HIV MEDICINE

Volume 19, Supplement 2, April 2018
ISSN 1464–2662

Abstracts of the 4th Joint Conference of the British HIV Association (BHIVA) with the British Association for Sexual Health and HIV (BASHH)
Edinburgh, UK
17–20 April 2018

BHIVA
British HIV Association

DAIG
Deutsche AIDS-Gesellschaft e.V

EACS European AIDS Clinical Society

WILEY Blackwell

TRIUMEQ is my treatment

DOLUTEGRAVIR▼ IS MY CORE

START WITH TRIUMEQ—
powered by dolutegravir, offering your patients all of the following:

CONFIDENCE

A potent regimen with **SUPERIOR EFFICACY** in treatment-naïve patients vs Atripla and atazanavir/r (in women)[1,2]

DURABILITY

A dependable regimen with a **HIGH BARRIER TO RESISTANCE**[1-3]

REASSURANCE

A convenient booster-free regimen with **FEW CLINICALLY SIGNIFICANT DRUG-DRUG INTERACTIONS**[3]

Triumeq▼
dolutegravir/abacavir/
lamivudine

TRIUMEQ is indicated for the treatment of HIV-infected adults and adolescents above 12 years of age weighing at least 40 kg.

Before initiating treatment with abacavir-containing products, HLA-B*5701 status must always be documented. Abacavir should not be used in patients known to carry the HLA-B*5701 allele due to the risk of hypersensitivity reaction.

Prescribing Information

Triumeq▼ dolutegravir 50mg/abacavir 600mg/lamivudine 300mg tablets
See Summary of Product Characteristics (SmPC) before prescribing.
Indication: HIV in over 12 years and ≥ *40kg*. Screen for HLA-B*5701 prior to use. Do not use if HLA-B*5701 positive. **Dose:** one tablet once daily with or without food. *Elderly:* Limited data in 65+ yrs. *Creatinine clearance <50ml/min or moderate/severe hepatic impairment:* Not recommended. Monitor closely in mild hepatic impairment. **Contraindications:** Hypersensitivity to any ingredient. Co-administration with dofetilide. **Warnings/precautions:** Both abacavir and dolutegravir are associated with risk of hypersensitivity reactions (HSR). Do not initiate in HLA-B*5701+ or previous suspected abacavir HSR. Stop Triumeq without delay if HSR suspected. Never reintroduce any dolutegravir- or abacavir-containing product after suspected HSR. Risks of immune reactivation syndrome, osteonecrosis, increased weight, lipids, glucose. Monitor LFTs in Hepatitis B/C co-infection. Inconclusive data on relationship between abacavir and MI; minimise all modifiable CV risk factors (e.g. smoking, hypertension, hyperlipidaemia). Not recommended if dolutegravir required b.d. (with etravirine (without boosted PI), efavirenz, nevirapine, rifampicin, boosted tipranavir, carbamazepine, oxcarbazepine, phenytoin, phenobarbital and St John's Wort). Use with cladribine not recommended. Use with Mg/Al-containing antacids, calcium, multivitamins or iron requires dosage separation. Caution with metformin: monitor renal function and consider metformin dose adjustment. When possible, avoid chronic co-administration of sorbitol or other osmotic acting alcohols (see SmPC section 4.5). If unavoidable, consider more frequent viral load monitoring. **Pregnancy/lactation:** Not recommended. Avoid breast-feeding. **Side effects:** See SmPC for details. Headache, insomnia, sleep/dream disorders, GI disturbance, fatigue, hypersensitivity, anorexia, depression, dizziness, somnolence, lethargy, malaise, cough, nasal symptoms, rash, pruritus, alopecia, arthralgia, myalgia, asthenia, fever, elevations of ALT, AST and CPK, blood dyscrasias, suicidal ideation or suicide attempt, rhabdomyolysis, lactic acidosis, erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis. **Basic NHS costs:** 30 tablets: £798.16 EU/1/14/940/001. MA holder: ViiV Healthcare UK Ltd, 980 Great West Road, Brentford, Middlesex TW8 9GS. Further information is available from Customer Contact Centre, GlaxoSmithKline UK Ltd, Stockley Park West, Uxbridge, Middlesex UB11 1BT.

POM S1A

Date of approval: January 2018 Zinc code: UK/TRIM/0037/14(9)

Adverse events should be reported. For the UK, reporting forms and information can be found at *www.mhra.gov.uk/yellowcard* or search for **MHRA Yellowcard** in the **Google Play or Apple App store**. Adverse events should also be reported to GSK on 0800 221441.

Adverse events should be reported. For Ireland, adverse events should be reported directly to the HPRA; Freepost, Pharmacovigilance Section, Health Products Regulatory Authority, Earlsfort Terrace, Dublin 2, Tel: +353 1 676 4971, *medsafety@hpra.ie*. Adverse events should also be reported to GlaxoSmithKline on 1800 244 255.

References: 1. Walmsley S et al. *J Acquir Immune Defic Syndr.* 2015;70:515-519. **2.** Orrell C et al. Published online July 17, 2017. *Lancet HIV.* doi: 10.1016/S2352-3018(17)30095-4. **3.** TRIUMEQ Summary of Products Characteristics. January 2018.

Date of preparation: February 2018 VIIV/DGR/0066/17e(1)

HIV MEDICINE

Published on behalf of the British HIV Association and the European AIDS Clinical Society

Editorial Office
Editorial Director: Ann O'Mahony
Wiley Blackwell
9600 Garsington Road
Oxford, OX4 2DQ, UK
Fax: +44 1865 714 591
E-mail: HIVedoffice@wiley.com

Production Editor
John Marlou De Guzman (e-mail: hiv@wiley.com)

Aims and Scope
HIV Medicine aims to provide an alternative outlet for publication of international research papers in the field of HIV Medicine, embracing clinical, pharmacological, epidemiological, ethical, preclinical and *in vitro* studies. In addition, the journal will commission reviews and other feature articles. It will focus on evidence-based medicine as the mainstay of successful management of HIV and AIDS.

Information for Subscribers
HIV Medicine is published in 10 issues per year. Institutional subscription prices for 2018 are: Print & Online: US$2660 (US), US$3102 (Rest of World), €1830 (Europe), £1443 (UK). Prices are exclusive of tax. Asia-Pacific GST, Canadian GST/HST and European VAT will be applied at the appropriate rates. For more information on current tax rates, please go to www.wileyonlinelibrary.com/tax-vat. The price includes online access to the current and all online back files to January 1st 2014, where available. For other pricing options, including access information and terms and conditions, please visit www.wileyonlinelibrary.com/access.

Delivery Terms and Legal Title
Where the subscription price includes print issues and delivery is to the recipient's address, delivery terms are Delivered at Place (DAP); the recipient is responsible for paying any import duty or taxes. Title to all issues transfers Free of Board (FOB) our shipping point, freight prepaid. We will endeavour to fulfil claims for missing or damaged copies within six months of publication, within our reasonable discretion and subject to availability.

Back issues: Single issues from current and recent volumes are available at the current single issue price from cs-journals@wiley.com. Earlier issues may be obtained from Periodicals Service Company, 351 Fairview Avenue – Ste 300, Hudson, NY 12534, USA.
Tel: +1 518 822-9300, Fax: +1 518 822-9305,
Email: psc@periodicals.com
HINARI: Access to this journal is available free online within institutions in the developing world through the HINARI initiative with the WHO. For information, visit www.who.int/hinari/en/
Wiley is a founding member of the UN-backed HINARI, AGORA, and OARE initiatives. They are now collectively known as Research4Life, making online scientific content available free or at nominal cost to researchers in developing countries. Please visit Wiley's Content Access – Corporate Citizenship site: http://www.wiley.com/WileyCDA/Section/id-390082.html

Publisher and Business Correspondence
HIV Medicine is published by John Wiley & Sons Ltd: 9600 Garsington Road, Oxford OX4 2DQ, UK. Tel: +44 (0)1865 776868, Fax: +44 (0)1865 714591. Blackwell Publishing was acquired by John Wiley & Sons in February 2007.
Wiley's Corporate Citizenship initiative seeks to address the environmental, social, economic, and ethical challenges faced in our business and which are important to our diverse stakeholder groups. Since launching the initiative, we have focused on sharing our content with those in need, enhancing community philanthropy, reducing our carbon impact, creating global guidelines and best practices for paper use, establishing a vendor code of ethics, and engaging our colleagues and other stakeholders in our efforts. Follow our progress at www.wiley.com/go/citizenship.
Journal Customer Services: For ordering information, claims and any enquiry concerning your journal subscription please go to www.wileycustomerhelp.com/ask or contact your nearest office.
Americas: E-mail: cs-journals@wiley.com; Tel: +1 781 388 8598 or +1 800 835 6770 (Toll free in the USA and Canada).
Europe, Middle East and Africa: E-mail: cs-journals@wiley.com; Tel: +44 (0) 1865 778315.
Asia Pacific: E-mail: cs-journals@wiley.com; Tel: +65 6511 8000.
Japan: For Japanese speaking support, Email: cs-japan@wiley.com.
Visit our Online Customer Get-Help available in 7 languages at www.wileycustomerhelp.com/ask.
Advertising: Sarah Young, HIV Medicine advertising (email: syoung@wiley.com)
Commercial reprints: Dean Martin (email: dean.martin@wiley.com)

OnlineOpen
HIV Medicine accepts articles for Open Access publication. Please visit http://olabout.wiley.com/WileyCDA/Section/id-828081.html for further information about OnlineOpen.

Disclaimer
The Publisher, the British HIV Association, the European AIDS Clinical Society and the Editors cannot be held responsible for errors or any consequences arising from the use of information contained in this journal; the views and opinions expressed do not necessarily reflect those of the Publisher, the British HIV Association, the European AIDS Clinical Society and the Editors, neither does the publication of advertisements constitute any endorsement by the Publisher, the British HIV Association, the European AIDS Clinical Society and Editors of the products advertised.

ISSN 1464-2662 (Print)
ISSN 1468-1293 (Online)

For submission instructions, subscription and all other information visit: www.hivmedicinejournal.com

Note to NIH Grantees
Pursuant to NIH mandate, Wiley Blackwell will post the accepted version of contributions authored by NIH grant-holders to PubMed Central upon acceptance. This accepted version will be made publicly available 12 months after publication. For further information, see www.wiley.com/go/nihmandate.

HIV MEDICINE (1464-2662) is published monthly except June and December. US mailing agent: Mercury Media Processing, LLC 1850 Elizabeth Avenue, Suite #C, Rahway, NJ 07065 USA. Periodical postage paid at Rahway, NJ. POSTMASTER: Send all address changes to *HIV MEDICINE*, John Wiley & Sons Inc., C/O The Sheridan Press, PO Box 465, Hanover, PA 17331 USA.

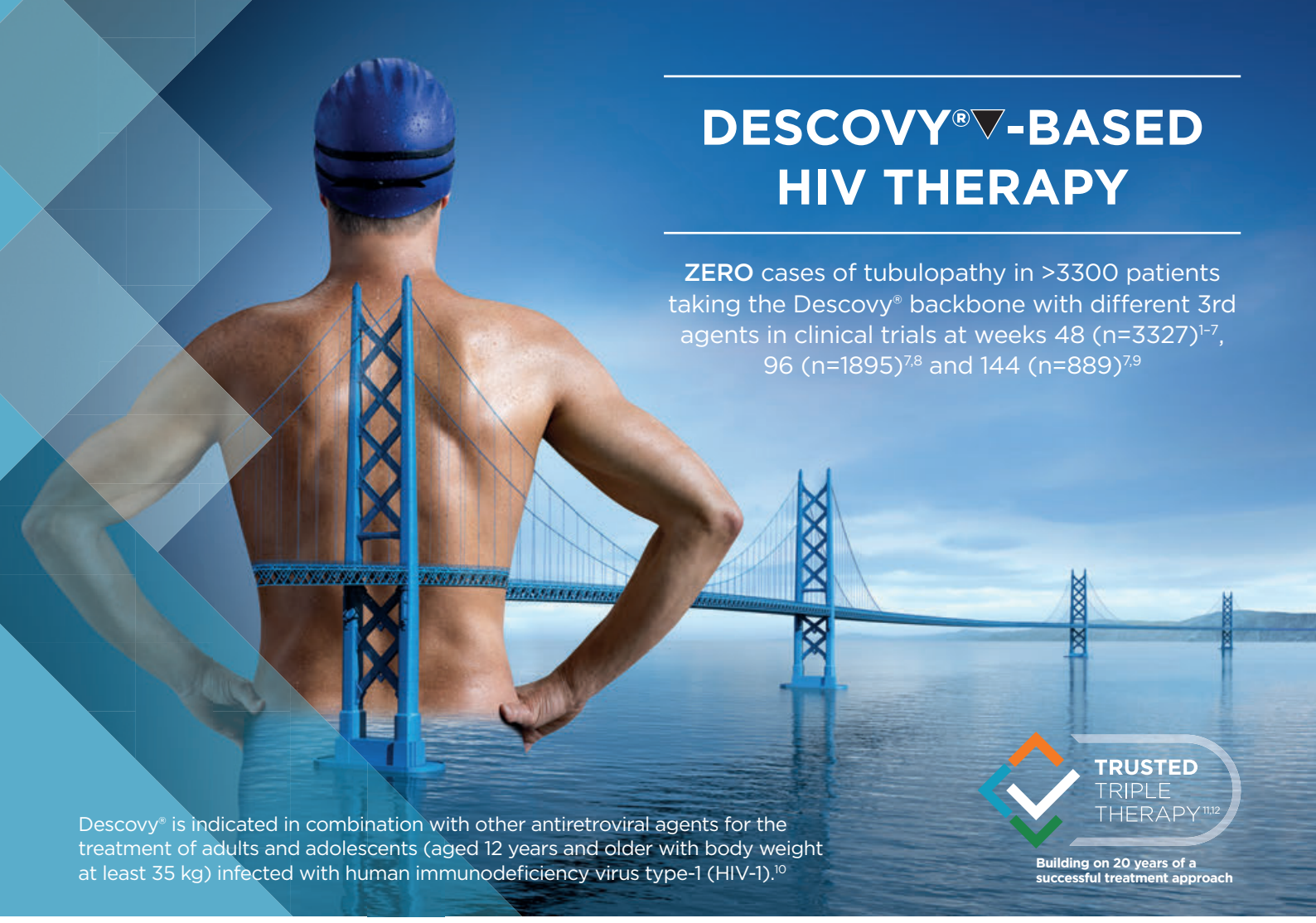
Typeset by Scientific Publishing Services (P) Ltd,
and printed in Singapore by Markono Print Media Pte Ltd.

HIV MEDICINE

Volume 19, Supplement 2, April 2018

Abstracts of the 4th Joint Conference of the British HIV Association (BHIVA) with the British Association for Sexual Health and HIV (BASHH)
Edinburgh, UK
17 -20 April 2018

Contents



DESCOVY®▼-BASED HIV THERAPY

ZERO cases of tubulopathy in >3300 patients taking the Descovy® backbone with different 3rd agents in clinical trials at weeks 48 (n=3327)[1–7], 96 (n=1895)[7,8] and 144 (n=889)[7,9]

Descovy® is indicated in combination with other antiretroviral agents for the treatment of adults and adolescents (aged 12 years and older with body weight at least 35 kg) infected with human immunodeficiency virus type-1 (HIV-1).[10]

TRUSTED TRIPLE THERAPY[11,12]

Building on 20 years of a successful treatment approach

DESCOVY® PRESCRIBING INFORMATION

Consult the Summary of Product Characteristics (SPC) before prescribing.

Descovy®▼ emtricitabine 200mg/tenofovir alafenamide 10mg or 25mg film coated tablets.

Indication: In combination with other antiretroviral agents for the treatment of HIV-1 infection in adults & adolescents (aged 12 years & older weighing at least 35 kg). **Dosage:** Adults & adolescents (aged ≥ 12 years, weighing at least 35 kg): One tablet, once daily, orally with or without food. The dose of Descovy should be administered according to the third agent in the HIV treatment regimen. Please consult the SPC for further information. Children (< 12 years or weighing < 35kg): Safety & efficacy has not been established. Elderly: No dose adjustment is required. Renal: No dose adjustment is required in adult or adolescent patients (aged ≥ 12 years, weighing at least 35 kg) with estimated creatinine clearance (CrCl) ≥ 30 mL/min. In patients with CrCl < 30 mL/min: not recommended. Should be discontinued in patients whose CrCl declines to < 30 mL/min during treatment. Hepatic: no dose adjustment required. **Contraindications:** Hypersensitivity to the active substances or to any excipients. **Warnings & Precautions:** Safety & efficacy in HCV co-infection has not been established. Tenofovir alafenamide is active against HBV. Co-infected HIV/HBV patients should be closely monitored for at least several months following discontinuation for symptoms of severe acute exacerbations of hepatitis. Descovy should be avoided in antiretroviral patients with HIV-1 harbouring the K65R mutation. Risks of mitochondrial dysfunction, immune reactivation syndrome, opportunistic infections, osteonecrosis with CART therapy. **Interactions:** Co-administration with certain anticonvulsants (eg. carbamazepine, oxcarbazepine, phenobarbital & phenytoin), antimycobacterials (eg. rifampicin, rifabutin & rifapentine), boceprevir, St. John's wort and HIV PIs other than atazanavir, lopinavir and darunavir is not recommended. Should not be administered concomitantly with medicines containing tenofovir alafenamide, tenofovir disoproxil, emtricitabine, lamivudine or adefovir dipivoxil. Co-administration of emtricitabine with medicinal products that are eliminated by active tubular secretion may increase concentrations of emtricitabine. Medicinal products that decrease renal function may increase concentrations of emtricitabine. Medicinal products that induce P-glycoprotein (P-gp) are expected to decrease the absorption of tenofovir alafenamide, resulting in decreased plasma concentration of tenofovir alafenamide, which may lead to loss of therapeutic effect of Descovy and development of resistance. Co-administration with medicinal products that inhibit P-gp and breast cancer resistance protein activity is expected to increase the absorption and plasma concentration of tenofovir alafenamide. Tenofovir alafenamide is a substrate of OATP1B1 and OATP1B3 *in vitro*. The distribution of tenofovir alafenamide in the body may be affected by the activity of OATP1B1 and OATP1B3. **Pregnancy & lactation:** Use in pregnancy only if potential benefit justifies the potential risk to the foetus. Breast-feeding; not recommended. **Side effects:** Refer to SPC for full information regarding side effects. Very common (≥1/10): Nausea. Common (≥1/100 to <1/10): Headache, dizziness, diarrhoea, vomiting, abdominal pain, flatulence, abnormal dreams, rash & fatigue. Uncommon (≥1/1000 to <1/100): anaemia, arthralgia, dyspepsia, angioedema & pruritus. **Legal Category:** POM. **Pack:** Bottle of 30 film-coated tablets. **Price:** UK NHS List Price – £355.73; Eire/Ireland – POA. **Marketing Authorisation Number:** EU/1/16/1099/001; EU/1/16/1099/003. Further information is available from Gilead Sciences Ltd, 280 High Holborn, London, WC1V 7EE, UK; Telephone:+44 (0) 8000 113700, For Ireland: +353 214 825 999. E-mail: ukmedinfo@gilead.com. Descovy is a trademark. **Date of approval:** August 2017; DVY/UK/17-08/MM/1194

▼ This medicinal product is currently subject to additional monitoring. Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Any suspected adverse reactions to Descovy should be reported to Gilead via email to Safety_FC@gilead.com or by telephone +44 (0) 1223 897500.

Adverse events should be reported. For the UK, reporting forms and information can be found at www.mhra.gov.uk/yellowcard.

For Ireland, suspected adverse reactions should be reported to the HPRA Pharmacovigilance using a Yellow Card obtained either from the HPRA, or electronically via the website at www.hpra.ie. Adverse reactions can also be reported to the HPRA by calling +353 1 6764971.

REFERENCES

1. Sax P, *et al*. Lancet 2015; 385: 2606–2615.
2. Eron J, *et al*. EACS 2017. Abstract PS8/2.
3. Gaur A, *et al*. Lancet HIV 2016; 3: e561–568.
4. Mills A, *et al*. Lancet Infect Dis 2016; 16(1): 43–52.
5. Winston A *et al*. EACS 2017.
6. Orkin C, *et al*. Lancet HIV 2017; http://dx.doi.org/10.1016/S2352-3018(17)30179-0 [Accessed December 2017].
7. Gilead Sciences. Data on File HIV-UK-17-03.
8. Wohl D, *et al*. J Acquir Immune Defic Syndr 2016; 72: 58–64.
9. Arribas J, *et al*. J Acquir Immune Defic Syndr 2017; 75: 211–218.
10. SmPC Descovy® Available at: https://www.medicines.org.uk/emc/medicine/31764 and https://www.medicines.org.uk/emc/history/31765. Accessed December 2017.
11. European AIDS Clinical Society (EACS) guidelines. Version 8.2, January 2017. Available at: http://www.eacsociety.org/files/guidelines_8.2_english.pdf. Accessed December 2017.
12. US Department of Health and Human Services (DHHS). July 2016. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Available at: http://aidsinfo.nih.gov/guidelines. Accessed December 2017.

GILEAD

Descovy®▼
emtricitabine/tenofovir alafenamide
200/10mg and 200/25mg tablets

DVY/UK/17-11/MI/1258 Date of preparation: December 2017

TRIUMEQ is my treatment

DOLUTEGRAVIR▼ IS MY CORE

START WITH TRIUMEQ—

powered by dolutegravir, offering your patients all of the following:

CONFIDENCE

A potent regimen with **SUPERIOR EFFICACY** in treatment-naïve patients vs Atripla and atazanavir/r (in women)[1,2]

DURABILITY

A dependable regimen with a **HIGH BARRIER TO RESISTANCE**[1-3]

REASSURANCE

A convenient booster-free regimen with **FEW CLINICALLY SIGNIFICANT DRUG-DRUG INTERACTIONS**[3]

Triumeq▼
dolutegravir/abacavir/
lamivudine

TRIUMEQ is indicated for the treatment of HIV-infected adults and adolescents above 12 years of age weighing at least 40 kg.

Before initiating treatment with abacavir-containing products, HLA-B*5701 status must always be documented. Abacavir should not be used in patients known to carry the HLA-B*5701 allele due to the risk of hypersensitivity reaction.

Prescribing Information

Triumeq▼ dolutegravir 50mg/abacavir 600mg/lamivudine 300mg tablets
See Summary of Product Characteristics (SmPC) before prescribing.
Indication: HIV in over 12 years and ≥ *40kg*. Screen for HLA-B*5701 prior to use. Do not use if HLA-B*5701 positive. **Dose:** one tablet once daily with or without food. *Elderly:* Limited data in 65+ yrs. *Creatinine clearance <50ml/min or moderate/severe hepatic impairment:* Not recommended. Monitor closely in mild hepatic impairment. **Contraindications:** Hypersensitivity to any ingredient. Co-administration with dofetilide. **Warnings/precautions:** Both abacavir and dolutegravir are associated with risk of hypersensitivity reactions (HSR). Do not initiate in HLA-B*5701+ or previous suspected abacavir HSR. Stop Triumeq without delay if HSR suspected. Never reintroduce any dolutegravir- or abacavir-containing product after suspected HSR. Risks of immune reactivation syndrome, osteonecrosis, increased weight, lipids, glucose. Monitor LFTs in Hepatitis B/C co-infection. Inconclusive data on relationship between abacavir and MI; minimise all modifiable CV risk factors (e.g. smoking, hypertension, hyperlipidaemia). Not recommended if dolutegravir required b.d. (with etravirine (without boosted PI), efavirenz, nevirapine, rifampicin, boosted tipranavir, carbamazepine, oxcarbazepine, phenytoin, phenobarbital and St John's Wort). Use with cladribine not recommended. Use with Mg/Al-containing antacids, calcium, multivitamins or iron requires dosage separation. Caution with metformin: monitor renal function and consider metformin dose adjustment. When possible, avoid chronic co-administration of sorbitol or other osmotic acting alcohols (see SmPC section 4.5). If unavoidable, consider more frequent viral load monitoring. **Pregnancy/lactation:** Not recommended. Avoid breast-feeding. **Side effects:** See SmPC for details. Headache, insomnia, sleep/dream disorders, GI disturbance, fatigue, hypersensitivity, anorexia, depression, dizziness, somnolence, lethargy, malaise, cough, nasal symptoms, rash, pruritus, alopecia, arthralgia, myalgia, asthenia, fever, elevations of ALT, AST and CPK, blood dyscrasias, suicidal ideation or suicide attempt, rhabdomyolysis, lactic acidosis, erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis. **Basic NHS costs:** 30 tablets: £798.16 EU/1/14/940/001. MA holder: ViiV Healthcare UK Ltd, 980 Great West Road, Brentford, Middlesex TW8 9GS. Further information is available from Customer Contact Centre, GlaxoSmithKline UK Ltd, Stockley Park West, Uxbridge, Middlesex UB11 1BT.

POM S1A

Date of approval: January 2018 Zinc code: UK/TRIM/0037/14(9)

Adverse events should be reported. For the UK, reporting forms and information can be found at *www.mhra.gov.uk/yellowcard* or search for **MHRA Yellowcard** in the **Google Play or Apple App store**. Adverse events should also be reported to GSK on 0800 221441.

Adverse events should be reported. For Ireland, adverse events should be reported directly to the HPRA; Freepost, Pharmacovigilance Section, Health Products Regulatory Authority, Earlsfort Terrace, Dublin 2, Tel: +353 1 676 4971, *medsafety@hpra.ie*. Adverse events should also be reported to GlaxoSmithKline on 1800 244 255.

References: 1. Walmsley S et al. *J Acquir Immune Defic Syndr.* 2015;70:515-519. **2.** Orrell C et al. Published online July 17, 2017. *Lancet HIV.* doi: 10.1016/S2352-3018(17)30095-4. **3.** TRIUMEQ Summary of Product Characteristics. January 2018.

Date of preparation: February 2018 VIIV/DGR/0066/17e(1)

Oral Abstracts

O1

Was the pain worth the gain? Antiretroviral (ARV) savings from the Improving Value project and generics use in England

L Waters[1], P Aubrey[2], J Harper[2], P Sharott[2], T Palmer[2], I Harrison[2], H Leake Date[3], L Jordan[4], S Schoeman[5] and I Willams[6]

[1]Mortimer Market Centre, CNWL, London, UK, [2]NHS England, London, UK, [3]Royal Sussex County Hospital, Brighton, UK, [4]Community Rep HIV CRG, London, UK, [5]Leeds Teaching Hospital NHS Trust, UK, [6]Institute for Global Health, University College London, London, UK

Background: Based on 2015/6 ARV expenditure of £429 m in England, the HIV Clinical Reference Group (CRG) & NHS England (NHSE) developed an Improving Value scheme (IV) for ARVs. This identified a range of ARV switches aiming, where clinically appropriate & acceptable, to yield a 2.5% annual spending reduction over 2 years. Increasing availabity of generic drugs also has the potential to reduce drug costs.
Methods: The HIV CRG, a multi-disciplinary group including representatives from the 4 England regions, community & specialty societies, developed a menu of switch choices & targets for implementation in 2016/7 and 2017/8., including patient information Pharmacy submissions were analysed to estimate the impact of the IV project and like-for-like branded to generic switches on drug spend nationally & regionally. We present the impact of 3 IV switches (Atripla to Truvada + generic efavirenz, Darunavir/ritonavir to Rezolsta and Atazanavir/ritonavir to Evotaz) and 2 generic switches (nevirapine-PR & abacavir/lamivudine) for 2016/7.
Results: For the 2016/7 financial year total ARV spend for England was £413.7 m, a 3.56% saving compared to 2015/6; savings ranged from 1.7% in the South to 5.0% in London. 33% of the savings were due to regional contract savings, 50% the NVP-PR & ABC/3TC generics substitutions and 17% the 3 analysed IV switches (equivalent to savings vs. 2015/6 of 1.19%, 1.78% & 0.59%, respectively). The value of individual switches for England overall is summarised in the table.

Switch	Saving
Kivexa to gABC/3TC	£6,956,811
Branded to generic NVP-PR	£722,022
Atripla to Truvada + gEFV	£1,131,212
Darunavir/r to Rezolsta	£752,172
Atazanavir/r to Evotaz	£240,404

Focusing on combined savings secondary to only IV switches by region these were: £416,163 in the North, £247,929 in the South, £349,097 in Midlands & East and £1,110,599 in London. Uptake of switches was high indicating acceptability to patients & the importance of community engagement & support.
Conclusion: In England ARV savings in 2016/7 exceeded the 2.5% target despite more people on treatment. In addition to significant savings secondary to regional contract negotiations and the 'natural' switch from branded drugs to generic equivalents, targeted changes of drug formulations, including changes in pill burden, can yield additional large ARV savings. In the current NHS climate we have a duty to work with patients to optimise prescribing efficiency but implementing appropriate, acceptable ARV switch strategies.

O2

NHS England commissioning for value: what is the hidden cost?

E Okecha, O Barry, A Johnston, J Mellor, H Baker and V Lee

Manchester University NHS Foundation Trust, UK

Introduction: In 2016 NHS England undertook the decision to switch standard antiretroviral (ARVs) therapy to generics. Whilst this accounted for savings from generic prescriptions, it did not account for follow up testing or additional appointments.
Background: Potential savings were identified if patients stable on Atripla, Triumeq, Darunavir/Ritonavir or Atazanavir/Ritonavir switched to equivalent generics.
Method: Patients stable on the above 4 regimens were identified. A retrospective case note review of those who switched until June 2017 was performed. Patients were followed up for 6 months.
Results: Total 432 patients.

Switched from Switched to	Atripla TDF/FTC/EFV	Triumeq ABC/3TC/DTG	DRV/rit Rezolst	ATV/rit Evotaz
Number	187	76	152	17
Cost saving/month (£)	71.77	113.93	19.44	19.44
Additional clinic visit	11	14	59	5
Total cost of clinic visit (£)	1800	2100	8850	750
Additional test cost	2750.04	3897.94	11496.9	1005.27
Drug wastage cost	4654.99	3193.91	4515	0
Net cost saving in 6 months	+74468.73	+44473.05	−3298.02	+227.61

Total 29 patients required further treatment switch
Conclusion: Our experience of switching to generics generated a significant saving for Atripla/Triumeq; it's important to note that additional tests/clinic visits/drug waste negated the saving. Modest savings were seen for Evotaz but there was a substantial loss for Rezolsta due to detectable viraemia. 29 patients required further switch; whilst not financial, this has significant cost impact on the wellbeing of our patients living with HIV.

O3

Audit of perinatally acquired HIV in UK-born infants reported 2014–2017

H Peters[1], L Byrne[1], P Tookey[1], S Webb[2] and C Thorne[1]

[1]Great Ormond Street Institute of Child Health, University College London, UK, [2]NHS Infectious Diseases in Pregnancy Screening Programme, Public Health England, London, UK

Background: Vertical transmission (VT) of HIV in the UK/Ireland in diagnosed women reached an all-time low of <0.3% in 2012–2014, thanks to high uptake of antenatal screening and effective interventions. Active surveillance of all pregnancies in HIV-diagnosed women and all paediatric diagnoses of HIV is carried out by the National Study of HIV in Pregnancy and Childhood (NSHPC); an on-going audit of the small number of perinatal infections acquired in the UK has been integrated into the NSHPC. Over 100 children with perinatal HIV (PHIV) born since 2006 were reported by April 2014, and over two-thirds of these were born to undiagnosed women. Findings from this audit have been published recently and fed into national standards and guidelines.
This update covers children with PHIV born 2006–2017 and reported since April 2014.
Methods: Supplementary maternal and infant information is collected for the audit through structured telephone interviews with paediatric, maternity and HIV clinicians involved in each case.
Results: A total of 25 children with PHIV were newly reported. Fifty interviews have been carried out so far, with at least one per case. Two-thirds (17/25) of children were born to undiagnosed women, 3 mothers were diagnosed during, and 5 prior to pregnancy. Child's age at diagnosis ranged from birth to 8 years.

Twelve undiagnosed women had a negative antenatal test. Seven partners were also diagnosed after the child's birth; one was known positive but had not disclosed. Two women had new partners in pregnancy. Four children were born to women who declined HIV testing in pregnancy (all before 2010). One woman presented >30 weeks and delivered preterm.
Two of the eight diagnosed women booked >18 weeks and had short duration of treatment; one seroconverted after a negative test; one reported problems taking ART. Three of these transmissions were in utero, four were postnatal and associated with breastfeeding.
At least 13 women had major complicating issues identified including immigration, housing or mental health issues, intimate partner violence, and social services involvement.
Conclusions: Among 25 recent VT cases in the UK, two-thirds involved undiagnosed women. Issues identified are similar to those previously reported; seroconversion was a common factor, highlighting the importance of partner testing/PrEP use in pregnancy. This ongoing audit provides valuable insights into the circumstances of the few transmissions still occurring in the UK.

O4

Post-transition outcomes in young adults living with HIV: 90:99:80

C Foster[1], S Ayers[1], G Frize[1], S Macdonald[1] and S Fidler[2]
[1]Imperial College Healthcare NHS Trust, London, UK, [2]Imperial College London, UK

Background: Globally, adolescence is the only age group where HIV associated mortality is rising, with poorer outcomes at all stages of the care cascade compared to adults; many cohorts report <25% retained on suppressive ART. We examined the post transition outcomes for young adults (YA) living with perinatal HIV (PaHIV) at a specialist UK centre.
Methods: Retrospective database and electronic record review for all those living with PaHIV attending January 2006 to September 2017, assessing retention, mortality, morbidity and viral load (VL) suppression.
Results: 182 YA registered; 16 (8.7%) subsequently transferred care, 4 (2.2%) were lost to follow up (>12 months LTFU) and 4 (2.2%) died at a median age 20 (r19–27) years: end-stage HIV with poor ART adherence (3), HIV/HBV hepatocellular carcinoma (1).
158 in current follow up, median age 22.9 years (r18.1–33.6), 56% are female, 85% Black African. Six (4%) have hepatitis co-infection. 157 (99.4%) have ever received ART; one age 19, CD4 336 cells/μl continues to decline therapy. At latest follow up 127/158 (80.4%) have a VL <200 c/ml, median CD4 count 626 cells/μl (IQR 441–820). 18 (11%), median 23.7 years, have severe immunosuppression, CD4<200 cells/μl, 4 with VL<200 c/ml.
128/158 (80%) are on standard ART; 2 NRTIs plus a; protease inhibitor (56%), integrase inhibitor (27%) and NNRTI (17%). 22 (14%) are on complex 3 ART class regimens, 50% VL<200 c/ml, median CD4 268 (IQR 54–670) cells/ul, half with prior mono/dual therapy, with dual (53%) triple (37%) and four class (10%) resistance mutations. Post transition, 14 (9%) had 1 or more new AIDS diagnoses: HIV wasting (4), recurrent sepsis (4), lymphoma (3), MAI (3), Cryptococcus (2), PCP (2) and MDR TB (1). Six had surgery for lipodystrophy and 6 gastrostomies for adherence.
Co-morbidities: 13 (8%) have significant disability; 4 severe learning, 5 motor due to infantile HIV encephalopathy (4), anorexia (1) and sensory impairments of hearing (5) and vision (2). Mental health: 33 (21%) anxiety and/or depression of whom 3 attempted suicide and 4 self harmed, 8 (5.6%) new onset psychosis, and 6 (4%) alcohol/drug dependency.
13 women and 3 men are parents to 25 uninfected children.
Conclusion: Post transition linkage and retention in care with access to therapy far exceeded 90:90:90 global targets in this highly complex cohort. Whilst LTFU and mortality combined was <5% over a decade, a fifth continue to struggle with adherence and mental health issues prevail.

O5

Adults with perinatally acquired HIV: 25 years and beyond

A Joynson, C Foster, S Fidler, S Ayres and H Pintilie
Imperial College Healthcare NHS Trust, London, UK

Background: With suppressive antiretroviral therapy (ART) most children living with perinatally acquired HIV (PaHIV) survive to adolescence, however there is a no data on perinatal outcomes in adult life (25 + years). We examined the outcomes for perinatally infected adults at a UK tertiary centre.
Methods: Retrospective database and electronic record review of adults with PaHIV born before November 1992 registered up to November 2017. Collated variable including demographics, ART, immunology, virology and HIV associated morbidity and mortality, anonymised and analysed in excel.
Results: Of the 60 PaHIV adults aged 25 and older ever registered; 11(18%) subsequently transferred care, 1 (1.6%) is lost to follow up and 3 (5%) died; aged 19, 20 and 27 years of advanced HIV with poor ART adherence. Of the 45 adults in current follow up; 26 (58%) are female, median age 27 years (range (r) 25–33), ethnicity: Black African 37 (82%), Mixed Race 3 (7%), Caucasian 5 (11%). Four (9%) have perinatal hepatitis co-infection; HBV (2), HBV/HDV (1), and HCV (1). All 45 received ART; at last follow up 39/45 (87%) have a viral load (VL) <200 c/ml, median CD4 count 676 cells/ul (IQR 363). Of the 6 (13%) with a VL >200 c/ml, the median CD4 count is 296 cells/ul (r 52–539). 17 (38%) are on first line ART; 5 NNRTI, 12 integrase. Of the 28 on second/subsequent line therapy resistance data is available for 24 with single (6) dual (11) triple (2) and four class (1) resistance mutations. 7/45 have had ART toxicity: including lipodystrophy (3), Stephen Johnson's syndrome (2) non-cirrhotic portal hypertension (1), facial hyperpigmentation (1). 60% have had vitamin D deficiency treated and 5/11 with bone density data have osteopenia. 11/45 (24%) have ever had one or more AIDS defining illness; most commonly tuberculosis (TB:7), atypical mycobacteria (3) and malignancy; lymphoma (2) kaposi's sarcoma (1). 3 patients had 8 admissions in the last 36 months; 1 exacerbations of bronchiectasis (x3 admissions), 1 pulmonary TB (x1) and depression/alcohol dependency (x4). Mental health diagnoses in adult care; 12 (26%) anxiety and/or depression of whom 1 attempted suicide and 3 self-harmed; 4 alcohol/drug dependency and 2 recurrent psychosis. 8/45 (18%) 7 females, have 15 uninfected children.
Conclusions: Despite complex histories and high rates of mental health issues, in this cohort of perinatally infected adults, almost 90% have viral suppression and over a third remain on first line ART.

O6

An analysis of the link between antiretroviral therapy and syphilis in men who have sex with men in England 2008–2016

H Allen[1], A Brown[2], H Mohammed[2], M Marks[3], G Hughes[2] and V Delpech[2]
[1]Clinical Research Department, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, UK, [2]Department of HIV and STIs, Public Health England, London, UK, [3]Hospital for Tropical Diseases, Mortimer Market Centre, London, UK

Background: The last two decades have seen a resurgence in bacterial sexually transmitted infections (STIs), most notably syphilis, amongst men who have sex with men (MSM) in the UK and globally. Changes in sexual behaviour, linked possibly to the increased use of anti-retroviral treatment (ART) for both the treatment and prevention of HIV, have been considered the major driving force for the recent increase in STIs in this group. However, the role of non-behavioural factors in the recent increase in STIs is unclear. A recent modelling study postulated that ART might have a direct impact on susceptibility to syphilis.
Methods: National HIV and STI surveillance datasets were used to identify HIV positive MSM between 2008 and 2016 in England. Multivariable poisson regression was used to assess the association between use of ART and bacterial STIs after adjustment for potential confounders.
Results: 19,428 HIV positive MSM contributed 112.96 person years of follow-up. Overall the rates of syphilis, chlamydia and gonorrhoea were 32.5 (95% CI: 31.5–33.5), 67.3 (95% CI: 65.8–68.8) and 78.0 (95% CI: 76.4–79.7) per 1,000 person years follow-up respectively. The rate of syphilis was marginally higher amongst individuals receiving ART (35.5 per 1,000 person years 95% CI: 34.1–36.8) compared to those not receiving ART (30.4 per 1,000 person years 95% CI: 28.4–33.3). In multivariable analysis, being aged between 35 and 49 (incidence rate ratio (IRR) 2.3 95% CI: 1.6–32) and being diagnosed with two or more other STIs (IRR 6.1 95% CI: 5.6–6.7) were the major risk factors for a syphilis diagnosis.
Conclusions: The diagnosis of two or more other STIs was used as a marker for high risk sexual behaviour and this was the major risk factor for a syphilis diagnosis amongst HIV positive MSM in this study. There was a statistically significant but clinically non-significant association between receipt of ART

and an increased risk of syphilis. Given the limitations of these datasets, including lack of robust behavioural data, this association may be explained by other unmeasured factors. Improved strategies to reduce transmission of bacterial STIs, including the scale up of syphilis testing in this high risk group are needed.

O7

Reduced chlamydia prevalence, shorter infections, and a fall in pelvic inflammatory disease diagnoses contemporary with increased chlamydia testing in England: an evidence synthesis using surveillance data, 2000–2015

J Lewis and P White

NIHR Health Protection Research Unit in Modelling Methodology, Imperial College London, UK

Background: Chlamydia screening programmes have been implemented in several countries, but the effects of screening on incidence, prevalence and reproductive sequelae remain unclear. In England, there were marked increases in testing with the roll-out of the National Chlamydia Screening Programme (NCSP) in 2003–2008. However, chlamydia prevalence estimated in the Natsal population-based surveys was similar in 1999–2001 and 2010–2012 – although the precision of the estimates was limited by the small number of infections. We have used an evidence-synthesis approach to examine trends in chlamydia prevalence over time, informed by time-series data on the number of tests and diagnoses available from NCSP or estimated from other sources in a recent paper.
Methods: We used newly-published annual figures for chlamydia test coverage and diagnoses in men and women aged 15–19 and 20–24-years in England before, during and after the scale-up of national screening. We applied a recently-developed statistical method which accounts for asymptomatic screening for chlamydia, symptomatic testing and natural recovery, to infer prevalence and the average duration of infections in each year, by sex and age group. We compared our results to reported pelvic inflammatory disease (PID) diagnosis rates in hospital and general practice.
Findings: We produced annual – rather than approximately ten-yearly – prevalence estimates and also estimated the average duration of infection, stratified by age and sex. Chlamydia prevalence and the average duration of infection declined in both sexes once screening was fully implemented, but progress has recently reversed with reduced testing. A fall in average infection duration in women was concurrent with a fall in annual PID diagnoses.
Interpretation: Our analysis provides the first evidence for a reduction in chlamydia prevalence in England associated with large-scale population testing. It also shows a consistent decline in the average duration of infections, contemporary with a fall in PID diagnoses over the same period. The trend of increasing prevalence and average duration of infection in recent years is concerning.

O8

Exploring the drivers of the recent decline in gonorrhoea diagnoses in MSM attending GUM clinics in England

D Ogaz[1], M Furegato[1], S Nash[1], P Blomquist[1], M Rayment[2], H Fifer[1], H Mohammed[1] and G Hughes[1]

[1]Public Health England, London, UK, [2]Chelsea and Westminster Hospital NHS Foundation Trust, London, UK

Background: Gonorrhoea (GC) disproportionately affects men who have sex with men (MSM) in England. Following successive annual increases since 2008, the number of GC diagnoses in MSM declined sharply between 2015 and 2016. Using national sexually transmitted infection (STI) surveillance data, we investigated possible drivers for this decline.
Methods: GC testing and diagnosis trends, annual test frequency, case-mix and median days to subsequent test following GC diagnosis were calculated in MSM attending sexual health clinics (GUM clinics) in England from 2012 to 2016 using the GUMCAD STI Surveillance System. Testing trends were stratified by GC test history (frequent: $\geq$2 tests in previous year; infrequent: $<$2 tests in previous year). All analyses were stratified by clinic location (London or outside London) and MSM throughput (bisected by the median annual number of MSM attendees): London-high (L-H) and -low (L-L); Outside London-high (OL-H) and -low (OL-L). As proxy markers for behavioural change, concurrent diagnosis trends in chlamydia and syphilis (primary/secondary/early latent) in MSM attending GUM clinics were determined. Information on testing platforms used by 13 clinics that had the greatest declines was requested to examine systematic testing error.
Results: In MSM, GC testing increased from 96,437 tests in 2012 to 166,830 in 2016. There was a 22% decline (22,169–17,244) in diagnoses from 2015 to 2016. Declines were largely in L-H clinics (67%) where GC testing was largely in frequent testers and test frequency was highest (49%, $\geq$2 tests/year) from 2015. Median days to subsequent GC test following diagnosis decreased in all clinic strata from 2012 to 2015 (L-H: 177–116 days). Between 2015 and 2016, GC case-mix did not vary greatly (median age: 30; White ethnicity: 82%; UK-born: 62% in both years), chlamydia diagnoses remained stable (12,667–12,563) while syphilis diagnoses rose (4,158–4,743). Of 8/13 clinics responding, 4 different testing platforms were used. Two of these clinics had introduced testing platforms on-site within the clinic, allowing more rapid results and patient management.
Conclusion: There is no evidence that changes in behaviour, patient case-mix, or testing platform errors, are associated with the GC decline. Increased testing frequency and shorter test-turnaround time, facilitating earlier identification and treatment of infection, especially those asymptomatic, may have limited secondary transmission and reduced GC incidence.

O9

How many people do we turn away? Measuring unmet demand on sexual health services

A Dunne[1], V Pearce[2], A Menon-Johansson[3], E Mabonga[4], L Jones[5], G Parry[6], K Watters[1] and M Brady[7]

[1]Southwark Council, London, UK, [2]Vikki Pearce Consulting, Brighton, UK, [3]Guy's and St Thomas' NHS Foundation Trust, London, UK, [4]Lewisham and Greenwich NHS Trust, London, UK, [5]Brook, London, UK, [6]SH24, London, UK, [7]Kings College Hospital NHS Foundation Trust, London, UK

Background: Sexual Health services frequently struggle to meet demand and patients have to be turned away. Recording the numbers and characteristics of people unable to access services helps to understand the individual and public health impact and to implement service developments to better meet sexual health need. We report the findings of a large turn away survey across 3 Local Authorities and 5 sexual health providers
Methods: From 1st – 30th November 2017 patients turned away from all local services were asked to complete a brief questionnaire giving details of basic demographics, postcode, reason for attendance and whether they had already been turned away for the same reason. The survey was undertaken at 7 sites of 3 NHS Sexual Health service providers, one 3rd Sector provider and one on-line service. A 'turn away' was defined as anyone not able to access the service on the day they attended and an attempt was made to capture information on all patients turned away.
Results: 1,094 people completed the survey. A further 1,116 people were turned away from our local online testing service. This represents 7.7% of activity in the 5 clinical services. 284 (26%) had already been turned away. Mean age was 29.4 (15–71). 59 (5.6%) of those turned away were aged between 16 -18. The majority of people turned away (54%) reported having symptoms, 25% wanted contraception (including LARC) and 4% needed emergency contraception. Only 11% of those turned away reported being asymptomatic. Of the 26% who had already been turned away 44% had attempted to access their GP and 42% another sexual health service. 51% of those turned away multiple times were from our local boroughs with the remainder being from out of our area.
Conclusions: We demonstrated the feasibility of doing a large scale, turn away survey across multiple services in a local health economy. The survey demonstrated significant levels of need for clinic services, which could not be met within current capacity. 89% of those turned away required face to face services with evidence of limited capacity both in primary care and sexual health services. This was the first time unmet need was systematically recorded, however it only captured expressed demand. Actual need will be greater given local sexual and reproductive health epidemiology. We intend to repeat the survey and would encourage other commissioners and providers to do the same to better understand the impact of limited access to sexual health services.

O10

Can we reduce syphilis screening in low-risk populations in sexual health clinics?

A Parr[1], N Pinto-Sander[2], D Williams[2] and D Richardson[1]
[1]Brighton and Sussex Medical School, UK, [2]Brighton and Sussex University Hospitals NHS Trust, UK

Background: Incident infectious syphilis has increased significantly in the UK since 2000 Sexual health services are currently experiencing significant financial pressure and need identify savings. We currently screen all patients accessing sexual health services for syphilis regardless of risk.
Methods: We identified all patients diagnosed with syphilis in our clinic in the past 5 years and then using clinical coding and electronic patient records we excluded: MSM, HIV positive, intravenous drug users (IVDU), known contacts of syphilis, non-EU citizens, sexual contacts from non-EU countries, commercial sex workers (CSW) and victims of sexual assault.
Results: There were 116 cases of early syphilis in the time period of which 104 were MSM leaving 12 cases. Of these 8 were male. 6 of the men, although not coded MSM, had documented sexual contact with other men, 1 man had previous partners from African countries, 1 man had lived in Brazil and had Brazilian partners, 1 was symptomatic from a penile ulcer, 1 was referred by blood transfusion had many sexual contacts in Ibiza and had a symptomatic genital ulcer, 2 women were diagnosed at antenatal testing, one Indian woman and one from a non-EU Eastern European country.
Conclusion: Of the 116 cases of early syphilis, all had identifiable risk factors from the clinical history. We suggest that all new patients should be screened for syphilis at initial presentation, but repeat testing could be rationalised to those who are symptomatic with ulcers or rash or have identifiable risk factors on sexual history taking.

O11

Moving from an 'opt out' to an 'opt in' health adviser service: impact on service delivery and patient engagement

A Colcutt, D Dennehy, A Wolton, D McConachie, M Mancinelli, D Laisiter and K Luke
56 Dean Street Chelsea and Westminster NHS trust, London, UK

Background: Changes in commissioning in sexual health further heighten the need for efficiency in the use of health adviser appointments in services with high rates of STIs. Pathways around health adviser support were redesigned to reduce non-attendances. The key change was a move to an 'opt in' rather than an 'opt out' service. Data was also gathered on reason for referral to establish patient motivations for using the service. Health advisers offered either assessment/onward referral only or an intervention of between 2–6 sessions (consisting of risk reduction, counselling or support).
Methods: 660 patients (83% male, 73% MSM) were referred during a 12-month period. Data on engagement, outcome and reason for referral were collected.
Results: The transition to the new 'opt in' model led to a reduction in DNAs from 31% to 13%. Further data is shown below.

Overview	Outcome	Reason n=660
Total referred 660	Attended 382	Sexual risk/chems 26%
Opted in 71%	Assessment only 29%	Health anxiety 19%
Didn't engage 29%	HA intervention 42%	HSV adjustment 3%
	Referred on 29%	HIV concerns 17%
		Sexual difficulties 12%
		Other 23%

Conclusion: This change in service design led to a significant reduction in unused appointments. The impact of this on the health adviser service was increased capacity and better use of clinician time. It is possible that the increase in appointments allowed greater flexibility and patient choice in times which further reduced unused appointments. Gathering data on reason for referral enabled the team to establish patient need for health adviser interventions based on key referral criteria and plan training and development accordingly. Patient feedback suggested that the change in pathway in this 12 month period did not affect patient experience.

O12

Three-site testing by the third sector in partnership with the sexual health service: the way forward for outreach testing for MSM

J Braunholtz-Speight[1], A Chady[2], S Schoeman[1], E Page[1], C Foulk-Jones[1], M Webster[1] and A Evans[1]
[1]Leeds Sexual Health, UK, [2]Yorkshire Mesmac, Leeds, UK

Background: It is known that the burden of bacterial STIs in MSM is predominantly extra-genital. However most Third Sector organisations (TSO) providing HIV point-of-care testing (POCT) only offer genital testing via a urine sample, often only to Under 25 s as part of the Chlamydia Screening Programme. It is also known that HIV transmission is more likely in the presence of another STI, particularly with rectal involvement. The BASHH Outreach Standards recommend extra-genital testing at pharynx and rectum regardless of sexual history, when targeting MSM. A positive outcome of our local sexual health service integration was partnering with a local TSO that were already offering sexual health screens to MSM. Our aim was to increase STI detection rates by offering triple site testing alongside HIV prevention and testing for MSM with a local TSO.
Methods: Prior to integration the TSO was offering STI testing via a postal urine only sampling kit. Together we developed a TSO triple site testing protocol for MSM in the outreach setting (TSO city centre premises, male only saunas and other outreach settings).The protocol included developing a standard operating procedure, training third sector staff and clinical governance arrangements.
Results:

Testing method	Year (s)	Client screens	Numbers of infections	Positivity rate	GC* cases	CT** cases
Postal urine kits only	2013–2016	758 (33.5% under 25)	27	3.6%	3	24
TSO Triple site protocol	2017	478 (26% under 25	72 51/72 (71%) extra-genital only	15%	32 28/32 (88%) extra-genital only	40 23/40 (58%) extra-genital only

*GC Gonorrhoea; **CT Chlamydia.

Over 99% were MSM/Transfemales in both periods.
Most common extra-genital site was rectal.
Costs per screen were also reduced significantly by using in-house testing rather than a commercial service.
Conclusion: Developing triple site testing by a local TSO at MSM/trans – focussed outreach services in partnership with the sexual health service, increased testing rates. Triple-site screening is significantly better than urine alone ($p<0.05$) at detecting infection in this setting. 88% of Gonorrhoea and 58% of Chlamydia would have been missed with urine-only testing. Third sector staff felt more satisfied and confident as a result of being able to provide a comprehensive / higher quality sexual health testing offer to their clients, especially those who choose not to access traditional sexual health clinic services.

O13

OptTEST programme interventions for indicator condition HIV testing are effective in significantly increasing HIV testing rates in non-specialist healthcare settings across Europe

A Sullivan[1], C Rae[1], I Sperle[2], S Jakobsen[2], J Kowalska[3], RL Colon[4], L Lemsalu[5], MJ Perez Elias[6], A Vassilenko[7], N Badridze[8], V Sikolova[9], G Kustyna[10], M Rayment[1], D Raben[2] and J Lundgren[2]
[1]Chelsea and Westminster Hospital NHS Foundation Trust, London, UK, [2]CHIP, Rigshospitalet, Copenhagen, Denmark, [3]Hospital for Infectious Diseases, Warsaw, Poland, [4]CEEISCAT, Barcelona, Spain, [5]National Institute for Health

Development, Tallinn, Estonia, [6]Hospital Ramon y Cajal, Madrid, Spain, [7]Belarusian State Medical University, Minsk, Belarus, [8]AIDS and Clincial Immunology Research Centre, Tbilisi, Georgia, [9]National Institute of Public Health, Prague, Czech Republic, [10]Hospital Rubenjoe, Rubenjoe, Ukraine

Background: OptTEST, an EU co-funded project, aimed to improve HIV detection and linkage to care across Europe. Part of this programme was to improve HIV Indicator Condition (IC) testing (HICT) by introducing a clinic policy, utilising implementation tools and delivering quality improvement (QI) interventions.
Methods: From Jan 2015, an HICT policy was introduced for up to 3 ICs (Pneumonia, Hepatitis B and C, Infectious Mononucleosis-like syndrome (IM)) in different clinical settings (primary care, emergency department, Acute Medical Unit, Specialist OPD) in 10 pilot countries. Baseline retrospective audits (offer and number of tests/total presenting with IC) were performed. Programme data collection included IC, age, HIV status, test offer, test performed, test result and transfer to care details (including CD4 cell count and treatment initiation). Implementation tools included a strategic pack (slide set, guideline review protocol, financial calculator), interactive service design module, staff training module and resource pack. Plan-do-study-act interventions were designed and implemented by local study teams and monitored using run charts.
Results: In total, 43 sites began testing in 8 countries, including the UK. Between Jan 2015 and Jun 2017, 78 of the 5,839 HIV performed were positive: 1.33% [95% CI: 1.07–1.66]. Offer (where data was available) and testing rates all increased significantly, overall: 48.12% [46.24–50.00] to 79.89% [78.74–81.00] and 39.82% [38.10–41.57] to 88.56% [87.72–89.37] respectively, both $p<0.05$. Uptake of offer was above 90% for all ICs at baseline (range 90.03–91.58%) and increased significantly for all except IM (range 92.09–100%). Of those patients testing positive, data is currently available for 54, of whom 44 (80%) transferred to care, with a median CD4 count of 326 cells/μl (range 4–1041); 56% were late presenters.

HIV prevalence: baseline and during OptTEST:

	BEFORE		OptTEST		
Indicator condition	HIV +VE (num/ denom)	% (95% CI)	HIV+VE (num/ denom)	% (95% CI)	p
Hepatitis	20/662	3.02 (1.91–4.55)	20/3681	0.54 (0.34–0.82)	<0.05
Pneumonia	11/322	3.41 (1.81–5.56)	30/1425	2.11 (1.45–2.95)	NS
IM	17/310	5.48 (3.34–8.46)	28/733	3.82 (2.60–5.40)	NS
Total	48/1294	3.70 (2.78–4.85)	78/5839	1.33 (1.07–1.66)	<0.05

Conclusion: Introduction of HICT policy, supported by implementation tools and QI increased HIV testing offer rate by 66% and testing rate by 102%; this approach is an effective way to increase HIV testing and identify cases of undiagnosed HIV in non-specialist healthcare settings.

O14

New HIV cases diagnosed though opt-out testing in hyperacute stroke: a call to amend national guidelines

L Benjamin[1], E Nastouli[2], L Haddow[3], S Edwards[2], A Laurie[2], S Browning[2], A Chandna[2], F Mattes[2], M Brown[2], L Waters[3] and R Simister[2]

[1]Institute of Infection and Global Health, University of Liverpool, UK, [2]University College London Foundation Trust, Liverpool, UK, [3]Mortimer Market, Central and North-West London NHS Foundation Trust, London, UK

Background: HIV infection is associated with stroke, particularly affecting younger individuals. Stroke is the 4th most frequent reason for hospital admission in HIV populations. Despite this, even in areas of high HIV prevalence, the uptake of HIV testing is generally poor for stroke and compounded by the current HIV guidelines omitting stroke as a HIV indictor disease. Knowledge of an individual's HIV status will not only prevent transmission and late diagnosis but will also have a favourable impact on stroke management. To address this issue, we proposed an opt-out HIV testing strategy in the Hyperacute Stroke Unit (HASU) at University College London Hospital (UCLH), UK.
Methods: We used the national guidance for opt-out HIV testing in medical settings where local HIV prevalence exceeds 2 per 1,000 individuals, to facilitate the roll-out of HIV testing at UCLH HASU. UCLH HASU serves the region of North Central Thames with a population of approximately 2.4 million. The HIV prevalence rate is 6.6 per 1,000. We audited the practice of HIV testing for the year before (Oct 2015 – Sept 2016) and the year following the introduction (Oct 16 – Sept 17) of opt-out HIV testing. We reported the rate of HIV testing, new HIV diagnosis and highlighted an example where this testing policy had an impact on patient management.
Results: Between Oct 2015 – Sept 2016<5% of HIV tests were performed on HASU. This increased to >80% between Oct 16 – Sept 17. There were 1,202 confirmed stroke cases admitted from Oct 16 – Sept 17 of these, 7 (6 per 1,000) were HIV positive and 4 (3.3 per 1,000) had a new diagnosis. The median age among those with HIV infection was 62.5 years (44–81), 4(57%) were male, 5(71%) had ischemic stroke, 2 (29%) had haemorrhagic stroke, and for 4 (57%), this was a recurrent event/admission. One newly diagnosed 81-year-old, had attended several hospitals prior to this admission and had a diagnosis of cervical cancer (a HIV indicator disease). All new patients were initiated on ART.
Conclusions: The implementation of opt-out HIV testing in HASU has increased uptake of HIV testing, and over a period of a year, identified 4 new cases that would otherwise be missed. This policy is now adopted by UCLH HASU. In line with NICE guidelines for HIV testing in acute medical units, stroke guidelines should be likewise updated.

O15

Exploring the epidemiology and management of shigellosis in a large acute hospital trust

L Bull[1], V Tittle[1], S Hughes[2], H Skene[3], LS Moore[2], N Mughal[2], M Nelson[1], R Jones[1] and M Rayment[1]

[1]Department of HIV/GU Medicine, Chelsea and Westminster Hospital NHS Foundation Trust, London, UK, [2]Department of Microbiology, Chelsea and Westminster Hospital NHS Foundation Trust, London, UK, [3]Department of Acute Medicine, Chelsea and Westminster Hospital NHS Foundation Trust, London, UK

Background: Although a well-documented cause of travel associated diarrhoea, sexually acquired Shigellosis has been documented in MSM since the 1970s, with a significant proportion of cases occurring in people living with HIV. Recent reports of sexually acquired cases have been largely sub-type *S. flexneri*. We wanted to investigate the epidemiology and management of cases of shigellosis in our Trust.
Methods: The database was interrogated to identify all shigellosis cases (defined by a positive stool culture for *Shigella spp.*) from November 2015-January 2018. A note review was undertaken to review demographic and behavioural data, and clinical management.
Results: Thirty-five cases were identified from 6229 stool cultures received in the study period (0.57%); median age 35 (range 16–91); 94% male. The majority of patients, (26; 74%) had been seen by either GU medicine or HIV; 9 (26%) by ED/adult admissions. All patients seen in GU/HIV had a sexual history taken and STI screen performed. Only 1 patient (11&t) seen by other specialities had a sexual history taken; however, 4 of this group (44%) reported recent travel to endemic areas; two others could be considered low risk for STI demographically. Of those asked about sexual behaviour, 25 (96%) were MSM of whom all reported anal sex. Eight (31%) reported higher risk activities such as fisting, rimming and group sex. Only one reported foreign travel. Overall, 19 (54%) patients were HIV positive, and 3 (9%) were on pre-exposure prophylaxis. Of those screened, seven (28%) had a concomitant STI diagnosed. Eighteen (51%) patients were treated empirically, of whom 6 (33%) required a treatment change in light of culture results. *Shigella sonnei* was isolated in 19 (54%), *S. flexneri* in 15 (43%), and mixed *Shigella spp.* in 1 patient. Ciprofloxacin resistance was reported in 12 cases (31%): 11 (58%) of *S. sonnei* and 1 (7%) in *S.flexneri*.
Conclusions: The majority (74%) of shigellosis cases were identified within GU/HIV medicine, and 58% were HIV positive. Cases seen in ED/adult admissions were unlikely to be asked a sexual history, although travel-related shigellosis was more prominent in this group. The predominant species overall – and in sexually acquired cases – was *S. sonnei*, which differs from previous surveillance data, which have reported the sexual epidemic to be largely *S. flexneri*. This observation has treatment implications, as the prevalence of quinolone resistance was a significantly greater in the former group.

O16

An outbreak of HIV amongst people who inject drugs: a phylogenetic analysis

C Jackson[1], M Ragonnet-Cronin[2], A Bradley-Stewart[1], C Aitken[1], A McAulay[3], N Palmateer[3], R Gunson[1], D Goldberg[3], C Milosevic[1] and A Leigh-Brown[2]
[1]*NHS Greater Glasgow and Clyde, UK,* [2]*University of Edinburgh, UK,* [3]*Health Protection Scotland, Glasgow, UK*

Background: Since the mid-1990s there have been less than 10 new diagnoses of HIV in people who inject drugs (PWID) every year in Scotland. In 2015 there was a sharp rise in the number of PWID diagnosed with HIV in Glasgow. The majority were found to be subtype C with the same two unusual drug resistant mutations (E138A & V179E) suggesting the cases were linked.
Methods: A phylogenetic analysis was generated to investigate if the cases were related, when infections had been acquired and if the strain was spreading to the wider community of the UK. All Scottish subtype C sequences were analysed and closely related sequences from the UK HIV Drug Resistance Database and from public databases, were used as background.
Results: Between 2005 and August 2016 there was a total of 104 cases of HIV with the E138 and V179 mutations, with the majority (71) being diagnosed between 2014 and 2016. All 104 outbreak sequences originated from Scotland. Mean genetic distance was <1% and mean time between transmissions was 5.5 months. The average number of onward transmissions consistently exceeded 1, indicating that spread had not ceased. Mean age was 38.4 (SD=6.5), 63/103 (61.2%) were men and 40 (38.8%) were women, 99/100 were white British. The oldest outbreak sequence was a female PWID who was diagnosed in 2005. Within the outbreak there were two active subclusters and one inactive cluster.
Conclusions: This is the largest HIV outbreak to have occurred among PWIDs in the UK and the outbreak has continued until current times. This clade has not been detected outside Scotland. Phylogenetic analysis demonstrated how rapidly the virus was transmitted, with average transmission intervals of around 6 months. Despite easy access to opiate substitution therapy, a homeless health service addictions team and extensive injecting equipment provision, the outbreak has continued with new cases being diagnosed. A robust test and treat public health strategy may impact the epidemic. This outbreak also highlights the possibility of using real time phylogenetic analysis to curb the outbreak.

O17

Viral evolution in infant HIV infection

M Hou[1], S Andrews[1], MA Garcia-Knight[1], K James[1], J Slyker[2], B Lohman-Payne[3], D Mbori-Ngacha[3], G John-Stewart[2], J Esbjörnsson[1] and S Rowland-Jones[1]
[1]*University of Oxford, UK,* [2]*University of Washington, Seattle, USA,* [3]*University of Nairobi, Kenya*

Background: Infants with perinatal HIV infection show much higher peak and slower decline in viral load after primary infection compared to adults. This could be due to host factors such as impaired HIV-specific T-cell responses in infants or viral factors such as transmission of escape mutations. The aim of this study was to assess the timing and strength of the cellular immune response in early infancy by studying virus evolution in HIV *gag* and *nef* genes.
Methods: Longitudinal plasma samples from 14 infants with perinatal HIV infection from a historical cohort in Kenya, followed-up 3 monthly until 15 months of age, were used to generate clonal sequences of HIV *gag* and *nef* genes. Pairwise homoplasy index test was used to screen for intra-patient recombination, with potential recombinants removed before further phylogenetic analysis. Maximum likelihood trees were generated and the diversity at each patient timepoint was calculated as the mean pairwise distance between all clonal sequences from the same patient timepoint. Bayesian hierarchical phylogenetic modelling was used to estimate intra-patient evolutionary rates. The ratio of non-synonymous (dN) to synonymous (dS) mutations (dN/dS) at each codon site for each gene in individual infants was estimated using Bayesian phylogenetics implementing Renaissance counting.
Results: A mean of 22 clonal sequences of *gag* and *nef* from a mean of 3.7 timepoints were generated for 14 infants. 2% of clonal sequences were putative recombinants and removed from further phylogenetic analyses. Diversity was higher and more variable across time in *nef* than in *gag*. Intra-patient evolutionary rates were also higher in *nef* than in *gag*. Overall selection across both genes was negative but codon specific dN/dS ratios indicated some positions under significant positive selection. Positions under positive selection varied between infants but many are contained within known cytotoxic T lymphocyte (CTL) epitopes restricted by the infant's own HLA type. Mutations at these sites were detectable from 3 months in some infants.
Conclusions: This study found evidence of positive selection pressure, consistent with CTL mediated selection, driving mutations in HIV *gag* and *nef* genes by 3 months in some infants. Despite this evidence of a functional CTL response in early infancy, it was inadequate to control HIV replication, with all infants experiencing high viral loads.

BHIVA Research Award Winner 2014, Sarah Rowland-Jones

O18

CD32 is enriched on CD4$^+$ T-cells with a T-follicular phenotype in gut-associated lymphoid tissue but does not associate with HIV DNA

J Thornhill[1], G Martin[2], M Pace[2], H Lewis[2], H Brown[2], S Peake[1], J Hoare[1], S Fidler[1] and J Frater[2]
[1]*Imperial College London, UK,* [2]*University of Oxford, UK*

Introduction: Gut-associated lymphoid tissue (GALT) is a key site of HIV reservoir. However, identifying latently infected cells remains a challenge. Descours et al. reported that CD32a – is a low-affinity IgG receptor as a specific surface marker for HIV reservoir. We examine the expression and phenotype of CD32 on CD4$^+$ T-cells in GALT and tonsil tissue of HIV+ individuals treated since primary HIV infection (PHI) and explore the relationship with HIV DNA.
Methods: Gut biopsy samples from terminal ileum (TI) and rectum were collected from HIV+ virally suppressed individuals enrolled in HEATHER, an observational study of treated PHI. Tonsil was available for one individual. Expression of CD3, CD4, CD8, HLA-DR, immune checkpoint receptors (ICR) (PD-1, Tim-3, TIGIT), T-Follicular (TFH) markers (CXCR5, ICOS, Bcl-6) & CD32 were assessed on mucosal & peripheral blood mononuclear cells (PBMC) by flow cytometry. Total HIV DNA was quantified by qPCR. CD32 + populations on CD4 T-cells were defined as CD32– and CD32+ (lo & hi subsets). Gating was based on CD3– lymphocyte CD32 populations.
Results: GALT samples were analyzed from 15 individuals enrolled in the HEATHER gut sub-study. All were male; median age & time on ART at biopsy was 37 years & 37 months (17–96) respectively. No difference in the frequency of both CD32 lo and CD32 hi CD4 T-cells was observed across anatomical sites (PBMC, TI, rectum and tonsil). In all anatomical compartments, CD32 + (lo & hi) had significantly higher HLA-DR & TFH marker expression compared to CD32– CD4 T cells ($p<0.0001$), with the highest expression for both on CD32 + hi subsets. ICR expression was also higher on CD32$^+$ (lo & hi) compared to CD32– CD4 T-cells (all $p<0.001$), however the highest expression was on the CD32$^+$ lo subset. No significant correlation was observed between HIV DNA & CD32 expression in any compartment.
Conclusion: Amongst virally suppressed HIV$^+$ individuals there was no association between total HIV DNA & CD32$^+$ expression on CD4$^+$ T-cells from GALT. However, tissue and blood CD32$^+$CD4$^+$ T cells had a T-follicular like phenotype and were enriched for other immune markers associated with HIV reservoir.

O19

Associations between cognitive function and cardiovascular risk factors: differences between people with HIV and HIV-negative controls

DD Francesco[1], J Underwood[2], JH Vera[3], E Bagkeris[1], D Asboe[4], PWG Mallon[5], FA Post[6], M Johnson[7], I Williams[1], M Boffito[4], P Greliak[2], J Anderson[8], CA Sabin[1] and A Winston[2]
[1]*University College London, UK,* [2]*Imperial College London, UK,* [3]*Brighton and Sussex Medical School, UK,* [4]*Chelsea and Westminster Healthcare NHS Foundation Trust, London, UK,* [5]*UCD, Dublin, Ireland,* [6]*King's College London, UK,* [7]*Royal Free Hospital, London, UK,* [8]*Homerton University Hospital, London, UK*

Background: High rates of age-related comorbidities such as cardiovascular diseases (CVD) and cognitive impairment are reported in people living with HIV (PLWH) with a possible detrimental effect of CVD and CVD risk factors on cognitive function. We described the associations

between CVD and CVD risk factors with cognitive function in PLWH and investigated whether these differed from associations seen in comparable HIV-negative controls.
Methods: Modifiable risk factors and history of CVD, metabolic factors, lipids, blood pressure and cognitive function were assessed in PLWH and controls participating in the POPPY study. Cognitive test scores were standardised into Z-scores (mean 0, SD 1) and averaged to obtain a global Z-score. Associations of global Z-scores with CVD and CVD factors were assessed using median regression adjusting for age, ethnicity, education and depressive symptoms (PHQ-9).
Results: The 977 PLWH (98% on ART) and 276 HIV-negative controls were predominantly male (86% and 65%) with a median age (interquartile range) of 52 (47–59) and 58 (53–63) years, respectively. PLWH were more likely to have dyslipidaemia (28% vs. 20%, p = 0.01) and to be on lipid-lowering medication (18% vs. 12%, p = 0.03), but were less likely to be overweight (BMI>25 kg/m^2: 55% vs. 66%, p = 0.004) compared to HIV-negative controls. Rates of hypertension (21% in both groups, p=0.9), use of anti-hypertensive drugs (15% vs. 16%, p=0.9) and chronic kidney disease (eGFR≤60 ml/min/1.73 m^2: 6% vs. 4%, p=0.4) were similar between groups. Among PLWH, those overweight (p=0.02) or on anti-hypertensive medication (p=0.02) had poorer cognitive scores, while haemoglobin was independently associated with better scores (p=0.02). None of eGFR, diabetes or smoking was significantly associated with cognitive scores in both groups. Whilst haemoglobin and anti-hypertensive medication showed similar associations among controls (p-interaction with HIV of 0.3 and 0.9, respectively), being overweight did not show a significant effect (p=0.5, p-interaction=0.12) in controls. Whilst those reporting hypertension had lower cognitive scores in both PLWH (p=0.04) and controls (p=0.02), the effect was reduced in controls (p-interaction=0.06).
Conclusions: CVD risk factors were associated with cognitive health in both PLWH and controls, although the strength of some associations differed between the study groups. These data further support the active management of CVD and CVD risk factors in PLWH.

020

Frequency and reasons for switching integrase inhibitor-based ART

C Petersen[1], J Alagaratnam[2], M Wood[2], F Ramzan[1], C Foster[1], S Fidler[2] and A Winston[2]
[1]Imperial College Healthcare NHS Trust, London, UK, [2]Imperial College London, UK

Background: Integrase inhibitor (INI) based antiretroviral (ART) regimens are widely used. Data on the frequency and reasons for modifying INI based ART are sparse. We assessed the incidence and reasons for persons living with HIV (PLWH) switching INI therapy.
Methods: Case note review was performed for all PLWH who switched from dolutegravir (DTG), elvitegravir/cobicistat (EVG/c) and raltegravir (RTG), between January 2015 and November 2017 at one large HIV centre. Demographics, clinical parameters and reasons for switch were evaluated, with differences between groups assessed using Chi square test.
Results: Of 1144 PLWH receiving an INI based ART regimen, 251 (21.9%) switched therapy, with 160 of these (64%) switching to another INI, and 91 (36%) switching 3rd agent class. Main reasons for switching were treatment simplification, toxicity and virological failure (see table). The predominant reason for treatment simplification was switching from twice daily RTG, 70 of whom switched to DTG once daily, and 22 of whom switched to another class of 3rd agent. The predominant toxicity leading to switching was neuropsychiatric, which was higher for DTG than other INI (p=0.001); for those on DTG, toxicities comprised mostly of sleep disturbances (n=21) and mood disturbances (n=23).
Conclusions: In this cohort of over 1,100 PLWH receiving INI, 22% of subjects switched therapy over a 22 month period. With the advent of once daily dosing schedules for all current INI, switches for treatment simplification are likely to reduce in frequency. However with more convenient regimens available, the proportion of switches for neuropsychiatric toxicities may increase and continued vigilance is warranted.

Table: Characteristics and reasons for switching INI.

	Total	Total	EGV/c	RTG
Number (%)	1,144	468	58	618
Demographics				
Median age (years)	45	42	41.5	47
Gender, Male	882 (77.1)	340 (72.6)	44 (75.9)	498 (80.6)
Switched INI	251 (21.9)	62 (13.2)	9 (15.5)	180 (29.1)
Reason for switch				
Simplify regimen	105 (9.2)	8 (1.7)	0	97 (15.7)
Neuropsychiatric toxicity	39 (3.4)	27 (5.8)	1 (1.7)	11 (1.8)
Other toxicity	9 (0.8)	4 (0.9)	1 (1.7)	4 (0.6)
Virological failure	29 (2.5)	1 (0.2)	0	28 (4.5)
Other reason	69 (6.0)	22 (4.7)	7 (12.1)	40 (6.5)

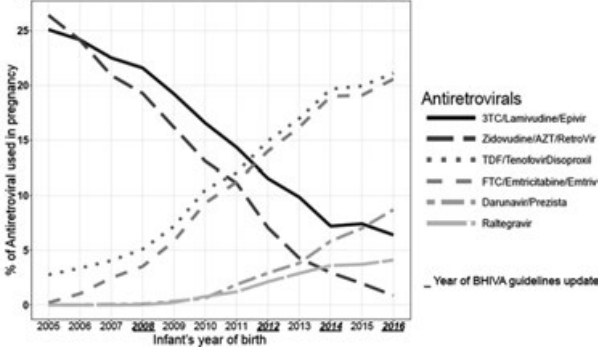
021

Assessing the influence of BHIVA guidelines on trends in antiretroviral use in pregnancy in the UK and Ireland in 2005–2016

V Rasi, C Thorne, H Peters, R Sconza and M Cortina-Borja
University College London, UK

Background: In 2013–2015 in the UK/Ireland, 65% of pregnant women with HIV were on ART at conception, and 90% had a VL<50 copies/ml by delivery; with an overall MTCT rate of 0.27%.The increasing availability of safe and effective ARVs has been a major reason for these achievements. This study evaluated the changes in use of ARVs over time and how pregnancy treatment guidelines influence clinical real-world use.
Methods: Changes in BHIVA guidelines from 2005 to 2016 were identified. Data on antenatal ARV use reported to the National Study on HIV in Pregnancy and Childhood (NSHPC) with a date of birth from 01-01-05 to 31-12–16 were analysed. Every ARV combination prescribed during pregnancy was considered and every individual instance of specific ARV use was the unit of analysis. We modelled calendar period trends of ARVs use and assessed if these followed BHIVA guideline updates.
Results: Data on 10,009 women and 13,757 singleton pregnancies were analysed. For these pregnancies, a total of 54,119 individual drug exposures were reported. Results show that whenever BHIVA guidelines were updated, clinical practice followed accordingly; e.g. when in 2005 Tenofovir (TDF)/Emtricitabine (FTC) was not yet a recommended backbone option, only 8 pregnancies (0.2%) were exposed to FTC and 109 (2.7%) to TDF, whereas in 2016 when TDF/FTC was introduced as a 'preferred option', FTC was given to 687 women (20.5%) and TDF to 705 (21.1%). In 2008 when any PI/r was introduced as an alternative treatment, PIs use increased from 23.3% in 2005 to 36% in 2008. In particular, Darunavir use, accounting for <1% of ARV usages in 2005–2008, reached 8.71% in 2016 following its inclusion as a 'preferred option'. Similarly, when the 2014 BHIVA update recommended Raltegravir (RAL) as a 3rd agent for newly diagnosed, ARV-naive women, RAL prescriptions rose from 0.2% of all ARV usages in 2008 to 4.1% in 2016. Figure 1 shows changes in ARVs use compared with BHIVA guidelines updates.

Figure 1. Trend in Antiretrovirals use in the NSHPC population



Conclusion: The NSHPC's national coverage, enables investigation of the 'real world' use of ARVs in pregnancy on a population level. Our findings demonstrate the responsiveness of ARV prescription, both before and during pregnancy, to changes in clinical guidelines.

O22

Disclosure of HIV-serostatus to new sex partners and sexual behaviours among HIV-diagnosed MSM in the UK: results from the ASTRA study

M Daskalopoulou[1], A Rodger[2], A Phillips[2], R Gilson[2], S Collins[3], L Sherr[2], S Wayal[2], J Anderson[4], K Aderogba[5], J McDonnell[2], E Wilkins[6], E Youssef[7], A Speakman[2] and F Lampe[2]

[1]Institute of Health Informatics, University College London, UK, [2]Institute for Global Health, University College London, UK, [3]HIV iBase, London, UK, [4]Homerton University Hospital, London, UK, [5]East Sussex Healthcare NHS Trust, Eastbourne, UK, [6]North Manchester General Hospital, UK, [7]Brighton and Sussex University Hospital NHS Trust, UK

Background: Since the emergence of evidence on the protective effect of suppressive ART on HIV transmission (2014 onwards), the significance of HIV-serostatus disclosure to sexual partners is changing. We assessed, among HIV-diagnosed MSM in the ASTRA study (2011–2012), prevalence of self-reported HIV-serostatus disclosure attitude to new sexual partners, and associations with sexual behaviours, including condomless sex with HIV-serodifferent (CLS-D) and HIV-seroconcordant (CLS-C) partners.
Methods: Cross-sectional questionnaire study in UK HIV clinics. Among MSM who had any sex in past 3 months, sexual disclosure attitude was defined as level of agreement to statement 'I'd expect to tell a new partner that I'm HIV-positive before we have sex' (agree-higher sexual disclosure, disagree or undecided-lower sexual disclosure). Associations were studied of sexual disclosure with: (i) socio-demographic, lifestyle, HIV-related factors, using modified Poisson regression, and with (ii) mutually exclusive sexual behaviours: (i) Higher HIV risk CLS-D (CLS-D plus not on ART or had viral load (VL)>50 c/ml), (ii) Other CLS-D, (iii) CLS-C only, (iv) condom-protected sex, using multinomial logistic regression.
Results: We included 1,373 MSM diagnosed with HIV for ≥3 months; 84% on ART, 75% had VL≤50 c/ml. Lower sexual disclosure was reported by 44%(95% CI: 41–46, n=600) and associated with black ethnicity, higher socio-economic status, non-UK place of birth, having an HIV-serodifferent or no stable partner, and self-reported suppressed VL on ART (compared to on ART without self-reported suppressed VL and not on ART). In adjusted models, MSM with higher sexual disclosure were more likely to have CLS-C only, relative to MSM who had condom-protected sex. Disclosure levels were similar for men reporting CLS-D (higher HIV risk CLS-D or other CLS-D) relative to condom-protected sex (Table). Lower sexual disclosure was associated with group sex and high partner numbers.
Conclusion: Lower sexual disclosure among MSM with self-reported undetectable VL on ART in 2011/12 may suggest early impact of knowledge of low HIV infectiousness on sexual behaviour. The strong association of higher sexual disclosure and CLS-C only suggests HIV transmission risk reduction behaviours (mutual HIV-disclosure and HIV-serosorting).Data were collected at time of changes in awareness of the impact of ART on HIV transmission, and are important in understanding future trends of HIV-disclosure and condom use.

O23

Met and unmet health, welfare and social needs of people living with HIV

M Kall, C Kelly, M Auzenbergs and V Delpech

Public Health England, London, UK

Background: People living with HIV have a diverse range of service needs, related to their HIV, as well as their health, welfare and social care. The extent to which these needs are currently being met is unknown. We present national estimates of the met and unmet service needs of people accessing HIV specialist services in the UK.
Methods: Positive Voices is a cross-sectional, probability survey of people with HIV, conducted between January and September 2017. Using the HIV surveillance database (HARS) as a national sampling frame, a representative sample of people attending 73 HIV clinics in England & Wales was invited to take part, and 4,415 people responded (51% response rate). Participants were asked about their need for 6 HIV-related, 11 health-related and 12 social and welfare services over the past 12 months, with response options: 'I did not need this', 'I have received this', 'I needed this but could not get it' and 'I needed this but did not try to get it.' Unweighted estimates of met and unmet need are presented.
Results: The greatest area of need was HIV-related services: particularly treatment advice, information on living with HIV and adherence support (61%, 47% and 40% needed the services, respectively); for each >90% had their needs met. A third (32%) needed peer support/social contact with people with HIV, and just over half (56%) received this. Long -term condition management support (42% needed the service), help to manage stress (33%), counselling (31%), weight management (29%) and sexual advice (27%) were the most needed health-related services: around half of these needs had been met (67%, 45%, 59%, 46% and 59% respectively). Generally the greatest area of unmet need was for social and welfare services, where in two-thirds (62%) of cases of need, services were either unavailable or not sought. Housing support (22%), help dealing with loneliness and isolation (20%) and help claiming benefits (19%) were each needed by a fifth of respondents, of which housing support and help claiming benefits was received by half, but only 24% received help with loneliness and isolation.
Conclusion: This comprehensive needs assessment provides important data for HIV care providers and support organisations to identify gaps in service provision. Provision of HIV-related services is overall good, but the need for social and welfare services is largely unmet. Further breakdowns by risk-group and geography are needed to tailor local response.

O24

A novel patient reported outcome measure for people living with HIV: development, face and content validity and stakeholder views on implementation

K Bristowe[1], P Clift[2], R James[3], M Platt[3], J Josh[3], A Sullivan[4], J Whetham[5], E Nixon[5], F Post[2], F Murtagh[6], M Kall[7], C Cheallaigh[8], K McQuillan[8] and R Harding[1]

[1]King's College London, UK, [2]King's College Hospital NHS Foundation Trust, London, UK, [3]UK-CAB, London, UK, [4]Chelsea and Westminster Hospital NHS Foundation Trust, London, UK, [5]Brighton and Sussex University Hospitals Trust, UK, [6]Hull York Medical School, UK, [7]Public Health England, London, UK, [8]St James' Hospital, Dublin, Ireland

Background: People living with HIV (PLwHIV) often have complex physical, psychological, and social needs, irrespective of treatment status, and health

Sexual behaviour in the past three months (N=1370)

	Condom-protected sex (n=545)		Higher HIV risk CLS-D (N=90)			Other CLS-D (N=259)			CLS-C only (N=476)		
Sexual disclosure	%	aOR (95% CI)	%	aOR (95% CI)	p-value	%	aOR (95% CI)	p-value	%	aOR (95% CI)	p-value
Lower (N=598)	52	ref	44	1.0		54	1.0		28	1.0	
Higher (N=772)	48		56	1.2 (0.8, 2.0)	0.290	46	0.9 (0.6, 1.2)	0.720	71	2.7 (2.0, 3.6)	<0.001

aOR: adjusted odds ratio; Multinomial logistic regression with adjustment for age, ethnicity, time since HIV diagnosis, and stable partner status; CLS-C: condomless sex with HIV-seroconcordant partners; CLS-D: condomless sex with HIV-serodifferent partners; ref: reference group.

related quality of life is poorer than the general population. PLwHIV's needs and symptoms can be easily missed, especially non-physical ones. Asking people to report concerns using Patient Reported Outcome Measures (PROMs) can help address this. PLwHIV and HIV providers have requested a PROM to reflect NHS HIV care outcomes. This study therefore aimed to determine the priorities of PLwHIV (adults) in terms of HIV care outcomes, develop a PROM, and optimise implementation.

Methods: In-depth qualitative interviews with: PLwHIV (maximum variation sample purposively sampled by age, gender, ethnicity, sexuality & illness stability); HIV professionals (sampled by profession (doctors, nurses & allied health professionals)); and HIV commissioners (sampled by role & regional HIV prevalence). Interviews were analysed using thematic analysis and framework analysis to allow comparison within and across participant groups. PROM domains and items were selected in an item generation meeting (PLwHIV, HIV professionals & researchers). Cognitive interviewing (think aloud & verbal probing) was used to refine the PROM.

Results: 57 people were recruited: 28 PLwHIV; 21 HIV professionals; and 8 HIV commissioners. PLwHIV and HIV professionals were recruited from outpatient clinics (London, Brighton, Dublin), commissioners were contacted directly (England only). Participants described problems and concerns within six broad themes: physical (e.g. pain, GI symptoms, sexual concerns), cognitive (e.g. memory, sleep), psychological (e.g. anxiety, depression), welfare (e.g. finances, immigration), social (e.g. isolation), and information needs. They also described a need for an overall assessment of wellbeing, and an opportunity to share primary concerns through freetext. A 23 item PROM was developed and refined through cognitive interviewing. Participants welcomed the development of a PROM for PLwHIV to: enable patient centredness; identify missed concerns; improve engagement and adherence; and shape services to the needs of the population.

Conclusion: We have developed a novel evidence-based PROM for use in routine practice that reflects the priorities and concerns of PLwHIV, and incorporates views of professionals and commissioners. Next steps are psychometric testing to assess reliability, validity and responsiveness of the PROM.

O25

Building a genomic framework for syphilis: novel approaches to whole genome sequencing

M Beale[1], M Marks[2], A Nori[3] and N Thomson[1]

[1]Wellcome Sanger Institute, Cambridge, UK, [2]London School of Hygiene and Tropical Medicine, UK, [3]Guy's and St Thomas' NHS Foundation Trust, London, UK

Background: Syphilis remains a major global public health problem, with an estimated 12–18 million cases annually worldwide. Epidemics of syphilis have been reported particularly amongst men who have sex with men (MSM) in UK, Europe and North America. In the UK, cases have risen from approximately 3,000 cases per year in 2012 to greater than 6,000 cases per year in 2016. Current molecular typing methods provide insufficient resolution to characterise these outbreaks, and our understanding of the national and global epidemiological trends of syphilis are currently poor.

Despite the first syphilis genome being sequenced in 1998, sequencing and genomic epidemiology has been restricted to date because the bacteria cannot be cultured *in vitro*. This has prevented large-scale surveys of genetic diversity and the corresponding improvements in epidemiological tracking that such tools have enabled for other STI pathogens. Limited genomic data has inhibited research into the pathogenesis, virulence, transmission patterns, and optimal treatment regimen. Recent advances in genomic technology are now making syphilis sequencing tractable, and we are beginning to explore the genomic diversity of this poorly understood pathogen.

Methods: As part of a larger study of global syphilis diversity, we applied a novel targeted-enrichment and Illumina sequencing methodology to perform whole genome sequencing of syphilis directly from clinical swabs (without culture) obtained from contemporary UK patients. Bioinformatic analysis was performed using a novel metagenomic pipeline, followed by phylogenomic analyses in comparison with existing global sequences.

Results: We developed and utilised state-of-the-art whole genome sequencing techniques for syphilis. Eight UK syphilis whole genomes were successfully sequenced to high coverage, and phylogenomic analyses were used to place the first syphilis samples sequenced from UK patients into global context. We demonstrate that global syphilis is characterised by two independent lineages, both of which are present in patients from the UK.

Conclusions: We demonstrate that whole genome sequence can provide insights into the genomic diversity both within and between patients. These tools may provide insights into the evolution, virulence and dissemination of syphilis as a pathogen. This work can act as a basis for future studies to provide valuable insights into syphilis in the future.

O26

Do men who have sex with men test for STIs as per BASHH/BHIVA guidelines and what factors influence STI testing? Findings from a large online community-based survey in England

S Wayal[1], D Reid[2], P Weatherburn[2], S Fabiane[1], P Blomquist[3], C Mercer[1] and G Hughes[3]

[1]University College London and NIHR Health Protection Research Unit in Blood Borne and Sexually Transmitted Infections, London, UK, [2]London School of Hygiene and Tropical Medicine, UK, [3]Public Health England, London, UK

Background: In the UK, MSM bear a disproportionate STI burden. We examined if STI testing among MSM in England reflected BASHH/BHIVA guidelines of annual STI testing among all sexually active MSM, and testing every 3 months (3 m) among MSM at high STI risk (i.e., had condomless anal sex with unknown/serodifferent HIV status partner, >10 partners over 6 m; recreational drug use during sex, and/or any unprotected sex with new partner(s)). We also examined factors associated with STI testing in the last 3 m, particularly its association with STI knowledge and engaging in high risk behaviours.

Methods: During spring 2017, 3,663 eligible men (aged >15 and sexually active in the last year) recruited from gay-orientated dating websites (Grindr/Scruff/Gaydar) participated in an online survey about their sexual health. 11 true statements about STIs were presented and respondents scored '1' for each statement they knew, with those scoring <6 treated as having 'low' STI knowledge. Men reporting ≥1 behaviour(s) stated above in the last 3 m were treated as 'engaging in high STI risk behaviours'. Multivariable regression was used to examine the association between STI testing (outcome), knowledge and engaging in high risk behaviours adjusting for known confounders: age, ethnicity, HIV status. Adjusted odds ratios (AOR) were calculated.

Results: In the last year, 55.4% of sexually active MSM had tested for STIs. In the last 3 m, 72.9% of men had engaged in high risk behaviours. Men who had engaged in high risk behaviours were more likely to test for STIs in the last 3 m (36.3%) than those who had not (22.0%); (AOR:1.87; 95% CI: 1.56–2.25; p<0.001). HIV+ men were also more likely to test for STIs in the last 3 m than HIV-ve MSM (45.9% vs. 30.2%;AOR:1.72;95% CI: 1.39–2.14; p<0.001). 43.3% men had low STI knowledge. Men with low STI knowledge were less likely to test for STIs than those with high knowledge (25.3% vs. 37.6%; AOR:0.59; 95% CI: 0.50–0.69; p<0.001). However, 63.7% of men who had engaged in high risk behaviours had not tested for STIs in the last 3 m, of which 46.1% had low STI knowledge.

Conclusions: Annual STI testing among sexually active MSM, and in last 3 m among MSM reporting high risk behaviours remains well below recommended standards. However, engaging in high risk behaviours and STI knowledge independently predict STI testing. Efforts to increase STI testing rates among MSM should address deficits in STI knowledge, especially among men engaging in high risk behaviours.

O27

Clinician-related factors associated with offering HIV tests to people aged 50+: a qualitative study

E Youssef[1], J Wright[1], V Delpech[2], K Davies[1], A Brown[2], V Cooper[3], M Sachikonye[4] and R De Visser[1]

[1]Brighton and Sussex Medical School, UK, [2]Public Health England, London, UK, [3]University College London, UK, [4]UK Community Advisory Board (UK-CAB), London, UK

Background: Despite a decline in new HIV infections in the UK, the proportion of new infections in people aged 50+ continues to rise. Despite high test uptake among all patients, older people are less likely to be offered

a test by a clinician. This study aims to identify clinician-related factors associated with HIV test offer to people aged 50+ who were later diagnosed late with HIV. This is part of a larger study also identifying patient-related factors associated with HIV testing in people aged 50+. Only clinician data are presented here.

Methods: Semi-structured interviews were conducted with 20 clinicians across South-East England who had seen a patient age 50+ within 3 years of a late diagnosis of HIV: 50% were from a medical speciality, 35% from a surgical speciality and 15% from acute/emergency medicine. 60% worked in a high prevalence area (≥2/1000). Data were transcribed verbatim and thematically analysed.

Results: Seven factors associated with HIV test offer were identified:

- Stigma: This was an overarching theme. Sexuality-related stigma against older groups particularly affected the perception older people are at less risk of HIV
- Stereotyping & risk perception: Clinicians were more likely to offer an HIV test to someone they perceived to be at high risk, commonly MSM and injecting drug users. Older people were perceived to be low risk
- Knowledge: Senior clinicians' knowledge was focussed on their speciality. Any exposure to HIV information tended to be incidental from journals or local HIV teams
- Symptom attribution: Clinicians tended only to consider HIV in unusual presentations, difficult to identify in older patients with comorbidity and functional decline
- Consent procedures: Confusion regarding consenting requirements appeared among all groups. Perceived need for a lengthy pre-test counsel was a barrier to testing
- Perceptions of patient responses: Some clinicians felt older patients may be offended by the offer of an HIV test especially if it was not perceived to be relevant to the appointment
- Practical issues: Facilitators included local policy/process and links with local HIV teams. Barriers included ability to identify patients for testing and clinical priority

Conclusion: Stereotypes and stigma about HIV among older adults, and a lack of HIV knowledge may need to be challenged to increase HIV test offer to people age 50+.

O28

A quantitative evaluation of the London Come Correct Condom Card (C-Card) scheme: does it serve those in greatest need?

N Ratna[1], M Bleasdille[1], C Lowndes[1], A Nardone[1], K Folkard[1] and A Roberts[2]
[1]Public Health England, London, UK, [2]THERAPY AUDIT, Newmarket, UK

Background: Condom Card (C-Card) schemes promote condom use among young people aged 16–24, the age group where the rates of sexually transmitted infections are highest. This study aims to evaluate the London C-Card scheme to assess its reach and factors associated with repeat use, in order to improve service delivery.

Methods: Cross-sectional registration data (01/01/2013–30/06/2016) and repeat attendances (01/01/2013-31/12/2016) of C-Card users were analysed. Univariate analyses of demographics in 2016 were compared to official national statistics (ONS) resident population. Multivariate logistic regression was used to determine demographic and service delivery factors that were associated with repeat use in 2013–2016.

Results: In 2016, 35,523 London residents used the scheme. Gender profile of C-Card users, was reflective of the resident population (male 50%, female 50%). Compared to resident population, the following groups were over-represented among C-Card users: young people aged 16–19 years (62% vs. 36%), of Black ethnicity (29% vs. 13%), Mixed ethnicity (10% vs. 5%), residents in the two most deprived areas (75% vs. 59%).

Of 98,319 registered users between 2013 and 2016, 30.4% (29,902) became repeat users. Repeat users were more likely to be men compared to women (AOR 1.16 (CI: 1.12–1.20)), registered with the scheme at age 12–15 years compared to 16–19 years (AOR 1.60 (CI: 1.53–1.68)), and resident in the most deprived compared to the least deprived area (AOR 1.23 (CI: 1.14–1.32)). Repeat users were also less likely to be of Black (AOR 0.88 (CI: 0.85–0.93), Mixed (AOR 0.92 (CI: 0.87–0.98)), and Other (AOR 0.89 (CI: 0.81–0.98)) ethnicity, compared to users of White ethnicity.

The likelihood of repeat use was strongly associated with registration models (with vs. without membership card: AOR 5.45 (CI: 4.90–6.06)); outlet types (pharmacy: AOR 2.66 (CI: 2.54–2.79), other health and social care services: AOR 1.51 (CI: 1: 41–1.61), education and youth services: AOR 1.39 (CI: 1.32–1.46), compared to sexual health services); and scale of scheme (large vs. small, AOR 1.13 (CI: 1.05–1.22)).

Conclusions: The scheme successfully reached key vulnerable groups (i.e. young people aged 16–19 years, of Black and Mixed ethnicity, and residents in deprived areas). However, compared to users of White ethnicity, those of Black and Mixed ethnicity were less likely to be a repeat user. Lessons could be learned from service delivery components that influence repeat use to improve service delivery.

O29

Trans:mission – a community-led HIV testing initiative for trans people and their partners at a central London sex-on-premises venue

A Wolton[1], M Ross[1], R Cameron[2], T Suchak[2] and M Boffito[2]
[1]CliniQ CIC, London, UK, [2]Chelsea and Westminster Hospital NHS Foundation Trust, London, UK

Background: Research indicates that trans women have a 49% higher likelihood of acquiring HIV than any other population. HIV prevalence among UK trans individuals is unknown but preliminary findings from Public Health England's HIV and AIDS Reporting System (HARS) data suggests 199 trans people attended HIV services in England in 2016. The actual number of trans people living with HIV is likely to be higher as trans people are known to face multiple barriers when accessing services, and health literacy within the communities is thought to be poor.

Method: A trans-led team provided monthly outreach at a sex-on-premises (SOP) venue in London, over 12-months. The venue caters for trans women, members of the cross-dressing/transvestite communities, and their partners. Attendees were offered a 3rd generation HIV test. Data concerning health literacy and demographics were collected during the pre-test discussion. The responses were then subject to a quantitative analysis.

Results: The outreach team performed 133 instant HIV tests. Of those tested 39% were trans women, 69.1% were cis (non-trans) men, and a quarter of men also identified as cross-dressers. The cohort was ethnically diverse and age ranged from 25 to 75 years. There were no reactive tests, but the team identified a significant risk of HIV acquisition. More than half of those tested reported unprotected sex in the preceding six months. 15.3% had never tested for HIV, and a quarter of all individuals tested had not screened for HIV for between 3 and 10 years. 68.7% of individuals (n=130) had not heard of PEP and 74% did not know where to access it. Awareness of PrEP was even lower: 83.9% had not heard of PrEP, and 86.2% did not know where to access it. Additionally, 74.8% of people stated they would not take PrEP if available, citing reliability, cost and possible interactions with hormones as prohibitive factors.

Conclusion: There was a significant lack of awareness concerning safer sex practices and methods of biomedical HIV prevention in trans & crossing-dressing attendees of a London SOP venue. This also extended to their sex partners, who were predominantly heterosexual, cis men. Additionally, there was an apparent lack of acceptability concerning PrEP despite its well-documented efficacy. These data highlight the need for greater visibility of trans/non-binary people in PrEP research and PrEP campaigns, as well as the need for further trans specific HIV prevention interventions.

O30

A mystery shop of genito-urinary medicine clinics evaluating the quality of advice given following a diagnosis of genital herpes type 2

C Towner[1], A Puzdrowski[1], R Cannon[1], S Barton[2], E Clarke[3], C Evans[2], E Foley[4], J Green[5] and R Patel[4]
[1]University of Southampton, UK, [2]Chelsea and Westminster Hospital, London, UK, [3]Royal Liverpool University Hospital, Liverpool, UK, [4]Royal South Hants Hospital, Southampton, UK, [5]St Mary's Hospital, London, UK

Background: In 2014, the British Association for Sexual Health and HIV (BASHH) released national guidelines regarding the management of genital herpes caused by herpes simplex virus type 2 (HSV-2), which included information on how to counsel patients diagnosed with this chronic sexually transmitted infection (STI). It is currently unknown how well clinicians are

delivering this counselling, which can be difficult and emotionally distressing for the patient.
Methodology: 14 UK genito-urinary medicine clinics were visited by a mystery shopper posing as a patient with newly-diagnosed HSV-2 who is seeking advice. The statements made in each consultation were transcribed from memory and each statement made by the healthcare professional was graded by a panel of five clinicians (all members of the HSV-2 Special Interest Group – and authors of the 2014 BASHH guideline) as Acceptable (A), Unacceptable (U), or Cause for Concern (C). A Delphi process was used to resolve areas of disagreement amongst the experts.
Results: A total of 519 statements were analysed under the themes of pregnancy, treatment, psychological support and resources, disclosure, natural history and transmission. Analysis using Pearson's chi-square showed a significant difference ($p<0.001$) between clinician's performance in pregnancy (67% acceptable grades) and psychological support and resources (91% acceptable grades), which achieved the lowest and highest proportion of acceptable grades respectively. A significant difference was also found between clinician's performance in disclosure (71% acceptable grades) and psychological support and resources ($p<0.001$). Health advisors and nurses both performed significantly better than doctors ($p=0.000498$ and 0.002475 respectively).
Conclusion: Clinicians across GUM clinics performed significantly less well in counselling HSV-2 patients on pregnancy and disclosure, indicating that these areas require the most improvements. Amendments to training and future guidelines should be made, to ensure that all patients are receiving sufficient and correct advice.

O31

Mapping the violence landscape among female sex workers in Karnataka, south India: associations between violence exposure by perpetrator, and HIV/STI risk

A Beksinska[1], R Prakash[2], S Isac[2], HL Mohan[2], L Platt[1], J Blanchard[3], S Moses[3] and T Beattie[1]
[1]London School of Hygiene and Tropical Medicine, UK, [2]Karnataka Health Promotion Trust, Bengaluru, India, [3]University of Manitoba, Winnipeg, Canada

Background: Female sex workers (FSWs) experience violence from perpetrators in domestic, workplace and community environments, but little is known about how violence experience by perpetrator and across settings impacts on HIV/STI risk. We examined whether HIV/STI risk differs by the perpetrator of violence, and the environment in which it occurs (domestic and workplace settings).
Methods: An Integrated Biological and Behavioural Assessment (IBBA) survey was conducted among random samples of FSWs in two districts (Bangalore and Shimoga) in Karnataka state, south India, in 2011. Physical and sexual violence in the past 6 months, by workplace (client, police, co-worker, pimp) or community (stranger, neighbour, auto-driver) perpetrators was assessed, as was physical and sexual intimate partner violence in the past 12 months. Weighted, bivariate and multivariate analyses were used to examine associations between violence by perpetrator and HIV/STI risk.
Results: 1,111 FSWs were included (Bangalore=718, Shimoga=393). Overall, one third (34.9%) of FSWS reported recent physical and/or sexual violence. Violence was experienced from domestic (27.1%), workplace (11.1%) and community (4.2%) perpetrators, with 6.2% of participants reporting recent violence from both domestic *and* non-domestic (workplace/community) perpetrators. Adjusted analysis suggests that experience of workplace/community violence is more important in increasing HIV/STI risk during sex work (lower condom use with clients; client or FSW under the influence of alcohol at last sex) than domestic violence. However, women who reported recent domestic *and* workplace/community violence had the highest odds of high-titre syphilis infection, recent STI symptoms and condom breakage at last sex, and the lowest odds of condom use at last sex with regular clients, compared with women who reported violence by domestic or workplace/community perpetrators only.
Conclusion: HIV/STI risk differs by the perpetrator of violence and is highest among FSWs experiencing violence in the workplace/community *and* at home. Effective HIV/STI prevention programmes with key populations such as FSWs need to include violence interventions that address violence across both their personal and working lives.

O32

Investigating the prevalence of non-consensual sexual experiences in a Northern Ireland university student population

E Haughey, H Liu, M Lowenstein, A Smyth, R McCue, C Patterson and J Elder
SCORE, Belfast, Northern Ireland, UK

Background: Previous research in this area has shown non-consensual sexual experiences (NCSEs) are prevalent in the student population, and harmful to education (NUS (2010) *Hidden Marks*. USI (2013) *Say Something)* However, surveys received few responses from Northern Ireland (NI), and cannot be considered to represent the population.
Methods: The survey asked about NCSEs in the 2015–2016 student population during their time as a student. The NCSEs investigated ranged from verbal abuse to rape. The format was an online questionnaire; open to all students over 18 at the university. Data was gathered on demographics, prevalence and nature of NCSEs, alcohol and drug involvement, reporting NCSEs, impact on mental health and quality of life, and student recommendations. Questions about NCSEs were guided using legal definitions, but legal terminology was avoided, to prevent misinterpretation. Free text boxes weren't included, to preserve anonymity: identifiable information of a crime must be reported to the police, under Section 5 of the Criminal Law Act (NI, 1967). Content warnings and the contact details of support organisations were given. The survey was promoted via emails from the SU, social media and leaflet promotion. The survey was active for 6 weeks. All questions were optional. Non-responses were omitted from the statistics generated.
3,097 students (12.5% of the total population) responded. 64% were female, 14% were LBG+, 7% reported a disability. 1/3 experienced verbal abuse, 1/10 received unwanted media images of genitals, 1/10 unwanted sexual touching. Only 6% considered themselves to have been sexually assaulted; a further 6% were unsure. 8% experienced an attempted penetrative assault, 5% experienced a completed penetrative assault. Of these two, over half reported both they and the perpetrator were under the influence. Over 10% said they had been coerced to consume alcohol or drugs. Over half reported the assault to someone, but only 4% told police; with 67% saying they did not feel it was serious enough to report. 61% reported negative mental health consequences, 44% a drop in academic performance, and 19% considered dropping out. Most students surveyed felt there should be more education on consent and the law.
Conclusion: NCSEs are frequent in university settings, and are best combatted by more education on consent and the law, and on alcohol and drugs relationship with NCSEs, and more accessible pathways to report to authorities.

O33

Review of presentation, management and outcome of six cases of genital *Neisseria gonorrhoeae* in pre-pubertal girls

R Adlington, C Greenshaw, C Murphy, S Bayley, A Goddard and L Hamlyn
Kings College Hospital NHS Foundation Trust, London, UK

Background: Acquired genital *Neisseria gonorrhoeae* (GC) infection in pre-pubertal childhood is rare: a national surveillance study of the UK and Republic of Ireland over 25 months (Jan 2010 – Jan 2012) identified only 6 cases. Literature on the subject is scant.
Method: We present a review of the presentation, management and outcome of 6 cases (including one sibling pair) of genital GC in girls aged under 8 years who were referred from a variety of sources to a sexual assault referral centre (SARC) in 2016–2017.
Results: All 6 girls presented with vaginal discharge. None made disclosures of child sexual abuse at or prior to presentation. First presentations were to the general practitioner in 4 cases and emergency department in 2 cases. All were identified as GC positive on initial swabs taken in that setting and subsequently referred on to the SARC.
Four of the 6 girls were treated according to BASHH guidelines with parenteral ceftriaxone and oral azithromycin. One received parenteral Benzyl penicillin in response to GC sensitivities. One was treated with 7 days of IV ceftriaxone and oral azithromycin. Test of cure was negative in all cases.
Household contacts were referred to local sexual health services for testing. In all but one case a household contact was positive. Genital GC was confirmed

in the mother in one case, an uncle in another case and pharyngeal GC was diagnosed in a third case. In one presentation, GC had been diagnosed in the boyfriend of a female sister (aged over 16 years) prior to the presentation.
All cases were referred and jointly investigated by Children's Social Care and Police. Initial child protection responses included placement in temporary foster care or with extended family or removal of the suspect from the family home. Five of the six children made no further disclosures to health professionals, police or social workers. One child made a vague disclosure about having a 'secret' but did not subsequently elaborate.
Four of the 6 children were made subject to a Child Protection Plan. Five of the 6 cases have subsequently been closed by the police- i.e no further investigation or court proceedings. One case is currently being considered by the Crown Prosecution Service.
Conclusion: Establishing the source and mode of transmission in young pre-pubertal girls in the absence of a clear disclosure of sexual abuse is challenging in terms of providing appropriate, sensible management that ensures the best outcome for the child and family.

O34

HIV-2 in the UK – management and antiretroviral treatment outcomes

P Sellers[1], I Reeves[2], R Dhairyawan[1], S Limb[1], J Anderson[2] and J Deayton[3]
[1]Barts Health NHS Trust, London, UK, [2]Homerton University Hospital NHS Foundation Trust, London, UK, [3]Barts and the London, Queen Mary University London, UK

Background: Management of HIV-2 infection is challenging; there are limited ART options and no randomised controlled trial data. We have a large cohort of HIV-2 infected patients and therefore undertook a study to identify and define the cohort, document management strategies and assess clinical outcomes of ART
Methods: All adults with HIV-2 or HIV-1/HIV-2 infection were included. Informed patient consent was acquired and clinical and laboratory data were collected from computerised records.
Results: 58 participants were recruited. 54 had follow-up data available; 43 HIV-2 infections and 11 HIV-1/HIV-2 dual infections. The cohort was predominantly female (70%) with age range 22–82 years, median 49. Most were of African origin (83%) with Guinea Bissau the most common country of birth. Six individuals were of European origin and 3 from Asia. 42 had started ART. Most individuals had undetectable HIV-2 loads at baseline; of detectable loads range was 2.79–5.56, median 4.13 log c/ml. Baseline CD4 counts were 47–1372, median 404. All ART regimens included boosted PI, most commonly darunavir in 38; bd dose in 26 cases and od in 12. Truvada was the most common co-prescribed ART in 31 cases. Ten patients were also receiving IIs, added to existing ART as treatment intensification following viral rebound. Six cases were intensified with raltegravir and 4 dolutegravir (bd). Intensified regimens were well tolerated and successful in re-suppression of HIV-2 load. Treatment outcome analysis showed 91% with undetectable HIV-2 load; CD4 count 174–1372, median 507 on ART. CD4 gain was modest overall with some individuals experiencing no change after ART. The range of CD4 change was 0–845, median 39. Twelve individuals remained ART naiive of whom, most had undetectable HIV-2 load (0–5.0 log c/ml, median 0); CD4 counts 336–1,611, median 703.
Conclusion: This is the largest cohort of HIV-2 infected individuals in the UK. Most subjects had persistently undetectable HIV-2 loads but a majority had initiated ART. Although treatment was associated with high rates of viral suppression, CD4 gain was limited and was not observed in some individuals. Darunavir was widely used, most often in bd dose, and was well tolerated and efficacious. Treatment intensification with raltegravir or dolutegravir was successful in this cohort. It is suggested that early initiation of ART for HIV-2 may be beneficial and should be offered to all patients regardless of plasma HIV-2 load.

O35

Safety and efficacy of elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide (E/C/F/TAF) in HIV-infected adults on chronic haemodialysis

J Eron[1], R Kalayjian[2], A Wurapa[3], J Stephens[4], C McDonald[5], A Wilkin[6], M McKellar[7], J Custodio[8], S Jiang[8], D SenGupta[8], R Castles[9] and M Das[8]
[1]University of North Carolina Chapel Hill School of Medicine, NC, USA, [2]MetroHealth Medical Center, Cleveland, Ohio, USA, [3]Infectious Disease Specialists of Atlanta, GA, USA, [4]Mercer University School of Medicine, Macon, GA, USA, [5]Tarrant County Infectious Disease Associates, Fort Worth, TX, USA, [6]Wake Forest University Health Sciences, Winston-Salem, NC, USA, [7]Duke University Medical Center, Durham, NC, USA, [8]Gilead Sciences, Inc, Foster City, CA, USA, [9]Gilead Sciences, Inc, London, UK

Background: Elvitegravir (EVG)/cobicistat (COBI)/emtricitabine (FTC)/tenofovir alafenamide (E/C/F/TAF) is approved for use in HIV-1 infected individuals with mild to moderate chronic kidney disease (estimated glomerular filtration [eGFR] 30–69 ml/min). Current HIV treatment for individuals on haemodialysis (HD) requires complex regimens with multiple pills. This is the first study to evaluate safety, efficacy, and pharmacokinetics (PK) of a daily single-tablet regimen (STR) in HIV-infected adults with end stage renal disease (ESRD) on chronic HD.
Methods: HIV-1 infected, virologically suppressed adults with ESRD (eGFR<15 ml/min) on chronic HD for ≥6 months were switched to open-label E/C/F/TAF 150/150/200/10 mg once daily for 48 weeks (W). Efficacy was assessed as the proportion of participants with HIV-1 RNA <50 copies (c)/ml (Snapshot algorithm). Maintenance of virologic suppression (<50 c/ml), safety, and patient satisfaction (Treatment Satisfaction Questionnaire) were assessed. A PK substudy was done at or between W2 and 4. W24 data are presented here and W48 data will be available for the conference.
Results: We enrolled 55 participants; median age 51 years (range 23–64), 24% female, 82% Black, median time on HD 6 years (range 1–17), median CD4 count 515 cells/μl (IQR 387, 672), and 22% Hepatitis C Ab positive, and 27% history of diabetes. At W24, 87% (48/55) had HIV-1 RNA <50 c/ml. The other 7 participants discontinued due to lack of efficacy (n=1), adverse events (AE, n=2), or other reasons not related to efficacy (n=4). EVG, COBI, and TAF PK were consistent with exposures in normal renal function. As expected, exposures of FTC and TFV (metabolite of TAF), which are renally eliminated, were higher compared to historical data in normal renal function. 16 (29%) participants had Grade (G) 3 or 4 AEs unrelated to study drug; 6 (11%) participants experienced study drug related AEs (all were G1-2, including nausea in 4). Two participants discontinued E/C/F/TAF due to AEs (allergic pruritus, related; staphylococcal endocarditis, unrelated). The participant with endocarditis died from heart failure after entering hospice. 24 (44%) participants had G3-4 laboratory abnormalities, all of which were present at baseline. 79% of participants felt 'much more satisfied' with the STR convenience compared to baseline.
Conclusion: Switching to E/C/F/TAF STR maintained virologic suppression at W24, was well tolerated, and more convenient for adults with ESRD on HD.

O36

Plasma NRTI concentrations and renal function in people with HIV

X Wang[1], M Boffito[2], L Dickinson[3], E Bagkeris[4], S Khoo[3], F Post[5], P Mallon[6], J Vera[7], I Williams[4], D Babalis[8], J Anderson[9], M McClure[1], A Winston[1] and C Sabin[4]
[1]Imperial College London, UK, [2]Chelsea and Westminster Hospital, London, UK, [3]University of Liverpool, UK, [4]University College London, UK, [5]King's College Hospital NHS Foundation Trust, London, UK, [6]University College Dublin, Dublin, Ireland, [7]Brighton and Sussex Medical School, UK, [8]Imperial Clinical Trials Unit, London, UK, [9]Homerton University Hospital NHS Trust, London, UK

Background: Whilst tenofovir (TFV) exposure is associated with renal complications, limited data exist on associations with exposure to other nucleoside reverse transcriptase inhibitors (NRTIs). We described the associations between plasma TFV, abacavir (ABC), emtricitabine (FTC), and lamivudine (3TC) pharmacokinetics (PK) and estimated glomerular filtration rate (eGFR) among participants in the POPPY study.
Methods: 691 participants receiving tenofovir disoproxil fumarate (TDF), ABC, FTC or 3TC underwent PK sampling (1/patient) from 29/04/2013-15/02/2016. Population PK models were developed (NONMEM v. 7.3) to predict NRTI PK

	NRTI			
	TDF	FTC	ABC	3TC
AUC_{0-24} quintiles				
1 – lowest	Ref.	Ref.	Ref.	Ref.
2	−3.3 (−6.9, 0.3)	−3.0 (−6.7, 0.8)	5.1 (−5.0, 15.3)	10.5 (−5.2, -26.3)
3	−3.4 (−7.1, 0.2)	−3.3 (−7.1, 0.6)	4.3 (−5.9, 14.5)	4.7 (−11.1, 20.5)
4	−51 (−8.8, −1.3)	−7 0 (−11.0, −3.0)	0.8 (−9.8, 11.4)	2.8 (−13.5, 19.1)
5 – highest	−12.8 (−16.6, −8 9)	−12.5 (−16.6, −8.3)	−8 8 (−19.4, 1.8)	−52 (−21.6, 11.1)
C_{max} quintiles				
1 – lowest	Ref.	Ref.	Ref.	Ref.
2	1.8 (−1.9, −5.5)	−3.0 (−6.7, 0.8)	1.6 (−8.6, 11.8)	8.1 (−7.8, 23.9)
3	−0.4 (−4.1, 3.3)	−3.2 (−7.1, 0.7)	4.6 (−5.6, 14.8)	4.1 (−11.7, 19.8)
4	0.1 (−3.7, 3.9)	−7.1 (−11.1, −3.1)	3.1 (−7.5, 13.7)	7.8 (−8.5, 24.1)
5 – highest	−4.3 (−8.2, −0.4)	−12.6 (−16.8, −8.4)	−91 (−19.8, 1.6)	−4.6 (−21.1. 11.9)
C_t quintiles				
1 – lowest	Ref.	Ref.	Ref.	Ref.
2	−18 (−5.2, 1.7)	−3.8 (−7.6, −0.1)	6.2 (−3.7, 16 2)	12.6 (−2.6, 27.9)
3	−61 (−9.8, −2.4)	−4.1 (−7.9, −0.3)	6 1 (−3.6, 15.8)	9.4 (−5.5, 24.3)
4	−7.1 (−10.8, −3.3)	−7.3 (−11.2, −3.4)	−1.0 (−11.8, 9.8)	2.6 (−13.9, 19.0)
5 – highest	−15 2 (−19.1, −11.4)	−13.1 (−17.3, −9.0)	−9.1 (−19.6, 1.4)	−9.5 (−25.5, 6.5)

parameters [area under the curve (AUC0-24), maximum concentration (Cmax), trough concentration (Ct)]. eGFR was estimated using CKD-EPI with sensitivity analyses using the MDRD equation. Linear regression assessed associations between eGFR and PK parameters (stratified using quintiles of each distribution) after adjustment for age, gender, race and receipt of concomitant medications and boosted protease inhibitors (PI/b).

Results: 554 participants were on TDF, 516 on FTC, 109 on ABC, and 142 on 3TC; 29.8%, 28.3%, 35.8% and 38.0%, respectively, were also on a PI/b. The majority were white men (86.4%) with a median age of 52 (range 23–82) years. Participants had received TDF, FTC, ABC and 3TC for a median (range) of 5.9 (0.1–15.3), 5.3 (0.1–11.2), 6.9 (0.1–16.4) and 10.4 (0.1–18.9) years respectively. Median (range) eGFR (ml/min/1.73 m^2) was 90.8 (41.7–145.2), 90.4 (41.7–145.2), 91.0 (35.0, 143.5) and 89.7 (35.0, 143.4) in recipients of the four drugs. eGFR values decreased as TFV and FTC AUC0-24 and Ct increased although a similar association with Cmax was only apparent for FTC (table). Associations of ABC and 3TC parameters with eGFR-EPI were, however, inconsistent. Among the 500 participants with PK for both TDF and FTC, PK parameters of the two drugs were generally correlated (AUC0-24 r=0.41, Cmax r=0.31, Ct r=0.53); similar trends were seen after additional adjustment for the other drug, although associations were generally reduced in size.

Conclusions: We confirm robust associations between several measures of TDF and FTC PK and renal function. In particular, both FTC and TDF parameters appear to be independently associated with renal function. In contrast, no clear associations with 3TC and ABC were apparent. Our findings may support the use of individual dose adjustments in people living with HIV.

BHIVA Research Award Winner 2013, Marta Boffito

O37

Renal, Inflammatory and bone biomarkers following switch to the DTG + RPV 2-drug regimen: the SWORD-1 and SWORD-2 studies

C Orkin[1], J Libre[2], L Kahl[3], E Blair[4], B Wynne[5], L Curtis[6], K Angelis[6], R Shah[3], M Aboud[3] and M Gartland[4]

[1]Barts Health NHS Trust, London, UK, [2]Hospital Germans Trias i Pujol, Barcelona, Spain, [3]ViiV Healthcare, Brentford, UK, [4]ViiV Healthcare, Research Triangle Park, NC, USA, [5]ViiV Healthcare, Collegeville, PA, USA, [6]GlaxoSmithKline, London, UK

Background: We evaluated the impact on markers of bone turnover, renal function and inflammation, of switching from current 3-4-drug antiretroviral therapy (CAR) to 2-drug regimen (2DR) dolutegravir (DTG) + rilpivirine (RPV).

Methods: SWORD-1 and 2 are identical, randomized, multicenter, open-label, Phase3 studies which demonstrated non-inferior efficacy following switch of HIV-1-infected adults (<50 c/ml for at least 6 months) from CAR to DTG+RPV once daily. Secondary endpoints included change from Baseline to Week (Wk) 48 for bone, renal and inflammatory biomarkers quantitated on cryopreserved samples. Change from Baseline to Wk48 in eGFR using cystatin C was an exploratory endpoint.

Results: 1,024 participants were randomized across both studies and exposed to DTG+RPV (513) or CAR (511):

Bone: the 2DR group had a decrease from Baseline to Wk48 in all markers of bone resorption (type-1 collagen C-telopeptide) and bone formation (bone specific alkaline phosphatase, procollagen 1-N-terminal propeptide, osteocalcin) which differed statistically significantly from CAR (p<0.001 for each marker)

Renal: greater decreases were observed in urine retinol binding protein and urine beta-2-microglobulin in the 2DR vs. CAR group; no change from Baseline was observed in serum Cystatin C or in eGFR (using cystatin C) in both groups (irrespective of baseline TDF use)

Inflammatory markers (C-reactive protein, D-dimer, Interleukin-6, soluble (s) CD14, sCD163, FABP-2 and sVCAM-1):There were no differences or consistent pattern of change from Baseline to Wk48 between 2DR vs. CAR groups.

Conclusion: Together, these data indicate that the switch to the 2DR DTG+RPV is associated with a favorable effect on renal tubular function, improvement in markers of bone health and has a neutral impact on markers of inflammation, while preserving virologic suppression.

O38

Platelet function upon switching to tenofovir alafenamide (TAF) verses continuing abacavir (ABC): a randomised substudy OVERRIDE

P Mallon[1], A Winston[2], F Post[3], C Bergin[4], M Yan[5], M Das[5] and M Rhee[5]

[1]University College Dublin, Ireland, [2]Imperial College London, UK, [3]King's College London, UK, [4]St James's Hospital, Dublin, Ireland, [5]Gilead Sciences Inc., Foster City, CA, USA

Background: ABC has been associated with increased risk of myocardial infarction with altered endothelial and platelet function as proposed underlying mechanisms. We hypothesised that a switch from ABC to TAF would result in decreased platelet reactivity.

Methods: HIV1-positive individuals on ABC/3TC were randomised to switch to TAF/FTC or remain on ABC/3TC while continuing their 3rd agent. We

measured platelet aggregation (PAg) at baseline, W4, and 12 in response to collagen (Col), thrombin receptor-activating peptide (TRAP), adenosine diphosphate (ADP), epinephrine (Epi) and arachidonic acid (AA). We compared population-derived agonist concentrations inducing 50% platelet aggregation (EC50) between-groups at BL, W4 and 12 by four parameter logistic regression. We measured platelet surface expression of the GPVI receptor by flow cytometry and compared between-group differences at BL and W12 pre- and post-stimulation with collagen-related peptide (CRP) by Wilcoxon rank sum test.

Results: At W4 PAg with Col, TRAP and ADP was significantly lower in the TAF/FTC arm, reflected by greater EC50 (Table). Reduced PAg in response to Col persisted at W12, while differences in PAg with TRAP and ADP were no longer significant. PAg with Epi and AA did not differ between groups at any time point. Expression of the collagen receptor GPVI, which mediates endothelial-platelet interactions, was higher at W12 in the TAF/FTC group (p=0.031).

Conclusions: Switching from ABC/3TC to TAF/FTC was associated with significantly lower platelet reactivity to TRAP and ADP at W4 and Col at W12. Together with higher surface GPVI expression, these observations suggest improvements in measures of platelet function involving endothelial-platelet pathways with a switch from ABC/3TC.

Demographics and platelet function

	TAF/FTC (n=29)	ABC/3TC (n=32)	p value
Age (yrs)	50 (43, 53)	49 (38, 54)	–
Male (n(%))	21 (72.4%)	22 (68.8%)	–
CD4 count (cells/mm^3)	659 (503, 833)	616 (512, 774)	–
Caucasian (n(%))	15 (51.7%)	19 (59.4%)	–
Current smoker	5 (17.2%)	7 (21.9%)	–
Col EC_{50} W4 (umol/l)*	**0.027 (0.022, 0.033)**	**0.017 (0.014, 0.022)**	**0.005**
TRAP EC_{50} W4 (umol/l)	**2.25 (1.99, 2.55)**	**1.75 (1.55, 1.96)**	**0.004**
ADP EC_{50} W4 (umol/l)	**1.56 (1.33, 1.87)**	**1.22 (1.05, 1.42)**	**0.03**
GPVI BL (10^3/plt)	5.27 (4.16, 6.63)	5.28 (4.11, 6.05)	0.7
GPVI W12 (10^3/plt)	**5.52 (4.51, 6.52)**	**4.49 (4.06, 5.61)**	**0.031**

Median (IQR) unless specified. EC_{50}=concentration of collagen required to induce 50% platelet (plt) aggregation. W=week. BL=baseline. *Mean (95% confidence internal).

O39

Five- and ten-year survival in a large cohort of patients with HIV-associated non-cirrhotic portal hypertension (NCPH)

K Childs[1], C Psomadakis[2], L Hookham[1], R Miquel[1], M Cannon[1], M Nelson[2], K Agarwal[1], C Taylor[1] and A Suddle[1]

[1]King's College Hopsital, London, UK, [2]Chelsea and Westminster Hospital, London, UK

Background: In the last decade there have been numerous reports of patients with HIV presenting with non-cirrhotic portal hypertension (NCPH). We describe the natural history and clinical outcome in the largest published cohort.

Method: This is an observational cohort study. Demographics, laboratory, radiological and histological data were gathered on all patients at 2 London centres with non-cirrhotic portal hypertension. This was defined by portal hypertension and either a biopsy or elastography excluding cirrhosis in the absence of any other form of liver disease.

Results: 44 patients were identified. From the time of diagnosis of NCPH median follow up (FU) time was 6.6 years (3.3, 8.5) with a total FU period of 310 patient years. All patients had received didanosine (DDI). 28 patients underwent biopsy, 10 displayed features of nodular regenerative hyperplasia or portal obliterative venopathy, others were non-specific. No patient had greater than F3 (Ishak) fibrosis, 24/28 were F0-F2. 27/44 patients developed portal vein thrombosis, 16 were anticoagulated. no major bleeding events occurred. At 5 years of NCPH follow up, 5 patients had died (3 liver cause), 1 had undergone orthoptic liver transplantation (OLT). After 10 years of FU, 7 had died (4 liver death), 5 had undergone OLT of whom 1 died. This gives a 5 year all-cause death and transplant free survival rate of 86% and a 10 year survival rate of 73%. 5 year liver death and transplant free survival rate of 91% and a 10 year survival rate of 79.6% 5 patients were transplanted. The indication was encephalopathy in 3 cases, recurrent ascites in 1 case and synthetic failure in 1 case. 1 patient died during the post-transplant period of gut ischaemia related to superior mesenteric vein thrombosis. Total follow up post OLT is 8.6 years.

Discussion: We report on a large cohort of patients with a long duration of follow up for HIV associated NCPH. This is a serious condition with 27% of patients having died or undergone liver transplantation at 10 years. Anticoagulation was safe in this group. Many presented with subtle derangements of liver function therefore HIV care providers must maintain clinical suspicion so that patients can receive joint care from both liver and HIV physicians.

Characteristic		N=44 N(%)/Median (IQR)
Gender	M/F	26 (59%)/18 (41%)
Ethnicity	Caucasian/Black	20 (45%)/ 24 (55%)
Age		45.4 (40.6, 50.4)
Presenting feature	Variceal bleed	14 (32)
	Ascites	9 (20)
	Deranged LFTs	18 (41)
CD4 cells/ml		291 (188, 393)

O40

Digital vending machine technology to distribute HIV self-tests to high risk men who have sex with men

G Dean[1], S Soni[1], A Pollard[2], C Peralta[3], L Rodriguez[4], N Pilarski[1], C Llewellyn[2] and J Vera[2]

[1]Brighton and Sussex University Hospitals NHS Trusts, UK, [2]Brighton and Sussex Medical School, UK, [3]University of Brighton, UK, [4]Martin Fisher Foundation, UK

Background: Novel strategies are needed to increase HIV testing in high-risk groups including men who have sex with men (MSM), and to meet goals to reduce undiagnosed HIV. HIV self-testing is an attractive strategy enabling user autonomy in the timing, location and disclosure of testing as well as convenience. Self-testing also gives opportunities for providers to reach populations not engaged with conventional testing. We developed and evaluated a digital vending machine to target HIV self-testing to high-risk MSM in a high prevalence UK community setting.

Methods: A cross-sectional survey in a sex-on-premises venue (sauna) assessed feasibility and informed development of a vending machine interface. Co-design workshops between designers and LGBT community volunteers explored attitudes towards self-testing and a vending machine to deliver HIV self-test kits in community settings. A bespoke vending machine distributing BioSure© self-test kits was developed and installed in the sauna. A cross-sectional mixed methods evaluation was conducted. Demographics were collected via the machine's user-friendly touchpad screen. An online questionnaire and structured interviews gathered information on user-experience of the machine, and experience, acceptability and attitudes towards HIV self-tests accessed via a machine.

Results: The survey and co-design workshops found that 32% of 281 sauna users had never tested for HIV, despite high infection risks. Acceptability of self-testing before installation of the vending machine was 93%. A total of 204 testing kits were accessed between 16th June and 31st of December 2017: mean age 31(18–70); 4%(7) had never tested for HIV before and 11% (22) had tested within the last 1–5 years. Uptake of tests was higher via the vending machine compared to testing conducted by community outreach workers in the same venue and study period (34 vs. 6 tests per month). Qualitative interview and online questionnaires demonstrated high acceptability and support for this intervention, which was considered accessible and appropriately targeted.

Conclusions: Community co-design supported development of an acceptable vending machine interface for the distribution of HIV self-test kits. This delivered low-cost HIV self-tests to men with low levels of prior testing; and represents an acceptable targeted distribution method that could be applied in other settings.

O41

Comparing uptake and acceptability of online self-sampling and self-testing for HIV

P Baraitser[1], C Howroyd[2], M Courtenay[2], S Amos-Gibbs[2], E Ardines[2], G Holdsworth[2] and M Brady[2]

[1]King's College London, UK, [2]SH:24, London, UK

Background: Regular testing reduces HIV transmission and promotes early diagnosis. Online services can increase access to HIV testing through self-sampling or self-testing. The characteristics of each test may determine user choice. Self-sampling has a 4 week window period, requires 600 µl of blood, with results within 72 h given by a healthcare professional. Self-testing has a 12 week window period, requires 2.5 µl of blood, generates a result in 15 min which the user reads themselves. This study compares user preference, uptake and acceptability of the two methods.
Methods: From 06-20/11/2017 we offered a choice of online HIV self-sampling or self-testing, free, to all over-18 year olds in Great Britain (we did not target groups at high risk for HIV). Self-testers were prompted to text back their results, 1–3 weeks later (3 reminders). Self-samplers were texted negative results with reactive results delivered by phone. An evaluation questionnaire was sent to all users who reported a result. Simple, descriptive statistics were used to analyse routinely collected data and questionnaire responses.
Results: 1,466 kits were dispatched. 984 people chose self-testing (67.1%) and 482 (32.9%) chose self-sampling. Response rates in both groups were similar; 563 (57.2%) of self-testers texted back results and 260 (57.2%) of self-samplers returned a blood test: χ^2, p=0.235). Tests were ordered from all over Great Britain particularly large urban areas. There were no new HIV diagnoses. Both groups were similar in age, sex, ethnicity, sexuality, recent risk of HIV, symptoms and recent use of sexual health services. The evaluation questionnaire had a 28.3% (233/823) response rate; 179/563 (31.8%) self-testers and 54/260 (20.8%) self-samplers. Most self-testers chose this method because they valued the immediate result (110/179, 61.5%). 84.9% of self-testers and 94.3% of self-samplers felt sufficiently supported. Self-testers were more confident in the accuracy of their results (97.2% vs. 79.6%, respectively: χ^2, p<0.001). Most users rated the service 5/5 (n=208/233, 89.3%) and would use their chosen method again (227/233, 97.4%).
Conclusion: When offered a choice of HIV self-testing or self-sampling, two thirds of users chose self-testing. Both groups were very satisfied with the testing method chosen and self-testers more confident in the accuracy of their result. Self-testing should be an important element of online HIV testing services.

O42

Are all HIV postal sampling kits the same? Dried blood spots significantly outperform conventional mini-tube sampling in a real world comparative review

M Page[1], S Atabani[2], M Wood[3], S Wilson[2], C Atherton[2], D Hartland[4], M Simpson[4], C Davenport[5] and S Taylor[1]

[1]Birmingham Heartlands HIV Service, UK, [2]Public Health England Birmingham Laboratories, UK, [3]Sexual Health Wirral, Wirral Community NHS Foundation Trust, UK, [4]Saving Lives Charity, Birmingham (Base), UK, [5]Institute of Applied Health Research, University of Birmingham, UK

Background: This is a comparative review of the use of dried blood spot (DBS) HIV sampling kits vs. mini-tube (MT) HIV sampling kits as part of an online sexually transmitted infection (STI) postal testing service. We have recently seen an increase in online and postal STI services in the UK. Expanding accessibility and testing for patients, and narrowing the HIV undiagnosed margin as per UNAIDS 90-90-90 target is a driver for this. The perception of online postal STI services being cheaper is also a factor.
Methods: In 2017, data were reviewed from an online postal STI kit requesting service at a time of transitioning from MT to DBS containing kits. We compared the STI postal kit return rates, HIV blood sample return rates, and the successful processing/analysis rates of the DBS and MT kits. Descriptive statistics were applied to participant characteristics, with Pearson's Chi-squared or Fisher exact test used to demonstrate statistical differences. We also calculated a 'request-to-result ratio' (RRR) for both kit types. The RRR is defined as the number of online kit requests required to produce one successfully analysed result.
Results: 550 STI postal kit requests from a North West of England region were reviewed from 13/06/17–22/09/17 (275 MT, 275 DBS). Baseline characteristics between the two groups were comparable (63% female, 90% white British, and 86% heterosexual with a median age of 26 years). The successful processing rate for the DBS was 98.8% c.f. 55.7% for the MT (p<0.001). The RRR for MT was 2.96, c.f. 1.70 for DBS. There was a 5.4% false positive HIV rate in the MT c.f. none in the DBS kits.

Summary of comparisons of MT and DBS kits for HIV sampling

Collection Kit	STI Kit Returns/ Requests n (%)	HIV Sample Returns/STI kit returns n (%)	Successful HIV sample processing & analysis/ HIV sample returns n (%)	Overall HIV results obtained/ STI kits requested n (%)	Request-to-result Ratio (RRR) n (ratio)
MT	189/275 (68.7)	167/189 (88.4)	93/167 (55.7)	93/275 (33.8)	275/93 (2.96)
DBS	183/275 (66.5)	164/183 (89.6)	162/164 (98.8)	162/275 (58.9)	275/162 (1.70)
p-value	0.58	0.70	**<0.001**	**<0.001**	**<0.001**

Conclusions: This comparative analysis suggests that in this community setting, the use of postal HIV DBS kits resulted in a significantly improved RRR compared with MT kits with the biggest factor being the large number of MT samples not analysed due to an inadequate blood volume. The unexpected level of false positive results in the MT samples needs confirming in larger studies.

O43

Integrating online services with face-to-face clinics: how we successfully managed channel shift

M Brady[1], E Ardines[2], J McBain[1], G Parry[2] and G Holdsworth[2]

[1]Kings College Hospital NHS Foundation Trust, London, UK, [2]SH24, London, UK

Background: Online STI testing services are increasingly commissioned alongside face-to-face clinics. There is evidence that an online offer can increase STI testing rates but little is know about how best to integrate with 'traditional' clinics nor how best to 'channel shift' patients from one to the other. We present our experience of integrating online services with an existing Sexual Health service.
Methods: In July 2016, in partnership with an online service, we launched 'e-testing' in our clinic. The service is available to all over-16s who want an asymptomatic screen. 16 and 17 year olds have safeguarding screening online. Patients can either access the service via iPads in the clinic or through a dedicated weblink. We developed a new reception process by merging the receptionist and HCA role and ensuring all patients had a quick 'triage' discussion to identify those appropriate to use the service and to support them to do so. Patients could choose to collect the test kit from clinic or have it delivered to their home. We present our first 18 months' experience.
Results: From July 2016 to December 2017 we successfully shifted 11,010 patients online: 7136 (65.2%) patients via the iPad in clinic and 3,834 (34.8%) via the weblink. This represents 21.9% of our total activity. 50.2% of online users were women and 9.9% were MSM. Demographics of online users broadly reflected those of clinic users. The overall return rate for tests was 75.7% with 10% of blood samples being insufficient or haemolysed. 60% of people received their results within 24 h of returning their kit and 94.1% within 72 h. Overall diagnostic rate was 9.5% with 472 chlamydia diagnoses, 86 gonorrhoea diagnoses, 98 reactive HIV results and 137 reactive syphilis results. 90.2% of people using the online service reported being asymptomatic. 18.8% reported having unprotected sex in the previous 3 days and 16.6% in the previous 5 days. These were signposted to clinic for emergency contraception or PEPSE where appropriate. 77.5% of online users had ever been to a Sexual Health service. 35.0% had done so in the last 12 months
Conclusion: We successfully integrated an online STI offer with our existing face-to face service. Shifting patients online has increased capacity for more complex cases in clinic. Considerable work and some service re-design was needed to ensure success. Although initially some service users needed support and encouragement it is now a 'normal' part of our service.

O44

How do people experience negotiating HIV-related online and remote testing resources?

J Gibbs[1], A Singh[1], C Estcourt[2], P Sonnenberg[1] and A Blandford[1]
[1]*University College London, UK,* [2]*Glasgow Caledonian University, Glasgow, UK*

Background: Advances in digital health and novel diagnostic technologies are creating new opportunities for people to access information about HIV, get tested, and receive results without accessing traditional services. However, it is unclear whether existing online emotional support and information about accessing testing, interpretation of results and future management, meets people's needs. To inform development of a novel online HIV results and initial management pathway, we explored how people access online HIV resources for information and testing, and their (within study and/or previous) experiences of using these resources and HIV self-sampling and self-testing kits.
Methods: Between April and August 2017 we conducted think-aloud and semi-structured interviews (n=28) with a community convenience sample of people from a range of ethnicities, age range 25–69, 36% female, 57% MSM, some of whom had previously accessed online information, self-sampling and self-testing kits. Transcripts were analysed using thematic analysis.
Results: Participants conceptualised their search for information on HIV and testing options in their psycho-social context, highlighting the importance of situation and emotion on their needs and experience. They sought a 'trusted source of information' and found the way in which information was presented did not meet their needs. Participants identified challenges in choosing the right test, and also expressed the need for preparing for a test and the potential result, advice around which they found lacking. Although participants liked the rapidity of the result with a self-test, they believed there was a lack of information about interpreting the test and little supportive advice if the result was reactive. Overall, participants highlighted the lack of tailoring, and sensitive presentation, of information, and the need for emotional support throughout the process.
Conclusion: Many HIV online testing resources do not consider the emotional and/or social contexts in which people are seeking information. They fail to address people's anxieties about HIV testing and fail to provide appropriate information to inform testing, interpret results and or support receiving reactive results. As an increasing proportion of sexual health services are provided online, these resources need to be tailored to users' information, testing and support needs. There is a need for innovative, fit-for-purpose approaches to support decision making and diagnosis.

O45

Safeguarding young people using online sexual health services

A Black, S Amos-Gibbs, G Holdsworth, E Ardines and P Baraitser
SH:24, London, UK

Background: As online sexual health testing become more available, an evidence base for safeguarding young service users is increasingly important. Online services may or may not support disclosure. The lack of face-to-face contact may limit identification of signs such as poor self-care or self-harm. However, online services provide consistent, standardised questions, time and space to reflect and increased anonymity that enables users to test service's responses. SH:24 requires all users aged 16–18 to complete a safeguarding risk assessment based on national guidelines.
Methods: We reviewed clinical records of all users reporting a safeguarding concern, 01/01/17 – 31/12/17 to describe demographics and reported risks. The multi-disciplinary clinical governance group classified cases into low, medium and high risk, and developed a typical case study example for each category.
Results: **Table 1: Number and type of safeguarding issues reported**

Safeguarding measure	n (%)
Service users 16–18 years	1,473
Safeguarding flagged users	122 (8%)
Safeguarding 'risks' reported	182*
Depression/ low mood	77 (42%)
Partner age difference	33 (18%)
Drink & drugs	29 (16%)
Pressured into sex	20 (11%)
Sexual assault	19 (10%)
Paid for sex	4 (2%)

*Users can report multiple risks.

Of the total users aged 16–18 years: 1,093/1,473 (74%) were female, 319 (22%) from Black and ethnic minority groups, 1,208 (82%) were heterosexual; 586 (40%) had attended a sexual health service previously; 124/858(15%) had a positive STI diagnosis. Among those who reported safeguarding risks: 93 (76%) were female, 26 (21%) were BME, 89 (73%) were heterosexual; 54 (44%) had attended a sexual health service previously; 5/50 (10%) had a positive STI diagnosis.
The online clinical team completed telephone safeguarding assessments for 75/122 (61%). 18/75 (24%) were referred (drug services=2; mental health services=5; sexual assault services=1; sexual health services=10). Initial analysis classified 48 (64%) cases as low risk, 21 (28%) as medium risk and 6 (8%) as high risk. For example, 'partner age difference of 2 years', was classified 'low risk' and suicidal ideation with little social support as 'high risk'. Those uncontactable after 3 attempts using two different media were denied STI testing, linked to a 'Get Support' page and invited to make contact at any time.
Conclusions: Young people regularly report safeguarding issues to online services. Most are effectively supported online or transitioned to face-to-face care.

Poster Abstracts

Antiretrovirals: efficacy, interactions and pharmacokinetics

P1

A phase 3b open-label pilot study to evaluate switching to elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide (E/C/F/TAF) single tablet regimen (STR) in virologically suppressed HIV-1 infected adults harbouring the NRTI resistance mutation M184V and/or M184I (GS-US-292-1824)

I Perez-Valero[1], JM Llibre[2], F Pulido[3], J-M Molina[4], S Esser[5], I McNicholl[6], R-P Lorgeoux[7], D Piontkowsky[6], L Sathia[8] and R Haubrich[6]

[1]Unidad VIH - Hospital Universitario La Paz, Madrid, Spain, [2]Fundación Lucha contra el SIDA, Barcelona, Spain, [3]Unidad VIH, Hospital Universitario 12 de Octubre, Madrid, Spain, [4]Saint-Louis Hospital and University of Paris, Paris, France, [5]Universitatsklinikum Essen, Essen, Germany, [6]Gilead Sciences, Inc, Foster City, CA, USA, [7]Gilead Sciences, Inc, Montreal, QC, Canada, [8]Gilead Sciences, Inc, London, UK

Background: Switching to a once-daily STR of E/C/F/TAF in HIV-1 infected patients was shown to be effective and safe through 144 weeks. No data exist evaluating the efficacy of E/C/F/TAF in subjects whose HIV-1 harbors the M184V/I resistance mutation.
Methods: 1824 is an ongoing, prospective, open-label, single arm, multicenter study evaluating the efficacy and safety of switching to E/C/F/TAF in subjects receiving a stable regimen (≥6 months) of emtricitabine/tenofovir disoproxil fumarate or abacavir/lamivudine plus a third antiretroviral agent. Subjects had a historical genotype report showing M184V and/or M184I and no evidence of previous virologic failure or resistance to boosted PIs or INSTIs. At screening, HIV-1 RNA <50 copies/ml (c/ml) was required as well as sequencing of integrated HIV DNA with no presence of other NRTI or PI resistance mutations. The primary objective is to evaluate the efficacy of switching to E/C/F/TAF in maintaining HIV-1 RNA <50 c/ml at Week (W) 12 using pure virologic response (PVR). Subjects with discontinuation or missing values were considered responders if last HIV-1 RNA <50 c/ml.
Results: Thirty-seven subjects switched to E/C/F/TAF. Mean age was 50 years (range 22–76), 73% White, 22% women and median CD4 count 724 cells/μl. Pre-switch regimens at screening were 2 NRTIs plus boosted PI (54%), INSTI (32%), NNRTI (11%), and INSTI+NNRTI (3%). All subjects had the M184V and/or, M184I mutations and 51% (19/37) had NNRTI resistance mutations on historic resistance tests. Archive DNA resistance testing found 43% (16/37) had M184V and/or M184I, 5% (2/37) had only NNRTI resistance and 51% (19/37) had wild type virus.
All 37 subjects maintained HIV RNA <50 c/ml by W12 based on PVR. Three subjects discontinued prior to W12 with the last recorded HIV RNA <50 c/ml. There were no virologic failures and no cases of emergent resistance. Four serious adverse events (AEs) occurred were not considered study drug-related. There were 19% (7/37) subjects experiencing any study drug-related AE; none were grade 3 or 4. One subject experienced an AE (muscle spasms) leading to premature E/C/F/TAF discontinuation.
Conclusion: In this primary analysis, 100% of HIV-1 suppressed subjects with baseline M184V and/or M184I mutations who switched to E/C/F/TAF maintained HIV suppression at Week 12 with no emergent resistance. E/C/F/TAF was well tolerated. Subjects will be followed for 48 weeks to establish the durability of HIV suppression on E/C/F/TAF.

P2

A review of switching people living with HIV (PLWH) from Atripla to Truvada and generic efavirenz (gEFV)

S Tyler, S Sonecha, M Boffito and A Pozniak

Chelsea and Westminster Hospital, London, UK

Background: PLWH were asked to switch their cART from Atripla to Truvada & gEFV in response to NHS England's (NHSE) switch target of 60%. This was discussed with PLWH during their regular clinic visit, with counselling and written information provided by the pharmacist. If a single tablet regimen (STR) was strictly required, an alternative STR was considered.
Aim: To evaluate outcomes of scheme and determine tolerability of switch and reasons for switching away from Atripla and subsequently from gEFV.
Method: Retrospective data collection was recorded on all PLWH as on Atripla on 1st April 2016. Electronic prescribing, dispensing systems and medical notes were used to identify PLWH switched to and away from Truvada & gEFV or to a different cART and reasons for switch.
Results: From a total of 2547 patients on Atripla 1556/2547 (61%) switched to Truvada & gEFV and 48/2547 (2%) to different NRTIs & gEFV. 648/2547 (25%) switched to a different cART and of these 31/648 (5%) switched to STRs to avoid pill-burden. 295/2547 (12%) did not switch as either lost to follow up, RIP or not yet reviewed. 1507/1604 (94%) remained on gEFV and 97/1604 (6%) subsequently switched off gEFV.
Table 1. Reasons why PLWH switched OFF gEFV

Reasons for switch	Number
• gEFV ADRs	75
1 CNS only	52
2 CNS+another reason/ADR	11
3 Other	12
• Drug-drug interactions	10
• STR request	6
• Tenofovir ADR(s)	4
• Virological failure	2
Total	97

CNS toxicity was the most common reason for discontinuation from gEFV with 63/97 (65%) patients stopping gEFV for this reason, of which 34/63 (54%) patients felt these had developed since switch to gEFV.
Conclusion: Most patients that switched to gEFV remained on this regimen. This is reassuring in the current NHS financial climate with the need to make cost savings using generics. The key reason for discontinuation off gEFV was CNS toxicity. A number of patients switched away from EFV for clinical reasons when Atripla therapy was reviewed, highlighting the importance of regular ART review in stable patients. With imminent Atripla patent expiry there may be an opportunity to offer patients a return to an STR, but only a minority of patients switched off Atripla to another STR solely to avoid pill burden. The NHSE switch target was met and significant cost savings were generated as every patient seen was initially switched. Consideration should be given to achievability when targets are designed. It is important to ensure patients are engaged with any switch schemes.

P3

An audit of low-level viraemia management in a large city clinic

D Goode, C Oswald, J Glascodine and H Wallace
Brotherton Wing Clinic, Leeds Teaching Hospitals Trust, UK

Background: Low level viraemia [viral load (VL) 50–200 copies/ml] raises concerns about potential drug resistance. Patients with persistent low level viraemia may require a change in treatment and BHIVA advises close monitoring. Following the integration of two HIV services, local policy for handling low level viraemia was changed in 2016. New local policy is for the clinician requesting the test to action VL >100 copies/ml, with compliance review, drug-drug interactions and repeat VL (within 3 months for PI & dolutegravir regimes, within 6 weeks for others). VL >200 goes directly to MDT. VL 50–99 are not recalled as the local assay has traditionally been viewed as very sensitive. We aimed to audit recall practice since the introduction of the new policy.
Methods: VL results between 100–200 copies/ml for 6 months from 01/01/2017 were retrieved. Records were reviewed for grade of clinician, class of medication, time to result action, time to repeat VL, repeat VL value, and regime change.
Results: 68 patients had a VL between 100–200 copies/ml in this time period. 58/68 (85%) had their VL repeated within 3 months. Of those repeated, 48% (28/58) were <40 copies/ml, 21% (12/58) were 41–100 copies/ml, and 31% (18/58) were >100 copies/ml. Of those who had a repeat VL >100, 28% (5/18) had known poor adherence and 56% (10/18) had a blip in the previous 2 years. Results by ARV class are outlined in Table 1. Overall, 4 patients (6%) had their ARV regime changed, all were on an NNRTI.
Table 1

	NNRTI (n=24)	PI (n=26)	INI (n=16)	Other (n=2)
Documented plan	20 (83%)	19 (73%)	11 (69%)	2 (100%)
Median time to action (weeks)	2 (r: 1–8) r=range	2 (r: 1–16)	3.5 (r: 1–6)	3.5 (r: 3–4)
Median time to repeat VL (weeks)	4 (r: 2–23)	8 (r: 2–27)	7 (r: 1–26)	3 (r: 2–4)
Retested as per clinic guidelines	18 (75%)	13 (50%)	12 (75%)	2 (100%)

Time to retesting was significantly (p=0.03) shorter when managed by a CNS than other grade of clinician.
Discussion: Although there was variance from both local and national guidance, the cohort recalled soonest was appropriately those taking NNRTI regimes. There was a lack of progression to virological failure across all groups, and only 6% underwent a regime change. Decisions to recall are likely to be influenced by grade of clinician and known patient factors e.g. compliance history, in addition to VL. Local policy has subsequently changed to routine recall if VL 50–200 on PI or dolutegravir, with the aim of concentrating resources on those most at risk.

P4

BHIVA monitoring guidelines may result in unnecessary investigation of hypophosphataemic patients with HIV: a twocycle audit at a large UK teaching hospital

M Lavery, S Currie and E Clarke
Royal Liverpool University Hospital, UK

Background: BHIVA monitoring guidelines recommend monitoring phosphate in patients with HIV with an undetectable viral load on ART every 6–12 months. A phosphate <0.8 mmol/l should be confirmed on a fasting sample.
Method: Retrospective review of the last 100 phosphates recorded for our HIV outpatients and analysis of the management of hypophosphataemia. Preliminary results were presented to the department, and a re-audit conducted.
Results: Of 100 patient results, 73 were male, 57 British, and 30 African, with a median age of 42 years (range 20–66).
20 patients had a phosphate <0.8 mmol/l, of which 4 (20%) were <0.64 mmol/l. 15 (75%) had no action taken, and 5 (25%) had repeat non-fasting phosphates taken. 3/5 (60%) were within normal range on repeat, 2 (40%) remained low and no further action was taken.

	NNRTI (n = 24)	PI (n = 26)	INI (n = 16)	Other (n = 2)
Documented plan	20 (83%)	19 (73%)	11 (69%)	2 (100%)
Median time to action (weeks)	2 (r: 1–8) r = range	2 (r: 1–16)	3.5 (r: 1–6)	3.5 (r: 3–4)
Median time to repeat VL (weeks)	4 (r: 2–23)	8 (r: 2–27)	7 (r: 1–26)	3 (r: 2–4)
Retested as per clinic guidelines	18 (75%)	13 (50%)	12 (75%)	2 (100%)

Following result presentation, re-audit of 50 patients demonstrated that 8/10 with hypophosphataemia were recalled for a fasting sample.
Conclusion: This audit illustrates that it is difficult to predict which patients will have a low phosphate, with no statistically significant differences between those with low and normal phosphates. The increased recall of patients with mild hypophosphateamia is time consuming for staff and inconvenient for patients, and does not affect ongoing management. We propose that BHIVA guidelines should be altered so that only those with phosphate <0.64 mmol/l would be recalled for a fasting sample (unless chronically hypophosphataemic), attempting to link that sample with planned appointments. Furthermore we suggest that routine calcium profiles should be limited to those patients on TDF unless there is a specific clinical indication, in order to make best use of limited resources.

P5

Clinical experience with tenofovir alafenamide (TAF)

C Richardson, M Shaw, E Simpkin, S Byrne, Y Gilleece and D Churchill
Lawson Unit, Brighton, UK

Background: Tenofovir alafenamide (TAF) causes less renal and bone toxicity than tenofovir disiproxil fumarate (TDF) but is more expensive, particularly when generic formulations of TDF are available. National commissioning and local prescribing guidelines state that the use of TAF can be approved by the MDT for patients with underlying renal or bone disease with definite (osteoporosis, FRAX>10%, CKD≥G3 or CKD G1/2 with A3 proteinuria) or relative contraindications to TDF (i.e. approaching these thresholds) in patients unable to take abacavir.
Methods: Review of all patients starting a TAF based regimen from July 2016 to September 2017 to assess TAF indications, compliance with guidelines and benefit to patients. Patients who received TAF through the compassionate access scheme or as part of a research study were excluded.
Results: 140 patients received TAF in this period. 83% (116) male, 17% (24) female. Median age of females 55 years (21–85) and males 56 years (23–87). The majority were switch patients (137); 3 were treatment naive. Indications for receiving TAF: 70 renal, 53 bone, 10 both and 7 other.
136 had an MDT decision documented
Contra-Indications (C/I) to TDF:

	Definite	Relative	Not C/I	Total
Renal	45	22	3	70
Bone	26	26	1	53
Renal and bone	9	1	0	10
Other		1	6	7
Total	80	50	10	

10 patients didn't have an approved C/I to TDF: 4 needed small tablets for swallowing difficulties, 3 for simplification, 2 didn't tolerate TDF (but had C/I to abacavir) and 1 patient self-reported osteoporosis. All were approved by MDT.

107 patients had a C/I to abacavir (16 CVD, 63 Q-risk >10%, 7 HBV, 4 B5701+ and 17 other including resistance).
Patients switching for renal indications had median UPCR pre-switch of 39.5 (6.3–175) and median UPCR 23.4 (5.8–112) at first reported test post-switch. Further analysis will include tolerability of TAF in these patients.
Conclusion: 93% of patients starting TAF met NHSE guideline criteria and 97% had a documented MDT discussion. In the remainder, MDT decisions were based on clinical need and knowledge of the individual patients.

P6

Cost-effectiveness switching from ritonavir- to cobicistat-boosted PIs: is simplification as straightforward as it sounds?

H Colver, T Sobo and J Turner
Luton Sexual Health, Luton, UK

Background: As a co-formulation with darunavir or atazanavir, cobicistat offers benefits in terms of pill burden and cost. In July 2016 NHS England recommended a cost-effectiveness switch from darunavir/ritonavir (DRV/r) to Rezolsta (target 50% of patients) and from atazanavir/ritonavir (ATV/r) to Evotaz (target 60% of patients), with implementation over a 2 year period. Guidelines have been produced to advise on suitability for switching.
Methods: 48 patients switching from ritonavir- to cobicistat-boosted PIs, with no other changes to their antiretroviral regimen, were identified from pharmacy records. A case note review was conducted to assess side effects and loss of virological control after switching to cobicistat.
Results: Table 1. summarises demographics of cases and results:

	Result (%) n=48
Black African ethnicity	37 (77%)
Female	27 (56%)
Mean age	44 (range 29–56)
Switching ATV/r → Evotaz	17 (35%)
Switching DRV/r → Rezolsta	31 (65%)
Truvada backbone	39 (81%)
Virological control maintained post switch	40 (83%)
No reported side effects post switch	38 (79%)
Continued on cobicistat-boosted PI	44 (92%)

Demographics of cases were representative of our predominantly Black African and female cohort. 39/48 cases had undetectable viral loads (<40 copies/ml) recorded prior to switching. Detectable viral loads pre-switch ranged from 116–4935 copies/ml. 39 cases remained or became virologically suppressed post switch. 6 had low level viraemia (<200 copies/ml) on post switch samples, 2 had treatment interruptions leading to increased viral loads, and one had a viral load of 391 copies/ml with low atazanavir levels on therapeutic drug monitoring (TDM). 79% reported no side effects post switch. Side effects reported included headache, diarrhoea, generalised itch, leg/foot pain and rash. Only 4 individuals (8%) were switched back to their original regimen for reasons including low atazanavir levels on TDM, burning pain in the feet and rash.
Conclusions: Although the majority of patients switching from ritonavir to cobicistat maintain virological control, benefit from a reduced pill burden and suffer no ill-effects, a small number experience side effects necessitating switch back to their original regimen. Clinics should consider issuing a short course of the cobicistat-containing regimen and assessing tolerability after switch before further prescribing in order to avoid wasting large quantities of medication.

P7

Did commissioning for value provide good value?

A Darley and M Pammi
Nottingham University Hospitals NHS Trust, Nottingham, UK

Background: The Commissioning for Value scheme was launched in 2016 to reduce the financial costs of ARV prescribing and included a proposal to switch patients from Atripla (ATP) to Truvada (TRU)+Efavirenz (EFV) with a switch target of 60% over 2 years. Switching ATP to TRU+EFV reduces the cost of FTC+TDF+EFV by 17% but involves going from a single tablet regime (STR) to 2 tablets daily.
Method: Patients on ATP in December 2016 were identified from the patient database and their records examined. Whether switch had been proposed and implemented along with reasons and outcomes were recorded and analysed.
Results: The database identified 244 patients on ATP in Dec 2016. Of these, 56 were no longer under our care or had already switched away from ATP giving a baseline of 188. Switch was discussed with 157/188 (88%). 21 were not offered this switch because ATP was no longer suitable due to side effects (14), drug interactions (5) or virologic failure (2). 9 patients have not yet discussed switch in clinic and 1 was deemed unsuitable to change from ATP. 110/157 (70%) accepted the switch. Reasons for declining included not wanting to change tablets (8/47), issues with pill burden (24/47) or were not stated (14/47). 11 patients switched to TRU+EFV but did not tolerate the change and went back to ATP. 9/11 reported new or increased side effects and 2 struggled to swallow the new tablets. 98 patients successfully switched to TRU+EFV giving a switch rate of 52% and cost saving of 9% excluding the costs of alternative switches. 30% remain on ATP and 18% are now prescribed other ARVs.
Conclusion: A year after the scheme began the target switch rate of 60% has not been achieved although the number of patients on ATP has reduced by 70% and more patients may switch in the future. A drug cost saving of 9% was realised excluding additional costs, alternative regimes and drug wastage. Increased pill burden was the main barrier to switching, demonstrating the value that patients place on STRs and continuity of treatment. The number of patients who did not tolerate the new regime was high and may reflect patients finding the new regime less acceptable. Patient education and clear explanations of any changes to treatment are particularly important and switches for cost-saving rather than clinical need should not be compulsory. Starting treatment on the best value regimes and generic switches may provide greater savings and be more acceptable to patients.

P8

Drugs in the 60s: polypharmacy and drug–drug interactions in older people living with HIV

E Wallis[1], MJ Lee[1], J Bilinska[1], L Campbell[1], R Patel[1], C Williams[1], R Kulasegaram[1] and C Smith[2]
[1]Guy's and St Thomas' Hospital, London, UK, [2]University College London, UK

Background: Multiple co-morbidities, polypharmacy and drug-drug interactions (DDI) are common challenges we face when caring for an aging population. We reviewed the prevalence of co-morbidities, polypharmacy & DDI in patients aged >60 attending an inner-city HIV clinic.
Method: All patients aged >60 attending clinic were included. Electronic notes were reviewed for data collection. We used www.hiv-druginteractions.org to assess for DDI. DDI were classified into: (i) 'significant' when co-administration is not recommended, (ii) 'potential', (iii) 'weak potential' requiring additional monitoring/adjustments. Statistical analysis included Spearman correlation coefficient performed in SAS.
Results: Of 300 patients aged >60, 78% (n=234) were men, 99.7% (n=299) on ART, 95% (n=285) virally suppressed (<200 copies/ml) and CD4 median 537 cells/μl. The most prevalent metabolic co-morbidities were cardiovascular, hypercholesterolemia (57%), hypertension (44%), ischaemic heart disease (9%) & heart failure (4%). Others include osteopenia/osteoporosis (37%), kidney disease (30%), malignancy (16%), diabetes (14%) & chronic HBV/HCV (11%). 30% had >3 metabolic co-morbidities. The median number of non-ART drugs was 3 (IQR=3–6) and 29% (50/272) of patients were on ≥5 (28 patients had incomplete drug histories). 57% (155/272) had ≥1 DDI and 19% (52/272) ≥4. 1% of DDIs (4/568) were 'significant', 68% 'potential' (386/568) and 31% 'weak potential' (178/568). We found a significant relationship between increasing age, number of drugs r=0.13 (p=0.03) & more DDI r=0.15 (p=0.01). Non ART drugs that caused 2/3rd of DDIs include statins (20%), Ca^{2+} channel

blockers (10%), erectile dysfunction (6%), β blockers (6%) opioids (6%), SSRIs (5%), antiplatelet (3%), 74 other drugs made up the remaining third. We found >80% of evidence for each DDI was of 'very low quality'.
Discussion: Over half our ageing HIV population had >1 DDI, the majority were classed 'potential' requiring additional monitoring/adjustments. Evidence for DDI is often very low quality. This poses a challenge for clinicians where experience is required to tailor prescribing for induvial patients. 'Significant' DDI were rare, perhaps owing to the input of specialist pharmacist and involvement with local GP's, with whom we routinely inform about the online drug interaction database in clinic letters. A significant trend was found with increasing age more DDI & polypharmacy, suggesting this issue will become more prevalent as our population ages.

P9

Dual therapy with dolutegravir and renally adjusted lamivudine in HIV infection: a treatment strategy to manage comorbidity and toxicity in older patients

M Tan[1], S Johnston[2], J Nicholls[2] and M Gompels[2]
[1]Bristol Medical School, Bristol, UK, [2]HIV Research Trials Unit, North Bristol NHS Trust, Bristol, UK

Background: Life expectancy in those living with HIV has improved with antiretroviral therapy and the proportion of individuals living with HIV over 50 has significantly increased. Management of non-HIV comorbidities has become increasingly important. We often seek ART combinations which are efficacious, well tolerated and free from interactions in this context.
The aim of this review was to assess the efficacy, durability and tolerability of simplification to dolutegravir (DTG) and lamivudine (3TC) once a day therapy in HIV suppressed patients.
Methods: This was a retrospective review of electronic patient records from a single centre using dual therapy. Patients were only switched to dual therapy if there was an existing comorbidity, interaction or side effect.
Results: Between 2015 and 2017 forty-five patients were switched to dual therapy with DTG 50 mg once a day and 3TC (adjusted for renal function – 300 mg to 150 mg) once daily. 23/45 patients had 3TC at 150 mg once daily due impaired renal function.
The median age at switch was 60 years – range 38 to 82. Baseline characteristics were: MSM 51%, male 82% and time on cART prior to switch 11 years. The median CD4 count was 693 cells/mm^3.
The reasons for dual therapy were: comorbidities 31%, laboratory abnormalities 29%, drug adverse events 19%, potential drug interactions 14% and other 7%.
The mean time on dual therapy was 8 months (range 1–20).
During this time, there were no virological failures, 2 discontinuations due to side effects, (1 patient with headache and 1 with insomnia) and no observed additional laboratory toxicities.
Conclusion: Simplification to dual therapy with dolutegravir and lamivudine is well tolerated, durable and efficacious in a population with a median age of 60 in the context of non-HIV comorbidities. This is also the case when lamivudine is used as a renal adjusted dose (>50% patients in this series). Use of this combination may be a useful treatment strategy to avoid interactions, toxicities and effects of comorbidities increasingly found in an ageing population. This review adds important data on the use of renally adjusted lamivudine as a dual therapy regimen. Further trials in this area are warranted.

P10

Fast tracking ART: an audit of management of patients with primary HIV infection

J Mellor, C Babu and V Lee
Manchester Foundation Trust, UK

Background: Several studies have shown clinical benefits of starting immediate antiretroviral therapy (ART) over deferral in patients diagnosed with primary HIV infection (PHI). It improves morbidity and mortality, and also reduces the risk of onward transmission. ART however should be started only when the individual feels ready to do so. We reviewed our current clinical practice in patients diagnosed with PHI.
Methods: A retrospective case note review of patients attending a busy inner city clinic with a diagnosis of PHI from Jan 16 to June 2017 was carried out. Information including demographics, baseline CD4 and viral load, and ART regimen was collected.
Results: A total of 23 patients (22M, 1F) were included. Majority of them were men who have sex with men 19/22 (86.4%). The median age was 35 years (range 19–63). The median baseline CD4 and viral load were 516 and 63,626 respectively. Of 23, 21 (91.3%) had had a previous negative HIV test with 17/21 (81.0%) testing within the previous 6 month period. The majority of them 21/23 (91.3%) were assessed by an HIV specialist within 2 weeks and 18/23 (78.3%) were offered immediate ART. Of those who were offered immediate ART, 16/18 (88.9%) accepted and started at their initial medical review visit. The median time from diagnosis to initial clinical nurse specialist (CNS), and doctor review were 8 and 34 days respectively. The median time from diagnosis to initiation of ART was 34 days.
Conclusion: In our audit, the majority of patients had had an HIV test within the preceding 6 months demonstrating the benefits of frequent repeat testing. Our data also demonstrates an opportunity for earlier initiation of ART at the first HIV CNS appointment. As a result we have developed a clear CNS pathway wherein we are able to offer ART via Patient Group Directions (PGD) to all patients diagnosed with HIV in a timely fashion in order to improve their outcomes, to reduce onward transmission, and consequently reduce the number of new HIV infections.2010 characters (excluded title and affiliations)

P11

First reported case of transmitted R263K dolutegravir resistance

S Cochrane[1], S Forsyth[2], J Daniel[2] and E Smit[3]
[1]University Hospitals Bristol NHS Foundation Trust, Bristol, UK, [2]Great Western Hospitals NHS Foundation Trust, Swindon, UK, [3]Heart of England NHS Foundation Trust, Birmingham, UK

Background: We report a case of confirmed transmission of R263K integrase mutation which has not previously been described. R263K is a rare nonpolymorphic mutation selected by elvitegravir and dolutegravir, causing a moderate reduction in susceptibility to these agents with minimal effect on raltegravir.
Case: Patient Y, a 40 year old female presented to our clinic in May 2017 as a recent sexual contact of HIV. She was found to be HIV positive, subtype C. Baseline bloods showed CD4 925 cells/mm^3 and viral load 1723 copies/ml. Avidity index was 0.628 indicating a recent infection. She was treatment naïve. Baseline resistance test showed M184V. Baseline integrase resistance was not requested initially in line with current BHIVA guidelines.
Her sexual contact X had fully susceptible subtype C virus at baseline in 2013 and commenced antiretroviral therapy with Triumeq approximately 2 years after diagnosis. He achieved an undetectable viral load after 2 months but after 8 months his viral load rebounded due to poor adherence and he disengaged from regular follow up.
Shortly after Y's diagnosis in June 2017, her contact X was found to have R263K mutation, as well as M184V and G163KR, secondary to poor adherence. Subsequent integrase resistance testing of her baseline sample confirmed all 3 resistance mutations (R263K, G163KR and M184V) had been transmitted to Y. She was commenced on Truvada and Rezolsta and her viral load became undetectable after 2 months.
Conclusion: We believe this is the first case to describe the R263K mutation as a primary transmitted resistance mutation. Studies have identified R263K reduces strand-transfer activity by decreasing the affinity of integrase for target DNA. In tissue culture, viral infectivity and replication were also reduced: these effects being more pronounced in subtype C compared with subtype B.
This case illustrates that despite reduced viral fitness in vitro, transmission is possible. With increasing integrase use it is likely we will see more primary resistance to this class. Baseline integrase resistance testing must be considered in patients at risk of these transmitted mutations particularly in the context of other class resistance, to ensure a robust antiretroviral regimen is chosen. This is supported by BHIVA guidelines. Evidence to support the use of dolutegravir in dual therapy is growing. However, without testing, this may lead to patients commencing a regime with only one fully active agent, risking further resistance.

Mean (SD)		INI DTG+RPV N=105	INI CAR N=97	NNRTI DTG+RPV N=275	NNRTI CAR N=278	PI DTG+RPV N=133	PI CAR N=136	PCLTT DTG+RPV N=134	PCLTT CAR N=140
Symptom count	Baseline	5.1 (4.9)	6.0 (5.1)	5.3 (5.0)	5.6 (4.9)	5.4 (4.7)	6.5 (5.8)	5.6 (4.7)	6.6 (5.0)
Range [0–20]	CFB48	−0.8 (4.6)	−0.2 (4.1)	−0.5 (5.0)	−0.2 (4.2)	−0.1 (5.0)	−0.1 (6.1)	−0.3 (4.9)	−1.1 (4.0)
MSBS	Baseline	9.3 (10.5)	12.4 (13.1)	9.2 (9.3)	10.2 (7.0)	10.5 (11.1)	12.0 (11.5)	10.0 (10.0)	12.0 (11.1)
Range [0–80]	CFB48	−1.4 (7.3)	−0.7 (11.2)	−1.5 (8.4)	−0.8 (7.8)	−1.3 (8.3)	−0.2 (10.4)	−1.3 (8.3)	−2.3 (8.2)
MHIVTSQTS	Baseline	54.9 (6.3)	55.0 (5.2)	54.6 (6.3)	53.9 (6.8)	53.4 (6.8)	53.1 (6.9)	52.4 (7.1)	52.5 (7.5)
Range [0–60]	CFB48	1.0 (6.0)	−0.3 (4.9)	1.4 (7.1)	0.8 (6.2)	2.1 (7.4)	0.2 (6.5)	3.1 (7.8)	0.1 (7.6)

SD, Standard deviation; CFB48, change from baseline at week 48.

P12

General practitioners' knowledge of, and confidence detecting, medication-related problems (MRPs) affecting people living with HIV (PLWH) using combination antiretroviral therapy (cART)

C Knox[1], B Flynn[2], M Shaw[3], SS Lim[3], HL Date[3] and J Vera[3]

[1]Brighton and Sussex Medical School, UK, [2]Brighton and Hove CCG, Brighton, UK, [3]Lawson Unit, Brighton and Sussex University Hospitals NHS Trust, Brighton, UK

Background: Polypharmacy and MRPs are emerging as important challenges facing PLWH, due to an increasing prevalence of comorbidities (primarily associated with ageing), which are mostly managed by General Practitioners (GPs). The aim of this project was to evaluate GPs' knowledge of MRPs affecting PLWH taking cART, GPs' confidence detecting MRPs, and to explore GPs' desire for support preventing and managing MRPs in PLWH.
Methods: A self-administered questionnaire was circulated to all primary care practices in a city with a high prevalence of PLWH (N=2350), for completion by GPs. Practices were defined as 'high' or 'low' prevalence according to the number of PWLH registered at each practice who were receiving treatment at the local HIV outpatient clinic. Data were collected using the clinic's anonymised client list. No participant or patient identifiable information was collected.
Results: 42 participants completed the questionnaire: 27 (64%) from a high prevalence practice (HPP); 15 (36%) from a low prevalence practice (LPP). 32 (76%) agreed that MRPs were an issue affecting PLWH. There was a wide range of reported confidence when prescribing, with 14 (33%) stating lower confidence (5/10 on confidence scale) and 28 (66%) reporting higher confidence (6/10). When prescribing, 7 (17%) did not use a resource to help identify potential MRPs. Among those who did use resources, the website www.hiv-druginteractions.com was most popular (n=13), followed by contacting a Specialist HIV Pharmacist (n=8). 73% (n=11) of LPP GPs felt they would benefit from further support, compared with 56% (15) of those from a HPP. The most popular support resources among both groups were dedicated telephone service (n=21), e-mail (n=18) and training/educational course (n=13).
Conclusions: The results show a wide range of reported confidence when prescribing for PLWH in a primary care setting. In HPPs, a higher proportion of participants disagreed that MRPs were a problem and did not regularly use a resource when prescribing. These findings may suggest an element of overconfidence which may give rise to MRPs. The findings indicate that overall, prescribers would welcome additional support in this area, through the form of telephone, e-mail or additional training. Our ongoing objectives are to implement and evaluate the effect of such strategies on rates of MRPs among PLWH.

P13

Impact of reasons for switch and prior regimen on patient reported outcomes (PROs) in the SWORD studies

Y Punekar[1], A Oglesby[2], K Angelis[3], A Antela[4], M Aboud[1], E Blair[2], L Kahl[1], M Gartland[2], B Wynne[5], S Lopes[1] and M Murray[1]

[1]ViiV Healthcare, Brentford, UK, [2]ViiV Healthcare, Research Triangle Park, NC, USA, [3]GlaxoSmithKline, Uxbridge, UK, [4]Infectious Diseases Unit, Hospital Clinico de Santiago, La Coruna, Spain, [5]ViiV Healthcare, Collegeville, PA, USA

Objectives: The SWORD studies demonstrated improvements in PROs among virologically suppressed HIV-1 patients switching from a 3/4 drug antiretroviral regimen (CAR) to a 2 drug-regimen of dolutegravir+rilpivirine (DTG+RPV). This analyses presents PRO results stratified by patients' baseline third agent class (INI, NNRTI, PI) and for patients with concerns about long-term toxicities of CAR (PCLTT).
Methods: PROs including HIV Treatment Satisfaction Questionnaire (HIVTSQ) and HIV Symptom Distress Module were assessed at Baseline, Weeks 4, 24, and 48. Change from baseline in total scores for the pooled cohort of SWORD1 and SWORD2 is presented here.
Results: 87% of patients were new to DTG or RPV and 27% of all patients were PCLTT. Low symptom burden [mean symptom bother score (MSBS)] and high treatment satisfaction [mean HIVTSQ total score (MHIVTSQTS)] was reported at baseline. This was maintained or slightly improved in both treatment arms across all 3 treatment classes (INIs, NNRTIs and PIs) and PCLTT patients at week 48 (Table 1). Patients who switched from an INI to DTG+RPV reported a trend towards symptoms improvements, in particular, pain/numbness/tingling sensation in hands/feet, headaches, and muscle aches/joint pain.
Conclusion: In SWORD, patients switching to DTG+RPV maintained or slightly improved their PROs regardless of their baseline treatment regimen. These results were consistent among PCLTT patients, making them ideal candidates for switch to DTG+RPV treatment.

P14

Lack of pharmacokinetic and pharmacodynamic interactions between the integrase strand transfer inhibitor bictegravir and the oral contraceptive ethinyl estradiol/norgestimate

J Custodio, G Ma, D SenGupta, A Zari, D Xiao, H Martin, E Quirk, B Kearney and A Mathias

Gilead Sciences, Foster City, CA, USA

Background: HIV-1 infection in women is most prevalent among those of childbearing potential. Hormonal contraceptives, especially oral combinations of an estrogen and progesterone component, are among the most common methods of family planning and/or pregnancy prevention. Bictegravir (BIC) is a potent, once-daily, unboosted integrase strand transfer inhibitor coformulated with emtricitabine/tenofovir alafenamide (F/TAF) for treatment of HIV-1. This study evaluated the pharmacokinetics (PK) and pharmacodynamics (PD) of a commonly used oral contraceptive (OC) ethinyl estradiol/norgestimate (EE/NGM) upon coadministration with BIC.
Methods: Healthy, nonpregnant, nonlactating, premenopausal female subjects (n=16) received the following treatments sequentially: Lead-in: 28 day cycle of EE/NGM; Cycle 1: (Days 1–28): 28 day cycle of EE/NGM; Cycle

2: (Days 29–56): 28 day cycle of EE/NGM with BIC (75 mg) coadministered with EE/NGM on Days 29–42. Intensive PK was evaluated on Days 14 and 42 and primary PK parameters (AUC_{tau}, C_{max}, and C_{tau}) were determined. PD assessments for luteinizing hormone (LH) and follicle stimulating hormone (FSH) were also collected on Days 14 and 42, and progesterone was collected on Days 21 and 49. Statistical comparisons were made using geometric mean ratios (GMR) and associated 90% confidence interval (CI) lack of alteration boundary of 70–143%, with OC+BIC as the test treatment and OC alone as reference. Safety was assessed throughout the study.
Results: Systemic exposures of norelgestromin (NGMN), norgestrel (NG) and EE were unaltered upon coadministration of OC+BIC [GMRs (90% CI) of all NGMN, NG and EE primary PK parameters contained within 70–143%]. LH, FSH, and progesterone median concentrations were comparable across all treatment cycles. LH and progesterone median values were lower than expected for ovulatory or luteal phases, respectively. FSH was in the lower range for the ovulatory phase and consistent with a potential decrease in serum LH and FSH by OC and the absence of ovulation, as indicated by low progesterone on Day 21. Coadministration of OC+BIC was generally well tolerated. The majority of adverse events (AEs) were Grade 1 and there were no Grade 3/4 AEs or AEs leading to discontinuation (one subject withdrew consent).
Conclusion: No loss of contraceptive efficacy is expected upon coadministration of OC+BIC, as evidenced by the lack of changes in PK or PD. Coadministration of OC+BIC was generally safe and well-tolerated.

P15

Management of virological rebound on therapy: an audit of local practice

B Yasar[1], K Roberts[1], S Flavell[1], L Paraskevopoulou[2], E Nastouli[2] and L Waters[1]
[1]Mortimer Market Centre, London, UK, [2]University College London Hospital Virology Laboratory, London, UK

Background: With increasingly normal life expectancy & recommendations to offer ART regardless of CD4, people living with HIV (PLWH) can expect to be on treatment for many years. It is therefore important that detectable viral loads (VL) are managed promptly to recognise virological failure & optimise ART. Reasons for detectable VL include poor adherence, drug-drug interactions (DDI) and resistance. The management of detectable VL was audited against local guidelines:

- Resistance testing (RT) and repeat VL should be case-by-case
- Adherence and concomitant medication review should occur
- MDT discussion is good practice

Methods: A retrospective case note review was completed on all patients with a detectable VL (defined as>50 c/ml) between 01/08/2016 and 30/11/2016. Patients who were previously virologically suppressed and not stopped therapy were included. Outcomes were assessed against current policy.
Results: In a total cohort of 4657 patients, 89 had a detectable VL during the study period. First detectable VL was <200 c/ml in 63/89 (70.8%), 200–500 c/ml in 19/89 (21.3%), and >500 c/ml in 7/89 (7.9%). Overall results are demonstrated in the table below.

	Total (N=89)	<200 VL (N=63)	200–500 (N=19)	>500 VL (N=7)
Repeat VL	84 (94.3%)	58 (92.1%)	19 (100%)	7 (100%)
Adherence checked	86 (96.6%)	61 (96.8%)	18 (94.7%)	7 (100%)
Concomitant medications checked	69 (77.5%)	51 (81.0%)	13 (68.4%)	5 (71.4%)
RT completed	20 (20.6%)	6 (9.5%)	8 (42.1%)	6 (85.7%)
MDT Discussion	14 (14.4%)	10 (15.9%)	3 (15.8%)	1 (14.3%)

RTs were carried out appropriately in all patients with VL<200, 3/6 (50%) of RT in patients with VL>200 were not according to policy in patients on a protease inhibitor. MDT discussion did not vary according to VL.
Conclusion: We demonstrated excellent adherence to local guidelines in checking adherence to ART and confirmation of detectable HIV VLs. RT adhered to policy in the majority of cases. This audit revealed a short fall in ensuring consistent questioning about concomitant medications including herbal and over the counter medication. Limitations of the audit include lack of documentation causing a potential underestimation of medication or adherence reviews. Based on the results it is an opportunity to highlight the importance of concomitant medication review as we still see cases of significant morbidity as a result of DDIs being missed.

P16

Meta-analysis of dolutegravir for 7196 patients in 13 randomised trials: effects of current HIV RNA suppression on efficacy and safety

A Hill[1], S Hughes[2], Z Liew[2] and A Pozniak[3]
[1]Liverpool University, Liverpool, UK, [2]Imperial College London, London, UK, [3]Chelsea and Westminster Hospital, London, UK

Background: In most European countries, 85–95% people on antiretroviral treatment have HIV RNA suppression <50 copies/ml. Dolutegravir (DTG) is significantly more expensive than several generic antiretrovirals. Dolutegravir is generally well tolerated, but has been associated with increased risks of insomnia and other CNS adverse events, in randomised trials and cohorts.
Methods: A PUBMED/Embase search identified 13 randomised head-to-head trials (7206 patients) of DTG with other antiretrovirals. Meta-analysis of absolute risks with Mantel-Haenszel methods and random effects models compared DTG vs. control, to show whether their relative efficacy and safety profiles were different when used in naïve/experienced patients, vs. patients with HIV RNA suppression at screening.
Results: There were 7 trials in naïve patients (ARIA, FLAMINGO, Gilead-1489, Gilead-1490, SINGLE, SPRING-1, SPRING-2), 2 in experienced patients (DAWNING, SAILING) and 4 switch trials in patients with HIV RNA suppression (NEAT 022, STRIIVING, SWORD-1, SWORD-2). For the 9 trials of naïve or experienced patients (n=5214), DTG showed 7% higher rates of HIV RNA suppression <50 copies/ml (p=0.002). This effect was consistent for comparison of DTG with NNRTIs (p=0.002), PIs (p=0.0003) and Integrase Inhibitors (p=0.05). In these 9 studies, there was also a 2% lower risk of discontinuation for adverse events (p=0.03) for patients taking DTG. By contrast in the 4 switching studies (n=1992), rates of HIV RNA suppression were 1% lower for DTG (p=n.s.); Grade 1-4 adverse events were 9% higher for DTG (p<0.001). In addition, discontinuation for adverse events was 3% higher for DTG (p=0.03). These effects were seen consistently across the NEAT, STRIIVING and SWORD 1 / 2 trials. There were higher risks of Grade 1-4 insomnia for DTG vs. control across the studies (p=0.03).
Conclusions: In this meta-analysis of 7196 patients in 13 randomised trials, there were efficacy and safety benefits for starting DTG vs. control treatments in both naïve and experienced patients. However, in the 4 switching studies of patients with HIV RNA suppression at baseline, there were significantly more adverse events (p<0.001) and AE discontinuations (p<0.001) for patients taking DTG. If patients are already tolerating current antiretroviral treatment, the risks of switching to DTG could outweigh the benefits.

Efficacy/safety	DTG vs. control Naïve or experienced pts	DTG vs. control Suppressed patients
HIV RNA<50 c/ml	7% higher (p=0.02)	1% lower (p=n.s.)
Grade 1–4 AEs	2% lower (p=n.s.)	9% higher (p<0.001)
D/C for AEs	2% lower (p=0.03)	3% higher (p<0.001)

P17

Patient acceptability of HIV drug switches and its impact on virological outcomes

S Castelino[1], T Wong[2], R O'Neill[1], Y Jani[2] and S Guard[1]
[1]Guy's and St Thomas' NHS Foundation Trust, London, UK, [2]University College London, London, UK

Background: HIV drug therapy is a major part of the cost of HIV treatment. Generic ARV and optimum pricing has enabled efficient use of budget by implementing HIV drug switches. This study assessed patient acceptability of switching and stability of markers of HIV treatment after switch.

Method: Between 6/2016 and 12/2017,120 adult patients who switched from Atripla to Truvada+generic efavirenz 600 mg; atazanavir 300 mg+ritonavir 100 mg to Evotaz and darunavir 800 mg+ritonavir 100 mg to Rezolsta were identified and randomly selected. HIV-1 viral load (VL) and CD4 count were reviewed before and 6 months after switch. A self-completed questionnaire to elicit patients' responses for satisfaction was designed. Error Incident reports were reviewed.
Results: Data was analysed for 120 patients. Atripla to Truvada+generic efavirenz switch, VL <20 copies/ml for 92.5% (37/40) before and 97.5% (40/40) after switch; Mean CD4 count was 604 (median 609) before and 688 (median 631) after switch. Darunavir+ritonavir to Rezolsta switch, VL <20 copies/ml for 77.5% (31/40) before and 95% (38/40) after switch, mean CD4 count was 540 (median 510) before and 606 (median 540) after switch. For the atazanavir+ritonavir to Evotaz switch, VL<20 copies/ml for 87.5% (35/40) before and 97.5% (39/40) after switch. 2.5%% (1/40) VL increased; mean CD4 count was 622 (median 606) before and 594 (median 622) after switch .The questionnaires were completed by 65 patients. 74% (48/65) patients agreed/strongly agreed that adequate information was given; 62% (40/65) of patients agreed/strongly agreed that they were able to express concerns about switching; 57% (37/65) of patients agreed/strongly agreed that they were able to contribute to decision-making; 63% (41/65) of patients had no concerns about switching. Tablet size; tablet numbers; possibility of side effects; perception of generics being inferior were main concerns. 78% (51/65) patients agreed/strongly agreed that switching makes best use of limited NHS resources. 38% (25/65), 25% (16/65) and 15% (10/65) patients indicate their overall satisfaction with the switch process as excellent, very good and good respectively. 2 error incidents on the Trust reporting system but no patient came to any harm.
Conclusion: No difference in VL and CD4 count of patients after switch indicating stability of outcomes. Satisfaction was high and incidents low. We have confidence that we have safe processes in place when switching ART.

P18

Phase 3 study of fostemsavir in heavily treatment experienced HIV-1 infected subjects: day 8 and week 24 primary efficacy and safety results (Study 205888, formerly AI438-047)

M Kozal[1], J Aberg[2], G Pialoux[3], P Cahn[4], M Thompson[5], J-M Molina[6], B Grinsztejn[7], R Diaz[8], A Lazzarin[9], M Gummel[10], A Pierce[11], P Ackerman[12], C Llamoso[12] and M Lataillade[12]

[1]Yale University School of Medicine, New Haven, CT, USA, [2]Icahn School of Medicine at Mount Sinai, New York, NY, USA, [3]Hôpital Tenon, Paris, France, [4]Fundación Huesped, Buenos Aires, Argentina, [5]AIDS Research Consortium of Atlanta, Atlanta, GA, USA, [6]Hôpital Saint Louis, Paris, France, [7]Instituto de Pesquisa Clínica Evandro Chagas FIOCRUZ, Rio De Janeiro, Brazil, [8]Federal University of São Paulo, São Paulo, Brazil, [9]Ospedale San Raffaele, Milan, Italy, [10]GlaxoSmithKline, Upper Providence, PA, USA, [11]ViiV Healthcare, Research Triangle Park, NC, USA, [12]ViiV Healthcare, Branford, CT, USA

Background: Fostemsavir (FTR) is an investigational attachment inhibitor being evaluated as a new class of antiretroviral (ARV) in heavily treatment-experienced (HTE) patients; those with ≤2 ARV classes remaining and unable to form a viable regimen.
Methods: Randomized subjects, with 1–2 remaining classes and failing their ARV regimen at screening, were randomized (3:1) to blinded FTR 600 mg or placebo twice daily (BID) plus current failing regimen for 8 days, followed by open-label FTR 600 mg BID plus optimized background therapy (OBT). Non-Randomized (NR) subjects, with no remaining fully active ARVs, started open-label FTR 600 mg BID plus OBT on Day 1. The primary efficacy endpoint (mean change in log10 HIV-1 RNA at Day 8), Week 24 efficacy, and cumulative safety results are presented.
Results: 272 and 99 subjects were assigned to the Randomized and NR cohorts, respectively. At screening, 72% of subjects had a CD4+ T-cell count <200 cells/μl; 41% had CD4 counts <50. 80% and 96% had prior exposure to INIs and PIs, respectively. For the Randomized Cohort, the mean decline in HIV-1 RNA at Day 8 was 0.79 log10 c/ml for FTR vs. 0.17 log10 c/ml for placebo (p<0.0001); 54% achieved virologic suppression at Week 24. Overall, 91% had an adverse event (AE); most were Grade 1–2. Thirty percent (110/371) had a serious adverse event (SAE); pneumonia was most common SAE (13 subjects). Seventeen subjects died; 12/17 deaths were due to AIDS/IRIS-related events and acute infections.
Conclusion: Fostemsavir demonstrated superior efficacy relative to placebo in HTE subjects treated for 8 days with functional monotherapy. 54% of Randomized subjects receiving FTR+OBT achieved virologic suppression at Week 24, along with 36% of NR subjects (81% with FTR as the only fully active ARV). Fostemsavir-containing regimens were generally well tolerated. These results support further development of FTR as an important option for HTE patients.

	Antiviral efficacy Day 8 – Randomized cohort		
	Placebo BID (N=69)	FTR 600 mg BID (N=201[a])	Mean difference (95% CI)
HIV-1 RNA $\log_{10}$ c/ml, least squares mean change (95% CI)	−0.17 (−0.33, −0.01)	−0.79 (−0.89, −0.70)	−0.63 (−0.81, −0.44) p<0.0001

	Antiviral efficacy week 24	
	Randomized cohort (N=272)	Non-randomized cohort (N=99)
HIV-1 RNA <40 c/ml FDA Snapshot[n (%)] (95% CI)	146 (54%) (48%, 60%)	36 (36%) (28%, 46%)

- 2 subjects in the FTR arm, who had missing Day 1 HIV-1 RNA values, were not included in the primary analysis

P19

Protease inhibitor monotherapy: who is still using this in the real world?

S Subbarao, F Shiva, R Weston and N Mackie

Imperial College Healthcare NHS Trust, London, UK

Background: The use of protease-inhibitor (PI) monotherapy (PIm) is not currently recommended as routine antiretroviral therapy (ART) in BHIVA guidelines. This strategy has been used in clinical trials and also in patients where tolerability to ART, particularly NRTIs, is a concern. This study aimed to identify individuals remaining on PIm as ART maintenance and review outcomes.
Method: Individuals receiving current PIm in August 2017 were identified using a pharmacy database and a case-note review was performed. Data on baseline demographics, viral load (VL) and length of PIm were collected.
Results: 36 HIV positive individuals on PIm were identified. 7 Black African (19%), 22 Caucasian (61%) and 6 other ethnicities (17%). The baseline characteristics are in Table 1. 33 (91.6%) individuals had an undetectable viral load at time of initiation of PIm. 1 (2.7%) had low-level viraemia at time of switch but suppressed within 24 weeks. 2 were started on PIm prior to transfer of care to our centre therefore we do not have their VL at the time of initiation. At the time of review 34 (94%) individuals remained undetectable on PIm after a 5 (11, 12) years. 2 had detectable viraemia which was due to non-adherence. The median Q-risk for all individuals was 6.4 (3–14.3) although 8 had a Q-risk of >10%, 3 of whom previously had had archived dual class resistance. 28/36 (78%) had current chronic kidney disease (CKD).
Conclusions: We identified 36 patients on PIm, the majority of whom were virologically suppressed. However, a sub-group of these patients also had moderate cardiovascular risk without associated archived viral resistance and would thus benefit from ART re-evaluation. PIm seems to be a durable strategy in carefully selected patients. However, ongoing review of such individuals is important to ascertain whether a PI-sparing regimen is an option, particularly with the advent of new agents such as tenofovir alafenamide.
Table 1. Characteristics and PIm regimen, n=36

	Patients N (%)
Risk	
MSM	25 (69%)
Heterosexual	10 (28%)
PI Regimen	
Darunavir OD	32 (88%)
Darunavir BD	3 (8%)
Lopinavir BD	1 (4%)
	Median (IQR)
Age at analysis	55 (51, 59)
Years HIV diagnosis before PIm	15 (11, 20.5)
Years on previous ART regimens	11 (8.5, 15)
Years on monotherapy	5 (11, 12)

P20

Resistance analyses of bictegravir/emtricitabine/tenofovir alafenamide switch studies

G Schembri[1], K Andreatta[2], M Willkom[2], R Martin[2], S Chang[2], H Martin[2], H Graham[2], E Quirk[2] and K White[2]

[1]Manchester Royal Infirmary, Manchester, UK, [2]Gilead Sciences, Inc, Foster City, CA, USA

Background: The novel, unboosted integrase strand transfer inhibitor (INSTI) bictegravir (B) has been coformulated with the nucleos(t)ide reverse transcriptase inhibitor (NRTI) backbone emtricitabine (F)/tenofovir alafenamide (TAF). In 2 phase 3 clinical studies, suppressed HIV-1 infected adults who switched to B/F/TAF from either a boosted protease inhibitor (PI)+2 NRTIs (N=290; Study 1878) or the INSTI dolutegravir (DTG)+NRTIs abacavir (ABC)/lamivudine (3TC) (N=282; Study 1844) had low rates of virologic failure (VF; HIV-1 RNA ≥50 copies/ml by snapshot analysis) through week (W) 48, and switching was noninferior to comparator arms. Here, integrated resistance analyses are described.
Methods: Available historical plasma HIV-1 RNA genotypes and retrospective proviral DNA genotyping of baseline (BL) viral isolates were analysed. Viral isolates from patients with HIV RNA ≥200 copies/ml at confirmed VF, discontinuation, or W48 were analysed for protease (PR), reverse transcriptase (RT), and integrase (IN) genotype and phenotype.
Results: Of the 572 patients who switched to B/F/TAF, pretreatment historical genotypes and/or retrospective proviral DNA genotypes of BL viral isolates were obtained from 394 patients for PR/RT and from 158 patients for IN. Preexisting primary INSTI resistance (-R), NRTI-R, nonnucleoside RT inhibitor (NNRTI)-R, and PI-R substitutions were observed in 0.6% (1/158), 14.0% (55/394), 18.3% (72/394), and 6.3% (25/394), respectively. Pre-switch resistance to F and/or TAF was retrospectively detected at BL in 8.9% (35/394) of patients and consisted of K65N/R (n=5), M184V/I (n=30), and/or ≥3 thymidine analog mutations (TAMs) that include M41L or L210W (n=4). Overall, 1.4% (8/572) of B/F/TAF treated patients experienced VF through W48. Of the 35 patients with preexisting F/TAF resistance, 1 (2.9%) experienced VF due to nonadherence. Postbaseline resistance analyses were conducted on viral isolates from 5 patients in the B/F/TAF group and 7 patients in the comparator groups. No patients on B/F/TAF developed de novo resistance to study drugs. One patient on boosted darunavir+ABC/3TC developed a treatment-emergent L74V substitution in RT.
Conclusions: Low rates of virologic failure occurred among the 572 patients who switched to B/F/TAF, including the 35 with preexisting F/TAF resistance. Through W48 there was zero treatment-emergent resistance in B/F/TAF treated patients demonstrating the utility of B/F/TAF in HIV-1 suppressed patients.

P21

Ritonavir/cobicistat interaction with glucocorticoids: are simple preventative measures effective?

I Mallik[1], E Elliot[2], G Jagjit Singh[3], M Boffito[2] and R Jones[2]

[1]Imperial College London, London, UK, [2]Chelsea and Westminster Hospital, London, UK, [3]Ealing Hospital, London Northwest University Healthcare NHS Trust, London, UK

Background: Ritonavir (RTV) and cobicistat (COBI) are pharmacological boosters commonly used in the treatment of HIV infection: both are potent inhibitors of cytochrome P450 3A4 (CYP3A4) activity. CYP3A4 is the main enzyme in the metabolic pathway involved in the clearance of endogenous and the majority of prescribed corticosteroids, thus co-administration of RTV or COBI with exogenous steroids can lead to excessive steroid exposure. Iatrogenic Cushing's syndrome and secondary adrenal insufficiency in this context have been well described in the literature. However, no national guidelines exist to date. Local guidelines were published in our Trust in 2015. Our objective was to investigate the efficacy of these guidelines in the prevention and management of ARV/corticosteroid drug-drug interactions (DDI) in a large HIV centre.
Methods: A 12-month service evaluation was conducted prior to publication of Trust guidelines, and a subsequent audit spanning 12 months was conducted post-publication. For both periods, we retrospectively reviewed the case notes of all HIV patients who had a cortisol test requested and were on a pharmacological booster. Data was collected on ARV/corticosteroid prescription, DDI management and inter-professional communication.
Results: During the service evaluation period (01/09/2014–15/09/2015), 2946 HIV infected patients were prescribed RTV or COBI. Of these, 11 (0.4%) were found to have experienced a true steroid+booster DDI. The most common culprit steroids were fluticasone (n=4) and triamcinolone (n=4) prescribed by primary and secondary-care non-HIV clinicians. One patient had a DDI due to an over-the-counter steroid preparation. Post-guideline publication, of 2822 patients prescribed a booster during the audit period (16/09/2015–15/09/2016), only 1 (0.04%) had a confirmed DDI – this was significantly lower (p=0.0064) than in the pre-guideline period. In both study periods, there was inconsistent monitoring and investigating: short synACTHen tests were not always conducted at 9 am and monitoring of adrenal axis recovery was inadequate.
Conclusion: Significantly fewer cases of drug interaction were seen in the post-publication period. However, management remained inconsistent. This data informs the need to provide on-going education for clinicians (including GPs and particularly junior doctors) and develop standardised, easy-to-follow, and accessible guidance on the avoidance and management of steroid/ARV DDIs.

P22

Safety and efficacy of DTG+RPV in the phase III SWORD-1 and SWORD-2 studies: 48-week subgroup analysis by baseline third agent class and geographic location

C Orkin[1], M-A Khuong-Josses[2], T Lutz[3], D Baker[4], R Rubio[5], E Blair[6], L Kahl[7], K Angelis[8], M Underwood[6], B Wynne[9], R Shah[7], K Vandermeulen[10] and M Aboud[7]

[1]Barts Health NHS Trust, London, UK, [2]CHG - Hôpital Delafontaine, Saint Denis Cedex, France, [3]Infektio Research, Frankfurt, Germany, [4]East Sydney Doctors, Darlinghurst, Sydney, NSW, Australia, [5]Hospital 12 de Octubre, Madrid, Spain, [6]ViiV Healthcare, Research Triangle Park, NC, USA, [7]ViiV Healthcare, Brentford, UK, [8]GlaxoSmithKline, Uxbridge, UK, [9]ViiV Healthcare, Collegeville, PA, USA, [10]Janssen, Beerse, Belgium

Background: This analysis evaluated efficacy and safety of switching from current antiretroviral regimen (CAR) to dolutegravir (DTG)+rilpivirine (RPV) by baseline third agent class subgroups as well as geographic location of subjects.
Methods: Sword 1 and 2 were two identical, open-label, global, non-inferiority studies which evaluated efficacy and safety of switching from 3 or 4-drug CAR to DTG+RPV once daily in HIV-1-infected adults, with HIV-1 RNA<50 c/ml for ≥6 months prior to screening and no history of virologic failure. Participants were randomized 1:1 (stratified by baseline 3rd agent class; age</≥50) to switch to DTG+RPV or continue CAR through Week (wk) 48. Primary endpoint was proportion of participants with viral load<50 c/ml at

Wk48 by FDA Snapshot for ITT exposed (ITTe) population. Wk48 response rates, adverse events (AE) and lipid changes were summarized in subgroups.
Results: 1024 participants were randomized across both studies (54% NNRTI; 20% INI; 26% PI at baseline). Switching to the 2-drug regimen (2DR) of DTG+RPV was non-inferior to continuing CAR at Wk48. Wk48 efficacy rates within 93–96% for 2DR across third agent subgroups and were similar to CAR. There were more AEs and AEs leading to withdrawal in the DTG+RPV arm vs. CAR across third agent subgroups; most AEs were Grades 1–2 (Table 2) Most common AEs leading to withdrawal in 2DR were psychiatric (1%–2%), gastrointestinal (<1%–2%) and neoplasm (0%–2%). Changes from baseline to Wk48 in lipid parameters were similar overall between DTG+RPV and CAR across third agent subgroups. Analysis by country gave results consistent with overall study findings
Conclusions: Switching to a novel 2DR of DTG+RPV in virally suppressed participants was effective and well tolerated across baseline third agent subgroups and regardless of geographic location

P23

Should we be monitoring patients' liver and renal function after switching to Rezolsta/Evotaz? A multicentre service evaluation

S Kennedy[1], J Ariel[2], E Wrench[1], M Kingston[2] and S Schoeman[1]
[1]Leeds Teaching Hospitals NHS Trust, UK, [2]Manchester University NHS Foundation Trust, UK

Background: Switching to Rezolsta and Evotaz from ritonavir boosted darunavir or atazanavir was introduced as part of NHS England's 'ARV Commissioning for Value Policy' in July 2016. The main driver was improved cost effectiveness. Despite national reassurances clinicians remained concerned about cobicistat related liver and renal toxicity. The SPC recommends checking liver function within 2–4 weeks of switch. Cobicistat has also been shown to decrease eGFR (~10 ml/min). As a result our clinic policy at both sites was, therefore, for patients to return for liver and renal function testing 2–4 weeks post switch. We set out to evaluate the clinical utility of this practice.
Methods: Patients switched between July 2016 and July 2017 were identified from pharmacy records at two large teaching hospital trusts and the case notes retrospectively reviewed. Data was collected on demographics, antiretroviral treatment, liver and renal function.
Results: Records from a total of 242 patients were reviewed. Of these, 180/242 (74%) and 62/242 (26%) had switched to Rezolsta and Evotaz respectively. The cohort comprised 63% men and 37% women with median age 44 years (range 21–81). The majority were African (45%) or white British (45%) and on a Truvada (63%) or Kivexa (17%) backbone. ALT and eGFR following switch were available for 212/242 and 214/242 respectively. Median change in ALT was +2 (range −109 to +97). Median change in eGFR was −1.5 ml/min (range −26 to +19). In total 22 (0.09%) patients discontinued Rezolsta/Evotaz. Reasons for discontinuation were ALT rise (1/22), renal concerns (9/22), side effects (5/22), drug interactions (4/22), non-standard regime (1/22), low level viraemia (1/22), tablet size (1/22). Of these 22, 12 (55%) returned to their previous medication and the others commenced a new antiretroviral regimen. Of the 9/22 who discontinued because of renal dysfunction, 6 cases were retrospectively assessed as unrelated to switching (eGFR had improved on the day of switch or there was no/little improvement in eGFR following discontinuation). The patient with otherwise unexplained ALT rise, had normalisation of ALT on discontinuation of cobicistat.
Conclusion: Our results demonstrate that it is safe for healthcare providers not to routinely monitor liver and renal function post switch to Rezolsta or Evotaz. In view of this both clinics have stopped additional monitoring of liver and renal function post switch. This will have significant cost saving implications.

P24

Starting ART: are we following guidelines?

K Ring, S Fidler, R Weston and N Mackie
Imperial College NHS Trust, London, UK

Introduction: BHIVA guidelines suggest that all HIV-positive patients start antiretroviral therapy immediately regardless of CD4 count. In clinical practice, choice of first-line therapy is guided by individual patient factors, local commissioning policies and national guidelines. An audit of first of first-line ART regimens was performed in ART-naïve individuals who were commenced on therapy over a 12-month period.
Methods: The audit was a retrospective case note review of all ART-naïve patients attending one urban centre who commenced therapy from 1/11/2016 to 31/10/2017. Using the pharmacy database, information was collected on demographics, risk behaviour, CD4 count and VL at time of starting ART, co-morbidities, HLA-B5701 status, resistance testing and ART regimen.
Results: 106 patients were identified aged from 19 to 83 (mean=39). The majority were male (84/106, 79%). 66/106 (62%) were MSM and 40/106 (38%) were heterosexual. The median CD4 count at ART start was 418 cells/μl (IQR 267–593). Median VL was 89,942 copies/ml; 25 patients had a VL>100,000 copies/ml. 9/106 (8.4%) had evidence of DR-mutations at baseline (1 NRTI, 6 NNRTI, 1 dual class, 1 PI). HLA-B5701 testing was available on 90/106 (85%) with only 1/90 (1.1%) positive. 1 patient had Hep B co-infection and 1 had osteoporosis. 14 patients had a Q-risk >10%. 4 patients had an eGFR <60. The median time interval between HIV diagnosis and ART start was 2 months (IQR 1–47). Patients with an interval >3 months were generally older (mean 41.3 vs. 37.6), had higher CD4 counts (median 520 vs. 377) and were more likely to have mental health issues (45% vs. 17%). 100/106 (94%) ART regimens adhered to BHIVA guidelines on first line therapies. 61/106 (58%) patients were taking FTC with TDF or TAF, 44/106 (42%) were on ABC/3TC. With regards to 3rd agents, 78/106 (74%) received INSTIs, 14/106 (13%) received PIs and 15/106 (14%) received NNRTIs. Of the 6 patients prescribed non-standard regimes, 3 individuals had 4-drug ART in acute infection with high VL, 2 pregnant women received Trizivir and one dialysis patient received 3TC/DTG dual therapy.
Conclusion: The vast majority of patients were started on ART regimes compliant with BHIVA guidelines. Significantly less (36/106, 34%) were in line with London guidelines. This often related to patient preference and concerns over side-effects. A significant number of patients with co-morbidities (e.g. mental health) required evaluation prior to initiation.

P25

Switch to bictegravir/emtricitabine/tenofovir alafenamide from dolutegravir and abacavir/lamivudine OVERRIDE

A Ustianowski[1], J-M Molina[2], D Ward[3], HJ Stellbrink[4], D Podzamczer[5], C Brinson[6], J Custodio[7], H Liu[7], K Andreatte[7], H Martin[7] and E Quirk[7]
[1]Pennine Acute Hospitals NHS Trust, Manchester, UK, [2]Hopital Saint Louis, Paris, France, [3]Dupont Circle Physicians, Washington, DC, USA, [4]ICH Study Center, Hamburg, Germany, [5]Hospital Universitari de Bellvitge, Barcelona, Spain, [6]Central Texas Clinical Research, Austin, TX, USA, [7]Gilead Sciences, Inc, Foster City, CA, USA

Background: Bictegravir, a novel, unboosted INSTI with high genetic barrier and low potential for drug interactions, has been coformulated with the NRTI backbone emtricitabine and tenofovir alafenamide (B/F/TAF) as a fixed-dose combination (FDC). We report the Week (W) 48 efficacy and safety Phase 3 results of switching to B/F/TAF from dolutegravir plus abacavir/lamivudine (DTG/ABC/3TC).
Methods: HIV-infected adults virologically suppressed on DTG/ABC/3TC or DTG plus ABC/3TC (DTG/ABC/3TC group) were randomised 1:1 to switch to B/F/TAF or continue DTG/ABC/3TC FDC through W48 in a double-blinded fashion. Primary endpoint was proportion with HIV-1 RNA ≥50 copies/ml (c/ml) at W48 (FDA snapshot). Noninferiority assessed through 95% confidence intervals (CI) using a margin of 4%. Secondary endpoints were proportion with HIV RNA <50 c/ml and safety [adverse events (AEs), laboratory results, bone mineral density (BMD), and renal biomarkers].
Results: 563 participants were randomised and treated (B/F/TAF n=282, DTG/ABC/3TC n=281): 11% women, 22% Black, median age 46 years (range 20–71). At W48, 1.1% switching to B/F/TAF and 0.4% continuing DTG/ABC/3TC had HIV-1 RNA ≥50c/ml (difference 0.7%; 95%CI −1.0% to 2.8%, p=0.62), demonstrating noninferiority. At W48, proportion with HIV-1 RNA <50 c/ml was 93.6% and 95.0% respectively. No participant developed resistance to study drug. Few participants (6 [2%] B/F/TAF, 2 [1%] DTG/ABC/3TC) had AEs leading to study drug discontinuation. Changes in BMD, renal and lipid parameters were similar between groups (Table), with the exception of a small decrease in triglycerides in the B/F/TAF group.
Conclusion: Switching to B/F/TAF was noninferior to continuing DTG/ABC/3TC with low rates of W48 virologic failure, and no resistance. B/F/TAF was

well tolerated, with a similar bone and urine protein safety profile to DTG/ABC/3TC.

Change from baseline at W48	B/F/TAF (n=282)	DTG/ABC/3TC (n=281)	p Value
Renal biomarkers, median			
Urine (u) Albumin: Creatinine ratio (CR)	+14%	+9%	0.74
u Retinol binding protein: CR	+20%	+29%	0.31
u Beta-2-Microglobulin: CR	+21%	+17%	0.53
eGFR (ml/min), median	+1.0	−1.8	<0.001
Mean % change BMD: Spine/Hip	+0.69/+0.16	+0.42/+0.30	0.33/0.46*
Lipid parameters, median			
Total cholesterol (TC (mmol/l)	0	+0.05	0.77
LDL-C (mmol/l)	+0.03	+0.05	0.42
HDL-C (mmol/l)	−0.03	0	0.13
TC:HDL ratio	0.0	0.0	0.56
Triglycerides (mmol/l)	−0.06	+0.03	0.028

*ANOVA model with treatment as fixed effect. All other p-values use 2-sided Wilcoxon rand sum test to compare treatment groups.

P26

Switching to bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) in women

C Kityo[1], E Koenig[2], A Avihingsanon[3], K Supparatpinyo[4], E DeJesus[5], H Wang[6], E Quirk[6], H Martin[6], C Elliott[7] and T Makadzange[6]

[1]Joint Clinical Research Centre, Kampala, Uganda, [2]Zona Universitaria/IDEV, Santo Domingo, Dominican Republic, [3]HIV Netherlands Australia Thailand Research Collaboration, The Thai Red Cross AIDS Research Centre, Bangkok, Thailand, [4]Chiang Mai University, Chiang Mai, Thailand, [5]Orlando Immunology Center, Orlando, FL, USA, [6]Gilead Sciences Inc, Foster City, CA, USA, [7]Gilead Sciences Ltd, London, UK

Background: The unboosted integrase inhibitor containing single-tablet regimen (STR) bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) has shown efficacy and safety in HIV-1 infected patients. Bictegravir is a novel, unboosted INSTI that has been coformulated with F/TAF in an STR that has shown high rates of suppression with no resistance in phase 3 studies of treatment naïve patients. We now report Week 24 (W24) safety and efficacy of switching to B/F/TAF vs. staying on baseline regimen (SBR) [elvitegravir (E)/cobicistat (C)/F/TAF, E/C/F/tenofovir disoproxil fumarate (TDF) or atazanavir (ATV)+ritonavir (RTV)+F/TDF] in an all-women, international multi-centre, randomised, open-label, phase 3 trial.
Methods: HIV-1 infected, virologically suppressed women on a protease inhibitor or boosted elvitegravir-containing regimen were randomised (1:1) to switch to B/F/TAF or stay on baseline regimen (SBR). The primary efficacy endpoint was the proportion of women with HIV-1 RNA >50 copies (c)/ml at W48 with 4% noninferiority margin (FDA snapshot). A secondary efficacy endpoint of HIV-1 RNA <50 copies/ml at Week 24 is reported here. Other secondary endpoints include safety (adverse events (AEs), laboratory abnormalities). This interim W24 efficacy and safety analysis was pre-specified.
Results: We randomised and treated 470 women (234 B/F/TAF, 236 SBR (E/C/F/TAF n=125; E/C/F/TDF n=98; ATV+RTV+FTC/TDF n=13). Demographic and baseline characteristics were balanced; overall 37% black, 28.3% white, 21.7% Asian, median age was 39 years and CD4 count was 686 cells/μl. At W24 98.7% in the B/F/TAF group vs. 99.2% in the SBR group achieved HIV-1 RNA <50 c/ml (difference −0.4% (95%CI: 3.0% to 1.9%, p=0.68). Two participants, one in each group, had resistance testing; neither developed resistance to any study drug. No participant discontinued treatment due to an AE; there were no differences between groups in grade 3 or 4 treatment-emergent AEs (3.8% B/F/TAF, 5.5% SBR group). Grade 3 or 4 laboratory abnormalities occurred in 17% of participants on B/F/TAF and 18% on SBR.
Conclusion: At week 24 women who switched to B/F/TAF maintained high levels of virologic suppression with comparable efficacy to those who remained on a baseline regimen. B/F/TAF was safe and well tolerated. This analysis supports the efficacy and safety of B/F/TAF in women observed in other B/F/TAF phase 2 and 3 studies.

P27

Tenofovir alafenamide versus tenofovir disoproxil fumarate: is there a true difference in efficacy and safety?

A Hill[1], S Hughes[2] and A Pozniak[3]

[1]Liverpool University, UK, [2]Imperial College London, London, UK, [3]Chelsea and Westminster Hospital, London, UK

Background: Ritonavir (RTV) and cobicistat (COBI) significantly increase plasma AUC concentrations of tenofovir disoproxil fumarate (TDF), by 25–37%. Higher plasma tenofovir concentrations are associated with higher risks of renal and bone adverse events. When combined with RTV or COBI, the TAF dose is lowered from 25 to 10 mg daily but the TDF dose is maintained at 300 mg daily. Most recently published randomised trials of TAF vs. TDF included RTV or COBI (e.g. with elivitegravir/COBI or darunavir/RTV). However, the most common use of TDF worldwide is unboosted, combined with 3TC and either efavirenz or dolutegravir.
Methods: A PUBMED/Embase search identified 11 randomised head-to-head trials (8110 patients) of TDF vs. TAF. Meta-analysis of absolute risks with inverse-variance weighting compared TDF vs. TAF, to show whether their relative efficacy and safety profiles were different when used boosted with RTV or COBI, vs. when unboosted.
Results: In the clinical trials including RTV or COBI, TDF treated patients showed borderline lower HIV RNA suppression rates <50 copies/ml (p=0.06), higher risks of bone fractures (p=0.05), lower bone mineral density (p<0.001) and higher rates of discontinuation for bone (p-0.03) or renal (p=0.002) adverse events (Table). By contrast, there were no significant differences in HIV RNA suppression rates or clinical safety endpoints (except bone mineral density) between unboosted TDF and TAF. Reductions in eGFR and bone mineral density (hip and spine) were significantly larger for boosted vs. unboosted TDF (p<0.01).
Conclusions: In this meta-analysis of 8110 patients, use of TDF boosted with RTV or COBI, was associated with higher risks of bone and renal adverse events, and lower HIV RNA suppression rates, compared with TAF. By contrast, there were no differences between TDF and TAF for efficacy and marginal differences in safety when unboosted. TDF dose should be lowered to 200 mg when combined with RTV or COBI, to adjust for their boosting effects. The health economic value of TAF vs. low-cost generic TDF may be limited when unboosted.

Efficacy/safety	Boosted TDF vs. TAF	Unboosted TDF vs. TAF
HIV RNA<50 c/ml	2% lower (p=0.06)	0% (p=n.s.)
Grade 1–4 AEs	19% higher (p=n.s.)	3% higher (p=n.s.)
Grade 3–4 AEs	4% higher (p=n.s.)	8% lower (p=n.s.)
Bone fractures	1% higher (p=0.05)	0% (p=n.s.)
D/C for bone AEs	1% higher (p=0.03)	0% (p=n.s.)
D/C for renal AEs	1% higher (p=0.002)	0% (p=n.s.)

P28

Tolerability, efficacy and cost savings associated with switching ritonavir to cobicistat

S Pires, S Cavilla and D Churchill

Lawson Unit, Brighton and Sussex University Hospitals NHS Trust, UK

Introduction: The Improving Values programme aims to move eligible patients to more cost-effective antiretroviral regimens, without compromising efficacy. As part of this programme, eligible patients may switch from ritonavir-boosted darunavir (DRV/r) and atazanavir (ATV/r) to their cobicistat-boosted equivalents (DRV/c and ATV/c). This reduces both pill burden and cost.
Method: Patients who had switched from DRV/r and ATV/r to DRV/c and ATV/c were identified from the clinic database. In addition, case notes were reviewed if patients later discontinued DRV/c and ATV/c. Creatinine was recorded at baseline and post switch.
Results: 173 patients were switched from DRV/r to DRV/c. Of these, 15 patients discontinued DRV/c (8.6%). 7 patients went back to their previous

DRV/r regimen because of tablet size (n=3), toxicity (n=3, stomach cramps, headaches, foot pain), patient choice (n=1).
8 patients switched to a different antiretroviral regimen due to diarrhoea (n=5), cardiovascular risk (n=2), pill burden and raised creatinine (n=1).
17 patients were switched from ATV/r to ATV/c. Of these 4 discontinued ATV/c (23.5%). 2 patients went back to their previous ATV/r regimen because of dizziness (n=1), acne and alopecia (n=1). 2 patients were switched to a different antiretroviral regimen due to pill burden and jaundice (n=1), simplification (n=1).
In the DRV/c group the median baseline creatinine was 86 μmol/l (range 55–146), and increased to 94 μmol/l (range 62–202) p=0.05. The patient with the creatinine of 202 discontinued Truvada and continued with lamivudine.
In the ATV/c patient group the median baseline creatinine was 83 μmol/l (range 61–113), and increased to 96 μmol/l (range 87–115) p=0.10.
Discussion: The majority of patients switched to DRV/c tolerated switching, with a small percentage switching back to their previous DRV/r combination or switching to a different antiretroviral class.
Of the patients switching to ATV/c a higher percentage did not tolerate the switch, though the numbers collected were smaller.
As expected, creatinine increased in both groups, though this was clinically significant in only one patient.
We estimate that by the end of 2017, £25,000 was saved by switching patients on to a cobicistat based regimen. There have been no virological failures seen as a result of switching patients onto cobicistat.

P29

Ultra low HIV viraemia: is it associated with normalisation of the CD4:CD8 ratio?

S Allan[1], J Cassell[1], S Bopitiya[1], B Kumari[1] and J Timms[2]
[1]Coventry and Warwickshire Partnership NHS Trust, Coventry, UK, [2]University Hospital Coventry and Warwickshire, Coventry, UK

Background: Normalisation of CD4:CD8 ratio is associated with better clinical outcomes and a value of >1 is considered normal. Its association with ultra-low viraemia has not been studied.Ultra-low viraemia® is defined as patients on HAART where the viral load is detectable but below the level of quantification (<40 copies/ml). We hypothesise that complete viral suppression may play a pivotal role in the normalisation of CD4:CD8 ratio.
Methods: 632 patients who had CD4 bloods done in our department between 01/01/16 and 31/12/16 were included. Patients not on HAART or On HAART for <48 weeks and with a VL>40 were excluded as our aim of the research to look at ultra-low viraemia. Demographic details and HIV viral load, (the presence or absence of ultra-low viraemia) and CD4 cell count were collected. If the patient had more than one CD4 within the 12 month period the mean CD4: CD8 ratio was calculated.
Results: Mean age was 44 year, 310 males, 322 females, 103 MSM. 148 (23.4%) patients had ratio of >1, 288 (45.6%) had a ratio of 0.99–0.5 and 196 (31%) had a ratio of <0.5. This study included only the patients with CD4:CD8 ratio of >1 and <0.5.

	CD4: CD8 Ratio >1	CD4: CD8 Ratio <0.5	p
	148 (23.4%)	196 (31.0%)	
Number on HAART for >48 weeks	137/148 (92.6%)	134/196 (68.4%)	=<0.0001
Viral Load<40/ml	127/137 (92.7%)	122/134 (91.0%)	0.617
Viral Load<40 copies/ml RNA detected	69/127 (54.3%)	86/134 (70.5%)	
Viral Load<40 copies/ml RNA not detected	58/127 (45.6%)	36/134 (29.5%)	0.009
Mean Rx length (months) V/L<40 copies/ml	56	51	0.609
V/L<40, RNA Detected (months)	51	52	
VL <40 no RNA detected (months)	63	49	0.323

Conclusion: Our study shows that the complete viral suppression (VL <40 copies/ml, No RNA detected) is significantly correlated with the normalisation of CD4:CD8 ratio in patient on HAART over 48 weeks, although causality is not established and requires further investigation. Normalisation of CD4:CD8 ratio is also associated with HAART for over 48 weeks and female sex.

P30

Virological and financial impact of switching HIV-infected patients to generic components

K Manavi
University of Birmingham, Birmingham, UK

Background: With the availability of generic Efavirenz in 2016, NHS England issued a directive to all HIV services to switch their patients from use of atripla to generic Efavirenz with Truvada or Kivexa where appropriate. There have been concerns about the possible impact of switching from single tablet regimes (STR) on patients' adherence and maintaining suppression of plasma viral replication. The aim of the present project was to investigate the proportion of patients with undetectable plasma viral load counts (VL) immediately before and after six months of switching from atripla to regimes with generic components in a large centre.
Methods: In the study department of HIV medicine, prescription of Atripla was ceased on 2nd January 2017. The Trust stopped ordering further supplies of Atripla in January 2017. Patients were informed of the new policy at their routine clinic attendance. They were assured that their new two-pill preparation contained the same antiretroviral regime as Atripla. Patients were switched to Efavirenz and Truvada in the first instance. Treatment options of patients who described side effects with the new preparation were reviewed in the Departmental MDT meeting. In the present analysis, patients who switched from Atripla for equal to or greater than 6 months were included. Patients participating in ongoing research trials requiring maintenance on Atripla were exempted from switching to generic alternatives. The financial analysis was carried out with the BNF price list for medications.
Results: A total of 467 patients were treated with Atripla in 2016. By the time of the present analysis 17 had defaulted from clinic and five patients continued on Atripla because of their participation in relevant research projects. All the remaining 445 patients switched from Atripla for greater than six months. This comprised 284 men (63%). There were 167 MSM, 108 heterosexual men, and 164 heterosexual women. Ten patients were co-infected with chronic hepatitis B. At the time of the switch from Atripla, 439 (97%) patients had plasma VL of <40 copies/ml. Among the 445 patients who switched from Atripla, 436 (98%) had plasma VL of <40 copies/ml after 6 months. Even after excluding the 15 patients who were switched to other STRs, 420/430 (97%) had plasma VL <40 copies/ml 6 months after the switch from Atripla. The annual cost of Atripla in the study cohort was £2,877,498. The annual cost of drugs to which patients were changed would be £948,042. The Department has therefore made an annual saving of £1,929,456 in this cohort. This equals an average annual saving of £4336.00 per patient who switched from Atripla.
Conclusion: Switching from a single tablet regime of Atripla to multi-tablet regimes did not compromise HIV VL suppression six months after the switch. Significant financial savings were made by the use of generic medications.

P31

Week-24 safety of fostemsavir in heavily treatment-experienced participants with HIV-1 (Study 205888, formerly AI438-047)

M Kozal[1], J Aberg[2], G Pialoux[3], P Cahn[4], M Thompson[5], J-M Molina[6], B Grinsztejn[7], R Diaz[8], A Lazzarin[9], M Gummel[10], A Pierce[11], P Ackerman[12], C Llamoso[12] and M Lataillade[12]
[1]Yale University School of Medicine, New Haven, CT, USA, [2]Icahn School of Medicine at Mount Sinai, New York, NY, USA, [3]Hôpital Tenon, Paris, France, [4]Fundación Huesped, Buenos Aires, Argentina, [5]AIDS Research Consortium of Atlanta, Atlanta, GA, USA, [6]Hôpital Saint Louis, Paris, France, [7]Instituto de Pesquisa Clínica Evandro Chagas FIOCRUZ, Rio De Janeiro, Brazil, [8]Federal University of São Paulo, São Paulo, Brazil, [9]Ospedale San Raffaele, Milan, Italy, [10]GlaxoSmithKline, Upper Providence, PA, USA, [11]ViiV Healthcare, Research Triangle Park, NC, USA, [12]ViiV Healthcare, Branford, CT, USA

Background: BRIGHTE is a Phase 3 study evaluating the safety and efficacy of fostemsavir (FTR), an investigational attachment inhibitor, in heavily

treatment-experienced (HTE) patients infected with multi-drug resistant HIV-1.

Methods: All selected participants were HTE, failing their current regimen and unable to form a viable regimen with remaining fully active antiretrovirals (ARVs). Participants with 1-2 remaining ARV classes (Randomized Cohort) were randomized 3:1 to blinded FTR 600 mg or placebo twice daily+current failing regimen for 8 days, followed by open-label FTR+optimized background therapy (OBT). Participants with 0 remaining fully active ARVs (Non-Randomized [NR] Cohort) started open-label FTR+OBT on Day 1. Here we present the Week 24 safety analysis. All ongoing participants but one had completed at least 48 weeks prior to the data cut-off for this analysis.

Results: 272 and 99 participants were assigned to the Randomized and NR Cohorts, respectively. Overall, 70% of participants had HIV-1 infection >15 years. Median baseline CD4+ T-cell count was 80 cells/μl (41 cells/μl, NR Cohort); 75% (278/371) had CD4 counts <200 cells/μl. 91% (338/371) of participants experienced ≥1 adverse event (AE); most experienced AEs of low intensity (68% Grade 1-2). Most AEs resolved without interruption of study drug. The most common G2-4 treatment-related AEs were nausea (4%), headache (2%) and diarrhea (2%). 6% (21/371) discontinued due to an AE, mostly due to complications of advanced AIDS. 30% (112/371) had a serious AE (SAE); few SAEs were treatment-related (2%) or led to discontinuation (4l%). Most participants who experienced a SAE had a baseline CD4 count <50 cells/μl. NR participants had higher rates of SAEs (37% vs. 27%) and G3-4 AEs (41% vs. 24%) vs. Randomized participants. Seventeen participants died; their median baseline CD4 count was <5 cells/μl. 12/17 deaths were AIDS-related events. 1/17 death was considered treatment-related (IRIS, recurrent atypical mycobacterial infection). Rates of G3-4 lab abnormalities were low.

Conclusions: FTR-containing regimens were generally well tolerated in this HTE study population with low baseline CD4 counts and complex comorbidities. Few SAEs and drug-related AEs led to study discontinuation. The prevalence of significant safety events is consistent with the baseline advanced disease of HTE participants. Participants with baseline CD4 count <50 cells/μl had a disproportionate number of SAEs, G3-4 AEs and Deaths.

P32

Week-48 results of AMBER: phase 3, randomised, double-blind trial in antiretroviral treatment (ART)-naïve HIV-1-infected adults to evaluate the efficacy and safety of the once-daily, single-tablet regimen (STR) of darunavir/cobicistat/emtricitabine/tenofovir alafenamide (D/C/F/TAF) versus darunavir/cobicistat (DRV/c) plus emtricitabine/tenofovir disoproxil fumarate (FTC/TDF)

J Gallant[1], C Orkin[2], J-M Molina[3], E Negredo[4], A Antinori[5], A Mills[6], J Eron[7], J Reynes[8], E van Landuyt[9], V Hufkens[9], J Jezorwski[9] and M Opsomer[9]

[1]Southwest CARE Centre, Santa Fe, NM, USA, [2]Barts NHS Trust, London, UK, [3]St Louis Hospital, Paris, France, [4]Germans Trias i Pujol University Hospital, Badalona, Spain, [5]National Institute for Infectious Diseases, Rome, Italy, [6]Southern California Men's Medical Group, Los Angeles, CA, USA, [7]University of North Carolina, Chapel Hill, NC, USA, [8]Montpelier University Hospital, Montpelier, France, [9]Janssen Pharmaceuticals NV, Beerse, Belgium

Objectives: AMBER (NCT02431247) is evaluating the efficacy and safety of D/C/F/TAF 800/150/200/10 mg vs. control (DRV/c+FTC/TDF) in ART-naïve, HIV-1-infected adults. We present Week 48 primary results.

Methods: AMBER is a Phase 3, randomised, active-controlled, double-blind, international, multicentre, parallel-group, non-inferiority trial. ART-naïve, HIV-1-infected adults were randomised (1:1) to D/C/F/TAF or control. The primary endpoint was non-inferiority of D/C/F/TAF vs. control regarding percentage patients with VL<50 c/ml by FDA snapshot analysis at Week 48 (10% margin).

Results: 725 patients (362 D/C/F/TAF; 363 control) were randomised and treated: median age 34.0 years, 12% women, 83% white, median $\log_{10}$ VL 4.52 c/ml, median CD4+ count 453 cells/mm^3, 7% CD4+ count <200 cells/mm^3 and 18% VL ≥100,000 c/ml. At Week 48, virologic response rate (FDA-Snapshot) was non-inferior for D/C/F/TAF (91.4%) vs. control (88.4%) (Δ2.7%; 95%CI: −1.6%; 7.1%; p<0.001) (per protocol 94.0% vs. 92.2%; Δ1.5%; 95% CI: −2.3%; 5.2%; p<0.001). VF rates (VL ≥50 c/ml; FDA-Snapshot) were low: 4.4% (16/362) D/C/F/TAF vs. 3.3% (12/363) control. Median (range) increases from baseline in CD4+ count (NC=F) were 171.0 (−778; 902) vs. 158.0 (−674;886) cells/mm^3. No treatment-emergent mutations related to DRV or TAF/TDF resistance were observed. Only one patient (D/C/F/TAF) developed M184I/V conferring resistance to FTC.

Grade 3-4 adverse events (AEs) (5.2% vs. 6.1%), serious AEs (4.7% vs. 5.8%), and AE-related discontinuations (1.9% vs. 4.4%) were low, with no deaths. D/C/F/TAF provided favourable renal (preservation of GFR and less tubular proteinuria) and bone safety vs. control. TC, LDL-C and triglycerides slightly favoured control vs. D/C/F/TAF, with no clinically-significant difference in TC/HDL-C ratio between arms.

Conclusions: D/C/F/TAF was non-inferior to DRV/c+FTC/TDF at Week 48 with a high virologic response rate (91.4%). D/C/F/TAF had better bone and renal safety parameters, with few AEs and a similar TC/HDL-C ratio. D/C/F/TAF maintains the high genetic barrier to resistance of darunavir with the safety advantages of TAF for ART-naïve, HIV-1-infected patients.

P33

Week 48 results of EMERALD: a Phase 3, randomised, non-inferiority study evaluating the efficacy and safety of switching from boosted-protease inhibitors (bPI) plus emtricitabine (FTC)/tenofovir disoproxil fumarate (TDF) regimens to the once daily (QD), single-tablet regimen (STR) of darunavir/cobicistat/emtricitabine/tenofovir alafenamide (D/C/F/TAF) in virologically suppressed, HIV-1-infected adults

C Orkin[1], J-M Molina[2], J Gallant[3], E Negredo[4], J Gathe[5], J Eron[6], E van Landuyt[7], E Lathouwers[7], V Hufkens[7], R Petrovic[7] and M Opsomer[7]

[1]Barts NHS Trust, Whitechapel, UK, [2]St Louis Hospital, Paris, France, [3]Southwest CARE Centre, Santa Fe, NM, USA, [4]Germans Trias i Pujol University Hospital, Badalona, Spain, [5]Therapeutic Concepts, Houston, TX, USA, [6]University of North Carolina, Chapel Hill, NC, USA, [7]Janssen Pharmaceutica NV, Beerse, Belgium

Objectives: EMERALD is evaluating the efficacy and safety of switching from bPI+FTC/TDF regimens (control) to D/C/F/TAF 800/150/200/10 mg in virologically suppressed, HIV-1-infected adults. We present wk 48 primary results.

Methods: EMERALD (NCT02269917) is a randomized, active-controlled, open-label, international, multicentre, parallel-group, non-inferiority trial. Virologically suppressed [viral load (VL)<50 c/ml for ≥2 months], HIV-1-infected adults were randomized (2:1) to switch to D/C/F/TAF or continue control. The FDA-stipulated primary endpoint was non-inferiority of D/C/F/TAF vs. control regarding % virologic rebound (confirmed VL≥50 c/ml or premature discontinuations with last VL≥50 c/ml) cumulative through wk 48 (4% margin).

Results: 1141 patients were randomized and treated (N=763 D/C/F/TAF; N=378 control); median age 46; 18% women; 76% white; 58% on >2 previous ARVs (prior to screening regimen); 15% with previous non DRV virologic failure (VF).

Virologic rebound through wk 48 was non-inferior for D/C/F/TAF (2.5%; n=19) vs. control (2.1%; n=8) (Δ0.4%, 95%CI: −1.5%; 2.2%; p<0.001). Most rebounders (12/19 [63%] vs. 4/8 [50%]) re-suppressed by wk 48 without change in therapy.

Wk 48 virologic suppression rates (VL<50 c/ml; FDA Snapshot) were 94.9% vs. 93.7% (Δ1.2%, 95%CI: −1.7%; 4.1%) and VF rates (VL≥50 c/ml; Snapshot) were 0.8% vs. 0.5% (Δ0.3%, 95%CI: −0.7%; 1.2%), with no discontinuations for VF. No resistance-associated mutations related to any study drug were observed.

Adverse events (AEs) were similar between arms: AE-related discontinuations (1.4% vs. 1.3%); grade 3-4 AEs (6.8% vs. 8.2%); serious AEs (4.6% vs. 4.8%); and no deaths. Renal and bone parameters favoured D/C/F/TAF vs. control. TC and LDL-C slightly favoured control vs. D/C/F/TAF, with no clinically significant difference in TC/HDL-C ratio between arms.

Conclusions: Percentage of virologic rebound after switching to D/C/F/TAF was non-inferior to control cumulative through wk 48, with high suppression rates (94.9%), no resistance development, better bone and renal safety parameters and similar TC/HDL-C ratio. D/C/F/TAF maintains the high genetic barrier to resistance of darunavir with the safety advantages of TAF, even in patients with a history of non DRV VF.

P34

Why do people switch away from cobicistat-boosted protease inhibitors?

L Byrne, S Kabagambe, F Awosusi and L Sarner
Barts Health NHS Trust, London, UK

Background: As part of the medicines optimisation CQUIN, NHS Trusts have been tasked with switching patients to generics/best value treatment including switching from ritonavir-boosted protease inhibitors (PI/r) to cobicistat-boosted PI therapy (PI/c). We aimed to examine how many patients started on PI/c switched to a different third agent/booster, and reasons why.
Methods: We interrogated our pharmacy database for patients who had ever been prescribed PI/c, and those with a subsequent prescription for a different third agent/booster. We confirmed switches off PI/c via the electronic patient record, with additional data for patients who switched. Lower than expected denominators indicate missing data.
Results: 801 people had ever been prescribed PI/c, between April 2016 and Dec 2017. 76% were prescribed darunavir/c (608/801) and 24% atazanavir/c (193/801). 59% were male (472/796); 46% were Black African (345/752); median age 46 years. 10% of people prescribed PI/c switched to another third agent or booster (81/801). 11% of people who switched were naïve to ART when PI/c was prescribed (9/81). Third agents prior to start of PI/c in experienced patients who switched were: 72% darunavir/r (51/71); 24% atazanavir/r (17/71); 4% other (3/71). People who switched were more likely to be Black African: 54% vs. 45% of people who did not switch (p=0.04). There was no difference in switch rate with gender, median age, or between darunavir/c & atazanavir/c. Indication for switching off PI/c was intolerance in 44% (35/79); 15% pill size (12/79); 9% treatment failure/resistance (7/79); 9% renal function (7/79); 4% drug interaction (3/79); 4% to improve CNS penetration (3/79); 3% pregnancy/conception (2/79); 3% pill burden (2/79); and 10% other (8/79). The most common adverse events in people switching due to intolerance were: 43% gastrointestinal upset (15/35); 17% sleep disturbance/vivid dreams (6/35); 11% fatigue (4/35); 11% rash (4/35); 9% mood disturbance (3/35); 9% weight gain (3/35) and 9% leg pain (3/35). 77% of experienced patients who switched off PI/c reverted to their original PI/r regimen (55/71); 48% of these patients switched back due to intolerance (26/54); 19% pill size (10/54) and 33% another reason (18/54).
Conclusion: We found a 10% switch rate in 801 patients prescribed PI/c, with the majority of experienced patients who switched going back to their previous PI/r. Clinicians should be cautious that a 'routine' switch of PI formulation may be destabilising.

Bacterial sexually transmitted infections

P35

A case of gonococcal tysonitis in a heterosexual man

H Bradshaw and R White
Singleton Hospital, Swansea, UK

Case report: A heterosexual male patient attended our walk-in sexual health clinic with a history of dysuria and swelling behind the glans of the penis. He had a regular female partner for the past 10 years however he had recently found out that she had been having sexual intercourse with another female. On examination he had bilateral swelling of the Tyson's glands which was painful to palpate. The patient found it too painful to try to express anything from the swelling. Urethral microscopy showed intracellular diplococci and the patient was treated for gonococcal tysonitis with ceftriaxone 500 mg IM and azithromycin 1 g PO. The patient improved and his symptoms resolved. Infection of the Tyson's gland is not a common complication of *Neisseria Gonorrhoea*.
Discussion: Tyson's glands are modified sebaceous glands without hair and lined with columnar epithelium located either side of the frenum. The glands produce smegma. If infected with *Neisseria Gonorrhoea* the glands are unilaterally or bilaterally swollen and tender. With moderate pressure pus may be expressed from ducts opening on either side of the frenum. If the swelling does not respond to antibiotics then the glands will need incision and drainage followed by a second course of antibiotics.

P36

A review of the rapid referrals for allergy investigation in patients with syphilis and self-reported penicillin allergy

J Leighton, T Garcez, A Sukthankar, J Edmonds and M Kingston
Manchester University NHS Foundation Trust, UK

Background: Since 2012 syphilis diagnoses in England have increased by 97%. Untreated, syphilis can lead to acute and long-term neuro and cardiovascular complications. First line treatment is with penicillin; however, allergy is self-reported in 10% of people. It's estimated that <10% of these are allergic. Referral for desensitisation in patients with syphilis and reported penicillin allergy is recommended in the BASHH guidelines. We have devised a rapid referral pathway between our integrated sexual health (ISH) and Immunology service to allow for rapid assessment of these patients and prompt administration of first line treatment. We present a series of patients who were seen in the Immunology clinic following referral from the ISH clinic with a diagnosis of syphilis and self-reported penicillin allergy.
Methods: A retrospective review of six identified cases was conducted. Data regarding diagnosis, allergy testing outcomes and subsequent treatment was collected.
Results: Of six cases, five had active syphilis at the time of referral. One (treated twice previously with doxycycline) was referred because of the high risk of reinfection. Two patients had ophthalmic syphilis with RPR 1:128, one had secondary syphilis (RPR 1:128), one had late latent (RPR negative) and due to a history of memory problems one needed treatment for neurosyphilis (RPR negative). Three (including both with ophthalmic syphilis) were seen in the immunology department within a week of referral, one was seen on the same day. Whilst awaiting allergy testing two patients received alternative treatment with doxycycline and azithromycin respectively. Suspected penicillin allergy was based on a history of rash in four patients, facial swelling in one and one had had a positive skin test (performed abroad). Patients underwent a combination of skin, blood and graded penicillin challenge tests, all tests performed so far have been negative for allergy. Of those referred with active infection (5); three have received first line penicillin based syphilis treatment, one (who was on medication that interfered with allergy testing which could not be stopped) is waiting for treatment with procaine penicillin to start and one (with no urgent clinical need) is awaiting a penicillin challenge test.
Conclusion: We present an effective care pathway for investigating patients with confirmed syphilis and penicillin allergy. Clinical judgement regarding the need for rapid or routine allergy testing is advised.

P37

An audit reviewing the use of pharyngeal swabs in heterosexual women attending a large ethnically diverse GUM clinic

D Friday and K Maung
Northwick Park Hospital, Harrow, UK

Background: Pharyngeal swabs have proven to be an essential part of sexual health screening especially in men who have sex with men. According to the British Association for Sexual Health and HIV (BASHH) pharyngeal swabs can be considered in heterosexual women if fellatio is reported. The aim of this audit was to review our practice of taking pharyngeal swabs in heterosexual women.
Methods: A retrospective review of the electronic patient record (EPR) system was conducted from the 1/07/2017 to the 15/8/2017. Heterosexual women reporting fellatio were selected. 197 patients were found during the period. The following were recorded: asymptomatic presentation, symptomatic presentation, who took the swab (clinician vs self-taken), whether the site proved positive for chlamydia or gonorrhoea and any other positive sites (rectal, vaginal).
Results: Of the 197 pharyngeal swabs reviewed only 1 proved positive for Chlamydia (CT). This patient was also found to have a positive CT vulvovaginal swab. 150 (76%) of the swabs were from patients presenting without any symptoms and 47 (24%) were symptomatic. A total of 28 (14%) swabs were taken by a health care professional (nurse, doctor, health care assistant) 116 (59%) were self-taken. In the remaining 53 (27 %) there was no clear documentation who had taken the swab. In terms of positivity in other sites, there were 10 positive CT and 1 positive Gonorrhoea in the vaginal swabs. 4

positive CT in rectal swab. No pharyngeal swab was found to be positive alone over the period of data collection.
Conclusion: Based on the findings of the audit, pharyngeal swabs in heterosexual women, especially those who are asymptomatic was not thought to be helpful in the management of these patients. The pick-up rate of sexually transmitted infections was extremely low and a high number of patients needed to be screened to produce a positive result. It is not cost-effective in an ever changing sexual health environment where resources are continually being stretched. However, it can play a role in individuals at high risk who report fellatio such as sexual assault cases and in commercial sex workers.

P38

Cerebrospinal fluid analysis in suspected neurosyphilis

V Tittle, N Talwar, N Rockwood, R Giddings, L Bull, M Nelson, M Rayment, R Jones and N Nwokolo
Chelsea and Westminster Hospitals, London, UK

Background: The diagnosis of neurosyphilis (NS) remains challenging. In 2012, a study at our centre found just one positive CSF RPR from 54 CSF samples. Latterly, we have seen an increase in clinical presentations consistent with NS.
Methods: Retrospective case review of suspected NS cases (by clinical features plus syphilis serology) undergoing lumbar puncture (LP) at one centre, in 2017. Data were collected from clinic notes, laboratory results and prescriptions.
Results: 37 patients met the inclusion criteria: all patients were male; 36 MSM; median age 42 (range 27–80 years old). 62% (n=23/37) were HIV positive and 85% had a viral load (VL) <100 RNA/ml. 81% (n=30/37) had serum RPR of ≥1:16. 67% (25) CSF samples were TPPA positive/equivocal, of which 75% (18) were RPR negative and 7 (25%) RPR positive. Of RPR positive samples, 4 (57%) had CSF white blood cells ≥20; 4 (57%) patients had CSF protein >0.45; 6 (85%) had CSF red blood cells ≤10 cells. Over 35% (n=13/37) of CSF WBC were <1. In total, 31 (82%) patients received NS treatment.
Table 1. CSF results of suspected NS patients (n=37)

	HIV − % (n)	HIV + % (n)	
		VL≤100	VL >100
CSF			
TPPA			
Negative	13.5 (5)	13.5 (5)	2.7 (1)
Positive*	21.6 (8)	35.1 (13)	8.1 (3)
Equivocal	2.7 (1)	2.7 (1)	0
CSF RPR			
Negative	21.6 (8)	35.1 (13)	2.7 (1)
Positive**	2.7 (1)	10.8 (4)	5.4 (2)
Not performed with negative CSF TPPA	10.8 (4)	5.4 (2)	2.7 (1)
Not performed with positive CSF TPPA	2.7 (1)	0	0
CSF WBC			
(1 missing)			
<1	18.9 (7)	16.2 (6)	0
1–10	16.2 (6)	21.6 (8)	5.4 (2)
11–19	2.7 (1)	2.7 (1)	0
≥20	0	8.1 (3)	5.4 (2)
CSF protein			
<0.45	35.1 (13)	24.3 (9)	5.4 (2)
≥0.45–1	2.7 (1)	24.3 (9)	5.4 (2)
>1	0	2.7 (1)	0

Discussion: NS cases have increased since 2012. More data are needed to determine if this is due to greater recognition of NS by clinicians, a true rise in total cases, or a change in phenotype to a more neuro-invasive form. Despite negative CSF findings, many patients received treatment.

P39

Descending aortitis as a rare manifestation of tertiary syphilis: gumma or cardiovascular syphilis?

L Harryman[1], L Clarke[2] and P Horner[1]
[1]Unity Sexual Health, University Hospitals Bristol NHS Foundation Trust, UK, [2]Department of Rheumatology, Southmead Hospital NHS Trust, Bristol, UK

Background: A 57 year old Somali patient presented with testicular and abdominal pain. His CT scan showed a soft tissue swelling surrounding and involving the aortic wall extending from the renal arteries to the iliac vessels. The mass caused partial obstruction of the inferior vena cava and bilateral hydronephrosis.
Methods: The urology team referred the patient to rheumatology. His blood tests revealed C Reactive Protein (CRP) 99, Haemoglobin 125, normal white cell and platelet count. His eGFR was 74. Autoimmune profile, immunoglobulins and complement were normal and screening for HIV and tuberculosis was negative. His syphilis serology showed Rapid Plasma Reagin (RPR) negative, Treponema Pallidum Particle Agglutination Assay (TPPA) >1:1280, IgM negative. He commenced prednisolone 20 mg od.
Review in the GUM clinic was arranged. He had been married for 35 years with no other sexual partners in that time. As a young man, prior to marriage, he developed urethral discharge and a groin ulcer following unprotected sex with a commercial sex worker. This was treated with antibiotics.
He had no neurological symptoms.
He had a past history of psoriasis.
On examination, blood pressure was 199/99, there was a systolic murmur loudest at the apex. He had widespread small ovoid scars on his trunk and limbs. A neurological examination revealed absent ankle jerk reflexes bilaterally but was otherwise normal.
A diagnosis of cardiovascular syphilis was made with a differential diagnosis of gummatous syphilis or idiopathic retroperitoneal fibrosis with incidental positive syphilis serology.
The patient was treated with 3 benzathine penicillin injections 2.4MU im on day 1, 8 and 15. His treatment was completed uneventfully.
Results: Chlamydia and gonorrhoea tests were negative. Hepatitis B serology showed resolved infection.
His wife tested negative for syphilis.
Echocardiogram showed no valve abnormality.
The patient's CRP declined to 10 and repeat ultrasound scan showed improvement of the hydronephroses.
A repeat CT scan is to be performed shortly to reassess the abdominal mass. Follow up syphilis serology showed no change.
Conclusion: This case represents an unusual presentation of tertiary syphilis. Whether cardiovascular or gummatous is unclear. His skin lesions may represent old secondary syphilis. The patient has, however, been successfully treated according to national guidelines and the progress of his abdominal lesion will be closely monitored.

P40

Genital dermatology: its role in modern integrated sexual health services

M Pammi and G Pagonis
Nottingham University Hospitals NHS Trust, Nottingham, UK

Background: All patients are entitled to high quality care that is clinically effective and delivers an optimal patient outcome. This is especially complex when managing genital dermatological conditions which need specialist care across a range of disciplines including vulval clinics, dermatology and urology. In the current era of integrated sexual health services, commissioning needs are changing with less emphasis on such specialised clinics and more focus towards targets and efficiency. However, the open access to sexual health services helps patients with genital skin problems accesses our services more readily than a dermatology clinic.
Aim: We aim to review genital dermatology clinic dynamics in a fully integrated sexual health service with specific focus on pathology and onward pathway for managing more complex patients that need supra-specialist input. The clinic was solely managed by GU physicians without joint dermatology input.
Methods: Case notes of all patients that are referred to the dermatology procedure and follow-up clinic from January 2017 to December 2017 are

reviewed. The main outcome measures include pathology identified, percentage of patients that were managed in house and discharged and those that needed referral to other services.
Results: A total 180 attendances including 90 new patients seen in the fortnightly clinic. 51% women. 53% had biopsy done. 20% attended for wart excisions/curettage. Lichen sclerosis is the commonest clinical pathology (25%) followed by wart excisions (20%). 78% managed fully in-house and 22% referred elsewhere. Of the referrals, majority were referred either to vulval clinic or urology. There were 3 cases of malignancy, including deep seated squamous cell carcinoma of the vulva, Kaposi's sarcoma in a HIV patient and penile intraepithelial carcinoma. There were 3 cases of VIN 2-3.
Conclusion: The Sexual Health clinics are significant providers of genital dermatology services. Our clinic has managed 78% of the cases without needing onward referral. These clinics are very important in providing training in skin biopsy procedures and fulfilment of GUM curriculum. A National survey of the trainees showed only 21% of them felt confident in doing biopsies independently. GUM physicians should emphasise the importance of these clinics and should be funded and coded to get better tariffs.

P41

Geospatial mapping of chlamydia, gonorrhoea and syphilis in a UK university town

S Saiyed[1], D Payne[1], J Rees[2], S Le comber[3], R Patel[2] and E Foley[2]
[1]University of Southampton, UK, [2]Solent NHS Trust, Southampton, UK, [3]Queen Mary University, London, UK

Background: Geographic profiling (GP) is one of the techniques of geospatial mapping which was initially used in criminology to locate the perpetrator's house in serial crimes like rape, murder or arson. Dirichlet process mixture (DPM) model of GP was used to analyse the geographical location of crime sites to build a heat-map which would describe the likelihood of offender's residence. Recently, this technique has been applied to spatial epidemiology after its success in criminology where they used GP to re-analyse a cholera outbreak study of 1854 to see if the model found the outbreak source by evaluating the disease sites as input. The same model was also used to analyse malaria cases in Cairo, Egypt and GP successfully ranked locations of infectious sources in both studies.
This technique could also be used in Genito-Urinary Medicine to identify any locations associated with a higher risk meeting a partner which may result in the acquisition of STIs. GP may be beneficial as part of an integrated STI control strategy making evidence-based targeting of interventions more efficient and cost-effective than untargeted interventions.
Methods: Purposive sampling was used to collect two data sets for geospatial mapping:

1 Patient's home postcode.
2 Locations of where sexual partners were encountered for the first time.

Patients over the age of 18 were recruited in a centrally located Sexual Health clinic in a large provincial university city. Patients were attending for the treatment of Chlamydia, Gonorrhoea or Syphilis. A patient information collection tool was utilized. DPM model was used to analyse this data.
Results: Purposive sampling for 26 patients generated additional data for 52 partners. With these data, a heatmap of the city was generated. A lot of popular student locations including restaurants, fast food locations and party venues came up in the top 5% of the geoprofile as 'hotspots'. This means only 5% of that 'hotspot' area needs to be searched to find the source of infection. According to the Lorenz plot made with the results, it showed that the model found more than 60% of 'sources' searching just 20% of the area.
Conclusion: The final results support the hypothesis that geospatial mapping can identify locations where patient's and partner's most frequently meet. Such information will help target interventions to locations where they may make the greatest impact.

P42

Management of *Neisseria gonorrhoeae* in MSM patients labelled as penicillin allergic

M Flinn[1] and R Kennedy[2]
[1]University of Glasgow, UK, [2]Sandyford, Glasgow, UK

Background: In light of increasing resistance profiles to *Neisseria gonorrhoeae* in the UK, novel approaches are being sought in the management of penicillin allergic individuals. The aim of this audit was to review how men who have sex with men (MSM) with a recorded penicillin allergy, who test positive for gonorrhoea, are managed in a Scottish regional sexual health service.
Methods: A list of all MSM labelled as penicillin allergic on our electronic notes system who tested positive for gonorrhoea on nucleic acid amplification test (NAAT) between September 2016 and September 2017 was compiled, with a total number of 31 cases. A clinical notes review was then performed to identify relevant information regarding the infection and penicillin allergy history.
Results: Infection of the pharynx was most common with 65% of cases testing positive and the urethra was least common being positive in 26% of cases. Rectal NAAT was positive in 13 patients (42%). 26 patients had culture performed (84%). Of those, 12 (46%) had positive growth.
3 cases were given the standard treatment of ceftriaxone and azithromycin (10%). The remaining 28 were given one of the treatment options listed in the BASHH guidelines for penicillin allergic patients. The majority (27 patients) received azithromycin alone and 1 patient received ciprofloxacin.
Overall, 28 patients (90%) were given non-standard treatment but only 6 (19%) clearly met the criteria for this as per BASHH guidelines (i.e. penicillin allergy recorded as being severe or previous anaphylaxis). All patients who met the criteria for non-standard treatment were appropriately treated. However, a large proportion of patients who received non-standard treatment had incomplete allergy details. 25 of the 31 patients (81%) had a test of cure carried out according to their NASH records. 24 had a negative result and 1 was positive.
Conclusion: Overall, allergy details were poorly documented and there is a tendency to be overcautious when treating those who are labelled as penicillin allergic. The incomplete allergy details make it difficult to draw absolute conclusions about appropriateness of non-standard treatment choices in many cases but only a small number had a clear indication. Improved allergy history taking is essential for decision making about non-standard therapy for gonorrhoea in this era of increasing azithromycin resistance.

P43

Mycoplasma genitalium and emerging antibiotic resistance: a local study

D Gamoudi[1], K Muscat[2], A Gauci Farrugia[2], M Abela[2] and V Padovese[2]
[1]Nottingham City Hospital, UK, [2]Mater Dei Hospital, Msida, Malta

Background: *Mycoplasma genitalium* (*M. genitalium*) is an emerging sexually transmitted infection, causing non gonococcal urethritis (NGU) in men, cervicitis and pelvic inflammatory disease in women. Although extended azithromycin regimen is still the first line treatment for *M. genitalium*, macrolide resistance is an emerging threat and this is impacting on clinical outcomes. Moxifloxacin is currently the treatment of choice for macrolide resistant *M. genitalium* infections.
A previous study conducted between 2013 and 2016 on 144 patients in the same GUM clinic showed a low rate of macrolide resistance (4.16%).The objective of the study is to re-assess antibiotic resistance and any changing resistance patterns in the local population.
Methods: A retrospective analysis of medical records of all patients attending the same GUM clinic between 1st January and 31st December 2017 was carried out. Nucleic acid amplification test (NAAT) positive results for *M. genitalium* were recorded in an excel sheet and analysed for antibiotics given. A test of cure (TOC) was offered 3 weeks post treatment.
Results: Overall, in the study period, a total of 5864 patients were tested and 114 (1.94%) resulted positive for *M. genitalium*; 42.9% were females. In males, the infection was more prevalent in men who have sex with men (58.2%).96 patients (84.2%) were treated with oral azithromycin 500 mg on day 1 and 250 mg on the following 4 days, 16 patients (14%) were treated with doxycycline 100 mg twice a day for 7 days, whereas 2 patients (1.7%)

were treated abroad and were lost to follow up. Of those who received treatment, only 75 returned for TOC (67%)and18 resulted positive again for *M. genitalium* (24%).Of these, 16 were treated with moxifloxacin and after performing TOC only 1 patient, who was HIV co-infected, had a persistent infection. Of the16 patients treated with doxycycline, 10 performed a TOC and only 2 tested positive.
Conclusion: Recent data on *M. genitalium* show increased macrolide resistance with 24% of patients retested positive after treatment compared to a 4.16% reported in our previous study. There is increasing concern about how best to treat dual macrolide and fluoroquinolone resistant *M. genitalium*.There have been a number of advances in the development of rapid methods for characterizing both the genotype and the drug resistance phenotype of *M. genitalium*. With this approach, NAATs would enable clinicians to individualize patient treatment by detecting common drug resistance markers.

P44

Mycoplasma genitalium testing and antibiotic resistance determination in symptomatic patients

R Dewar[1], K Templeton[1], D Clutterbuck[2], J Shepherd[1], J Paterson[2] and I Fernando[2]
[1]Royal Infirmary, Edinburgh, UK, [2]Chalmers Sexual Health, Edinburgh, UK

Mycoplasma genitalium is an emerging sexually transmitted bacterium, which is prevalent in ~1–3% of the global population. The infection causes similar symptoms to Chlamydia, such as urethritis in males and cervicitis/pelvic inflammatory disease in females. Like Chlamydia infection, the macrolide azithromycin is the recommended first-line treatment for *M. genitalium* disease. However, the occurrence of resistance mutations to azithromycin is becoming problematic. The prevalence of macrolide-resistant strains varies geographically. For example, 18% of isolates were macrolide-resistant in Sweden compared to 72% resistance cases in New Zealand. The aim of this project is to determine the frequency *of M. genitalium* and its resistance to macrolides in Edinburgh, UK.
Methods: Testing was conducted using urine samples from males and vaginal swabs from females that were submitted to the NHS sexual health clinic. The nucleic acid was extracted using an automated extraction process and contained an internal control. The extracts were then analyzed using a commercial qPCR-based method (ResistancePlus® MG assay, SpeeDx), which simultaneously detects the presence of *M. genitalium* and five macrolide resistant mutations. Samples which tested positive for macrolide resistance were subsequently sequenced to determine the resistant mutation.
Results: A total of 121 samples were collected, extracted and analyzed. 11 samples tested PCR-positive for the presence of *M. genitalium* (males n=9, females n=2), which was equivalent to a 9% prevalence rate. 90% of these positive samples were found to be macrolide resistance. Sequencing analysis of the 23S rRNA gene revealed the macrolide mutation A2058G to be the most common. The majority of macrolide-resistant samples were collected from patients who did not previously receive azithromycin treatment, thus suggesting the circulation of a macrolide-resistant strain within population in Edinburgh.
Conclusions: Overall, these data show a high level of macrolide resistance in *M. genitalium* positive samples. Determining the presence of resistance will facilitate in the selection of a suitable antimicrobial treatment plan for the patient. Although relatively uncommon, the prevalence rate of *M. genitalium* (9%) was similar to that of gonorrhea (8%) in the samples tested, thus highlighting the importance of routine diagnostics for *M. genitalium* infection.

P45

Neisseria gonorrhoeae (GC): changing pattern of antibiotic sensitivity and persistence of DNA detection 2007–2017

S Young and S Allan
Integrated Sexual Health Services, Coventry and Warwickshire Partnership Trust, Coventry, UK

Background: Nucleic acid amplification testing (NAAT) is used in GUM clinics to diagnose GC infection; however its in-built sensitivity potentially detects DNA from non-viable organisms following successful treatment. BASHH guidelines stipulate that test of cure with NAAT (TOC) should take place 2 weeks post-treatment. This study aims to determine whether this is an adequate time interval to perform TOC. We also analysed the changing pattern of antibiotic sensitivity between 2007 and 2017.
Methods: All GC cases at our clinic between 01/01 and 30/06 in 2007–2017 were identified and assessed for antibiotic sensitivity, and from 2013–2017 also analysed for TOC data.
Results: In 2017 there were 153 GC cases; culture and sensitivities were available for 88, with TOC in 87 cases.
Table:

Susceptibility to Antibiotic groups	2007 (%)	2009 (%)	2011 (%)	2012 (%)	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)
Fully sensitive to antibiotic testing panel	46	67	59	49	79	59	43	55	42
Reduced susceptibility to 1	27	15	20	38	10	20	23	23	26
Reduced susceptibility to 2	15	10	16	8	6	13	21	15	15
Reduced susceptibility to 3	12	2	5	3	2	8	5	6	15
Reduced susceptibility to 4	–	–	–	–	–	–	–	1	2
Reduced Susceptibility to Cefuroxime	–	–	–	–	–	–	–	1	3

TOC with NAAT was performed between 10 and 126 days post-treatment with a mean, median and mode of 19, 14 and 14 days respectively.
Conclusions: Reduced susceptibility to Cefuroxime and increasing number of multidrug resistant *N. gonorrhoea* is a worrying sign that needs further investigation.
Our data supports BASSH guidelines for TOC 2 weeks post-treatment.
From 2016–2017 there has been an decrease in GC fully sensitive to the antibiotic testing panel and a concerning increased in reduced susceptibility to increasing numbers of antibiotic groups.
Our data supports BASSH guidelines for TOC 2 weeks post-treatment.

P46

No microscope means no slides: does it matter when treating *Neisseria gonorrhoeae*? A review of local practice

A Gill[1] and C Robertson[2]
[1]Cobridge Community Health Centre, SSOTP, Stoke-on-Trent, UK, [2]Birmingham Heartlands Hospital, UK

Background: A significant proportion of the gonorrhoea disease burden is managed in satellite clinics within the central West Midlands. Typically, these function without on-site microscopy. Unintentionally, this may be delaying effective timely treatment of infected patients. During this era of increasing antimicrobial resistance, with the recognition of azithromycin-resistant strains of gonorrhoea, judicious antimicrobial prescribing and optimal management of this cohort is essential. We sought to evaluate local practice to determine whether patients in these settings are being managed appropriately despite the lack of microscopy availability.
Methods: A retrospective review of electronic case notes was carried out, looking at the number of patients treated for gonorrhoea within 7 satellite clinics in the central West Midlands between October and December 2016. 100 consecutive patient records were reviewed.
Results: 56 males and 44 females were identified, with 40% White British, and the second largest ethnic majority Black Caribbean (29%), reflective of the local population. The majority were heterosexual males and females (76%) with 24% MSM. 52% of patients were reviewed at the largest satellite clinic. The typical symptoms treated included discharge – either yellow or purulent – and dysuria. 60% of patients were treated on the same day, with 73% of these

patients subsequently testing positive for gonorrhoea. 43/60 (72%) of those treated on the same day were males, likely reflective of the increased likelihood for symptomatology in this group. Furthermore, 26/32 (81%) males who were treated on the same day based on symptoms went on to test positive for gonorrhoea. 16/38 (42%) of Black Caribbean males were symptomatic compared to 11/60 (18%) of White British males. Asymptomatic patients treated on the same day as presentation tended to be gonorrhoea contacts.
Conclusion: The above shows that antibiotic stewardship locally is reasonable, with appropriate same-day treatment of the vast majority of patients. Males are more likely to be symptomatic, and in the absence of bedside microscopy, recognition of typical symptoms is enough to justify treatment in this cohort.
Satellite clinics continue to play a vital role in the management of integrated sexual health issues. The central West Midlands clinics serve a densely populated area and the wider geographic distribution of these allows patients easier access to medical treatment.

P47

Primary syphilis in late pregnancy complicated by true penicillin allergy

L Dufaur and S Singh
Barts Health NHS Trust, London, UK

Background: The prevalence of syphilis continues to rise in the UK. Despite universal screening for syphilis at antenatal booking, since March 2016 there has been an increase in cases of congenital syphilis in infants born to women who acquired the infection later in pregnancy. Penicillin remains the optimal treatment and case reports have demonstrated treatment failure with macrolides due to inadequate tissue penetration and antibiotic resistance.
Methods: Retrospective case note review.
Results: A male presented to our GUM clinic with painful penile ulcers. He was HIV positive, virally suppressed and only divulged sex with men. He was treated for genital herpes but returned with worsening symptoms and subsequently received treatment for primary syphilis, that was confirmed on serology (RPR 1:8). A week later he attended with his symptomatic female partner. She was 32 weeks pregnant, had negative HIV and syphilis serology at antenatal booking and last had sex with him at 28 weeks. On examination she had tender inguinal lymphadenopathy and bilateral oedematous 'kissing' vulval ulcers. She reported penicillin allergy and was treated for primary syphilis with erythromycin 500 mg QDS until urgent patch testing could be arranged. Her RPR was 1:4. Patch testing confirmed penicillin allergy and desensitisation was not recommended due to the high risk of anaphylaxis and premature labour. She remained symptomatic despite completing erythromycin. Baby was delivered at 36 weeks by emergency caesarean section due to pathological CTG. There were no signs of congenital syphilis and infant treatment was commenced. Maternal recovery was complicated by group A streptococcus bacteraemia necessitating ITU admission. Maternal RPR at this stage was 1:32 and she was commenced on doxycycline 100 mg BD for 2 weeks.
Discussion: This case presented a management conundrum with high risk of congenital syphilis and limited treatment options due to allergy and pregnancy. The index case did not initially divulge female partners which further delayed her management. The rising RPR and ongoing symptoms suggest treatment failure with erythromycin. 3rd trimester syphilis screening is recommended where women are deemed 'high risk' but in practice is rarely performed. This case confirms the ongoing challenge of identifying women who are at risk of acquiring syphilis during pregnancy and may support the recommendation for universal repeat screening.

P48

Sensitivity of COPAN Eswab versus direct inoculation for culture of *Neisseria gonorrhoeae* (NG)

N Astill, H Wallace, K Phyu, M Coates, H Inns, J Wilson and E Page
Leeds Teaching Hospitals Trust, UK

Background: Our hospital-based GUM clinic NG cultures were directly plated, and portered 2×daily to onsite microbiology for incubation. Service relocation in Nov 2015 to a city centre hub forced change. Samples were directly plated, incubated onsite for 48–72 h then transported in CO_2-enriched environment. Retrospective comparison demonstrated a non-significant decline in urogenital culture sensitivity but significant reductions at rectal and pharyngeal sites. In 2017 a new method for NG culture transportation, COPAN Eswab, was piloted and sensitivity for NG culture against positive NAAT for Eswabs vs. direct plating and on site incubation (2016) and direct plating and microbiology incubation (2015) was evaluated.
Methods: Cases of NAAT positive NG with a culture taken June–Sept 2017 (data to Nov 2017 will be available for conference presentation) were compared to cases January–June 2016 and January–June 2015. Odds ratios are reported with 95% confidence intervals in brackets.
Results: Overall sensitivity per infected patient (any positive NAAT and culture from any site): 2017 vs. 2016 and 2015: 135/213 (63%) vs. 176/253 (70%), OR 0.76 (0.51–1.11), p=0.16 and 218/279 (78%), OR 0.48 (0.33–0.72), p=<0.001. Total sites with positive NAAT and associated culture processed: 2017 n=244, 2016 n=333, 2015 n=375.

Site	2015 (%)	2016 (%)	2017 (%)	2017 vs. 2015	2017 vs. 2016
Male urethral	90	86	91	OR 1.14 (0.41–3.14) p=0.81	OR 1.79 (0.67–4.79) p=0.25
Female	77	71	56	**OR 0.37 (0.17–0.79) p=0.009**	OR 0.53 (0.26–1.08) p=0.08
Rectum	55	39	45	**OR 0.65 (0.33–1.26) p=0.03**	OR 1.24 (0.64–2.43) p=0.53
Pharynx	51	33	21	**OR 0.27 (0.13–0.57) p=<0.001**	OR 0.55 (0.24–1.26) p=0.15

Conclusion: Eswabs did not improve NG culture sensitivities compared to direct plating and onsite incubation (2016) and was significantly reduced at 63% vs 78% compared to direct plating and microbiology incubation (2015). As with 2016 methodology this was driven by a loss of positive cultures at extra genital sites. Eswabs also lead to a reduction in female genital tract NG culture sensitivity. The reasons for this are likely to be multifactorial: stopping female urethral sampling and inappropriate clinician sampling techniques. Since moving off the hospital site, we have been unable to maintain our high levels of NG culture sensitivity. The drop in sensitivity is highest in the pharynx, a site where NG resistance often develops. This may affect our ability to detect emerging NG resistance in the future.

P49

Successful use of pristinamycin for the treatment of *Mycoplasma genitalium* after nearly 12 months of recurrent urethritis

C Saxon
Manchester University Hospital NHS Foundation Trust, UK

Background: *Mycoplasma genitalium* (MG) testing is not routinely available in genitourinary medicine (GUM) clinics in the UK. Patients accessing testing privately or other countries can present to our services for management. Treatment of MG can be challenging due to antibiotic resistance.
Methods: We present a case of MG.
Results: A 27 year old male contacted our clinic in 04/2017 requesting pristinamycin for MG following review of the European MG guidelines. He was treated for chlamydia with doxycycline in 11/2017 at another service. Due to recurrent symptoms he received two doses of azithromycin 1 g in 12/2017 and 01/2017 via his GP without repeat testing. Symptoms worsened so he arranged private online testing and was found to be positive for MG. He received moxifloxacin via the online service in 02/2017. A few hours after the first dose he reported feeling unwell with aching limbs and joints. Of note the urethral symptoms resolved with one dose of moxifloxacin. He did not take any further moxifloxacin due to the side effects and so returned to the original GUM service where he was given azithromycin 500 mg stat followed by 250 mg od for 4 days. He arranged a test of cure (TOC) online in 03/2017 which was negative. He was symptom free for 5 weeks before presenting to our clinic in 04/2017 with a 4 day history of green urethral discharge and dysuria. His regular female partner (RFP) had not been treated for MG but they had not had sex from 01/2017 until early 04/2017. We treated with 1 week doxycycline on the day but requested MG testing via the national reference

laboratory which came back positive. Clinical impression was re-infection with likely macrolide resistant MG from untreated RFP. An initial request to medicines management for pristinamycin was declined until doxycycline 100 mg bd for 2 weeks was trialled. Symptoms persisted following this and TOC was still positive. Pristinamycin 1 g qds was subsequently approved and prescribed. We treated his RFP with moxifloxacin. TOCs at 4 weeks for patient and RFP (10/2017) were negative for MG and the patient remains asymptomatic.

Conclusion: Whilst this case demonstrates the successful use of pristinamycin for treating MG it also highlights the challenges of testing for MG in the UK and access to pristinamycin. The resulting delay in achieving cure for this patient will likely have had significant impact on his personal life as well as resulting in multiple GUM clinic and primary care attendances.

P50

Testing for and managing *Mycoplasma genitalium* in women attending a GUM clinic

K Nichols, O Sim-Ifere, N Pinto-Sander and S Soni
Brighton and Sussex University Hospitals NHS Trust, UK

Background: There is growing evidence that *Mycoplasma genitalium* contributes significantly to pelvic inflammatory disease (PID) and cervicitis and interest in testing women with these STI syndromes is increasing. At our clinic women with suspected PID/cervicitis and partners of men with MG urethritis are tested for MG. We present findings from our clinical experience.

Methods: All cases of MG diagnosed in women were identified. Data on clinical presentation, microbiological results, treatment regimen and test of cure (TOC) were obtained from clinical records.

Results: Between 1st November 2016 and 31st October 2017, 790 women were tested for MG and 66 (8.4%) were positive. Median age of women with MG was 22 (17–45) years, 54/66 were of white ethnicity. 15/66 presented as sexual contacts of MG, 42/66 had symptoms: pelvic pain (31), dyspareunia (20), bleeding (18), discharge (25). Co-infections were chlamydia (6), gonorrhoea (3), bacterial vaginosis (15), trichomonas vaginalis (1). During the same time period, 241 were diagnosed with PID and MG was detected in 22 (9.1%) of these compared with chlamydia 39/241 (16.2%), gonorrhoea 8/241 (3.3%) and bacterial vaginosis 61/241 (25.3%).

Overall symptom resolution was seen in 90% women who were initially symptomatic and attending for TOC. 37/51 women given extended course of azithromycin attended for first TOC which was positive in 16/37 (43.2%). No treatment failures were seen with moxifloxacin first line (8). 11/16 attended for second TOC of which 6/11 (54.5%) were positive: 4 had had azithromycin, 1 moxifloxacin, 1 refused treatment. Of these 6, 5 were given moxifloxacin and subsequently cleared, 1 was lost to follow up. Median time to confirmation of microbiological cure was 35 days (14-85) following one antibiotic regimen and 168 days (67–280) following $\geq$ 2 regimens.

Conclusion: MG contributes to reproductive tract morbidity in women and we have seen good rates of symptom resolution following treatment with azithromycin and moxifloxacin. However azithromycin is associated with high rates of microbiological failure and a much longer overall time to achieving microbiological cure. Moxifloxacin efficacy remains excellent. From a practical perspective, we note that attendance for TOC is poor and managing MG without prior knowledge of resistance status is laborious, expensive and time consuming for patients. Macrolide resistance testing alongside detection is strongly recommended where an MG testing service is being implemented.

P51

Utility of clinical audit to unify treatment paradigms across disciplines within a single provider

A Shand-Davis[1], Z Amin[1], L White[2], R Pugh[2], S Acharya[1] and J Arumainayagam[1]
[1]Walsall Integrated Sexual Health, UK, [2]Birmingham Medical School, UK

Background: Standards exist for the management of complications of sexually transmitted infections such as pelvic inflammatory disease (PID) and epididymo-orchitis (EO) and it is our aim to achieve the targets set in the standards. However, not all disciplines in the same provider organisation adhere to these, resulting in inequalities in care. We wanted to try and address this by performing comparative audits in the sexual health clinic and across the relevant disciplines, present them at relevant meetings to ensure that same pathways are followed.

Methods: Between September 2016 and August 2017, we audited patients who attended with PID at the gynaecology department and EO at the Urology and compared the results with those who attended the sexual health clinic, in the same period. We reviewed the case notes on 50 patients with each condition at each site. The audit standards chosen were those set by the British Association for Sexual health & HIV (BASHH). These included targets on diagnosis, antibiotic treatment, partner notification, managing non-responders and follow-up.

Results: Among those diagnosed as having PID at the sexual health clinic, 81% received recommended regimens while 20% received Erythromycin and Metronidazole while at the gynaecological department (GD) 73% received Doxycycline and Metronidazole without Ceftriaxone and the remainder had other treatments. Partner notification was performed among 25% at the sexual health clinic compared to 14% at GD. Of all women, 90% had follow-up at sexual health compared to 50% at GD. Among those diagnosed with EO, over 90% were tested for chlamydia and gonorrhoea in sexual health clinic while none were tested in Urology. Appropriate antibiotics were prescribed in over 90% in sexual health compared to 20% in Urology. Partner notification was performed in 21% in sexual health but none in Urology. 100% of non-responders were dealt with in sexual health clinic but none in Urology. Details of all auditable standards and demographic data will be presented.

Conclusions: This audit has shown that significant differences in practice exist between disciplines in the same hospital. However partner notification was low at the sexual health clinic which has now been addressed. The audits have been incorporated in the audit programme of the relevant disciplines to ensure that the standards are met and will be re-audited in 12 months.

Basic science: immunology, virology and pathogenesis

P52

'Is resistance futile?' A review of the use of resistance testing within a city centre HIV department

C Wood, K Weeks and A Sukthankar
Manchester University NHS Foundation Trust, UK

Background: Resistance testing is useful for guiding treatment options and investigating virological failure. It is an expensive test and there is conflict between the guidance on its use between BHIVA treatment guidelines and monitoring guidelines. Hence, we have reviewed the use of resistance test (RTs) within our department.

Method: We identified all RTs requested between August 2016 and August 2017 in our centre with a cohort of approximately 2000 patients. We reviewed the electronic patient records of all patients who had $\geq$4 RTs in that time period and a random sample of those who had $\leq$3.

Results: During the study period, 556 RTs were requested. We reviewed 184 RTs performed on 128 patients. Of these 115 (62.5%) were successful, 33 failed and 36 were not tested as the VL was undetectable (RT requested before result known).

Seventy-nine (42.9%) RTs were deemed not to meet the monitoring guidelines. This represents a cost of over £16,000. Of these, the majority, 34 (44.2%), were related to the RT being requested on the first detectable VL, rather than waiting for a repeat test. This highlights the main difference between the guidelines; with the treatment guidelines recommending RT on a single VL >200 and the monitoring guidelines advocating RT following two VLs >200; 18 of the 34 tests would have satisfied the treatment guidelines.

The guidelines recommend that RTs are done *preferably* within 4 weeks of stopping ART. Of those reviewed, 13 RTs were requested after this time, of which 5 had stopped >6 months before the RT (range 5–36 weeks; median 20). It is of course possible that some mutations will still be detectable after 4 weeks.

No new resistance mutations were detected in any of these cases, compared with 6 in the RTs deemed to meet the criteria.

Of the RTs 151 performed (excluding people with a new diagnosis or naïve with no documented baseline), there was no change in the treatment regimens in 104 (68.9%).

Discussion: We intend to use these results to develop a local protocol for requesting RTs within our department to standardise care. We would advocate

that the BHIVA treatment guidelines and monitoring guidelines harmonised their recommendations regarding resistance testing.

P53

A review of detectable HIV viral loads following the introduction of a new viral load assay

K Roberts, B Yasar, S Flavell, L Paraskevopoulou, E Nastouli, S Edwards and L Waters
Mortimer Market Centre, London, UK

Background: In 2016 the clinic moved to a hologics viral load assay because of a need to use c-marked tests and a desire for a more automated process. This was then followed by anecdotal reports of increased numbers of detectable HIV viral loads and 'blips'. We evaluated the outcome of patients with newly detectable HIV viral loads to see if clinical management altered as a result.
Methods: A spreadsheet was obtained from the virology database for all patients who had a detectable HIV viral load between 16/08/16 and 31/11/16. The data included date and result of the viral load and the previous and subsequent viral load results. A notes review was then carried out for each patient and data was gathered on clinical management. The data was analysed using Microsoft excel.
Results: 195 individuals had a detectable HIV viral load within the timeframe. 89/195 (45.6%) had a detectable viral load having previously been undetectable, without intentionally stopping therapy. When repeated the viral loads were undetectable for 53/89 (59.5%) individuals and detectable in 30/89 (33.7%).
Treatment outcomes following this initial detectable viral load were divided into: Anti-retroviral therapy (ART) switch, intensification of ART, or no change to ART. The majority, 70/89 (78.7%), saw no change to their ART. ART was intensified in 6/89 (6.7%) and changed in 13/89 (14.6%).
Adherence to ART was varied within this group, with 60/89 (67.4%) patients documented as adherent. On viral load repeat 45/60 (75%) had subsequent undetectable viral loads, and 15/60 (25%) remained detectable. 26/89 (29.2%) were non-adherent to ART, and adherence was unknown for 3/89 (3.4%). Patients were more likely to have a higher detectable HIV viral load if they reported non-adherence.
The effects on future treatment of these 45/60 people with subsequently undetectable viral loads were: 4/45 (10.8%) switched ART, 2/45 (5.4%) had intensification of ART, and 39/45 (83.8%) had no change.
The effects on future treatment of the 15/60 people with subsequently detectable viral loads were: 7/15 (46.6%) switched ART, 2/15 (22.2%) had intensification of ART, and 6/15 (40%) had no change.
Conclusion: 15 patients switched or intensified ART as a result of detectable viral loads. The worst case scenario is that 5 of these switched unnecessarily: cobicistat to ritonavir, switch off a low barrier regimen and intensification of a dual ART regimen. On review all ART changes seemed appropriate, with the effect on patient care being minimal.

P54

Antiretrovirals in nanoparticle formulation to improve control of HIV replication and prevent viral escape

AM Geretti, G Villa and UoL Nano-ARV Study Group
University of Liverpool, UK

Background: ART is highly effective in controlling HIV-1 infection, but available agents have limitations, such as variable bioavailability and tissue penetration, short and long-term toxicity, and selection of drug resistance. Nanomedicine creates new opportunities to overcome the shortcomings of conventionally formulated drugs though improved pharmacokinetics and pharmacodynamics. With support from a BHIVA Research Award, this study optimised a cell culture model to study *in vitro* the antiviral activity of nanoparticle (NP)-formulated relative to standard-formulation (SF) antiretrovirals.
Methods: NP-efavirenz (EFV) and NP-lopinavir (LPV) were tested for their ability to inhibit HIV-1 replication and prevent escape through the emergence of drug-resistant variants. NP-EFV and NF-LPV had been generated through integrated materials and pharmacology research at the University of Liverpool. *In vitro* culture models were optimised to test the antiviral activity of NP-EFV and NP-LPV against laboratory-adapted HIV-1_{IIIB} and patient-derived clinical isolates of HIV-1 subtype B, both grown in cord blood mononuclear cells (CBMC), using reverse transcriptase (RT) activity as a read-out of virus replication. Passage experiments investigated the kinetics and patterns of emerging drug-resistant variants, which were characterised by Sanger sequencing.
Results: In parallel experiments, NP-EFV effectively suppressed HIV-1 replication in CBMC, with 50% inhibitory concentration (IC_{50}) ranges that were comparable to those of SF-EFV. The IC_{50} values with SF-EFV vs. NP-EFV were 0.7–1.0 nM vs. 1.0–1.1 nM with HIV-1_{IIIB}, and 1.2–3.1 nM vs. 1.0–3.8 nM with clinical isolates of HIV-1 subtype B. Data were highly reproducible. In passage experiments over 16 weeks, virus escape was slower with NP-EFV relative to SF-EFV. In addition, strains growing at week 16 showed a different resistance profile. With HIV-1_{IIIB}, major emerging mutations in RT were K103N+L100I with SF-EFV and Y188C+L100I with NF-EFV. There were no significant differenced observed in the resistance kinetics and patterns of NP-LPV vs. SF-LPV.
Conclusions: An *in vitro* culture system was successfully optimised for the reproducible measurement of HIV-1 inhibition and escape in the presence of nanoparticle-formulated antiretrovirals. Further studies are required to validate the use of clinical isolates other than subtype B, and the influence of cell types other than CBMC.

BHIVA Research Award Winner 2013, Anna Maria Geretti

P55

Evaluation of Nanopore MinION in HIV-1 molecular testing

P Scott[1], J Quick[2], K Hardy[3], O Lancaster[3], N Loman[2], J Simpson[3] and E Smit[3]
[1]Mircopathology Ltd, Coventry, UK, [2]University of Birmingham, Birmingham, UK, [3]Public Health England Laboratory Birmingham, UK

Background: HIV-1 drug resistance mutations (DRM) develop during combination antiretroviral therapy (cART), due to selective pressure and replication errors. Resistance testing of HIV-1 *gag/pol* amplicons by Sanger sequencing is the current gold standard, but minority variant sensitivity is limited and assembly of contiguous files is required. Nanopore technology can sequence long DNA molecules in parallel, with increased sensitivity vs. Sanger sequencing. The aims of this research were to evaluate the suitability of MinION sequencing for routine diagnostic use and to determine whether DRM occur on the same or different genomes (DRM linkage) among the virus population.
Methods: 12 pseudoanonymised *gag/pol* RT-PCR amplicons from 4 patients were sequenced in triplicate by Oxford Nanopore MinION technology. Consensus sequences were calculated using Nanopolish and IGV software and compared to those from Sanger. Controls included a multi-DRM HIV-1 RT-PCR amplicon, Lambda phage DNA and nuclease-free water. Linkage was inferred on a per-genome basis using in-house Python bioinformatics scripts. Clinical histories were used to determine the effect of treatment pressure on DRM linkage in the viral population over time.
Results: MinION sequencing identified many consensus DRM as wild-type mixtures. There was minimal barcoding error (<0.01% Lambda DNA present in HIV-1 barcoded samples), indicating that sensitive detection of minority variants is theoretically possible. The error rate due to homopolymeric tracts was >83%. 98% HIV-1 sequence reads mapped to HIV-1 *gag/pol* and additional DRM were not identified. With regards to linkage analysis, a proportion of reads had similar DRM resistance profiles to the MinION consensus sequence (40–70%). Although Nanopolish phase-reads correction aids analysis, its impact on sensitivity could not be resolved during the study.
Conclusion: In summary, MinION technology can generate HIV-1 DRM consensus sequences using existing tools that is comparable to Sanger. Differences between Sanger and MinION data may be due to sequence data bias, but further work is required to determine the exact nature of this phenomenon and to correct for ambiguities and significant sources of error. Ongoing developments of MinION technology and sequence data manipulation could enable routine diagnostic use for HIV-1 resistance testing in the near future, with the capacity to infer resistance mutation linkage and more effectively tailor patient therapy.

BHIVA Research Award Winner 2016, Paul Scott

P56

False positive *Pneumocystis jirovecii* immunofluorescence

V Sivaraj, V Sekhawat, R Kulasegaram and U Mahadeva
Guy's and St Thomas' Hospital NHS Foundation Trust, London, UK

Background: Immunofluorescence (IF) has been the gold standard for diagnosis of *P. jirovecii* oocysts on respiratory fluids. Morphological diagnosis based on detection of alveolar casts and cysts on Papanicolaou and Grocott (silver) stains, respectively, is less sensitive. We describe a case of false positive *P. jirovecii* IF in an induced sputum specimen due to *Candida* spp. oral commensals.
Method: A 56 year old Nigerian HIV positive man on ART (ABC/3TC/DRV-r) for 10 years, with a CD4 count of 434 cells/ml and undetectable HIV Viral Load, presented with breathlessness. An induced sputum was reported positive for PJP on IF. There was no exercise induced desaturation or radiological evidence of PJP on CTPA, but the latter revealed bilateral pulmonary emboli. Review of the cytological diagnosis was requested.
Results: On review of the Papanicolaou and Grocott slides of the case several *Candida* organisms were seen, and no pneumocysts. The manufacturer's product sheet for the IF kit states that the antibody used is known to cross-react with *Candida albicans*, resulting in false positivity. It is therefore important that the cytopathologist correlates the IF result with their interpretation of Papanicolaou and Grocott stains before issuing a final report.
Conclusion: *Pneumocystis jirovecii* IF tests have a potential to produce false-positive results due to *Candida* spp. Testing should be requested only when PJP is a real possibility, and the test result should also be interpreted in the clinical context.

P57

MIP-3α does not appear to play an important role in amplifying human infection with HIV-1 in the female genital tract

S Sibeko[1], C Herrera[2], S Andrews[1], J Ekeruche-Makinde[2], N Olejniczak[2], Y Aldonn[2], A Evans[2], K James[1], R Moore[1], S Dhar[3], V Rai[3], M Dennis[4], S Sharpe[4], C Jones[2], N Berry[5], S Rowland-Jones[1] and R Shattock[2]
[1]University of Oxford, Oxford, UK, [2]Imperial College London, London, UK, [3]Oxford University Hospitals, UK, [4]Public Helath England, Porton Down, UK, [5]NIBSC, Hertfordshire, UK

Background: Importance of understanding early events in acute HIV-1 infection for development of more effective preventative and therapeutic strategies is paramount. In particular, given that heterosexual transmission to women is the most common route of HIV-1 transmission, there is a need for better understanding of early events at the mucosa in female genital tract (FGT). Because of difficulties studying this in humans, current understanding is based on FGT studies in macaque model: it is not known how much these findings also apply to women. In particular, a seminal macaque study suggested that a key event after initial transmission of SIV in the mucosa was secretion of MIP-3α, thought to be stimulated by exposure of mucosal epithelial cells to SIV via 'outside-in' signalling. MIP-3α secretion led to the recruitment of virus-susceptible dendritic cells and subsequently CD4 T-cells to the initial foci of infection, leading to exponential expansion of the infection. We set out to test the translational relevance of these macaque findings in humans.
Methods: Here we used several *in vitro* models of human FGT, together with endocervical and cervico-vaginal secretions collected from healthy HIV-1 uninfected volunteers, to assess the secretion patterns of MIP-3α by female mucosal epithelial cell models and examine the response of the *in vitro* models to HIV-1 and other stimuli. We also measured 32 other analytes in the FGT models to compare and contrast secretion patterns with those of MIP-3α. Further, we used macaque endocervical explant tissue models to compare and contrast findings in humans. We analysed MIP-3α levels by the sandwich quantitative ELISA and Luminex immunoassays.
Results: Our data show that MIP-3α is secreted constitutively at high levels in a polarised fashion by the human FGT, and particularly the endocervix, but that this chemokine secretion is not augmented by HIV-1 exposure. Similarly, there is no evidence that MIP-3α levels are elevated on exposure to SIV in macaques. Our results further show that the human endocervix is a rich source of MIP-3α with its levels being among those of the highest analytes, while MIP-3α levels are low in the macaque endocervix. IL-2 and IL-17A are elevated on exposure to various SIV preparations, a response we did not see in humans.
Conclusion: These findings demonstrate the importance of testing relevant human tissue models before extrapolating findings in monkey models to the human situation.

BHIVA Research Award Winner 2016, Sengeziwe Sibeko

P58

Persistent CD4:CD8 ratio reversal despite years of suppressive ART

A Francis-Morris[1], N Mackie[2], S Fidler[1] and K Pollock[1]
[1]Imperial College London, London, UK, [2]Imperial College Healthcare NHS Trust, London, UK

Background: CD4:CD8 ratio reversal is associated with immune activation and non-AIDS morbidity and mortality in persons living with HIV infection (PLWH). We investigated CD8 count change over years on antiretroviral therapy (ART) and the relationship with CD4:CD8 ratio reversal in a cohort of PLWH attending HIV outpatient services.
Methods: Data including demographics, CD4 and CD8 counts prior to and during ART and HIV viral load (VL), were collected from electronic records covering 1st January 2006 to 31st December 2016. HIV seroconverters, who started ART within 3 months of primary HIV infection (PHI), were identified from a matched database. The anonymised dataset was analysed using IBM SPSS Statistics v24. The CD4:CD8 ratio and time on ART during the study were derived mathematically; a CD4:CD8 ratio $\geq$1 was considered normal. Multivariate analyses were conducted using Cox Regression.
Results: Records from n=876 PLWH including those starting ART during chronic HIV infection and 75/876 (8.6%) HIV seroconverters, were analysed. The majority were male; 741/876 (84.6%), and Caucasian; 507/876 (57.9%), and all achieved HIV VL <50 RNA copies/ml. The median (IQR) pre-ART CD4:CD8 ratio was 0.41 (0.24–0.63). Normalisation of CD4:CD8 ratio occurred in 274/876 (31.3%). CD8 count response to ART varied by baseline CD8 count; with an expansile effect in those with CD8 count $\leq$600 cells/μl, p<0.001; no significant effect in those with CD8 count 601–900 cells/μl, p=0.165, and a contractile effect in those with a CD8 count >900 cells/μl, p<0.001. Those aged 18–30 years were most likely to have CD8 contraction with ART, p=0.017. Those with a baseline CD8 count of 351–600 cells/μl had the greatest frequency of CD4:CD8 ratio recovery; 67/166 (40.4%). In multivariate analysis, higher pre-ART CD8 count and older age at diagnosis were associated with CD4:CD8 ratio reversal post VL suppression, p=0.007 and p<0.001, whereas years on ART and early treatment of PHI was protective, p<0.001 and p<0.001.
Conclusion: In these PLWH, despite years of viral suppression, CD4:CD8 ratio recovery occurred in less than one third. Older age at HIV diagnosis and pre-ART CD8 expansion were associated with persistent CD4:CD8 ratio reversal. Investigation of the mechanism should include the study of immune activation associated with the HIV reservoir and persistent pathogens such as CMV, and should inform the utility of CD4:CD8 ratio monitoring to predict non-AIDS morbidity and mortality.

P59

Rate of HIV rebound and CD4 T cell kinetics in an ageing population on successful antiretroviral therapy

A Katiyar[1], E Gathogo[1], S Kinloch-de Loës[1], M Johnson[1], F Lampe[2] and CJSmith[2]
[1]Royal Free London NHS Foundation Trust, London, UK, [2]University College London, London, UK

Background: The number of people with HIV (PLWH) $\geq$50 years is on the rise. Although it is known that older age is associated with lower risk of viral rebound on ART, it is less clear whether this continues after the age of 50. Further, immune function in the HIV-negative population is known to decline in older age, but it is unknown if this is mirrored in PLWH with normalized CD4 count.
Methods: PLWH attending a single HIV centre were followed from the first date on or after 1/1/2005 with VL<50 cps/ml on ART until viral rebound (2 consecutive VL>200 cps/ml) or last follow-up. Multiple viral suppression (VS) episodes per person were included. Rates of viral rebound were adjusted for potential confounders using Poisson regression with GEEs. For immune analyses, people were followed from the first time they were aged$\geq$50 years,

VL<50 cps/ml on ART with CD4>500 cells/μl, until date of viral rebound or last follow-up. CD4 count & CD4/CD8 ratio change over this time was calculated using multi-level linear regression.
Results: 4045 people were followed for median (range) 6.3 (0.0–11.4) person-years and 1 (1–5) VS episodes. Viral rebound rates among >50 years were substantially lower than <40 years and continued to decline with increasing age (Table). 1118 people included in immune analyses had median (range) follow-up of 3.9 (0.0–11.4) years. An increase in CD4 count of +12 cells/μl (95% CI +9, +15;p<.001) per year older and in CD4/CD8 ratio of +0.031 (+0.028,+0.035;p<.001) was observed.
Table: Rate of viral rebound stratified by age (p<0.0001)

Current age (years)	No. of rebounds	Person-years	Rate of viral Rebound* (95 % CI)	Adjusted** rate ratio (95% CI)
<40	428	6787.7	6.3 (5.7, 6.9)	1.00
40–49	289	5792.9	5.0 (4.4, 5.6)	0.77 (0.61, 0.96)
50–54	213	5364.0	4.0 (3.4, 4.5)	0.62 (0.49, 0.80)
55–60	130	3660.1	3.6 (2.9, 4.2)	0.57 (0.42, 0.77)
60–65	50	1971.8	2.5 (1.8, 3.2)	0.50 (0.33, 0.76)
65–70	30	1062.8	2.8 (1.8, 3.8)	0.49 (0.29, 0.84)
70+	12	842.2	1.4 (0.7, 2.5)	0.24 (0.10, 0.58)
Per 5 years older:				0.83 (0.79, 0.88)

*Per 100 person years; **Adjusted for gender, HIV acquisition mode, time since start of ART, current CD4 count (cells/mm^3).
Conclusion: Despite increasing prevalence of co-morbidities, rates of viral rebound continue to decline with increasing age. Further, this is one of the first studies showing CD4 T-cell preservation in those aged ≥50 years and stable on ART. These positive results need to be confirmed in other PLWH cohorts.

P60

Two case reports on safety and impact of α4β7 integrin monoclonal antibody in treated primary HIV infection on HIV reservoirs OVERRIDE

J Thornhill[1], J Hoare[1], S Peake[1], M Khan[1], K Williamson[2], C Murray[3], J Frater[2], S Kinloch[3] and S Fidler[1]
[1]Imperial College London, London, UK, [2]University of Oxford, Oxford, UK, [3]Royal Free NHS Foundation Trust, London, UK

Background: Gut-associated lymphoid tissue (GALT) is preferentially infected during primary HIV infection (PHI) & a key site of HIV persistence. α4β7 integrin, a gut-homing receptor expressed on CD4 cells, facilitates CD4 cell trafficking to GALT. A monoclonal antibody against α4β7 integrin (Vedolizumab) is used to treat inflammatory bowel disease (IBD). Data from ART treated SIV-infected primates showed HIV viral control following Vedolizumab administration. We present 2 cases of HIV+ individuals treated with ART in PHI, who received Vedolizumab for IBD.
Methods: Vedolizumab was administered as licensed for IBD; at 0, 2, 6 then every 8 weeks. Informed consent for blood sampling & gut biopsy was obtained. Routine clinical monitoring data was captured (CD4, CD8 and HIV VL). Paired blood and gut biopsy samples from the terminal ileum (TI) & rectum were collected at a single time point from participant A. Comparisons with blood & GALT samples from the HEATHER cohort (15 ART treated PHI individuals) were made for β7 expression & total HIV DNA measured by flow cytometry and qPCR, respectively.
Results: Clinical characteristics are shown in Table 1. No adverse events were reported and GI symptoms improved for both. For Participant A: β7 expression on blood CD4+ cells increased over the 3 study visits (12.7%, 13.7% & 22.1%, respectively); β7 expression on GALT CD4+ cells was lower for participant A compared to HEATHER participants & healthy controls. Blood total HIV DNA for participant A (at biopsy visit) was comparable to the mean HEATHER HIV DNA (3.4 vs. 3.1 Log/106 CD4 (Lcpm)). Despite only 8 months of ART since PHI, total HIV DNA in GALT for participant A (TI 3.7, rectum 3.5 Lcpm) was below the mean of HEATHER participants (TI 3.6, rectum 3.5 Lcpm) who median (range) time on ART was longer at 34 (15–96) months.
Conclusions: We report the first 2 cases of HIV+ individuals receiving Vedolizumab for IBD. It was shown to be safe, well tolerated & associated with good IBD control. These preliminary data support further exploration of α4β7 integrin antibodies as a strategy to limit GALT HIV reservoir. It remains to be shown if longer treatment period may further impact on reservoirs.
Table 1. Clinical characteristics

	Participant A	Participant B
Age, years (sex)	31 (M)	53 (F)
IBD diagnosis	Crohn's	UC
Year HIV diagnosis	2016	2000
Days from PHI to ART	28	10
Months from PHI to Vedolizumab	3.5	202
Months on ART at time of gut biopsy	8	NA
Current CD4 count	419	1054
Current VL	<20	<20

P61

Wide variation in susceptibility of transmitted/founder HIV-1 subtype C isolates to protease inhibitors and association with *in vitro* replication efficiency

K Sutherland[1], D Collier[1], D Clairborne[2], J Prince[2], M Deymier[2], R Goldstein[1], E Hunter[2] and R Gupta[1]
[1]University College London, London, UK, [2]Emory University, Atlanta, GA, USA

Background: The *gag* gene is highly polymorphic across HIV-1 subtypes and contributes to susceptibility to protease inhibitors (PI), a critical class of antiretrovirals that will be used in up to 2 million individuals as second-line therapy in sub Saharan Africa by 2020. Given subtype C represents around half of all HIV-1 infections globally, we examined PI susceptibility in subtype C viruses from treatment-naïve individuals.
Methods: PI susceptibility was measured in a single round infection assay of full-length, replication competent MJ4/*gag* chimeric viruses, encoding the *gag* gene and 142 nucleotides of *pro* derived from viruses in 20 patients in the Zambia-Emory HIV Research Project acute infection cohort.
Results: Ten-fold variation in susceptibility to PIs atazanavir and lopinavir was observed across 20 viruses, with EC_{50}s ranging 0.71–6.95 nM for atazanvir and 0.64–8.54 nM for lopinavir. Ten amino acid residues in Gag correlated with lopinavir EC_{50} (p<0.01), of which 380K and 389I showed modest impacts on *in vitro* drug susceptibility. Finally a significant relationship between drug susceptibility and replication capacity was observed for atazanavir and lopinavir but not darunavir.
Conclusion: Our findings demonstrate large variation in susceptibility of PI-naïve subtype C viruses that appears to correlate with replication efficiency and could impact clinical outcomes.

BHIVA Research Award Winner 2015, Ravindra Gupta

Behaviour, transmission, public health interventions and prevention

P62

'The stress is all about sex': using a participatory approach to understand sexual decision-making amongst school attending young people in rural Sierra Leone

K Bethell[1], A Strang[2] and O O'Brien[2]
[1]NHS Lothian, Edinburgh, UK, [2]Queen Margaret University, Edinburgh, UK

Background: Sierra Leone (SL) has persistently high levels of adolescent pregnancy and reducing this is a priority. Data that captures the experience of young people (YP) and the decisions that they make about sexual and reproductive health (SRH) is required to help inform education and public health interventions.

Objectives: This study aims to establish how YP at school in SL understand their rights and responsibilities around sex and relationships, and to find out what the facilitators and barriers to making positive decisions in this area are, with a view to informing locally developed SRH programs.
Methods: An adapted version of the Participatory Ethnographic Evaluation and Research (PEER) approach was used to involve the YP throughout the research process. Six male and six female students were trained in research methods and met in gender group sessions (GGS) to develop the tools for data collection. Each then interviewed 3 friends and fed these interviews back to the visiting researcher in debriefing sessions. Initial findings were discussed with the participants in GGS for clarification and interpretation. Key informant interviews and notes from the GGS also contributed to the data set.
Results: Evidence demonstrated the pervasive nature of gender inequalities between the groups. Expectations of the communities and pressure to achieve at school weighed heavily on the young women, and yet the power in relationships remained decisively with the young men. While romantic notions of 'good' relationships and the acknowledgement of the benefits of equality were commonplace, sex was referred to negatively by both genders. It was described as a tool of control, with transactional sex and 'sexual harassment' portrayed as normal. Relationships were kept secret from all but trusted friends, and the stresses that were associated with navigating them were vividly described as physical and mental illness. Anxiety surrounded pregnancy and there was strong pressure to abort in secret despite the danger this entails. There was no mention of contraception.
Conclusion: The study demonstrates the need to consider the broad social context when considering SRH interventions. Messages about risks create anxiety amongst females in school, but structural factors significantly limit their ability to influence outcomes. This study suggests the need to work with boys, men and the wider community to share the burden of responsibility, improve knowledge and develop strategies for change.

P63

A case of inflammatory skin reaction post Gardasil vaccination in a man living with HIV

N Pinto-Sander, E Russell, T Buckingham, Y Gilleece and D Richardson
Lawson Unit, Brighton and Sussex University Hospitals NHS Trust, UK

Background: The quadrivalent human papilloma virus (HPV) vaccine Gardasil© is used in 13 year old schoolgirls to prevent cervical cancer. It is generally considered a safe and well-tolerated vaccine. In 2015, the JCVI recommended the vaccine for men who have sex with men (MSM) aged 18–45 years old to be delivered via a PHE pilot via selected GUM clinics. Here we describe an erythema nodosum (EN) like reaction following vaccination with Gardasil© in an HIV-positive MSM.
We describe a 43-year old HIV-positive MSM diagnosed in 2005 with an undetectable HIV RNA on truvada, darunavir, ritonavir since 2011. He had previous treated hepatitis C, depression and shingles and was taking regular duloxetine and lansoprazole. Importantly he had no new medical problems, no allergies and had not started any new medications. Forty-eight hours after his initial Gardasil© injection he developed a 'bite' like lesion on his left leg and a small lesion on his nostril. These settled after 10 days without medical review or treatment. 5 weeks later he returned for his second vaccination which was administered as initial symptoms had fully resolved. Twenty-four hours later he developed an identical lesion on the left leg and two further lesions, one on each leg, in the subsequent 2 days. Routine haematology and biochemistry including a vasculitis screen was normal however a skin punch biopsy, although with limited subcutaneous tissue, showed a mixed lymphohistiocytic infiltrate including eosinophils in the dermis suggestive of EN. The patient subsequently developed a superficial wound infection in a single lesion which cultured Methicillin-resistant *Staphylococcus aureus* (MRSA) which was treated successfully with antibiotics. The patient remained well and his skin fully recovered after 5 weeks.
Discussion: EN is a panniculitis and has previously been described as a rare complication following Gardasil vaccination in an adolescent girl and as a reaction following other vaccines. Local injection site complications following Gardasil© are well known but rarer skin complications such as lichenoid drug eruption and potentially more serious erythema multiforme have also been described.
Conclusion: Here we describe, to our knowledge, the first reaction suggestive of EN in an HIV-positive MSM following Gardasil© administration. Although EN usually resolves without sequelae our patient developed significant infection following this adverse drug reaction which required management.

P64

A high mortality rate amongst HIV-infected homeless people who inject drugs: reviewing cause of death and engagement with services

R Metcalfe[1], T Martin[2], C Glover[1], SE Peters[1] and S Priyadarshi[2]
[1]Brownlee Centre, Gartnaval General Hospital, Glasgow, UK, [2]Addictions Services, NHS GG&C, Glasgow, UK

Background: There is an ongoing HIV outbreak amongst homeless people who inject drugs (PWIDs) with virologically linked new diagnoses exceeding 100 in under 3 years. A very high mortality rate was noted in this cohort, even compared to similar cohorts of HIV uninfected PWIDs. We sought to review causes of death and linkage with services prior to death in order to target interventions to improve outcomes in this cohort.
Methods: A retrospective case note review of all patients from this cohort who had died between July 2015 and December 2017. Hospital medical records, procurator fiscal records and addictions team records were reviewed to collect data. Data was compiled on cause of death, HIV markers and opiate substitute therapy (OST) prescription at time of death.
Results: There were 10 deaths over a 2.5 year period in a cohort of 115 HIV infected homeless PWIDs identified as part of the current outbreak, giving an all cause mortality of 8.7% in this time period.
5/10 (50%) were female; mean age 45 (range 37–54). 5/10 (50%) had current Hepatitis C co-infection.
Mean time from HIV diagnosis to death was 8.5 months (range 0–28) with 8/10 (80%) dying within a year of HIV diagnosis.
Primary cause of death: 5/10 (50%) were directly drug related deaths (overdoses), 1/10 (10%) metastatic malignancy, 2/10 (20%) cardiovascular events, 2/10 (20%) pneumonia.
6/10 (60%) were on antiretroviral treatment (ART) and 4/10 (40%) ART naïve. Mean time from last CD4/viral load (VL) test to death was 2 months (range 0–6). 1/10 (10%) no tests. 4/9 (44%) had HIV viral load<40 copies/ml. Mean CD4 count 320 cells/cmm3 (range 160–554).
8/10 (80%) were on a current OST prescription under community addiction team (CAT) and 1/10 (10%) were known to CAT but had disengaged from care.
Conclusion: In this cohort study we found much higher all cause mortality than other cohort studies. Drug related deaths were the most common cause, which is similar to other studies. This is despite the majority currently engaging with addictions services and HIV services and 40% adhering to ARVs. There were no deaths directly related to HIV infection and CD4 counts were not significantly low. This study demonstrates the highly chaotic lifestyle and vulnerabilities of this HIV cohort who require a specialist approach and a high level of input from HIV, addictions and homeless health services.

P65

A structural equation model to predict the acceptability of PrEP in MSM in Leicester

R Jaspal[1], B Lopes[2], P Papaloukas[1] and J Bayley[3]
[1]De Montfort University, Leicester, UK, [2]Universidade de Coimbra, Portugal, UK, [3]Barts NHS Trust, London, UK

Background: PrEP is an effective method for preventing HIV. Previous research suggests that men who have sex with men (MSM) may not regard PrEP as being personally beneficial despite engagement in HIV risk behaviours. This study set out to examine the factors that predict personal acceptability of PrEP in MSM at risk of HIV.
Methods: 191 MSM in Leicester completed a cross-sectional survey tapping into key demographic factors, HIV knowledge, sexual risk behaviours, HIV testing, STIs, and PrEP acceptability.
Results: Kruskal-Wallis tests showed that there were statistically significant effects of education level and income, respectively, on HIV knowledge. Respondents with GCSE-level education had significantly less HIV knowledge than those educated to postgraduate degree level. Respondents with less than £10,000 income possessed significantly less HIV knowledge than the higher income groups.

A structural equation model was constructed to examine the relationship between HIV knowledge and PrEP acceptability (as dependent variable) with perceived HIV risk, actual sexual risk behaviour, having had STIs in the past 12 months, and the frequency of HIV testing as mediators. There was a significant pathway with perceived HIV risk mediating the impact of HIV knowledge on actual sexual risk behaviour (β=.32, p<.001). This suggested that, in order for HIV knowledge to impact actual sexual risk behaviour, MSM must perceive themselves to be at risk. The model then suggested that actual sexual risk behaviour had a statistically significant impact on having a STI for the past 12 months (β=.33, p<.001) and on the frequency of HIV testing (β=.22, p=.002). As expected, frequent actual sexual risk behaviour leads to higher frequency of STIs in the past 12 months and to higher frequency of HIV testing. Frequent HIV testing significantly predicted the variance of PrEP acceptability (β =.21, p=.004). This suggests that the frequency of HIV testing is associated with perceiving PrEP as being beneficial as a remedial response to frequent engagement in sexual risk behaviour.
Conclusion: The results highlight socio-economic inequalities in HIV knowledge and HIV testing, and suggest that MSM with high levels of HIV knowledge and perceived HIV risk and who regularly test for HIV are most likely to endorse PrEP as an HIV prevention method. It is necessary to increase HIV knowledge and to facilitate accurate risk appraisal in MSM in order to enhance PrEP acceptability in MSM at risk of HIV.

P66

A systematic review of risk of HIV transmission through biting or spitting: implications for policy

F Cresswell[1,2,3], J Ellis[4], J Hartley[5], C Sabin[4], G Brook[6], C Orkin[7] and D Churchill[2]
[1]London School of Hygiene and Tropical Medicine, UK, [2]Brighton and Sussex University Hospitals NHS Trust, Brighton, UK, [3]Infectious Diseases Institute, Kampala, Uganda, [4]University College London, London, UK, [5]Western Sussex NHS Trust, Worthing, UK, [6]London North West University Healthcare NHS Trust, London, UK, [7]Barts and the London NHS Trust, London, UK

Introduction: A draft Parliamentary Bill seeks to increase penalties for assaults on emergency workers. Debate in parliament focused on the risks associated with biting and spitting. This and other recently publicised announcements, such as the use of spit hoods to protect police, seem to be partly based on an exaggerated fear of blood borne virus transmission. We undertook a literature search to clarify the risk of HIV infection from biting and spitting.
Methods: We performed a systematic review using Medline, Embase and Northern Lights databases. Key search terms included 'HIV', 'human immunodeficiency virus', 'AIDS', 'acquired immune deficiency syndrome' AND 'bites', 'bitten' OR 'spit', 'spat', 'spitting' OR 'saliva'. We also hand searched relevant conferences and reference lists. Inclusion criteria for the final papers were: (i) exposure of interest and (ii) outcome of interest described (HIV seroconversion or absence thereof). We excluded papers that did not provide original case data.
Results: 742 title unique titles or abstracts were reviewed, yielding 32 articles for full-text review of which 13 articles were included in the final dataset (Fig. 1). Evidence was of low quality (12 case reports/series and 1 letter). Data was extracted for 23 people bitten by HIV-positive individuals; 14 (61%) did not HIV seroconvert and 9 (39%) had a positive HIV-test after the biting incident. Of the 9 cases where HIV infection occurred only 4 were classified as high or very high plausibility based on temporal relationship between incident and positive HIV-test or phylogenetic linkage. In the cases of HIV seroconversion the protagonist had HIV viraemia and/or blood in their mouth at the time of the bite and/or caused deep injury. There were no cases of HIV transmission through biting in the UK and no cases where the protagonist was on HAART. There were no cases of HIV transmission through spitting.
Conclusion: The risk of transmitting HIV through spitting is nil, and through biting is negligible. The majority of people living with HIV are on HAART which will eliminate any risk of transmission by any means. Post-exposure prophylaxis is not indicated after a bite from an HIV-positive individual in all but exceptional circumstances. Policy to protect emergency workers should be made with this evidence in mind, and balanced with respecting the rights and dignity of people living with HIV.

P67

An outbreak of HIV amongst homeless people who inject drugs (PWIDs): describing the epidemic and developing an innovative service model

R Metcalfe, C Glover, K Brown, V Patton and SE Peters
Brownlee Centree, Gartnaval General Hospital, Glasgow, UK

Background: Since Nov 2014, Glasgow has witnessed a significant rise in HIV amongst homeless people who inject drugs (PWIDs) with 118 new diagnoses. The existing model of hospital based HIV care is not suitable for this group and a new service model to target this under-served population has been implemented.
Methods: We reviewed the cohort to describe the epidemic and measured effectiveness of the new service with surrogate markers. The model includes

1 A BBV specialist outreach nurse to co-ordinate with multidisciplinary organisations and seek patients out including by 'walking the streets'
2 Antiretroviral therapy (ART) dispensed via community pharmacies to those on daily opiate substitution therapy (OST)
3 A weekly consultant led BBV clinic within the homeless health facility, also providing sexual & reproductive health and soft tissue infection expertise.

Results: 118 PWIDs have been diagnosed with HIV of whom 103 are confirmed Clade C with primary NNRTI mutations. There were more new diagnoses in 2017 than 2016 (37 vs. 30). Mean age 41, 43/118 (36%) are female. Of those with complete partner notification, 61/83 (73.4%) have reported sexual contacts alongside a history of IDU.
Of those with results, 38/111 (34%) had avidity <40% and 65/110 (59%) have confirmed current Hepatitis C co-infection. 10/118 (8.5%) are deceased.
98/118 (83%) have received ART, with 89/118 (75%) on a current prescription. 53/118 (45%) have received ART via community pharmacies linked to daily OST dispensing, with 32/118 (27%) currently receiving this.
Of those with results, 71/110 (65%) had an undetectable viral load at last check. 35/118 (30%) have attended the consultant led outreach BBV clinic, with the remainder heavily supported by BBV specialist nurse.
Conclusion: Despite very good needle exchange provision, a comprehensive addictions service and OST prescribing, HIV is spreading rapidly amongst homeless PWIDs in Glasgow. Traditional service models are not suitable for this group and we have developed a holistic approach to provide ART and engagement in HIV care. This is vital to improve health outcomes and reduce onward transmission to control the epidemic in this highly vulnerable group.

P68

Are we losing them? A retrospective case note review of HIV patients with chaotic attendance and patients lost-to-follow-up at an urban HIV clinic service

H Sakurai[1] and I Fernando[2]
[1]University of Edinburgh, Medical School, UK, [2]Chalmers Sexual Health Centre, Edinburgh, UK

Background: Major risks of disengagement from HIV care include increased mortality in individual patients, increased risks of onward transmission and HIV drug resistance. We reviewed patients with poor attendance or lost-to-follow-up (LTFU) from a large urban HIV service, to identify measures to improve retention in care.
Methods: We identified (i) patients completely LTFU from care in the period Jan 2000–Aug 2017 and (ii) patients not attended specialist HIV clinics for more than 12 months but then reengaged during January 2012 to August 2017. Data was collected on demographics, medical history, risk factors for poor attendance, length of disengagement, antiretroviral discontinuation, and blood markers.
Results: From a current patient cohort exceeding 700, only 51 patients were identified as possibly LTFU from the service since 2000. 59% cases (n=27) were unresolved, 37% (n=17) had documentation of transfer of care. 2 patients were deceased. 11% (n=5) patients were not engaging with HIV care but had received other types of secondary care. Of these 5 patients; 1 patient refused further HIV care due to experience with an adverse drug reaction, 2 patients had a history of mental health problems. Considering the 27 unresolved cases, it is likely that the majority had left the locality, as there was no evidence of them receiving any type of other secondary care.

Since January 2012, only 35 patients still in care had failed to attend specialist HIV clinics for a consecutive 12-month period. However, 6 patients had documentation of receiving care from another service during that period. 14 patients continued antivirals despite lack of attendance at a formal HIV clinic and had an undetectable viral load when reviewed in clinic. Of the remaining 15 patients, 8 had a documented history of mental health issues, 4 had closed disclosure status. Only 1 patient had a history of drug or alcohol misuse. At reengagement of these 15 patients, 11 had a documented reason for poor attendance. This includes; travelling (n=5), mental health issues (n=3), social circumstances (n=2), and booking problems (n=1). 4 patients had a medical condition attributed to uncontrolled HIV infection.
Conclusion: This study showed a high retention rate of patients by this HIV service, comfortably achieving the 90% WHO retention target over the past 5 years. Most poor attenders in this study had documented risk factors prior to disengagement. Improved attention to early amelioration of these risk factors may help maintain such patients in care.

P69

Assessment of the human papilloma virus immunisation programme in MSM and HIV patients attending an inner city clinic in Wales

S Warren and N Lomax
Cardiff Royal Infirmary, Cardiff, UK

Background: The Human Papilloma Virus (HPV) immunisation programme was introduced by Welsh Government on 1st April 2017 for all MSM's aged 15–45 years and for case-by-case consideration for at risk groups including all HIV patients, MSM over 45 years, sex workers and transgender men and women. All these groups of patients are at high risk of HPV infection, with the immunisation programme likely to provide protection against a wide range of HPV-related diseases and cancers. The vaccine used is Gardasil® and is given as a course of three injections ideally at intervals of 0,1 and 4–6 months. However it is clinically acceptable to give the first and third doses up to 24 months apart. Our service decided to offer the vaccine to all patients (male and female) attending our HIV clinic as well as the eligible MSM's and for consultant decision on the other at risk groups. The vaccine can be given to all HIV patients regardless of CD4 count or antiretroviral therapy.
Method: All patients who were coded as receiving the HPV vaccine were included in this audit from 1st April 2017 until 1st December 2017. Data was collected on demographics and number of vaccines received.
Results: 917 patients were coded as receiving an HPV vaccine. 532 patients were MSM, 374 patients were HIV positive and 11 were female (CSW or transgender). The results for the MSM were as follows; age range 15–68, with 55% of patients being aged 20–29. The results for the HIV cohort were as follows; 319 males (age range 20–55), 55 female (age range 20–65). 917 patients received 1 vaccine, 426 patients had received 2 vaccines and 108 received 3 vaccines. No adverse events were recorded after receiving the vaccine and it has been well received by all our patients.
Conclusion: As Wales is the first country in the UK to roll out the HPV vaccine programme for MSM and HIV patients, this data demonstrates the practical ease of giving the vaccine and the excellent acceptability of it. Patients are guided when the next dose is, however they are advised that the dose can be given at their next scheduled appointment as long as all 3 doses are given within 24 months of the first dose. Future audits will be needed to establish the uptake of the vaccine in 2 years from the onset of the programme start date.

P70

Auditing AUDIT: service evaluation of Alcohol Use Disorders Identification Test to screen gay, bisexual and other MSM attending a sexual health service

A Maxwell, M Pakianathan, C Henderson-Cleland, J Avery and A Hegazi
The Courtyard Clinic, Wandsworth Integrated Sexual Health, St George's Healthcare NHS Trust, London, UK

Background: Rates of hazardous drinking (28%–34%) are higher among sexual health (SH) clinic attendees than in the general population (26%) and it is associated with higher risk sexual behaviour. Alcohol screening in SH settings is acceptable to patients and is recommended by current NICE public health guidelines. Alcohol Use Disorders Identification Test (AUDIT) is a validated self-completed screening tool for detecting problematic drinking in healthcare settings. Gay, bisexual and other MSM (GBM) may experience higher rates of problematic alcohol use than the general population but there are few published data to inform screening in SH clinics for this specific group.
Methods: Following a baseline audit of alcohol documentation in GBM attending an urban SH service in 2015, routine screening was introduced using AUDIT in June 2016. All clinic attendees received a paper questionnaire to self-complete at registration and hand to their attending clinician. Hazardous alcohol consumption prompting referral to a Health Advisor for brief intervention or signposting to alcohol services was defined as >21 units/week (the then nationally recommended maximum allowance for men) or an AUDIT Score >7 in 2017. Documentation of alcohol histories and identification of hazardous drinking were compared in 300 GBM before and after the introduction of AUDIT intervention with a 2017 re-audit.
Results: An alcohol history was documented in 81.3% (244/300) of clinic attendees in 2015 and 86.7% (260/300) in 2017 however this improvement did not reach statistical significance (p=0.09). In the 2015 audit hazardous drinking was identified in 14.3 % (n=35) [95% CI 10.5–19.3] of patients but this increased to 26.2% (n=68) [95% CI 21.2–31.8] when AUDIT was employed (p=0.001). Overall 58.3% (n=346) of GBM were diagnosed with an STI and this was similar in those who were or were not identified as hazardous drinkers (60% vs. 59%). Rates of reported recreational drug use were higher in hazardous than in non-hazardous drinkers (66% vs. 41%, p<0.001).
Conclusion: We observed improvements in the documentation and identification of hazardous drinking in GBM attending an integrated SH service following the introduction of routine AUDIT screening. Further research is needed into the relationship between alcohol consumption and interventions to improve sexual health in this population.

P71

Awareness of pre-exposure prophylaxis (PrEP) in the black and minority ethnic (BME) community: results of a questionnaire survey

N Ekong[1], J Braunholtz-Speight[1], N Mukelabai[2] and A Evans[1]
[1]Leeds Centre for Sexual Health, West Yorkshire, UK, [2]BHA Leeds Skyline, Leeds, West Yorkshire, UK

Background: The efficacy and recommendation of Pre-exposure prophylaxis (PrEP) for HIV prevention is well established in high-risk groups. Men who have sex with men (MSM) and people from sub-Saharan Africa living in the UK are the two largest groups with newly acquired HIV infection in the UK. In addition to treatment as prevention and safer sex, PrEP has been publicly promoted as another means to reduce the transmission of HIV infection. We aimed to assess the awareness of this information in the BME community in our city.
Method: Questionnaires were circulated to attendees of two football tournaments in 2017 (African Cup of Nations and Refugee football tournament). Questions about demographics, high-risk sex in the preceding 6 months, prior knowledge of PrEP and willingness to take PrEP both if they had to pay privately or if offered by the NHS were asked. They could complete the questionnaire on paper or an electronic version. They had privacy to complete the questionnaires.
Results: 75 completed questionnaires were returned during the 2 events (42 and 33 respectively). 95% were male and 5% female. 52% were in the 15–24 years age group (age ranged from 15–74). 77% were black African, 8% identified as black British, 4% as white British and 11% as other. 93% were heterosexual, 4% bisexual male and 3% declined to state their sexuality. 81% (61/75) had never heard of PrEP or were not sure what it was. With further explanation about PrEP, 60% (45/75) would take PrEP if provided by the NHS. 18% would take PrEP on the NHS only if their sexual risk changed. Of the 60% who would take PrEP on the NHS, 51% of them would not self-fund. 45% (34/75) said PrEP would not change their current condom usage. In the preceding 12 months, 19% had sex with a partner from a country considered high risk for HIV. 4% men had sex with another man. 3% had sex with a HIV positive partner and paid for sex respectively. Everyone in these highest risk groups said they would take PrEP if offered by the NHS. 5% had used post exposure prophylaxis (PEP) in the preceding 12 months and 41% of the respondents did not know what PEP was.
Conclusion: Awareness of PrEP and PEP was lacking in this group of young majority black African males. When told about PrEP they showed interest and

surprise. 100% respondents at highest risk would take PrEP. Better targeting of HIV prevention messages including PrEP is needed to BME communities.

P72

Brave New World? Clinical advice on sexual health and contraception to local authorities in England: what works?

J Clarke[1], J O'Sullivan[2], M Murchie[3] and P Bevan[4]

[1]Leeds Teaching Hospitals Trust,UK, [2]Camden and Islington Public Health, London, UK, [3]Sandyford Initiative, Glasgow, UK, [4]Hackney and City of London, UK

Since 2013, the split between NHS and Local Authority (LA) commissioned services have isolated sexual health services from the NHS. Sexual health services need to be delivered in a clinically safe and cost effective manner. Local authorities now make choices on investing millions of pounds of public health budgets into services novel to their organisational and contracting experience. What drives them to consider engage clinical advisors in this process?

The NHS set up systems of independent clinical advice, notably the Regional Clinical Senates supporting clinical commissioning groups. Is there any equivalent for LA commissioning? If so, what criteria on clinical governance and quality standards exist to inform the process? Can we develop a template for the ideal clinical advisor to guide LA commissioning? What skill sets are needed for developing service models? Are these the same as needed for evaluating procurements?

Methods: Literature search for guidance on local authority commissioning for sexual health, role of independent clinical advisor. Review of workstream of London Sexual Health Transformation Programme (LSHTP) Clinical Advisory Group.

Results: Published data or commentaries in health databases on acting as a clinical advisor are rare. Independent clinical advisors in other settings are expected to have up to date skills, knowledge and experience in their area of specialism and deep understanding of the health and social care sector. Management skills of influencing, communication and analytical abilities are essential.

The LSHTP, led by the City of London, has a standing CAG with advisors drawn from a range of disciplines (GP, Sexual Health Advisor, GU Physician, SRH physician). LSHTP published local service specification templates for both terrestrial and online sexual health services. How this group have worked to influence thinking on LA commissioning will be discussed.

Conclusion: Advisers from the NHS had to adapt to a different landscape of financial and political constraints while advocating for retain clinical quality and safety. Commissioning is soon to enter a second phase of procurements across England as the first areas tendered complete their 5 year contracts. There is a growing cohort of senior clinicians with operational experience in LA commissioned services. Collating experience to define the role of independent clinical advisor with skills valued by LA commissioners will help sustain safe standards of care into the future.

P73

Can you deliver HPV vaccination in a routine HIV care service?

L Gillespie

Brownlee Centre, Glasgow, UK

Background: In 18/11/15, the Joint Committee on Vaccine and Immunisation advised men who have sex with men (MSM) should be vaccinated against Human Papilloma Virus (HPV). The Scottish Chief Medical Officer announced on 10/5/17 that HPV immunisation would be offered to MSM up to, and including 45 years of age, attending Scottish sexual health clinics and HIV clinics from 1/7/17. This programme is opportunistic, at point of patient attending for care.

Data for the local HIV clinic is presented below.

Methods: *Staff education*:

Education for the HIV clinic multidisciplinary team (MDT) was provided on 2 occasions. This information was emailed to allow distribution to those not in attendance. A flow chart was created with input from different members of the team; emailed to the MDT; and a hardcopy made available in clinic rooms.

Patient Education:

Immunisation Scotland Patient Information Leaflets (including vaccine record card) were ordered, and were available in clinic rooms, and patient waiting area.

Practical Measures:

Vaccine ordering procedure and storage was discussed and agreed with the lead clinic nurse prior to vaccine roll out. Patient Group Direction for HPV was updated for the NHS Board.

Review of uptake:

Data fields were added to the HIV database to allow recording of vaccine eligibility, immunization status, and dates of vaccinations. An Excel spreadsheet of eligible patients was created. Review of Clinical Review Forms and electronic notes of those eligible. Review of paper prescriptions in clinic folder in case of failure to document electronically or on paper clinical review form.

Results: There were 358 eligible patients in the HIV clinic cohort. 77.4% (277) of eligible patients attended during the first 4 month period. 69% (191) of eligible patients who attended were offered the vaccine. 2% (6) were already immunised. 57.4% (159) had immunisation schedule commenced. Of these, 75.5% (120) have had 2 vaccines, and 1.2% (2) have had 3 vaccines (as of end Dec 2017), meaning that 76.7% of those starting the vaccination schedule have had either a further 1 or 2 doses as of end Dec 2017. 26 patients (7.3%) declined or deferred vaccination. 86 patients (31% of eligible attendees) had no record of being offered the vaccine between July to October 2017

Conclusion: HPV vaccination can be delivered in a routine HIV care setting as part of an opportunistic vaccination programme, with a good rate of attendance for subsequent vaccines.

P74: Abstract withdrawn

P75

Chemsex with crystal methamphetamine, associated risk-taking and patient reported adverse consequences

M Pakianathan[1], W Whittaker[2], J Avery[1], C Henderson-Cleland[1], L Ribeiro[1], MJ Lee[1], F Iqbal[1] and A Hegazi[1]

[1]Wandsworth Integrated Sexual Health, St George's Hospital, London, UK, [2]Centre for Health Economics, University of Manchester, Manchester, UK

Background: Chemsex is the use of specific drugs in sexual settings by gay, bisexual and other men who have sex with men (GBMSM) that may or may not include the use of crystal methamphetamine (CM). We aim to describe characteristics of GBMSM participating in chemsex and associated outcomes with CM use, which we hypothesize is associated with greater harms.

Methods: A cross-sectional retrospective analysis of case notes of GBMSM accessing a South London open access sexual health service between 1/6/14 and 30/9/17. Routine holistic clinical assessments (including substance use, chemsex, mental health and sexual health as well as patient perceived consequences of chemsex). Chemsex participants disclosing CM use were compared with those not disclosing CM use and adjustments made for HIV status, age and ethnicity.

Results: Of 2752 GBMSM accessing service; of which, 407/2174 (19%) disclosed chemsex participation. Median age of chemsex participants was 34 (range: 15–71). CM chemsex (CMC) was reported in 214 (59.4%) cases and these GBMSM had reported higher mean number of sexual partners in preceding 3 months than non-CMC cases (8.7 vs. 5.8 p=0.002). Polydrug use was common (n=301, 74%).

	CMC (%)	Non-CMC (%)	AOR (95% CI)
Injecting drugs (n=307)*	48.1	9.2	9.1 [4.5–18.5]
Group sex (n=261)**	74.8	61.8	2.1 [1.1–3.7]
STI (n=360)***	81.8	63	2.0 [1.2–3.4]
Mental health impact (n=254)*	66.3	28.6	5.3 [2.9–9.7]
Work impact (n-229)*	48.6	15.7	6.2 [3.0–13.0]
Overdose (n=226)*	33.6	7.5	6.8 [2.6–17.8]
Financial costs (n=156)*	36.7	4.6	12.8 [3.6–45.3]

*p<0.001, **p=0.016, ***p=0.008.

Conclusion: We present the first UK data demonstrating that amongst GBMSM participating in chemsex, CM use is associated with higher risk behaviours as well as STI acquisition. CM use was also significantly associated with patient perceived adverse other health and social consequences

highlighting the importance of holistic assessments of chemsex participants that go beyond an assessment for sexual health consequences alone.

P76

Chemsex: a survey of staff attitudes in a non-major urban, level three, integrated sexual health service

M Ewens[1], CJN Lacey[2] and IR Fairley[1]
[1]YorSexual Health, York Teaching Hospitals NHS Trust, York, UK, [2]University of York, York, UK

Background: Substance misuse before or during sex (chemsex) is widely reported in major cities; predominantly London, Manchester and Brighton. Men who have Sex with Men (MSM), who participate in chemsex, are more likely to engage in high-risk sexual behaviours, and acquire sexually transmitted infections. Little evidence exists of the prevalence of chemsex in non-major urban areas.
Aims: To explore staff attitudes and knowledge of chemsex in a non-major urban level 3 Integrated Sexual Health Service (ISHS).
Method: A paper-based questionnaire was distributed to staff within our ISHS, prior to a local update on chemsex and the reasons for screening.
Results: 45 individuals completed the survey: 8 doctors; 33 nurses and 4 other healthcare professionals. 43 respondents knew what chems were, 2 nurses didn't. 44 people routinely asked patients about recreational drug use within their history; this dropped to 31/45 (69%) when asking MSM about chems. A reason for this may be the fact that 24 respondents (53%) did not feel comfortable screening for chemsex. 11/45 declared they did not have enough knowledge about chems to talk about them openly with patients, and the risks involved. 22 (49%) knew about slamming; of which 12 knew what a slam pack was. Interestingly, 12 respondents knew where to refer patients who wanted help regarding chems, and safer slamming advice, even though there is no established pathway within our service. Staff were asked to identify three common drugs used for sex from a short list; the results of which can be seen in the table below:

Drug	Respondent identified
Crystal methamphetamine	27
Mephedrone	35
Gamma hydroxybutyrate	31
Alkyl nitrites	10
Ecstasy	15
Other	17

Conclusion: The majority of staff within our semi-rural ISHS had a basic appreciation of what chemsex was. Self-reported routine screening for chems by staff was not evident, with a lack of knowledge perhaps accounting for this. As a result, further chems teaching has taken place, with the creation and dissemination of a referral pathway to our local MSM charity for patients requiring support. Slam packs are available within our clinic for those at risk of blood borne viruses. Further studies are needed, regarding chemsex in non-major urban areas, to reduce the sexual health inequalities experienced by MSM within these communities.

P77

Chemsex: prevalence, characteristics and associated risk profiles of men who have sex with men in South Australia. A cross-sectional cohort study

C Khaw[1], L Raw[2], I Zablotska-Manos[3] and M Boyd[4]
[1]Adelaide Sexual Health Centre (Clinic 275), Infectious Diseases Unit, Royal Adelaide Hospital, Adelaide, SA, Australia, [2]SA Health, Adelaide, SA, Australia, [3]Kirby Institute, UNSW, Sydney, NSW, Australia, [4]School of Medicine, University of Adelaide, Adelaide, SA, Australia

Background: Chemsex (Intercourse under the influence of psychoactive substances that heighten sexual arousal and disinhibition) is common among men who have sex with men (MSM). We report the prevalence, associated risk profiles and characteristics of MSM who engage in chemsex in South Australia.
Methods: Over 6 months (February to August 2017), MSM attending SA's only public sexual health clinic, a high HIV caseload General Practice and a drop in/appointment based non-government organization were invited to complete an anonymous survey about chemsex. Participants provided socio-demographic information and reported on sexual practices, drug use, HIV/STI testing and status. We assessed the proportion of respondents reporting chemsex and the associated factors. For statistical associations of interest, we present adjusted prevalence ratios (APR) and 95% Confidence Intervals (95%CI).
Results: Among 410 GBM participants, 31% were under 26 and 32% were 26-35 years old; 76% were Australian-born; 2.0% were of Aboriginal or Torres Strait Islanders (ATSI); 66% were employed fulltime or part time. In the preceding 6 months, 82% reported having multiple (>/=2) partners, 67% had condomless anal intercourse with other males; 42% engaged in group sex. By self-report: 12% were HIV-positive and 78% HIV-negative. Receiving PrEP: 6.4%. Chemsex was reported by 120 (29%) of participants. Substances used included crystal methamphetamine (14%) and gamma hydroxybutrate or butyrolactone (GHB/GBL, 5%), among other drugs, mainly for fun (18.5%), 'party and play' (10.2%), to have sex for longer (9.3%) and become less inhibited (9.5%). In the multivariate regression analysis, chemsex was associated with being Australian-born (APR=1.45; 95%CI: 1.02–2.06), engaging in group sex once/a few times (APR=1.86; 95%CI: 1.35–2.57) or at least monthly (APR=2.30; 95%CI: 1.23–4.29) in the last 6 months, hooking-up for sex online or via mobile applications (APR=1.70; 95%CI: 1.19–2.43), being HIV positive vs. negative (APR=2.46; 95%CI: 1.62–3.73) or taking PrEP (APR=1.85; 95%CI: 1.06–3.23).
Conclusions: In this clinical sample of MSM in South Australia, chemsex, being born in Australia and being HIV positive were found to be a key predictors of condomless anal sex. Understanding prevalence and risk profiles may help inform the development of intervention strategies to address decreasing STI and HIV transmission in South Australia

P78

Combination prevention and HIV: a cross-sectional community survey of gay and bisexual men in London

L Logan[1], I Fakoya[2], F Burns[2], A Rodger[3], A Howarth[2], G Murphy[1] and A Nardone[1]
[1]Public Health England, London, UK, [2]Institute for Global Health, University College London, UK, [3]Royal Free London NHS Foundation Trust, London, UK

Introduction: Significant declines in new diagnoses in MSM attending sexual health (SH) clinics in London have been observed and attributed to an increase in repeat HIV testing alongside decreased time from HIV diagnosis to initiation of antiretroviral therapy and the use of Pre-Exposure Prophylaxis (PrEP).
Methods: A total of 767 MSM were recruited from 22 social and sex on premises venues in London between October and December 2016. Fieldworkers recruited eligible men who completed an anonymous questionnaire and were asked to provide an oral fluid specimen. Specimens were tested for anti-HIV antibodies (Ab). Logistic regression was used to identify factors associated with frequent HIV testing (two or more HIV tests in the last 12 months) and PrEP use.
Results: Almost all men (96%) reported ever having an HIV test and 70% had had a test in the previous 12 months, half (49%; 325/668) reported frequent testing. Men aged 35 years and over were significantly less likely to have tested more than once (p value=0.0026). Men that had had an STI in the last year [adjusted odds ratio (AOR) 3.0, 95% CI 1.79–5.20] or reported two or more casual condomless partners in the previous 12 months (p value=0.0099) were more likely to have had more than one HIV test in the previous year. Frequent testing was not associated with ethnicity, education, chemsex or PrEP use. 78% (584/744) of men provided an oral fluid specimen of which 545 were eligible for analysis and 38 (7.0%) were HIV Ab positive. Of these 13% (5) reported their status as negative indicating an undiagnosed infection. 6.2% (46/744) reported using PrEP in the previous 12 months of whom 13% (6/46) reported not having attended a sexual health clinic in the last year and 11% (5/44) had not had an HIV test in the last year. Men reporting two or more casual condomless partners (AOR: 2.9, 95% CI 1.17–6.98) or chemsex in the last year (AOR: 6.3. 95% CI 1.09–4.91) were more likely to have used PrEP. There was no association between PrEP use and frequent testing (AOR: 2.1, 95% CI 0.93–4.88).
Conclusion: Overall HIV testing was high and the rate of undiagnosed infection comparable to national estimates. Study participants at increased risk of HIV transmission were testing more frequently and using PrEP. Men reporting PrEP use were not all following recommendations for testing and clinical monitoring. Efforts to promote national HIV testing guidelines and to support people using PrEP safely remain crucial.

P79

Comorbidity, polypharmacy and renal impairment: the experience of managing a PrEP cohort in an integrated sexual health service setting

C Knapper[1], H Birley[1], Z Couzens[2], I Parker[1] and A Jones[2]
[1]Aneurin Bevan UHB, Newport, UK, [2]Public Health Wales NHS Trust, Wales, UK

Background: Funding for Pre-exposure prophylaxis for HIV (PrEP) in the form of Truvada was launched in our area in July 2017. We set up a PrEP service to be delivered via our pre-existing integrated contraceptive and sexually transmitted infection (STI) Integrated Sexual Health (ISH) open access walk-in service which follows a hub and spoke model over a wide geographical area covering urban and rural communities. In this abstract we highlight the findings and issues encountered following the first 5 months of PrEP service provision in this setting.
Method: We set up the PrEP service in line with national operational guidance in conjunction with our national Public Health body. Patients could self- refer or be referred to PrEP clinic from open access ISH clinics where they would have an initial pre- PrEP work up of full STI screen and renal function assessment. PrEP was commenced in a booked appointment slot in PrEP clinic staffed by the HIV team with follow up via open access ISH clinics at 1 month then 3 monthly.
Results: 96 patients attended for pre-PrEP work up and were given appointments for PrEP initiation in PrEP clinic. All were MSM, eligibility criteria 1 with a third living outside our catchment area. The mean age was 35.5 years with an age range of 15–76 years. Of those given appointments, 74 commenced PrEP, 2 were diagnosed with HIV on pre- PrEP work up, 6 declined PrEP (3 of whom declined to start PrEP on the basis of low risk, pre-existing co-morbidity and abnormal baseline renal function). The remainder (14) did not attend their appointment. Of the 96 patients, 51 (53%) were known to have been diagnosed a bacterial STI in the last year with 28 (29%) having syphilis, gonorrhoea, chlamydia or HIV diagnosed on pre-PrEP work up in our service. Medical history revealed 55 (58%) had a pre-existing co-morbidity with 23 (24%) having 2 or more co-morbidities, 51 (54%) were already taking 1 other medication with 20 (21%) taking 2 or more medications. Of those 18 years and over, where eGFR has been calculated, 35 (38%) have had an estimated Glomerular Filtration Rate (eGFR) of under 90 of whom 10 (11%) have had an eGFR of under 70. One 36 year old patient with baseline eGFR of 85 developed acute reversible renal impairment (eGFR 25 at lowest) at 3 months on PrEP.
Conclusion: Overall we have found unforeseen levels of co-morbidity, polypharmacy and renal impairment in our cohort of PrEP patients. As a result, we have altered our service model and all patients are now followed up in booked appointment PrEP clinics run by members of the HIV team to allow closer monitoring and management. Those with eGFRs of below 70 or with eGFRs below 80 and with co-morbidities impacting on renal function are monitored on a monthly basis and PrEP has been incorporated into our pre-existing virtual HIV renal clinic for discussion with a renal physician.

P80

Declining PEP use: a consequence of PrEP?

G Whitlock, T Suchak, S Patel, K Gedela, E Devitt, S McCormack, N Nwokolo and A McOwan
56 Dean Street, Chelsea and Westminster Hospital, London, UK

Background: We present the temporal evolution of PEP and PrEP use at our service over the past 5 years.
Methods: We searched the electronic patient record database at a central London sexual health service from 1st January 2012 to 31st December 2017 for PEP and PrEP use. PEP use was determined from the national PEP code, PEPS. PrEP use is presented as the cumulative number of PrEP initiators: a local PrEP code for PrEP initiation (NPrEP) was introduced in September 2015 and replaced by national PrEP codes (O43, O51, O52, O53) in 2017.
Results: Monthly PEP use at our service increased from 69 in January 2012 to 336 in December 2015, was stable around 360 per month until October 2017 then declined in the last 2 months of 2017: the first consecutive 2 months with less than 300 PEPs since September 2015. Monthly PrEP initiation increased from 11 in September 2015 to 1188 in December 2017 (by local codes) and from 1 in April 2017 to 1623 in December 2017 (by national codes), mainly due to the NHS England PrEP IMPACT trial.
Table 1. Monthly PEP and cumulative PrEP use

	Jul 17	Aug17	Sep 17	Oct 17	Nov 17	Dec 17
PEP	367	373	335	336	285	203
PrEP (local code)	995	1072	1127	1167	1171	1188
PrEP (national code)	2	14	26	574	1276	1623

Conclusion: There is a clear correlation between the uptake of PrEP and fall in demand for HIV PEP. This suggests that high-risk individuals are switching from PEP to PrEP to reduce their HIV risk. The fall in PEP use will result in cost savings for the NHS.

P81

DIY HIV prevention: what are the experiences of London-based men who have sex with men who source PrEP outside clinical trials?

S Paparini[1], W Nutland[2], T Rhodes[2], V-K Nguyen[1] and J Anderson[3]
[1]Graduate Institute of International and Development Studies, Geneva, Switzerland, [2]London School of Hygiene and Tropical Medicine, London, UK, [3]Homerton University Hospital NHS Foundation Trust, London, UK

Background: Issues of cost-effectiveness and of responsibility for prevention services have so far led NHS England to decide not to fully commission pre-exposure prophylaxis (PrEP) for HIV prevention, other than through an implementation trial. Given the significant lag between the awareness of PrEP efficacy and the opportunity to obtain PrEP through traditional health care routes, many gay and other men who have sex with men (MSM) have turned to 'DIY PrEP', purchasing generic formulations of PrEP for themselves on the internet or via other alternative routes. However, there is very little research on DIY PrEP practices and no qualitative study with DIY PrEP users in the UK.
Methods: A formative qualitative study was conducted in 2017 to inform the development of an intervention (PrEP Club) to support DIY PrEP users and improve the safety and experience of this prevention strategy. Focus groups were held with 20 MSM who are based in London and are obtaining PrEP through means other than clinical trials, to explore their accounts and experiences of sourcing and using generic PrEP.
Results: Participants were often recommended PrEP by peers and by clinicians, who also signposted them to sources of generic PrEP. As early adopters, participants deployed significant personal initiative to find out about PrEP, buy it and ascertain legitimacy of sellers and products. Participants also had to negotiate uncertainties about actually using PrEP, including deciding on drug dosing and how to monitor their health. The level of support they received varied substantially depending on the health service they accessed. Participants also discussed the help they would have liked, and their views on proposed interventions to support current and future DIY PrEP users.
Conclusion: DIY PrEP is an important part of HIV prevention in England and internationally. The findings from this qualitative study indicate the need for specific skills for healthcare workers and for community-based interventions to support DIY PrEP user and ensure the continued safety and effectiveness of informal PrEP use.

P82

Do adverse childhood experiences (ACEs) negatively affect sexual health outcomes, sexual risk-taking and wider health outcomes? A study of attendees at specialist sexual health services in Greater Glasgow and Clyde

L Kelso
NHS GGC, Glasgow, UK

The study explored the prevalence of adverse childhood experiences (ACEs) reported by adults attending specialist sexual health services, alongside the relationship between ACEs and adverse health outcomes in adulthood.
Attendees of specialist sexual health services in NHS Greater Glasgow and Clyde completed an anonymous online survey covering demographics, sexual history, family history, and health outcomes. ACEs recorded were childhood

abuse (psychological, physical and sexual), and childhood household adversity (household member experiencing mental ill health, substance abuse, criminal behaviour, mother/stepmother treated violently, and parental separation).
Categorical Principal Component's analysis was used to create summary variables measuring sexual risk-taking, sexual health outcomes, health-harming behaviours, physical and mental health outcomes. Hierarchical multiple linear regressions explored the relationship between an ordinal, cumulative ACE exposure variable and each outcome; and individual ACE area exposure and each outcome variable (controlling for confounding effects of age, gender and sexual orientation). Cluster analysis investigated different profiles of ACEs in the sample and influences on outcome variable scores.
Among the 319 participants, 89% reported at least one ACE, with 32% reporting 4 or more – substantially higher prevalence than previous studies. Cumulative exposure to ACEs was predictive of poorer sexual health, physical health and mental health outcomes. Four ACEs were significantly associated with poorer mental health outcomes. Attendees presenting with different demographic (i.e. gender and sexual orientation) and ACE profiles are important for understanding greater risk-taking behaviour and poorer outcomes in some areas.
This study indicates that adults attending specialist sexual health services may be more likely to have experienced ACEs than the general population, and that ACE exposure is associated with various negative outcomes and increased likelihood of risk-taking behaviour. Effective sexual health practice may benefit from an understanding of the lifelong impact of ACEs in order to tailor support more effectively to the complex needs of attendees.

P83

Drug Use Disorders Identification Test (DUDIT): a new tool to identify problematic chemsex in sexual health clinics?

E-R McDonald, A Hegazi and M Pakianathan
Wandsworth Integrated Sexual Health, St George's Hospital, London, UK

Background: Gay, bisexual and other men who have sex with men (GBMSM) with problematic chemsex participation are increasingly presenting to sexual health services. DUDIT (Drug Use Disorders Identification Test) is a widely used, validated self-administered drug-screening questionnaire. We evaluated its acceptability, feasibility and utility as a screening tool in a sexual health setting. Men with a DUDIT score of $\geq$6 are deemed to probably have drug-related problems, i.e., risky or harmful drug habits that might be diagnosed as substance abuse/harmful use or dependence and a further assessment is recommended.
Methods: A cross-sectional retrospective analysis of case notes of GBMSM accessing a specialist gay men's sexual health clinic in South London from 5/6/17 to 18/9/17. All new and rebook patients routinely received a DUDIT questionnaire as part of the triage process and all patients underwent subsequent holistic assessments on a standardised profoma which included questions on drug use and chemsex. Data extracted was analysed in MS Excel. DUDIT scores were compared to subsequent disclosures of problematic chemsex. Fishers exact test was used for statistical analysis.
Results: DUDIT was completed in 116 /151 (77%) patients during the study period. Most, 110 (95%) were gay men, median age 32 years. White ethnicity was most common n=94 (81%) but only 64 (55%) were UK-born. Recreational drug use was disclosed by 47/103 (46%) and 27/112 (24%) disclosed chemsex. 20/27 (74%) of chemsex participants had a DUDIT score $\geq$6. Overall STI diagnoses were similar at 37% and 40% in those scoring $<$6 and $\geq$6 on DUDIT, however a rectal STI was significantly more likely 18% vs 36% ($p<0.007$) as was reporting of a high risk behaviour (e.g requiring PEP, fisting, group sex) 45% vs 87%, ($p=0.0001$). DUDIT had a 92% sensitivity in identifying chemsex participants (11/12) who reported additional non-sexual health negative consequences suggestive of problematic chemsex.
Conclusion: DUDIT was an acceptable and feasible screening tool with high completion rates in our sexual health setting. Our data suggest that it may have a role in identifying problematic chemsex enabling targeted assessments and interventions to those who most need it.

P84: Abstract withdrawn

P85

Ethical tensions in the use of phylogenetic analysis of HIV transmission networks: a scoping review

A Northam, L Mulka and J Cassell
Brighton and Sussex Medical School, UK

Background: Phylogenetic analysis describes relatedness between strains of the HIV virus, and has potential to elucidate transmission patterns at individual and population level. This could allow us to develop novel interventions to interrupt transmission chains and powerfully enhance our current epidemiological methods. However, there is a need to address ethical issues such as privacy, stigma, and even criminalisation. This review seeks to identify, describe and summarise the ethical debates about the use of phylogenetic analysis of HIV, in order to inform policies on its ethical implementation.
Methods: A systematic search in PubMed, MEDLINE, EMBASE, PsychInfo, Web of Science and ASSIA, for English-language articles in peer-reviewed journals. We identified articles which discussed ethical issues raised by creating phylogenetic HIV networks. Employing thematic analysis techniques, an overall description of the literature was developed.
Results: 21 of 599 papers met the inclusion criteria; all were published between 2001 and 2017. Three main themes emerged: (i) misunderstanding of the limitations of phylogenetics in the forensic/legal setting and associated risks, (ii) the issue of balancing public health benefits vs. protecting individual's interests, and (iii) the particular complexities in obtaining informed consent. Authors identified that the risks associated with loss of privacy to the individual differs greatly dependent on the setting.
We identified that a variety of ethical frameworks are employed, mainly implicitly, to ground the discussions in the literature about the use of phylogenetic analysis in HIV. Interestingly, none of the identified papers were published in ethics journals. While authors highlighted the ethical dilemmas around creating HIV phylogenetic analyses, few proposed solutions to the issues.
Conclusion: HIV phylogenetics presents a unique challenge due to the social and legal landscape of HIV transmission. The crux of this debate is the challenge of balancing public and individual interests, particularly given that these are yet to be satisfactorily quantified or consensus reached. Our review of the literature highlights where additional theoretical, empirical and interdisciplinary work is required to inform the future ethical use of this technology. Further empirical work is required to inform normative deliberation, and this process should be seen as a constant feedback loop, rather than a linear process.

P86

Ethnic variations in the characteristics of sexual partnerships reported by behaviourally heterosexual sexual health clinic attendees: do they explain ethnic differences in STI diagnoses?

CRH Aicken[1], S Wayal[1], PB Blomquist[2], SM Fabiane[1], G Hughes[2] and CH Mercer[1]
[1]University College London, London, UK, [2]Public Health England, London, UK

Background: In the UK, ethnic differences in STI diagnoses are not fully understood. We examined whether ethnic variations in the characteristics of sexual partnerships explain these inequalities.
Methods: We administered an online survey that explored sexual behaviour in attendees at 16 sexual health clinics across England in summer 2016. We analysed data reported by 3230 behaviourally-heterosexual people aged $\geq$15 years on the number and characteristics of their recent (last 3 months) partnerships, stratified by gender and ethnic group. These survey data were linked to the GUMCAD STI surveillance system to obtain data on acute bacterial STI/trichomoniasis diagnosis made $\pm$6 weeks of completing the survey. Multivariable regression was used to calculate adjusted odds ratios (aOR) to examine whether ethnic variations in partnership characteristics explain ethnic differences in STI diagnosis, after adjusting for known confounders, age and partner numbers.

Results: Ethnic variations were observed for men and women in the number and type(s) of partners reported, e.g. % with >3 recent partners (last 3 months) ranged 6.9%–20.2% of men (p=0.05), 0.4%–6.3% of women (p=0.01); % of partnerships which were casual: 37.7%–53.8% of men's (p=0.01), 18.7%–32.9% of women's (p<0.01); condomless last sex: 46.6%–64.2% of men's partnerships (only) (p<0.01); and ethnic-mixing: 35.1%–86.2% of men's partnerships and 32.1%–79.3% of women's were ethnically-different, both p<0.001. Overall, 21.9% (95%CI: 18.4–25.8) of men and 11.3% (95%CI: 8.7–14.6) of women had acute STIs diagnosed, which varied by ethnicity, range: 9.9% of Indian/Bangladeshi/Pakistani men to 33.7% of mixed ethnicity men, p=0.09; 7.0% of Indian/Bangladeshi/Pakistani women to 16.0% of Black Caribbean women, p<0.01. After adjusting for age, number and type(s) of partners, and ethnic mixing, STI diagnosis continued to vary by ethnic group for both men and women (p=0.03 and p<0.01, respectively).
Conclusion: Taking account sexual partnership characteristics alongside partner numbers does not appear to explain ethnic differences in STI diagnoses among clinic attendees, indeed doing so exacerbates the differences among men. The role of partnership characteristics, beyond that of individual behaviours, in understanding STI risk requires more investigation as such intelligence could provide new insight into tackling ethnic inequalities in STIs and reducing transmission at a population level.

P87

Experience of a PrEP service in a central London sexual health clinic

T Elliott, L Hawkins, M Proserpio and O Dosekun
St Mary's Hospital, London, UK

Background: Pre-exposure prophylaxis (PrEP) is recommended within an HIV prevention package for people at high risk of infection, however it is not currently available on the NHS in England. A service was established in our clinic in July 2016 to support patients seeking or taking PrEP. From October 2017, the clinic opened to recruitment for the NHS funded PrEP Impact trial. We describe the cohort of men who have sex with men (MSM) receiving PrEP care at our clinic prior to the start of the Impact trial.
Methods: A list of HIV negative MSM attending the clinic between July 2016 and September 2017 was obtained. We collected information on demographics, sexually transmitted infection (STI) diagnoses, discussion about PrEP and PrEP use from GUMCAD and local codes, and review of case notes.
Results: Of the 2920 HIV negative MSM attending clinic during the study period, PrEP was discussed with 344 (12%) and 138 (5%) were already taking PrEP or planned to start. 19 (14%) of PrEP users were either part of a clinical trial or having PrEP care elsewhere.
119 MSM received PrEP care within the clinic: median age was 38 years (range 21-80) and 82 (69%) were of white ethnicity. Of these, 100 case notes were available for review. 86 (86%) had ever been diagnosed with an STI, and 45 (45%) had previously taken HIV post-exposure prophylaxis (PEP). 32 (32%) had a diagnosis of a rectal STI or syphilis at least once during the study period. 74 (74%) reported unprotected anal intercourse (UAI) in the prior 3 months with a median of 2 partners (range 1–50). 17 had no documentation about source of PrEP or were yet to obtain it. Of the remaining (83), the source of PrEP was as follows: 63 (76%) bought online, 18 (22%) Truvada supplied after PROUD study, 2 (2%) private UK prescription and 1 (1%) prescribed overseas. Where dosing method was documented or decided (n=84), 58 (69%) opted for daily PrEP, 21 (25%) event based, 3 (4%) intermittent and 2 (2%) a mixture of the above. Excluding patients previously on the PROUD study, PrEP had been taken for a median of 1 month prior to having PrEP care at the clinic (range 26 months prior to 14 months after first PrEP clinic visit).
Conclusion: Risky sex, STI incidence and prior PEP use are high amongst MSM PrEP users in this clinic. Most access PrEP online and opt for daily dosing. PrEP is not routinely discussed with MSM clinic attendees. We recommend that sexual health proformas include a prompt to discuss PrEP with those at risk.

P88

Hepatitis A vaccination in men who have sex with men (MSM): are we offering adequate protection during an outbreak?

E Wallis, K Skolimowska, C Cosgrove, M Pakianathan and A Hegazi
St Georges Hospital, London, UK

Background: Europe is currently in the midst of a sexually acquired hepatitis A (HAV) outbreak among men who have sex with men (MSM). Current BASHH guidelines recommend opportunistic vaccination of MSM without reliable evidence of previous vaccination/infection. We aimed to identify whether clinicians are assessing the risks of HAV acquisition in MSM and offering appropriate vaccination in a London sexual health & HIV clinic.
Method: Retrospective review of 200 adult MSM records attending clinic over a 3-month period in 2017. Electronic and paper records were reviewed to assess HAV immunity, vaccination rates and high-risk behaviours. Chi-square and Mann Whitney U tests were used in Excel for statistical analysis.
Results: Of 200 patients; 2 were excluded as no notes available. 67% (132/198) of MSM were HIV−. HIV+ patients were older with median age 49 vs 29 (p<0.001). HAV immunity was more frequently tested in the HIV− compared to HIV+'s; 62% (82/132) vs. 42% (28/66) p=0.008. Non-immunity was more common in HIV- group; 43% (43/82) vs. 14% (4/28) p=0.004, which could be related to younger age. Once found to be non-immune, 60% of all MSM were vaccinated. Barriers to vaccinations for the non-immune included non-response to recall after serology result (50%), pending serology at consultation (19%) and no vaccine available (13%). No reason documented in 19%. For those not tested for HAV, a greater proportion of HIV- MSM were offered vaccination compared to HIV+'s (16% vs. 3% p=0.040). A greater proportion of HIV+ MSM had coexisting chronic liver disease (11% vs. 2%, p=0.003). Both groups reported similar rates of high-risk sexual practices including >2 sexual partner in 3 months, chemsex, and recent STI diagnosis.
Conclusion: The majority of missed vaccinations opportunities was because clinicians chose to await serology and subsequently recalled patients' DNA, which may have been in part driven by a desire to ration vaccine to those who most needed it due to the global vaccine shortage. HIV− MSM were more likely to be tested for HAV and offered vaccination despite a higher proportion of chronic liver disease in HIV+'s, putting them at greater risk of HAV-associated morbidity. A potential barrier is the use of paper notes in HIV clinic compared with an electronic proforma in sexual health clinic, serving as a prompt to check HAV immunity and offer vaccination. A similar aide memoir in HIV clinic may improve screening and vaccination during the current outbreak.

P89: Abstract withdrawn

P90: Abstract withdrawn

P91

HIV Health in Faith Agenda Scotland

M Zimunya and S Shallangwa
Waverley Care, Glasgow, UK

Background: Today in Scotland, HIV affects 1 in 903 people. Among African communities, that figure is 1 in 20. Since 2010, we have been challenging this inequality through the Health in Faith Agenda, recognising the important role faith plays in African communities. In the 2011 census in Scotland, 36,000 people identified as 'African, Caribbean or Black'. Sexual health and HIV are rarely priorities among this population as they face competing health and social issues including immigration, housing, employment, mental health, isolation, generational and cultural tensions, and discrimination.
Methods: The project aims to work with faith communities and their leaders to reduce health inequalities and increase access to HIV information, testing and support. We engage with communities about the issues important to them, building mutual trust before introducing discussion about our core HIV remit. Volunteers within churches are recruited as health ambassadors. Engagement focuses on HIV awareness, especially around advances in treatment and care, to help remove the fear and stigma associated with HIV. Evidence of the disproportionate impact of HIV on Africans in the UK is

used to overcome perceptions about HIV. Faith leaders co-facilitate awareness sessions with project staff, who also deliver training to specialist NHS HIV staff on faith-related issues around treatment.
Results: During 2016/17 the project has achieved a number of successes, summarised below:
Relationship building:

- Worked with 70+ churches serving African communities

HIV testing:

- 33 HIV testing sessions conducted, supporting 170 individuals to know their status

Raising awareness:

- National training events organised for faith leaders and health ambassadors
- 40 awareness sessions delivered, involving over 1000 individuals – leading to increased understanding of HIV transmission and treatment
- Health in Faith Conference attended by 150 faith leaders and community members

Mainstream service engagement:

- Faith-based training delivered to NHS Greater Glasgow and Clyde HIV specialist staff
- Weekly information stall located in NHS GGC HIV specialist services

Conclusion: Faith remains a central part of African communities in Scotland. By building trusting relationships, providing accurate information and reconciling HIV messages with people's faith and moral values, the Faith and Health Agenda is contributing to challenging HIV stigma, encouraging people to access testing and reducing the risk of late diagnosis.

P92

How a sample of the heterosexual HIV+ community in London understand and feel about U=U

K Forbes
Body & Soul, London, UK

Background: Over 550 organisations from over 70 countries have united to support the U=U (or Undetectable=Untransmittable) campaign. U=U is truly ground-breaking news for the HIV+ community, yet there are concerns that the message isn't being communicated to PLWH in England. A third sector organisation that supports people living with and affected by HIV sought to gauge their members understanding, thoughts and feelings about U=U.
Methods: In January 2018, 86 adult members of the organisation attended a workshop entitled 'U=U for HIV', delivered by a guest HIV consultant and an experienced member of staff. The participants were aged 22–71 (median age 47), came from 28 boroughs of London and beyond, were 64% female, 92% HIV+ and 81% black African. The participants were registered members of the organisation and are representative of the community the organisation supports. The workshop lasted 1.5 h, was structured starting with a presentation about U=U, moving into peer led discussion and questions.
Results: The workshop was well received and confirmed the hypothesis that the HIV+ community are not entirely aware of U=U and its meaning. In a baseline survey taken before the workshop started, over 80% of members who responded answered yes to 'Do you know what your viral load is?' and 'Do you know what undetectable viral load is?', but only 40% answered yes to 'Have you heard about U=U?' A key message made by members throughout the workshop was that while the news about U=U is positively received, why is it not being publicised to the general population? The community would like to see message delivered in GP and hospital waiting rooms, for example. The younger adults in particular had concerns about the law and disclosure considering U=U. Members felt that too few doctors knew about U=U and a considerable proportion had not discussed U=U with their clinician. Members said learning about U=U in the workshop made them feel 'empowered', 'liberated', 'confident' and 'knowledgeable'.
Conclusion: We advocate on behalf of the PLWH that we support, that the U=U message should be shared across England in a public health campaign. This could help to reduce stigma, increase ARV adherence, reduce HIV transmission and make it easier for PLWH to form more open relationships. HIV clinicians should be aware that PLWH are not all aware of U=U and would benefit from an explanation from their clinician about what U=U means for them personally.

P93

How activated are you? Improving people with HIV's confidence in managing their health

L Yong, I Reeves and S Zetler
Homerton University Hospital, London, UK

Background: The Patient Activation Measure (PAM) is a tool to assess patients' knowledge, skill and confidence in managing their own health. In collaboration with NHS England, it is being trialled in people with long-term conditions in order to understand how patient activation can improve outcomes. We report on the feasibility and experience of implementing PAM in an inner city HIV service.
Methods: PAM was administered to patients living with HIV, ranging from the newly diagnosed to those receiving routine follow-up care as well as those with greater complexity/comorbidity. For those least 'activated', individualised treatment care plans were created incorporating PAM responses and used to tailor discussions with patients about ongoing care. PAM was re-administered after interventions were delivered. Patients' CD4 counts and viral loads were also obtained from clinical records.
Results: PAM was administered to 210 patients. Seven patients' questionnaires were excluded as their responses suggested they were doing so in a rote manner and/or they had difficulty with understanding to English literacy levels. Of the remaining 203 patients, 13.8% scored Level 1 (least activated), 24.1% scored Level 2, 37.4% scored Level 3, and 24.6% scored Level 4 (most activated). Fifty-nine of the less 'activated' patients were identified for a trial of PAM-informed personalised care planning. Of this cohort, 35.6% were recorded as having a comorbid mental health diagnosis. In addition, a further 12 patients scored Level 2 but positively answered 'Agree' to all questions, and thus were not included as they did not require intervention. Interventions such as medication counselling, psychological therapy and psychiatric assessments have been offered and accepted. The trial is ongoing and thus far, 20% of the identified cohort have completed interventions as agreed through tailored care planning. 86% of patients have reported higher activation as measured by PAM.
Conclusion: In this convenience sample of diverse individuals, most were able to complete PAM. Nearly two-thirds had scores in the most activated range. Among the least activated were a significant number with recognised mental health problems where low PAM scores may simply reflect their symptoms. The trial continues and we intend to collect data for the rest of the less activated cohort and evaluate whether, post intervention, patient activation as measured by PAM is associated with lower viral load and/or CD4 count.

P94

How effective are psychological interventions at reducing sexual risk-taking within sexual health?

C Kiddy, E Dixon, P Puszkiewicz, P Bullemor-Day, K Gurney and H van der Walt
CNWL HIV and Sexual Health Service, London, UK

Background: In 2016, there were 420,000 diagnoses of sexually transmitted infections (STIs) made in England. Risky sexual behaviours (i.e. behaviours that increase the risk of contracting STIs) include having multiple sexual partners, condomless sex, and combining sex with drugs and alcohol. Research evaluating the efficacy of risk reduction interventions has found varying levels of success. Psychological therapy potentially has an important role in reducing sexual risk-taking and the occurrence of STIs, particularly as mental health difficulties, including depression and anxiety, can increase the likelihood of people engaging in risky sexual behaviours.
Methods: Participants attending brief individual psychological interventions as part of routine care completed outcome measures at assessment and at their final session. These included self-report measures of depression (PHQ-9), anxiety (GAD-7) and a sexual health measure (SHM) which assesses worries about sexual health, having safer sex and risky sexual behaviour (including chemsex). The psychological intervention was provided by clinical psychologists and included Cognitive Behavioural Therapy (CBT), Systemic Therapy and Motivational Interviewing techniques. The mean number of sessions attended was 8.6 (range 1–19). Fifty-six clients completed outcome measures between December 2014 and June 2017.
Results: Table 1. Self-report outcomes based on pre and post-therapy outcome measure scores

	Improved (%)	No change (%)	Worsened (%)
Sexual Health Measure (n=54)	83	2	15
Having safer sex (n=47)	66	30	4
Depression Measure PHQ-9 (n=56)	68	11	21
Anxiety Measure GAD-7 (n=56)	98	2	0

Conclusion: The intervention was effective at reducing self-reported sexual risk-taking, with the majority of participants reporting 'having safer sex' as less of a problem by the end of therapy. Findings also showed improvements in levels of worry related to sexual health and levels of generalised anxiety and depression. This strongly suggests that Psychology teams embedded within sexual health services are well-placed to deliver effective interventions to reduce sexual risk-taking and improve sexual health.

P95

How many people need to take PrEP to prevent one new HIV infection? Meta-analysis of 32 HIV incidence studies in 64,741 patients

V Pilkington[1], N Nkwolo[2], A Pozniak[2], G Whitlock[2] and A Hill[3]
[1]Imperial College London, London, UK, [2]Chelsea and Westminster Hospital, London, UK, [3]Liverpool University, Liverpool, UK

Background: In 2016, there were 1.8 million new HIV infections worldwide, with 5167 in the UK. Oral TDF/FTC use has shown an 87% reduction in the risk of HIV transmission in MSM (PROUD/IPERGAY trials), with reductions of 50–60% in studies of heterosexuals in sub-Saharan Africa. A 12-month course of generic TDF/FTC as PrEP in sub-Saharan Africa costs <£50 per person. High quality generic TDF/FTC for PrEP is available online for import to the UK for £40 per month. This analysis aimed to estimate how many people would need to take PrEP for each new HIV infection prevented.
Methods: An online search identified studies of the incidence of new HIV infections in MSM, Female Sex Workers (FSWs), IV drug users (IDU) and heterosexuals. Estimates were from a range of countries in Europe, Asia, USA, and sub-Saharan Africa. For each study, the annual incidence of new HIV infections was used to calculate the number of people who need to take PrEP to prevent 1 HIV infection (NNTB). This is the reciprocal of the percentage reduction in HIV incidence for PrEP, assuming either 87% or 50% efficacy.
Results: HIV incidence estimates were obtained from 32 studies. The mean annual incidence of HIV infections was 7.2% for MSM, 2.0% for FSW, 4.4% for IDU, 3.9% for adolescents and 2.4% for heterosexuals in sub-Saharan Africa. There were wide ranges of incidence between countries and studies (Table). The number of people needed to take PrEP to prevent 1 HIV infection (NNTB) was 16 for MSM assuming 87% efficacy of PrEP. With 2810 new HIV infections in MSM in the UK in 2016, this would translate to over 40,000 MSM taking PrEP each year in the UK to achieve a 90% reduction in new HIV infections. There were larger NNTB estimates for other populations, especially if the efficacy of PrEP fell to 50%.
Conclusions: Worldwide, to prevent 1.8 million new HIV infections each year, at least 40 million people at high risk of HIV infection will need to take PrEP. Current use of PrEP in the UK needs to be upscaled significantly to maximise the potential benefits in HIV prevention. In Australia, with 20% of the UK population, 20,000 people are already receiving PrEP, The use of low-cost generic TDF/FTC would minimise the budget impact to the NHS.

Population	Incidence (%)	NNTB (87%)	NNTB (50%)
MSM (n=12)	4.1–12.5	9–28	16–49
FSW (n=3)	1.1–4.1	34–103	60–179
IDU (n=4)	0.2–8.7	13–575	23–1000
Adolescents (n=4)	1.1–6.7	17–101	30–175
Heterosexuals, Africa (n=9)	0.6–6.5	18–209	31–175

P96

Identifying HIV risk in heterosexuals in the era of PrEP

W Budu-Larbi, V Tuckey, S Kegg and A Manning
Queen Elizabeth Hosptial Woolwich, London, UK

Background: PrEP has established efficacy in reducing the risk of HIV acquisition and has become a key component of HIV risk-reduction. Adoption of PrEP has so far been community-driven and largely by MSM. However, our clinic HIV cohort is 85% heterosexual. The PHE PrEP programme recognises the unmet HIV prevention need in heterosexuals and other at-risk individuals but we are unclear on how to identify individuals who may benefit from it. We sought to determine demographics, identifiable risk factors and patterns of accessing sexual health care amongst individuals who had tested HIV positive for the first time over a 30 month period in order to inform our targeting of HIV risk-reduction interventions.
Methods: A sequential case review of all new heterosexual diagnoses of HIV made at a south London HIV clinic between January 2015 and June 2017). Identifiable risk factors for HIV acquisition, prior HIV testing, prior GUM clinic attendances and prior STI infections were sought.
Results: 44 patients tested HIV positive of this period. 25 were female, 19 were male and 80% (35) black African (6% white British and 14% other/mixed backgrounds). Average age at diagnosis was 44 years. Almost half (48%) of patients had previously tested HIV negative in the UK or abroad but only 18% had previously attended a GUM clinic. Only 8/44 (18%) had previously been diagnosed with an STI. The most common identifiable risk factor for HIV acquisition was unprotected sexual intercourse in a high prevalence country (31/44, 70% of new acquisitions) with a partner of unknown HIV status.
Conclusion: We describe a population who are recognisable as at risk of HIV acquisition and therefore could benefit from PrEP but do not tend to present to GUM services prior to their HIV diagnosis. Furthermore, patients who subsequently test HIV positive have frequently not previously been tested for HIV (a potential opportunity to discuss PrEP) and past history of STIs did not seem to be a 'red flag' to identify future HIV risk. The only consistent signal appeared to be unprotected sex in a high-prevalence setting – generally on visits to a country of origin once settled in the UK. To reach this population PrEP needs to be more accessible – in primary care, Travel Medicine Clinics – and signposted in a range of community settings. We are currently exploring a range of approaches to raise awareness of PrEP in this at-risk population.

P97

Implementation of HPV vaccine in men who have sex with men in a sexual health outpatient setting

R Thomas[1] and T Wilson[2]
[1]Sandyford Service, Glasgow, UK, [2]Glasgow University, Glasgow, UK

Background: Currently MSM do not benefit from herd immunity sought by human papilloma virus (HPV) vaccination schedules in adolescent females in the U.K. This is concerning given MSM attending sexual health services are known to have higher rates of HPV and HPV related cancers than heterosexual males.
Methods: We launched a HPV vaccination programme in July 2017 in an outpatient sexual health service. An opportunistic approach for vaccine implementation was decided across all clinic types for those eligible. Horizon scanning showed that 3283 MSM aged 16–45 years attended our service in 2016 with a similar number of attendees predicted for 2017. We provided specific training to all clinical staff and produced a patient group direction (PGD) for use by non-prescribers to maximise patient access. Patient held vaccine record cards were developed to document all vaccine administrations. A survey was carried out before and after vaccine implementation to assess MSM knowledge regarding HPV and the vaccine to see if this had changed following programme launch.
Results: Data was collected from July 1st, 2017 to October 31st, 2017.There were a total of 1579 HPV vaccine prescriptions for 1057 individuals. Scottish Index of Multiple Deprivation (SIMD) group 1 had the greatest uptake of vaccines during this period. Prior to vaccine implementation, 77 % of surveyed MSM had awareness of HPV, of whom 67 % were aware of the vaccine. Awareness of HPV and the HPV vaccine increased to 95% following its introduction.
Conclusions: The total number of individuals vaccinated is reassuring. Approximately a 3rd of our annual estimated MSM attendees for 2017 had already accessed the vaccine by month 4. This helps plan future procurement and service provision. Patients with SIMD1 postcodes had the highest number

of vaccines prescribed. This could be due to the geographical location of clinics, however, does suggest that priority groups are accessing the service. Although a small number of individuals were surveyed, this suggests people want more information regarding side effects of the vaccine and the reasons why we are vaccinating. This highlights the importance of education and information provision which may improve HPV vaccine uptake in the future. Ideally, being able to differentiate between the numbers of vaccines per individual over a larger time period would allow us to assess schedule completion and dropout rates.

P98

In the community: a pilot service evaluation of HIV point of care testing community pharmacies

M Phillips[1], B Vollans[2], L McFarlane[3] and C Beckett-Hill[4]
[1]Cumbria Partnership NHS Foundation Trust, UK, [2]OutREACH Cumbria, UK, [3]Community Pharmacy Cumbria, UK, [4]Cumbria County Council, UK

Background: Cumbria is an area of low HIV prevalence (0.98 per 2000), but has a high rate of late diagnosis (67% in 2015). There are <10 HIV diagnoses a year. Cumbria is the second most sparsely populated county in England, with a population density of 73 people per square kilometre. A theory around late diagnosis of HIV relates to availability of testing. Although testing is available at Sexual Health services and an enhanced GP service, people may be likely to encounter friends and family in healthcare settings in the County. Postal kits may not be appropriate for individuals whose risk factors are outside of their home relationship. We wished to test the feasibility and acceptability of HIV POCT testing in community pharmacies.
Methods: A collaboration was produced between key stakeholders. The decision to use third generation combined HIV and Syphilis tests was based on three core factors: The low likelihood of encountering seroconversion given local HIV rates; the ease of use of the kit and the easy interpretation of result. Pharmacies with enhanced skill sets (Healthy Living Pharmacies) were identified via the Local Pharmacy Committee, and were invited to take part based on interest and geographical spread. Pharmacists and their colleagues were trained face to face in sexual health discussions, how to manage a reactive test and performing the test. Testing packs were created with CT and GC testing, as well as condoms. A nurse liaison was allocated from the Sexual Health Service to be able to attend the pharmacies, perform quality assurance and act as a contact point for the pharmacists. The scheme was advertised in local papers, social media, television and radio. Each interaction was recorded on the pharmacy EPR, Pharmoutcomes.
Results: 144 tests have been provided and recorded on Pharmoutcomes. 1 test was declined by the pharmacist and the patient fast tracked to Sexual Health (they answered positive to lymphadenopathy and fever). 39 identified as female (37.5%), 104 male (72%) and 1 trans (0.5%). 137 (95.1%) were born in the UK. Sexuality was indicated as heterosexual 96 (66.7%), Homosexual 37 (25.7%), Bisexual 11 (7.6%). 64 (44.4%) had never had an HIV test before. When asked why pharmacy was chosen, 118 (81.9%) stated ease of access, 16 (11.1%) had been referred and the others gave 'other' as their reason. 100% users rated the service as good or excellent, and recommendable to others.
There have been no reactive tests for HIV, and one for syphilis.
Conclusion: The service has been received positively, with a number of people who have not tested before having come forward. The number of tests performed each month has grown from month to month, and was seen to be responsive to renewed media campaigning. The service is being embedded in pharmacies that performed the most testing for ongoing work. Testing therefore is both feasible and acceptable in this setting. This highlights the need for multi-pronged, community cognisant approaches to HIV testing.

P99

Increase in reported UAI amongst MSM in London, and decrease in anxiety: updates from an online survey

Y Dunkley[1], D Wang[2], K Skipper[2], S Worrall[1] and A Evans[3]
[1]Positive East, London, UK, [2]Spectra CIC, London, UK, [3]METRO, London, UK

Background: Survey data since July 2016 has been analysed amongst MSM who use the online dating service Grindr, within London. The broadcast messages include click-throughs to an online survey form that is open throughout the year.
Methods: 2 survey click-throughs were broadcast between July–September 2017, and 2 survey click-throughs were broadcast between October–December 2017.
Clients were asked the same range of questions as relating to risk factors for HIV transmission including HIV testing behaviours, chem usage, PEP & PrEP knowledge and use, and UAI frequency with monogamous and causal partners. Clients are also asked whether they are worried about the risks they are taking, or getting support on the risks they are taking.
Data is analysed cumulatively according to the financial year:

1 1086 had answered the survey by end of September 2017 (1086 respondents between July and September)
2 2046 had answered by end of December 2017 (960 respondents between October and December)

Results: Data has remained consistent from July 2016 along all indicators, however, from October 2017, reported UAI with casual partners has significantly increased, and anxiety has decreased:

1 October–December 2016: 52% UAI with casual partner in last 12 months, and 59% concerned about the risks they are taking
2 July–September 2017: 43% (48% mean since July 2016) UAI with casual partner in last 12 months, and 51% (56% mean since July 2016) concerned about the risks they are taking
3 October–December 2017: 56% UAI with casual partner in last 12 months, and 37% concerned about the risks they are taking

Conclusion: There is evidence that a behaviour change is potentially emerging amongst MSM using dating apps in London, whereby UAI with casual partners is increasing and anxiety is decreasing
A further round of data analysis will be undertaken January–March 2018 to establish whether this is a real trend, and whether there are further variables that could account for changes (e.g. the emerging use of PrEP, which at present still remains below 10% of survey respondents, but is increasing incrementally)
Evidence will be mapped against prevention campaigns, and biomedical advances.

P100

Informing the national decision to approve pre-exposure prophylaxis (PrEP) in Scotland

G Valiotis and K Smith
HIV Scotland, Edinburgh, Edinburgh, UK

Background: On 10 April 2017, PrEP was approved for use on Scotland's national fully subsidised healthcare system (NHS). The Scottish Medicines Consortium (SMC) announced that following their rigorous process PrEP has been deemed an effective treatment to prevent the transmission of HIV and will be made available on the NHS in Scotland. Prior to approval, lack of awareness of PrEP and a fragmented national approach were viewed as key barriers to the decision making process.
Methods: We monitored international studies and policy guidance on the effectiveness of PrEP as an additional part of comprehensive HIV prevention, and convened a round-table of experts to focus efforts and identify priorities. We published a PrEP good practice guide, and administered Scotland's expert group which produced guidance for Scotland on prescribing criteria, cost assessments, and mapped information and training needs of workers and the community. To produce a unified Patient Group submission to the SMC we brought together community and third sector organisations in Scotland, and we designed an online survey to capture the experiences and concerns people might have about PrEP. We were able to convey the potential positive impact of PrEP from the survey responses (n=350), and from a summation of anecdotes from community members attending information events.
Results: We were able to create a unified voice through community leadership, and from collaboration of community members, service providers, researchers and decision makers all coming together. The PrEP guidance was referenced as an evidence base by the SMC as part of their final approval decision. Sections of the Patient Submission were read out at the SMC hearing on PrEP. The collaborative was successful and regarded as a model for other organisations to use in future submissions. Our submission to the SMC was integral in the approval of PrEP.
Conclusion: This work demonstrated that coordinating workforces and decision makers, creating cross sector support, and conveying the personal

experiences of people already using PrEP or who would likely benefit from PrEP, are effective for campaigning and advocating for the approval of PrEP. When professionals and the community are able to join together to learn from each other, policy changes can be made.

P101

Invisible no longer: exploring the experiences of women living with and at risk of HIV in the UK

D Laycock[1], J Stevenson[2], L Kwardem[1], E Bell[2], F Hale[2], J Lennon[1], J Shepherd[1] and F Obadeyi[1]
[1]Terrence Higgins Trust, London, UK, [2]Sophia Forum, London, UK

Background: Around a third of people living with HIV in the UK are women and every year 25% of new diagnoses are in women. Yet women living with and affected by HIV have been mainly invisible in the narrative and response to HIV in the UK.
Methods: A survey for women living with HIV was used. A second survey was open to any women who have ever experienced concern about HIV (and who have not been diagnosed with HIV). Both surveys were open to any women (including trans women) living in the UK aged 18 and over, and were administered online. Survey results were supplemented by six workshops that used participatory methodology. Five were attended by women living with HIV. One workshop was attended by women who do not identify as heterosexual.
Results: Data from 308 surveys and the output of six workshops attended by 32 women were taken forward for analysis.
Living with HIV: 27% of women felt that health services missed an opportunity to diagnose their HIV earlier. 41% felt they had been diagnosed late. A third of women did not have anyone to turn to for support post diagnosis. 58% of women had experienced violence in their lifetime. 1 in 6 women living with HIV never or rarely had enough money to cover their basic needs. 17 women felt that their immigration status had affected their ability to manage HIV. Over 40% of women felt that HIV had affected their choice to have children and 54% of women felt that their HIV status affected their sex lives. Awareness of U=U was high (96%) but there was a corresponding high level of women who did not believe or fully trust U=U.
HIV prevention: Women in stable relationships, women resident in London and women born outside the UK were more likely to worry about HIV. Three women used blood donation as a means to check their HIV status. 46% of women would like to try using online HIV testing services and 30% would like more opportunities to test within community settings. 48% of women had not been offered information about HIV prevention the last time they took an HIV test. Women who do not identify as heterosexual felt that HIV, and sexual health services more broadly, did not meet their needs.
Conclusions: There remains a lack of understanding of who women at risk of HIV are and what factors put women at risk of HIV. More research and service focus is needed to identify and meet the needs of women living with HIV.

P102

Is a centralised PrEP service a barrier to equity of access to NHS PrEP for MSM? An analysis from one centre

DJ Clutterbuck[1], J Kavanagh[2] and C Clark[1]
[1]NHS Lothian, Edinburgh, UK, [2]ISD Scotland, Edinburgh, UK

Background: NHS funded HIV PrEP is provided at the main specialist clinic for MSM in our health board, in large city centre clinic in a postcode in the least deprived quintile of the Scottish Index of Multiple Deprivation (SIMD 5). We wished to investigate whether offering PrEP monitoring and dispensing centrally disadvantages MSM attendees from postcodes associated with higher levels of deprivation.
Methods: The rapid scale up of PrEP (3 months from approval by Scottish Medicines Consortium to implementation) meant that infrastructure to support monitoring and dispensing of PrEP was concentrated in our main service and one other site. Training on PrEP information giving and baseline monitoring tests was provided to the whole sexual health team in 10 other local sexual and reproductive health clinics, drop-in services and outreach services for MSM in areas of deprivation outside the city centre, from which they were referred to the main clinic for prescribing. Data on lifetime sexual partner and postcode was extracted from NaSH to identify all MSM attendees to our services between 10th July and 31st December 2017. Those prescribed PrEP were identified using prescription data. Postcode data was used to stratify attendances by SIMD.
Results: PrEP was prescribed to 239 (11%) of 2120 individual MSM attending during the study period. The largest proportion of MSM accessing our service were from SIMD 5 (least deprivation). However the proportion of attendees prescribed PrEP in each deprivation quintile was remarkably similar (Chi^2 2.7775, p=0.6).

	SIMD					
	1	2	3	4	5	Total
MSM attendees	234 (11%)	446 (20%)	502 (23%)	317 (14%)	621 (28%)	2120
No. PrEP prescribed	25	45	66	37	66	239
% PrEP prescribed	11	10	13	12	11	11

Conclusions: MSM who attend our service from postcodes associated with greater deprivation are just as likely to receive PrEP as those from the least deprived postcodes. There is no evidence that we have created any additional structural barriers to equity of access to PrEP on the basis of geography. However:

- The proportion of MSM accessing our service from postcodes with the highest index of deprivation remains low.
- SIMD is **not** a measure of individual deprivation: more work is required to investigate whether deprivation is a barrier to PrEP access.

Multiple risk cofactors (syndemics) may mean PrEP is more likely to be indicated in men from more deprived postcodes.

P103

Kissing but not sex is the strongest risk factor for oropharyngeal gonorrhoea in men who have sex with men: a cross-sectional survey

EPF Chow, D Priest, V Cornelisse, TRH Read, CS Bradshaw, MY Chen and CK Fairley
Melbourne Sexual Health Centre, Alfred Health, Australia

Background: A mathematical model has supported the hypothesis that transmission from oropharynx to oropharynx (i.e. kissing) is sustaining the gonorrhoea epidemic among men who have sex with men (MSM). However, no empirical data have confirmed this.
Methods: MSM attending a public sexual health centre in Australia between March 2016 and February 2017 were offered a short questionnaire on kissing-only (i.e. kissing without oral and/or anal sex), sex-only (i.e. oral and/or anal sex without kissing), and kiss-and-sex (i.e. kissing with oral and/or anal sex) partners in the last 3 months. Logistic regression was performed to examine the association between oropharyngeal gonorrhoea positivity by nucleic acid amplification test and type of behaviour. Potential confounders such as demographic characteristics, HIV status, contact of gonorrhoea, and gonorrhoea infection at the urethra and anorectum were adjusted in the model.
Results: 3771 men completed the survey and were tested for oropharyngeal gonorrhoea on the same day. The median age was 30 (IQR 25–37) and 6.2% (n=235) had oropharyngeal gonorrhoea. The median number of kiss-only partners was 2 and kiss-and-sex partners was 3. The majority of men (62.5%) did not have sex-only partners. Reporting ≥4 kissing-only partners (aOR=1.6; 95% CI: 1.1–2.33; p=0.012) was significantly associated with oropharyngeal gonorrhoea compared to no kissing-only partners after adjusting for potential confounding factors. Number of sex-only partners (p=0.429) was not associated with oropharyngeal gonorrhoea. Reporting ≥4 kiss-and-sex partners was associated with oropharyngeal gonorrhoea in the univariable analysis (aOR=2.3; p<0.001) but was not significant in the adjusted analysis (aOR=1.53; p=0.067).
Conclusion: These data suggest that kissing is the strongest risk factor for acquiring oropharyngeal gonorrhoea. These data suggest that sex is not the principle acts responsible for oropharyngeal gonorrhoea and that and that the borderline significance of kissing and sex is a risk primarily associated with kissing.

P104

Know about PrEP: developing a PrEP literacy intervention in Scotland to support community conversations

I Young[1], K Smith[2] and G Valiotis[2]
[1]University of Edinburgh, UK, [2]HIV Scotland, Edinburgh, UK

Background: Pre-exposure prophylaxis (PrEP) was approved for NHS Scotland provision in April 2017. However, PrEP knowledge was limited beyond a small group of highly PrEP literate activists and clinicians. This was compounded by ongoing PrEP, HIV and homophobic stigma seen in negative and ill-informed media engagement with PrEP. These factors pose significant barriers to the implementation of an effective HIV prevention option for communities at high risk of HIV transmission in Scotland.
Methods: Drawing on our *Developing HIV Literacy Framework* (Young et al, *forthcoming*), we developed a community conversation tool for practitioners to support the introduction of PrEP to individuals with limited PrEP knowledge. The tool was a multi-fold business-card size leaflet with minimal text and visual images that answered common questions about PrEP. After piloting the tool (March–May 2017) with community partners, a revised tool was tested between June–October 2017 by community organisations working with gay and bisexual men and African heterosexual communities, and sexual health providers in 14 Scottish NHS Boards. To assess how the tool worked, we conducted individual (n=9) and group (6 groups, n=21) interviews with clinical (n=13) and community practitioners and/or members (n=19). Participants included practitioners working with gay and bisexual men, African heterosexual men and women, and BME gay men working across Glasgow, Fife, Forth Valley, Tayside and Perthshire Edinburgh, Grampian and London.
Results: We found that the tool was well received by community partners and in some clinical settings. The tool helped to structure PrEP conversations for practitioners and community volunteers, who came up with creative ways of using and sharing the material. It also facilitated the introduction of PrEP-related information and discussions, such as risk assessment and treatment as prevention. The tool was used not only for potential PrEP users, but for sexual partners and peers and seen as a useful resource to introduce PrEP to those with low or limited HIV literacy and/or those unfamiliar with PrEP.
Conclusion: Our PrEP tool offered ways to address specific barriers caused by HIV stigma and homophobia and encouraged engagement with simple messages to overcome initial barriers. Our work shows the key role that sexual partners, communities, organisations and wider structural factors play in HIV literacy, and its role in the effective provision of PrEP.

P105

Managing the syphilis outbreak in the era of digital partner notification

MJ Lee, P Suranga, E Ojilong, C Phoenix, A Nori and A Menon-Johansson
Department of Sexual and Reproductive Health, Guy's and St Thomas' Hospital NHS Foundation Trust, London, UK

Background: Syphilis diagnosis and partner notification presents a challenge in the era of geospatial applications, and lack of an integrated results system. Digital partner notification (PN) has been introduced in 2016, and our syphilis pathway was audited against the national 2015 guidelines.
Methods: A retrospective audit of electronic notes included all GUMCAD codes for syphilis (A1–6) and all patients receiving benzathine penicillin G (BPG) in a central London clinic from 1st June 2016 to 31st December 2016. Syphilis was diagnosed with confirmed microscopy or serology.
Patient demographics, HIV status, stage of syphilis, treatment received, and PN documentation were reviewed. Anonymised data from the digital PN website, SXT, was also included. Fisher's exact test was used to analyse categorical variables and t-test for continuous variables.
Results: 212 patients were diagnosed and treated for syphilis. Majority were male (199/212, 94%), white ethnicity (123/217, 60%), and men who have sex with men (181/209, 86.6%). 99/212 (47%) were HIV-positive. 168/212 (79%) had early syphilis (chancre/rash present or serological evidence of infection less than 2 years duration), 70 (41%) were asymptomatic.
In the early syphilis cohort, 164 (98%) had a pre-treatment RPR performed, and 132 (79%) were done on the same day of treatment. 99 (59%) had a repeat RPR 6 months after treatment. There was no significant difference in serological response (four-fold decrease in RPR at 6 months) following treatment with BPG or doxycycline.
Partner notification initiation at the time of syphilis diagnosis was documented in 188 (88.7%). 94 (43%) used SXT for PN. While the mean number of all partners indexed in the lookback period was not significantly different in those using SXT vs those who did not (5.6, SD 10.42 vs. 4.07, SD 7.83; p=NS), the mean number of contactable partners was higher in the SXT group (2.77, SD 4.23 vs. 1.47 SD 2.22; p=0.011) and the mean number of partners tested, verified by either patient or healthcare worker was also higher in the SXT group (0.71, SD 0.89 vs. 0.24 SD 0.46; p=0.0001)
Conclusion: Digital partner notification is associated with improved PN verification. Strategies to improve the serological testing, including alerts on electronic prescribing systems for repeat RPR tests, and integration of online self-tests for asymptomatic patients when sending reminders for repeat tests, may improve follow-up management of syphilis.

P106

Men who have sex with men in rural Scotland, Wales, Northern Ireland and the Republic of Ireland demonstrate comparable sexual health risk behaviours to those in urban areas, highlighting the need to reduce stigma and optimise rural sexual health services

R Kennedy[1], L McDaid[2], P Flowers[3] and J Frankis[3]
[1]Sandyford Services, Glasgow, UK, [2]University of Glasgow, Glasgow, UK, [3]Glasgow Caledonian University, Glasgow, UK

Background: Bespoke sexual health services for men who have sex with men (MSM) tend to be in larger urban areas. However, MSM in rural areas also have sexual health needs, with little or more difficult access to these services.
Method: Data from a cross-sectional, online survey of n=2760 MSM were analysed from respondents in Scotland, Republic of Ireland, Northern Ireland and Wales who had answered 'Is your nearest gay venue within easy reach?'. Reported distance (scale 1–5) was divided into Near (1–2) or Far (3–5) (n=1380 in each group) and used as a proxy for rurality. Chi^2, T-Test and bivariate regression analysis were used to examine demographics, sexual, mental and holistic health characteristics related to rurality. Significant variables were entered into a multivariate logistic regression model to assess adjusted odds ratios (OR).
Results: Chi^2 associations between demographics/behaviours and distance to gay venues showed significant association with: Age ($p<0.001$); Qualifications ($p<0.001$); Relationship status ($p=0.001$); Sexual orientation ($p=0.008$); Country ($p<0.001$); Financial worries ($p=0.014$); Time from last STI test ($p=0.008$) and last HIV test ($p=0.007$); Chemsex in last 12 months ($p=0.002$); Chemsex drug use in past 4 weeks ($p=0.004$); Problematic drinking ($p<0.001$). No significant associations were found for: STI diagnoses in the last year ($p=0.977$); Group sex in last 12 months ($p=0.416$); Having >=2 condomless anal sex partners in last 12 months ($p=0.893$); Smoking status ($p=0.828$); Lifetime mental health diagnoses ($p=0.255$). In the final multivariate regression model living near gay venues was significantly predicted by age (26–35 years OR=1.6 95% CI=1.3-2.1; 36-45 years OR=1.4 CI=1.1-1.7) and qualifications (degree OR=1.4 CI=1.2-1.8; postgraduate OR=2.3 CI=1.8-3.1). Living far from venues was significantly predicted by financial worries (OR=1.3 CI=1.1-1.6) and high stigma scores (OR=1.02 CI 1.01-1.03 per 1 unit increase).
Discussion: No significant association between distance from gay venues and sexual behaviours were found in the final regression model, including chemsex and higher risk sex. This suggests that sexual risk for MSM living far from the gay scene and bespoke MSM services, is similar to those living near. Stigma is higher rurally and may discourage rural men from testing locally. Education, support and awareness raising for rural healthcare workers may limit stigma and optimise sexual health services for MSM available in these areas.

P107

National HIV testing week: an evaluation of multi-agency collaboration within a local borough

E Cheserem[1], E Phiri[1], E Barber[1], J King[2], T Adam[1], Y Dunkley[3] and M Lascar[1]
[1]Whipps Cross University Hospital, London, UK, [2]Waltham Forest Council, London, UK, [3]Positive East, London, UK

Background: HIV prevalence in our borough is high, at 5.3 per 1000 adults. We explored the impact of a coordinated multiagency approach comprising

NHS sexual health staff, local Public Health and local HIV charity representation on increasing knowledge about HIV and uptake of HIV testing during National HIV Testing week.
Methods: Three main activities were included and evaluated:

- Educational activities aimed at increasing knowledge about HIV transmission and HIV testing among Health Care Professionals (HCP), as well as school-based assemblies and workshops.
- HIV testing stalls in main outpatient areas, on a mobile bus and at local council premises.
- Media promotion of the campaign using press releases and NHS Trust and Council websites.

We evaluated number of attendees to all activities, knowledge on HIV transmission & testing via questionnaires at the educational sessions (on HIV transmission and prevention, understanding of 'undetectable = un-transmissable' and when/who to test) and uptake of HIV self-testing kits.
Results: 142 HCPs attended hospital-based lectures; 139/97% attended talks given within the acute trust, whereas the community based HCP talk was poorly attended (3/142). 43 (30%) people completed the questionnaires. There was an improvement in correct answers by 16%, indicating that the lectures improved attendees' knowledge. 764 pupils received school-based talks on HIV transmission and testing.
A total of 112 self-testing kits were given out by sexual health staff; 82 within hospital and 30 on the mobile bus. There were 52 men (46%) and 60 women (54%), aged between 19 and 49 years. An additional 46 kits were given out at the local council by the HIV charity.
Our project was covered by 3 local newspapers and 1 radio station, and the local councillor tested for HIV, supporting our campaign.
Conclusion: Joint partnership between community and hospital-based services was feasible and productive, reaching 1018 individuals. Hospital-based educational activities and uptake of self-testing kits was much greater than similar activities in community settings. Knowledge gaps in HIV transmission still existed, even among hospital staff. For those that attended, knowledge levels increased, with potential benefit to patients.
More work needs to take place to understand interventions that can impact engagement in community settings. Further research is required to assess the rate of return and identification of STIs using self-testing kits.

P108

NHS provision of HIV PrEP in Scotland: a retrospective review of the first 8 weeks of prescribing in two sexual health centres

C Grimshaw[1], H Pollitt[2], D Raha[2], D White[3], D Clutterbuck[2] and R Gilson[1]
[1]Sandyford Initiative, NHS Greater Glasgow and Clyde, Glasgow, UK, [2]Chalmers Sexual Health Centre, NHS Lothian, Edinburgh, UK, [3]Borders Sexual Health Clinic, NHS Borders, Galashiels, UK

Background: Tenofovir disoproxil/emtricitabine as HIV PrEP was introduced in Scottish sexual health clinics on 10th July 2017. We performed a retrospective analysis of individuals prescribed NHS PrEP in two Scottish Health Boards (A and B) during the first 8 weeks of roll-out.
Methods: PrEP prescriptions were identified using the national sexual health IT system. Demographic, clinical and prescribing data from the patient records was recorded into a spreadsheet. Comparisons between Health Boards were analysed using Chi-squared contingency tables.
Results: Data was obtained on all 232 patients who received NHS PrEP in the two Boards during the audit period. 66% of patients met eligibility criterion 3 alone (reporting condomless penetrative anal sex with two or more partners in the last 12 months and likely to do so again in the next 3 months), whereas just 3% met criterion 1 alone (current sexual partners of people who are HIV positive with a detectable viral load). 25% met more than one eligibility criteria. 19% of patients in Health Board A and 22% in B chose to use event-based dosing.
More patients reported white Scottish ethnicity in Board A (62%) than B (49%) but not significantly (Chi^2 3.67, p=0.055). 20% of patients were aged over 50 years. There was no significant difference in age distribution between boards (Chi^2 6.7247, p=0.15). A total of 37% of patients had a documented comorbidity. 41% were taking other medication. 34% were deemed medically complex (including age>50 years). Side effects were documented in 32 patients (14%). In Board B, 67% self-referred to clinic, compared with 76% in A (Chi^2 1.52, p=0.47, no significant difference). Only 7 patients had never attended Scottish sexual health services previously. PrEP was commenced at first visit in 27%, and deferred in 55%. It was already being sourced online by 18% of patients. The proportion deferred was similar in both boards.
A greater proportion of patients in Board B consented to communication with their GP (62% vs. 41%, Chi^2 9.9044, p<0.01).
Conclusion: As anticipated, many at-risk individuals self-refer for NHS PrEP, but initial data suggests that fewer than expected access services for the first time as a result of PrEP availability. A large proportion of patients receiving NHS PrEP pose potential complexities in terms of age, comorbidities and polypharmacy. There are opportunities for shared learning among boards where there are differences, for example in terms of GP communication.

P109

Partner notification and PEPSE: a missed opportunity for diagnosing HIV early?

G Ahmed[1], M Pakianathan[1], MJ Lee[2] and A Hegazi[1]
[1]The Courtyard Clinic, Wandsworth Integrated Sexual Health, St George's Healthcare NHS Trust, London, UK, [2]Department of Sexual and Reproductive Health, Guy's and St Thomas Hospital NHS FT, London, UK

Background: Undiagnosed HIV remains a challenge in the UK and a cause of onward transmission. In patients presenting for HIV post exposure prophylaxis after sexual exposure (PEPSE) the source is often of unknown HIV status. BASHH guidelines recommend proactive attempts be made to establish the HIV status of the source as early as possible A Swiss study previously found this possible in 43% of attempted cases with 6% of contacts testing HIV positive and resource saving opportunities to discontinue PEP and alleviate anxiety in partners of those confirmed negative. There are no similar studies published from the UK.
Method: Audit of 151 Gay, Bisexual and other MSM (GBMSM) identified by GUMCAD coding as accessing or discussing PEPSE 1/6/14–13/1/17 at a London Integrated Sexual Health Service. Case notes were retrospectively reviewed and risk parameters for PEPSE and outcomes of partner notification (PN) extracted onto a standardised proforma.
Results: Median age was 30 years and 14% (n=21) were bisexual. 35% (n=53) were diagnosed with and STI in the episode. 70% (n=72) had previously used PEPSE. 94% received PEPSE for unprotected anal sex (passive AI (n=77), active AI (n=24). 37% of presentations were chemsex associated (n=48). Recent intravenous drug use was reported in 20% (11/55) and group sex in 58% (21/36) PEPSE was started in 116/151 (78%) of GBMSM. Source HIV status was known in 32/116 28% of cases ['negative' (n=12), 'Positive Viral Load (VL) undetectable' (n=10), 'Positive VL unknown' (n=10)]. HIV status of source was not documented in 52% of cases (61/116) and documented as 'unknown' in 20% (23/116).
PN outcomes of source to arrange testing or verify VL or HIV status were: No documented attempt to contact source 99/116 (85%), plan to contact and confirm HIV source status but no follow up documented in notes 7/116 (6%), source untraceable 6/116 (3%), source partner contacted 4/116 (3%) of whom 1 patient's VL was successfully confirmed and 1 patient was confirmed as testing HIV negative.
Conclusion: PN for contacts of PEPSE recipients may be underutilised as a tool to target HIV testing and improve its early detection. There may also be potential in some cases, to alleviate anxiety in PEPSE recipients and reduce unnecessary PEPSE prescribing. Despite variable documentation, many episodes of PEPSE were associated with chemsex and other high-risk behaviours and presents an opportunity for sexual health clinics to identify and address these vulnerabilities.

P110

Partner notification resolution: why is it overlooked in integrated community clinics?

K Kearley-Shiers
University Hospitals Bristol NHS Foundation Trust, Bristol, UK

Background: Providing accurate information in a timely manner to sexual contacts of patients diagnosed with sexually transmitted infections (STIs) is key to identifying and treating undiagnosed infection. Partner notification (PN) can reduce patient re-infection, complications and rates of new infections in the community. However, a systematic review found too few trials to determine the relative effectiveness of the provider on the effectiveness of PN. National UK audits have found the follow up of some STIs in genitourinary medicine clinics to be limited, though barriers to comprehensive PN are

unclear. There is a need for local services to identify barriers to improved outcomes in this field.
Methods: Three out of six level two community clinics were audited using four outcomes suggested by the British Association of Sexual Health and HIV. A key outcome is PN resolution. The PN for positive Chlamydia or Gonorrhoea results over a one year period from each clinic was evaluated. A nine question online survey was then sent to permanent clinicians in level 2 clinics to obtain attitudes to PN and PN resolution. Quantitative and qualitative information was collated by the author.
Results: There was approximately one positive result per month for each clinic. Audit revealed that PN resolution occurred in 3% of positive results. Overall response rate to the online questionnaire was 48% (n=11); 64% nurses and 36% doctors. The majority of respondents confirmed that PN resolution was not part of their routine practice. 55% of respondents felt happy to do PN resolution once highlighted as part of PN, which increased to 80% if further training were provided. 20% said they would not feel happy to do this despite additional training.
Important barriers to PN resolution were identified. These include lack of time (54% of responses), lack of experience (8% of responses) and lack of a structure or safety net to ensure full PN resolution was achieved (38% of responses).
Conclusion: PN is integral to managing STIs, for the patient and wider community, but requires healthcare workers to be competent in this skill and to ensure that it occurs. This survey has identified that although staff are generally happy to carry out complete PN, there are barriers that lead to PN resolution being overlooked. Whilst training can highlight the need for PN resolution, a formalised method for ensuring it occurs within each clinic could be an important part of improving PN outcomes.

P111

Patients assessed for, but not prescribed NHS funded PrEP: a retrospective review

I Procter[1] and D Clutterbuck[2]
[1]University of Edinburgh, Edinburgh, UK, [2]Chalmers Sexual Health Centre, Edinburgh, UK

Background: NHS funded HIV PrEP was initiated across Scotland on 10th July 2017. We performed a retrospective review of patients attending a single centre who attended for a PrEP consultation and had baseline renal function tests but in whom PrEP was not prescribed.
Methods: Patients attending in July and August 2017 where PrEP was recorded as a reason for attendance and eGFR was requested, but with no record of an NHS prescription at that appointment, were reviewed. We also reviewed patients identified in an audit of prescribing in whom initiation of PrEP was delayed.
Results: Of 103 patients identified, 39 were duplicates and 9 were excluded. Of 55 included, 76% self-referred for NHS PrEP. 82% (45) had not been self-sourcing PrEP and were prescribed NHS PrEP at a later appointment; 31% (14 patients) received this within 14 days, 48% (31 patients) within 28 days, and 13% (6 patients) waited over 42 days. In 7% (3 patients), the initiation of PrEP was deferred due to concerns regarding renal function; in 91% (41 patients) due to availability of appointments. In 1 further patient, PrEP was delayed due to giving PEPSE . Risk of HIV acquisition during deferral was not recorded in 69% (34 patients). Further unprotected anal intercourse was recorded in 4 patients (8%). 29% of patients visited LSRHS again prior to their prescription of PrEP. 1 was prescribed PEPSE, and 1 attended for a sexual health screening due to a recent episode of UPAI. 6 patients received STI treatment. 4 patients requested NHS PrEP at this interim visit.
Of the 10 patients (18%) not receiving NHS PrEP, 2 patients had baseline tests but subsequently chose not to commence PrEP. Only 2 patients requested NHS PrEP but did not meet the eligibility criteria. 1 patient was offered NHS PrEP but declined, and 5 patients were already self-sourcing PrEP.
Conclusions: Very few patients 2, (4%), self-referred for NHS PrEP but were ineligible, suggesting ability to self-identify a high risk of HIV. There were no cases of medical ineligibility, or lack of confirmation of Scottish residency preventing PrEP prescribing. 9% (5 patients) attended for monitoring of self-sourcing PrEP, with four of them switching to NHS funded PrEP at a subsequent appointment.
Risk behaviour during PrEP deferral period was not well recorded, but capacity to initiate PrEP opportunistically in the highest risk individuals in whom risk behaviour is frequent and who reattend should be improved.

P112

Permissable risk: professional views on HIV disclosure circumstances

M Phillips[1] and S Ryan[2]
[1]Cumbria Partnership NHS Foundation Trust, Cumbria, UK, [2]Newcastle University, Newcastle, UK

Background: In 2014 there was a consultation by the Law Commission, 'Reforming the Offences Against the Person Act'. One of the lines of inquiry was around the use of criminal sanctions in English and Welsh Law for the transmission of HIV. The status quo was retained, and so individuals may still be criminally liable under some circumstances if their sexual partners acquire HIV. We sought to examine the consistency of advice and views around transmission amongst professionals working with PLWH.
Methods: Two metropolitan centres in England were selected, one in the North and London. Any physicians in the area were invited to attend an evening workshop, as well as other key partners such as third sector professionals. Invitations were made through clinical networks and local clinical leadership, as well as BHIVA providing representation. A written response sheet was provided to each participant with question prompts based on the 2014 consultation, and an iterative discussion was facilitated by the researchers to examine views held in the room. A second workshop was held in the North with a practising lawyer present to feedback and challenge some of the initial findings.
Results: There was a spectrum of responses from individuals in the North centre. There were polarised opinions on which circumstances should prompt a PLWH to disclose, ranging from 'A person need not disclose HIV+ status provided he/she engages in safer sex and has a low viral load' to 'A person must disclose HIV+ status prior to engaging in any sexual activity with another individual'. Although the number of people attending the London workshop was much smaller, the spectrum was similar. The discussion at the two centres featured concerns about mediating consent and disclosure in complex settings such as during chem-sex or group sex. At both centres, the professionals were able to name sources of shared decision making including the third sector and MDTs. There was a difference in reliance on emerging concepts such as undetectable=untransmissable, with one centre referring to moral and ethical principles of shared decision making, and the other centre relying almost exclusively on biomedical research. The workshops revealed diverse thinking about what constituted risk vs. significant risk in the context of viral load.
Conclusion: There is a range of moral standpoints, and legal interpretations, that are driving discussions with PLWH. It is not absolutely accurate to say that undetectable=unprosecutable as no such legal precedent has been set. However, if undetectable=untransmissable, no transmission can take place and therefore there is no case to answer in England and Wales. It is important for professionals dealing with PLWH to understand how their own moral and ethical standpoint may influence their conversations around this complex topic, and ensure their advice is accurate and consistent with current biomedical, ethical and legal positions.

P113

Point-of-care HCV RNA screening by finger-prick is technically feasible but uptake is reduced by concomitant offer of HIV testing

AM Geretti[1], H Austin[1], G Villa[1], J Williams[2], P Davies[2], M Hopkins[2], A Beloukas[2] and W Sawicki[2]
[1]University of Liverpool, Liverpool, UK, [2]Royal Liverpool University Hospital, Liverpool, UK

Background: Eliminating hepatitis C as a public health threat by 2030 has been set as a priority by the World Health Organisation. Improving offer and uptake of HCV screening is a central component of the strategy. This study investigated the feasibility of offering point-of-care testing (POCT) for HCV in an inner-city accidence and emergency (A&E) department using a pre-validated method for detecting viral RNA in finger-prick blood, and to assess the influence on uptake of offering concomitant POCT for HIV.
Methods: Following extensive technical validation studies, the innovative testing method was based on the detection of HCV RNA and HIV-1 RNA in small-volume capillary blood collected by finger-prick using the Cepheid GeneXpert platform, with a turnaround time of 90 min. Over a period of six

months, all adults attending A&E with minor injuries throughout 24 h were invited to complete an anonymous questionnaire and offered POCT. Distinct, alternating cycles of offering screening for HCV alone or for both HCV and HIV together were implemented. The main outcome measures were: (i) among questionnaire respondents, proportion that accepted or declined HCV POCT, and (ii) influence of concomitant offer of HIV screening on POCT uptake.
Results: Overall, 814/859 (94.8%) questionnaires were returned and 324/814 (39.8%) test offers were accepted, comprising 211 HCV tests and 113 HCV+HIV tests. Respondents were predominantly aged 18–54 years (647/814, 79.5%) and of self-reported white ethnicity (725/814, 89.1%), with equal proportions of men and women. Most POCT participants (260/324, 80.3%) elected to receive the results by text message rather than wait. After adjusting for age and knowledge of HCV status, offering concomitant HIV screening was associated with a 50% decline in POCT uptake (adjusted odds ratio 0.51; 95% confidence interval [CI] 0.38–0.68; p<0.001). HCV prevalence was 1/324 (0.31%; 95% CI 0.05–1.73). No participant tested positive for HIV (prevalence 0.0%; 95% CI 0.0%–1.17).
Conclusions: Whilst implementation of HCV RNA screening at point-of-care was technically feasible, uptake was moderate and the simultaneous offer of HIV screening appeared to have a detrimental impact on acceptability. This finding appears to suggest persistent stigma surrounding HIV testing and bears implication for the design of screening programmes. It should be confirmed in other settings.

P114

Pre-exposure prophylaxis (PrEP) with tenofovir and emtricitabine in clinical practice and the issues involved

H Bradshaw
Singleton Hospital, Swansea, UK

Background: PrEP has been shown to be highly effective in reducing HIV transmission in men who have sex with men (MSM). PROUD, a phase 3 open-label randomised controlled trial and iPrex, a phase 3 randomised double-blind placebo controlled trial reported an 86% and 44% reduction in HIV transmission risk in MSM respectively. IPERGAY, a phase 3 randomised double-blind placebo controlled trial also reported a reduction in HIV transmission risk of 86%. PrEP provision is being separately assessed in England, Wales and Scotland and there are BHIVA/BASHH guidelines on PrEP use out for consultation. We have been providing PrEP to those at risk in our service since July 2017.
Methods: The notes of all patients who have currently been prescribed PrEP by our service from 07/17 up until 02/01/18, a total of 36, have been reviewed. The patients' eligibility criteria, co-morbidities, time to starting PrEP, sexually transmitted infection (STI) diagnoses in the preceding 12 months and any issues arising from taking PrEP were reviewed.
Results: All of the patients prescribed PrEP in our service are eligibility category 1 (HIV negative MSM who have had unprotected sexual intercourse (UPSI) in the preceding 3 months). The age range of patients was 19–53 years old and the range of time from first attending our PrEP clinic until starting was 0–41 days. 100% of patients had a baseline assessment according to the current PrEP guidelines. 42% of patients had had an STI in the preceding 12 months, including Chlamydia, Gonorrhoea and Syphilis. Only 6% (2) of patients reported chemsex and were given advice regarding this. There have been some issues arising in some patients who have come to discuss/started on PrEP namely renal issues which have meant 6% (2) of patients have had to stop PrEP.
Conclusion: We have found the majority of demand for PrEP from patients attending our service is from MSMs. Some of these have not attended our service previously or have not attended sexual health services for some time and thus as well as discussing the issues surrounding PrEP they also need advice and discussion regarding several other issues such as recommended vaccinations and treatment of STI's. To efficiently cope with this demand we are now providing a specialist clinic for MSMs. As PrEP is prescribed for longer periods of time we will continue to review related issues including incidence of other STI's and any issues/side effects from taking PrEP.

P115

Pre-exposure prophylaxis (PrEP) monitoring in a larger teaching hospital

S Todd, L Bell and C Emerson
Royal Victoria Hospital, Belfast, UK

Background: There has been a general upward trend in new HIV diagnoses in our area since 2000. The NHS does not provide Pre-Exposure Prophylaxis (PrEP) against HIV in our area despite recommendations for key populations at risk. Some patients may purchase generic drugs on the internet but how many are aware of this process and if so are they attending for monitoring? Our Genito-Urinary Medicine (GUM) clinic provides monitoring only.
Method: We designed codes (PREP1: PrEP 1st monitoring, PREP2: PrEP all subsequent monitoring) to collect data on PrEP discussions and/or monitoring in GUM clinics in June 2017. We retrospectively looked at these codes over a 5 month period (August–December 2017) to find out how many patients were on PrEP, identify risk factors and whether they attended for monitoring.
Results: During this period PrEP was discussed with 50 patients. Median age was 35 (range: 21–75). 86% (43/50) were born within the UK. 98% (49/50) were men who have sex with men (MSM) and 10% (5/50) had a HIV positive partner. 28% (14/50) had a regular partner. Median number of casual partners was 4 (range 1–50) with 88% (44/50) having condomless anal sex within the last 3–6 months. 30% (15/50) had a bacterial STI within the last year. 16% (8/50) had rectal CT. 48% (24/50) were already on PrEP prior to attendance with 92% (22/24) attending specifically for monitoring. Of the 26 patients not on PrEP, 58% (15/26) initiated discussion with clinician on review with 14/15 having had condomless anal sex within the last 3–6 months. Baseline testing; 100% (50/50) had HIV test, 98% (49/50) had hepatitis & syphilis screen and 92% (46/50) had chlamydia/gonorrhoea PCR. 96% (48/50) had a baseline U&E and 82% (41/50) urinary PCR.
Conclusion: Rates of HIV acquisition in MSM remain high in our area, compared to other areas within the UK, and PrEP is a crucial strategy to reduce risk. Some high risk MSM are aware of PrEP, purchasing it online and attending GUM clinics for monitoring. Worryingly 48% (24/50) only attended GUM after commencing PrEP. Ad hoc education around PrEP is happening within our clinics targeting MSM who have had condomless anal sex or a rectal bacterial STI. We need a structured PrEP clinic to provide equal and safe access to information, medication and monitoring as a strategy to help reduce the rates of HIV acquisition in our area.

P116

Pre-exposure prophylaxis information for women in the UK: a targeted web resource

J Stevenson[1], S Strachan[1], M Ross[1], P Decle[2], K Charters[1], I Lut[1], E Bell[1], J Roche[1], M Sachikonye[1] and S Cole[1]
[1]Sophia Forum, London, UK, [2]Forum Link, London, UK

Background: In 2016, 25% of new HIV diagnoses in the UK were amongst women. Excluding the impact of changed migration patterns, there has been little reduction in new diagnoses amongst women, and nothing to mirror the 'steep drop' seen for gay and bisexual men in recent data. There has been little investment or delivery of prevention interventions targeted at women specifically, and correspondingly little recognition of risk of HIV acquisition amongst women themselves. Pre-exposure prophylaxis (PrEP) as an individually-controlled, discreet prevention tool, has been recognised globally as a tool from which women in particular may benefit. In the UK, there is little knowledge about PrEP amongst women in general, or amongst women at higher risk of HIV acquisition.
Methods: A women-focused web resource was developed by advocates, researchers and women living with HIV to provide detailed, accessible information about PrEP to women in the UK. The website, http://womenandprep.org.uk includes specially created content focused on women. The site is designed to be accessible, structured around questions women are likely to have, prioritized through consultation with key stakeholders and partners. Content includes information on PrEP, including how it works and how to access it, as well as detailed information on other forms of HIV prevention, HIV testing and sexual health.
Results: The website was designed and optimized to be fully accessible, providing content in small, digestible sections in a brightly coloured site with photos and graphics. Since launching on 27th November 2017, the site has received 529 unique users over 657 sessions. It has received positive feedback

from clinicians and others involved in HIV prevention, who have welcomed a women-focused resource to which they can direct women for accurate information and links to support and services.
Conclusion: Women are included in the PrEP IMPACT trial, and should be included in any future provision of PrEP through the NHS. To ensure PrEP is accessible to and taken up by women at higher risk of HIV acquisition who might benefit from it, it is vital to create information resources and build community and individual awareness of PrEP amongst women. Resources designed specifically for women are an important part of this effort.

P117

PrEP access, eligibility and uptake in the north east of Scotland

D Brawley[1], L Buchanan[2], A Butt[1] and S Baguley[1]
[1]Grampian Sexual Health, Aberdeen, UK, [2]Aberdeen University, UK

Background: NHS HIV Pre-exposure prophylaxis (PrEP) provision was launched in Scotland in July 2017. PrEP access, eligibility, coding and uptake were reviewed in our service which provides specialist sexual healthcare for the North East of Scotland.
Methods: Two clinical record data sets were assessed from the National Sexual Health System (NaSH)

- Men who have sex men (MSM) attending from 4/7/17 to 4/10/17 assessed for PrEP discussion, coding and uptake
- PrEP prescriptions from 10/7/17-31/12/17 assessed for eligibility and regimen

Postcode data for both data sets was assessed for rurality and deprivation from the Scottish Index of Multiple Deprivation (SIMD).
Results: Of 113 MSM attending, 102 (90%) had a PrEP discussion. Seventy six (67%) were eligible with 59 (78%) commencing PrEP. Data from 69 records show 35% were coded correctly, with incorrect/absent coding in 65%. Deprivation indices show 35% were from least deprived areas, with 5% from the most deprived areas.
PrEP was prescribed for 104 individuals; 102 (98%) cis male and 2 (2%) cis females with age range of 18-78. Majority (97%) of males identified as MSM with 1 male and all females identifying as heterosexual. Eligibility criteria was as follows;

- 75% MSM having unprotected anal intercourse (UPAI) with >2 partners in last 12 months
- 15% MSM having UPAI with >2 partners and a rectal STI in last 12 months
- 6% MSM with a rectal STI in last 12 months
- 3% HIV positive partner with a detectable viral load
- 1% other

Daily PrEP was prescribed in 52% and event based in 48%. Twenty five (24%) live in rural areas with only 40% of those presenting to outreach services. Rates of named care via Community Health Index registration and GP communication was 76% (79/104) and 72% (75/104) respectively. These rates were unaffected by rurality. Deprivation indices show 33% (34/103) of individuals were from the least deprived postcodes, which was more pronounced in rural areas at 44% (11/25).
Conclusion: The majority of MSM accessing our service are being assessed for PrEP with high eligibility and uptake rates. However data coding requires to be improved to allow accurate data collection. PrEP uptake appears to be unaffected by rurality however a service review is required to improve outreach care and engage those from the most deprived areas. Confidentiality concerns appear not to influence outreach service engagement due to high rates of CHI registration and GP contact consent.

P118

PrEParation is key: lessons learned from the implementation of a fully NHS-funded PrEP service in a large urban sexual health outpatient setting in Scotland

R Kennedy and R Gilson
Sandyford Services, Glasgow, UK

The number of HIV diagnoses in Scotland continues to rise. Previous interventions have had minimal impact on onward transmission, particularly within high risk men who have sex with men (MSM). Of 285 new HIV diagnoses in Scotland in 2016, 35% were in our health board and 49% were in MSM. In July 2017 Scotland became the first, and remains the only, country in the UK to offer NHS funded HIV Pre-Exposure Prophylaxis (PrEP) to all eligible patients who want it. Our service has the highest number of individuals on this treatment in the country (>350 at time of writing). Our implementation aspired to provide equitable, efficient and timely provision of PrEP. Challenges we met were:
1. *Development of a local protocol:* This was periodically reviewed and updated to align with emerging evidence and national guidance for consultation. A patient information leaflet was produced and made available both online (that may be texted or emailed to patients) and in hard copy.
2. *Drug costs:* Although initially high, tenders for generic formulations have been secured, thus reducing future drug costs.
3. *Clinic capacity:* Uptake exceeded horizon scanning and Scottish PrEP Short Life Working Group estimates.
4. *Training needs:* Large numbers of these patients are managed outwith specific PrEP clinics thanks to robust training for all clinical staff ahead of implementation and availability of experienced staff to answer questions. After initial high numbers of haemolysed serum samples, we have taught staff how to centrifuge in-house.
5. *Skill mix:* This was evaluated ahead of implementation and increased health care support workers were recruited for those requiring asymptomatic STI screening.
6. *Future plans:* Initial 1 month follow-up has used large amounts of clinic capacity but is hoped to soon be by telephone in low risk clients. Although the ultimate aim is to have nurse led clinics, our experience has been that Consultant support and supervision is necessary at the outset.
Whilst it is too soon to see whether there is an appreciable decline in HIV incidence locally since implementation, there have already been some clear benefits including increase in sexual health screening and attracting individuals who had never attended the service before. The process has highlighted how good local staff support, training and planning can prepare a service for large scale interventions as well as some practical lessons that can be shared with other units planning to implement similar services.

P119

PrEPARED in Wales: uptake and use of PrEP in Wales

R Drayton[1], Z Couzens[2], A Phillips[2] and LF Homer[2]
[1]Cardiff and Vale UHB, Cardiff, UK, [2]Public Health Wales, UK

Background: PrEP was made provisionally available in Wales in July 2017 with a view to evaluating its uptake and impact after 3 years. 3 groups are eligible: MSM who have engaged in condomless anal sex in the preceding 3 months (category 1), people with HIV positive partners on ARVs and a detectable viral load (category 2), and those considered to be at higher risk for other reasons (category 3). 32 new clinical codes were devised to allow for prospective data collection.
Method: Clinical codes submitted between 1st July and 1st December from all 6 participating health boards to Public Health Wales were reviewed.
Results: 378 patients were reported as eligible for PrEP; 333 (88%) as category 1, 2 as category 2 (0.5%), 1 (0.3%) as category 3 and 42 (11%) category unknown. 261 (69%) patients had commenced PrEP, 74 (20%) had declined it, and 43 (11%) were in the process of being assessed at the time of analysis. The reasons of those who declined were as follows: 16/48 (33%) cited no self-perceived risk, 15 (31%) had concerns about side effects, 13 (27%) wanted other protective methods, 2 (4%) didn't want to take medication and 2 (4%) didn't want to engage with monitoring. Of the 261 who commenced PrEP, 182 (70%) are currently taking it, 8 (3%) are known to have stopped and 71 (27%) have not re-attended for a review appointment as per protocol. 312/333 (94%) prescriptions were written for daily PrEP compared with 21/333 (6%) for event based (for 100 other prescriptions the regimen was not coded). Of the 187 follow-up appointments captured, 158 (84%) had an adherence assessment. 138 (87%) reported that all risk episodes had been covered, with 8 (5%) reporting no risk episodes had been covered. No new HIV infections have been reported in patients commenced on PrEP.
Discussion: The vast majority of patients accessing PrEP in Wales are MSM who are engaging in condomless anal sex. A fifth of eligible patients declined PrEP and a third of those declining cited no self-perceived risk. Work is needed to assess the differences in behaviour of those who accept or decline PrEP. Although only a minority of patients were known to have discontinued, 27%

had not attended follow-up when expected; reasons for this may include discontinuation, choosing to take PrEP as event-based or difficulties in accessing an appointment. Clinical coding may be incomplete, particularly in those assessed but not commenced on PrEP. Addressing this will improve the accuracy of data.

P120

Preventive and risk behaviours among MSM recently infected with HIV: results of a pilot cross-sectional survey in England

A Aghaizu[1], H Ward[2], A McOwan[3] and V Delpech[1]
[1]Public Health England, London, UK, [2]Imperial College London, London, UK, [3]Chelsea and Westminster Hospital, London, UK

Background: For the first time since the mid-80s, HIV diagnoses among men who have sex with men (MSM) have fallen in five of the largest clinics in London. The PrEP Impact trial will roll out PrEP for 10,000 deemed to be high risk persons. Here, we explore the circumstances in which men report to have acquired their incident HIV infection and review if men anticipated their risk and took measures to reduce these.
Methods: Self-administered survey distributed to MSM diagnosed with incident HIV infection [identified either through testing history, a p24 antigen positive HIV antibody negative test or a Recent Infection Testing Algorithm (RITA)] across 7 clinics in London, Manchester and Sheffield in 2014. Men were asked about behaviours in the 6 months preceding diagnosis and, using an open ended question, how they believed they had acquired HIV.
Results: Of the 51 MSM recruited, 20 were born abroad (mainly Europe) and most (44) were white. The median age was 32 years (range 20–57). Half (24) reported PEP (17) or PrEP (3) use in the previous 6 months. Nearly all men (n=47) reported a specific event which they attributed their HIV infection to; these could be broadly categorised using four themes:

- men who had been aware when they had engaged in high risk UAI, (n=17; UAI with casual partners and or multiple partners);
- men reporting to have attempted to negotiate safe sex but that their ability to do so had been compromised, (n=6; UAI due to drug induced disinhibition (4), lack of opportunity to negotiate safe sex in group sex situation (1), and rape (n=1);
- men who reported attempting to protect themselves but that this was unsuccessful (n=21; split condom (7), believing partner had an undetectable viral load (2), dipping (5), serosorting (6), oral sex only (1)
- men who believed transmission to have been from a regular partner (n=3), however the majority of these also indicated other risks such as >1 UAI partner, an STI or chemsex.

Conclusion: In a group of MSM who had recently acquired HIV, while there were high levels of risk behaviour shortly before diagnosis, half reported having taken active steps to prevent infection implying at risk men may self-select for PrEP. All men in this random sample would have been eligible based on the current recruitment criteria.

P121

Provision of post-exposure prophylaxis following sexual exposure (PEPSE) at a pre-exposure prophylaxis (PrEP) appointment: the experience of two London clinics

E Pool[1], N Stewart[1], D Ivens[2], A Marchesani[3], S Roedling[3], J Saunders[1] and R Gilson[1]
[1]University College London, London, UK, [2]Mortimer Market Centre, CNWL, London, UK, [3]Archway Centre for Sexual Health, CNWL, London, UK

Background: PrEP is highly effective in preventing HIV acquisition. PEPSE may be indicated in some patients when attending to initiate PrEP, or at follow-up. There is limited experience of this situation and some uncertainty as to how it should be managed. This scenario is likely to become increasingly common as more people access care for PrEP.
Aim: To review PEPSE use among patients attending for PrEP initiation, or follow-up.
Methods: A retrospective case note review of patients seen for PrEP initiation and monitoring. Patients who had initiated PEPSE at least one month prior to data collection were included, in order to assess HIV testing outcomes. Data were extracted to describe patient characteristics and case details.
Results: Among 174 patients who attended for PrEP care between October and November 2017, PEPSE was indicated in seven (4%) (Table 1). Six patients commenced PEPSE; one declined. All cases were men who have sex with men (MSM), median age 47 years (range 27–52 years). One patient was using self-sourced event based dosing (EBD) PrEP, but had missed a dose after sex. One patient did not perceive a need for PEPSE as their partner reported PrEP use. Of the six patients who started PEPSE, four attended for an HIV test 1 month after completing PEP, all tested negative. All individuals commenced PrEP immediately following completion of PEP.
Conclusion: PEPSE was indicated in a small proportion of patients presenting for PrEP. There is limited experience of this situation. The BHIVA/BASHH PrEP guidelines suggest that transitioning directly from PEPSE to PrEP can be considered, with an HIV test at the end of PEPSE and again 4 weeks later. US CDC PEP guidelines are consistent with this. Current BASHH PEP guidelines do not include partner's PrEP use in risk calculation. In our experience, some patients decline PEPSE, and want to start PrEP immediately; the recommended retests were sometimes not completed. This review is limited by the short time period of data collection and possible missed cases due to coding errors.
Demand for PrEP amongst MSM is high, and the potential for benefit very large. Clear guidelines and awareness of how to integrate PrEP with other HIV prevention methods, including PEPSE and condoms, is important. This will minimise risks, including starting PrEP in someone who has been recently infected. Table 1: Summary of cases. Receptive anal intercourse (RAI), regular male partner (RMP), casual male partner (CMP).

Table 1: Summary of cases. Receptive anal intercourse (RAI), regular male partner (RMP), casual male partner (CMP).

Case	Age (years)	Exposure/Contact	Response to PEPSE offer	Post PEPSE HIV test result
1	31	RAI/RMP HIV+ detectable viral load and condom break	Accepted	Not completed
2	50	Condomless RAI/CMP unknown HIV status	Declined PEPSE, started PrEP	Decline PEPSE. Testing advised but patient did not attend
3	31	Condomless RAI/CMP unknown HIV status. Patient using EBD self-sourced PrEP but missed a dose	Accepted	Negative
4	47	Condomless RAI/CMP unknown HIV status reportedly using PrEP	Accepted, but stopped RAL, used PEPSE as PrEP	Negative
5	50	Condomless RAI/CMP unknown HIV status	Accepted	Negative
6	52	Condomless RAI/CMP unknown HIV status	Accepted	Not completed
7	27	Condomless RAI/CMP unknown HIV status	Accepted	Negative

P122

Reducing lost to follow-up (LTFU) rate in a large HIV clinic: a quality improvement project (QIP) to correctly identify those LTFU, improve engagement in care and inform allocation of administrative and clinical resource

L Dufour[1], C Jeong[1], J Sheppard[1], M Marshall[1], H Morrin[1], G McKinley[1], D Chilton[2] and J Bilinska[2]

[1]King's College London GKT School of Medical Education, UK, [2]Harrison Wing, Department of HIV Medicine, Guy's and St Thomas' Trust, London, UK

Background: Patient disengagement is a threat to achieving the UNAIDS 90-90-90 target in the UK, and an important source of onward HIV transmission, morbidity, mortality and cost to the NHS. BHIVA standards aspire to 95% retention in care. Many patients are not truly LTFU, but identifying those who are, and re-engaging them in care, requires extensive time and resource.
Methods: Patients not seen in the HIV service for ≥8 months, and without future appointments were identified using the hospital IT system in Sept 2017, to create a LTFU database. Using electronic clinical notes and clinic letters, patients who transferred HIV care, died, or were incorrectly mapped to the HIV service were removed. Remaining patients were regarded as truly LTFU, and were contacted by telephone on two occasions to encourage them to rebook clinic appointments. The demographics of those LTFU were examined and compared with those of the attending cohort.
Results: 377 patients had not been seen for at least 8 months representing 10.5% of the cohort. 163/377 (43%) patients were not truly LTFU: 39 were HIV negative, 77 had transferred care, 45 had moved abroad and 2 had died. 214/377 (57%) patients were thought to be truly LTFU, representing 6% of the cohort. We were able to contact 23 of these patients by phone, 19 rebooked with the HIV service, and 4 declined to re-engage, giving a re-engagement rate of 79% if reached by phone. The remaining 191/214 (89%) patients could not be reached by phone, with many expired telephone numbers; work to re-engage them continues. Notes review and phone work took a total of 44 h and counting. Demographic comparison showed that patients with undetectable viral load are less likely to become LTFU ($p<0.001$), and homeless patients significantly more likely to be LTFU ($p=0.003$).
Conclusion: Nearly half of patients labelled as LTFU were not truly so. Our cohort is highly mobile, resulting in many patients moving between treatment centres. This highlights the importance of maintaining contact details, asking patients to notify us of transfers, and identifying mapping errors in hospital systems. Re-engagement work is ongoing, and demographic data can provide us with the tools to identify patients at risk of LTFU and target intervention. Centralised data at PHE would be helpful in tracing patients. LTFU work is time consuming and should be considered in business planning.

P123

Renal problems and PrEP in Wales: a bigger concern than anticipated

R Drayton[1], Z Couzens[2], C Knapper[3], U Andrady[4], S Danino[5], H Bailey[4], R Davies[6] and J Tyler[7]

[1]Cardiff and Vale UHB, Cardiff, UK, [2]Public Health Wales, UK, [3]Aneurin Bevan UHB, UK, [4]Betsi Cadwalader UHB, UK, [5]Abertawe Bro Morgannwg UHB, UK, [6]Cwm Taf UHB, UK, [7]Hywel Dda UHB, UK

Background: Emtricitabine/tenofovir disoproxil (FTC/TDF) as PrEP was made available in Wales in July 2017, alongside PrEP management guidelines. TDF has been associated with a decline in renal function in PrEP trials, but few serious adverse renal events have been reported. The Welsh PREP steering group received multiple concerns from clinicians regarding abnormal renal function. However, this information was not being collected via prospective coding.
Methods: A survey was sent to all 6 health boards in Wales administering PrEP regarding the number of patients with renal issues before or during PrEP, and those who discontinued due to renal problems.
Results: All 6 health boards responded. 11/378 (3%) eligible patients had not started PrEP due to renal concerns; 8 due to an eGFR <60 ml/min, 3 due to other co-morbidities. 18/261 (7%) of those commenced on PrEP required increased clinic visits for renal monitoring. Of the 4 health boards affected, the proportion requiring increased monitoring was 6/36 (16%), 8/76 (11%), 3/41 (7%) and 1/87 (1%). 5 patients required increased monitoring due to an eGFR drop >10 ml/min, 9 due to eGFR between 60–80 ml/min, 2 due to proteinuria and 2 due to other comorbidities. 8/261 (3%) required 1 or 2 extra visits beyond normal protocol. 10/261 (4%) were being followed up monthly (of which 7 had been discussed with a local nephrologist and incorporated into a pre-existing virtual HIV renal clinic). 3/261 (1%) discontinued PrEP due to renal concerns; 2 due to heavy haematuria unlikely to be related to PREP. The third patient was a 36 year old who discontinued PrEP having developed reversible renal impairment with an eGFR drop from 85 ml/min to 25 ml/min and proteinuria and haematuria on urine dipstick.
Discussion: In real world experience of administering PrEP, concerns regarding renal toxicity are not insignificant. 3% of eligible patients were not commenced on PrEP due to renal issues. A new clinical code has been devised to monitor this prospectively across Wales. 7% required increased monitoring, though there was a marked variation between clinics. Contributing factors to this may be different populations accessing clinics, or differing interpretation of guidelines or advice from colleagues. The Wales PrEP management guidelines are being updated to offer further guidance on monitoring these patients. One patient discontinued PrEP following a possible adverse reaction, although other causes cannot be excluded.

P124

Retention of subjects in a PrEP randomised control study in the advent of PrEP becoming available on the NHS

S Squance and A Shepherd

NHS Lothian, Edinburgh, UK

Background: A randomised control study in a Scottish urban setting had recruited and initiated Pre Exposure Prophylaxis (PrEP) in high risk MSM, in the month prior to the announcement that PrEP would become available on the NHS in Scotland. The study team had screened 40 potential subjects and 36 MSM went onto take the first dose of Investigational Medical Product (IMP). The announcement of NHS PrEP could potentially result in subjects leaving the study as this was the only way of accessing free PrEP.
Methods: A semi structured interview was carried out with subjects attending for their routine study visits. Over a 1 month period 13 subjects (36.1%) were questioned. The Interviews used open questions to identify factors that would aid retention. The responses were grouped and used to formulate the retention strategy to be used by the Nursing team.
Results: We currently have all 36 subjects still in follow up (100%) approaching week 48.
32 remain on IMP with 4 (11%) switching to Generic NHS PrEP but attending follow up as per study protocol.
The subjects liked that they had a direct phone number to either phone or text and get a timely response from someone that they knew.
It was important to see the same people at each visit.
They liked that the study team worked with them to facilitate visits at times that would suit their needs rather than service availability.
That they would be seen on time or even if they were late.
They would like to receive information about how the Study is progressing and results as they were available.
An informal network has developed between subjects.
Quotes 'It is like attending a private clinic' 'More people should take part in research to give back to the MSM community'
Conclusion: Working with the expectations, informing and flexibility with study subjects, has help retention. The availability of the study team has allowed them access to care or treatment in a manner that may not be had they gone through the routine clinical channels.
The findings from this work have been related to the clinical sponsors, this has facilitated resources and peer support to enhance retention.
The relationship between the subjects and the study team has resulted in an ongoing dialogue about how we can enhance the experience of individuals taking part in clinical research.

P125

Sexual assault among men who have sex with men (MSM): associations with drug use and chemsex

C Fine[1] and C Ward[2]

[1]University of Manchester, Manchester, UK, [2]Manchester University NHS Foundation Trust, UK

Background: The Crime Survey for England and Wales reports that 2.5% of females and 0.4% of males have reported a sexual offence in the last 12 months, however little information is available about the prevalence of sexual assault among men who have sex with men (MSM). It has been suggested that as low as 3.9% of men actually report their experiences, compared to a figure of around 15% in women. We aimed to look at rates and associations of sexual assault among MSM attending our service.
Methods: A retrospective case notes review was undertaken for MSM attending the integrated sexual health (ISH) clinic between March and August 2016. Due to the number of MSM attendees a random sample of patients were selected. Data was collected on demographics, sexual assault reporting, drug and alcohol use, and sexually transmitted infections (STIs) and risk factors.
Results: 260 case notes were reviewed. The median age was 30 (range 19–82). 177 (68.1%) were White British and 232 (89.2%) identified as gay. Sexual assault was not discussed in 87 (33.5%) patients. In those where a discussion took place there were 19 sexual assaults disclosed, giving a prevalence of 11.0% (19/173). 25 (9.6%) patients reported drinking alcohol in excess of 20 units per week. 89 (34.0%) reported recreational drug use in the last 6 months, of which 51.7% (46/89) involved the use of the chemsex drugs mephedrone, gamma-hydroxybutrate or crystal methamphetamine, and 30.3% (27/89) had injected. 20 (7.7%) patients reported engaging in group sex and 81 (31.2%) reported never using condoms. 111 (42.7%) patients had an STI diagnosed in the preceding year or at their index consultation. In univariate analysis sexual assault in MSM was significantly associated with the use of recreational drugs (p=0.0002), chemsex drugs (p=0.0001), injecting drugs (p=0.0001) and group sex (p=0.0105). No association was found between sexual assault and alcohol use.
Conclusion: 11.0% of MSM clinic attenders sampled reported sexual assault either previously or at that clinic visit. Sexual assault among MSM was significantly associated with recreational drug use, but specifically use of chemsex drugs, injecting and participation in group sex (all p=<0.05). Chemsex can blur the lines regarding what constitutes consent and what doesn't leading to high rates of risk taking and potential sexual assault. More focus is needed on ascertaining sexual assault disclosure in MSM attending sexual health clinics.

P126

Social marketing and mass media interventions to increase HIV testing among men who have sex with men: systematic review and intervention component analysis

L McDaid[1], J Riddell[1], G Teal[2], N Boydell[3], N Coia[4] and P Flowers[5]

[1]MRC/ CSO Social and Public Health Sciences Unit, University of Glasgow, Glasgow, UK, [2]Institute of Design Innovation, The Gla, Glasgow, UK, [3]Usher Institute of Population Health Sciences and Informatics, University of Edinburgh, Edinburgh, UK, [4]NHS Greater Glasgow and Clyde, UK, [5]Glasgow Caledonian University, UK

Background: Only half of UK MSM reported annual HIV testing (as recommended in current UK guidelines), with less than one quarter of 'at risk' MSM testing more frequently. Social marketing, mass media and communication campaigns have a role in promoting HIV testing, but evidence of effectiveness is limited.
Methods: Systematic review of evidence on social marketing and mass media interventions for HIV testing in MSM published since 2010 to identify patterns in delivery (i.e., mode of delivery) and programme (i.e., Behaviour Change Techniques (BCTs)) components within interventions (in line with the eight benchmark criteria for social marketing) associated with effectiveness.
Results: A total of 2748 papers were retrieved and 19 met the inclusion criteria. Seven studies reported results indicative of an increase in HIV testing. Adherence to social marketing principles was often superficial. The characteristics of the included studies were reviewed and categorized as representing low and high *social marketing complexity*, with a greater proportion of studies with high complexity reported results indicative of an increase in testing. An array of different imagery was used, primarily with photographs as the central image; use of imagery representative of the target audience, or (often naked) actors that were explicitly or inferred to be MSM, was associated with effectiveness. In reviewing the ways in which the interventions worked, we found that the vast majority worked through the provision of *knowledge* or through use of *social roles and identities* (usually in relation to MSM related identities or ethnic or sexual identities). We identified use of 30 distinct BCTs, but three BCTs formed the backbone of most of the interventions and can be thought of as standard content: 'Instructions on how to perform behaviour' (providing factual information about how people should access a test or use a test kit); 'Credible source' (use of official and trusted branding, or logos); and 'Information about health consequences' (enabling testing decisions with assessment of the pros and cons, of whether to test or not).
Conclusion: Our novel and rigorous approach has identified the key social marketing components, visual designs, and mechanisms of behaviour change associated with increasing HIV testing among MSM. Together these can be developed into evidence-informed social marketing interventions to promote regular HIV testing to MSM.

P127

Stigma Survey UK: an intergenerational comparison of stigma and discrimination in non-HIV healthcare settings across the UK

I Lut[1], C Smith[2], A Hudson[1], V Delpech[3], A Ely[4], A Williams[5] and C Foster[6]

[1]Family Planning Association, London, UK, [2]University College London, London, UK, [3]Public Health England, London, UK, [4]Children's HIV Association, Bristol, UK, [5]London North West Healthcare NHS Trust, London, UK, [6]Imperial College Healthcare NHS Trust, London, UK

Background: HIV-related stigma affects people's healthcare experiences and their decisions in accessing care. We report intergenerational differences of experiences in healthcare settings outside HIV clinics among adults and young people (YP) living with HIV in the UK.
Methods: *The People Living with HIV* Stigma Surveys UK were co-produced by people living with HIV (PLWH), clinicians and researchers. Two cross-sectional studies [adults (18+) and YP (15–24)] were conducted, exploring stigma and discrimination experienced by PLWH in the UK. Participants were recruited through community organisations and HIV clinics. Descriptive and multivariate analyses are presented.
Results: Data from 1450 adults and 300 YP was analysed; median ages 45 years (37, 52) and 20 years (17, 22) respectively. 76% and 53% identified as male (including trans men) and 67% and 39% of sexually active participants were men who have sex with men (MSM). 62% of adults identified as White British while 79% of YP identified as Black, Asian or Minority Ethnic. 65% of YP acquired HIV at birth and 29% were infected sexually. 92% of participants in both studies were currently on ART. Reported experiences of stigma and avoidance of health in primary care, GUM or in/outpatient services perceived due to HIV status in the last year are presented below:

	Adults (N=1450)	Young people (N=300)	p	Adjusted OR (95% CI)* YP vs. Adults
Treated differently	441 (30.4%)	15 (5.0%)	<0.001	0.19 (0.099–.037)
Refused or delayed care	243 (16.8%)	9 (3.0%)	<0.001	0.45 (0.195–1.03)
Heard negative comments	120 (8.3%)	16 (5.3%)	<0.001	0.83 (0.45–1.55)
Use of excess barrier protection	202 (13.9%)	27 (9.0%)	<0.001	0.73 (0.45–1.19)
Avoid seeking care	396 (27.3%)	50 (16.7%)	0.012	1.69 (1.13–2.56)

*Adjusted for sexuality, ART, high PHQ2 score, positive self-image, worry of being treated differently, experiences and behaviour in healthcare.

Conclusions: YP reported experiencing significantly less stigma compared with older adults. However they are more likely to avoid seeking health care when needed in these settings. Whilst experiencing less discrimination, YP are more likely to treat poor experiences as a barrier to seeking care.

P128

Swinging: what we should be asking

D Honey
Barts Health, London, UK

Background: Swinging 'consensual exchange of partners, especially spouses, for sex' is a popular pastime for some people. Swinging Heaven, a UK based swingers network, currently boasts 1,939,192 members. One search for 'swingers' parties/clubs, produced 76 results within the M25 area. Private parties add to this number. Since the evolution of social media, the internet and transient affordable travel, individuals can now be notified of events via mobile almost instantaneously. Swinging apps, dogging apps/sites, were not counted. This lifestyle remains guarded, as the stigma attached to this lifestyle is still prevalent and may impinge on voluntary disclosure. In order to capture this demographic more widely, this group need to be identified as high risk as swingers may have been underestimated.
Method: I Identified 12 participants who agreed to being observed and interviewed at 2 swingers events; one cocktail party (attendees approx 85) the other a party for under 35's in Southern England (attendees approx 130). Participants agreed to be observed and interviewed post event. Participants were two married couples two heterosexual romantic partners, two married men (attending without spouse; unaware of their attendance) one single man and one single woman at a swingers private event. All participants were observed at the events and interviewed post event relating to the lifestyle and STI's. Condoms were available free of charge at this event. The event organiser allows a small number of single men to each event. One of the events has an age limit of 35.
Results: Multiple 'dipping' from one person (Insertion of penis into vagina and mouth for short periods before changing partners) was observed without condom use across many party goers in the larger play room at the under 35's event featuring 6 double beds. Approximately 28–34 people were involved over a 30 min period engaged in intimate sexual contact. One male participant was observed (Married attending as single male) engaged in oral sex and rimming with another male as part of a two male one female sexual group. The single woman had 3 partners and protected vaginal sex at all times, but UPSI oral. Protected oral sex was not observed.
Conclusion: Swinging enhanced sexual relationships and sanctioned mutual fantasies and uninhibited sexual encounters. Participants felt free to partake in sex with other partners alongside regular partners. In this small snapshot, although condoms were available, use of condoms was not always observed. Participants reported getting 'caught up in the moment' enjoying being free and sexually uninhibited. Older members wore condoms more often whereas the under 35 age group did not. Five of the participants had experienced an STI. The single woman had protected vaginal sex at all times. Attendees of this lifestyle choice may represent a potential threat to sexual health.

P129

Symptoms of depression and anxiety and sexual health and behaviour among heterosexual men and women attending genitourinary medicine (GUM) clinics in England

R Coyle[1], A Miltz[1], J Sewell[1], A Phillips[1], A Speakman[1], J Anderson[2], R Dhairyawan[3], R O'Connell[4], L Sherr[1], V Apea[4], S Collins[5], M Lascar[5], A Tang[6], S Mann[7], F Lampe[1] and A Rodger[1]
[1]University College London, London, UK, [2]Homerton University Hospital NHS Foundation Trust, London, UK, [3]Barking, Havering and Redbridge University Hospital Trust, London, UK, [4]Barts Health NHS Trust, London, UK, [5]HIV i-Base, London, UK, [6]Royal Berkshire NHS Foundation Trust, London, UK, [7]King's College Hospital NHS Foundation Trust, London, UK

Background: Evidence from the UK and USA suggests depressive symptoms in young people are associated with risk factors for sexual ill-health, and that symptoms of mental ill-health may be elevated in GUM clinic attendees. Here we assess the relationship between sexual behaviour and symptoms of anxiety and depression among heterosexual men and women in the 'Attitudes to and understanding of Risk of Acquisition of HIV' study (AURAH).
Methods: AURAH is a cross-sectional questionnaire study of people without HIV, recruited in 20 GUM clinics in England 2013–14. In heterosexual participants who reported sex in the last three months we assessed the association of depression symptoms (PHQ-9 score≥10) and anxiety symptoms (GAD-7 score≥10) with condomless sex with non-regular partner/s (CLS-NR) and condomless sex with ≥2 partners (CLS-2+) during this time period; and with STI diagnosis in the past year. We used modified Poisson regression analysis adjusted for age, ethnicity, study region, education and relationship status.
Results: Questionnaires were completed by 470 heterosexual men and 675 women. Depressive symptoms were reported by 95 (14.1%) women and 28 men (6.0%). Anxiety symptoms were reported by 79 women (11.7%) and 21 men (4.5%).
Recent sex was reported by 584/675 (86.5%) women and 410/470 men (87.2%). In these individuals CLS-NR, CLS-2+ and STI were reported by 192 (32.9%), 114 (19.5%) and 127 (21.7%) women and by 199 (48.5%), 144 (35.1%) and 98 (23.9%) men. In women, depressive symptoms were associated with CLS-NR and CLS-2+ and anxiety symptoms were associated with CLS-2+ and STI history. In men there was no significant relationship between psychological symptoms and sexual risk behaviours.

	Adjusted prevalence ratio		
	CLS-NR	CLS-2+	STI (last year)
Women			
PHQ9<10	1	1	1
PHQ9≥10	**1.37 (1.05–1.78)***	**1.79 (1.22–2.62)***	1.24 (0.85–1.82)
GAD7<10	1	1	1
GAD7≥10	1.09 (0.77–1.54)	**1.66 (1.09–2.52)***	**1.59 (1.10–2.30)***
Men			
PHQ9<10	1	1	1
PHQ9≥10	0.79 (0.50–1.24)	0.50 (0.21–1.18)	1.27 (0.62–2.60)
GAD7<10	1	1	1
GAD7≥10	0.77 (0.38–1.56)	0.42 (0.11–1.54)	0.95 (0.35–2.36)

Conclusion: Our study demonstrates an association between psychological symptoms and sexual risk behaviours in women; direction of causality cannot be inferred. Clinicians involved in the management of mental illness and/or sexual health should consider this association as part of holistic patient assessment.

P130

The case for pre-exposure prophylaxis for HIV: why such conflict?

P Grudgings and M Phillips
Lancaster University, Lancaster, UK

Background: Each day 17 people are diagnosed with HIV in the UK, which has paved the way for Pre-exposure Prophylaxis (PrEP). Scotland implemented full provision of PrEP through its NHS and is currently the only country that offers this in the UK. NHS England (NHSE) have come under increased pressure to fund PrEP with the question remaining in England as to who should take the responsibility for the funding. There has been a moral dimension to the debate of funding, with some commentators focussing on the preventative medicine aspect, and some focussing on condomless sex as a lifestyle choice. We wished to examine the literature regarding these arguments.
Methods: A literature review was conducted using Embase and PubMed with the phrases 'HIV-1' and 'PrEP', delivering 193 results. This was refined with subgroup terms, reducing the results down to 34. In the BMJ, single search terms, such as 'pre-exposure prophylaxis' gave 504 results. This produced a wide range of subgroups relating to the topic and allowed general articles pertaining to PrEP to be reviewed.
Results: The NHS is a fixed funding system that requires simultaneous application of judicious resource allocation based on need and effectiveness, whilst advocating for patients and trying to prevent further disease. There were a multitude of arguments both for and against PrEP provision. In favour were temporary treatment, preventing lifelong infections and long-term cost effectiveness in favour of funding PrEP. Arguments against were based on diversion of financial resource, increasing incidence of STIs and HIV drug resistance. The fulcrum for most positions was resource allocation, with wider issues being cited to support the reason for the proposed resource allocation. For instance, that condom use is cheaper and funded so why add PrEP in, and that condomless sex is a lifestyle choice. Conversely, that the prevention of HIV will save more money than would need to be spent if HIV were acquired, and so it represents value.

Conclusion: We found that the arguments around PrEP in England were essentially arguments about a publically funded health system with finite resources. In the literature, the arguments for and against were about who should pay and why it was/was not good value. It was only in support of these opposed arguments that moral and ethical viewpoints were used.
There were parallels with the arguments against the introduction of contraception. It is a choice to use contraception as opposed to condoms and it gives the user more control over their life. The same rationale should be applied to PrEP use. The long-term preventative benefits will be cost-effective when preventing lifelong HIV infections. When introducing PrEP as part of a comprehensive prevention strategy, it is a step closer to bringing the HIV epidemic to an end.

P131

The current picture of sexual health advising

M Clarke[1], R Williams[2], J Roberts[3], C Evans[4], G Bell[5], M Murchie[6], D Thirlby[7], M Cross[8], L Furness[9], H Clarke[10] and E Hodges[11]
[1]University Hospitals Bristol NHS Foundation Trust, Bristol, UK, [2]Western Sussex Hospitals NHS Foundation Trust, Sussex, UK, [3]Brighton and Hove Sexual health and Contraception Service, Brighton, UK, [4]Chelsea and Westminster NHS Foundation Trust, London, UK, [5]Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK, [6]Greater Glasgow and Clyde Health Board, Glasgow, UK, [7]Manchester University Foundation Trust, UK, [8]Belfast Health and Social Care Trust, Belfast, UK, [9]Cardiff and Vale NHS University Health Board, Cardiff, UK, [10]HomertonUniversity Hospital Trust, London, UK, [11]Cambridgeshire Community Service NHS Trust, Cambridge, UK

Background: Sexual Health Advisers (SHAs) specialise in partner notification, risk reduction and counselling/support for people affected by sexually transmitted infections (STIs/HIV). The role of SHA has changed in recent years in response to the reconfiguration of sexual health services, including the integration of Contraception and Sexual Health (CaSH) and Genitourinary Medicine (GUM). The Society of Sexual Health Advisers (SSHA) undertook a national survey to establish the impact of these changes.
Methods: Practitioners conducting sexual health advising were contacted through the SSHA and BASHH (British Association for Sexual Health and HIV) mailing list and the SSHA website between 18/08/2017 and 20/09/2017. They were asked to complete a questionnaire on the current picture of Sexual Health Advising. Questions were both quantitative and qualitative, including (job title, role, setting) and perceived importance of the SHA role.
Results: Of 245 respondents, 200 (82%) 'Health Adviser' in their job title, of whom 62/200; 31%) had dual nurse/ health adviser roles. Services covered included Sexual Health (233/245; 95%); HIV (133/245; 54%) and Contraception (118/245; 45%). Reported duties included: Partner Notification (PN) (232/245; 95%); management of positive results (209/245; 85%); management of administration and recall systems for positive results (207/245; 84%); Safeguarding (217/245; 89%); Motivational Interviewing (187/245; 76%); Post Exposure Prophylaxis (PEP) (180/245; 73%), and drug and alcohol interventions (165/245; 67%).
Perceptions of the importance of Sexual Health Advising included: the contribution of PN and prevention to good public health; information and emotional support for the patient; management of complex and vulnerable patients; and giving good quality, holistic patient care.
Conclusion: Partner notification, management of positive results, STI/HIV prevention and emotional support still form the backbone of Sexual Health Advising. Many practitioners also respond to evolving patient need for safeguarding, alcohol and drug interventions and PEP/PrEP.
Practitioners assert the essential contribution SHAs make to holistic patient care and the control of STIs/ HIV.

P132

The importance of community-led policy interventions for addressing stigma

G Valiotis, K Smith, N Sparling and J Hirono
HIV Scotland, Edinburgh, UK

Background: Addressing stigma is identified as the most ambitious outcome of the Scottish Government's Sexual Health and Blood Borne Virus Framework, the document that dictates public health policy and practice in this area. However, progress towards eliminating stigma in Scotland was not able to be demonstrated. A unified approach that harnessed the expertise of community members was seen as a priority to effectively address stigma in Scotland.
Methods: To ensure a coordinated and informed work plan, a diverse group of people was brought together and formed the HIV anti-stigma Consortium (n=20), featuring community members and other experts from relevant work forces. By leading discussions, chairing meeting and meeting with decision makers, community members took leadership roles in the Consortium and shaped the direction of the work. UNAIDS and WHO guidance on addressing stigma were linked with Scottish national policies, data, and the experiences of community members that were captured through focus groups (2 groups, n=10) and from an online consultation (n=22). To create a national plan for reaching zero HIV stigma in Scotland the Consortium co-published a strategy in two parts: the Road Map to Zero, and an Action Plan. Key messages from the strategy were used in a dynamic social media campaign (reach of 6.5 million people) to promote it to community members and decision makers.
Results (lesson learned): This work was community-led and received widespread support by addressing government policy, creating opportunities for political leadership, defining opportunities to challenge inequalities, providing evidence of best practice and prioritizing community leadership and involvement. The strategy received cross sector support from Members of Scottish Parliament, clinicians, third sector, and statutory services. The launch campaign received endorsements by the First Minister of Scotland and Scottish celebrities.
Conclusion: Through community leadership and mobilizing stakeholders, the national strategy enabled a reinvigorated interest to address stigma. This was a result of creating a common agenda among key decision makers and by creating links between national strategies and global targets. We were able to reframe our focus on how to best tackle stigma and place eliminating HIV stigma high on the agenda of policy makers, stakeholders and service providers.

P133

The trends in PrEP awareness, acceptability and uptake amongst MSM in London between 2016 and 2018

J Bayley[1], T Nadarzynski[2], M Portman[3], G Owen[4], T Pasvol[5] and W Nutland[6]
[1]Barts NHS Trust, London, UK, [2]Solent NHS Trust, Southampton, UK, [3]CNWL NHS Trust, London, UK, [4]I Want PrEP Now, London, UK, [5]Imperial NHS Trust, London, UK, [6]PrEPster, London, UK

Background: Pre-exposure prophylaxis (PrEP) is an effective biological tool to reduce risk in acquiring HIV, thus its uptake and adherence are crucial for achieving significant public health outcomes. It is important to understand awareness, acceptability and motivation towards PrEP for those at higher risk of HIV such as men who have sex with men (MSM). Our aim was to explore these in MSM living in North East London at two time points 18 months apart.
Methods: An online survey on PrEP acceptability was advertised on Grindr (a geo-spatial social app for MSM) in July 2016 and January 2018. The questionnaire consisted of items exploring demographics, awareness of PrEP and whether they were currently taking or considering taking in the future. We also asked about levels of awareness on how to source, the need for monitoring and whether they were in contact with a sexual health clinic if on PrEP. The analysis used chi-squared tests and logistic regression.
Results: 312 and 201 surveys were returned for July 2016 and January 2018, respectively. The majority of respondents were aged 21–40 years, white and educated to undergraduate level or above. Awareness of PrEP was high for both surveys (95%–100%). PrEP uptake increased from 6.8% in 2016 to 34.7% in 2018. For those considering PrEP use, the knowledge of how to source it increased from 19.8% to 40.6% in 18 months. There was a strong negative correlation between the lack of HIV testing and PrEP awareness ($p<0.01$). PrEP use was higher in those having completed A-levels or an undergraduate degree for 2018 (see table). This was not seen in the 2016 survey. There was an increase in engagement with clinical services, from 61.1% (11/18) in 2016 to 80.7% (50/62) in 2018, but was not statistically significant ($p=0.09$).

Those currently taking PrEP in January 2018 Educational attainment	Odds ratio	95% CI	p-value
GSCE or equivalent	1		
A Level	**7.9**	1.2–51.4	**0.03***
Undergraduate degree	**6.0**	1.4–25.6	**0.02***
Postgraduate degree	3.3	0.56–20.0	0.18

Discussion: There has been a significant increase in PrEP awareness, uptake and knowledge of where to source it between 2016 and 2018. However, only 4 in 10 MSM of those wanting to take PrEP in the future know how to obtain it. More work is needed to raise awareness of PrEP and HIV testing, especially amongst those with lower educational attainment. Future research needs to focus on PrEP acceptability and uptake in MSM of minority ethnic backgrounds which were underrepresented in this study.

P134

Using digital interventions to address barriers to condom use among high-risk groups in England

T Mukiwa and C Kifetew
Terrence Higgins Trust, London, UK

Background: Nationally in 2016, there were 417,984 sexually transmitted infections (STIs) and 2,323 HIV cases diagnosed at sexual health clinics. Men who have sex with men (MSM) and Black African (BA) communities carry a disproportionately high burden of HIV and STIs in England.
Condoms are a cornerstone of HIV and STI prevention in the UK; however uptake among key communities is insufficient. National surveys targeting MSM and BA have shown inconsistent use and high levels of condom failure due to breakage or slippage. Research also shows that Ill-fitting and inappropriate condoms can be linked with incomplete use, reduced pleasure and erectile issues.
Lack of information and lack of access to different condom options are believed to contribute to poor use, and digital platforms provide an unparalleled medium to access high risk groups in a cost-effective way. This project aimed to use a digital intervention to increase awareness of and access to different condom options to those most at risk of HIV and STIs in England.
Methods: An online condom assessment tool was created and promoted via targeted social media. Individuals answered a set of questions on fit, sensitivity and potential latex allergies. Based on the answers they gave, information about appropriate condoms was provided and they were offered a free sample condom pack.
Results: There were 10,348 completions of the tool between April and December 2017. Only 14% of the responses showed that users were satisfied with the condoms they were using. The remaining responses showed that individuals were using condoms that did not provide enough sensitivity (72%), that were too tight/too short (41.6%), too loose (18.4%), or were itchy (a potential sign for latex allergy) (16.8%).
3246 individuals went on to order the free sample condom pack. The types of condoms ordered matched the responses given in the tool. The most popular condom packs requested were for extra-sensitivity 'sensations' condoms (49%), followed by large (22.9%), trim (smaller) (14.7%) and latex-free (13.2%) condoms.
Conclusion: The number of digital tool completions and packs ordered suggests that ignorance about condom types persist. Many may be using the wrong condoms which could lead to condom failure and a reluctance towards consistent use. Further promotion of this tool may increase condom use among high risk groups.
Condom distribution scheme providers may be interested in incorporating this digital assessment tool as part of their service.

P135

Variation in retention in care for patients newly diagnosed with HIV in 2015

S Desai, A Brown, J Khawam, P Kirwan and V Delpech
Public Health England, London, UK

Background: In England, the effectiveness of HIV services to provide high quality care is assessed through a range of clinical indicators integrated into a National Dashboard. We investigated patient and clinic characteristics associated with retention in care in the year following diagnosis.
Methods: National surveillance data for patients newly diagnosed with HIV and seen for care in England in 2015 was used to examine the effect of demographics, (ethnicity, age, route of exposure), patient complexity at last attendance, and clinic-level factors on retention in care using multilevel logistic regression. Adjusted odds ratios (aOR) with 95% confidence intervals (CI) are reported for predictors significantly ($p<0.05$) associated with retention. The model incorporated random variation to determine if clinic variation can be explained by the explanatory variables. Models were compared with the likelihood ratio test.
Results: In 2015, 4628 people diagnosed and linked to care and 89% were seen in 2016. Retention was high among white gay/bisexual men and heterosexual men (both 94%) and lower among people who inject drugs (PWID) (78%). Retention increased with age [85% of 15–24 year olds returning compared to 91% of ≥50 year olds ($p<0.02$)]. It was lowest in London (87%) and highest in North of England (92%, $p<0.003$). Retention ranged from 61%–100% in clinics with more than 10 new HIV diagnoses. After accounting for clinic-level clustering, all variables, except region of clinic, were significantly associated with retention: age group (15–24 vs. ≥50: aOR:2.3 95%CI 1.4–3.8); and exposure group (black African heterosexual men (aOR: 0.4 95%CI 0.2–0.7), white heterosexual women (aOR: 0.4 95%CI 0.3–0.8) vs. white gay/bisexual men). Large clinics (>1000 patients) were twice as likely to retain patients compared to small clinics (<100 patients). Though associated with retention nationally, case mix and clinic size did not explain the variation in retention observed at clinic level ($p=0.24$ and $p=0.64$, respectively).
Conclusion: While retention in care for patients newly diagnosed with HIV is high, younger people, PWIDs and those attending smaller clinics less likely to be retained. The variation between clinics is concerning; while larger clinics perform better nationally, the variation in retention is not explained by clinic size alone. Further investigation is needed to identify and address the determinants of clinical variation to ensure equity of care nationally.

P136

Were we PrEPared? Implementing HIV pre-exposure prophylaxis across Scotland: early analysis of the first eight months of NHS roll out

N Steedman[1], C Estcourt[2], L Wallace[3], D Clutterbuck[4], A Winter[5], S Wrigglesworth[1] and D Goldberg[3]
[1]NHS National Services Scotland, Edinburgh, UK, [2]Glasgow Caledonian University, Glasgow, UK, [3]Health Protection Scotland, Glasgow, UK, [4]NHS Lothian, Edinburgh, UK, [5]NHS Greater Glasgow and Clyde, Glasgow, UK

Background: Human Immunodeficiency Virus (HIV) Pre Exposure Prophylaxis (PrEP), in which a people at high risk take oral tenofovir/emtricitabine daily or around the time of risky sexual exposure, significantly reduces the risk of HIV acquisition. Uniquely in the UK, PrEP has been available to all eligible Scottish residents since July 2017 on the NHS via sexual health services. We report on the first 8 months of PrEP roll out.
Methods: Descriptive analysis of the first ~900 patients started on PrEP (07/2017–03/2018). Data were extracted from NaSH (the National Sexual Health IT System – the electronic patient records system for the majority of sexual health services in Scotland) or an equivalent electronic spreadsheet from non-NaSH using services. A novel clinical coding system was introduced to enable identification of those assessed for PrEP, and those who initiated PrEP, using similar codes to Public Health England's IMPACT study. Data were linked with laboratory diagnoses for blood borne viruses and bacterial STIs. Descriptive statistics were used.
Results: We will present data on demographic characteristics and eligibility criteria of people assessed for PrEP including those who did/did not initiate

PrEP, PrEP regimen preferences (daily/event based), HIV seroconversions, new blood borne virus infections and new STIs diagnosed in those on PrEP and in those not on PrEP in the population as a whole.
Conclusions: These data provide a vital initial analysis of patient characteristics, infections and PrEP prescribing in the context of one of the world's first national PrEP implementation programmes. Findings will assist and inform public health planners, commissioners, clinicians and policy in the UK and internationally.

P137

What are the biggest challenges in providing PrEP: the Welsh experience

R Drayton[1] and C Nicholas[2]
[1]Cardiff and Vale UHB, Cardiff, UK, [2]Cardiff University Medical School, UK

Background: PrEP was made provisionally available in Wales in July 2017, the impact of which will be assessed after 3 years. To enable this, an additional 32 clinical codes were devised to collect prospective data on all eligible patients, including those not given PrEP. Although the cost of the drug and any additional tests are reimbursed by Welsh government, no other additional resource has been made available to clinics.
Method: A link to an online survey was emailed to all BASHH members in Wales in December 2017 with a request for it to be completed by clinicians with experience of providing PREP. Clinicians were asked to indicate of a scale of 1–10 the extent that they had found 24 areas challenging (1=not challenging, 10=extremely challenging). Responses were anonymous.
Results: 17 responses were received from clinicians working in 4 health boards. These health boards account for 92% of patients on PrEP to date. The areas identified as most challenging were lack of HIV point of care test provision, inaccurate or missed coding in eligible individuals who decline PrEP and time required to undertake coding, all with a medium score of 8/10. Concerns regarding the impact on other services provided, failure to appropriately code patients given PrEP, and PrEP being requested by MSM consistently using condoms for anal sex all had a medium score of 6/10. Concerns regarding pre-existing renal, bone and psychiatric comorbidities scored 3, 2 and 2/10, respectively, although 6/17 (35%), 3/17 (18%) and 2/17 (12%) of clinicians had scored these 7/10 or more, respectively. Deteriorating renal function or proteinuria whilst taking PrEP had a medium score of 2/10; however, 3/17 (18%) clinicians scored with a 7 or higher. PrEP being requested by the following groups all had a medium score of 1/10; non-eligible heterosexual men and women, MSM having oral sex only, non-residents in Wales or eligible patients under 16 and 18. However, in this last area 3/16 (19%) clinicians had scored as 8 or higher.
Discussion: The majority of areas of concern were logistical. The most challenging clinical issue reported was PrEP being requested by MSM who are consistently using condoms. If this group were to successfully access PREP, it would adversely affect the apparent impact of the intervention. There was a large discrepancy of experience, particularly with regards to comorbidities and toxicities, and young people, possibly due to differing regional demographics.

P138

What do commissioners and health providers think about the National Chlamydia Screening Programme in England? Findings of qualitative interviews conducted as part of an external review

G Davis, D Draper, D Shaw, M Bleasdille, C Naidoo, E Buitendam, K Dunbar, K Folkard, J Saunders and S Migchelsen
Public Health England, London, UK

Background: The National Chlamydia Screening Programme (NCSP) is an opportunistic screening programme for young people (YP) and since its national rollout began in 2003, it has undergone numerous changes. We interviewed sexual health (SH) commissioners and health providers involved with the NCSP to understand their thoughts on the past, current and future structure of chlamydia screening in England, as part of a wider external peer review of the NCSP.
Methods: Semi-structured interviews were undertaken with a range of stakeholders: 13 one-to-one phone interviews and three group discussions. Participants were asked for their perceptions of the NCSP's strengths, weaknesses, future opportunities and threats (SWOT). Framework analysis was used to identify and organise themes raised by stakeholders.
Results: Common themes were identified across the SWOT domains and these broadly mapped against the pillars of clinical governance.
Engagement Stakeholders discussed the need to increase regional and national collaboration and raised concerns about YP engagement.
Risk Management The NCSP has improved attitudes to SH testing and reduced stigma, but concern that focus on chlamydia has reduced awareness of other STIs.
Monitoring Rural stakeholders reported negative impacts of the single national monitoring threshold.
Resources The NCSP initially drove investment in SH services, but funding and staffing cuts have impacted local provision of screening.
Education & Training The NCSP has improved SH education in both health professionals and YP but additional work in schools is needed.
Programme Delivery The major theme focused on service delivery and integration of new approaches, such as online testing, with national guidance.
Evidence & Guidance Regional variation exists in perception of PHE's role, with requests for more sharing of best practices and clinical evidence.
Conclusions: Stakeholder feedback has provided insight on the impact of the NCSP; discussing the initial effects during implementation, the current situation facing stakeholders and how the NCSP can adapt for the future. Participants felt the impact of the NCSP on attitudes to SH testing and the opportunity to speak to YP about their general sexual health was positive. Numerous themes were identified that were consistent across the country, however variation in needs and threats between urban and rural areas were highlighted. The feedback will help inform discussions on the future structure of the NCSP.

P139

What factors do HIV-negative MSM consider when evaluating their HIV risk? A qualitative analysis

S Desai[1], C King[2], A Roy[3], F Burns[2], A Nardone[1], R Gilson[2], M Shahmanesh[2] and C Llewellyn[3]
[1]Public Health England, London, UK, [2]University College London, London, UK, [3]Brighton and Sussex Medical School, Brighton, UK

Background: HIV prevention services are provided to men who have sex with men (MSM) attending sexual health (SH) clinics in England, although uptake and utilisation may be influenced by self-perception of HIV risk. If perceived risk is less than actual risk, men who could benefit from effective prevention may not use the services. The objective of this study was to understand how MSM perceive their HIV risk and the factors taken into consideration when making this assessment.
Methods: Semi-structured interviews with a purposive convenience sample were conducted with HIV negative MSM attending two SH clinics in London and Brighton. A Framework approach was used to analyse the data and develop themes by two researchers independently.
Results: Nineteen HIV negative MSM were interviewed and four main themes were identified: P*artnerships and trust*, which played an important role in low perceived risk for men in relationships; *intentions to be safe*, where condom use and HIV testing were important determinants, *contextual factors*, such as being under the influence of alcohol and changes in risk over time and *HIV knowledge*, which was high among all men regardless of perceived risk.
Conclusion: The majority of men identified as being at low risk of HIV despite some reporting inconsistent condom use and engaging in casual sex. Men did not judge their risk based on these behaviours and their context but on their intention to be safe and the relationships they were in. An objective assessment to establish an individual's risk and highlight differences between perceived and calculated risk could be used as the basis of discussing and determining appropriate prevention interventions for MSM attending SH clinics.

P140

What is the likelihood of acquiring hepatitis B virus (HBV) or hepatitis C virus (HCV) through biting or spitting? A review of the published literature with particular reference to the emergency services

H Pintilie[1] and G Brook[2]

[1]Imperial College Healthcare NHS Trust, London, UK, [2]London North West University Healthcare NHS Trust, London, UK

Background: A draft Parliamentary Bill seeks to criminalise assaults on emergency workers through biting and spitting, especially through the risk of infection. This and other recently publicised announcements, such as the use of spit hoods to protect police, seems to be partly based on an exaggerated fear of blood borne viruses (BBVs). We undertook a literature search to try and clarify the risk of hepatitis infection from such exposures.
Methods: A literature search identified 245 papers. These were reduced to those relevant to HBV and HCV transmitted through biting or spitting and the scientific plausibility of this. Emergency service reports were reviewed for data regarding incidents involving spitting or biting.
Results: *Biological Plausibility*: Although both HBV DNA and HCV RNA can be found in saliva of infected patients, the infectivity and levels required for transmission are not clear. Levels may relate to occult blood rather than saliva itself.
Case Reports: 9 relevant reports of hepatitis transmission were identified. 6 HBV transmissions through bites and 1 through spitting. 4 were in mental health institutions, 1 during a fight with a stranger and 2 after occupational exposures (1 nurse, 1 policeman). 2 case reports were transmission of HCV through bites. Both cases occurred after fights. Of these 9 reports, transmission was confirmed in 1 HBV case by genome sequencing.
Reported Incidents: In 2010 the Scottish police reported 105 incidents involving police at work – 28 (27%) spitting and 27 (26%) biting. Only 74% involved contact with mucous membranes or broken skin, and most were deemed no or low risk for BBV exposure. Avon and Somerset Police reported 16% of recorded assaults as spitting incidents April–November 2017 and West Midlands police reported 231 recorded assaults on officers and staff by spitting or biting in 2016. The proportion of assailants with BBVs is not stated, but there are no reported cases of infection.
Conclusions: Although transmission of HBV and HCV via spitting or biting is biologically plausible, the virulence and risk of this is not established. Only a small number of transmissions of HBV and HCV from spitting or bite injuries have been reported. Police reports show a varied number of these injuries occurring but those deemed to be significant for possible BBV exposure appear to be very few and only 1 transmission has been reported in the literature in a police officer. Therefore, the overall risk appears to be very low.

P141

Working across epidemics: comparing the acceptability of self-led testing options for HIV and hepatitis C virus (HCV) among men who have sex with men (MSM) and people who use drugs (PWUD)

TC Witzel[1], A Guise[2], L Parkes[3], P Weatherburn[1], FM Burns[4], S Mandal[5], A Nardone[5], T Rhodes[1], C Sabin[4], M Harris[1] and AJ Rodger[4]

[1]London School of Hygiene and Tropical Medicine, UK, [2]King's College London, UK, [3]University of East Anglia, Norwich, UK, [4]University College London, London, UK, [5]Public Health England, London, UK

Background: HIV and Hepatitis C Virus (HCV) disproportionately affect key populations (KPs) including men who have sex with men (MSM) and people who use drugs (PWUD). Increased testing rates are key in controlling these overlapping epidemics. Self-led testing options including self-testing (ST) and self-sampling (SS) have gained popularity in recent years. Working across two datasets, we compare acceptability of these testing options for HIV and HCV among MSM/PWUD.
Methods: Study 1 explored HIVST/HIVSS acceptability in 6 focus group discussions (FGDs) with 47 MSM in London, Plymouth and Manchester (07/15–11/15) and 17 stakeholder interviews (05/16–12/16). Study 2 explored HCVST/HCVSS acceptability in 3 FGDs with 18 PWUD and 5 stakeholder interviews in London (01/17–03/17). FGDs and interviews were transcribed verbatim and analysed thematically. Emergent themes were compared.
Results: Self-led testing options for both viruses were valued by KPs for providing convenience and confidentiality; stakeholders praised the opportunity to reach new populations and increase testing frequency. HIVST and HCVST gave a high degree of control to the user although both were perceived by KPs to have lower sensitivity than tests in clinical settings especially if using oral fluid. Self-led options for HCV were problematic for PWUD and stakeholders as they currently detect antibody rather than antigen, leading to uncertain results in early infection or previous cleared infection/re-infection. KPs felt SS procedures were overly complex. For HCV, self-led approaches did not ameliorate barriers to health care access experienced by PWUD due to stigma and lack of available treatment, significantly limiting potential utility unless access to HCV therapy is improved. In contrast, seeking care following a positive result after remote testing for HIV was not considered equally problematic for MSM, although some participants reported concern about whether 'others' would link to care.
Conclusions: Self-led testing options have the potential to increase testing rates by enhancing convenience and privacy but do not meet needs in a uniform way across HCV and HIV epidemics. Although valued for HIV, limitations in available self-testing HCV assays and profound health service barriers related to stigma limit utility. Investment in HCV services should instead focus on reducing healthcare barriers for PWUD to clinical settings and improving access to treatment through a client centred approach.

P142

Young adults' chlamydia testing patterns and awareness of guidance: results from a clinic-based survey

S Currie[1], C Mercer[2], K Dunbar[3], J Saunders[3] and S Woodhall[3]

[1]Royal Liverpool University Hospital, Liverpool, UK, [2]University College London, London, UK, [3]Public Health England, London, UK

Background: The National Chlamydia Screening Programme (NCSP) recommends that under 25 year-olds test annually, upon change of partner and re-test three months after treatment. This is in order to prevent and control chlamydia through detection and treatment of infection. Young Persons (YPs) knowledge of NCSP guidance and testing practices with regard to new partners is not known.
Aim: To establish YPs' knowledge of and adherence to NCSP testing guidance. To understand sexually active young persons (SAYPs) sexual behaviour in relation to chlamydia testing.
Methods: Clinic-based convenience survey of young adults; distributed to patients 15–24 years old who attended a GUM clinic in the North West between 26th May and 8th July 2016.
Results: 680 patients 15–24 years of age attended the clinic in the time frame. Of which, 195 completed the questionnaire.
They had low levels of awareness of the NCSP recommendations to test annually (11%); on change of partner (37%), and to retest three months after a diagnosis (17%). However, annual testing was still reported by 66% and 56% reported having been tested for chlamydia in the last year. Three-quarters of respondents indicated they would be happy to be offered a chlamydia test each time they saw a doctor or nurse.
117 respondents provided information on both the timing of their most recent chlamydia test as well as the timing of first sex with their most recent partner. On average (median), respondents' most recent test was around 6 weeks *after* first sex with their partner, however, there was substantial variation: 24% reported having had a chlamydia test within a few months of first sex occurring with the partner, 31% had not been tested since having sex with the partner and 45% had been most recently tested around 6 months to well over a year after first sex with the recent partner.
Conclusion: There is limited awareness of NCSP guidance and this is reflected in young person's testing patterns in relation to new sexual partnerships. Better ways of capturing data on timing of testing in relation to partnership formation are needed, such as more in-depth qualitative work to develop the conceptual frameworks around testing practices. This would improve recommendations to young people and healthcare professionals regarding when chlamydia testing should be recommended and would help inform updated NCSP guidance.

Children and pregnancy

P143

'HIV test? No thank you.' New multidisciplinary policies for pregnant women who decline an HIV test

N Astill, L Miall, A Evans, S Schoeman and J Wilson
Leeds Teaching Hospitals Trust, UK

Background: Following an incident in which a pregnant woman at high risk for HIV repeatedly declined HIV testing, the lack of local or national policies was apparent. Our Pregnancy-in-HIV therefore decided to develop Trust antenatal and neonatal policies.
The MDT includes a GUM Consultant (Chair), Obstetric, Paediatric and Virology Consultants, associated Registrars and Specialist Nurses, the Antenatal Screening Co-ordinator and Screening Midwives.
Approach taken: Key issues discussed were: ensuring identification of those declining HIV testing to the MDT; universal testing of infants vs. risk-stratification; calculating risk to infant and defining level of unacceptable risk; cord blood testing; timing of MDT decision to request court authority to allow infant testing; advanced preparation of court authority requests. Trust legal advice was taken.
Results/policies developed: A woman declining HIV testing at booking and 20 weeks will be seen by the Obstetric Consultant and offered cord blood testing at birth; if declined a full HIV risk assessment of her and her partner will be done; she will be informed that infant testing may be required. Women in 3rd trimester still declining HIV or cord blood testing will be discussed by the MDT. The risk of mother to child HIV transmission will be calculated. The MDT decided on risk stratification for infant testing using a risk of 1:1000 (as in adult PEP) to initiate a court authority request.
The above have been incorporated into pre-existing Trust obstetric and paediatric guidelines on the management of HIV-positive women in pregnancy and their infants. The guidelines now cover women who decline antenatal HIV testing but accept cord blood HIV testing, decline antenatal HIV testing and infant testing, and women presenting in labour who have not had an antenatal HIV test. The information required for a full HIV risk assessment, a flowchart for antenatal HIV testing and timing of referral to the MDT, examples of calculations of risk of maternal HIV and infant transmission are also included; as is a detailed description of how to apply for court authority to undertake an emergency assessment, including an outline case that requires only individual case details adding. All of this has been reviewed and approved by the Trust solicitor.
Conclusion: To our knowledge these are the first comprehensive policies about management of women who decline antenatal HIV testing in order to prevent HIV-infection in infants at risk.

P144

A case-note review of characteristics and outcomes of five HIV-positive women who breastfed

N Astill and J Wilson
Leeds Teaching Hospitals Trust, UK

Background: Within our cohort, 5 HIV-positive women have breastfed 6 babies over the past 3 years. Supporting and understanding women's decisions is important, as it is considered safer for women to engage with services whilst breastfeeding than to breastfeed without disclosing or engaging with care.
The aim is to explore key characteristics, partner and social factors, and outcomes in women who decide to breastfeed.
Methods: HIV-in-Pregnancy MDT minutes were trawled and corroborated with the paediatric HIV nurse to identify women who breastfed. Notes were reviewed.
Results: See Table. Woman A is Caucasian, B to E are black African. A and D had previously breastfed, the other 3 were primigravida. E was diagnosed HIV-positive during this pregnancy, B re-engaged with care at 5/40. All continued ART after delivery and had monthly VL tests for themselves and their infants during breastfeeding. All mothers have now stopped breastfeeding. All infants were HIV PCR negative at last testing, two are under 18 months old.
Conclusion: All women had good adherence to ARVs and blood tests during pregnancy and breastfeeding, and no transmissions have occurred during breastfeeding. All but one woman discussed breastfeeding plans with their doctor. She had not disclosed her HIV status to her partner, and had financial pressures to breastfeed.

Patient	A (twins)	B	C	D	E
Breastfeeding plan disclosed prior to delivery	Yes	Yes	No	Yes	Yes
Partner disclosure	Yes	Yes	No	Yes	Yes
Partner's HIV status	Negative	Un-tested	Untested	Positive	Untested
Social/ financial pressures influencing decision	Nil	Nil	No partner disclosure Financial pressure	Nil	No family disclosure
Documented partner support	Yes	Un-known	Unknown	Un-known	Yes
VL at 36/40	<20	<20	<20	<20	<20
Infant PEP	4 weeks	4 weeks	6 weeks	8 weeks	4 weeks
Exclusive breastfeeding	Yes	Yes	No	Yes	Yes
Breastfeeding duration (weeks)	8 and 20	20	5 days	4	3
Why stopped	Difficult	Weaned	Medical advice	viraemia	Fatigue, painful

P145

Breasfeeding experiences of mothers with HIV from two UK centres

P Seery[1], H Lyall[1], C Foster[1], W Khan[2], S Dermont[2], S Raghunanan[1] and M Marks[1]
[1]Imperial Healthcare NHS Trust, London, UK, [2]Chelsea and Westminster NHS Trust, London, UK

Background: Since 2012 forty babies have been breast fed (BF) by women with HIV in the UK with no transmissions (NSHPC). This study explores the experiences of 8 women who BF 10 babies.
Methods: Retrospective electronic record review of BF women and babies between 2012 and 2017 in 2 London Hospitals.
Results: 3 babies were BF in 2012, 7 in 2015–2017. One mother disclosed covert BF during a previous pregnancy.
Mothers: 10 pregnancies in 8 HIV diagnosed women aged 35–46 years (median 38.25 years) at delivery; 6 Black African, 7 on ART from conception (3 NRTI, 4 NNRTI, 1 protease inhibitor and 2 integrase inhibitors) all had viral loads (VL) <50 at delivery; 3 babies were born by vaginal delivery, 4 elective caesarean (CS) and 3 emergency CS, median gestation 38+3. All women had partners; only 5 were documented as aware of maternal HIV. 3 mothers (4 babies) identified extended family being unaware of their HIV diagnosis as a reason for BF. Consent was given for information to be shared with GPs and community healthcare professionals (HCP) for only 2 babies.
Babies: All babies received AZT as post exposure prophylaxis. 3 babies were BF for <1/52: 2/3 received pasteurised expressed breast milk. Of remaining 7, average BF duration was 33/52 (IQR 4/52–95/52), 3 exclusively BF and 4 mixed fed with 3/4 introducing formula milk to babies <1 week old for clinical reasons (1/3 mastitis, 1/3 maternal diarrhoea and re-admission with wound infection, 1/3 due to insufficient infant weight-gain). One baby had a diarrhoeal illness, and one had prolonged raised ALT, both continued BF. 2 women who BF for >1 year identified struggling to wean baby off breast as a reason for continuing.
Monitoring: 6 babies required additional VL tests (between 1–19); mothers were also monitored monthly throughout BF, requiring an average 6 extra VL tests. All mothers remained fully suppressed throughout duration of BF and all babies had negative VL post-completing BF; 1 woman continues to BF; 5 babies have negative antibody tests to date. One mother and baby travelled abroad unmonitored for 6 months.
Conclusion: Women who BF faced many challenges. A higher proportion than expected had not informed partners, family, or primary HCPs about their HIV, raising concerns BF could be part of maintaining 'the secret'. Women with VL<50 who choose to BF should be encouraged to inform those who need to know, so they can be appropriately supported.

P146

High levels of psychosocial vulnerability in HIV-positive pregnant women attending an inner London HIV clinic

E Bird, S Sanda-Bah, M Zaheer, P Hay and A Hegazi
St George's University Hospital, London, UK

Background: Intimate partner violence (IPV) commonly escalates in pregnancy and is independently associated with adverse obstetric perinatal outcomes, in addition to its documented effect on aggravating adverse health behaviours including smoking, alcohol and substance use. BHIVA guidelines recommend screening HIV positive pregnant women for IPV and offering appropriate intervention as well as documenting other key social parameters including sexual history, mental health status, housing issues, smoking, drug use and alcohol consumption.
Methods: Retrospective case notes review of all HIV positive pregnant patients attending an inner London HIV clinic 1/1/13–31/12/16. Socio-demographic data were collected in a standardised proforma and analysed in Excel.
Results: 81 pregnancies were identified in 64 patients. Median age was 36 years (Range 21–47). 15% (n=12) pregnancies were in UK born women and 77% (n=62) were of black African ethnicity. 89% (n=56) women had acquired HIV heterosexually and 8% (n=5) vertically. 21% (n=16) pregnancies were documented as having significant difficulty engaging with HIV care. Documentation of social and health behaviours is shown in the table below. 47% (n=28) of pregnancies were unplanned. There was a regular male partner in 92% (n=68) pregnancies, of whom 31% were HIV positive, 53% HIV negative and 7% untested. Median relationship duration was 4 years.10/81 pregnancies ended in miscarriage, 9/81 TOP, 1/81 stillbirth and the remainder live birth.

	% of documented cases disclosing (n)
Current mental health issues	51 (24/47)
Disclosed IPV	18 (8/45)
Housing issues	50 (19/38)
Smoker	14 (6/43)
Recreational drug use	21 (6/29)
Alcohol AUDIT score	
AUDIT score 0–7	81 (34/42)
AUDIT score≥8	14 (6/42)

Conclusions: Significant levels of social vulnerability were seen in this small cohort of pregnant patients but documentation was variable and ways of improving this should be addressed. Better identification of these issues offers the opportunity for brief intervention or signposting and referral to specialist services. Plans are underway to develop and evaluate a clinical proforma to aid documentation and adherence to BHIVA guidelines.

P147

How does a national mentor mother training project support women living with HIV through pregnancy? A qualitative evaluation of 4M: My Health, My Choice, My Child, My Life

A Cameron[1], L Kwardem[2], A Namiba[2], N Osborne[2], A Welbourn[2], S Tariq[3], L Bacchus[1] and R Dhairyawan[4]
[1]London School of Hygiene and Tropical Medicine, London, UK, [2]Salamander Trust, London, UK, [3]University College London, London, UK, [4]Barts Health NHS Trust, London, UK

Background: Women living with HIV can face psychosocial challenges during pregnancy and motherhood. Peer-support to women living with HIV during pregnancy improves wellbeing, self-efficacy and adherence. We present a qualitative evaluation of a mentor mother programme (4M) for women living with HIV. 4M trained 46 mentor mothers across eight UK regions in April–October 2016. Led by women living with HIV, workshops comprised training on pregnancy and HIV, and a creative writing session.
Methods: We adopted a participatory and collaborative approach, with an MSc student and peer researcher working closely together. We conducted semi-structured telephone interviews with nine mentor mothers and two 4M project leads in June–July 2017. Data were transcribed, followed by thematic coding to identify emergent common themes.
Results: Overall, feedback was positive. Mentor mothers reported improvements in self-confidence, social networking and coping. They described developing empathy through personal sharing, increasing their sense of belonging and reducing isolation. They highlighted project leads' sensitivity and reflection, which contributed to an inclusive and safe space. Mentor mothers particularly valued the creative writing component, and its potential to draw out resilience and increase self-confidence in delivering peer-support. Five mentor mothers had provided peer-support to 11 women following 4M training. Barriers to providing ongoing peer-support included mentor mothers' social circumstances; health issues; and lack of robust links with local clinics and support services. Projects leads described 4M as reinforcing the importance of community based support and creative spaces. However they identified capacity as a challenge in terms of number of women trained and geographical coverage.
Conclusion: 4M is a highly valuable and acceptable peer-led platform for the education and self-development of women living with HIV, fostering resilience and self-efficacy. As well as individual benefits to mentor mothers, 4M is a sustainable model of peer-support for women living with HIV during pregnancy and early motherhood, in line with the ethos of national standards for peer-support. Challenges include ongoing support for mentor mothers and a lack of awareness and uptake of their expertise. We encourage care providers to work collaboratively with this mentor mother network in order to support women living with HIV effectively during pregnancy and beyond.

P148

Increased rates of malignancy in youth living with perinatally acquired HIV; a single-centre case series

S Chhabra[1], H Lyall[2], S Fidler[1] and C Foster[2]
[1]Imperial College London, London, UK, [2]Imperial College Healthcare NHS Trust, London, UK

Background: Adults living with HIV have an increased risk of malignancy yet there is a paucity of data for children, adolescents and young adults (CAYA) with perinatally acquired HIV (PaHIV). The general population risk of developing cancer between birth and 24 years of age is approximately 1 in 250, with the incidence in the UK increasing since the 1990s to 0.19 per 1000 person years.
Methods: Retrospective case note review of CAYA living with PaHIV presenting with a malignancy aged less than 25 years attending a tertiary unit from 12/2002 to 12/2017, assessing cancer presentation, outcomes and viral load (VL) suppression.
Results: 9/298 (3%) PaHIV have ever been diagnosed with a malignancy under 25 years; 6 lymphoma (3 Hodgkins, 1 Burkitts, 2 B-cell) and one each with juvenile myelomonocytic leukaemia (JMML), hepatocellular carcinoma (HCC) and upper gastrointestinal (GI) adenocarcinoma. Year of diagnoses: 2002–07 (2), 2008–12 (2), 2013–17 (5). 8/9 were male, 7/9 black African and at cancer diagnosis, median age was 18 years (IQR 12–22), median CD4 was 453 cells/μl (IQR 231–693), 5/9 (56%) had VL<50 c/ml. Median length of HIV viraemia >50 copies HIV RNA/ml pre-cancer diagnosis 14 years (IQR 9–16).
Presentations: Lymphomas: appetite and weight loss (2), lymphadenopathy (3), fever (2), mediastinal mass with SVC obstruction (1); JMML aged 10 months: rash, splenomegaly, lymphadenopathy; HCC: diagnosed on routine screening despite 13 years of suppression of both HIV and Hepatitis B virus; GI adenocarcinoma: abdominal pain and weight loss. Potential delay in diagnosis in the 5 cases pre-2014 attributed to nonspecific symptoms (4) and/or learning difficulties (2) and travel abroad (3).
Outcomes: Four are in remission; lymphoma (3) and JMML for 12, 5, 1.5 and 1.2 years respectively. Three died; rapidly relapsing B-cell lymphoma, HCC metastatic recurrence following surgery, chemotherapy and radiotherapy and metastatic GI adenocarcinoma with palliative care from diagnosis. One is under going a second transplant for relapsing lymphoma and one, recently diagnosed, chemotherapy for lymphoma.
Conclusion: In this cohort, CAYA with PaHIV had a seven-fold increased risk of malignancy compared to their uninfected peers, predominantly driven by lymphomas. Presentation is often nonspecific and requires a high index of suspicion to facilitate diagnosis. It is hoped that earlier access to antiretroviral therapy will mitigate some of the risk for future generations.

P149

Integrase inhibitor use in paediatrics: a single-centre cohort experience

Y-N Abo[1], E Refsum[2], N Mackie[1], H Lyall[1], G Tudor-Williams[1] and C Foster[1]
[1]Imperial College Healthcare NHS Trust, London, UK, [2]Imperial College London, London, UK

Background: Integrase Strand Transfer Inhibitors (INSTI); raltegravir (RAL), dolutegravir (DTG) and elvitegravir (EVG) are licensed in children from 4 weeks, 6 years and 12 years respectively. INSTIs are not yet recommended as first line therapy for children in Europe due in part to a paucity of data. We audited INSTI use in a single-centre treatment experienced paediatric cohort.
Methods: Retrospective cohort analysis by database and electronic record review of INSTI use in perinatally acquired HIV-1 (PaHIV) commenced aged <18 years from first paediatric INSTI use in May 2009 to December 2017. Data collected included demographics, antiretroviral therapy (ART), immunology, virology and toxicity, and was anonymised and analysed in Microsoft Excel.
Results: 54 children ever commenced an INSTI, 30 (56%) from 2015 onwards. Three subsequently transferred care and were excluded from analysis. 26/51 (51%) were female, 40/51 (78%) black African, median age at INSTI start 15 years (range 2–17.8, IQR 13.8-16.6), at a median weight 54.7 kg (r 14.1–115.5). 19/51 (37%) started RAL, 4 subsequently simplifying to DTG, 26 (51%) started DTG and 6 (12%) EVG. Indications for INSTI-ART; virological failure (VF) 22/51 (43%), simplification 16 (31%), previous ART toxicity 11 (22%), avoidance of drug-drug interactions (2; atypical mycobacteria and lymphoma therapy). Median duration of INSTI exposure was 1.58 years (range 0.03–8.64) and 32/51 (63%) remain on INSTI containing ART. In the 22 with VF at INSTI start, median time to suppression 26 days. 8/51 (17%) had subsequent VF; 6/8 due to documented poor adherence. No integrase mutations were documented on genotyping. 5 (9.8%) discontinued INSTI due to toxicity: low mood/fatigue (DTG), hepatitis (DTG), hypertension (DTG), sleep disturbance and raised creatinine kinase (max 18,161U on DTG persisting on RAL) and neutropenia (RAL).
15/80 (19%) of the current paediatric cohort (<18 years) are on an INSTI containing ART:11 on single-tablet regimens, 3 with protease inhibitors and1 on once daily RAL plus kivexa.
Conclusion: INSTI-regimens were generally efficacious in this treatment experienced paediatric cohort and INSTI use has increased since 2015. However 9.8% switched due to toxicity, attributed most frequently to dolutegravir.

P150

Management of antenatal HIV: a clinical audit

J Flexen and L Sarner
Barts NHS Trust, London, UK

Background: UK mother to child transmission rates of HIV are at an all-time low of 0.27% as a result of universal antenatal screening for HIV alongside a multidisciplinary, evidence based approach to the care of HIV positive pregnant women and their infants. However, a recent UK national clinical audit on management of pregnancies in women living with HIV highlighted some deviation from BHIVA guidelines including delays to HIV review and antiretroviral initiation. This audit aimed to demonstrate compliance with selected auditable outcomes (1, 2, 3, 4, 6 and 12) from the current national guidance on management of HIV infection in pregnant women (BHIVA 2012/interim 2014).
Method: A retrospective audit of HIV positive women >age of 18 with pregnancies progressing past 16 weeks gestation and delivering from 1/1/2014–31/12/2016 was conducted. Cases were identified from a local database and data collected from electronic databases, paper and electronic record systems. Data collected was input into, and analysed using Microsoft Excel.
Results: 51 cases were identified for inclusion in the audit resulting in 50 live births. The age range was 24–43 years (mean age 35 years), 76% of cases were of African origin There were 5 (9.8%) new diagnoses of HIV in this current pregnancy and 40 (78.4%) patients conceived on antiretroviral therapy. 1/3 of the cohort had coexisting co-morbidities, 27% had previous AIDS defining illnesses and 17% developed pregnancy related co-morbidities. 90% of patients had disclosed to their partner prior to or during the pregnancy, with the majority of partners being HIV negative (68%). Of 50 deliveries, 25 (50%) women had spontaneous vaginal deliveries, 10 (20%) planned caesareans and 15 (30%) emergency caesarean sections. Compliance with the 100% audit standard was met in all but one criteria, as only 23/25 (92%) babies had HIV antibody testing by age 24 months. No infants tested positive for HIV.
Conclusion: An effective multi-disciplinary team is essential for the successful management of HIV in pregnancy, however this must extend until the infant antibody test. Robust fail safes should be in place for managing infants lost to follow-up which may also enhance retention in care of mothers.

P151

Predictors of viral suppression after transition from paediatric to adult HIV care

N Lin[1], L Phung Khanh[2], S Fidler[3] and C Foster[4]
[1]London Northwest Healthcare NHS Trust, London, UK, [2]Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam, [3]Imperial College London, London, UK, [4]Imperial College Healthcare NHS Trust, London, UK

Background: Two million people aged 10–19 are living with human immunodeficiency virus (HIV) worldwide. Age disaggregated data describing retention in care and viral suppression in this cohort are sparse. This retrospective, single-centre UK cohort analysis examines predictors of viral suppression in adolescents and young adults (AYA) with perinatally-acquired HIV (PaHIV) after transition to a specialist AYA service from paediatric care.
Methods: 147 PaHIV+ AYA in adult services with >1 year antiretroviral therapy (ART) experience were included. Age at diagnosis, ethnicity, region of birth and ART experience data were collected via case note review. HIV viral load (VL) data were collected from first adult clinic visit onwards. VL was analysed as a continuous variable over time using linear regression modelling. Sex, age at diagnosis, age and VL at first adult clinic visit and increasing age were explored as independent predictors of VL trajectory. Correlation between repeated values in each participant was taken into account using generalized estimating equations with independence working correlation structure. Sensitivity analysis was conducted to examine the effect of drop out.
Results: 54% of patients were female, 82% Black British/African and 63% born in Western Europe. Median age at diagnosis was 4 year (IQR1–8). Median age at first adult clinic was 18 year (IQR17–19); median current age was 24 year (IQR21–26). Four patients were lost to follow up and 4 patients died during the data collection period. Amongst individuals with detectable VL at transition (≥400 c/ml, 36%), increasing age predicted decreasing VL over time (change in log10 viral load per year=−0.19, 95% CI [−0.24, −0.14], p<0.001). In 77 patients with at least 3 years' follow-up the association was preserved (effect size −0.23, 95% CI [−0.41, −0.06], p=0.008). Viral suppression at transition predicted lower VL over time when compared with detectable individuals (mean difference in log10 VL=−0.71, 95% CI [−1.31, −0.12], p=0.019 at age 23). Age at diagnosis, age at first adult clinic and gender were not significantly associated with VL at first visit or VL trajectory over time.
Conclusion: VL decreases over time in PaHIV+ AYA who are viraemic at transition from paediatric care. This has implications for appropriate settings to support AYA in achieving viral suppression as they mature.

P152

Pregnancies in women newly diagnosed with HIV in the UK and Ireland: 2012–2016

H Peters, K Francis, R Sconza and C Thorne
Great Ormond Street Institute of Child Health, University College London, London, UK

Background: In the UK and Ireland (UK/I) antenatal HIV screening is recommended to all women, with uptake of >97%. HIV-positive women are now usually aware of their diagnosis before conception, with this the case in >85% of HIV-positive pregnancies in 2012–14. We describe the small group of women diagnosed in the year prior to or during pregnancy.
Methods: The National Study of HIV in Pregnancy & Childhood conducts active surveillance of pregnancies in women living with HIV in the UK/I. Data on all pregnancies with expected date of delivery (EDD) 2012–16 and reported by 31-12-17 were analysed. New diagnosis was defined as occurring within 12 months prior to conception or during pregnancy.

Results: Overall, 18% (1094/6139) of pregnancies were in newly diagnosed women, of whom 76% (835) had antenatal diagnoses. The proportion of pregnancies with antenatal diagnosis declined from 16% (226/1370) in 2012 to 11% (119/1097) in 2016, $p<0.005$.
Overall, 23% (251/1094) of women were White, 67% (732) Black African and 85% (904/1060) born outside UK/I. Median age at diagnosis was 31 year (IQR:27,35).
Most (759/809, 94%) women diagnosed in pregnancy were diagnosed in an antenatal setting and 3.1% (25) in a GUM clinic. Over 50% (397/697) were nulliparous. Half (391/735) booked late (>12 week) and 14% (113/835) were diagnosed in the 3rd trimester (48/113 also booked late). Among migrants with data available, 15% (59/391) arrived in UK/I whilst pregnant and 16% (64) in the year prior to pregnancy. 772/835 received ART in pregnancy, with median start at 19 week gestation (IQR:16,23).
Half (112/230) of those diagnosed in the year before pregnancy were diagnosed in a GUM clinic, 25% in a previous pregnancy, 13% in hospital, 5.2% at GP and 4.4% abroad. Over half (137/248) conceived on ART and 68% (156/231) booked by 13 week.
Among women diagnosed in pregnancy, 19% (145/772) had first CD4 count <200 and further 29% (227) had CD4 200–<350. Low CD4 (<350) was associated with Black African ethnicity, born outside UK/I and age >30 years, $p<0.05$.
Conclusion: The proportion of women diagnosed shortly before or during pregnancy continues to decline, reflecting improved testing outside pregnancy and high uptake of antenatal HIV testing over the last decade. The need for continued support for these services remains, particularly for women receiving HIV testing in their first pregnancy. Half of women diagnosed in pregnancy had low CD4, indicating infection could have been identified at an earlier stage.

P153

Syphilis in pregnancy: a review of management and outcomes of antenatal patients testing positive for syphilis screening at a large urban centre

A Peacock[1] and I Fernando[2]
[1]University of Edinburgh, Medical School, UK, [2]Chalmers Sexual Health Centre, Edinburgh, UK

Background: Rates of syphilis have been steadily increasing across the UK over the past decade. As such, more women are testing positive for syphilis at antenatal screening. Early identification and appropriate management of these women significantly reduce the risk of associated adverse pregnancy outcomes, including congenital syphilis. We reviewed the care given to women who tested positive for syphilis at antenatal screening at a large urban centre, between January 2008 and May 2016, and their pregnancy outcomes.
Methods: Data was gathered on maternal demographics, syphilis serology, management, pregnancy outcome, and infant serologies, treatment and follow-up. Patient care was audited against nine standards; as recommended by BASHH syphilis guidelines and the NHS Scotland Pregnancy and Newborn Screening standards.
Results: There were 50 pregnancies with a true positive syphilis serology result over the study period. 92% of patients were from moderately or severely deprived social backgrounds. Cases were divided into three groups; Group 1: New diagnosis of syphilis in this pregnancy and requiring treatment (n=28), Group 2: Previous diagnosis of syphilis but unclear history of treatment therefore requiring further treatment (n=4), Group 3: Previous diagnosis of syphilis and history of adequate past treatment (n=18). Of the nine audited standards, five were met. Unmet standards included: patients to be informed of result within 21 days of the booking test (81%), patients to complete a recommended treatment regimen (91%), all infants born to mothers treated for syphilis in that pregnancy to receive serology screening at birth (88%) and infants to receive follow-up till serology becomes negative or 18-months of age (94%). There were 6 adverse pregnancy outcomes (APOs), 2 of which may have been related to syphilis infection (1 very pre-term delivery and 1 case of possible congenital syphilis).
Conclusion: In our service, unmet audit standards were often a result of poor communication between teams, which has now been strengthened. The APOs identified in this study are among well-recognised complications of antenatal syphilis infection. With an ongoing syphilis epidemic, it is important that services around the UK remain vigilant to identify and correctly manage syphilis in pregnancy, to prevent related APOs increasing in number.

P154

Transitioning out of transition services: do transition clinics support or impede the transition process from paediatric to adult services?

S Flavell, E Stergiopoulou, T Peake, P Bullemor-Day, K White, S Edwards, A Teague and N Ahmed
Mortimer Market Centre, London, UK

Background: Transition is defined as a purposeful and planned process of supporting young people's move from paediatric (PS) to adult services (AS). Guidelines recommend supportive measures, given known associations with health deterioration, during this time. In the UK, specialist adolescent transitional clinics (SATC) exist to address this need. Our SATC sits within adult services consisting of a dedicated multidisciplinary team providing the care. Anecdotal evidence suggests reluctance from adolescents to move to AS from SATC. Whilst barriers to transition from PS to AS are well described, there is a lack of data on moving from SATC to AS. We aimed to explore this via adolescent opinion at our centre.
Methods: All patients attending a London SATC between December 2016 and June 2017 were asked to complete a questionnaire, which explored views on moving to AS.
Results: 53% (34/66), median age 21 years (range 18–24 years), completed the questionnaire. The median time the patients had been within the SATC was 4 years (range <1–7). The median age patients wanted to move to AS was 24 years (range 16–45). 68% (23/34) wanted to remain in the SATC between 1 and 6 years (range 0–100). Confidence in self-management was the main theme linked to readiness for change. 62% (21/34), thought integration should be facilitated by a SATC team member. Self-reported concerns included a perceived lack of support, unfamiliar clinicians, logistical challenges and medication difficulties. Individuals hoped for independence, flexibility and control over HIV.
Conclusion: Barriers for adolescents moving from SATC to AS were analogous to those around transition from PS. We know SATC are strongly valued and excellent at providing the support they intend to. However, are they creating further anxieties for adolescents moving to AS and ultimately impeding the transition to AS? SATC models need to be more structured and tailored, recognising these findings from the adolescent viewpoint in order to avoid a double transition.

P155

What age do adolescents achieve continuous viral suppression?

N Ahmed, S Flavell, T Peake, P Pearson, N Karabetca, L Waters, A Teague and S Edwards
Mortimer Market Centre, London, UK

Background: Adolescence is a turbulent transitional time of biological and psycho-social changes. Chronic conditions, particularly HIV, further complicates this by stigma and the impact of an infectious condition at sexual debut and disclosure. Factors contributing to poor virological control are well described, with little data looking at age of consistent virological suppression (CVS). We aimed to determine the age at which adolescents achieve CVS and reasons for this.
Methods: All patients with perinatally acquired HIV attending our adolescent clinic were identified. Demographics and HIV history were collated. HIV viral loads (VL) were analysed to determine the age at which CVS was achieved. Notes review determined reasons for CVS.
Results: 107 patients were identified. All were on their second/subsequent antiretroviral regimen; 50 patients had confirmed resistance (72% multi-class resistance). 65 (61%) were virally suppressed at transition, of whom 52 maintained CVS; 62% female (n=32), 38% male (n=20). Of those not achieving CVS, 55% (n=30) were female and 45% (n=25) males. VLs were analysed, determining the age at which adolescents achieve CVS (Table 1). 6 patients have not achieved CVS to date.

Age	No. patients 2 × consecutive VL<50	Total no. patients under observation	% patients 2 × VL<50 (95% confidence interval)
15	0	3	0% (0–71)
16	6	11	55% (23–83)
17	6	22	27% (11–50)
18	10	30	33% (17–53)
19	12	35	34% (19–52)
20	19	37	51% (34–68)
21	20	36	56% (38–72)
22	21	35	60% (42–76)
23	20	33	61% (42–77)
24	19	26	73% (52–88)
25	15	21	71% (48–89)
26	11	17	65% (38–86)
27	13	15	87% (60–98)
28	8	8	100% (63–100)
29	5	5	100% (48–100)
30	4	4	100% (40–100)
31	2	2	100% (16–100)
32	2	2	100% (16–100)

Table 1. The number of patients with 2 consecutive viral loads <50 copies/ml Reasons for CVS included environment change (prison release, university completion, employment), therapy support (simplification, newer therapies, blister packs, changing timing), psychology, planned treatment interruption, hospital admission.

Conclusions: Within our cohort, from the age of 20 over 50% of those under follow up were achieving CVS. Our findings can inform HIV services of resources required and the age up to which additional resources need to be implemented to support adolescents remaining engaged in care until a time when they can self-manage their HIV more effectively. Non-healthcare environments also need to adopt a youth friendly approach to adolescents with chronic conditions. A larger sample is needed to confirm findings.

P156

What women want: patient information for women living with HIV in resource rich countries who want to breastfeed their babies

N Freeman-Romilly[1], P Seery[2], A Namiba[3] and H Lyall[2]

[1]Oxford University Hospitals NHS Trust, Oxford, UK, [2]Imperial College Healthcare NHS Trust, London, UK, [3]Salamander Trust, London, UK

Background: Recent evidence suggests that the HIV transmission rate during breastfeeding, in the context of effective viral suppression, may be 2% or less depending on the duration of feeding.

Between 2012 and 2017, we worked with eight women living with HIV who chose to breastfeed. In total ten children were breastfed. At present, none of these children have had a reactive HIV test. Patient concerns encountered included when to stop breastfeeding, frequency of blood tests, and conflicting advice from community professionals.

We felt developing accessible resources on HIV and breastfeeding would be useful to patients and the staff who support them.

Methods: To determine areas of interest, we consulted with HIV doctors, specialist midwives, specialist paediatric nurses, HIV peer supporters and patients from within our hospital. We developed a Patient Information Leaflet (PIL) draft that was presented and distributed at a Shared Care Study Day and allowed us to seek comments from HIV clinicians across the UK, four of whom provided detailed feedback. The final draft was presented to fourteen mothers living with HIV who mentor other women in their communities. Their verbal and written responses ensured that information addressed the concerns of the target audience and was framed in a way that met the preference for clear guidance, while acknowledging the limited evidence base on breastfeeding by mothers living with HIV in resource rich countries.

Results: We produced two PILs (excerpts are included as figures in the full text). One is for women living with HIV deciding how they want to feed their baby. The other is for women living with HIV who have chosen to breastfeed. This includes a troubleshooting guide where advice for breastfeeding mothers living with HIV differs from that for women without HIV e.g. mastitis management. The information is centred on clinical safety and harm reduction. This is summarised in the aide memoire the 'Safer Triangle: Undetectable Virus + Happy Tums + Healthy Breasts for Mums'.

Conclusion: The PILs have been shared with clinicians within the UK and mainland Europe. The text has been adapted by other HIV centres for their internal use.

Currently there is insufficient evidence to allow clinicians to unhesitatingly support breastfeeding by women living with HIV in resource rich countries. Despite this, it continues to be vital to offer sensible, non-judgmental, harm reduction support to those women who do choose to breastfeed.

P157

Youth and antiretroviral therapy: to PEG or not to PEG?

N Kirkhope and C Foster

Imperial College Healthcare NHS Trust, London, UK

Background: A small proportion of children and young people (CYP) with perinatally acquired HIV (PaHIV) struggle with adherence to antiretroviral therapy (ART) despite multidisciplinary team (MDT) input resulting in severe immunosuppression and occasionally insertion of a Percutaneous Endoscopic Gastrostomy (PEG). We reviewed the long term impact of PEG use on ART adherence assessed by HIV viral load (VL) and CD4 cell count.

Methods: Retrospective case note review of all PaHIV CYP with a PEG inserted between 1995 and 2017. Data collated included demographics, ART, CD4 and VL pre and post PEG insertion, anonymised and analysed in excel.

Results: 15 CYP had PEGs inserted; 10 (67%) female, 47% black African at a median age of 17 years (range 2-25, IQR 6–22). 2 CYP had PEGs inserted a second time, and one for a third (aged 6, 12 and 20) all for recurrent adherence issues. 6 (40%) still have a PEG in situ. At insertion (n=15) median VL was 33,956 c/ml (IQR 2792–133,547 c/ml) median CD4 count 40 cells/μl (IQR 10–220 cell/μl). Reasons for PEG insertion; poor ART adherence (15/19, 79%), lymphoma with eosophageal perforation (1), cryptosporidial diarrhoea (1) and HIV wasting (1). Where adherence was the main indicator; 81% had one or more additional concern; safeguarding (8), mental health (8), malignancy (2) and sever learning disability (2). All had ART administered via PEG and 4 (22%) received additional enteral feeds. ART tablets crushed via the PEG included: darunavir, Truvada, Descovy, Trizivir, Triumeq, tenofovir, raltegravir and dolutegravir with liquid formulations of Kaletra, ritonavir, zidovudine, lamivudine and abacavir. All 15 are alive, with 14 (93%) achieving a VL <200 c/ml with PEG ART. Of the 9 with the PEG subsequently removed, median CD4 at insertion was 50 cells/μl (IQR 17–181 cells/μl), median PEG time was 3.3 years (range 0.5–6.8 years). Median age at last follow up 23 years (range 8–30 years) with median 5.4 years (range 1.5–17.8) post PEG removal, all swallow tablet formulation ART, 100% have a VL <50 c/ml, with a current median CD4 count 940 cells/μl (range 261–1353).

Conclusion: PEG use in this small cohort of CYP PaHIV struggling with adherence and severe immunosuppression resulted in viral suppression and excellent immune reconstitution. Adherence was maintained on oral ART post PEG removal. Short term PEG use should be considered for CYP struggling with adherence, despite MDT efforts, particularly during the turbulent period of adolescence.

Comorbidities HIV/ART complications

P158

A cross-sectional study to investigate spleen stiffness via acoustic radiation force impulse (arfi) elastography in HIV-infected patients with non cirrhotic portal hypertension

L Garvey[1], S Atzori[2], M Williamson[3], J Maurice[2], J Main[2], M Lemoine[2], G Cooke[2] and S Taylor-Robinson[2]

[1]Imperial College Healthcare NHS Trust, London, UK, [2]Imperial College London, London, UK, [3]North Middlesex University Hospital NHS Trust, London, UK

Background: Several HIV centres describe small cohorts of patients with non-cirrhotic portal hypertension (NCPH). Didanosine (ddI) exposure has been associated and the optimal monitoring and management of these patients

remains unclear. Non-invasive assessment of the spleen is now being utilised to assess splenic stiffness in cirrhotic portal hypertension and predict outcomes. This technique has not previously been studied in patients with HIV and NCPH.
Methods: Acoustic Radiation Force Impulse (ARFI) elastography was performed using Philips EPIQ7™ to simultaneously assess liver and spleen stiffness in 3 patient groups. Group 1: HIV and NCPH, defined as the presence of portal hypertension manifestations in the absence of cirrhosis; Group 2: HIV and past ddI exposure (without known NCPH), Group 3: HIV and no history of liver disease. Groups were matched for age, HIV chronicity and antiretroviral treatment (including cumulative ddI exposure in Groups 1 and 2). Clinical and demographic information was collected. Differences in liver and spleen stiffness (in kPa) between groups were analysed using the Mann–Whiney U test.
Results: 25 patients were recruited (Group 1: n=11, Group 2: n=5, Group 3: n=9). Patients were well matched for age, HIV chronicity and all had HIV RNA levels <20 copies/ml. Cumulative ddI exposure in Groups 1 and 2 was 56 and 53 months respectively (p=0.91). Median (IQR) ARFI liver and spleen stiffness in Group 1, 2 and 3 was 5.5 (4.8–9.8), 4.3 (4.0–5.3) and 4.8 (3.8–5.2) kPa (p=0.031) and 46.3 (29.5–143.2), 21.3 (14.6–26.8) and 18.3 (14.6–21.6) kPa (p=0.001) respectively. Liver and spleen stiffness were both significantly higher in NCPH vs. ddI-exposed (p=0.019 and p=0.005) and ddI-unexposed controls (p=0.038 and p<0.001). Spleen stiffness was more effective than liver stiffness at predicting NCPH, AUROC 0.812 vs 0.948. Combining the two variables improved the diagnostic performance, AUROC 0.961. The optimal cut-off for predicting NCPH using splenic stiffness was 25.4 kPa, with sensitivity 91%, specificity 93%, PPV 91%, NPV 93%, positive likelihood ratio 12.73, negative likelihood ratio 0.10. Spleen and liver stiffness scores were strongly correlated (p=0.0004 95%CI 18, 59).
Conclusion: Elevated spleen stiffness is observed in HIV patients with NCPH and can be quantified easily using ARFI with high diagnostic accuracy. Novel strategies such as ARFI for longitudinal monitoring of patients with HIV and NCPH should be considered.

P159

A pilot study to investigate respiratory ill health in people living with HIV

P Collini[1], R Hubbard[2], D Teare[1], M Chopra[3], D Allen[3] and S Berry[3]
[1]University of Sheffield, Sheffield, UK, [2]University of Nottingham, Nottingham, UK, [3]Sheffield Teaching Hospitals, UK

Background: Helping people living with HIV (PLWH) to maintain long-term health as they age is central to HIV care and involves monitoring for chronic HIV-associated co-morbidities. Chronic lung disease (CLD) is recognised to be more common in PLWH as they age, but UK data on CLD prevalence and phenotype in PLWH are limited, particularly in female, non-white, never smoking groups, and studies of progression over time are lacking.
This pilot study aimed to obtain preliminary data on CLD in these subgroups and establish a simple scheme for monitoring lung health of PLWH for a future longitudinal study.
Methods: Cross-sectional pilot of CLD prevalence among PLWH on ART by age, gender, ethnicity and smoking status using convenience sampling of PLWH attending routine clinics. PLWH completed a web-based questionnaire of self-reported chronic cough, wheeze & phlegm production using the BOLD study questions; dyspnoea using the Medical Research Council (mMRC) scale; health related quality of life (EQ-5D-5L); respiratory, smoking and other lung exposure history. Forced Expiratory Volume (FEV)1 and Forced Vital Capacity (FVC) were measured by spirometry and z-scores derived from Global Lung Initiative age, sex and ethnicity predicted values. We extracted HIV data from clinical records and evaluated the suitability and acceptability of the measurements. 50 HIV negative controls matched for smoking status were also assessed.
Results: We recruited 150 PLWH, median age 46, 31% female, 47% white. 65% were never smokers, 45% reported childhood exposure to solid cooking fuel. 49% reported a history of PCP, TB or pneumonia and 26% a diagnosis of COPD, asthma or bronchiectasis. All groups had lung ill-health (table) that correlated with EQ5D5L.
Conclusion: CLD may affect all PLWH subgroups. These data and methods can inform a longitudinal study of CLD in UK PLWH.

P160

An aggressive strategy for primary CNS lymphoma (PCL): remarkable results from two patients with HIV

A Dalla Pria[1], J Forni[1], R Murphy[1], D James Pinato[2], J Murphy[1], E Kanfer[3], M Nelson[1] and M Bower[1]
[1]National Centre for HIV Malignancy, Chelsea and Westminster Hospital, London, UK, [2]Imperial College London, London, UK, [3]Imperial College Healthcare NHS Trust, London, UK

Introduction: Since 1986, we have cared for 70 HIV+ patients (63 male, mean age 39 years, median CD4 22/mm^3) diagnosed with PCL including 31 diagnosed in the cART era. The median survival is just 1.4 months. In May 2016, IELSG32 trial for PCL in HIV negative patients was published demonstrating the efficacy of MATRix chemotherapy (methotrexate, cytarabine, thiotepa and rituximab) followed by high dose chemotherapy and autologous stem cell transplantation (ASCT) (Lancet Haem 2016, 3, 217–27). They documented a 2 year overall survival of 69%, compared to the 2 year overall survival in our HIV+ cohort of 7% (0% in pre-cART era and 14% in cART era).
Methods: Patients with biopsy proven PCL were treated with 4–5 cycles of MATRix chemotherapyand those with clinical and radiological evidence of chemosensitive disease progressed to etoposide mobilisation and progenitor stem cell harvesting, followed by high dose BCNU (carmustine) and thiotepa chemotherapy and ASCT. Patients receive concomitant cART and opportunistic infection prophylaxis throughout.
Results: Two patients (30 years M & 59 years F) have been treated with this very aggressive schedule. Both were recently diagnosed with HIV and had severe immunosuppression (CD4<50). During the MATRix, both patients suffered grade 4 neutropenic sepsis, grade 4 thrombocytopenia, grade 3 mucositis. Both patients achieve a clinical response with symptomatic improvement in cerebral function and both achieved radiological partial responses and hence proceeded to ASCT. Patient 1 had prolonged Klebsiella pneumonia and BCNU related veno-occlusive disease of the liver following his ASCT as well as HIV virological escape in his CSF whilst maintaining an

		Smoker		Gender		Ethnicity		Age	
	All	Ever	Never	Male	Female	White	Non-White	<50	>50
BOLD + %	51	69.39	40.86	53.13	42.86	57.35	42.86	48.28	55.00
MRC >1 %	47	59.57	39.78	41.49	54.76	48.48	42.86	42.53	51.72
Mean FEV1z	−0.66	−0.77	−0.59	−0.70	−0.49	−0.72	−0.62	−0.70	−0.59
(95% CI)	(−0.88 to −0.44)	(−1.24 to −0.29)	(−0.84 to −0.34)	(−0.98 to −0.43)	(−0.90 to −0.09)	(−1.07 to −0.36)	(−0.91 to −0.33)	(−0.98 to −0.42)	(−0.94 to −0.24)
Mean FEV1:FVCz	−0.42	−0.81	−0.19	−0.50	−0.20	−0.55	−0.22	−0.44	−0.38
(95% CI)	(−0.63 to −0.21)	(−1.17 to −0.44)	(−0.45 to 0.07)	(−0.71 to −0.28)	(−0.69 to 0.30)	(−0.85 to −0.26)	(−0.57 to 0.14)	(−0.71 to −0.18)	(−0.73 to −0.04)

undetectable plasma HIV viral load. Both patients have re-engrafted following ASCT and remain in clinical remission. Their overall survivals are 23 & 7 months so far.
Conclusion: An aggressive approach can be undertaken in HIV-associated PCL and although the toxicity is substantial, these are the longest overall survival durations for any of the 70 patients we have cared for.

P161

An evaluation of care of people living with HIV who are aged 50 and over

J Leighton, H Kang, A Sukthankar and C Babu
Manchester University NHS Foundation Trust, UK

Background: In the UK one in three people accessing HIV care are over the age of 50. HIV services need to respond to this changing demographic. We evaluated the care of people living with HIV (PLWH) aged 50 who access our clinic with the aim of developing our service to meet their care needs.
Methods: Of our cohort of PLWH, 14% (279/1996) were aged 50. A retrospective analysis of the first 50 who attended clinic in the preceding 12 months was conducted. Data regarding HIV treatment, comorbidities and social history was collected.
Results: *Demographics*: Median age was 54.5 years (range 50-75) and 56% (28) were White British. Men accounted for 80% (40) of whom 70% (28) were MSM. *Diagnosis*: 1983 was the year of the earliest recorded diagnosis and the median time living with HIV was 145 months (range 17-418). At diagnosis, median age was 44 years (range 25-66), average opening CD4 count was 302 cells/mm^3 (range 15-881) and 34% had late diagnosis with CD4<200 cells/mm^3. *Treatment*: Recent CD4 count on average was 568 cells/mm^3 (range123-1614) with 98% (49) on ART, of whom 90% (44) had VL<50. Most (43) were on their 2nd or subsequent treatment regimen. Median time on ART was 108 months (range 13-232). Most (15) took three ART pills a day, whilst two required 8 pills per day. Polypharmacy (defined as the use of 4 or more other medications not including ART) was identified in 56% (28). *Co-Morbidities* included: hypertension (38%), hypercholesterolaemia (32%), mental health problems (26%) and cardiovascular disease (20%). *Screening*: A median CV risk score calculated in 88% (44) of patients was 7.5%. FRAX score was documented in 64% (32). *Social*: Of the 23 patients for whom living circumstances was recorded 16 lived alone. Active employment was recorded in 18 cases and 10 patients had a recorded disability. Of those reported to be sexually active (50%), 15 (60%) had STI screening within 12 months, 5 of whom had a new STI.
Conclusion: We demonstrated that PLWH aged 50 years have multiple comorbidities, social care needs and complex HIV management issues including polypharmacy. As outlined in the document 'the future of HIV services in England' a holistic approach to their care is needed. MDT and allied health professional input would be beneficial to address their widespread needs. We have devised a comprehensive proforma in line with BHIVA standards and aim to set up a specialist HIV-elderly medicine clinic to address the specific care needs of our ageing HIV population.

P162

Antiretroviral therapy (ART) choices in an ageing population: an evolving process

J Bilinska[1], MJ Lee[1], E Wallis[1], L Campbell[1], R Patel[2], C Williams[1] and R Kulasegaram[1]
[1]Harrison Wing, Department of HIV Medicine, Guy's and St Thomas' Trust, London, UK, [2]St George's University, London, UK

Background: In the era of antiretroviral therapy, there is an increasing focus on management of renal, bone and cardiovascular health in people living with HIV (PLHIV). We reviewed ART exposure and co-morbidities in the over 60s.
Method: We performed a cross-sectional study of all PLHIV over 60 years old attending our inner-city HIV clinic in September 2017. We collected data from their electronic records including demographics, ART history and co-morbidities. Cardiovascular risk was calculated using QRISK2 and data was analysed using Minitab™.
Results: We identified 300 patients over the age of 60, with a median age of 64 (Range 60–90).
After adjusting the estimated glomerular filtration rate (eGFR) for ethnicity, 22% (66/300) had chronic kidney disease stage 3–5 (CKD) with a median eGFR of 51 (IQR 42–56). 15% (10/66) of CKD patients were on renal tubular transport inhibitors, which could lead to falsely reduced eGFR results.
80% (53/66) of patients with CKD were on appropriate ART and 20% (13/66) overall remained on tenofovir disoproxil fumerate (TDF) or atazanavir (ATV) based ART.
Of these, 12% (8/66) of CKD patients were on TDF and 9% (6/66) on ATV.
Increased duration of TDF exposure was significantly associated with CKD (p=0.034) using logistic regression. The median length of TDF exposure in CKD was 95 months (range 1-179).
Multivariate analysis showed that even when adjusted for age, ethnicity, diabetes mellitus and hypertension, the association between increased length of TDF exposure and CKD still trended towards significance (p=0.089).
51% (152/300) of the over 60s had a Dual-energy X-ray absorptiometry (DEXA) scan of which 70% (107/152) were diagnosed with either osteopaenia (T score<−1 and >−2.5) or osteoporosis (T score<−2.5) (71/152 and 36/152 respectively). 33.3% of patients with osteoporosis (12/36) remained on TDF.
87% (260/300) patients had a cardiovascular risk>10% and 23% of those patients were on fosamprenavir (0.4%), lopinavir (1%), abacavir (17%) or maraviroc (5%).
Conclusion: This analysis has identified a significant number of patients with raised cardiovascular risk, renal or bone disease in our aging population of PLHIV. We need to focus on this population, and those approaching this age group, to regularly review their ART. The BHIVA treatment monitoring guidelines help us facilitate this process and reduce the risk of further co-morbidities.

P163

Are there missed opportunities to identify kidney disease in people living with HIV and diabetes or impaired glycaemic control?

G Birch and I Reeves
Homerton University Hospital, London, UK

Background: Chronic Kidney Disease (CKD) may be more common in patients with HIV; therefore regular renal monitoring is vital. Diabetes is an additional risk factor for kidney disease. The BHIVA monitoring guidelines state that all people over the age of 40 should have an HbA1C test as part of their metabolic assessment. Individuals with CKD should avoid being on ART with nephrotoxic potential and may need dose adjustment.
Methods: Routine HbA1c monitoring started in March 2017. Electronic records were searched for all HbA1c results March to November 2017 as well as all those with a recorded diagnosis of diabetes. Demographics, other diagnoses, prescribed medications, renal function and cardiovascular risk factors were recorded. QRISK2 was used to calculate CVD risk. HbA1c results were classified as normal, pre-diabetes or diabetes according to international definitions. Those with a confirmed eGFR <60 ml/min were classified as CKD stage 3 or worse.
Results: Of 1160 patients registered at the clinic, 642 had HbA1c performed in the time period; we identified 93 patients with diabetes (n=65) or confirmed raised HbA1c (n=28): 92% (86/93) were aged over 40, 74% (64/86) of which had HbA1c tested. Evidence of CKD 3 was found in 18% (17/93). 91 patients had a formal assessment of proteinuria by urine protein:creatinine ratio, the mean being 43.9 mg/mmol; a minority also had an estimation of albuminuria (15/93). 46% (43/93) had a diagnosis of hypertension compared with 76% (13/17) of patients with CKD (though 16 of the latter were prescribed anti-hypertensive medication). Of these 17 with CKD, 1 (6%) was on a TDF based regimen, 9 (53%) were on TAF/FTC, 2 were on other NRTI backbones and 4 were on NRTI sparing or boosted PI/3TC combinations. Of the remaining 76, a further 9 were on TAF/FTC, 5 on other NRTI backbone and 6 on NRTI/TDF-sparing regimens.
Conclusions: Estimation of eGFR and proteinuria was high but few patients had albuminuria assessed which may be particularly relevant for this group. The prevalence of CKD 3 was higher than in the general population and mean proteinuria was abnormal, as might be expected. We found one patient who had progressed to CKD 3 while still on TDF suggesting that this might have been avoided. TDF was used in the majority of the remainder and we recommend careful attention to this group in order to identify higher risk patients who might benefit from treatment switch.

P164

Avoiding abacavir: an audit reviewing cardiovascular risk in HIV-positive patients and their corresponding HIV antiretroviral therapy

N Weston, N Williams and M Roberts
Worcester Royal Hospital, Worcester, UK

Background: Cardiovascular disease (CVD) is a significant contributor to morbidity and mortality in HIV-positive populations. This risk increases as the HIV population ages; approximately 25% of HIV-positive adults accessing care in the UK are now aged over 50 years old. Although there are no randomised control trials proving certain HIV anti-retrovirals (ARVs) increase CVD, evidence has shown abacavir and maraviroc are associated with increased CVD and worse outcomes in high risk populations. BHIVA guidelines recommend that all HIV positive patients should have regular review of their CVD status.
Methods: A total of 261 patients were reviewed from our HIV cohort. Patients' CVD risk was scored using the QRISK2 calculator into low/medium/high risk. Patients with a moderate/high risk were then assessed to see whether they received lifestyle recommendations, whether started on a statin and whether certain ARV regimes were being avoided.
Results: Of 261 patients, 117 (45%) were over 50 years old. 9 (3.5%) were over 70 years old. In total 95 (36%) patients were classified as moderate or high risk of CVD. 35 (13%) patients were in the high risk group. 22 (63%) patients were on a statin. 30 (86%) patients had had a review by a dietician to discuss modifiable risk factors. 4 (11%) of this high risk group were on abacavir. 60 patients were in the moderate risk group. 24 (40%) patients were on a statin. 42 (70%) patients had had a review by a dietician to discuss modifiable risk factors. 12 (20%) patients were on abacavir. 5 of these 12 patients had been started on a statin and 9 of these patients had been seen by a dietician to discuss modifiable risk factors. None of our at risk patients were on maraviroc.
Conclusion: Our HIV cohort is older than the national average with a significant proportion at increased risk of CVD. There was variability in how often review of CVD risk factors was being performed. The majority of our patients at increased risk of CVD had either seen a dietician and/or started statin therapy, however 24% of our at risk population had not. Abacavir usage declined with increased CVD risk. In conclusion, CVD risk is likely to become an increasingly important aspect of holistic HIV care as this population ages. This data highlights the importance of an annual CVD risk score as a useful tool to signpost patients for review in our MDT to optimise HAART, risk factor modification and dietetic input. This audit will promote better practice in this area.

P165

Cardiovascular risk management in people with HIV and diabetes or impaired glycaemic control: room for improvement?

G Birch and I Reeves
Homerton University Hospital, London, UK

Background: Diabetes is a significant risk factor for cardiovascular disease (CVD). Some studies have found higher rates of diabetes in people with HIV. The BHIVA monitoring guidelines recommend annual HbA1c testing in those over 40. We aimed to evaluate our HbA1c testing and to evaluate the CVD risk management of those with abnormal HbA1c or known diabetes.
Methods: Electronic records were searched for all HbA1c results from March 2017 to November 2017 and all those with a diagnosis of diabetes. Demographics, other diagnoses, prescribed medications, renal function and cardiovascular risk factors were recorded. QRISK2 was used to calculate CVD risk (>10% defined as high risk). HbA1c results were classified as normal, pre-diabetes or diabetes according to international definitions.
Results: Of 1160 patients attending the clinic, 642 had HbA1c performed in the time period; three new cases of diabetes were made as a result of HbA1C results. 65 patients were known to have diabetes and 28 patients had a prediabetes HbA1c. Of these 93 patients, 12 (13%) had no documented smoking history. HbA1c was done in 41/65 (63%) of diabetic patients; 20% were <48 mmol/mol/ 6.5%. Excluding 5 patients with established CVD, 57/88 (57%) had had a QRISK2 calculated as part of routine care. QRISK2 was calculated with most recent data and 58% (51/88) had a score >10%, this included 13 patients who did not have a documented CVD risk. In those with a QRISK2>10%: 88% (45/51) had diabetes; 71% (36/51) were prescribed an antihypertensive; 43% (22/51) had cholesterol >5.0 mmol/l, but 64% (14/22) of these were on a statin. 4 people with a QRisk2>10% could not have their BMI calculated due to missing data and of the remaining 47, 55% were obese (BMI>30). 61% (31/51) of people with a QRisk2>10% had seen a dietician. Of 92 patients on ART, 86 (93%) had a VL<100 cps per ml. One patient with a QRISK2>10% was on an Abacavir containing regimen.
Conclusions: In a group of patients with increased risk for CVD, there were gaps in documentation of important risk factors and CVD risk calculation. HbA1c monitoring identified new cases of diabetes. Few patients with diabetes met the glycaemic control target. Hypertension and hypercholesterolemia may not have been managed optimally. Only one higher risk patient was taking Abacavir. We recommend that HIV clinics work closely with primary care to optimise recognition and management of CVD risk.

P166

Central obesity and non-alcoholic fatty liver disease in people living with HIV: a pragmatic approach

C Dewar[1], A Price[2] and B Payne[1]
[1]Newcastle University, Newcastle upon Tyne, UK, [2]Newcastle-upon-Tyne Hospitals, UK

Background: Non-alcoholic fatty liver disease (NAFLD) may have increased prevalence and risk of progression in people living with HIV (PLWH). It is currently unclear whether some PWLH should be screened for NAFLD. The aims of our study were to develop a pragmatic approach to the detection of NAFLD in an HIV clinic setting.
Methods: Consecutive adult PLWH attending for outpatient care were reviewed and those with recurrently abnormal liver function (ALT>ULN on ≥2 occasions in last 13 months) were identified. At next planned visit we assessed central obesity (CO, by waist circumference) and insulin resistance (IR, defined as diabetes mellitus and/or elevated HbA_1C). Where diagnosis of NAFLD was made, staging was performed by NAFLD Fibrosis Score (NAFLD-FS) and/or transient elastography (TE, Fibroscan).
Results: 544 patients were evaluated. 100 (18%) had recurrently abnormal ALT, and 69 attended for clinical assessment (80% male, mean age 47.9 years, mean duration of diagnosed HIV infection 10.9 years, 97% ART treated). CO was present in 71% of these subjects. By BMI, 66% were overweight (BMI>25) and 35% were obese (BMI>30). Of note, 20% of subjects with CO had normal BMI. 10% had IR, all of whom had coexisting CO.
A causative diagnosis for liver disease was able to be made in 80% of subjects. NAFLD was the commonest cause of liver disease with a prevalence of 25% (3% of the total cohort of PLWH). 82% of cases of NAFLD were previously undiagnosed. Almost all patients with NAFLD had CO (sensitivity 94%, specificity 37%). BMI-defined obesity lacked sensitivity (Sn 50%, Sp 69%). Most subjects with NAFLD did not have IR (Sn 25%, Sp 92%). There was no association between presence of NAFLD and current or nadir CD4 count or duration of HIV infection or therapy. Presence of NAFLD was however associated with current EFV treatment (p=0.05). Of subjects with NAFLD, 69% had low fibrosis risk, 25% indeterminate risk, and 6% high risk.
Discussion: The prevalence of recurrently elevated ALT in a typical HIV cohort was high. NAFLD was the commonest cause of liver disease, but a large majority of cases were previously undiagnosed. This study is likely to underestimate the true prevalence of NAFLD in PLWH as: (i) ALT may be normal in NAFLD; and (ii) ultrasonography lacks sensitivity. The simple addition of waist circumference measurement to routine clinical HIV care will identify almost all PLWH with NAFLD and identifies many more at risk individuals than BMI.

P167

Clinical presentation and treatment of patients with neurosymptomatic HIV cerebrospinal fluid escape

S Rackstraw and M Marta
Barts Health NHS Trust, London, UK

Background: Neurosymptomatic cerebrospinal (CSF) escape occurs when patients present with new neurological symptoms and HIV load is detectable at higher or similar values than plasma, despite antiretroviral therapy (ARV).

Previously, cohorts and case studies have described antiretroviral therapy switches or intensification based on central nervous system (CNS) penetration or HIV resistance-testing results. As this is a rare phenomenon, there is no clear agreement on how this should be done, in contrast with virological ARV failure in plasma alone.
Method: Retrospective case review of clinical records from clinic database of HIV positive patients attending the joint HIV neurology clinic. We present the clinical features, including results of neuroimaging and CSF analysis from 25 patients diagnosed with symptomatic CSF escape. We also describe their clinical response to modifications made to ARV following each presentation.
Results: In our cohort, patients presented with a variety of neurological features, from headaches to worsening seizure frequency, but the commonest was of an acute meningoencephalitis. Most patients presenting with this condition were on a protease inhibitor based regime, and responded clinically and in MRI to changes made, usually by the addition of new active agents. Improvement of neurological deficits occurred in all patients, rarely to baseline.
Discussion/conclusion: Neurosymptomatic CSF escape needs to be considered in the differential diagnosis of HIV+ patients presenting with an acute meningoencephalitis, particularly amongst those on protease inhibitor based regimes. Delay in identification and ARV changes seems to impact on recovery. Protease inhibitors may not adequately achieve virological suppression in the CNS in a small proportion of patients, thus allowing resistant virus to cause neurological disease.

P168

Clinical use of brain magnetic resonance imaging (MRI) for neurological symptoms in effectively treated people with HIV

L Kent[1], A Amlani[1], S Vundavalli[1], B Ridha[2] and J Vera[2]
[1]Brighton and Sussex University Hospitals NHS Trust, UK, [2]Brighton and Sussex Medical School, UK

Background: Since the introduction of combination active antiretroviral therapy (cART), the profile of neurological manifestations in HIV has changed. Therefore, there is a need to re-evaluate the role of brain MRI in clinical practice. This study aimed to determine indications and common findings on brain MRI and analyse their relationship with patient factors. The impact of brain MRI on patient management was also assessed.
Methods: A database of 250 scans, collected from a large, urban centre between and 2010–2014 was used to identify participants. HIV positive individuals undergoing brain MRI with a reported clinical indication were included in the study. Exclusion criteria included those scanned solely for research purposes and those with no patient notes. Chi-squared, correlation analysis and logistic regression were performed to analyse relationships between patient factors, MRI results and outcomes.
Results: 166 patients undergoing 183 MRI scans were selected. The most common indications for MRI were cognitive symptoms (n=53, 30%), followed by headaches (n=46, 25%). 77 (42%) patients had no findings on MRI. The most common finding on MRI was subcortical hyperintensities (n=53, 29%), followed by global atrophy (n=30, 16%) and vascular white matter hyperintensities (WMH) (n=27, 15%). Age at MRI was predictive of global atrophy ($p=0.022$) and vascular WMH ($p<0.0001$). Years on ART was predictive of global atrophy ($p=0.014$). CD4 T cell count was predictive of HIV-related pathology on MRI ($p=0.014$). Those with abnormal MRI were more likely to undergo further testing ($p<0.001$).
Conclusions: The profile of neurological manifestations in HIV has changed in the cART-era. Now, cognitive symptoms and headaches are leading indications for brain MRI. The most common MRI results are non-specific findings. These may be related to age, HIV itself, ART or other patient factors. More research must be carried out to determine the role of MRI in managing patients in the cART-era.

P169

Determinants of cognitive function differ in a European and a Korean cohort

D De Francesco[1], A Winston[2], JY Choi[3], RA van Zoest[4], J Underwood[2], J Schouten[4], NS Ku[3], WJ Kim[5], P Reiss[4] and CA Sabin[1]
[1]University College London, London, UK, [2]Imperial College London, London, UK, [3]Yonsei University College of Medicine, Seoul, South Korea, [4]AMC, Amsterdam, the Netherlands, [5]Korea University College of Medicine, Seoul, South Korea

Background: HIV-associated cognitive impairment (CI) remains relevant in people living with HIV (PLWH) treated with antiretroviral therapy. However, risk factors for CI may differ in populations of PLWH of different ethnicity. We compared the prevalence and determinants of CI in a Northern European and a Korean cohort of PLWH, and assessed the ability of individual cognitive tests to discriminate between those with and without CI.
Methods: Cognitive performances were assessed using a comparable battery covering 6 domains in 134 PLWH aged ≥45 years from the COBRA study (Netherlands, UK), and 194 PLWH aged ≥18 years from the NeuroAIDS Project (Korea). Cognitive scores were standardised using population-specific normative scores and averaged to obtain an overall score. Determinants of cognitive function were evaluated using linear regression. Factors that were associated with cognitive function in univariate analyses were selected for inclusion in a multivariable model. The discriminative ability of individual cognitive tests to detect CI (defined by an overall score 0.5 SD or more below the mean) was assessed using the area under the receiver operating characteristic curve (AUROC).
Results: The 134 COBRA PLWH (mean age: 57 yrs, 93% male, 88% white ethnicity, 100% on cART) had a higher CD4 (mean±SD: 646±214 cells/μl) and lower rate of anaemia (8.3% with haemoglobin≤13 g/dl) compared to the 194 Korean PLWH (45 years, 94% male, 90% on cART, mean CD4: 481±236 cells/μl, 19.1% with anaemia). The prevalence of CI was 18.8% in COBRA PLWH and 18.0% in Korean PLWH ($p=0.86$). In COBRA, being of African descent was the main determinant of cognitive function ($p<0.01$) whereas in the Korean cohort anaemia (other than years of education – $p<0.01$) was the main risk factor ($p=0.1$). The discriminative ability of CI screening was highest for tests of attention (AUROC of 0.81–0.84) and executive function (0.80–0.88) in COBRA PLWH and for tests of processing speed (0.73–0.80) and motor skills (AUROC=0.78) in Korean PLWH.
Conclusion: Two cohorts of PLWH from different geographic regions report similar CI rates when assessed using similar cognitive tests. However, determinants of cognitive performance in the cohorts differ considerably with ethnicity and anaemia being important determinants in one but not the other cohort. These findings suggest that differences in ethnicity and other diseases should be taken into consideration when comparing CI rates in different geographic regions.

P170

Diagnostic accuracy of non-invasive markers of fibrosis in HIV mono-infected patients with histologically confirmed NAFLD

J Maurice[1], E Tsochatzis[2], M Nelson[3], P Kelleher[3], L Garvey[4], M Thursz[1] and M Lemoine[1]
[1]Imperial College London, London, UK, [2]University College London, London, UK, [3]Chelsea and Westminster Hospital NHS Foundation Trust, London, UK, [4]Imperial College Healthcare NHS Foundation Trust, London, UK

Background: Non-alcoholic fatty liver disease (NAFLD) is a common cause of chronic liver disease. Only about 15% develop liver fibrosis, the main predictor of liver-related mortality. Therefore it is critical to risk stratify patients with fibrosis using non-invasive (NI) markers. NAFLD is at least as common in patients with HIV, but few studies have validated the performance of NI markers of fibrosis in this population.
Methods: Prospective cross-sectional study. Patients with HIV mono-infection, radiological evidence of hepatic steatosis and abnormal liver function tests (ALT>80) and/or transient elastography (TE, Fibroscan®)≥7.1 kPa), with no evidence of other chronic liver disease, were offered a liver biopsy. A fasted Fibroscan and blood tests were collected. Liver histology was reported using NASH CRN scoring system. Continuous variables are expressed as mean (SD) or median (IQR) as appropriate. The performance of

NI markers was assessed using area under ROC curves (AUROC). Cut-off values were evaluated for sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), positive likelihood ration (LR+) and negative likelihood ration (LR-).
Results: From April 2016-January 2018, 36 patients had a liver biopsy. The population characteristics were: age 46.0 (12.5) years, BMI 30.8 (4.5) kg/m^2, waist circumference 103.8 (11.5) cm, time since HIV diagnosis 9.5 (5.0–17.3) years, diabetes 16.7%. Median time between liver biopsy and NI tests was 1.0 (0.0–4.0) month. The histological diagnosis was NASH n=24 (67%), simple steatosis n=9 (25%), non-specific n=3 (8%). Significant (≥F2) and advanced (≥F3) fibrosis was present in n=16 (44%) and n=13 (36%). The performance of TE and serological markers using previously validated cut-offs for F3 fibrosis are in table 1. All markers performed poorly at diagnosing F2 fibrosis. Combining TE and FIB-4 increased the AUROC for F3 to 0.83 (0.68–0.98).
Table 1

Test	Cut-Off	Sensitivity	Specificity	PPV	NPV	LR+	LR−	AUROC
FIB-4	≤1.3	0.69	0.74	0.60	0.81	2.65	0.42	0.74
	≥2.67	0.08	1.00	1.00	0.66	–	0.92	
NFS	≤1.455	0.62	0.74	0.57	0.77	2.36	0.52	0.70
	≥0.676	0.00	0.96	0.00	0.63	0.00	1.05	
APRI	>1.0	0.31	0.96	0.80	0.71	7.08	0.72	0.52
TE	9.0 kPa	0.50	0.74	0.50	0.74	1.92	0.68	0.79

Conclusion: TE and FIB-4 combined are most effective to rule out F3 fibrosis, but performed poorly with F2 fibrosis. Further work with larger cohorts is required to validate optimal cut-offs and diagnostic algorithms in the HIV population.

P171

Discontinuation of dolutegravir (DTG) containing therapy and adverse events in a Scottish cohort

M Cevik[1], R Campbell[1], D Raha[2] and D O'Shea[1]
[1]Western General Hospital, Edinburgh, UK, [2]Chalmers Sexual Health Centre, Edinburgh, UK

Background: HIV treatment guidelines have incorporated newer drugs such as DTG which is an integrase inhibitor. However, there have been concerns regarding intolerance and early discontinuation. We present real world experience of DTG use in our cohort with an aim to assess the tolerability and side effects in patients commenced on DTG.
Methods: All cART-naive and cART- experienced HIV positive individuals who were prescribed DTG between Aug 2014 and Mar 2017 were identified. Data were retrospectively collated through electronic patient records and case note review. Descriptive statistics were performed to examine demographics, baseline characteristics, CD4 count and HIV viral load.
Results: A total of 428 patients taking DTG containing regimen were identified. Median age was 49 years and majority (60%) was MSM. Median time living with HIV was 12 years and median time on cART was 7.5 years (0–20 years). Out of 428 patients 36 (8.4%) discontinued DTG containing regimen and 24 (5.6%) of those discontinued due to adverse reactions. 20 patients were prescribed DTG with abacavir and 16 with TDF. At the time of starting DTG, median CD4 count was 516 cells/mm^3 (108–1219) and all except 5 patients had undetectable HIV viral load. Sleep and GI disturbance followed by hypersensitivity reactions were the main adverse events observed in patients who discontinued DTG. Reported side effects and reasons for discontinuation are summarized in the table below.

Category	Adverse reaction	*n* (%)
Neuropsych/CNS (3.6%)	Sleep disturbance	8 (1.9)
	Neurological symptom	4 (0.9)
	Anxiety/Depression	2 (0.4)
	Other psychiatric symptom	2 (0.4)
GI disturbance (1.16%)	Epigastric pain	4 (0.9)
	Diarrhoea	3 (0.7)
Hypersensitivity		6 (1.4)
Myalgia/Joint pain		1 (0.2)
Patient choice		5 (1.2)
DDI/Contraindication		2 (0.4)
Simplification		2 (0.4)
Non compliance		2 (0.4)
Clinician choice		1 (0.2)

Median time on DTG containing regimen was 94 (13–703) days. In 14/24 (60%) patients side effects resolved after DTG discontinuation. Over 40% of the patients who discontinued DTG switched back to their previous regimen. 8/36 patients had deranged liver function however none of those discontinued DTG for this reason. 5 patients had detectable HIV VL at the time of discontinuation; 3 of those had poor compliance.
Conclusion: In a treatment experienced cohort, DTG was well tolerated and lower rates of discontinuation were observed due to adverse reactions. Discontinuation rate in our cohort was 8.4%, 5.6% due to adverse reactions which is lower than reported in the literature (10–15%). Discontinuation due to neuropsychological or psychiatric events was seen lower in frequency at 3.6% compared to 10% reported in recently published observational studies. More clinical data would be beneficial to identify factors to risk stratify patients and to explore the mechanisms of potential neurotoxicity.

P172

English demographics and cost of HIV-associated comorbidities in individuals over the age of 35: an investigation using the Hospital Episode Statistics (HES) database

L Wild[1], A Smith[1], L Sathia[1], S Davies[1], D Pedreno Fernandez[2] and D Lawrence[1]
[1]Gilead Sciences, London, UK, [2]IQVIA, London, UK

Background: We aimed to quantify the demographics and cost of various comorbidities in people living with HIV (PLWH) over the age of 35, compared to the HIV negative population in the England using the Hospital Episode Statistics (HES) database.
Methods: We utilised 5 years of HES data from 04/2011 to 03/2016 to extract episodes coded with an HIV diagnosis and a concurrent diagnosis of selected comorbidities – renal disease, osteoporosis and cardiovascular disease. Episodes of these comorbidities without an HIV diagnosis were also extracted as control groups. As these comorbidities typically occur in older individuals, we excluded individuals under 35 years old where different aetiologies may confound findings. The cost per episode in both groups was derived from both diagnosis-based Healthcare Resource Group and matched NHS reference costs, which do not include ARV drug costs.
Statistical analysis (t-test, one tail, assuming unequal variance) compared age and cost per episode between PLWH vs. the non-HIV population. The tests were performed across the selected comorbidity groups.
Results: 8126 HIV and 12,531,894 non-HIV episodes were identified with the comorbidities of interest. All comorbidities were seen at a significantly ($p<0.05$) younger mean age in PLWH. Cost per episode was also significantly higher ($p<0.05$) in PLWH for all comorbidities examined.

	Renal disease	Osteo-porosis	Cardiovascular disease
Age (mean)			
HIV	**50.8***	**53.8***	**55.5***
Non-HIV	70.0	76.8	76.6
Cost per episode (mean)			
HIV	**£2,039***	**£2,858***	**£3,019***
Non-HIV	£957	£2,147	£2,786

*Significant difference, HIV vs. non-HIV, $p<0.05$.

Conclusion: PLWH present with renal, bone and cardiovascular comorbidities at a younger age, and treatment is associated with significantly higher costs per episode than HIV negative individuals. At a population level, this economic impact is likely to increase with an ageing group of PLWH. Early identification and proactive management of patients at increased risk, for example avoiding drugs that may be associated with exacerbation of comorbidities, could reduce this burden.

P173

Evaluation of a combined HIV and elderly medicine clinic for older people living with HIV

CP Santos[1], NA Ransome[1], L Parker-Joyce[2], G Mundowa[2], T Levett[1], J Wright[1] and JH Vera[1]

[1]Brighton and Sussex Medical School, UK, [2]Brighton and Sussex University Hospitals NHS Trust, UK

Background: The UK prevalence of HIV in older adults continues to increase, with an estimated 38% of those infected with HIV being older than 50. The older people with HIV (OPLWH) and HIV services looking after them face greater demands due to their higher risk of co-morbidities, polypharmacy, and mental health burden. To cater for these complex needs, a service that combines elderly medicine and HIV was set up in a high prevalence city to undertake geriatric reviews in OPLWH.
Methods: A service evaluation of a sample of patients attending the clinic between 2012 and 2017 was conducted using clinical data collated from the clinic's database. Data evaluated included demographics, HIV and non-HIV related clinical parameters such as co-morbidities, frailty status (FRAIL scale) and mental health (hospital anxiety and depression scale). Quality of life measurements were evaluated using the EuroQol five dimension (EQ-5D), a measure of health status, and the older people quality of life (OPQOL-Brief) questionnaires. Patient satisfaction was assessed via a self-completing survey.
Results: Data from 38 patients were evaluated. Median age (range) was 67 (52–81) years, 89% were male, 97% white and 82% MSM. Smoking (21%), recreational drug use (16%), and alcohol intake (3.5 units/per week) were low. Median time since HIV diagnosis was 20 (5–32) years, and median years on cART was 18 (3–28) years. The main reasons for referral to the clinic were co-morbidities (44.1%), polypharmacy (20.6%), diagnostic uncertainty (14.7%), falls (8.8%), medication related problems (5.9%), and mobility issues (5.9%). The median number of co-morbidities per person was 8 (1–19), taking on average 8 (1–15) additional non-ART medications. Most patients referred to the clinic were deemed as frail on the FRAIL scale, mean score (SD): 3 (1.7); and had anxiety and/or depression problems, mean HADS score: 15 (8.4) (scale 0–21). Although perception of health status was acceptable, EQ-5D mean score 59 (27.4) (scale 0–100). Quality of life was poor OPQOL mean score 29 (6.9) (scale 13–75). Satisfaction with the service is high among patients.
Conclusions: The disease burden of the cohort evaluated was significant. The most common reason for referring to the clinic was management of co-morbidities (44.1%), suggesting HIV services struggle to manage the complexity of these patients. The joint clinic offers a care model to target the unmet care needs observed in this cohort of patients.

P174

Factors associated with HIV-associated neurocognitive disorder in an unselected cohort in East and South London: the HAND study

S Rackstraw[1], O Davies[2], A Thiyagarajan[1], A Sharp[2], N Patel[2], R Szydlo[3] and R Kulasegaram[2]

[1]Barts and the London NHS Trust, London, UK, [2]Guy's and St Thomas' NHS Foundation Trust, London, UK, [3]Imperial College London, London, UK

Background: UK studies have shown low levels of neurocognitive impairment (NCI) in selected cohorts. Several clinical factors including Antiretroviral Therapy (ART) CNS penetration effectiveness (CPE) score have been linked with HIV associated neurocognitive disorder (HAND). In the first study of HAND in an unselected cohort in London, we aimed to: (i) determine the extent of NCI in this cohort (ii) establish correlation with HIV-related factors and medical comorbidities.
Methods: 786 HIV+ participants aged >18 were prospectively recruited from 4 HIV clinics in East and South London. Medical and ART history and mental state assessment were completed. Computerised assessment of neurocognitive function was performed using Cogstate tests. Participants had NCI if they were >1standard deviation (SD) outside of the population mean in 2 or more cognitive domains.
Results: The median age was 46. 65% were Caucasian. 81% had HIV VL <100. Median CD4 count was 566. Of the 710 who completed the computerised Cogstate tests 84% were men. 37.2% had NCI. Fig 1 demonstrates the factors found to be independently associated with HAND on multivariate analysis when adjusted for ART drug regimen.

Variable	n	odds ratio	p value
Anxiety			
Normal	354	1.00	
Borderline	143	1.41	0.15
Abnormal	193	2.47	**0.0001**
Summarised IHDS			
Normal	553	1.00	
Abnormal	137	3.90	**0.0001**
Race			
Black African	129	1.00	
Black Caribbean	32	0.88	0.78
Caucasian	475	0.22	**0.0001**
Other	22	0.31	0.041
Education			
College/University	458	1.00	
Other	232	1.73	**0.004**
Transmission route			
MSM	446	1.00	
Other	244	1.96	**0.003**
CPE score			
0–5	42	1.00	
6–8	530	1.35	0.47
>8	35	3.22	**0.037**

Conclusion: NCI was observed in 37.2% of this cohort. Anxiety, abnormal IHDS, being black African, below college level education, non-MSM transmission route and CPE score >8 were associated with HAND. The CPE score effect is at variance with that observed in other studies. This could be due to intensification of ART in those with prior NCI or even a degree of drug toxicity. More research is needed on the effects of ART on HAND.

P175

Fibroscan: how do the results measure up to liver biopsy?

L Bannon, D Bradshaw and Y Gilleece

Brighton and Sussex University Hospitals NHS Trust, UK

Background: In people living with HIV (PLWH) liver disease is a leading cause of morbidity and mortality, irrespective of viral load suppression status. This study aims to determine how Fibroscan assesses the severity of fibrosis, compared to liver biopsy, across a range of liver pathologies.
Method: A retrospective cohort study of patients referred to HIV/Liver multi-disciplinary meetings (MDT) between 2004 and 2015. Data on histology, demographics, laboratory results, ARV exposure and Fibroscan reports were recorded. Ishak (modified Knodell score) and qualitative descriptions of fibrosis on histology reports were used to evaluate the severity of fibrosis. In Fibroscan reports, the kPa and F score were used as the measure of fibrosis.
Results: Of 84 patients referred to MDT, 24 individuals had a liver biopsy and Fibroscan: Median age 50.2 years (range 30–72 years). 20 male, 4 female, White-UK n=18, Black-African n=3, Black-Portuguese n=1, White non-UK n=2. 20/24 (83.3%) had an HIV RNA <50 c/ml and 21/24 (87.5%) had a CD4 count >250 cells/mm^3 (range 186–1560). There was a concordance rate of 18/24 (75%) between the extent of fibrosis reported in the liver biopsy and the Fibroscan. Fibroscans followed biopsy by 4.4 years on average (range −1 to 10 years).
Of those where there was a difference in the findings, Fibroscan underestimated the extent of fibrosis in 2/24 (8.3%) patients. In both cases

the cause was chronic viral hepatitis (hepatitis C n=1, hepatitis B & treated hepatitis C n=1) and Fibroscan reported no/mild fibrosis (F0-1) whilst biopsy demonstrated moderate fibrosis. Fibroscan followed biopsy by 3 and 10 years in these patients. In 4/24 (16.7%) of patients, the Fibroscan reported a greater severity of fibrosis. All four patients had Non-Alcoholic Fatty Liver Disease (NAFLD). On biopsy three had mild or moderate fibrosis but were cirrhotic on Fibroscan an average of 4.8 years (range 0–9 years) later. One patient had a biopsy (mild fibrosis) and Fibroscan (moderate-severe fibrosis) in the same year. There was no correlation between CD4 count or virological suppression and Fibroscan accuracy.
Conclusion: Fibroscans reported the same extent of fibrosis as liver biopsies in 75% of PLWH referred to our MDT. It may underestimate the severity of fibrosis in chronic viral hepatitis suggesting that biopsy is still important in this group. In PLWH with NAFLD, Fibroscan may overestimate the severity of fibrosis.

P176

Frailty is dynamic in older adults living with HIV: a prospective observational study

N Hrouda, J Wright and T Levett
Brighton and Sussex Medical School, UK

Background: Almost 40% of those accessing HIV services in the UK are now aged over 50 years. These older adults are at risk of developing age-related syndromes, such as frailty. Frailty represents a loss of homeostatic reserve. Little is known about frailty trajectories in the HIV+ population. This study aimed to describe transitions in frailty in those with HIV and any associated factors.
Methods: We conducted a prospective, observational study of HIV+ adults aged 50 years or older. 253 participants were recruited, with 223 participants (88%) returning after 1 year. At both time-points, frailty was assessed using a frailty phenotype with five criteria (unintentional weight loss, low activity, exhaustion, muscle weakness and slow walking time). Participants were scored and categorised based on number of criteria fulfilled (robust=0, pre-frail=1-2, and frail=3-5). Frailty transitions, defined as movement in score or category from baseline, were recorded and examined alongside collected demographic, HIV and clinical data.
Results: At baseline, 94 (37.1%) were robust, 111 (43.9%) pre-frail and 48 (19.0%) frail. At follow-up, 89/223 (39.9%) were robust, 93 (41.7%) pre-frail and 41 (18.4%) frail. Using raw frailty score (0–5), 126 (56.5%) retained the same score with 52 (23.3%) and 45 (20.2%) becoming more and less frail respectively. Worsening frailty score was associated with unemployment (p=0.016), lower educational attainment (p=0.041), greater comorbidity (p=0.009), namely prior stroke (p=0.001), depression (p=0.005), and greater co-medication use (p=0.004). Multiple functional parameters were associated with increased score including slower walk speed (p=0.006) and sit-to-stand test (p=0.049), weak grip (p=0.037) and low physical activity (p=0.021). No HIV factors were linked to progression to greater frailty score. None of the measured parameters were associated with improvement in frailty score.
Conclusion: At 1-year, older HIV+ individuals demonstrated transitions in frailty to both higher and lower frailty states and scores, yet the majority remained unchanged. Factors related to general health and functional status rather than HIV were associated with greater frailty. Enhanced emphasis on these during clinical encounters may help to prevent progression in frailty and should be explored further.

P177

Functional immune characterisation of HIV-associated non-small cell lung cancer

AD Pria[1], DJ Pinato[2], A Kythreotou[2], F Mauri[2], R Shiner[2], A Akarca[3], P Trivedi[2], N Gupta[2], T Marafioti[3], P Olivieri[3], N Khan[2], V Tittle[1], M Bracchi[1], T Newsom-Davis[1] and M Bower[1]
[1]National Centre for HIV Malignancy, Chelsea and Westminster Hospital, London, UK, [2]Imperial College London, London, UK, [3]University College London, London, UK

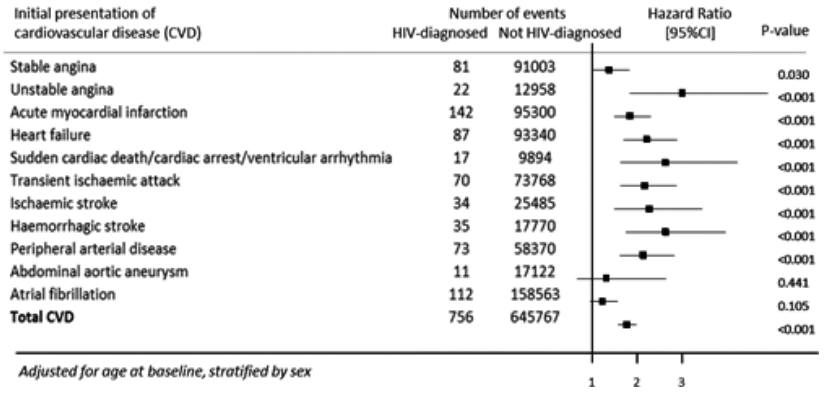
Introduction: Non-small cell lung cancer (NSCLC) is a leading cause of morbidity and mortality in people living with HIV (PLHIV). Programmed death 1 (PD-1) receptor/ligand (PD-L) interaction underlies viral and anti-cancer immune exhaustion and is a therapeutic target in NSCLC. In this study, we evaluated whether HIV status influences the anticancer immune response in NSCLC.
Methods: We identified 24 HIV-associated NSCLC from 221 archival samples. We utilised multiplex immunohistochemistry and NanoString immune profiling to functionally characterize the immune cell infiltrate in relationship to PD ligands expression. We compared prevalence and clinicopathologic significance of PD-L1 and PD-L2 expression in relationship to HIV status.
Results: Prevalence of PD-L1 and 2 immunopositivity was 45% and 33% in HIV-associated NSCLC and independent of tumour stage. PD-L1 expression correlated with higher peritumoural CD4 and CD8 infiltrate ($p<0.05$) but not with peripheral blood lymphocyte counts, HIV viral load or duration of HIV infection. Following 1:1 matching by stage, grade and histotype the proportion of PD-L1 (p=0.08) and PD-L2 (p=0.67) positive cases was similar according to HIV status. NanoString immune profiling demonstrated dysregulation of transcripts related to interferon-related signaling, chemotaxis and macrophage activation.
Conclusion: HIV status does not influence the expression of PD ligands in NSCLC. Multi-technology characterization of the anti-cancer immune response reveals an immune reactive microenvironment in HIV-associated NSCLC, supporting the clinical use of PD-1/PD-L1 irrespective of patient HIV status.

P178

HIV as a risk factor in the initial presentation of a range of cardiovascular, coronary, cerebrovascular, and peripheral arterial diseases: a linked electronic health records study of 8 million adults in the UK

M Daskalopoulou[1], A Phillips[2], A Gonzalez-Izquierdo[1], L Smeeth[3] and S Denaxas[1]
[1]Institute of Health Informatics, University College London, London, UK, [2]Institute for Global Health, University College London, London, UK, [3]Department of Non-Communicable Disease Epidemiology, London School of Hygiene and Tropical Medicine, London, UK

Background: HIV has been associated with increased risk of myocardial infarction (MI), ischaemic stroke, and heart failure. However, associations with other cardiovascular diseases (CVDs), such as stable angina, abdominal aortic aneurysm, peripheral arterial disease, atrial fibrillation, or mortality from coronary heart disease, remain understudied. This study examines associations between HIV and incidence of a range of heterogeneous CVDs in a large unselected population without pre-existing diseases of interest, using linked UK electronic health records (EHR).
Methods: Prospective open cohort study using anonymised linked primary care (Clinical Practice Research Datalink), hospital admission (Hospital Episode Statistics), and mortality records (Office of National Statistics) from the CALIBER resource. HIV serostatus and CVDs were ascertained using diagnostic codes in individual EHRs (Read codes in CPRD, ICD-10 in HES and ONS). Adults registered with a GP and free from diagnosed CVDs at baseline were followed-up between 1997 and 2016. The primary endpoint was first record of one of 11 CVDs according to time-updated HIV-serostatus. (Figure) For each CVD presentation, and by time-updated HIV-serostatus, we compared cumulative incidence rates (IR) per 1000 person-years (PY) and used Cox models to estimate cause-specific hazard ratios.
Results: Among 8,092,909 individuals, 9500 (0.1%) were HIV-diagnosed (mean baseline age 34 years [SD12], 64% male) over 110,136 total PY of follow-up (55,260 PY before HIV diagnosis, 54,876 after). We observed 654,257 first presentations of CVDs during a median follow-up of 10 years [IQR 5–15]. Among HIV-diagnosed people, 684 (7.2%) had a first CVD presentation (total CVDs: IR=8.9 per 1000 PY, 95%CI 8.2–9.8), the most common being MI (2.3, 1.9–2.8), atrial fibrillation (1.7, 1.4–2.2), and heart failure (1.4, 1.1–1.7). HIV-serostatus was significantly associated with incidence of stable and unstable angina, MI, heart failure, sudden cardiac death, stroke subtypes, and peripheral arterial disease. No significant association was observed between abdominal aortic aneurysm or atrial fibrillation and HIV-serostatus.
Conclusion: In this population-based cohort study of a large primary care sample, we observed heterogeneous associations between HIV-serostatus and initial presentation of a range of acute and chronic CVDs. These results have implications for clinical risk assessment and trial design among HIV-diagnosed individuals.



P179

HIV in later life: audit findings from a new virtual clinic service for older HIV patients

S Gwyn, A Croucher and I Reeves

Homerton Sexual Health Services, London, UK

Background: HIV in Later Life Virtual Clinic (HILLVC) was launched in April 2017 at our HIV outpatients, serving an ageing patient cohort with largely well-controlled HIV. HILLVC reviews the cardiovascular, renal and bone health records of HIV patients aged 50+, to prompt intervention where needed. We present the audit findings for the initial 8 months of the service.

Methods: Records of patients aged 50+ were reviewed, and audited for: adjusted 10 year CVD risk calculation (qrisk2 x1.6) within 3 years (target 100%); FRAX score (www.sheffield.ac.uk/FRAX/tool.jsp) within 3 years (target 100%) and DEXA scan (no target). Any missing risk calculations were performed. Patients for whom a DEXA scan was indicated, and patients on tenofovir disoproxil (TDF) meeting renal criteria for tenofovir alafenamide (TAF) switch were identified. Findings were recorded in the patient notes to guide onward clinical management.

Results: 334 patients (median age 55; range 50-85) were identified. 196 (58.7%) were male. Ethnicity: Black African 61%; Black Caribbean 9.3%; White British 7.6%. 118 sets of notes were audited; 98 in detail. 93/98 (94.9%) were on antiretroviral therapy (ART); 82/98 (83.7%) had a viral load (VL) <40 at audit. Median CD4 count 567 (range 57–1476). 30/98 (30.6%) had a previous AIDS diagnosis.

Pre-audit, 58/118 patients (49.2%) had had a CVD risk calculation in the last 3 years; post-audit 110/118 (93.2%). 5/84 (6%) had documented history of stroke; while none had a history of ischaemic heart disease (IHD).

29/118 patients (24.6%) had a pre-audit FRAX score; 107/118 (90.7%) post-audit. DEXA scans were recommended according to National Osteoporosis Guideline Group (NOGG) guidance for 36/118 (30.5%). 9/118 patients (7.6%) had had a pre-audit DEXA scan, 16/118 (13.6%) post-audit: 9/16 had normal BMD; 7 had osteopaenia in their hip and/or spine; none had osteoporosis.

61/98 patients (62.2%) were receiving TDF at the time of audit, of whom 5 (8.1%) were identified as candidates for switch to TAF. 12/98 patients (12.2%) were already receiving TAF.

Conclusions: HILLVC improved the CVD risk assessment from 49.2% to 93.2%. A small number of patients were identified as eligible for TDF to TAF switch. Few patients had a FRAX risk or DEXA scan at baseline, while this audit shows a high proportion (30.5%) meet NOGG criteria for DEXA scanning and may therefore may be at high fracture risk. Continued audit is needed, to ensure fracture risk is better assessed in this cohort.

P180

HIV infection adversely influences the natural history of untreated hepatocellular carcinoma (HCC)

AD Pria[1], DJ Pinato[2], TY Chen[3], E Allara[4], F Trevisani[5], B Minguez[5], M Zoli[5], M Harris[6], N Mercahnte[7], H Platt[8], M Jain[9], E Caturelli[10], L Kikuchi[11], J Pineda[7], M Nelson[1], M Cerrone[1], F Farinati[12], GL Rapaccini[12], A Aytaman[13], M Yin[14], M Bower[1], E Giannini[15] and N Brau[16]

[1]National Centre for HIV Malignancy, Chelsea and Westminster Hospital, London, UK, [2]Imperial College London, London, UK, [3]VA Central Texas HCS, Austin, USA, [4]NIHR Blood and Transplant Research Unit, Department of Public Health and Primary Care, Cambridge, UK, [5]Università di Bologna, Bologna, Italy, [6]St Paul's Hospital, Vancouver, Canada, [7]Universidad de Sevilla, Sevillia, Spain, [8]Merck, Sharp & Dohme Corp, Kenilworth, NJ, USA, [9]University of Texas Southwestern Medical Center, Dallas, TX, USA, [10]Ospedale Belcolle, Viterbo, Italy, [11]Universidade de São Paulo, São Paulo, Brazil, [12]Università di Padova, Padova, Italy, *[13]VA New York Harbor HCS, New York, NY, USA, [14]Columbia University, New York, NY, USA, [15]Università* di Genova, Genova, Italy, *[16]Mount Sinai School of Medicine and James J. Peters Veterans Affairs Medical Center, Bronx, New York, USA*

Background: HCC is a leading cause of mortality in people living with HIV. However, studies evaluating whether HIV can affect the natural history of HCC have been inconsistent due to heterogeneity in geographical origin, etiology, stage, and treatment status. In this large, multi-center study we aimed to assess the prognostic impact of HIV status in two large cohorts of patients who did not receive active anticancer treatment.

Methods: HIV-infected patients with untreated HCC were retrospectively identified from 47 centers in North and South America, Europe, and Australia and compared to 776 HIV-negative subjects with treatment-naïve HCC recruited from the ITALICA consortium. The primary endpoints were overall survival, with HIV status being tested as prognostic factor in uni- and multivariable survival analyses. Secondary endpoints were presentation and staging of HCC at diagnosis.

Results: Among the 132 HIV-positive patients, 56% had undetectable plasma HIV RNA, and the median CD4+ cell count was 256/mm^3. Compared to the 776 HIV-negative patients, they were younger (53 vs. 67 years, p<0.001), more commonly male (95% vs. 80%, p<0.001), hepatitis C virus positive (74% vs. 54%, p<0.001), but had similar Child-Turcotte-Pugh (CTP) scores at diagnosis (7 vs. 7, p=0.37). They presented more commonly with larger tumours (median diameter, 6.0 vs. 4.0 cm, p<0.001), with uni-nodular lesions (62% vs 51%, p=0.012), had higher AFP level (median 714 vs. 77 ng/dl, <0.001) and a higher proportion of portal venous invasion (36% vs 26%, p=0.034) and distant metastases (28% vs. 8%, p<0.001). HIV-positive patients had lower median survival (3.0 vs. 8.0 months HIV[–], Log rank p<0.001) with estimated 1-year survival rates of 13% vs. 24%. Multivariable Cox regression analysis identified HIV infection as an independent predictor of worse survival (H.R.,1.62; 95% C.I., 1.19–2.19, p=0.002) together with age, male sex, living in the Americas vs. Europe, CTP score, AFP level, portal vein invasion and BCLC stage. Among HIV-positive patients, independent predictors of mortality were CTP score, AFP level, and presence of metastases, but not HIV viral load, CD4+ cells or BCLC stage.

Conclusion: HIV infection is independently associated with adverse survival in patients who did not receive treatment for HCC. Mechanistic studies to

investigate the biologic foundations of such survival difference are urgently required.

P181

Impact of rheumatic symptoms on physical functioning and quality of life among treated people with HIV in high and low resource settings: a case study of the UK and Zambia

N VanDeVen[1], O Ngalamika[2], K Martin[1], K Davies[3] and J Vera[3]
[1]Brighton and Sussex University Hospitals NHS Trust, UK, [2]University Teaching Hospital Lusaka, Zambia, [3]Brighton and Sussex Medical School, UK

Background: Rheumatic manifestations in people living with HIV (PLWH) such as pain, joint stiffness, and fatigue are commonly reported. However, very little is known about differences in prevalence and impact of rheumatic symptoms on physical functioning and quality of life of PLWH on effective cART in high and low-resource settings.
Methods: A cross sectional study of people with HIV on effective cART enrolled from two large urban clinics in the UK and Lusaka, Zambia was conducted in 2016. Eligible participants had no history of trauma to the joints within 4 weeks of recruitment or documented evidence of rheumatic disease. Current rheumatic symptoms, functional ability and health-related quality of life were evaluated using the health assessment (HAQ) and quality-of-life short form (SF-36) self-reported questionnaires adapted for each setting. Chi square, student's t-test Mann-Whitney or Fisher's tests were used to compare study groups depending on the type of variable and distribution of the data.
Results: 214 patients were enrolled (108:UK and 106:Zambia). Compared to the UK group, participants from Zambia were younger [mean age (SD): 47 (11.5) vs 44 (12.3) p=0.034], and had lower CD4 counts [median (range) 640 (231–1243) vs 439 (41–1150) p=0.018]. Participants from the UK had been living with HIV for longer [median years (range) 11 (0–25) vs 6 (0–30) p<0.001], and reported to have more comorbidities than the Zambia group (65% vs 25% p<0.001). All participants were on cART with 100% of those in the UK group with a documented HIV viral load of <40 copies/ml. Rheumatic symptoms were common in both groups (UK: 69% vs. Zambia: 61%:), however, the UK group reported significantly more joint stiffness (40% vs. 18%), muscle pain (56% vs. 38%), and fatigue (72% vs. 61%) compared to the Zambia group. Although there were no differences in physical functioning between groups, the UK group had significantly worse quality of life measurements (general health, vitality, mental health, emotional, and social functioning) associated with rheumatic symptoms compared to the Zambian group (p<0.001).
Conclusions: Rheumatic symptoms in PLWH stable on cART without rheumatological disease in both the UK and Zambia were common. PLWH in the UK reported worse quality of life measures associated with rheumatic symptoms compared to those in Zambia, suggesting that other factors such as mental health and multimorbidity might play a key role in determining wellbeing and quality of life of PLWH.

P182

Individualised and integrated lifestyle management of metabolic comorbidities: a practical model

A Duncan, R Mullin and L Tosunlar
Guy's and St Thomas' Hospital, London, UK

Background: Metabolic comorbidities are more common and more challenging to control in people living with HIV compared to the general population. Many people living with HIV experience multiple comorbidities; treatment includes medical and lifestyle management. We present a service evaluation of a multidisciplinary patient-centred individualised lifestyle management HIV outpatient clinic.
Methods: A physiotherapist and dietitian, both HIV specialists, jointly reviewed patients at 30 minute appointments. Referral criteria were: dyslipidaemia with increased cardiovascular disease (CVD) risk; prediabetes/type 2 diabetes; reduced bone mineral density/increased fracture risk; lipodystrophy, hepatic steatosis or morbid obesity. 10-year CVD risk (QRisk2-2017, HIV adjusted) and quality of life were assessed in all patients. Readiness to change was assessed prior to agreeing individualised outcomes. Diet, exercise and smoking behaviour change was enabled using coaching, goal setting, motivational interviewing, mindfulness and cognitive behavioural therapy. Referral and outcome data were explored.
Results: In 2017 48 patients were referred: 71% male; mean age 45.8±8.2 years; 43% White, 28% Black African, 17% Black Other and 12% Other; living with HIV for 11.2±7.8 years.
The principal reason for referral was: Obesity with multiple comorbidities 50%; Bone health 17%; Dyslipidaemia 15%; Diabetes 8%; Lipodystrophy 6%; Underweight with multiple comorbidities 4%.
Individualised outcome measures ranged from 2–4 per patient and were: weight; waist; fasting blood glucose; HbA1c; 10-year CVD risk score; fasting LDL cholesterol; DEXA spine T-score; mid-arm and thigh circumferences
Baseline 10-year CVD risk was 11.0±8.3%
86% of repeated outcome measures showed improvement. For example those aiming to lose weight achieved a mean 5.1±5.9% loss in 6 months
Onward referral from this service included: specialist smoking cessation; pain management; bariatric surgery; psychology; musculoskeletal physiotherapy; and exercise support (YMCA, exercise on referral, classes).
Conclusion: HIV patients with metabolic comorbidities referred to our service were surprisingly young, with the majority living with multiple comorbidities. Given the diversity of treatment modalities needed, we suggest that metabolic comorbidity management requires an individualised approach. Further research is required to explore both long-term outcomes such as CVD risk and patient experience.

P183

Interleukin-6 is associated with frailty in older adults with HIV

T Levett[1], J Wright[1] and J Rusted[2]
[1]Brighton and Sussex Medical School, UK, [2]University of Sussex, Brighton, UK

Introduction: HIV-positive cohorts are ageing globally. Issues of ageing are therefore gaining prominence. Frailty has been a focus for researchers as it represents a means of identifying those most vulnerable to negative ageing outcomes. Frailty is the end result of global physiological decline; a driver for which may be chronic inflammation. We aimed to assess the relationship between inflammatory biomarkers and frailty in older adults with HIV.
Method: A prospective observational study recruited 253 PLWH aged ≥50 (median 59.6) from October 2014–2015. Frailty was defined by modified frailty phenotype including five criteria: exhaustion, low physical activity, weight loss, weak grip and slow walk. Presence of ≥3 denoted frailty, 1-2 pre-frailty and 0 robust. Prefrail and robust individuals comprised a non-frail group (n=205). Blood samples from 252/253 (99.6%) were analysed using commercially available ELISA kits for interleukin-6 (IL-6), C-reactive peptide (CRP), tumour necrosis factor-alpha (TNF-α), interferon-gamma (IFN-γ) and D-Dimer.
Results: Median IL-6 levels were significantly higher in those with frailty compared to those without at 1.4 pg/ml vs. 0.9 pg/ml (p<0.001). CRP was higher amongst frail individuals but this failed to reach statistical significance (6.22 vs. 3.78 mg/ml, p=0.215). There were no differences for IFN-γ, TNF-α or D-dimer. In uni- and multivariable logistic regression, controlling for age, mood symptom score and number of comorbidities, IL-6 was the only biomarker associated with frailty when examined by quintile change. A linear relationship was demonstrated with a 53% increased likelihood of frailty for every quintile increase in IL-6 (aOR 1.53; 95% CI 1.07-2.19, p-value for trend 0.018). When examined across the three frailty categories the median values of both CRP and IL-6 increased with frailty state from robust to frail (p=0.012 and p<0.001 respectively). Again, no relationship was seen for IFN-γ, TNF-α or D-dimer.
Discussion: Only IL-6 emerged as the cytokine associated with frailty in this cohort. However, levels of IL-6 were lower than reported across the literature in both HIV and frail patients, which may reflect the younger cohort with good HIV control. This adds to the data supporting a role for IL-6 in frailty in the setting of HIV.

BHIVA Research Award Winner 2014, Tom Levett

P184

Investigation of significant lymphadenopathy in persons living with HIV: a review of practice in a large London HIV clinic

H Pintilie, S Ross, A Joynson, N Mackie and O Dosekun
Imperial College Healthcare NHS Trust, London, UK

Background: Lymphadenopathy in HIV positive patients is common and may indicate significant comorbidity including malignancy. We conducted a review of our pathways for investigating lymphadenopathy and time to obtain a diagnosis.
Methods: A list of 23 HIV positive patients who had undergone lymph node (LN) sampling at a large HIV centre in London between 2012 and 2017 was obtained from histopathology. Notes of 20 eligible patients were reviewed.
Results: The mean (range) duration of HIV infection at time of LN investigation was 11 (0–23) years; 3 patients presented within the first year of diagnosis. At the time of biopsy, mean CD4 was 358 (18–750) cells/μl; 9 (45%) patients were prescribed ART, 4 (20%) had a viral load (VL) <50 copies RNA/ml and in the remaining 16, the mean HIV VL was 645,272 copies RNA/ml. First presentation with symptoms warranting investigation was to the HIV service (11, 55%), A&E (6, 30%) or GP (3, 15%). 16 (80%) patients had palpable nodes and 11 (55%) had associated B symptoms. 11 (55%) were investigated as outpatients. The suspected diagnoses were predominantly lymphoma (18, 90%) or TB (15, 75%). The biopsied site was: cervical (10, 50%), inguinal (4, 20%), axillary (3, 15%), mediastinal (2, 10%) and pelvic (1, 5%). The first method of LN sampling requested was FNA (13, 65%), core biopsy (CB) (6, 30%) or excision biopsy (EB) (1, 5%) via referral to radiology (15, 75%), surgeons (3, 15%) or bronchoscopy (2, 10%). 13 (65%) had an FNA, 4 (20%) CB and 3 (15%) had both at initial sampling, within an average of 15 days (0–41) for outpatients and 6 days (0–35) for inpatients. Samples were sent to histology in all 19 successful biopsies, and 12 (63%) to microbiology. The initial investigation was conclusive in 12 (60%) of the patients; 6 had further investigation: 3 EB and 3 CB. Overall, a conclusive diagnosis was reached within a mean of 31 (1–128) days from biopsy request. Significant comorbidity was diagnosed in 7 (35%) cases: TB (3), lymphoma (3) or KS (1). 1 patient died prior to diagnosis.
Conclusions: Over a third of HIV positive patients with lymphadenopathy had a significant new diagnosis, yet referral pathways are varied and delays in obtaining a diagnosis occur. We recommend that HIV services develop pathways within their organisations to expedite investigation of HIV positive patients with lymphadenopathy where TB or malignancy are suspected, and consideration be given to include this recommendation in BHIVA Guidelines.

P185

Is there a difference in the frequency or severity of acute respiratory illness between HIV-positive and -negative individuals?

J Brown[1], E Pickett[2], C Smith[1], T Mahungu[2], D Lowe[2], S Madge[2], M Youle[2], M Sachikonye[3], M Johnson[2], J Hurst[1], T McHugh[1], I Abubakar[1] and M Lipman[1]
[1]University College London, London, UK, [2]Royal Free London NHS Trust, London, UK, [3]UK-CAB, HIV Treatment Advocates Network, London, UK

Background: A growing prevalence of chronic non-communicable respiratory illness is recognised among people living with HIV (PLWH). Mechanisms underlying this are unclear: one possible cause could be a greater incidence and/or severity of acute respiratory illness despite antiretroviral therapy. We therefore sought to evaluate whether the frequency or severity of acute respiratory illness differed by HIV status now that most PLWH are using antiretroviral therapy (ART).
Methods: In this prospective observational cohort study, PLWH and age, gender and tobacco smoking matched HIV negative participants were followed for 12 months with weekly documentation of any acute respiratory illness using standardised illness definitions. Severity of illness was assessed using a scale asking about 9 different symptoms and impacts, each scored out of 6 points, where a higher score corresponded to more severe symptoms.
Results: 136 HIV positive and 73 HIV negative participants were recruited and followed-up for 12 months; the median number of weeks for which data were reported by each participant was 44/52 weeks (85%). Participants had a mean (SD) age of 50 (11) and 52 (8) years respectively; all but one HIV positive participant was using ART and 87% had an HIV viral load <40 copies/ml, HIV positive participants had a median (IQR) CD4 count of 686 (458-848) cells/μl. The frequency of acute respiratory illness did not differ with HIV status (incidence rate ratio in PLWH 0.87, (95% CI 0.65-1.12, p=0.28). However, when Acute Respiratory Illnesses occurred, HIV positive participants reported more severe symptoms, with a median total symptom score at the time of reporting illness of 14 points (IQR 8-22.5) in HIV positive and 9 (4.25-14) in HIV negative participants (p<0.001).
Conclusions: In an HIV positive population using ART with good levels of virological suppression, the frequency of acute respiratory illness did not differ compared to HIV negative individuals, but PLWH reported more severe symptoms when these illnesses occurred. Further work should evaluate whether this reported difference in severity reflects underlying changes in immune response despite antiretroviral therapy.

BHIVA Research Award Winner 2015, James Brown

P186

Malignant melanoma in a cohort of HIV-positive individuals: significance of new strategies for HIV physicians

R Murphy, AD Pria, J Forni, P Holmes, C Brock, M Nelson and M Bower
National Centre for HIV Malignancy, Chelsea and Westminster Hospital, London, UK

Background: HIV associated melanoma is a non-AIDS-defining in people living with HIV (PLWH). Surgical excision remains standard treatment for early disease. In BRAF mutated melanoma, durable responses can be achieved with BRAF and MEK inhibitors. For BRAF wild type tumours, immunotherapy with immune checkpoint inhibitors targeting the PD-1/PDL-1 axis, is the mainstay of treatment. The immune check point inhibitors may have a dual action in PLWH: as an anticancer agent and potentially eliminating HIV viral reservoirs that persist despite ARVs.
Methods: A retrospective analysis was performed of prospectively collected data on all patients with melanoma referred to Chelsea and Westminster Hospital between 1986 and 2017. The management and outcome of PLWH treated with molecularly targeted therapy or immunotherapy was further studied.
Results: 26 PLWH with malignant melanoma were identified (all male, mean age 55 years). The median interval between HIV diagnosis and melanoma diagnosis was 4 years. At melanoma diagnosis the mean CD4 cell count was 468/mm^3, 77% were on ARVs and 65% had an undetectable HIV viral load. In this cohort, 73% were treated solely with surgical management. Two patients were identified with BRAF V600E mutations. One patient diagnosed with advanced melanoma in 2009, was treated initially with surgery and then received the anti-VEGF monoclonal antibody bevacizumab, followed by the oral BRAF inhibitor dabrafenib, then the oral MEK inhibitor trametinib (treatment ongoing). He was switched from a booster PI regimen to an integrase inhibitor as the metabolism of these oral –nibs is via CYP3A4. The other patient diagnosed with advanced melanoma in 2016 was initially treated with surgery followed by dual treatment with the anti-CTLA-4 antibody ipilimumab and the anti-PD-1 antibody nivolumab. He continues to receive maintenance nivolumab (treatment ongoing) and achieved a good partial response. His lymphocyte subsets, CD4 counts, CD4%, CD8 counts and CD8% were maintained throughout the immunotherapy and only grade 1 toxicities were experienced.
Conclusions: Surgical management of early stage melanoma provides effective control in PLWH. For advanced disease, HIV physicians need to be aware of drug interactions with oral targeted inhibitors, as well as the potential for HIV reservoir depletion by PD-1/PDL-1 inhibitors.

P187

Management of anaemia in patients living with HIV in a teaching hospital

S Wallis[1] and K Manavi[2]
[1]University of Birmingham, Birmingham, UK, [2]University Hospitals Birmingham, UK

Rationale: Anaemia is a prognostic factor amongst patients with HIV and may provide an indication to start treatment in resource-limited settings.

Investigating causes of anaemia amongst patients with fully suppressed HIV viral load is important as it can be a 'red flag' sign.
Aims: To determine whether cases of anaemia were appropriately investigated in patients with HIV in a teaching hospital.
Methods: We identified patients with anaemia between 1st January 2015 and 1st December 2016. Measurements of ferritin, folate, vitamin B12, thyroid-stimulating hormone (TSH), reticulocytes, haemoglobin electrophoresis, and glucose-6-phosphate dehydrogenase (G6PD) for each case were investigated.
Results: Of the 1699 patients with haemoglobin measurements during the study, 421 (24.78%) had anaemia, 9 patients (2%) were fully investigated, 210 patients (50%) partially investigated, and 202 patients (48%) not investigated at all. Of the 219 patients who were investigated, a cause was identified in 132 patients (60%). Iron deficiency anaemia (IDA) was the commonest cause (n=87). Colonoscopy was carried out in 4/12 men and in 0/4 post-menopausal women with IDA.
Conclusion: Initial data suggest high prevalence of anaemia in patients with HIV and poor adherence to departmental guidelines. Investigation of barriers to adhere to anaemia protocol would be beneficial.

P188

Managing chronic renal impairment with modern antiretroviral choices: a clinical audit

MJ Lee, A Ali, P Farrugia, A Duncan and N Larbalestier
Harrison Wing, Department of HIV Medicine, Guy's and St Thomas Hospital NHS Foundation Trust, London, UK

Background: With the increasing options for antiretrovirals (ARV), patients with HIV have more choices in renal disease. We audited the use of nephrotoxic ARVs in HIV-positive patients with chronic kidney disease stage 3 or worse (CKD3+) against NHS England guidelines, following the introduction of Tenofovir alafenamide (TAF) in our clinic in December 2016.
Methods: 338 patients were retrospectively audited, matched for age, gender and ethnicity to the cohort of patients attending a London HIV clinic. Those with CKD3+ (eGFR, adjusted for ethnicity, <60 ml/min/1.73 m^2 for more than three months) in the past year, had their demographics, biochemistry, ARV and medical histories reviewed.
Results: 59 (18%) patients had evidence of CKD3+. The majority were male (43/59, 72%). 27/59 (45.7%) were black ethnicity, and median age 58 years (IQR 50–65). Median length of HIV infection was 15 years (IQR 10–19). 27/59 (48%) were hypertensive, and 15/59 (25%) were diabetic.
17/59 (29%) patients were on a creatinine transport inhibitor with normal renal imaging and no renal co-morbidity and. In the remainder, documented reasons for chronically raised creatinine levels include drug-induced (9/42, 36%), use of creatine supplements (6/42, 14%), following acute kidney injury (2/49, 5%), HIV-associated nephropathy (5/49, 12%), renal tract malignancy (2/49, 5%), or other intrinsic renal disease (2/49, 5%). 16/59 (27%) had evidence of declining eGFR (>10% in prior 6 months).
12/59 (20%) remained on Tenofovir disoproxil fumarate (TDF) regimes and 5/59 (8%) remained on atazanavir despite CKD3+. Reasons for remaining on TDF include 'stable' renal function (4/12, 33%), patient choice (1/12, 8%), other NRTIs contraindicated (1/12, 8%), co-morbidities preventing ARV switch (2/12, 16%), or not documented (5/12, 42%). 2/12 (17%) had evidence of declining eGFR and 1/12 (8.3%) had a urinary protein-creatinine ratio >50. 13/59 (22%) had switched to alternative ARVs due to renal impairment in the past year, and 10/59 (17%) started on TAF.
Conclusion: 72.9% of CKD3+ patients were on appropriate ARVs. 17% of our CKD3+ cohort are on TAF-based ARV regimens. Due to the short interval since the introduction of TAF, some patients on 6 monthly visits may not had the opportunity to switch. Implementing strategies such as automatic referrals to multi-disciplinary ARV meetings to optimise ARV choices in patients with chronic renal disease and potentially nephrotoxic medications.

P189

Monitoring HIV-positive individuals: cost efficiencies in a troubled health economy

D Gamoudi, L Craxford and A Fox
Nottingham University Hospital NHS Trust, UK

Background: The 2016 BHIVA monitoring guidelines present a consensus on assessment and monitoring of HIV positive individuals. Our aim was to audit our adherence to this guidance particularly as regards CD4 monitoring and calculate any cost savings that may ensue with improved compliance.
Methods: A retrospective analysis of all HIV clinic attendees between February 2016 and February 2017 was undertaken and for each patient, the number of CD4 tests done in the preceding 12 months was ascertained. A further sub-study of 62 patients was undertaken to determine in greater depth investigation requests for viral loads (VL), full blood count (FBC), and renal profiles in the preceding 12 months by randomly reviewing 2 patients on each clinic list (to avoid clinician bias) in February 2017. Patients were excluded if they were in a clinical trial, pregnant or not fully suppressed. Case notes of sub-study patients were further reviewed if testing was done more frequently than expected, to establish whether any specific reasons were given.
Results: Table 1 shows the number of CD4 tests done per patient stratified by CD4 cell count in the preceding 12 months.
Table 1: Frequency of CD4 Testing in 842 virologically suppressed individuals:

Number of times CD4 tested	Number of patients tested occasions)		
	CD4>350 (on >2	CD4 200–350	CD4<200
0	–	4	–
1	–	45	6	39
2	9	308	31	268
3	7	290	31	252
4	5	127	19	103
5	4	37	2	31
6	2	21	2	17
7	–	6	2	4
8	2	3	–	1
9	–	1	1	–

Substudy of additional tests done in 62 patients

Type of test	Numbers of test	Patients
Viral load	3 or more	10 (16%)
FBC		11 (18%)
Renal		16 (26%)

Conclusion: BHIVA guidelines suggest that if the CD4 count is <200 cells/mm^3, testing every 3-6 months is recommended. If the CD4 count is 200–350 cells/mm^3, test annually. For CD4 counts >350 cells/mm^3 on 2 occasions >1 year apart, no further tests are required. 919 unjustified CD4 tests were done in this period equating to an excess expenditure of £20,540 from CD4 testing alone. This is more than the annual salary of a Band 3 HCA. In otherwise well, virologically suppressed patients, FBC and renal profile is recommended 6–12 monthly. Adhering to guidelines would save £550 in the 62 patients reviewed. If extrapolated to the entire cohort (1060 patients) there are further significant cost efficiencies to be made. In the current economic climate, HIV services may benefit greatly by implementing BHIVA monitoring standards. We have subsequently implemented a revised policy in our blood taking lists to help reduce unnecessary investigations.

P190

Muscle mitochondrial function and contemporary antiretroviral therapy

M Hunt, G Zhu, L Greaves and B Payne
Newcastle University, Newcastle upon Tyne, UK

Background: Despite ART, some people living with HIV (PLWH) exhibit reduced physical function or frailty. The underlying patho-mechanisms remain poorly understood. Maintenance of normal mitochondrial function in skeletal muscle is important in healthy ageing. We therefore investigated whether PLWH on contemporary ART have evidence of mitochondrial dysfunction.
Methods: Tibialis anterior biopsies were obtained from 37 PLWH: 13 ART naïve, and 24 ART treated. All treated subjects were currently exposed to contemporary NRTIs (TDF, ABC, 3TC, FTC), but 14 also had past exposure to older NRTIs known to be associated with mitochondrial DNA damage (AZT, d4T, ddI, ddC). Multiplex immunofluorescence was performed on 10 μm cryo-sections with automated quantification of the abundance of mitochondrial respiratory chain complexes within individual myofibres.
Results: Mean age was 48 years. A mean of 1229 myofibres were analysed per subject. Compared with ART naïve (group 1), subjects with past exposure to older NRTIs (group 3) showed a significantly higher proportion of myofibres deficient (z score<−3) in mitochondrial complex I (CI) and complex IV (CIV). Subjects with exposure to only contemporary ART (group 2) also showed a deficiency of CI but not CIV (see table). This pattern was also true of severely deficient fibres (z<−6). There were no associations between mitochondrial defects and age, current or nadir CD4 count, or duration of diagnosed HIV infection.

Mitochondrial defect	ART group	Mean $\log_{10}$ defect (SD)	p value
CI (z<−3)	1	−3.09 (1.31)	–
	2	−1.91 (1.46)	0.05
	3	−1.93 (0.74)	0.01
CI (z<−6)	1	−3.89 (0.39)	–
	2	−3.28 (0.96)	0.08
	3	−2.68 (0.92)	<0.0001
CIV (z<−3)	1	−3.24 (0.55)	–
	2	−3.13 (0.73)	NS
	3	−2.52 (0.64)	0.004
CIV (z<−6)	1	−4.00 (0.00)	–
	2	−3.83 (0.39)	NS
	3	−3.57 (0.68)	0.04

Conclusions: Automated multiplex immunofluorescence is a reliable tool for the objective quantification of mitochondrial defects in skeletal muscle of PLWH. As expected, mitochondrially deficient myofibres were most abundant in subjects with exposure to historical NRTIs. Surprisingly however, PLWH who only had exposure to contemporary ART showed intermediate levels of mitochondrial defects. Future studies should confirm these observations in larger numbers of subjects and explore their relevance for physical function. Furthermore, we show for the first time that affected myofibres are predominantly deficient in CI, which is of relevance for potential therapeutic interventions.

P191

No difference in the detection of pathogenic respiratory pathogens between HIV-positive individuals using ART and matched negative individuals

J Brown[1], S Rofael[1], E Pickett[2], C Smith[1], I Abubakar[1], T McHugh[1] and M Lipman[1]
[1]University College London, London, UK, [2]Royal Free London NHS Trust, London, UK

Background: Severe bacterial respiratory infections remain a significant cause of morbidity and mortality among people living with HIV (PLWH) despite the provision of antiretroviral therapy. A possible explanation is a greater frequency of bacterial colonisation by bacterial respiratory pathogens among PLWH.
Methods: As part of a cohort study evaluating acute respiratory illness among PLWH and a matched HIV negative population, we measured the prevalence of three common respiratory pathogens (*Streptococcus pneumoniae*, *Haemophilus influenzae* and *Moraxella catarrhalis*) in sputum samples obtained at baseline (when participants had no symptoms of acute respiratory illness). Culture-independent multiplex quantitative PCR assays were used to determine the prevalence and bacterial loads of these pathogens.
Results: 65 sputum samples from PLWH and 36 from HIV negative individuals were tested. Mean (SD) age of participants was 52 (9.5) years; PLWH had a median (IQR) CD4 count of 700 (471–848) cells/μl.
Overall, one or more of the three respiratory pathogens were detected in 71 (69%) of samples. There were no significant differences in the prevalence of detectable bacterial pathogens between HIV and negative participants with *Streptococcus pneumoniae* detected in 55% of samples from PLWH and 44% from HIV negative participants (p=0.29), *Haemophilus influenzae* from 41 and 33% respectively (p=0.31) and *Moraxella catarrhalis* from 8 and 14% respectively (p=0.89). The only significant difference in the quantitative bacterial load in those with bacteria detected was that the concentration of *Haemophilus influenzae* was lower in samples from HIV positive participants (median (IQR) count 8×10^2 (2×10^2–3×10^3) vs. 1×10^4 (2×10^3–7×10^4, p=0.01).
Conclusions: There was no evidence of a difference by HIV status in frequency of airway colonisation with the three commonest bacterial respiratory pathogens. Other causes of the higher incidence of bacterial pneumonia should be sought.

BHIVA Research Award Winner 2015, James Brown

P192

Non-viral liver disease burden in HIV mono-infected individuals: a prospective cohort study

L Vickers[1], D Katarey[1], B Parnell[1], Y Tan[1], JR Potts[1], S Verma[1] and Y Gilleece[2]
[1]Department of Gastroenterology and Hepatology, Brighton and Sussex University Hospitals NHS Trust, UK, [2]Department of HIV and Genitourinary Medicine, Brighton and Sussex University Hospitals NHS Trust, UK

Background: Non-viral liver disease in HIV mono-infected patients is a growing problem. Possible causes include alcohol, non-alcoholic fatty liver disease, and antiretroviral therapy (ART). We aimed to assess the prevalence and risk factors of clinically significant hepatic fibrosis (CSHF) in HIV mono-infected individuals with abnormal liver tests.
Methods: HIV mono-infected individuals with elevated transaminases for ≥6 months were identified from 2010 to 2016. The first 75 individuals were prospectively assessed in a service evaluation project though subsequently ethical approval was obtained. Each individual underwent transient elastography, Alcohol Use Disorders Identification Test (AUDIT) questionnaire and metabolic syndrome (MS) screening. Thresholds for CSHF and hepatic steatosis (HS) were liver stiffness measurement (LSM) ≥7.1 kPa and controlled attenuation parameter (CAP) ≥237 dB/m respectively.
Results: Of 425 eligible individuals, 109 have been recruited to date. The median age was 51 years (IQR 45–58), median time since HIV diagnosis 14 years (IQR 10–18), 101 patients (93%) were male and 107 (98%) had HIV RNA <40 c/ml. Overall, 61 (56.0%) had HS and 26 (24%) had CSHF. Of those with CSHF (n=26), 16 (61%) had HS and seven (27%) cirrhosis (LSM>11.5 kPa). Risk factors for CSHF are shown in Table 1.

Number of risk factors for CSHF	Risk factor categories	CSHF n=26
None		**7 (27%)**
One	Alcohol	5 (19%)
	MS	3 (12%)
	ART	1 (4%)
	Total	**9 (35%)**
Two	Alcohol and MS	3 (12%)
	Alcohol and ART	0 (0%)
	MS and ART	4 (15%)
	Total	**7 (27%)**
Three	Alcohol, MS and ART	**3 (12%)**

Table 1. Risk factors for CSHFIn those with and without CSHF, no differences were seen in age (51 vs. 51 years, p=0.967), BMI (27.1 vs. 26.1, p=0.286), HIV duration (14 vs. 16 years, p=0.141), diabetes mellitus prevalence (4.3% vs. 12.7%, p=0.263), or ART use (including didanosine, stavudine, nevirapine and efavirenz). Lower HDL cholesterol was the only independent predictor of CSHF (HR 0.190, 95% CI 0.042–0.865, p=0.032). Both FIB-4 and APRI poorly identified CSHF (AUROC 0.506 and 0.516 respectively).

Conclusion: Our preliminary results show a high non-viral liver disease burden in HIV mono-infected individuals with elevated transaminases, with about 1:4 having CSHF and >50% having HS. Alcohol and MS (alone or in combination) were risk factors for CSHF in 42% with lower HDL being the only independent predictor of CSHF. There were no identifiable risk factors for CSHF in 27% raising the intriguing possibility of a direct effect of the HIV infection.

P193

Perceptions of healthy diet and weight in people living with HIV

N Astill[1], C Bebbington[2] and C Tait[1]

[1]Leeds Teaching Hospitals Trust, UK, [2]Leeds Medical School, University of Leeds, Leeds, UK

Background: Cardiovascular disease (CVD) is an increasing burden in our ageing HIV cohort. Restricting dietary salt, saturated fat, cholesterol and alcohol intake, reducing weight and increasing physical activity are known to reduce the risk of CVD. The aim of this qualitative study was to explore healthy diet and weight from a patient perspective to improve service provision in the future. We looked at: (i) perceptions, (ii) barriers, (iii) support requirements.

Methods: 5 questions were devised that addressed the aim. Two approaches and subpopulations were used:

- Focus group at a migrant women's HIV support group.
- Semi-structured interviews with individuals attending HIV outpatient clinics.

Thematic analysis was performed on written notes.

Results: Overall, healthy diet and weight was discussed with 24 people living with HIV.

- 12 African women were seen at the migrant women's group.

1 Perceptions:
(a) *Importance*: the topic is of considerable interest, especially cultural aspects of diet
(b) Limited knowledge: many inaccurate and disparate beliefs about what constitutes a 'balanced diet' or 'healthy' foods and drinks
(c) Participants consider their diet healthy. Maize- or sorghum-based carbohydrates form the basis of most meals
(d) Unhealthy issues recognised: e.g. large portion sizes, limited willingness to exercise.
2 *Barriers*: a) poor commitment b) poor motivation
3 *Support*: education on diet and exercise: from professionals in the community or in clinic, or within community groups

5 women and 7 men were interviewed at HIV clinics. 4 black African, 6 white British, 1 Chinese, 1 south-east Asian.

1 Perceptions: a) importance, b) limited knowledge: none knew of the increased CVD risk associated with HIV-positive status
2 Barriers: a) increased costs and time associated with healthy eating, b) information from professionals often forgotten, c) non-British diets not discussed in healthy eating advice, d) when moving to the UK it is difficult to transition to a healthy British diet
3 Support: a) leaflets b) professional support and information on a regular basis

Conclusion: Healthy diet and weight are important to patients, but knowledge of what constitutes 'healthy' and its importance in the context of HIV is lacking. Patients would like education and information, and non-British diets must be considered within this. Staff should be aware of these perceptions and barriers when supporting patients.

P194

Perceptions of poor-quality healthcare by people living with HIV and diabetes

A Duncan[1], B Peters[2], C Rivas[3] and L Goff[2]

[1]Guy's and St Thomas' Hospital, London, UK, [2]King's College London, UK, [3]University College London, London, UK

Background: Diabetes is more common and more challenging to control in people living with HIV compared to the general population. Diabetes and HIV peer support groups have voiced potential challenges with their healthcare. This study was designed to explore the lived experiences and perceived health needs of people living with both diabetes and HIV.

Methods: Semi-structured interviews were conducted with adults living with both HIV and either type 1 or type 2 diabetes. Purposive sampling ensured a diversity of the UK's HIV positive population was represented. Recruitment was assisted by key community partners. The data were explored using thematic content analysis.

Results: The 22 interviewees from across the UK reported a diversity of physical and mental challenges associated with living with both HIV and diabetes:

- HIV stigma was reported to be prevalent among healthcare professionals. Participants described a diversity of examples of how stigma and fear of HIV disclosure adversely affected the quality of their care
- HIV stigma negatively impacted diabetes group education sessions
- Those with a body mass index in the normal range felt generic diabetes advice focusing on weight loss was highly inappropriate
- Participants attributed onset of diabetes to historical antiretroviral exposure
- Those who were diagnosed with HIV when already living with diabetes described a negative impact on diabetes control after initiating antiretrovirals
- A burden of fear of transmitting HIV through insulin sharps was described
- Poor communication between HIV, diabetes and primary care staff resulted in prescribing errors, repeated phlebotomy and unnecessary appointments.

Conclusion: Participants stated an urgent need for:

- Effective communication to be established between all healthcare providers; the current model of letter writing was felt to be ineffective
- Staff in HIV clinics to increase their knowledge of diabetes
- Diabetes providers and primary care staff to be trained in key aspects of HIV care and be challenged regarding HIV stigma.

There is an urgent need to improve care for people living with both HIV and diabetes. Improved knowledge, professionalism, roles and systems are all key to improving quality of care.

BHIVA Research Award Winner 2016, Alastair Duncan

P195

Phase 3, randomised, controlled trial of switching to fixed-dose bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) from boosted protease inhibitor-based regimens in virologically suppressed adults: a sub-analysis of week-48 lipid results

J Fox[1], FA Post[2], M Johnson[3], ES Daar[4], E DeJesus[5], Y-P Liu[6], H Graham[6], A Cheng[6], H Martin[6] and E Quirk[6]

[1]Guy's and St Thomas' NHS Foundation Trust, London, UK, [2]King's College Hospital NHS Foundation Trust, Kings College London, UK, [3]Royal Free London NHS Foundation Trust, London, UK, [4]Harbor-UCLA Medical Center, Torrance, CA, USA, [5]Orlando Immunology Center, Orlando, FL, USA, [6]Gilead Sciences Inc., Foster City, CA, USA

Background: Bictegravir (BIC, B), a potent integrase inhibitor with a high resistance barrier and low potential for drug-drug interactions, was coformulated with the nucleoside reverse transcriptase inhibitors (NRTI) emtricitabine/tenofovir alafenamide (F/TAF) as B/F/TAF and demonstrated high efficacy, no resistance, and good tolerability in Phase 3 registrational studies at week (W) 48. We explored the effect of simplification from bPI-based multi-tablet regimens to B/F/TAF single-tablet regimen on lipids.

Table. Median (IQR) changes in fasting lipids from baseline at W48

	BL bPI regimen containing F/TDF			BL bPI regimen containing ABC/3TC		
	Switch to B/F/TAF (n=245)	Maintain bPI (n=243)	p-value	Switch to B/F/TAF (n=45)	Maintain bPI (n=44)	p-value
TC (mmol/l)	0.1 (−0.34, 0.60)	0.10 (−31, 0.47)	0.53	−0.28 (−0.80, 0.05)	0.21 (−0.26, 0.70)	<0.001
Direct LDL (mmol/l)	0.05 (−0.34, 0.49)	0.08 (−0.36, 0.39)	0.47	−0.18 (−0.80, 0)	0.08 (−0.18, 0.54)	0.001
TG (mmol/l)	−0.03 (−0.42, 0.26)	0.02 (−0.33, 0.34)	0.12	−0.35 (−0.58, −0.01)	0.34 (−0.17, 0.73)	<0.001
HDL (mmol/l)	0.08 (−0.08, 0.21)	0.03 (−0.08, 0.18)	0.086	0.03 (−0.10, 0.13)	0.03 (−0.16, 0.16)	0.40
TC: HDL ratio	−0.1 (−0.6, 0.3)	0.0 (−0.5, 0.4)	0.21	−0.4 (−0.7, 0.0)	0.0 (−0.3, 0.4)	0.012

Methods: HIV-infected adults virologically suppressed on boosted atazanavir (ATV) or darunavir (DRV) + either abacavir/lamivudine (ABC/3TC) or F/tenofovir disoproxil fumarate (F/TDF) were randomised 1:1 to continue their bPI regimen or switch to B/F/TAF. Changes from baseline (BL) to W48 in fasting total cholesterol (TC), low-density lipoprotein (LDL), high-density lipoprotein (HDL), TC:HDL ratio, and triglycerides (TG) were summarised by BL NRTI. p-values were calculated using 2-sided Wilcoxon rank sum test (between arms).
Results: 577 participants were randomised and either switched to B/F/TAF (n=290; 85% F/TDF at BL) or continued bPI regimens (n=287). No change in lipids occurred following switching from FTC/TDF+bPI to B/F/TAF. However, TC, LDL, TG and TC:HDL ratio all significantly improved when switching from ABC/3TC+bPI to B/F/TAF (table).
Conclusion: Lipid changes when switching from bPI to B/F/TAF are dependent on the baseline NRTIs and confirm the more favourable lipid profile of BIC compared to bPIs and F/TAF compared to ABC/3TC.

P196

Planning care for an ageing HIV cohort

C Chandler[1], E Rutland[2] and J Zhou[1]
[1]Worthing Hospital, Worthing, UK, [2]St Richard's Hospital, Chichester, UK

Background: In 2016 38% of people living with HIV/AIDS (PLWHA) accessing care in the UK were ≥50 years of age. The prevalence of chronic medical conditions increases with age. Service providers and commissioners have to adapt to the health and social care needs associated with multi-morbidity in PLWHA.
Aim: To assess the demographics and the prevalence of comorbidities in HIV positive individuals accessing our services with a view to planning ongoing care of an ageing cohort.
Methods: Notes review of all PLWHA registered with two HIV Clinics in the same geographical area, aged ≥50 years.
Results: 148/389 (38%) of the cohort were aged ≥ 50 (50–85), predominantly male 111 (75%). Source of infection; men who have sex with men (MSM) 51%, heterosexual 47%, MSM who inject drugs 1% and injecting drug use 1%. Ethnicity; White British 76%, African 20%, other 4%. 84 (57%) were employed / self-employed. Mean CD4 607. Virological outcomes were good (2/148 persistent viraemia in last year). 116 (78%) had one or more comorbidities (1–12), 61 (52%) of these are exclusively followed up in primary care. Long term concomitant medications were taken by 106 (72%), average 4 medications (1–14). 18 (12%) had at least one admission to secondary care in the preceding year. 10 year CVD risk (Qrisk2): <10% in 58, 10–19% in 47 and ≥20% in 24, previous cardiovascular event in 14 (5 missing data). 4 had osteoporosis and a further 3 had 10 year risk of major osteoporotic fracture >10%. 21 had eGFR ≤60. Detailed discussion on antiretroviral medications in relation to Qrisk2, FRAX score, renal function and comorbidities will be presented. Primary care records were not reviewed therefore some patient data may be incomplete.
Discussion: PLWHA in this cohort have multiple comorbidities, with half being managed solely by GPs. Local service development should include improving the existing model of a minimum annual GP letter by establishing local enhanced services benchmarking on other established services. Service specification would include regular communication of concurrent medical issues to the HIV service. Bespoke educational sessions for primary care should focus on HIV & ageing, frailty and drug interactions. This review also highlighted patients with multi-morbidities and polypharmacy who would benefit from individualised care and joint working between HIV physicians and other specialists e.g. elderly care and metabolic medicine.

P197

Prevalence of comorbidities in women living with HIV 50 years and over in a South London Clinic

C Russell, N Collins, T Moyo and E Mabonga
Lewisham and Greenwich, NHS Trust, London, UK

Background: There has been an increase in the number of people 50 years and over living with HIV due to cART which has transformed HIV into a chronic manageable condition. As the cohort ages so does the complexity of patients due to an increasing number of co-morbidities.
Aim: To assess the prevalence of specific non-infectious co-morbidities (hypertension, dyslipidaemia, Type 2 diabetes, COPD, bone disease and cardiovascular disease) in women living with HIV 50 years and over.
Methods: Retrospective cross-note review in all women who attended the clinic between 01.06.2016 to 08.06.2017 and were 50 years and older. Ethno-demographic, viro-immunological and therapeutic data in addition to details of comorbidities and polypharmacy (5 or more medications excluding cART) were obtained. Data was analysed with SPSS v22.
Results: 140 women 50 years and over attended during the defined period. We have data on 58 patients. 79% were of black ethnicity; 94% heterosexual transmission was the mode of HIV acquisition; with a median age of 59 years. The median duration of HIV infection was 10.5 years (IQR 7–14 years). The median CD4 at diagnosis was 156 cells/μl with a median CD4:CD8 ratio 0.2. The median current CD4 599 cells/μl with a median CD4:CD8 ratio of 0.8. 95% of women had an HIV RNA <40 copies/ml. 43 (74%) women had a co-morbid condition (Table 1), with 21 (48%) having more than one condition. 16 (28%) had more than 5 medications prescribed excluding their antiretrovirals. Of the 54 women that had recent BMI data, 30 (55%) would be classed as obese.

Co-morbidity	Frequency (%)
Hypertension	30 (70)
Dyslipidaemia	15 (35)
Type 2 diabetes	14 (33)
COPD	6 (14)
Bone disease	4 (9)
Cardiovascular disease	2 (5)

Conclusion: There was a high prevalence of comorbidities in this population with hypertension being the most common condition. Just under a third of patients are on more than 5 co-medications so drug-drug interactions need to be considered in this cohort. Obesity represents a highly prevalent condition in this patient group and an important target for intervention.

P198

Profile of mobility experienced by people living with HIV in an inpatient rehabilitation setting

B George
Mildmay Hospital, London, UK

Background: People living with HIV (PLHIV) can experience physical, cognitive and psychological co-morbidities associated with HIV disease and thus require specialist neuro-cognitive rehabilitation. Amongst this cohort it is important to deliver physiotherapy interventions that maximise function and promote effective participation in everyday living. The UK Functional Independence Measure and Functional Assessment Measure (FIMFAM), a 30 item global measure of disability, is captured during regular clinical practice to quantify service outcomes.
Methods: A retrospective analysis was conducted of admission and discharge FIMFAM scores of patients admitted from 2013 to 2016. Exclusion criteria included clients readmitted to acute care, death and incomplete data. Motor FIM scores were extracted from FIMFAM and evaluated between four subgroups of assistance required: Independent (range 42–49), Minimal (range 29–41), Moderate (range 15–28) and Maximum (range 7–14). Demographic data including ethnicity and primary diagnosis were collected. Comparisons of number, age, and median change in score from admission to discharge were made.
Results: Scores were collected from 91 patients with a mean age of 52 years, 67% male and mixed ethnicity; primarily Black African (44%) and Caucasian (40%). The most common primary diagnoses were those of the central nervous system (74%) including *HIV Encephalopathy* (35%), *Progressive Multifocal Leukencephalopathy* (11%) and *Cerebral Toxoplasmosis* (9%). Following this, respiratory illnesses (11%) were reported. 59% of patients required staff assistance on admission, with a trend of increasing mean age with greater requirement for assistance: Independent (41%, 51 years), Minimal (24%, 48 years), Moderate (22%, 54 years), Maximum (14%, 56 years). On discharge 67% of patients were independent with significant differences found between admission and discharge Motor FIM scores in all groups ($p < 0.001$): Independent 2.0 (range 0–6), Minimal 7.0 (range 0–15), Moderate 15.5 (range 1–31) and Maximal 6.0 (range 0–26).
Conclusion: PLHIV are presenting to rehabilitation with a broad range of primary diagnoses leading to mobility restrictions. All groups demonstrated significant change in function, which has lead to increasing independence on discharge. Physiotherapy contributes to improved functional outcomes in PLHIV and is a vital component of assessment and rehabilitation.

P199

Renal and bone health monitoring, chronic renal disease, and tenofovir disoproxil prescribing in older women living with HIV (WLWH) attending a community HIV clinic

A Cheng, M Curtiss, K Rabjohns and E Dwyer
Berkshire Healthcare NHS Foundation Trust, UK

Background: The demographics of people living with HIV are changing. Public Health England (PHE) data shows 40% of WLWH are now aged ≥45, however there is a paucity of research in this cohort. Many have longstanding HIV diagnoses and long term exposure to antiretrovirals (ARVs). These factors may increase the incidence of age-related co-morbidities, particularly tenofovir disoproxil (TDF), which has a well-documented impact on renal and bone health. WLWH aged ≥45 now make up 50% of female attendees at our clinic. We therefore audited in this cohort: (1) Monitoring of renal function using Creatinine/eGFR/uPCR & bone health via FRAX fragility assessment; (2) Incidence of chronic kidney disease (CKD) vs. age/gender matched control group; (3) TDF use.
Method: Retrospective records review of WLWH aged ≥45 attending in 2017
Results:

- 94/125 (75%) females ≥45 years analysed. 75% (70/94) Black African. Median age=52. Median years since HIV diagnosis=13. 100% on ARVs. 97% (91/94) viral load <40. 66% (62/94) currently prescribed TDF.
- 100% had Creatinine, UPCR and eGFR measured in 2017. FRAX score was calculated in 12% (11/94), 6/11 taking TDF
- 10/94 patients had CKD 3–5. 3/10 were on TDF. Rationale for remaining on TDF was documented in 2/3. 24% (15/62) on TDF had proteinuria (uPCR>15). 1/62 had uPCR >50. 38% (12/32) not on TDF had proteinuria.

Table comparing patients with CKD 3-5 (eGFR<60 ml/min/1.73 m^2) to age/gender matched controls (PHE data)

Age	% CKD 3–5	% CKD 3–5 PHE controls
45–54	7% (4/54)	2.5%
55–64	17% (4/24)	6.4%
65–74	11% (2/14)	16%
75+	0% (0/2)	36%

Conclusion:

- The number of older WLWH is increasing. Our cohort had a median of 13 years since diagnosis, indicating prolonged ARV exposure.
- Renal function, but not bone health, was well-monitored. A more holistic approach to monitoring metabolic markers is needed.
- Our cohort had ≈3× more CKD vs. controls at ages 45–64. This finding is limited by small sample size.
- Proteinuria and CKD were more common in non TDF users. This may represent proactive TDF avoidance. A review of individuals' clinical notes is needed to confirm this.
- 2/3 patients with CKD remained on TDF due to documented patient preference and intolerance to substituted agents.
- TDF use is likely to decrease as agents with better metabolic profiles and research on nucleotide sparing/lite regimens emerges. This will aid clinicians to have proactive discussions, and patients to make informed choices regarding future ARV switch options.

P200

Switching to tenofovir alafenamide (TAF): why and when?

S Munatsi, A Darley and M Pammi
Nottingham University Hospitals, Nottingham, UK

Tenofovir Alafenamide (TAF) is one of the more recent NRTI (Nucleoside Reverse Transcriptase Inhibitor) that is available and a preferred option according to the BHIVA Guidelines for Treatment of HIV Positive Adults with Antiretroviral Therapy. However, prescribing TAF is subject to NHSE commissioning guidelines and MDT approval to manage the growing HIV treatment costs. In UK, the HIV cohort is expanding with the proportion of people newly diagnosed with HIV over 50 years increasing from 9% in 2006 to 17% in 2016. There is a growing HIV cohort who will benefit from TAF due to co-morbidities including renal and bone concerns.
Aim: To review all patients who were switched to a TAF containing regimen, study the reasons for switch and also audit the MDT approval at the time of switch.
Methods: Casenotes of all patients who were switched to a TAF containing regimen since January 2016 to date were included in the analysis.
Results: 44 patients were switched to a TAF containing regimen between January 2016 and December 2017. 40 patients were switched in-house while 4 had transferred in from elsewhere. 97.5% of switches had MDT approval.100% had a documented reason for the switch. 72.5% were switched due to renal reasons and 20% were switched due to bone reasons. 2.5% had both renal and bone issues and 5% were switched due to the small pill size, which does not comply with the commissioning guidance. Of the bone related switches 33.3% had confirmed osteoporosis, 11.1% had osteopenia, 22.2% had high FRAX scores. Of the renal related switches (72.5%); 49% were stable but had a history of previous renal issues with Tenofovir such as Fanconis and Renal Tubular Acidosis. Others included patients with chronic kidney disease and concurrent nephrotoxic medication, therefore TAF the preferred option. 58% had a decline in renal function prompting the switch. The average creatinine clearance and eGFR at the time of switch to TAF were 72.6 and 58.4 ml/min respectively. The average drop in eGFR at baseline to eGFR at the time of switch was 15.8 ml/min. 100% of the patients who were switched >3 months ago have improved/stable GFR following switch.
Conclusion: TAF has clear benefits especially in patients who have multiple co-morbidities. In our cohort of 1000 patients, one -third are now aged 50 years and above. With increasing renal and bone co-morbidities along with cardiovascular risk, more patients may benefit from this drug than the switches we have seen in our cohort of patients.

P201

TAF uncovered: examining prescribing practice of tenofovir alafenamide (TAF) and subsequent renal outcomes

N Talwar, V Tittle, E Peter, I Ugbekile and M Rayment
Chelsea and Westminster Hospitals, London, UK

Background: NHS England state that the TAF commissioning policy is designed to 'enable access to TAF where its use is supported by clinical evidence and it is demonstrated to represent good value.' This evaluation reviews the use of TAF within a large London cohort.
Methods: The database was interrogated to identify all individuals prescribed a TAF-based combination with a full year of follow up. Data collected: demographics, indication for TAF prescription, renal function at baseline and 12 months, measured by serum creatinine/chronic kidney disease stage (CKD). Exclusion criteria included private/temporary/study patients and those with missing data.
Results: A total of 100 patients met the inclusion criteria: 92% male, 61% white, median age 57 (range 24–81 years old). The indication for TAF was renal in 45%, bone in 49%, and a combination in the remainder. In the renal cohort, the mean creatinine at baseline was 111 μmol/l, with a range of 64–195 μmol/l. The mean difference in creatinine from baseline to 12 months post-TAF switch was −0.3 μmol/l, with a range of −66 to +32 μmol/l. If expressed as CKD stage, 10% moved to a worse category, 10% to a better category, and 80% remained the same at 12 months post-TAF switch. Urinary abnormalities were poorly documented. The majority (75%) received TAF as Descovy.
Discussion: Indications for TAF were largely in line with NHS England guidance, falling under renal and bone domains, with an unexpectedly large referral rate for bone disease. Of renal referrals, these data fail to demonstrate improvements in creatinine when considered as an aggregate population. However, the range of creatinine changes is broad, suggesting for some patients TAF switch was therapeutic. These data were insufficient to explore predictors (such as age, co-morbidities and co-medications) associated with changes in renal function following TAF prescription.

P202

The use of alternative renal monitoring in people living with HIV (PLWH) over the age of 50 to predict renal disease

T Rashid[1], K Perinpathasan[2], C Casley[1], R Jones[1], J Levy[1], B Hendry[3] and M Boffito[1]
[1]Chelsea and Westminster NHS Foundation Trust, London, UK, [2]Imperial College London, UK, [3]King's College London, UK

Background: Chronic kidney disease reduces overall patient survival compared to healthy individuals. Morbidity and mortality is increased due to a greater incidence of drug toxicity, multimorbidity secondary to renal complications and premature cardiovascular death. Renal disease in people living with HIV (PLWH) occurs at an earlier age than age-matched controls secondary to classical risk factors, as well as HIV specific factors ranging from viraemia itself to anti-retroviral renal toxicity. We reviewed two well-known methods of estimating renal function and two new methods of calculating risk of renal disease in PLWH over the age of 50, to assess whether alternative methods can predict progression to chronic kidney disease (CKD) alongside standard renal estimation methods.
Methods: Prospective data were collected from 117 patients attending the dedicated 'Over 50s Clinic' in a large urban centre over a 24 month period. Data included age, sex, ethnicity, antiretroviral regimen, blood pressure, nadir CD4 and QRISK2 scores. Renal calculators used were the Modification of Diet in Renal Disease (MDRD) estimated GFR (eGFR), CKD Epi eGFR, University of California, San Francisco calculator for risk of chronic kidney disease (UCSF), Copenhagen University's calculator (CHIP/D.A.D). The UCSF authors view a 10% risk in 5 years as high and we have used this as our cut off. The CHIP/D.A.D score can be divided into low, medium or high risk depending on the percentage score.
Results: Demographics: Mean age was 57; median 55 (range 50–75). The majority (82%; 96/117) identified as white and 94% (110/117) were men.
CKD Epi eGFR and MDRD eGFR had similar numbers for those with normal renal function (76.9%, 76.1% respectively). CKD stage two was defined as an eGFR 60–90 together with other evidence of chronic kidney damage. We used the presence of proteinuria. The figures were similar.
All patients using the CHIP/D.A.D calculator were identified as having either medium or high risk to progression of CKD in five years. Ten patients were identified as high risk. Of these, 60% (6/10) were prescribed a TDF based regimen with 20% (2/10) prescribed TAF.
Using the UCSF calculator, 32 individuals were shown to have a five year renal risk of more than 10%. Of these, 50% (16/32) were on a TDF based regimen and 18.8% (6/32) were on a TAF containing regimen.
Figures were similar for the CHIP/D.A.D and UCSF calculators using each of the two renal estimators, with UCSF picking up higher risk in the lower eGFR groups than CHIP/D.A.D.
Conclusion: The new renal risk calculators require more investigation, to be useful adjuncts for assessing renal risk in the ageing HIV population. Using these calculators may be useful in ARV naïve patients to identify renal risk prior to long term ARV use.

P203

The VACS Index in relation to frailty and ageing syndromes in older adults with HIV

T Levett[1], J Rusted[2] and J Wright[1]
[1]Brighton and Sussex Medical School, UK, [2]University of Sussex, Brighton, UK

Introduction: As we establish the post-viral suppression era, people living with HIV (PLHIV) will face new challenges as they age with chronic infection. Cohort heterogeneity regarding ageing trajectories may prompt us to identify those at greatest risk of negative ageing outcomes. One method is frailty assessment, drawn from elderly medicine; an alternative, from HIV research, is the Veterans Aging Cohort Study Index (VACSI). We aimed to evaluate the relationship between VACSI, frailty and issues of ageing, including mobility and functional status, in older PLHIV.
Method: A prospective observational study recruited 253 PLWH aged ≥50 (median age 59.6) from October 2014–2015. Frailty was defined by modified frailty phenotype including five criteria: exhaustion, low physical activity, weight loss, weak grip and slow walk. Presence of ≥3 denoted frailty, 1–2 prefrailty and 0 robust. The VACSI is calculated using age and routinely collected laboratory results: CD4, HIV viral load, haemoglobin, platelets, creatinine, liver transaminases and hepatitis C status. At baseline. participants completed a comprehensive assessment, including falls and functional status.
Results: 48/253 (19%) were frail, 111 pre-frail (43.9%) and 94 (37.1%) robust. Overall median VACSI score was 22 (IQR 18–33). Frail individuals had a significantly higher VACSI at 25.5 (IQR 18–38) compared to 18 (IQR 18–28) without (p=0.043). Across three frailty groups of robust, prefrail and frail, we saw respective increase in median VACSI of 18 (IQR 12–27), 22 (18–33) and 25.5 (18–38), but this did not reach significance (p=0.061). In univariate analysis, a one-point increase in VACSI was associated with 3% increase in odds of frailty (OR 1.03 95% CI 1.01–1.06, p=0.013). However, after controlling for age, sex, number of comorbidities and mood symptom score, this was not retained (aOR 1.03; 95% CI 0.98–1.06). Of age-related problems at baseline, those with self-reported mobility problems had higher median VACSI compared to those without (24 vs. 18, p=0.02) but there was no relationship with disability, falls or hospital admission in the last year.
Discussion: VACSI was higher in frail individuals but did not predict frailty in multivariable analysis. Higher VACSI was seen in those with mobility problems but not other traditonal ageing syndromes. However, given its derivation from routine data, it may still be more applicable long term and warrants further evaluation in larger, longitudinal studies.

BHIVA Research Award Winner 2014, Tom Levett

P204

Transient elastography to screen for hepatic fibrosis in a HIV-infected cohort

L Bell, S Megarity, M McIntyre, J Cash, N McDougall and M Hunter
Royal Victoria Hospital, Belfast, UK

Background: National cohort studies repeatedly describe that liver-related deaths account for 10–15% of mortality in patients with HIV-infection. Transient elastography (TE) is a non-invasive test for liver fibrosis which is well-validated in chronic hepatitis C (HCV) and non-alcoholic fatty liver disease (NAFLD) cohorts. Recently, liver fibrosis tests (including TE) were applied to 402 HIV mono-infected patients, and TE was found to be a valid

test. In this study, we piloted real-world use of TE to assess feasibility and acceptability.
Methods: A retrospective chart review was carried out. 200 HIV-infected patients were randomly selected from a cohort of 1000 patients. Those patients who were not engaged in care (i.e. less than 2 out-patient appointments in the past 12 months) or not on anti-retroviral medications (ARVs) were excluded. Demographics, lifestyle factors and laboratory parameters were recorded. Patients with raised transaminases within the past year were selected at random and offered screening for hepatic fibrosis using TE.
Results: Of the 161 HIV-infected patients on ARVs, 49 (30%) had a raised AST or ALT within the preceding year. 12 patients were found to have an AST-to-platelet ratio index (APRI) of greater than 0.7. Of these the causes identified included: 4 hepatitis C co-infected, 1 hepatitis B co-infected, 2 alcohol related, 1 Budd Chiari, 2 medication related and 2 not established. 9 (6%) of the 161 patients were Hepatitis B co-infected and 6 (4%) were hepatitis C co-infected.
Of 161 patients, 9 had previously attended for TE, 6 of whom were hepatitis C co-infected and 3 hepatitis B co-infected. 12 HIV-monoinfected patients with raised transaminases were selected and offered TE. 6 did not attend for screening. The mean TE score was 5.3 kPA with 1 out of 6 (16.7%) patients having a reading greater than 7.
Conclusion: There is a small but significant burden of liver disease in patients on ARVs. 50% of our small sample did not attend for a separate TE appointment, A larger study is required to determine the rate of hepatic fibrosis in our HIV mono-infected patients.

Education, training and professional development

P205

'Putting Caring Conversations into Practice': a digital person-centred care learning resource for staff working in GP practices, utilising HIV case studies

A Solon
Waverley Care, Edinburgh, UK

Background: 'Putting Caring Conversations into Practice' is a free digital learning resource for staff working in GP practices across Scotland. It is designed to support health professionals and non-medical staff in their use of person-centred conversations to improve both their experiences and those of people with long-term conditions.
The resource developed out of Waverley Care's work to challenge HIV stigma, and has been funded by the Scottish Government to contribute towards outcomes in its Sexual Health and Blood Borne Virus Framework, specifically related to challenging stigma among professionals.
To inform the resource, research conducted by Waverley Care in 2014 explored the healthcare experiences of people living with HIV. We found that while 81% of respondents could identify positive experiences of engaging with healthcare professionals, 32% could also point to examples where they felt stigmatised as a result of their HIV status. A majority of these positive and negative interactions were experienced in GP settings.
Methods: Inspired by evidence based research from the University of West of Scotland, the resource delves into what makes a conversation caring and looks at how healthcare staff can use these 'caring' principals. Through health professionals' use of the 'seven Cs' of Caring Conversations - being courageous, connecting emotionally, being curious, considering other perspectives, collaborating, compromising and, celebrating - patients are supported to identify what matters to them in life, and in health, and the steps they can take to get there.
Using real-life case studies and a mix of film and interactive content, the resource uses the experiences of people living with HIV to help to bring learning to life, inspire best practice and support self-management.
Results: To date, the resource has been sent to every primary care practice in Scotland. Waverley Care has also actively promoted its use through a variety of targeted conferences, events and relevant sub-groups. Since its launch in August 2016, there have been 557 unique users who have completed the training. An external evaluation conducted in January 2017 resulted in Caring Conversations achieving an overall rating of 4.2 out of 5.
Conclusions: Evaluation has concluded that the resource is effective in engaging with GP practice staff and helping them to implement Caring Conversations and person-centred care, whilst simultaneously increasing knowledge around HIV.

P206

'Try a little tenderness': the views of staff following the tendering of a city-centre sexual health service

C Wood and O McQuillan
Manchester University NHS Foundation Trust, UK

Background: Local authorities assumed responsibility for public health services from April 2013, following changes introduced in The Health and Social Care Act 2012. Since then, the majority of sexual health services have been put out to tender, which represents a major change for sexual health clinics and the staff working within them.
We wanted to further explore the impact this process had on staff in our service, which we managed to retain after success in a tendering process in 2016, focussing on their thoughts, opinions and attitudes towards the tender process – for them personally, for the patients and for the service overall.
Methods: We conducted an anonymised online survey sent out to all staff working within the newly commissioned and integrated sexual health service. We asked a series of questions using a 1–10 scale (1=strongly disagree, 10=strongly agree), as well as open questions allowing participants to expand on their answers.
Results: The survey was completed by 85 respondents; 30 nurses, 21 administrative staff, 21 doctors, 11 healthcare assistants, 2 health advisors, and 9 chose not divulge their role. Forty one members of staff worked at the 'hub' site at the time of tender, with the rest, 44 (52%), working at the 'spoke' sites.
We have deemed strong positive or negative responses as scores ≤4 and ≥7

	Score ≤4	Score ≥7
I understand why we were put out for tender	8 (9%)	68 (80%)
I felt positive about what it meant for my role	43 (52%)	18 (21%)
The process had a positive effect on my physical & mental wellbeing	49 (59%)	7 (8%)
Standard of care for patients has improved	45 (57%)	17 (20%)
The overall outcome of the tendering process for the service was positive	38 (45%)	27 (32%)
The following are from a section directed at staff directly involved in the tender bid, although all staff could answer if they wished to (n=variable):		
It made it easier to recruit & retain staff (n=48)	36 (75%)	4 (12%)
It had a positive effect on staff morale in the service (n=60)	53 (90%)	3 (5%)

Conclusion: The tendering process will continue and we ourselves may go through it again very soon. We hope to use the results of this survey to disseminate to staff, trusts and commissioners on a regional and national basis to ensure the predominantly negative impact of tendering on staff is acknowledged, in the hope that we can try to militate against this in the future.

P207

Age-related inconsistencies in the quality of pregnancy related HSV-2 counselling between UK sexual health clinicians

A Puzdrowski[1], C Towner[1], R Cannon[1], E Clarke[2], S Barton[3], C Evans[3], R Patel[4] and E Foley[4]
[1]University of Southampton, UK, [2]Royal Liverpool and Broadgreen University Hospitals NHS Trust, UK, [3]Chelsea and Westminster Hospital, London, UK, [4]Royal South Hants Hospital, Southampton, UK

Background: All patients with newly-diagnosed Herpes Simplex Virus type 2 (HSV-2) should be counselled by clinicians on how to manage their infection. In particular, the implications of HSV-2 on current or future pregnancies should be discussed. Although the risk of neonatal herpes in this group is small, many women will seek advice from unreliable sources during pregnancy,

increasing their anxiety and the demand for unevidenced interventions. The 2014 BASHH guideline advises that pregnancy related counselling be offered to all patients at diagnosis.
Methods: 14 UK GUM clinics were visited by three female mystery shoppers posing as a patient with newly-diagnosed HSV-2 who is seeking advice. Transcripts of each consultation were made and the advice given relating to pregnancy was graded by a panel of HSV Special Interest Group clinicians as Acceptable, Cause for Concern, or Unacceptable.
Results: Mystery Shoppers 1 and 2 (age 20) had to prompt clinicians to discuss pregnancy on 7 out of 9 consultations (77.8%). Mystery Shopper 3 (age 27) had to prompt on 1 occasion out of 5 (20%). Pearson's Chi Square shows this is a significant difference (p=0.036331).
The pregnancy advice given to Mystery Shoppers 1 and 2 was graded Acceptable 58.8% of the time; pregnancy advice given to Mystery Shopper 3 was graded Acceptable 86.6% of the time. This reveals a significant difference between the quality of advice given to patients of different ages (p=0.000011).
Conclusion: There are age-related differences in the quality of advice offered to patients with HSV-2. It appears that younger patients are not being counselled effectively on pregnancy at presentation, and may not receive this advice unless they seek specific follow-up. Clinicians reviewing patients with genital herpes need to review their own consultation styles and offer additional counselling to those that may have been diagnosed previously at a young age.

P208

Are we keeping GPs in the loop? A retrospective audit of communication between the GUIDE clinic and local primary care centres

A Crowe[1], S Spencer[2], P White[1] and D Rowley[1]
[1]St James's University Hospital, Dublin, Ireland, [2]Coombe Family Practice, Dublin, Ireland

Background: The GUIDE clinic (GenitoUrinary and Infectious Diseases) is the largest HIV clinic in Ireland with a cohort of approximately 3000 HIV positive patients. Correspondence letters to Primary Care physicians from the HIV clinic are varied in terms of frequency and content. As this cohort of patients become older, they are more likely to develop medical comorbidities. This infers the need for greater communication between all healthcare providers. Findings from the BHIVA 'Shared Care Project' 2017 suggest that good correspondence between Primary and Secondary care is crucial to promote high quality care. Furthermore, BHIVA standards of care suggest 'at least annual communication with GPs about the care of people with HIV'.
A pilot study of HIV-positive patients who attend both a university teaching General Practice (GP) and the GUIDE clinic revealed that only 60% had a clinic letter in the previous 12 months. It was estimated that 69% of this cohort were exposed to potential drug-drug interactions (DDIs).
We aimed to audit the correspondence between our own GUIDE clinic and local Primary Care Centres.
Methods: We performed a retrospective audit of 100 HIV positive patients attending the GUIDE clinic between September and October 2017 using the Electronic Patient Records system (EPR).
Results: Of 100 patients audited, 77 were male and 23 female. Mean age was 39. Nationality was varied with the majority being Irish (63 patients).
We recorded that 64/100 patients had a GP listed on EPR. Of these 64 patients, 39 (60%) had a clinic letter sent to their GP in the previous 12 months.
Of the 39 patients with letters sent to their GP in the last year, only 27 (69%) had the exact Highly active anti-retroviral therapy (HAART) regimen named.
Conclusion: The findings from this audit show that correspondence between our GUIDE clinic and community GPs does not meet recommended standards of care. The implications of this gap in communication are significant. This leaves GP's unaware of a patients' immune status and HAART therapy. It also creates the possibility of potentially hazardous Drug-Drug Interactions when co-prescribing with unknown HAART.
We propose to set up an alert window on the EPR system at time of clinic review which reminds the physician to check if an up to date letter has been sent in the previous year and if the exact ARV regimen is listed. We aim to re-audit our results 3 months after initiation of same.

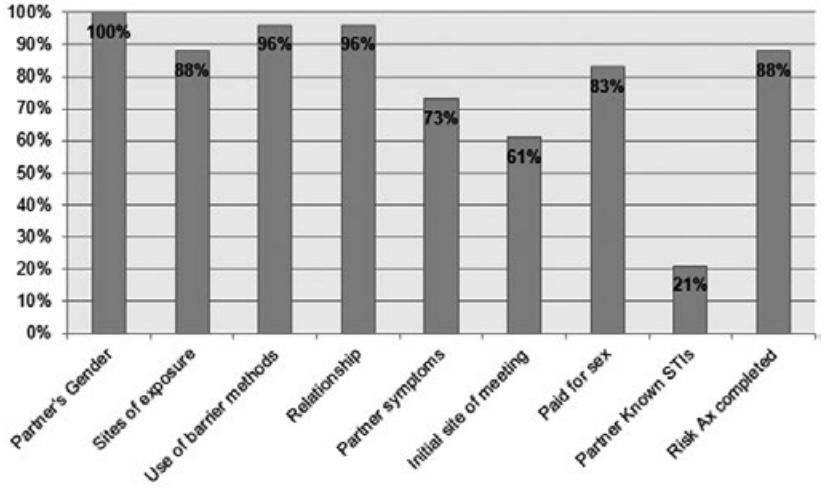
P209

Clinical audit investigating the sexual history standards of clinicians at Royal South Hants Hospital in Southampton

S Saiyed[1], D Payne[1], J Rees[2], E Foley[2] and R Patel[2]
[1]University of Southampton, UK, [2]Solent NHS Trust, Southampton, UK

Background: In 2013, the British Association for Sexual Health and HIV (BASHH) published guidance on the minimum information requirements for a routine sexual history consultation. It is recommended that all patients should be asked the following: gender of partner, sites of exposure, use of barrier methods, relationship to partner and symptoms or high-risk behaviour of this partner. At a minimum, the number of partners within the past 3 months should be recorded, with specific details for a minimum of the last 2 partners if these are within the past 3 months. Following these guidelines allows action in response to incubation periods and contact tracing of infection.
Methods: Patient notes from a single sexual health clinic within Solent NHS Trust were audited over a 3-week period in the autumn of 2017. In addition, 50 patients with recent new diagnoses of Chlamydia, Gonorrhoea or Syphilis were included who were over the age of 16 and sexually active within the past 6 months. Any patients with previously diagnosed STI which has not been adequately treated and those living outside of Solent NHS trust catchment area for the 6 months prior to diagnosis were excluded from this audit.
Figure. Percentage adherence to the 2013 BASHH standards for sexual history taking

Results: Most clinicians followed the majority of the BASHH guidelines but failed to conduct a thorough risk assessment of partner(s). The best adhered criteria were documenting the number of partners and their genders whilst the worst adhered criterion was asking the patient about their partner's previous STIs.



Recommendation after initial cycle:
- Development of a Patient information collection tool.
- Publicise the BASHH guidelines in a non-intrusive way through the use of posters in staff areas.
- Raise staff awareness to the key audit findings at the next monthly staff meeting.

Conclusion: Standard histories although good in most areas require improvements to meet the BASHH standard in partner related risk assessment. A number of recommendations if followed may improve compliance with expert national guidance.

P210

Do hospital physicians know enough about HIV pre exposure prophylaxis? A survey of middle grade hospital doctors to evaluate their clinical understanding of PrEP

E Adams and C Grimshaw
Monklands Hospital, Airdrie, Lanarkshire, UK

Background: With the introduction of NHS-funded Pre Exposure Prophylaxis in July 2017, many hospital doctors will encounter HIV negative patients who are taking tenofovir disoproxil fumarate/emtricitabine. Recognised side effects include renal dysfunction and reduction in bone mineral density.
It will be imperative that hospital specialists are aware of what PrEP is, when to avoid withholding PrEP, recognised side effects and sources of further information and clinical guidance.
We aimed to evaluate junior physicians' knowledge of PrEP in clinical practice
Methods: A survey was created for hospital middle grade doctors. These doctors initially review hospital admissions, perform medicine reconciliation and decide which medications to withhold or continue. A pilot questionnaire conducted with middle grade doctors informed the final questions. The survey was distributed to 20 FY2 to CMT 2 doctors working in hospital medicine through purposive sampling at a Scottish District General Hospital. The surveys were conducted in isolation without access to medical resources. Results were transcribed into a spreadsheet and answers analysed.
Results: Only 20% of participants identified that PrEP referred to 'Truvada', none recalled the generic names. A further 10% identified PrEP as an anti-retroviral medicine. 60% described the rationale for taking PrEP was to prevent HIV infection.
80% of participants did not identify renal dysfunction as a blood abnormality that could be related to PrEP. Most participants reported transaminitis as a side effect. 35% of participants knew when PrEP should be continued ('recent exposure').
Post Exposure prophylaxis rather than pre-exposure prophylaxis was described in some answers. Infectious disease teams were identified as a source of advice.
Conclusion: Most participants did not know the drugs that constitute PrEP, and almost half were unaware that it is used to prevent HIV infection, demonstrating poor understanding of what PrEP is among junior doctors working in inpatient medicine. This highlights a potential risk that junior doctors may not recognise a rise in creatinine attributable to PrEP. If PrEP is withheld inappropriately by doctors following recent exposure, this could impact efficacy.
This study demonstrates a need for increased education and awareness among non-genitourinary specialists, as a lack of knowledge and understanding of these drugs could potentially impact patient safety.

P211

Evaluation of the impact of a bespoke peer-to-peer genital microscopy training tool in a London sexual health clinic

D Vijeratnam
Solent NHS Trust, Portsmouth, UK

Background: The use of microscopy of genital samples in clients attending sexual health services (SHS) allows for the near-patient diagnosis and instant treatment of genital conditions. With restructuring of SHS in the UK in the form of frequent tendering of services, integration of contraception and genitourinary clinics, and stretched budgets, there is a potential risk to staff training and microscopy standards.
Methods: In June 2016 to January 2017, an audit of microscopy reading and reporting among healthcare professionals working at Enfield SHS was performed against BASHH standards. A microscopy training package, including a bespoke peer-to-peer cascade training competency tool, individualised audit feedback and departmental educational sessions, was introduced and microscopy standards were re-audited. A user survey of the training package was also performed.
Results: Of the initial audit of 37 slides, 26 (70%) slides were read correctly and led to appropriate patient management. 11 (30%) reports were incorrect risking inappropriate diagnosis $\pm$ treatment. Following the introduction of the training package a re-audit of 24 slides revealed 22 correctly-read slides (92%) and, of the remaining 2 slides, 1 slide result was not recorded and 1 slide was reported incorrectly however both clients were appropriately treated initially according to their corrected microscopy findings. Of the 13 staff questioned including doctors, nurses and healthcare support workers, 5 had completed the training tool, 8 were undergoing training, and 5 were training others. All 13 staff felt the training tool improved their daily practice (4 agree, 9 strongly agree) and, after using the tool, all staff would be confident using the tool to train others (3 agree, 10 strongly agree). Similarly, all 13 staff would recommend the tool to someone in the same role.
Conclusion: A high quality of microscopy reading and reporting was achieved following the introduction of a bespoke training competency package and led to low inter-clinician variability. This intervention was low-cost and enabled training of a previously untrained group (Band 3 support workers). The cascade peer-to-peer nature of the tool allows for structured maintenance of competencies and ensures continuous trainer availability. Sound microscopy provision is an essential aspect of high quality Level 3 sexual health care and the bespoke peer-to-peer training tool proved effective and acceptable to staff.

P212

Guaranteeing lessons for all: the provision of sexual health education across Scotland

N Sparling, G Valiotis and L Beattie
HIV Scotland, Edinburgh, UK

Background: Education is the fundamental tool in equipping young people with the information they need to reduce their risk of acquiring HIV, and a means of combatting the stigmatising attitudes towards people living with HIV. Despite rights to information being embedded within international human rights protections, sexual health lessons in Scotland are not compulsory. These lessons are delivered through Relationship, Sexual Health and Parenthood (RSHP) education. Evidence demonstrates that young MSM, among other target populations, in Scotland are at higher risk of HIV as a consequence of having poor knowledge about HIV risk. Prevention remains a public health challenge and Scotland's Sexual Health and Blood Borne Virus Framework identifies RSHP as key to ensuring young people have the information to make healthy choices regarding their sexual health.
Methods: Firstly, a roundtable event was hosted with key specialists from HIV, education, and policy backgrounds. The diversity of participation demonstrated the breadth of issues RSHP lessons are expected to cover. Subsequently a survey was sent to local authorities in Scotland and responses were received from all 32 authorities from a range of representatives including education departments, health improvement teams and individual schools.
Results: Inconsistencies exist across Scotland on how RSHP lessons are taught, the resources that are used and the level of content related to HIV. RSHP lessons do not have parity with other areas of the curriculum and pressures within education mean teachers do not have time to participate in training. Over one-third of respondents did not categorically state that HIV is taught within RSHP lessons. The extent to which local authorities, NHS Boards, and other stakeholders work collaboratively to share resources, and actively consult the views and experiences of young people was also investigated.
Conclusion: In order for young people to make healthy and informed choices, they must receive information about HIV that reflects the modern day realities of the virus, with resources providing information on the latest HIV prevention and treatment strategies. The introduction of legislation in Scotland for RSHP to become a compulsory component of the curriculum would equal the precedent recently set by the UK Government and guarantee access for every young person in Scotland, improve knowledge and therefore reduce the number of new HIV infections.

P213

Health care professionals' confidence and ability to manage intimate partner abuse (IPA) in men who have sex with men in a city sexual health and HIV service

S Stockwell, Y Gilleece and T Buckingham
Brighton and Sussex University Hospitals, UK

Background: IPA is common among women, globally it affects a third of women at some time in their lives. IPA in same sex relationships is considered to be as prevalent. Despite this training in IPA focuses solely or mainly on heterosexual relationships. IPA in MSM is associated with substance misuse, poor mental health and condomless sex.
Aim: The aim of the survey was to evaluate the confidence of our health care professionals in assessing IPA in the MSM population, the frequency that the staff were directly asking men about IPA, whether they know how to react once IPA was revealed and whether they felt they had had sufficient training in identifying and responding to IPA in MSM.
Method: A questionnaire was sent to all HCPs in a busy city sexual health and HIV outpatient service. We used Likert Scale, Yes/No answers and free text within the questionnaire to assess confidence, knowledge and clinical practice regarding IPA in MSM.
Results: A total of 20 HCP answered the survey; a mix of consultants (39%), specialist registrars (9%), and junior doctors (9%), nurses (27%) and specialist nurses (18%). On a confidence scale of 1–5 (1 being not confident and 5 being very confident) in managing IPA in MSM, 18% rated themselves as 2, 46% as 3, and 36% as 4. 10% stated they always asked their patients about IPA, 20% asked frequently and 70% rarely asked. 100% of responders knew that IPA could involve physical, sexual, psychological abuse as well as financial control. 55% did not know the incidence of IPA in our local MSM cohort. A range of answers were suggested from 5 to 35%. Once IPA is identified 45% of the HCP would refer to a health advisor as part of their management. 27% would address the patient's safety (immediate and/or longer term). 36% knew the correct referral pathway. 9% addressed the emotional needs of the patient. 36% would involve 'the team'. No one knew how to help a perpetrator of IPA. No one had had MSM specific IPA training and all respondents felt they needed it. It was suggested that training focus on case studies, easily accessible referral information and guidance on how to help someone who commits IPA.
Conclusion: In order to improve the sexual health of our local MSM population IPA must be addressed. HCP's ability to identify and correctly respond to IPA in MSM patients can be improved. A regular and MSM specific IPA training program would be beneficial.

P214

Identifying opportunities to increase HIV testing in general practice in Scotland

G Valiotis, N Sparling, J Hirono, L Ryder-Jones and K Slack
HIV Scotland, Edinburgh, UK

Background: Approximately 13% of people living with HIV in Scotland are undiagnosed and it is vital to increase diagnostic opportunities. Whilst primary care settings have repeatedly been identified as an appropriate setting for HIV prevention and testing, evidence suggests that there are ongoing missed opportunities for testing. Amended guidelines by the National Institute for Health and Care Excellence (NICE) call for more comprehensive testing in general practice settings in England. They include a call for GPs in high prevalence areas to offer and recommend HIV testing to everyone who has not previously been diagnosed with HIV and who registers with a practice, or is undergoing blood tests for another reason and has not had an HIV test in the previous year. Currently no such guidelines exist for Scotland.
Methods: Therefore we worked with key stakeholders including the RCGP Scotland to develop a survey to understand GP knowledge surrounding HIV, and examine the levels of HIV testing that occur in general practice. Over 10% (n=454) of all GPs in Scotland responded to an online survey which was disseminated through different channels across every Health Board in Scotland. To prioritise collecting data where HIV is most prevalent, GP practices were targeted in the 10 postcode districts with the highest HIV prevalence. Further semi-structured interviews were conducted with six respondent GPs from different Health Boards.
Results: 90% of GP respondents stated that testing and treatment for HIV/STIs are provided in their respective practices but over a quarter of GPs do not feel comfortable raising the issues of sexual health and HIV with their patients. Only 15% of new patients registering at GPs in high prevalence areas are routinely offered an HIV test. Only 3% (n=13/419) of survey respondents correctly identified each indicator condition from a list of various presentations, suggesting that opportunities are being missed. The survey found knowledge gaps amongst GPs and low confidence levels around sexual health and HIV. Over 40% of GPs in high prevalence areas feel their training has not been adequate to date.
Conclusion: Testing opportunities are being missed when new patients register at GP practices in high prevalence areas. General practice should seek to normalise HIV testing as part of routine health checks and GP registrations to increase diagnosis. GP practices will require more resources and support in order to improve testing outcomes.

P215

Improving sex and relationships education in remote and rural Scotland: collecting the views and experiences of young people in the Highlands

R Hughes, R MacGilleEathain and J Sykes
Waverley Care Highland, Inverness, UK

Background: Providing quality Relationships, Sexual Health and Parenthood Education (RSHPE) to young people is essential to achieving the Scottish Government's Sexual Health and Blood Borne Virus strategy outcomes. It has been identified that promoting positive sexual health and providing equity of access to confidential information and services in remote and rural Scotland presents specific challenges (Peacock and Fraser 2007). Wave, a new RSHPE programme for secondary schools in the Scottish Highlands, was devised to enhance and support existing RSHPE in this area. The development of the programme was informed by the collation of large scale survey data from local young people.
Methods: Young people completed an anonymous questionnaire regarding their views and experiences of existing sex education in school. The survey was available online, and paper copies were distributed in secondary schools, youth groups, further education establishments and youth sexual health clinics.
Results: A sample of 1195 participants aged 12–24 years completed the survey, with individuals from all Highland Council wards participating. 49% (n=590) of participants identified as female, 43% (n=515) as male, 1% (n=12) as non-binary, 0.7% (n=8) as transgender and 6.3% (n=70) chose not to disclose gender. 47% reported that they did not get enough sex education in school and 37% reported that they felt it should start in primary school. 66% were of the opinion that a sexual health expert was the best person to teach the subject compared to 3% who chose their class teacher. 51% of participants reported that it was easiest to speak to friends about sex and relationships. Young people requested more information on a range of subjects including pornography, sexting and abortion, with contraception, STIs, sex and the law, and puberty being the most frequently requested topics. 57% of participants requested more online RSHPE information and support.
Conclusion: Findings suggest that school-based RSHPE in the Scottish Highlands is not fully meeting young people's needs and that additional input from educators with specific sexual health knowledge is required. The availability of online information and support is important to this sample of young people who can face challenges accessing services on a face-to-face basis. Peer relationships have also emerged as a key resource for young people as they develop their understanding of sexual health and relationships.

P216

Management by nurses of women presenting with lower abdominal pain and/or deep dyspareunia to a sexual health service

C Carter and P Goold
Umbrella Sexual Health Service, University Hospital Birmingham, UK

Background: Many women presenting to a large City sexual health service complain of lower abdominal pain (LAP). The differential diagnosis is broad, requiring careful assessment including bimanual pelvic examination (BPE) which previously was undertaken by Drs. LAP is often not related to sexual health and examination can be normal. Our clinical nurse specialists

underwent training to undertake assessment of women with LAP including BPE to identify normal vs. abnormal and refer appropriately. Non-medical prescribers (NMP) had received additional training to manage Pelvic inflammatory disease (PID). An audit of the management of women presenting with LAP and/or deep dyspareunia who were seen by nurses was undertaken. There are no national guidelines for the management of women presenting with LAP, but the British Association of Sexual Health and HIV (BASHH) guidelines for the management of PID provided a framework for reference as well as recommendations from local training.
Methods: A retrospective audit of 100 electronic patient records of women presenting with LAP and/or DD to a trained nurse in a large sexual health service. Demographic data were collected. Management was assessed against BASHH PID guidelines and local training recommendations including: appropriate history, pregnancy test (PT), investigations, clinical examination and final outcome including whether reattendance within 3 months with PID.
Results: 72 patients were included. There was no documentation of presence/absence of bowel or urinary symptoms in 71%. 71% had a PT recorded (6% positive). A further 26% should have had a PT in accordance with guidelines. Sexually Transmitted Infection screen was offered in 99%. 82%were examined, a further 6% should have been examined in accordance with training recommendations. 100% of abnormal examinations were referred to a or trained NMP with the same examination findings in 100%. 2 patients returned within 3 months needing to be treated for PID (1 had been advised to see a and 1 had new partner).
Conclusions: This audit was reassuring in that it demonstrated high standards for referral of abnormal examination and good concordance of examination with experienced staff. It highlighted poor documentation of bowel and urinary symptoms and although PT rates were relatively high, could be improved as could undertaking a clinical examination. A departmental guideline for the management of women with LAP has since been produced.

P217

The impact of examination method on injury detection after rape of sexually inexperienced women and girls: findings from a systematic review

C Anderson[1], S Bewley[2] and P Seed[3]
[1]East Kent Hospitals NHS Foundation Trust, UK, [2]The Havens, London, UK, [3]King's College London, UK

Introduction: Public understanding of rape is low, particularly with regard to the occurrence and expectation of injury This expectation of injury can be further perpetuated when the case involves sexually inexperienced victims. Forensic examination uses differing methods, all have correspondingly varying rates of injury detection.
The aims of this systematic review were to investigate the incidence of bleeding and/or genital injury at first sexual intercourse, in a population having consensual or non-consensual sex, and the incidence of bleeding and/or genital injury at non-consensual sexual intercourse in virgin and non-virgin populations.
Methods: Two search algorithms were used to search MEDLINE and Science Direct. Retrospective cohort studies, prospective cohort studies, case-control studies and cohort studies were included. Two researchers independently reviewed titles, abstracts and full papers, and performed exclusions and data collection. 53 authors were emailed to request missing data. Random-effects meta-analysis and subgroup analysis by examination method (macroscopic inspection, colposcopy, toluidine blue) were performed.
Results: From 1455 titles, one study was included for question 1 (Northern Ireland), and eight for question 2 (7 resource-rich countries, 1 South Africa). Five papers used macroscopic visualisation, two used toluidine blue and colposcopy, one used colposcopy. Settings ranged from sexual assault referral centres to non-specified police stations. Injury documentation spanned exhaustive lists of the female genitalia to only specifying genitoanal injury. Meta-analysis showed relative risk for injury in the sexually inexperienced of 1.79 (95% CI 1.42–2.26). Macroscopic examination gave more homogenous results, with overall effect 2.26 (95% CI 1.74–2.94).

P218

Towards an effective method of delivery of clinical supervision for sexual health nurses

J Dalrymple[1], J Frankis[2], F Fargie[1], L Kelso[1], S Panesar[1] and K Lorimer[2]
[1]Sandyford Sexual Health Service, NHS Greater Glasgow and Clyde, UK, [2]Glasgow Caledonian University, Glasgow, UK

Background: Sexual health nurses are regularly exposed to patient experiences of sexual assault, domestic violence and sexual abuse. Clinic interventions are tailored towards minimal attendances, limiting face to face contact. Reduced potential therefore exists to establish therapeutic supportive relationships, necessitating optimisation of short term interactions with patients who frequently bring complex sexual, mental health and social issues. In addition, following integration with reproductive health services, and in a funding restricted climate, sexual health nurses increasingly utilise assessment and technical skills previously undertaken by doctors. What has not followed is a system of clinical supervision (CS) which reflects their work, mostly in isolation, with significantly greater clinical responsibilities. Recent CS research focuses on mental health, ward-based, elderly care and community settings with minimal applicability to high intensity short term interactions. This study therefore aims to develop an effective CS format responsive to modern sexual health nursing.
Methods: A mixed methods, cross-sectional study will measure the impact of current structures of delivery of CS on its effectiveness. The Manchester Clinical Supervision Scale (MCSS), a pre-validated questionnaire will be offered to all sexual health nurses across the 11 mainland health boards in Scotland. In addition, 12 purposive individual interviews will provide depth to the survey evidence and seek to understand nurses' organizational contexts and cultures. Interviews will also be offered to 6 trainee genito-urinary medicine and sexual and reproductive health doctors, exploring their experiences of CS to gain insights from colleagues exposed to an identical patient group. Quantitative data will be analysed using inferential statistics to determine the key factors for effective CS. Qualitative interview data will be analysed thematically.
Results: This 14 month funded project is currently underway. Key outcomes are: an overview of current CS provision for sexual health nurses in Scotland, insight into CS as experienced by sexual health nurses and doctors and development of a candidate CS structure for sexual health nurses.
Conclusion: Based on the findings of this exploratory project, future funding will be sought to undertake and evaluate a pilot quasi-experimental trial of a method of CS tailored to respond to the recently transformed working environments of sexual health nurses.

Innovation, information technology and service development

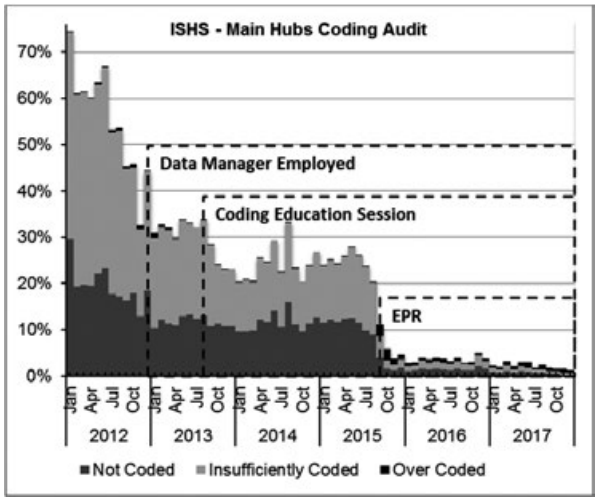
P219

'Coding for Dummies': a cost–based analysis of a programme to improve clinical coding

H Gees and R Taylor
Nottingham University Hospitals NHS Trust, UK

Background: Clinical coding is the backbone of remuneration for many sexual health services, in addition to providing invaluable data for planning services at a public health level. We present a strategic approach to consistently improve coding, and the subsequent financial impact.
Methods: Using big data we looked at over 275,000 attendances at our city based integrated sexual health service (ISHS) main 'Hubs' and analysed over 8 million data points covering the 5 year period 2012–2017. We examined the impact of a sustained programme to improve clinical coding on the amount of episodes not coded or insufficiently coded (defined as not reported on SRHAD/GUMCAD, excluding patient group SHHAPPT codes).
Results: The graph shows coding accuracy from 2012 to 2017, and a reduction from high levels of absent/insufficient coding whilst maintaining low levels of excessive coding.

	2012	2013	2014	2015	2016	2017
Not Coded	19.5%	11.6%	11.4%	8.4%	1.4%	0.7%
Insufficiently Coded	35.2%	17.9%	12.6%	9.8%	1.5%	0.7%
Correctly Coded	44.9%	70.2%	75.9%	81.2%	96.4%	97.8%
Over Coded	0.4%	0.3%	0.1%	0.6%	0.7%	0.8%



The integration of sexual health services, and hence widespread use of both GUMCAD & SRHAD coding in 2012, correlates with an improvement in coding, likely due to better representation of existing 'integrated' activity not captured by a single coding set.

The employment of a data manager in 2013 was also associated with a sustained improvement, as this individual's role included understanding of clinical coding and financial reporting, then actively working with staff to improve knowledge and understanding. A specific financial education session set up by the data manager in late 2013 was also associated with further reduction in insufficient coding. Together these measures helped increase adequate coding from 45% in 2012 to 81% in 2015.

The financial implication of better recording of work carried out has been reflected in 31% uplift in revenue in 2017 cf. 2012.

The introduction of a robust EPR (Inform) which has coding 'built in' to the clinical documentation had the most significant impact, reducing lost revenue 7-fold, resulting in an income uplift of 16%.

Conclusion: Where ISHS remuneration is tied to clinical coding, revenue can be increased by ensuring all work is coded for. This can be achieved by educating staff, by employing and employing data manager(s) who understand all areas of the service/process, and by increasing the capture of activity by installing a fit-for-purpose EPR – plus ensuring it is correctly used.

Future work will focus on how to chase the final 1.4% of missed coding.

P220

52 weeks of HIV testing in a large urban emergency department: engagement in care

K Flanagan[1], H Alexander[2], C Russell[1] and K Quinn[1]

[1]King's College Hospital NHS Foundation Trust, London, UK, [2]Guy's and St Thomas's NHS Foundation Trust, London, UK

Background: NICE recommend expanded HIV testing in areas of very high prevalence (>5 per 1000) including Emergency Departments (ED). We report upon engagement in care following opt-out HIV testing (via notional consent) in patients >18 years who attended an ED in an area with a very high prevalence.

Methods: ED HIV testing data was collated across a 52 week testing period (08.08.2016–08.08.2017). HIV positive patients identified were categorised as newly diagnosed, disengaged from care (not seen in a HIV service for >12 months before their ED test) or engaged in care. Patients newly diagnosed and those who had previously disengaged from care were reviewed 6 months after their ED test to determine whether they were 1. Engaged in care, on ART 2. Engaged in care, not on ART 3. Not engaged in care 4. Deceased.

Results: 44,091 ED attendees had blood tests of whom 25,852 had a HIV test (58.6% testing rate).190 HIV positive individuals were identified (excluding duplicate tests), equating to a prevalence of 7.3 patients per 1000, lower than that of the two local boroughs (mean prevalence 12.6 per 1000), 16.8% (32/190) were new diagnoses and 8.9% (17/190) had disengaged from care. A further 5.3% (10/190) could not be contacted and therefore care status could not be verified. 68.9% (131/190) of those with positive tests resided in the two local boroughs. 6 months after their ED HIV test, care status of those newly diagnosed and those who had disengaged is detailed below:

New diagnoses, n=32	% (n)
Engaged, on ART	68.7 (22)
Engaged, not on ART	6.3 (2)
Deceased	6.3 (2)
Not engaged	18.7 (6)
Disengaged from care, n=17	
Engaged, on ART	41.1 (7)
Deceased	5.9 (1)
Not engaged	53.0 (9)

Conclusion: In an area of very high prevalence, notional consent has achieved a high rate of HIV testing and improved engagement in care. The proportion of undiagnosed infections was higher than national estimates within 2017 public health England (16.7% vs. 11.6%) dataset. The prevalence rate within the ED however was lower than that of the local population. Analysis of the differences between those who had a HIV test compared to those who did not is planned to identify factors associated with testing and determine reasons for the lower than expected ED prevalence. Of the HIV positive patients identified through ED testing, engagement in care has risen from 68.9% (131/190) to 87.3% (166/190) as a result of the project which has received continuation funding.

P221

A bird's-eye view: using geospatial mapping to demonstrate changes in sexual health clinic catchment areas

R Morris, V Tittle, C Scott, R Jones and M Rayment

Chelsea and Westminster Hospital NHS Foundation Trust, London, UK

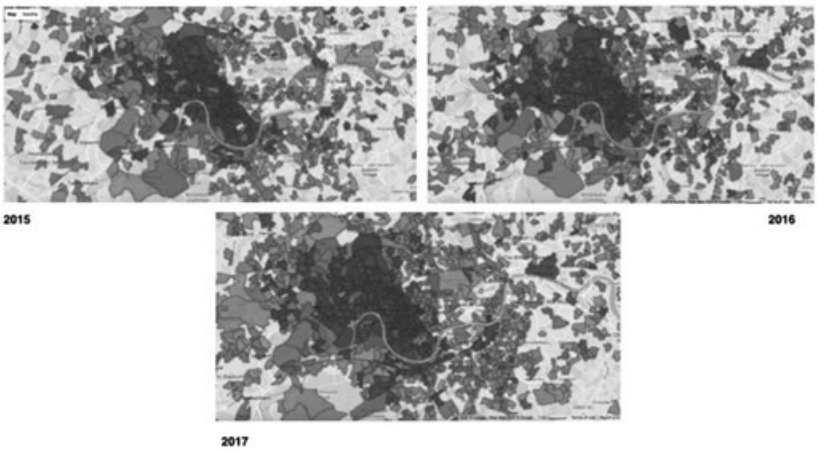
Background: BASHH, PHE and the Local Government Association have suggested that sexual health (SH) services are at the 'point of collapse' following the reduction in the public health budget. In line with the BASHH 'hot six key metrics' we used heat maps to illustrate the change in attendance patterns in a large London clinic.

Methods: Data encompassing all clinic attendances during the month of August in the years 2015/16/17 were collected. Demographics were reviewed. Post code, lower super output area (LSOA) and Local Authority of reported attendees were mapped using geospatial mapping software to generate heat maps to examine changes in catchment area and distance travelled.

Results: Absolute numbers presenting to clinic rose from 2049 presentations in August 2015 to 3243 during August 2017 (+59%). Attendances from MSM rose from 17% to 21.6%; the fraction of female attendances fell from 53.9% to 51.8%. Geospatial mapping has demonstrated an enlarging catchment area of the clinic (Figure)

Figure. Geospatial mapping attendees LSOA of residence Aug 2015–2017

Discussion: The results demonstrate a 59% increase in attendances when comparing 2015 and 2017. The clinic relocated in mid-2016 which may have influenced results in the 2015–2016 interval. However, following the closure of six dedicated SH clinics within the London region in 2017, there has been a clear increase in attendances from individuals residing in boroughs with reduced SH provision.



Conclusion: These data demonstrate the increasing pressures on front line SH services. Extensive clinic closures and reduced SH funding may to lead to poorer sexual health outcomes.

P222

A new model for remote HIV care: experience in the use of the Attend Anywhere video consultation platform

S Baguley and D Brawley
NHS Grampian, UK

Background: NHS Grampian provides HIV care to the populations of the Orkney and Shetland islands. Historically this has involved patients flying to Aberdeen for consultations and blood tests.
Attend Anywhere is a secure video consultation platform being rolled out by NHS Scotland since mid 2017. It includes a Waiting Area feature which makes it possible to see tele-patients as part of a conventional anchimedicine clinic.
Methods: From summer 2017 the Grampian Sexual Health service began incorporating Attend Anywhere consultations as part of the default care pathway for people with HIV living in areas remote from Aberdeen. Patients visit their island GP for blood tests when convenient and then have a teleconsultation from home using the Attend Anywhere app. The Waiting Area for the system is accessed via a link on our website.
Results: Island GPs are happy to take HIV related blood samples when needed and these results are accessed via our Electronic Record. Some patients have elected to continue flying to Aberdeen for consultations as they do not want their GPs to be involved with their HIV care. Others are delighted with the new model. One patient wrote: 'Using the software allowed the consultation to take place with minimal disruption to my working day. The fact I was sitting in my own living room made me feel much more relaxed than if I'd been at the clinic. I also felt the v/c creates a more equal partnership between patient and professional, rather than the patient being in the doctor's domain. The software was straight forward to download and access. The quality of the sound and picture was excellent, which is quite something when you live in a remote village on a Scottish Island.'
Conclusion: Although numbers are small, the service is popular with patients who have used it. We are planning an expansion which will make it available for a wider range of patients attending the wider sexual health service. However the majority of people will continue to need to attend the department in person due to their symptoms or testing requirements.

P223

A question of time: an audit of the new 'Returns' clinic at a Scottish sexual health centre

K Catton[1], H Pollitt[1], M Mustafa[1] and D Raha[2]
[1]Chalmers Centre, Edinburgh, UK, [2]iCash, Kings Lynn, UK

Background: A new 'Returns' clinic has been set up at a Scottish sexual health centre for medical staff to review return patients in a 15 min appointment, bookable up to 3 weeks ahead. Since its introduction we noticed that new or complex patients were also being booked into this clinic requiring longer than 15 min for a thorough assessment. It was also noted that many patients who were suitable for a 15 min appointment could alternatively have been seen in the band 5 nurse clinic.
Methods: A retrospective data collection was conducted of 11 consecutive 'Returns' clinics pre and post-intervention using electronic patient records. Clinician assessment was made of each attendance based on information available at booking. A guideline was developed for staff booking appointments with criteria for single and double appointments (i.e. 15 vs. 30 min) and prompts to consider band 5 nurse clinics as an alternative where appropriate. Poster displays, email updates and daily announcements were used to advertise the guideline over a 1 week period. A type 3, 1 tailed T-test was used to determine statistical significance.
Results: 76 attendances were audited pre-intervention and 77 post-intervention. The percentage of attendances with an appointment length that was too short reduced significantly from 17% to 8% ($t(138) = 1.7$, $p < .05$). The percentage of patients who would have been appropriate for the band 5 nurse clinic was similar pre and post-intervention (55% vs. 52%). Balancing measures included appointments which were too long (unchanged at 3%) and the number of patients seen over 11 clinics (76 vs. 77). There was minimal difference in the number of patients who 'did not attend' (17 vs. 18).
Conclusion: The introduction of a new guideline for the 'Returns' clinic has been an effective strategy for reducing attendances with an inappropriate appointment length. This has been achieved without detrimental effect on the number of patients seen in the clinic. Further work needs to be done on increasing the capacity of the band 5 nurse clinic as this would free up clinicians with more advanced skills to manage cases with greater complexity. The results of this audit will be shared with the senior management team to enable appropriate workforce planning.

P224

A QUIP to improve staff engagement with a departmental safeguarding pathway for young people: a journey from failure to success

P Dhavala[1], A Ijaaz[1], F Parveen[1], ST Rabbani[1], N Rehman[1] and A Hughes[2]
[1]Faculty of Life Sciences and Medicine, Kings College London, London, UK, [2]Guy's and St Thomas' NHS Foundation Trust, London, UK

Background: Clinicians have a duty to protect and promote the wellbeing of young people (YP); this is particularly important in sexual health clinics where professionals play a role in the prevention of child sexual exploitation. Across our three sexual health clinics, it is required of healthcare professionals (HCPs) to refer YP under 18 years to the departmental safeguarding team (DST) via trust email. This team can assess for concerns and signpost the YP to relevant services. However, despite quarterly departmental training on safeguarding over a three year period, HCPs did not consistently refer. The aim of this QUIP was to increase referral rates from a baseline of 40% to 100%.
Method: We used the patient database to assess YP attendance. We compared this data to the number of referrals received by DST to calculate

referral rate. We implemented four PDSA cycles, each piloting a new intervention that aimed to improve referral rates: (1) An awareness campaign; mini posters urging professionals to refer young patients were placed on each clinical computer screen, and a daily email reminder was sent to the team. Here we saw the effect of having a visual prompt on referral rates. (2) An incentive-based PDSA, where referral rates between healthcare workers by profession were tracked. To encourage HCPs to comply, a prize for the highest performing professional group was offered. Throughout this PDSA, rankings per group were released every week. (3) An accountability-based intervention. Here, HCPs were made aware that their individual performance would be tracked, and relevant line managers informed of their referral rate. Alongside this, daily email reminders were also sent to HCPs. (4) Email-based intervention alone were sent to HCPs twice weekly.

Results:

Intervention	% REFERRED
PDSA 1	66 (31/47)
PDSA 2 (week 1)	53 (21/40)
PDSA 2 (week 2)	32 (11/34)
PDSA 3 (week 1)	78 (25/32)
PDSA 3 (week 2)	87 (40/46)
PDSA 4	88 (38/43)

Conclusions: Reports of individual performance to relevant line managers with daily email reminders led to the highest increase in referral rates. Our results suggest that when emails were consistently sent, HCPs were more inclined to refer. This is further supported by decline in referral rate in PDSA 2, where no emails were sent. PDSA cycle 4 has continued to maintain the high referral rate. It would be interesting to assess whether this approach can be used to improve staff engagement in other areas including referral to clinical research.

P225

A review of non-attenders and strategies to prevent disengagement from care at a large urban HIV centre

E Chung, N Barsley-Masina, L Waters and S Dakshina
Mortimer Market Centre, London, UK

Background: Disengagement from care negatively impacts the health of people living with HIV. We reviewed non-attenders at a large HIV clinic to determine attendance outcomes and strategies taken to re-engage in care.
Methods: From Apr-Oct 2017 we reviewed patients who did not attend (DNA) a HIV clinician appointment over the previous consecutive 10 months (standard of care is minimum 6-monthly review). Data were collected on demographics, CD4 & HIV viral load (VL), adherence to clinic DNA policy, communication methods and proportion who returned to care. Our DNA policy specifies after 1st DNA - call/text/email/letter to patient and to GP (consent permitting) and arrange follow-up (f/u) in 1 month; 2nd consecutive DNA same contact methods as 1st DNA + arrange f/u in 3 months; 3rd consecutive DNA – contact patient as per 1st DNA + arrange f/u in 6 months; and after 4th DNA the patient is deemed lost to follow up and all contact methods exhausted.
Results: Data was analysed on 194 patients; 151 (78%) men, mean age 45 years, 52% white, and 64% men who had sex with men. Table 1 summarises main findings. Returned to care (61%): mean number of previous appointments DNA and/or cancelled before returning to care was 1 and mean time to returning was 11 months. Not returned to care (39%): 4/75 planned to be away; 21 (28%) have appointments scheduled and 50 (67%) remain disengaged.
Summary of results:

	Returned to care (n=119) (%)	Not returned to care (n=75) (%)
Mean age, years	46	43
Undetectable VL	97 (82)	56 (75)
Mean CD4	580	610
DNA policy followed	18 (15)	25 (34)
Texts sent	96 (81)	67 (93)

Continued.

	Returned to care (n=119) (%)	Not returned to care (n=75) (%)
Phone call	51 (43)	56 (77)
Consented to letter	49 (42)	24 (33)
Letter sent	12 (10)	25 (35)
Consented to email	31 (26)	16 (22)
Email sent	12 (10)	18 (25)
Consented to GP contact	75 (63)	29 (40)
GP contacted	0	1 (1)

Conclusion: A quarter of our non-attenders disengaged from care; most were older white men (reflecting our clinic population) and registered with a GP. This is contrary to the REACH study which identified being female, younger, not registered with a GP as factors associated with non-attendance. More attempts were made at contacting the non-returners vs. returners to care and letters sent to patients even if consent was not given when deemed in their best interest. However, communication to GPs was inadequate; this could be done earlier in our pathway to potentially facilitate return to care. Overall, at least one method of contact was made for all non-returners who remain a challenging group.

P226

A service evaluation of a comprehensive 'one stop' memory service for people living with HIV

A Butler[1], O Pounds[2], C O'Brien[2], S Anderson[2], E Nixon[2], S Banerjee[1], J Vera[1], P Henshaw[3] and C Elphick[3]
[1]Brighton and Sussex Medical School, UK, [2]Brighton and Sussex University Hospitals, UK, [3]Sussex Partnership NHS, Brighton, UK

Background: Assessment of symptoms of cognitive impairment in people living with HIV (PLWH) in clinical practice is difficult and can result in patients attending multiple appointments for testing and evaluation in specialist services that are not set up to deal with the complexities associated with the management of PLWH. Comorbidities include recreational drug use, mental health and social problems and the long-term sequelae of HIV and its treatment. In response to this, we set up a 'one stop' memory service. In a single appointment a multidisciplinary team of memory and HIV specialists assess referrals.
Methods: A service evaluation of patients attending the clinic between 2016 and 2017 was conducted using clinical data collated from the clinic's database. Data included demographics, HIV, neuropsychological (RBANS and executive function), LP and brain MRI parameters. Quality of life measurements were evaluated using the EQ-5D, a generic measure of health status and the DEMQOL (a condition-specific measure of health related quality of life).
Results: Data from 36 patients attending the clinic was evaluated. Median age (range) was 57 years (range 31–81) with a median time since HIV diagnosis of 19 years (5–31). 83% were male, and all patients were prescribed ART with 94% (34) with a VL <40 copies/ml. The most common causes for cognitive impairment were mild cognitive impairment (MCI) (40%), followed by mental health (anxiety and/or depression 26%). There were two diagnoses of dementia. On neuropsychological testing, mean performance on measures of delayed recall and executive functioning was >1 SD below the population mean. Mean performance on measures of attention and immediate recall was also below average and poorer than that of MCI patients. 53% of patients have reported abnormalities on brain MRI with vascular white matter hyperintensities the most common finding (46%). Perception of general health and quality of life associated with cognition was low, mean (SD) EQ 5DL=64.92 (22.57) (scale 0 to 100) (n=26); DEMQOL 70 (18.57) (population average for dementia 90) (scale 28 to 112). Satisfaction with the service was high among patients and health care professionals.
Conclusion: Cognitive impairment is common in PLWH despite effective control of HIV. Quality of life in patients with cognitive impairment is poor. Memory services for PLWH have the potential to help with uncertainty in the assessment and management of cognitive symptoms in those with HIV.

P227

Acceptability of native mobile phone applications (apps) in sexual health: is an app acceptable in men who have sex with men for those taking or considering taking PrEP

J Bayley[1], T Nadarzynski[2], M Portman[3], G Owen[4], T Pasvol[5] and W Nutland[6]
[1]Barts NHS Trust, London, UK, [2]Solent NHS Trust, Southampton, UK, [3]CNWL NHS Trust, London, UK, [4]I Want PrEP Now, London, UK, [5]Imperial NHS Trust, London, UK, [6]PrEPster, London, UK

Background: New HIV infections can be significantly reduced with effective pre-exposure prophylaxis (PrEP). High levels of PrEP engagement are seen for educated white MSM, however inequalities remain for other demographics. Previous research has shown low levels of acceptability for sexual health-related native mobile phone applications (apps). We assessed the acceptability of a native phone app in men who have sex with men (MSM) as a novel way to engage populations that are currently underserved in PrEP provision.
Methods: An online survey on acceptability of native mobile phone apps was advertised on Grindr (a social networking native app for MSM) in July 2016 and January 2018. The questionnaire consisted of items exploring demographics, awareness of PrEP, its use or consideration and attitudes towards a native app for PrEP adherence and information. Chi-square and logistic regression were performed to identify factors associated with the acceptability of the app.
Results: 513 surveys were returned in total (312 for 2016 and 201 in 2018). Four out of five respondents were aged 21–50 years and 80% were white and educated to undergraduate level or above. For those already taking PrEP, acceptability of a mobile phone app decreased from 100% (17/17) in 2016 to 81% (47/58) in 2018, but this was not statistically significant. For those not currently taking PrEP but considering in the future, acceptability for an app was 90% in both surveys. There was no association with other demographic variables.
Discussion: A native mobile phone app for PrEP in MSM is highly acceptable. This is in contrast to other native sexual health-related apps. For a majority of MSM, this technology might result in higher adherence rates and engagement with sexual health services, including more frequent STI screening. Web-based apps (websites optimised for smart phones) may be a better solution for those citing concerns over privacy and access to their phone from others. An app may complement improved access to information on PrEP and the increase in population knowledge on PrEP. More research is needed for ethnic minorities and those with lower levels of educational attainment, which were under-represented in this study, about how best to digitally engage these populations with lower levels of PrEP engagement.

P228

Adapting HIV testing algorithms and clinical advice for people with persistently indeterminate test results: The Indeterminate Retrovirus Infection Service (IDRIS)

S Fidler[1], C Brown[2], M Khan[1], S Kaye[1], D Muir[3], P Patel[2], A Menezes[2], T Mbisa[2], J Tosswill[2] and G Taylor[1]
[1]Imperial College London, UK, [2]Public Health England, London, UK, [3]Imperial College NHS Trust, London, UK

Background: HIV diagnosis relies on detecting HIV-specific antibody or viral antigens or whole virions. Certain rare individuals with persistently indeterminate test results have to live with uncertainty as to their true HIV status, and their best clinical management remains unknown. This may become increasingly an issue with the widespread availability of PrEP, PEP and early ART initiation, potentially delaying or altering the development of HIV-specific antibodies. We describe a new national referral clinical service (IDRIS) to explore novel diagnostic algorithms, and offer counselling and management of individuals with persistently indeterminate HIV test results.
Methods: Eligible individuals referred to the IDRIS clinic by their medical provider through PHE have had the following: multiple 'reactive' or indeterminate HIV antibody tests on different platforms with indeterminate Western Blot profiles, in the absence of confirmed HIV RNA, DNA or p24 antigen tests. Additional blood was drawn for repeat HIV antibody EIAs, HIV Western blot, HIV RNA (including ultralow copy HIV RNA to 1 copy/ml) HIV DNA (total and sorted CD4+ T-cells) including multiple primer sets, p24 antigen; infection screen including EBV, CMV, VZV, HTLV, HBV, HCV, STS, autoantibodies, immune activation markers; HLA-DR and CD25 expression on CD4 and CD8 cells and CD4, CD8 counts and CD4:8 ratio.
Results: The first four individuals attended the service in late 2017: all were diagnosed with HIV infection. Western blots were sometimes improved, no co-infections were found, and T-cell activation markers were normal.

	HIV-1 EIA (Murex) S/CO	HIV Western blot	HIV RNA	HIV RNA Ultra-sensitive	HIV DNA	CD4 count	CD4:8
1	7.5	p17,p24,GP41,GP160	<20	1	+	807	2
2	15.3	p17,p24,GP41,GP120, GP160	<20	0	–	785	2.5
3	16.5	p17,p24,p51,p66,GP41, GP120,GP160	<20	9	+	811	2
4	6.4	p17,p25,p55,p31,p51, p66,GP41,GP120,GP160	<20	0	–	1359	1.5

Conclusion: This preliminary report of a new HIV testing has shown that with freshly processed samples, increased blood volumes and new technology, it has been possible to reach a definitive HIV diagnosis. As no data exist to inform the clinical management of cases identified as HIV+ in this setting, prolonged follow-up is required with support and counselling for people who have had to live with uncertainty for many years. Increased patient numbers will be presented.

P229

Addressing clinical sexual health questions of people living in south-east London through an online sexual health provider: a qualitative study

A Morelli[1], P Baraitser[2] and J Syred[1]
[1]King's College London, UK, [2]King's College Hospital NHS Foundation Trust, London, UK

Background: South East London has one of the highest rates of sexually transmitted infections and teenage pregnancy in the UK. In response to a need to increase access to sexual health services, an online sexual health provider delivers online contraception, sexually transmitted diseases self-testing, chlamydia treatment and sexual health consultations through text messages and phone calls. The purpose of this study was to explore the type of clinical questions asked to the service provider by people living in South East London. Also, this study examines the extent to which these questions could be answered online without a referral to a clinic.
Methods: A thematic analysis of secondary data was conducted to explore the type of clinical questions asked through the online service provider. Also, demographic data from 82 unique users were collected to investigate if the users who asked a clinical question differed from other users of the online service. A total of 740 inbound text messages were collected from 1 January 2017 to 31 August 2017 and 194 webchat conversations. The webchat service was active from 25 February 2016 to 18 May 2016. Of these, a total of 85 text messages and nurses' notes and 22 webchat records met the inclusion criteria and were analysed using the software NVivo. Ethic approval was gained from the NHS Health Research Authority.
Results: The research identified five types of clinical question submitted to the service: anxiety about symptoms, lack of understanding about STIs, risks associated with unprotected sex, fear of contraceptive safety and conflicting information reassurance. There is good uptake of this online service from people who are most likely to suffer from sexual ill health in London; that is, men who have sex with men, and Black, Asian and Minority Ethnic Groups. Symptomatic users in the study were twice as likely to ask a clinical question than the symptomatic users who were not included in the study but who accessed the service. Symptomatic users, who accounted for 30% of the study participants, had to be referred to a clinic as the provider does not provide a symptomatic service at present. The study participants and the rest of the online users did not significantly differ in terms of demographic characteristics.
Conclusion: Findings suggest that the online provider can help reduce anxiety and provide reassurance for several sexual health topics and that users perceive it to be an accurate source of information.

P230

An allied health professional-led annual health clinic to improve standards of care

R Shrivastava, C Stradling, K Kholia, E Stevens, J Williams, K Barclay, L Lewis, C Gamble and S Taylor

Birmingham Heartlands HIV Service, Directorate of Infection, Heartlands Hospital, UK

Background: British HIV Association (BHIVA) 2016 guidelines recommend routine screening for cardiovascular disease (CVD), fracture risk, psychological distress, cognitive difficulties and partner notification (PN). An allied health professional (AHP) led Annual Health Clinic (AHC) was designed to improve routine screening for patients and provide access to suitable follow up or brief interventions. This review aimed to establish whether high risk patients were identified, referrals generated, and if national screening targets were met.
Methods: AHC comprises Health Advisor, Dietitian, OT, Sexual Health Nurse, includes routine bloods, urinalysis; PN; sexual health advice; STI, cardiovascular, diabetes, bone, mood & neurocognition screening. Tools used are QRisk2, QDiabetes, Frax, HADS and IHDS. We reviewed appointment bookings and attendance for 2016/17; BHIVA self-report audit tool for CVD risk; & outcomes.
Results: 22% of the cohort (262/1169) chose to attend AHC during 2016. Electronic reminders for doctors and phone invitations for patients were instigated during 2017, which increased clinic bookings by 43%. Screening identified significant number of patients with modifiable comorbidities: overweight (46%), obese (22%), at risk of CVD (17%), diabetes (30%), & fractures (6%). From Jan to July17, 59% (201) patients met our dietetic referral criteria, 70% of whom accepted dietetic follow up.100% of patients over 40 who attended AHC had their 10-year CVD risk calculated as compared to only 54% of the general clinic population assessed within the last 3 years in 2015 improving to 83% in 2017. For Jan–Jun 2017, 22% (33) met OT referral criteria for psychological and cognitive interventions. Out of 164 patients seen by the HA in AHC, 34 accepted a STI screen of which, 1 herpes, 2 gonorrhoea and 1 candida positives were identified. Those who declined felt there was no risk of infection as they were in monogamous relationship. A smear and contraceptive services were offered to all applicable patients who attended, as were all the HA services available including HIV PN.
Conclusion: Development of standardised AHP-led AHC successfully identified high risk patients, generated appropriate referrals, and improved screening rates towards the national target. This review prompted the expansion of AHC to include introduction of monthly evening AHC, opt out booking system, CAGE alcohol screen, and chemsex screening.

P231

An audit of the management of erectile dysfunction within a psychosexual service

H Church, N Anderson and P Goold

Umbrella Sexual Health, University Hospital Birmingham, West Midlands, UK

Background: A recently commissioned integrated sexual health service (SHS) provides a Psychosexual service (PS) that accepts referrals for patients with Erectile Dysfunction (ED). Relevant medical conditions are managed via the GP. In 2011 the British Society of Sexual Medicine (BSSM) published guidance for the management of ED which include appropriate assessment via history, examination, treatment and investigations including; BP, BMI, lipids, HbA1C and Testosterone. In response, the PS developed a generic GP letter requesting these investigations. This audit aims to assess the management of patients with ED by the PS against the national guidelines and to see if the GP ED investigation letter was being utilised appropriately.
Methods: Electronic records (ER) for ED patients who had their initial assessment in the PS between 22.12.15 and 20.01.17 were reviewed against the BSSM guidelines and whether the GP letter was utilised. Cases were identified by electronic and manual search. Records from prior SHS attendance/s and/or GP correspondence were included.
Results: 35 ED patients were identified. The median age was 41.3 years (range 20–67). 62.8% were internal referrals and 37.2% from GP. 45.7% were seen by a clinician with psychosexual training and 54.3% by psychosexual therapists. Median time between referral and appointment was 47.9 days (range 8–188). All patients had sexual, relationship and psychological histories. 97.1% had a medication history, but only 54.3% had this reviewed in the PS. 71.4% had a recreational drugs and alcohol history, but only 20% had this reviewed in the PS.
40% had a genital examination ever, but only 20% re-examined on initial assessment. Treatment was offered at first appointment in all patients. This was psychosexual therapy in 88.6% patients. The ED GP communication letter was utilised in only 28.6% patients. Only 2.9% patients had BP or Testosterone recorded.
Conclusion: The BSSM guidance was being followed for sexual, relationship and, psychological histories and offer of a treatment plan at first review but not for reviewing medication, recreational drug history, examining or record of investigations. Utilisation of the ED GP letter was well below expectations. The PS propose to record BP, BMI and review the medication and social history for all ED patients and has reviewed the process for using the GP ED letter.

P232

Assessing the measurement of patient experiences and outcomes in healthcare settings on receiving care after sexual violence: a systematic review

R Caswell[1], K Lorimer[2], J Ross[1] and J Heskin[1]

[1]University Hospital Birmingham, UK, [2]Glasgow Caledonian University, Glasgow, UK

Background: Despite 1 in 5 women experiencing sexual violence since aged 16 there is underreporting and a reluctance to disclose, even in healthcare settings. No systematic review to identify patients' priorities for delivering a high-quality service for those who have experienced sexual violence has previously been performed. The objectives of this review included establishing how patient reported outcomes measures (PROMS) and experiences (PREMS) in this context have been measured, to identify if a 'gold measure' exists and to identify themes regarded by patients as priorities for delivery of high-quality health care.
Methods: Protocol registered with PROSPERO. Systematic search across eight electronic databases and grey literature. Studies eligible for inclusion included: patients/participants older than age 13 years, all study designs that focused on sexual violence and had patient reported outcomes or experience related to health care. A narrative synthesis was conducted, due to heterogeneity of studies.
Results: Over 4000 studies were screened against title and abstract and 182 for full text eligibility. Of the 22 studies included for data extraction, the majority (n=15) were conducted in North America, and 2 in the UK, revealing a paucity of evidence from the UK context. The majority were qualitative studies (n=11), 8 quantitative and 3 mixed methods. No common validated method of assessing PROMS or PREMS was identified. Patient reported outcomes highlighted the importance of combined medical, psychological and forensic support. Key emerging themes related to patient experiences included: the importance of communication, including how staff interact with patients and what they say (e.g. being believed, offered reassurance and non-judgemental attitudes) for how this impacts on trust; the importance of listening to and understanding patients' needs to ensuring patients feel in control, and; the suitability of the setting to facilitate privacy and comfort.
Conclusions: The review has identified the need for a validated approach to assess patient outcome and experience after seeking healthcare after sexual violence. There is a paucity of evidence from the UK context. From the studies reviewed clear themes for provision of a high quality service from a patient perspective have emerged and should be incorporated into future work when reviewing service delivery.

P233

Can a vaccine passport improve vaccine coverage in HIV services? A service evaluation

S Horner, S Mann, B Teruzzi and D Chadwick

South Tees Hospitals NHS Foundation Trust, Middlesbrough, UK

Background: An increased risk of vaccine-preventable infections (VPI) is seen in people living with HIV (PLWH), and current vaccine coverage and immunity is variable. Vaccine passports are portable documents, designed to be kept by PLWH and updated when vaccinations are given, with the potential to improve vaccine coverage. The main aims were to pilot this passport for use in both primary and secondary care, to assess how successful it had been in improving vaccine coverage and to gauge acceptability to participating PLWH.

Methods: PLWH attending the HIV clinic and registered with a GP were invited to participate from January-March 2017. Baseline immunity to VPIs was established and appropriate vaccinations required determined based on the BHIVA Vaccination Guidelines (2015). A passport was filled in and the PLWH informed about additional vaccines they should obtain from their GP. A letter was sent to the PLWH's GP (with copy to PLWH) asking them to give the recommended vaccines. At follow up clinic 6–9 months later, the passport was reviewed including confirmation by PLWH and GP if vaccines were given. PLWH satisfaction with the system was evaluated by a survey.
Results: 85 PLWH consented to take part however only 73 provided sufficient data for analysis. At baseline (Table 1) significant proportions of PLWH were not immune to or not vaccinated with the main VPIs, especially HPV, pneumococcus and measles. After the passport was applied immunity following vaccination improved significantly (53% overall) for all VPIs except VZV, however full coverage was not achieved. There was some resistance from GPs to provide HPV, PCV-13 and VZV vaccines although failure of PLWH to attend surgeries was also common. The system was popular with PLWH although many asked why vaccines could not be given in the HIV clinic.
Conclusion: The passport was successful in increasing vaccination coverage although near-full coverage was not achieved. Whilst popular with PLWH, the passport system's complexity and difficulty in ensuring PLWH attend surgeries for vaccines suggests a more successful service would be to commission HIV clinics to provide all vaccines.
Table 1

	Baseline (n=73)	Post Vaccine Passport (n=73)
Age, median years (range)	48 (21–84)	
Gender % male	78	
Ethnicity (%)		
White	71	
Black African	22	
Other	7	
Immunity or vaccinated (%)		
Hepatitis A*	53	73
Hepatitis B*,#	53	86
HPV (n=22)	0	36
Influenza	72	96
Measles*	37	48
Pneumococcus~	16	51
Varicella Zoster*	52	55

**Confirmed on serology. # (HBsAB>10). ~ including PCV-13*

P234

Can an affordable point of care (POC) HIV viral load assay be developed for use in developing countries? Proof of concept using the SAMBA II Semi-Q Whole Blood based viral load assay

G Brook[1], N Goel[2], D Friday[1], A Ritchie[2], H Jama[1], R Arjoonsingh[1] and H Lee[2]
[1]London North West University Healthcare NHS Trust, London, UK, [2]Diagnostics for the Real World, Cambridge, UK

Background: Viral load measurements are largely unavailable to patients in developing countries due to cost and a lack of a portable robust POC assay. The SAMBA platform provides a semi-quantitative POC assay that uses the WHO-defined cut-off for treatment failure of 1000 copies/ml to monitor ART. Whole-blood samples as small as 150 µL can be used, circumventing the need for phlebotomy and centrifugation. The result is a binary <1000 or >1000 copies/ml. The equipment is portable, robust and automated, using heat-stable reagents. The performance of the assay is being evaluated in different settings in the UK, Eastern Europe and Africa. We present preliminary results from the UK cohort.
Methods: Viral load levels (<1000 or >1000 copies/ml) were semi-quantified on SAMBA II on patient samples in two London clinics. The results were compared with viral load (VL) results simultaneously obtained with a standard commercial HIV VL assay (TDL in-house assay).
Results: The concordance between SAMBA II and commercial assay VL above or below 1000 copies/ml are given in the table. A small false +ve rate (>1000 copies) was initially noted (V2 assay). After adjusting a pipetting stage to avoid sample contamination, the number of false +ves fell significantly (V4 assay).

	V2 results	V4 results
Total tested	300	203
True negatives (<1000 copies/ml)	252	194
False positives	17	1
True positives (>1000 copies/ml)	20	6
False negatives	0	0
Unresolved*	11	2
% Accuracy	94.1%	99.5%
Sensitivity	100%	100%
Specificity	94%	99%

**Not enough sample remaining to perform discrepant analysis*

Conclusion: After appropriate assay optimisation these initial results show a high level of VL result concordance in a cohort of patients who are mostly suppressed on ART. The V4 SAMBA II assay will be further validated on 1500 samples from patients in Eastern Europe and Africa where a higher number with VLs >1000 copies/ml is anticipated. Provided that SAMBA performance is maintained in other settings and manufacturing costs can be kept low, this assay has the potential to offer affordable, usable and reliable VL testing in the monitoring of ART in resource-poor settings.

P235

Can vaginal pH and *Trichomonas vaginalis* (TV) POCT be used as a means of reducing vaginal microscopy in women with vaginal discharge?

S Legg[1], V Pradhan[1], E Gebru[2], J Temu[2], J McSorley[2] and G Brook[2]
[1]Imperial College School of Medicine, London, UK, [2]Dept of GUM/HIV, Central Middlesex Hospital, LNWH Trust, London, UK

Background: Microscopy is widely used to diagnose the causes of discharge, but is time consuming and may not be available for all circumstances. We looked to build an algorithm for managing vaginal discharge based on symptoms, vaginal pH and TV POCT only.
Methods: A retrospective study of women who presented to the clinic between May 2017 and December 2017 with vaginal discharge. In addition to microscopy, vaginal pH was taken and a TV POCT performed for pH ≥4.5. Data was collected on symptoms, vaginal pH, TV POCT result and microscopy diagnosis.
Results: In women for whom results were adequately recorded, the TV prevalence was 14% (77/564 women) at pH of ≥4.5 and 0% (0/64 women) in women with a pH of <4.5
The symptoms and diagnosis of 386 women who were TV negative in one or both tests and had a vaginal pH recorded are given in the table:

			Symptoms			
	Diagnosis	Number	Itch	Smell	Neither	Both
pH<4.5 (64 women)	Nil	32 (50%)	11	4	16	1
	BV+ Thrush	2 (3%)	1	1	0	0
	Thrush	27 (42%)	14	3	7	3
	BV	3 (5%)	0	2	0	1
pH≥4.5 (322 women)	Nil	90 (28%)	20	25	35	8
	BV+ Thrush	27 (8%)	3	9	9	5
	BV	184 (57%)	25	85	49	21
	Thrush	21 (6.5%)	12	0	6	3

In women with vaginal discharge who were TV negative with a vaginal pH of ≥4.5, the majority (65%) had BV whilst in women with a pH of <4.5 the most likely diagnoses were thrush (45%) or no microbiological diagnosis (50%). Symptoms of smell (46% of BV) or vaginal itch (52% of Thrush) also correlated with the diagnosis although they were also found in women with no microbiological diagnosis.

Conclusion: Vaginal pH testing allied with TV POCT is a quick and cheap method to diagnose women presenting with discharge in a community setting. We found that using a combination of pH, TV POCT and symptoms, appropriate empirical treatment could be constructed. This would be useful for settings in the community where microscopy was not available.

P236

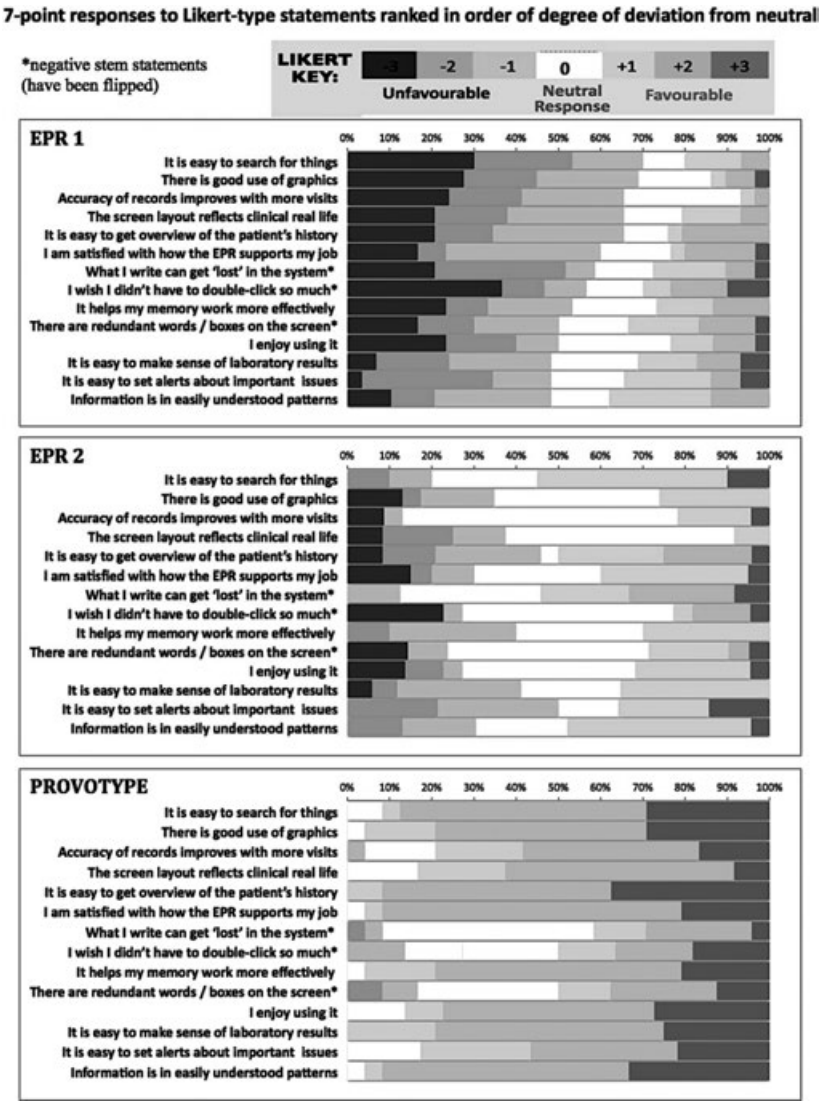
Clinician productivity in the integrated sexual health walk-in service in Edinburgh: a quality improvement project

D Raha and D Clutterbuck
Chalmers Centre, NHS Lothian, Edinburgh, UK

Background: The walk-in service at our integrated sexual health clinic runs on weekday mornings. As demand significantly exceeds capacity, all attendees in person are triaged and given advice or directed to care within the service or elsewhere. Those with complex and/or priority needs are seen in the walk-in clinic. Each clinician is allocated 6 patients per clinic when fully booked. The clinic is staffed with between 2 and 7 clinicians according to resource, who see unselected patients except for IUD and implantable contraception, which are identified at triage for efficiency. If additional patients need to be seen urgently, they are added as extra. The numbers of patients seen by individual clinicians was thought to be very variable.
Aims: The aim of the project was to review the system implemented after integration of GUM and SRH in 2011, ascertain the mean number of patients seen by each clinician in the walk-in and to initiate a process of changing the way the walk-in clinic operates to increase efficiency.
Methods: Data on 18 months of attendances was extracted from the clinic IT system (NaSH) including the number of 'Walk-in' and 'Extra' clinic sessions and patient seen per clinician. To account for 'extras', the number of patients from the extra clinic seen by each clinician over the same time were added to each clinician's total and divided by the total number of Walk-in sessions worked.
Results: Analysis allowed for variability in clinician duties including GUM/SRH consultants providing senior and on call supervision for the service and those providing IUD fittings within the clinic. Overall the mean number of patients seen per clinician per session was only 4.5, with a mean of 1.95 unfilled slots each clinic. There was no significant difference between IUD fitters and non-IUD fitters in the average number of patients seen, but there was wide variability between individual clinicians who saw between 3 and 8 patients in a session. If there were more than 4 clinicians on the walk-in, the number of unfilled slots increased.
Conclusion: Results suggested scope to improve utilisation of clinician time for the walk-in clinic and that the optimum number is 4. Although additional capacity is utilised when available, efficiency falls. A maximum of 4 clinicians are now allocated to the walk-in, with. additional clinicians allocated to appointment clinics booked in advance through a phone triage system.

P237

Design better EPR: a mixed methods survey and 'test drive' comparing clinical usability across two systems and a provotype interface [demo presented]



D Pao[1], J Stevens[1], D Lockton[2] and N Weinstein[3]
[1]Royal College of Art, London, UK, [2]Carnegie Mellon University, Baltimore, USA, [3]Cardiff University, UK

Background: There is widespread concern about the clinical usability of the Electronic Patient Record (EPR), and commercial software development often fails sufficiently to understand the clinical perspective. Unlike a *prototype*, which resembles as far as possible a final product, a *provotype* is intended to provoke discussion and insight around how best to design an interface, breaking free from any prevailing design paradigm.
Results: Respondents spanned the wide range of sexual health clinical posts, from 4 integrated GUM clinics, 3 of which used EPR1 and one of which used EPR2. In total, there were 54 survey responses relating to the 2 EPR systems (30 and 24 respectively), and 48 survey responses (24 from each group) relating to the provotype (*Figure*). In addition, there is further quantitative data from the 'test drive' discussions. These reveal areas of design that need to be addressed
Conclusion: It is clear that EPR are an improvement over paper records in key ways. However, given the critical role of the EPR – not only as *the* tool in a clinician's busy working day but also as the guardian of 'data collected or verified at the point of clinical care - this research indicates that beyond this, clinical usability is far from optimal. Findings point to areas, concepts and associated visualisations that would improve usability. *This is a small regional sample of just two EPR systems and should be understood as such – further data from national online survey to follow.*

P238

Developing collaborative nursing models for people living with HIV and hepatitis C co-infection in the advent of increased access to direct acting antivirals: a service development in a large UK urban clinic

R Burholt, C Phillips, S Verma, D Williams and Y Gilleece
Brighton and Sussex University Hospitals NHS Trust, UK

Introduction: New Direct Acting Antivirals (DAAs) for Hepatitis C (HCV) means treating HIV/HCV co-infection has never been more effective. However, the challenge is to maintain delivery of high quality specialised care for those with complex needs. Becoming an operational delivery network (ODN) site meant a sudden expansion in the number of patients we could treat and an opportunity to treat those previously not appropriate for interferon based therapy particularly those with mental health problems. Following a near medication miss there were concerns that poor communication between the different teams involved; HIV, Hepatology and Pharmacy, could lead to adverse patient outcomes.
Aim: To review the current service provision for HIV/HCV co-infected patients, identify areas for improvement and develop a multidisciplinary (MDT) pathway to ensure safe patient care.
Results: The following issues were identified: Unclear roles and responsibilities with respect to communication between the teams and patients. Uncertain identification of those eligible for treatment. Coordination of care for complex patients especially those with mental health needs. Clarification and communication of decisions re Antiretroviral (ARV) changes.
Outcomes:

- A clear pathway was developed by the HIV/HCV Nurse Specialists to clarify roles, responsibilities and timelines. A shared communication tool was agreed to manage cross-service queries. The original alternate month co-infection clinic was replaced with a weekly MDT meeting.
- A registry of co-infected patients was set up and updated testing guidelines were implemented to capture all unknown HCV patients.
- Psychological and addiction needs assessed at baseline: AUDIT tool for alcohol use, support with recreational drug use and mental health assessment with a PHQ4.
- HIV Pharmacist to lead on changes in ARVs, drug–drug interactions (DDI) and washout periods required.

P239

Digital dissection: realising the potential of service user engagement in re-designing a sexual health service website

H Harstein, A Brooks, N Morgan, J Shaw and S Davies
Northern Devon Healthcare Trust, Devon, UK

Background: Since devolution to Local Authority commissioning, Sexual Health Services (SHS) have been subject to re-tendering, with specifications including ambitious marketing and digital access targets. In preparation for this process, we performed an extensive review of our existing website to better understand its effectiveness in meeting the digital needs of users. Sharing the strategy and findings will be useful for SHS planning similar reviews.
Methods: Target groups (including young people (YP), LGBTQ individuals, those living with disabilities and others) and local primary care providers (PCPs) provided qualitative and quantitative feedback via online surveys and focus groups. Hotjar heatmaps and Google analytics were used to assess service website activity.
Results: Surveys: 101 SHS users and 50 PCPs responded. Reviewers expressed interest in online booking, home sampling kits and an online chat facility, also a mobile-friendly layout. Users most frequently visited the site to find information about clinics and times (28%) (also reflected in heatmap analysis), or looking for information on contraception (16%). 18% would prefer not to have to use face-to-face SHS if digital alternatives were available. 90% of respondents stated that NHS branding provides reassurance. PCPs mainly accessed the site to find information about STI treatment (82%) and management of complex GU problems (80%). PCPs expressed concern for missing safeguarding cues if face-to-face services were reduced. Focus groups: Suggestions for website improvements included: use of signing/subtitles, Browse Aloud, Picture of Health; more photos/videos including walk-throughs, 'meet the team'; interactive content in YP pages; dedicated areas for e.g. LGBTQ, sex workers. Ease of navigation and smartphone utility were considered vital. Website analysis: data on website user journeys, user volume (52K in 2017), visit duration (average 1:23 mins) and popular pages (implants and pill info) was collated. Analysis demonstrated the difficulty of navigating the current site on a mobile.
Conclusions: The project has provided a rich information source on which to base digital improvements. Many user suggestions have already been adopted. Because of the ambition to expand content whilst retaining ease of use, we plan to incorporate 'dynamic landing pages'. Serial website analysis would be useful in assessing the impact of improvements.

P240

EmERGE: codesigning mHealth to support access to records and reduced visit pathways in patients living with stable HIV

M Darking[1], F Henwood[1], B Marent[1], B West[2] and J Whetham[3]
[1]School of Applied Social Science, University of Brighton, UK, [2]European AIDS Treatment Group, Brussels, Belgium, [3]Brighton and Sussex University Hospitals NHS Trust, UK

Background: The success of healthcare technologies depends on their capacity to offer shared value and benefit to patients and healthcare providers. Many people living longer healthier lives with HIV are keen to better understand the impact of HIV on their lives and to access their own health records. Populations are ageing with associated co-morbidities and complexities and there is a need for more efficient communication between people living with HIV (PLWH) and their health care providers.
EmERGE is a five year Horizon 2020 funded project developing & evaluating an mHealth platform for those living with stable HIV. Within EmERGE individuals see their clinician once a year with interim results checked and pushed through to an application on their mobile phone. Here we report on the first phase of co-design workshops and interviews with community groups, patients & clinicians.
Methods: Co-design workshops and semi-structured interviews were held in each of the participating sites with community members and clinicians invited to participate. Data were analysed thematically drawing on grounded theory techniques.
Results: Between January and June 2016, 14 co-design workshops and 22 semi-structured interviews were held. These reached 97 PLWH and 65 clinicians.
Co-design participants approached the mHealth platform with pre-existing concerns arising from their experiences of receiving or providing care: PLWH

particularly addressed issues of stigma and questioned how mHealth could enable them to manage their HIV; Clinicians problematized the compatibility of mHealth with existing IT systems and questioned which patients should be targeted by mHealth. Imagining the potential of mHealth for HIV care, co-design participants suggested 'medical functionalities' (accessing test results, managing medicines and appointments, and digital communication channels), 'social functionalities' (peer-support network, international travel, etc.), and 'general features' (security and privacy, credibility, language, etc.). Co-design participants also anticipated potential implications of mHealth for self-management and the provision of care.
Conclusion: Findings from the first phase of co-design workshops & interviews have been fed back into the development process of the mobile & clinical web application. The platform has now been successfully integrated at each of the five clinical sites and recruitment to the evaluation is underway. A second phase of co-design workshops has just commenced which will review patient & clinician perceptions of the application in action.

P241

Erection difficulties: are brief group interventions in a sexual health setting effective?

P Bullemor-Day, K Gurney, H van der Walt, M Yates and K White
Sexual Problems Assessment and Treatment Service (SPATS), London, UK

Introduction: Sexual problems services within the NHS must deliver short-term, cost-effective and efficacious interventions due to increasing demand for services and financial pressures. A psycho-educational and sex therapy-based group intervention was developed and piloted as the first-line treatment for erection difficulties. This formed part of a stepped-care approach in a sexual problems service based within a busy sexual health clinic.
Methods: All patients with erection difficulties had a psychological and medical assessment. Patients with primarily non-organic erection difficulties were invited to attend the group intervention. This comprised five group sessions and an individual mid-point review session, using Sex Therapy and Cognitive Behavioural Therapy (CBT) techniques. Participants were given self-report outcome measures pre and post-intervention, which included quantitative and qualitative aspects of change. The data for 23 participants attending the group are included.
Results: Table 1: Mean scores across all participants

Outcome	Pre group	Post group
NSOG*	31.1	43.6
IIEF*	11.7	15.4
Confidence to use condoms*	3.2	5.4
Satisfaction with sex life*	2.7	5.1
Severity of problem**	7.2	5.4
PHQ-9**	6.9	4.9
GAD-7**	5.3	4.3

*Increase represents improved functioning
**Decrease represents improved functioning

Conclusions: The intervention was well received and evaluated favourably by participants. Significant change in reducing the severity of erection difficulties and improving sexual functioning and satisfaction was reported. Qualitative feedback suggested distinct benefits of a group intervention over individual care. Improved confidence in condom use was also reported, which has wider implications for sexual health and STI transmission. Further efforts to utilise group interventions for sexual problems may support the continued provision of psychosexual services in NHS sexual health settings.

P242

Establishing multi-disciplinary working with primary care

R Saman, N Fearnley and S Brady
Bradford Teaching Hospitals, Bradford, West Yorkshire

Background: It was noted that of our 409 HIV service cohort, a significant proportion are registered in a single primary care provider. This healthcare organization provides responsive NHS General Practice services designed to meet the needs of people who are homeless or in unstable accommodation; those who have come to the city as refugees or to seek asylum. A number of our most complex patients living with HIV are registered with this service and consequently regular communication with the team was already taking place. Following on from this, and with holistic management of healthcare needs in mind, a bi-annual multi-disciplinary team (MDT) meeting was setup.
Methods: A review of patient demographics, discussion points and management plans as a result of the MDT was carried out to describe the success of this collaboration.
Results: Two MDT meetings have taken place to this date. Attendance included HIV consultants, clinical specialist nurses, a pharmacists, psychology and general practitioners. Twenty-nine patients were discussed at the first meeting and seven at the second meeting. Common themes included cervical cytology, contraception, non-attendance, mental health issues, domestic violence, immigration concerns, housing and financial matters. As an adjunct to this collaboration, our service also provided HIV training for the staff in the practice. It was noted as a result of these meetings and improved communication methods, coordinated action plans have been established for each patient with the correct services involved and appropriate monitoring and follow up arranged.
Conclusion: Clinicians from both the HIV service and primary care have found this new MDT collaboration highly beneficial and we plan to continue these bi-annual meetings. We believe they have facilitated better communication between care professionals and enhanced support for some of our most vulnerable service users.

P243

Evaluation of home STI testing introduced in a response to local authority budget cuts

R MacDonald, S Rankin and H Leng
Hope House, Gloucester, UK

Background: Due to a 26% budget cut and decommissioning of our chlamydia screening service we had to review patient care. To reduce resources we needed to increase self-care and so moved asymptomatic STI tests to home testing in June 17. Tests for Chlamydia (CT), Gonorrhoea (GC) with HIV and Syphilis (STS) can be ordered on line or picked up in clinic. After 6/12 we reviewed uptake, results, demography and issues with the tests in our low prevalence rural county.
Method: Results from Preventx 1/6/17-1/12/17
Results: 7370 kits requested, 73.8% returned. 6741 patients tested. Ave. age 26 year
Ethnicity White 92.3%, BME 6.2%, NK 1.4%
% rural LA 46.6%

Number tests ordered	CT/GC (%return)	CT/GC/ HIV/STS (%return)	CT +(%)	GC +(%)	STS +(%)	HIV +(%)
Female	1759 (74)	2584 (74.5)	249 (7.7)	8 (0.2)	12 (0.9)	10 (0.8)
Male-het	710 (70.6)	1174 (72.4)	112 (8.3)	3 (0.2)	6 (0.9)	5 (0.8)
MSM	66 (84.8)	496 (74.4)	77 (18.1)	28 (6.6)	25 (8.4)	8 (2.7)

Blood test issues	
Insufficient sample	172(5.5%)
Haemolysed	271(8.6%)
HIV + not confirmed	22(96%)(1 known HIV +)

Conclusion: We have shown home testing is acceptable and attracting the 'right' people as we had a high return rate compared with similar studies and a higher CT prevalence than our previous screening programme despite less promotion. We saw a large number of tests requested from rural communities who may struggle with clinic access. BME uptake % was lower than the population (6.2 vs. 10.9%) we need to work with these groups to improve testing. There is potential budget risk due to demand for home tests however we have stayed in budget mainly due to limiting promotion of tests to only those requesting tests. There were a lot of issues with blood tests due to haemolysed or insufficient samples which has used staff resources. We also had more false positive HIV results compared with our clinic testing which may be due to increased confirmatory testing done on clinic samples. We have updated our website about how to take the test which should reduce this and warned patients of possible false positive results. Home testing is cheaper than clinic testing however there can be hidden costs dealing the increased problems from home tests which need to be considered. Also despite advice on our website there is a risk if a patient doesn't see a clinician any PEPSE, contraception or CSE issues will be missed. Offering innovative services like home testing is important, however clinics must continue to pressure decision makers to fund services appropriately to provide safe sexual health care.

P244

Genital skin, the forgotten organ

R Dabis
Watford Clinic, Hertfordshire, UK

Background: Genital Skin clinics within sexual health services are under threat of being decommissioned.
Aims/Objectives: In order to value the importance of these clinics a retrospective case note study was undertaken to look into the diagnoses made following genital skin biopsies performed within a sexual health clinic and the symptoms of those with a penile intraepithelial neoplasia (PIN) or vulval intraepithelial (VIN) diagnoses which led patients to attend the service were noted.
Method: Genital biopsy cases were identified using local coding from 1st January 2013 to 1st September 2017. Demographics were identified. Symptoms of initial presentation were noted.
Results: A total of 48 biopsies were identified. There were 14 male biopsies, 34 female. Ethnicity: White British - 29, White other - 3, Mixed - 3, Asian - 5, Black - 3, Other - 3, Chinese - 2. The following diagnoses were made: One PIN, seven VIN, nine lichen sclerosus, seven inflammation/lichen simplex, nine melanosis, one lichen planus, five lichenoid inflammation, one zoon's balanitis, eight warts.17% of the genital biopsies performed were PIN/VIN. All those with a diagnosis of VIN and PIN attended a walk-in/ appointment clinic with symptoms within the genitalia bar one patient who attended for an asymptomatic screen. Six had symptoms of growths/lumps on the genital skin and one patient complained of itching. All were HIV negative.
Conclusion: Important dermatological diagnoses are made within a sexual health clinic. It is vital that these services within sexual health clinics continue, to give patients with genital symptoms the choice of presenting to such services. The correct diagnoses will lead to appropriate skin management.

P245

HealthUnlocked BASHH Forum: a review of use over the last 5 years

H Pintilie[1], R Thomson-Glover[2], J Dhingra[3] and M Wood[4]
[1]Imperial NHS Trust, London, UK, [2]East Cheshire NHS Trust, Chester, UK, [3]University College Medical School, London, UK, [4]Royal Liverpool and Broadgreen University Hospitals NHS Trust, Liverpool, UK

Background: The HealthUnlocked BASHH community is a social network forum for sexual health, moderated and administered by BASHH. It is a public forum that provides a platform where individuals can discuss and ask questions about all aspects of sexual health and responses can be posted by other members or by professionals. Use of the forum since it went live 5 years ago was reviewed for activity and content.
Methods: The website statistics were analysed in January 2017 for number of users and posts. Each post was individually reviewed for content type and the replies were graded according to whether they were helpful or not.
Results: There had been 747 posts in 5 years. A large number of postings (34%) are related to symptoms. Other posts ask advice on named conditions (25%) such as a recent diagnosis of herpes or chlamydia. Contraception (12.5%), sexual function (12.5%), relationships and questions about attending sexual health clinics and STI acquisition risk (9%) make up most of the other posts. Since BASHH HealthUnlocked started there had been 1400 replies to posts. The vast majority of replies (84%) are helpful and offer advice or support. In total, over 3400 individuals have joined the forum (up from 2400 in August 2016), with a huge increase in the 6 months prior to analysis. The average number of new members over the 6 months up to analysis had been 208 per month. The number of posts have increased year on year, with the highest numbers occurring in January 2017 (272); double that occurring in the latter half of 2016. During the month of January 2017, the page had over 106 000 views, up 17% since the previous month.
Conclusions: The use of the HealthUnlocked forum is increasing month on month and the number of posts highlights this as does the large number of visitors, which is greater than the number of members. As the majority of responses are helpful, HealthUnlocked could therefore be a useful platform from which patients can gain information and support about symptoms, conditions or other sexual health concerns. This can be achieved either by posting or by reading others' posts and responses. We would therefore encourage health professionals to contribute to this valuable resource for patients, as well as direct patients to it for further information and peer support. This platform could thus be used to engage a wider range of patient groups, and empower more people to make informed decisions about their sexual health.

P246

HIV-related medical admissions to an HIV specialist inpatient unit: quality standards and outcomes

M Krutikov, S Parry, L Drury, N Matin and C Orkin
Barts Health NHS Trust, London, UK

Background: BHIVA *Standards of Care* for people living with HIV in the UK address the provision of HIV specialist inpatient care with the aim to provide rapid, equitable access to care under an expert specialist HIV multidisciplinary team. We investigated adherence to two *Standards of Care* in a specialist inpatient unit.
Methods: A retrospective case-note audit of 100 consecutive admissions to a specialist inpatient unit from 11/16 to 9/17 was performed. Primary auditable outcomes were: proportion of patients admitted within 24 h of transfer request (target 90%) and proportion of patients seen in HIV outpatients within 1 month of discharge (target 95%). Secondary outcomes were to describe demographics, clinical and linkage to care (LTC) status, patient flow and reasons for discharge delays.
Results: 32% of patients were transferred within 24 h of request (median 2 days, range 0–11 days). Median admission length was 13 days and discharge occurred at median 0.5 days after the point of being medically fit (all delays >3 days were awaiting rehabilitation placement). 50% presented with opportunistic infections or AIDS defining illnesses; 13% required admission to critical care. There were 5 inpatient deaths; 4 due to AIDS-defining illnesses. 35% of patients had social problems e.g. homelessness and drug and alcohol use. 33% of patients were discharged to the local HIV rehabilitation centre. 73% were seen in HIV outpatients within 1 month of discharge, 23% were seen at >1 month; 4% failed to attend.
Table 1: Cohort demographics, clinical and LTC status.

	n=100
Median age, years (range)	47 (19–76)
Male	66
Ethnicity	
White	40
Black	42
Asian	2
Other	16
CD4 count (median, range)	(76, 2–1879)
<50	39
50–199	29
>200	31
Unknown	1
HIV VL (median, range)	(21,174, 0–2,896,876)
<40	

Continued.

	n=100
22	
≥40 (≥100,000)	75 (37)
Unknown	3
LTC status	
New	25
Lost to follow-up	26
Engaged in care	49

Conclusion: Targets for transfer to specialist care and outpatient follow-up were not met. Despite 75% of patients having known HIV-infection pre-admission, 70% of patients had advanced disease. This suggests that further resources are required to engage these patients in care and treatment. The local HIV rehabilitation unit is a valuable resource, supporting early discharge from the inpatient unit. Recommendations include sharing findings with hospital management to improve HIV admission pathways, and ensuring patients have outpatient follow-up scheduled within 1 month at the time of discharge.

P247

Impact of express test on GUM walk-in clinic

N David
iCaSH Norwich, Norwich, UK

Background: Our GUM walk-in clinics have been very busy since we relocated the service to Norwich city centre in February 2015. We have been capping the number of patients per clinician to ten, in a 4 h clinic. Recently we started online STI testing for asymptomatic patients (Express Test service) using Local Authority funding for an innovative project. Express tests were introduced on 15/08/2017. This study is looking at the impact of Express Test on our GUM walk in services.
Methods: GUM walk-in clinics activity data for the month before and the month after introducing the Express test has been collected from the Lilie System. The compared data has been broken down based on gender.
Results:

	JULY 2017	SEPT 2017
Total no. of patients attended	671	542
Mean no. of patients per day	32	26
Total number of female patients	393	300
Mean no. of female patients per day	19	14
Total no. of male patients	278	242
Mean no. of male patients per day	13	12
40 or more patients	3 days	Nil.
30 or more patients	14 days	5 days
Reduction in Female Patients – 24%		
Reduction in Male Patients – 13%		

Conclusion: The total number of patients attending the GUM walk-in clinics reduced by 18% after the introduction of online STI testing for asymptomatic patients. The reduction rate in female patients (24%) was higher than in male patients (13%). Online STI screening service for asymptomatic patients is an effective method for managing a busy GUM walk-in service.

P248

Improving the referral process to sexual health for individuals attending a SARC

N Fearnley, C Cunningham, T Lait-Huzzard, S Brady and C Donohue
Locala CIC, Bradford, West Yorkshire

Background: In 2015 a new non-NHS organisation was commissioned to provide the regional sexual assault referral centre (SARC) which offers a range of support services to anyone who has experienced sexual assault or sexual violence. Anecdotally we became aware of an increasing volume of post-assault referrals for follow up sexually transmitted infection (STI) screening to our service. We also noted a high rate of non-attendance to pre-arranged booked appointments. We sought to review referral numbers, demographics and attendance rates and develop changes in service to improve the referral process and patient experience.
Methods: From our electronic patient record (EPR) we were able to identify all referrals from the SARC. We then reviewed the clinical records of all referrals received between 1 January and 31 December 2017.
Results: 96 referrals were received. 86 (90%) were female and 7 were male. The average age was 24 with range of 13–50 years; 23 were under 18 years. 54 (56%) patients attended our service although 2 episodes appeared to be unrelated to the initial referral. Most were offered an appointment after 2 weeks for STI screening, however some had indications for earlier review including 9 who required continuation of HIV post exposure prophylaxis (PEP) and one who required an emergency intrauterine device.
Conclusion: Our results confirm that a high proportion (44%) of patients referred never attend our service. All SARC referrals now reach our sexual health advisor team by secure email ensuring a prompt response, especially in the case PEP continuation. Patients are initially contacted by their preferred method and have one further contact if no response. We have a dedicated team member who will make contact with all under 18s, explore options to facilitate their attendance and ensure appropriate follow up and recall. We are also in the process of improving the written information patients are given about our service when they attend the SARC. Other sexual health services nearby reported similar experiences and some regionally agreed strategies have been proposed. These include a card with a SARC logo which can be given to patients and can be easily recognised by staff when presenting to services. Given almost a quarter of referrals were under 18, we must balance individual patient choice with follow up of potentially vulnerable individuals who may have ongoing needs.

P249

Integrated health pathway for unaccompanied asylum seeking children (UASC): a quality improvement project focusing on the sexual health needs of UASC

C Oxenham, D Oxenham, L Owen, H Turner, D Tippetts, S Edwards and J Ashby
CNWL, London, UK

Background: Unaccompanied Asylum Seeking Children (UASC) are a vulnerable group of young people with complex health and social needs. In recent months an increased number of UASC arrived in the UK, with London boroughs looking after 1/3, amounting to 1540 at the end of 2017. An integrated health pathway including Paediatric, Psychiatry and Integrated Sexual Health Services (ISHS) for all UASC patients was agreed locally with the aim of direct referral of all UASC within area for assessment within a level 3 ISHS.
Methods: A direct referral pathway into ISHS and a Standard Operating Procedure for care within service was developed. Quality standards for UASC attending ISHS such as routine enquiry about sexual violence and FGM, BBV testing, and sex education were agreed. Quality Improvement (QI) activity using Plan-Do-Act-Study (PDSA) cycles was used to monitor and optimise partnership working and ensure provision of best practice.
Results: From January-December 2017, 26 UASC were referred to ISHS via the integrated pathway and 19 attended. Attendees comprised 1 Female and 18 Males, aged 14–18 years, mainly originating from The Greater Horn of Africa. 79% accepted STI/BBV screening, 90% received advice about sexual health and contraception, 100% were offered condoms and 15% signed up to c-cards. 26% of attendees disclosed experiencing sexual violence. 1/19 was diagnosed with Hepatitis B. Themes indicating vulnerability to abuse and exploitation identified within consultations included limited English language, lack of social support, social isolation, trauma experienced in country of origin or on their journey to the UK, lack of knowledge about sex, poor understanding of their rights and how to navigate sexual health systems in the UK. Following initial high rates of DNA, PDSA cycles focussed on strengthening pathways and reducing DNAs, and we have seen an increase in attendances from 3 in July to 8 in December.
Conclusion: Clear pathways for referral into ISHS for this group can help achieve good levels of attendance and screening for UASC. High rates of sexual violence were seen within this group. Vulnerabilities identified with this group indicate they are at high risk of abuse and exploitation. Developing a QI team including various stakeholders across the care network, and utilising PDSA cycles we have seen on-going improvement in the management of UASC in ISHS. Local experience can help inform national guidance regarding UASC in sexual health.

P250

Interpretations of 'positive' approaches to youth sexual health services: concept defining as one phase of a realist evaluation

K Shearn, H Piercy, P Allmark and J Hirst
Sheffield Hallam University, UK

Background: Policy and practice guidance recommends a positive approach to youth sexual health, one which broadly promotes sexual wellbeing as opposed to only treating the negative impacts of sexual activity. There is, however, a lack of conceptual clarity concerning what this means and how it might be translated into practice. This study aimed to explore perceptions and interpretations of positive approaches to youth sexual health services.
Method: A definition of positive approaches was sought as one phase of a realist evaluation. Data relating to interpretations of positive approaches were gathered from multiple sources. These included three primary case studies where positive approaches to youth sexual health had been attempted (comprising 24 one-to-one interviews with commissioners, managers and frontline clinical and non-clinical practitioners, three workshops with 47 participants in total, documentary analysis including academic, evaluation, marketing and media outputs), three secondary case studies of services with similar aims reported in the academic and grey literature and a review of current English policy. Data was analysed using principles of Critical Interpretative Synthesis.
Results: Three main categories of interpretations of a 'positive approach' to youth sexual health were apparent from cases where local decision makers had attempted to implement them:

1) 'a marker of quality', where the service is delivered by friendly, welcoming staff who affirm young people's attendance at clinic but retains a focus solely on protection from STIs and reducing risk of pregnancy
2) 'a strategy to reduce sexual ill-health' which adopts a broad range of methods as a means to encourage young people make healthy choices and
3) 'a reorientation of services' which focusses on supporting young people to become autonomous adults and achieve sexual wellbeing.

These different interpretations led to disparities in perceived priorities limiting, or creating tension in, service transformation initiatives.
Conclusion: Progress towards a positive approach to youth sexual health services is currently hindered by a lack of conceptual clarity and consistent interpretation amongst decision makers. This study presents alternative interpretations, each with defined principles and characteristics, which may stimulate clarification across policy and practice.

P251

Involving people in service and policy making in Scotland: driving positive change

G Valiotis, R Hodgson, D Downing, L Mohlakoana and N Sparling
HIV Scotland, Edinburgh, UK

Background: The Sexual Health and Blood Borne Virus Framework states 'Patient involvement is core to good practice and should not be considered optional', reflecting it as a statutory requirement. We wanted to ensure that this engagement is meaningful because, when it is, it benefits everyone; service users, service providers and commissioners. Patient involvement improves the health of those involved, the range and quality of service, and leads to economic savings.
Methods: In order to develop National Involvement Standards for Scotland, we worked with Health Boards to establish involvement initiatives. These initiatives were then linked in to a national network designed to influence policy at a national level. The National Involvement Standards were designed using key indicators that would ensure involvement is meaningful and integrated into service delivery and design.
Results: In Tayside a user-led peer support group was initiated. Clinical practices were changed to better protected confidentiality by ensuring full names are not disclosed unwillingly. In the NHS Lothian Patient Forum a number of people received peer support training and access to peer support is now readily available. In Grampian, patients were able to shape the design of an information leaflet, which provides relevant contact details for clinicians and support services; it has now been distributed to all patients. In Glasgow, patients played an important role in developing a local anti-stigma campaign. Nationally, the patient initiatives were able to influence the development of national prescribing guidelines which ensure that patients are fully consulted during any proposed treatment changes. Patients who have been involved through local and national initiatives reported increased HIV awareness, improved health and wellbeing, improved self-esteem, and less social isolation.
Conclusions: National Involvement Standards are an effective tool for local Health Boards to develop action plans for meaningful involvement, service improvement, and to measure progress against an evaluation framework. Whilst involvement leads to improvements, there is a lack of academic research that supports the cost effectiveness. The next stage will be to develop an evidence base to explore cost effectiveness of patient involvement.

P252

'Just encourage testing': a self-triage tool

A Fernandes, V Jessop and K Horn
Royal United Hospital, Bath, UK

Background: Demand for sexual health services remains high. Innovative ways of improving access to sexual health is hence imperative.
A pilot of a 'self-triage tool' for patients identified as asymptomatic on preliminary assessment was trialled at open-access sessions at a sexual health department as part of the drive to improve patient flow and help to manage clinician work-load.
Methods: Over a 3-month period in 2017, a cohort of clients who attended open-access sessions and were identified as 'asymptomatic,' on preliminary triage were requested to complete an additional screening questionnaire; designed to serve as a 'sexual risk-assessment tool.' If the response to all questions indicated no specific risk, the client proceeded to see a Health Care Assistant who instructed on submitting a urine sample (if male) or self-taken vaginal swab (if female) for Chlamydia and Gonorrhoea, and collected bloods for HIV and Syphilis. Men who had sex with men (MSM) were offered triple swabs and tests for Hepatitis A and B in addition. This obviated the need to see a Nurse/Doctor, helped with reducing waiting times and increased the overall number of patients seen.
A retrospective review and analysis of all clients who were reviewed as part of this pilot was conducted to identify the pros and cons of this scheme.
Clients participating in the pilot were identified using the Lilie System. These consultations were further analysed, with tests and results noted, together with any significant findings when a full sexual history was subsequently taken.
Results: Over the 3 months a total of 873 clients attended the open-access sessions, of which 134 (16%) were included in this pilot. Of these only 7 had positive test results – 6 positive for chlamydia, 2 positive for gonorrhoea; the age range of patients was 18–70, with an average age of 25 years.
Conclusions:

- This 'self-triage tool' proved an efficient way of dealing with clients who were assessed to be asymptomatic, and at 'low risk.'
- The relatively small percentage of positive results suggests that this is a safe triage tool, with few significant omissions resulting.
- The tool saves time for both the client and clinician, shortens waiting times, and reduces the number of clients who leave without being seen.
- Clients who had a positive result had to be reviewed, with a detailed medical, allergy and sexual history taken.
- This is preferable to Chlamydia self-testing kits as the majority of patients will also accept a blood test. Window periods are explained; however a full sexual history is not taken, risking relevant information not being elicited.

P253

Looking in the mirror: a quality improvement project for a sexual-health service based genital dermatology clinic

K Catton, P Revie, K Weaver and I Fernando
Chalmers Centre, Edinburgh, UK

Background: In the current NHS climate, service development is essential to maximise efficiency and quality of care. We reviewed our sexual-health service based genital dermatology (GD) clinic in order to identify areas for improvement. This included a patient questionnaire and audit of the two

most common conditions seen in our clinic: Lichen Sclerosus (LS) and Vulvodynia.
Methods: 51 patients out of 79 who attended our GD clinic over a 7-week period from August 2017 completed a patient satisfaction survey including 2 qualitative and 12 quantitative questions (65% completion rate). Retrospective case note audit was conducted on 32 consecutive patients with a diagnosis of LS and 32 with Vulvodynia, seen in the clinic from January 2016. The British Association of Dermatologists (BAD) guidelines on management of LS and Vulvodynia were used as a measurable standard for audit.
Results: Over 94% of patients (n=51) responded 'agree' or 'strongly agree' to 10 quantitative questions on topics including clinician sensitivity, explanation of diagnosis and shared decision making. Common areas for improvement included waiting rooms and access to appointments.
The LS audit showed, 69% of patients with active disease (n=29) were reviewed within 4 months of starting steroids. 100% of patients who met BAD indications for biopsy (n=3) received biopsy. Documentation of an annual review plan for all LS patients (n=32) was 97%; however only 69% had documented discussion of malignancy risk. 31% of all LS patients (n=32) remained in clinic for annual review. Of the Vulvodynia patients audited (n=32), 83% met BAD recommendations for combining treatment modalities e.g. oral medication, topical therapies, physiotherapy or psycho-sex advice. However, <10% had formal ISSVD (International Society for the Study of Vulvovaginal Diseases) Vulvodynia classification documented.
Conclusion: Self-assessment using objective data is a useful quality improvement process for any service. We were pleased that overall patient satisfaction was high. Clinical areas for improvement include consistent documentation and reviewing all active LS patients within 4 months. High retention rates for LS follow-up were due to some clinicians' concerns about whether GPs can manage the burden of yearly LS reviews. Next we plan to survey local GPs to investigate this concern, with the aim to increase our discharge rates. This will improve access for new patients to our clinic.

P254

Mobile health (mHealth) interventions to support self-management in HIV: a systematic review

V Cooper[1], J Clatworthy[2] and J Whetham[2]
[1]The Research Unit Limited, Brighton, UK, [2]Brighton and Sussex University Hospitals NHS Trust, UK

Introduction: Self-management is an important aspect of long-term HIV treatment. Mobile technologies offer the potential to efficiently deliver interventions to facilitate HIV self-management. The last comprehensive review of such mHealth interventions was conducted in 2011. Given the rapidly evolving field, a need was identified for an updated review of the literature. This study aimed to describe and evaluate current evidence-based mHealth interventions to support self-management in HIV.
Method: Eight online databases (Medline, Scopus, Embase, PsycINFO, Cochrane, Global Health CAB, IEEE explore, Web of Science) were systematically searched for papers describing and evaluating mHealth HIV self-management interventions. Reference lists of relevant papers were also searched. Data on intervention content and evaluation methodology were extracted and appraised by two researchers.
Results: The electronic database search identified 570 potentially relevant papers, 132 of which were selected for full text screening on the basis of the title and abstract review. These papers were obtained and subjected to full text review, with 37 papers meeting the inclusion criteria. A further 4 papers were identified from the reference list search and communication with authors, resulting in a total of 41 papers included in the review. Of the 28 mHealth interventions identified within these papers, the majority (n=20, 71%) had a single focus of either improving adherence (n=16), increasing engagement in care (n=3) or supporting smoking cessation (n=1), while just 8 (29%) were more complex self-management interventions, targeting a range of health-related behaviours. Interventions were predominantly delivered through SMS messaging. They significantly impacted on a range of outcomes including adherence, viral load, mental health and social support.
Conclusion: Since the last major review of mHealth interventions in HIV, there has been a shift from exploratory acceptability/feasibility studies to impact evaluations. While overall the interventions impacted on a range of outcomes, they were generally limited in scope, failing to encompass many functions identified as desirable by people living with HIV. Participant incentives may limit the generalizability of findings.

P255

MYCO WELL D-ONE: evaluation of a novel rapid diagnostic test for detection of *Ureaplasma* and *Mycoplasma* in sexual health patients

L Jones[1], O Spiller[2] and D Morris[2]
[1]Cwm Taf University Health Board; Cardiff University, UK, [2]Cardiff University, School of Medicine, UK

Background: The emerging pathogens *Ureaplasma* species (*U. parvum* and *U. urealyticum*) and *Mycoplasma hominis* can only currently be diagnosed by test facilities at Public Health England. We are evaluating the colourimetric assay MYCO WELL D-ONE using genitourinary samples from Sexual Health Clinics. MYCO WELL D-ONE is a rapid diagnostic to detect *Ureaplasma* species and *Mycoplasma hominis* and provide antibiotic susceptibility outputs for macrolides, tetracyclines and fluoroquinolones.
Methods: Ethics for this study was granted by the Midlands Research Health Authority (IRAS Project ID: 230693). First catch urine samples, endocervical and vulvovaginal swabs from patients attending sexual health clinics were collected to evaluate the test. Samples were inoculated into 10 ml sterile saline for investigation by: 150 µl per well for MYCO WELL D-ONE plate, titration in commercial Ureaplasma or Mycoplasma media and agar, with 2 ml processed to extract genomic DNA for measurement by the PHE validated taqman-probe multiplex qPCR method. All query antibiotic resistance indicated by the assay was re-tested using Clinical Laboratory Standard Institute (CLSI) guidelines (2011).
Results: Data for the first 270 patients (study target=1000) was analysed (102 endocervical/vulvo-vaginal swabs, 74 female urine, and 94 male urine samples). Sixty (59%) swabs from female patents showed *Ureaplasma species* (range 10–10,000,000 infectious organisms per ml saline), while only 23 (32%) female urine and 6 (6.4%) male urine samples showed Ureaplasma infection. Two samples were doxycycline-resistant and one levofloxacin resistant strain. No Erythromycin or Josamycin resistance was found. *Mycoplasma hominis* was found in 27 female samples (12.5%) and 7 male urine samples. Only two of these patients were not co-infected with *Ureaplasma*. Clinical evaluation of female patients with *Ureaplasma* bacterial load >10,000/ml showed 75% were symptomatic with no other bacterial pathogens isolated. All male patients with high *Ureaplasma* bacterial load were symptomatic and had co-infection with other sexually transmitted infections. Bacterial load were too great (<10,000 infectious units/ml; CLSI standards requirement) in 39.5% of swabs, 12% of female urine and 1% of male urine samples.
Conclusion: The MYCO WELL D-ONE assay shows high sensitivity and good specificity, but bacterial load in many swabs is too high for accurate antimicrobial sensitivity testing, and a future study needs to compare detection in matched urine and swab samples.

P256

Online innovation to reach men who have sex with men

A Jeffery and A Nielson
METRO Charity, London, London

Background: There is high prevalence of HIV and other STIs amongst MSM, and risk is exacerbated by multiple barriers to accessing services, such as time constraints, service user embarrassment, and limited clinic opening hours or locations. METRO Charity currently provides twice-weekly drop-in clinics to MSM in the Royal Borough of Greenwich (RBG), and service user feedback showed a desire for services which felt less clinical and more representative of the MSM community, as well which were linked up to support multiple needs. In response, METRO developed an innovative and responsive online service for MSM, to provide additional support for clients attending drop-in clinics and to reach MSM who were unable or unwilling to access in-person services.
Methods: PitstopPlus.org was designed to modernise and expand engagement with MSM, and to offer MSM a linked-up holistic package for sexual health support. PitstopPlus uses simple language and an engaging, playful, and interactive approach to provide tailored support and interventions to individual service users. Via PitstopPlus, service users can: Order free home testing kits for Chlamydia, Gonorrhoea, Syphilis, HIV, and Hepatitis B; Order

free condoms; Access test results online and via text messages; Find local clinics; Set automated reminders to re-test and re-order condoms; Access a telephone support line; Be signposted to treatment and relevant local services; Request anonymous partner notification services; Self-refer into linked services; Log sexual experiences and receive tailored advice, referral offers, and STI tests / condoms accordingly

Results: Since PitstopPlus launched on 1 May 2016, a total of 1531 clients have registered to the site, and 43 infections have been found (14 Syphilis, 2 Hep B, 3 Chlamydia Urethral, 4 Chlamydia Throat, 7 Chlamydia Rectal, 7 Gonorrhoea Throat, 6 Gonorrhoea Rectal). MSM engaging with the site are testing for HIV and other STIs with greater frequency, and contact with MSM who are traditionally harder to reach has increased.

Conclusion: PitstopPlus provides innovative support to MSM to take responsibility for their own sexual health, and reduces the numbers of low-risk MSM who attend GUM clinics. PitstopPlus provides a service which MSM want to use and enjoy engaging with, and lessens the burden on NHS services by reducing unnecessary face to face contact and allowing GUM services to focus on clients who require physical support and treatment.

P257

Online services: reaching MSM around the country who are struggling with issues around sex, drugs and alcohol. A Public Health England HIV Innovation Project March 2016–November 2017

D Edwardes[1], G Halfin[1], J Harbottle[1] and M Moncrieff[2]
[1]Terrence Higgins Trust, UK, [2]London Friend, London, UK

Background: Men who have sex with men (MSM) have long been disproportionately impacted by problematic drug and alcohol use. In 2014 Sigma Research published The Chemsex Study (www.lambeth.gov.uk/sites/default/files/ssh-chemsex-study-final-main-report.pdf), a qualitative study among MSM in south London. They found, by analysing data from the Gay Men's Sex Survey, that over a 4 week period:

- 88.6% had used alcohol
- 14.3% had used chemsex drugs (GBL, mephedrone and crystal meth) (compared to 6.6% in the rest of England)
- 32.7% of HIV positive MSM had used chemsex drugs (compared to 21.9% in the rest of England).

Method: Terrence Higgins Trust built on the foundations of its Friday/Monday website for MSM concerned about sex and drugs, working in partnership with London Friend to deliver online groupwork and one-to-one counselling to MSM across England. The project used Zoom, cost-effective online video conferencing software, to deliver these services. Clients could access the service using their phone, computer or tablet from any location. This removed geographical barriers, enabling people living in areas with no specialised support for MSM with sexualised use of alcohol and drugs to access these services. In addition the service encouraged people who found it more convenient, or where there may be local concerns around anonymity, to access these services online.

Results: 202,379 MSM saw adverts on Facebook and 9256 saw adverts on Grindr.

- 241 people submitted their contact details to express interest in counselling and groupwork services. 146 submitted a full application.
- Over 50 people completed groupwork or counselling.
- 38% of people who accessed groupwork, and 32% who accessed counselling, were living with HIV.
- 49% of people who signed up for groupwork, and 31% who signed up for counselling, were from outside London.
- 96% of clients starting counselling, and 75% of those starting groupwork, completed it.
- 92% of groupwork clients reported an improvement in the control of their drug/alcohol intake.
- 92% of counselling clients reported an improvement in their sense of control over their drug use.

Conclusion: The project was successful in reaching MSM across England, and translating existing physical support services onto an online platform which helped them make meaningful changes in their lives around their use of sex, drugs and alcohol. Both Terrence Higgins Trust and London Friend are investigating ways to integrate online services into what they offer.

P258

Patient experience with HIV specialist services and GP services among adults living with HIV in England and Wales

M Auzenbergs, M Kall, C Kelly and V Delpech
Public Health England, London, UK

Background: Ensuring that people have a good experience with their care is an important health outcome and should be measured to drive improvements in the quality of care. We present data on patient satisfaction with HIV and GP services.

Methods: Positive Voices is a cross-sectional, probability survey of people with HIV, conducted between January and September 2017. A representative sample of people attending 73 HIV clinics in England & Wales was invited to take part, and 4415 people responded (51% response rate). Participants were asked to rate their HIV clinic and GP out of 10, and agree or disagree (5-item Likert scale) with the following statements about their HIV service: (i) 'I have enough information about my HIV', (ii) 'I feel supported to self-manage my HIV', (iii) 'I am involved in decisions about my HIV care', (iv) 'At appointments, I have enough time to cover everything I want to discuss' and (v) 'The staff listen carefully to what I have to say'; and statements about their GP service: (vi) 'My GP knows enough about my HIV condition and treatment', (vii) 'I am comfortable asking my GP questions about my HIV', (viii) 'My GP is as involved as I want them to be with my HIV care', (ix) 'I feel that my HIV specialist and my GP communicate well regarding my health' (for those registered and disclosed to GP). Agreement was defined as a 'Strongly Agree' or 'Agree' response.

Results: Mean HIV clinic rating was 9.3 (95% CI: 9.2, 9.3). No difference in rating was observed by ethnicity (white=9.2, black=9.3, other=9.2), gender (female=9.3, male 9.2), and age (9.2 age <35, 9.2 age 35–44, 9.3 age 45–54, 9.4 age ≥55). Mean GP rating was 6.9, and again no variation by age, sex or ethnicity. For each of the five HIV service statements, the proportion agreeing was >95% across sex, ethnicity, and age, except for: 3) <95% for those aged <55, male and of other ethnicity. Overall agreement with the GP statements was lower compared to HIV service statements. For 6&7) <75% of respondents from all age groups, ethnicities and genders agreed; for 8) <75% across all age groups, ethnicities and genders agreed, except for age ≥55, for which 77% agreed; and for 9), <75% across all age groups, ethnicities and genders agreed, except for age ≥55, for which 75% agreed.

Conclusion: The quality of patient experience with HIV specialist services and very high overall, with GP ratings also similar to the general population, with little variation by patient characteristics indicating high equity of care.

P259

Preferences for the format of text messages containing results of online screening for sexually transmitted infections: a service evaluation

T Nadarzynski[1], C Scholfield[1], Y Symonds[1], C Graham[2] and S Kidsley[1]
[1]Solent NHS Trust, Southampton, UK, [2]University of Southampton, UK

Background: Mobile phone text messages with the results of screening for sexually transmitted infections (STIs) are an acceptable and effective method in reducing the time from screening to diagnosis, subsequent treatment and partner notification. Including the names of STI within the text could benefit patients and produce substantial operational savings. We examined the attitudes of STI self-sampling service users towards the wording of text results containing the names of STIs.

Methods: An online survey explored how service users understood different formats of text messages and assessed attitudes towards the inclusion of names. A text invitation to the online survey, with an URL link, was sent to service users who had used self-sampling offered by Solent NHS Trust. The data were analysed using descriptive statistics

Results: In total, 115 users responded, over 86% would prefer to receive text messages that include the names of STIs and 60% would prefer to receive one text for negative results. The majority (65%) would not be concerned about other people reading the text if it includes the names of STIs. A small minority

(15%) showed concerns about the inclusion of names and for 11% this would stop them from requesting the self-sampling kit. 86% would prefer multiple texts with the names of an STI for which they were positive (Chlamydia and Gonorrhoea), and 74% would prefer to receive separate text messages indicating that inconclusive results required for retesting.
Conclusion: Multiple text messages that include the names of STIs for which patients test positive or negative are highly acceptable. Most self-sampling users would prefer a single text for negative results and multiple tests indicating positive bacterial STI or incomplete samples. Users might need to be reminded to delete the text from their phone after receipt to minimise the risk of the text being visible. The results of this survey support a change of practice to sending multiple text messages with the results of online self-sampling that include the names of STIs.

P260

Rapid access partner testing

A Menon-Johansson
Guy's and St Thomas' NHS Foundation Trust, London, UK

Background: Public Health England (PHE) 2016 data shows that the positivity of partners of chlamydia, gonorrhoea, syphilis and HIV who test is 40%, 35%, 12% and 4% respectively. The positivity of partners is high enough to make them priority 'high value' public health patients but too low to make syndromic treatment congruent with good antibiotic stewardship. We therefore reviewed verified partners tested at clinic to determine if the mixed interpretation of national data was replicated when partners were seen promptly and if a 'test and wait' strategy for results was effective to reduce the inappropriate use of antibiotics.
Methods: Partners testing at three clinics were identified from a database from an electronic partner notification (PN) tool. The clinic number used to sign off the partner attending for testing enabled the review of the clinical record for the sexual history, testing, results and treatment.
Results: Of the 98 partners reviewed, 28 patients (29%) had insufficient patient data or results and this left 70 partners for analysis. When the sexual history stated 'last sex more than two weeks' then 15 days was used in the analysis.
Conclusion: The results support the mixed interpretation of the national data despite all but one of the partners being seen and tested within 11 days. The majority of partners had the same infection; however, six partners (9%) were found to have either a different or additional infection. The 'test and wait' strategy in 14 partners prevented inappropriate antibiotic use in 10.

P261

Recording of non-ART (antiretroviral therapy) medications for patients living with HIV: how can we use an electronic record to improve recording to allow safe prescribing and care?

H Casey and K Horn
The Riverside Clinic, Royal United Hospital, Bath, UK

Background: Conducted in an outpatient HIV unit with pharmacy support provided 1 day per week. Recent adverse patient events related to interactions between ART and existing prescription medication. Patient record stored on electronic system Lilie.
Aim: 1.100% of patients on ART to have current non-ART medication recorded in past year (as per BHIVA standard), 2.100% of patients starting or switching ART to have an interaction check carried out and documented 3.100% of patient's allergy status recorded at each visit.
Methods: Plan, Do, Study, Act (PDSA) quality improvement (QI) methodology used. Collect baseline data from 2 months of clinic attendance for percentage of patients with current medications recorded in the last year, drug allergies and, for all patients starting or switching medications, percentage of interaction checks at time of switch. PDSA cycles based on baseline data to review findings with MDT, review use of electronic record and create new templates to improve consistency of recording of information.
Results: 62 patient records reviewed at baseline;

- 90% had drug allergies recorded at last visit
- 74% had medication history recorded at last visit with 94% recorded in last year
- 9 patients started on new ART of these:
- 5 had current medications documented at time of switch
- 1 had incorrect medications documented
- 3 had no medication history documented
- Interaction checks were performed for 57% patients requiring one at time of prescribing.

Area of highest risk was at time of new ART prescribing consistent with clinical incidents that prompted review. PDSA cycles identified lack of consistency with location of information within electronic document, lack of awareness of potential interactions between ART and common medications e.g. steroid inhalers and no clear method of recording change in ART on current templates. Findings addressed through QI with awareness raised in department and to wider hospital prescribers, new templates designed for changes in medication and current templates updated to create clear areas for recording medication history. Ongoing data collection through record review used to monitor progress.
Conclusion: When switching to an electronic record patient safety can be compromised if information is not recorded clearly and consistently. Making simple templates so information is stored in a single location with clear prompts can improve prescribing to lower risk to patients and safeguard prescribers.

P262

Review of a multispecialty vulval dermatology service

H Sakurai[1] and I Fernando[2]
[1]University of Edinburgh, Medical School, UK, [2]Chalmers Sexual Health Centre, Edinburgh, UK

Background: The management of vulvar conditions requires multispecialty input, and robust communication and referral pathways with primary care. The objective of this study was to review a multispecialty multisite tertiary level vulval skin service at a large urban centre, and to compare it against other services described in literature and published standards. The vulval skin service spanned sites at the sexual health centre and the gynaecology outpatients' department and each site included input from both a GUM physician and Gynaecologist.
Methods: A retrospective review was conducted of new patients seen at the vulval skin service in the period August 2015 to March 2016. Details of the referral, consultation and management were obtained through review of case notes, referral letters and clinic letters. Audit against recommended British Association of Dermatology and RCOG standards were undertaken for the

Sexual contact of the following infection (number)	Partner positive for the same infection (%)	Number of partners with a different infection (%)	Partner with more than one infection	Average (Std dev) time from notification to partner testing (days)	Median (range) time since last unprotected sex (days)	Test & wait	Number of partners with a positive result (%)
Chlamydia (38)	16 (42%)	1 (3%)	0	2.76 (7.47)	7 (1–56)	10	4 (40%)
Gonorrhoea (15)	9 (60%)	0	3 (20%)	2.33 (2.71)	7 (5–15)	4	0 (0%)
Trichomoniasis (5)	1 (20%)	1 (20%)	0	2.00 (2.91)	7 (1–28)	0	-
Syphilis (11)	1 (9%)	1 (9%)	0	2.73 (2.24)	7 (3–21)	0	-
HIV (1)	0	0	0	8	Not documented	0	-

specific conditions of Lichen Sclerosis (LS) and Vulval Intraepithelial Neoplasia (VIN).
Results: 302 patients were seen over the study period, 264 (85.7%) were referred from general practice. LS was the most common diagnosis (55.6%). Neoplastic conditions comprised 7.9% of diagnoses. The service had a biopsy rate of 10.6%, which confirmed neoplastic conditions in 78.1% of total biopsies.
Audit of LS patients (n=168) revealed need for improvement in biopsy rates for cases refractory to initial treatment (24%), and communication with GPs about follow-up (72%). However, service performance was satisfactory regarding information provision to patients (93.5%) and documentation of date of initiation of potent topical steroid treatment and response (100%). At 18 months from initial review, 86% of LS patients had been discharged to primary care. Of 18 patients with VIN audited, 24% received an initial trial of pharmacological therapy, 71% were referred for immediate excision. One patient was initially managed with monitoring alone. The service had satisfactory performance for VIN management for recommended standards of biopsy confirmation of diagnosis (95%) and secondary care follow-up (100%).
Conclusion: This study analysed diagnoses and management of patients with vulvar skin pathology at the multispecialty clinic. Evaluation against formal standards of care highlighted areas for improvement in the care for LS patients, especially more diligent use of biopsy for refractory cases. There is also requirement for clearer communication and pathways with primary care.

P263

Should patients be taught how to use the Liverpool HIV drug interaction checker? A pilot service evaluation

J Conway[1] and K Rogstad[2]
[1]University of Sheffield, South Yorkshire, UK, [2]Sexual Health Sheffield, South Yorkshire, UK

Background: The NHS *Five Year Forward View* produced in 2014 identifies the need to support people to manage their own health and the BHIVA 2018 Standards initial consultation document includes the need to optimise self-management. The Liverpool HIV Drug Interaction Checker website has been in operation since 1999, providing a central location for checking for potential interactions between antiretroviral therapy and other medications. Some Doctors have already begun to show their patients how to use the website. This pilot service evaluation assesses the views of patients who have already been shown how to use it and whether other patients are aware of the tool, and how many staff advise patients about it.
Methods: Questionnaires were posted to patients who had been instructed on using the HIV Drug Interaction Checker as part of their routine care and agreed to be contacted. 13 questionnaires were given to patients attending HIV clinics and 10 to clinicians/specialised nurses.
Results: 10 patient questionnaires have returned thus far. Regarding the tool: 1 had been shown how to use; 8 (80%) wanted to be taught how to use. On a 7-point Likert-type scale (1 – very unhelpful, 7 – very helpful) on how useful it would be the score was 5.2. Preferred methods for teaching were app 5 (50%), face-to-face without observed practice 4 (40%), face-to-face with observed practice 3 (30%) (participants could choose multiple options). Regarding who delivered teaching, 5 (50%) had no preference, 3 (30%) preferred nurses and 2 (20%) doctors.
7 clinician questionnaires (5 Consultant and 2 Nurse Practitioner) have been returned thus far. On a 7-point Likert-type scale (1 – never, 7 – every patient) on how often it is used during a clinic the score was 3.6. The Drug Checker was used with 36% (3.6, given on a scale of 0 to 10). All the responses stated that they used the tool between 1 and 5 times a week. Only 18% (1.8, given on a scale of 0 to 10) of patients were shown how to use the site by the clinician.
Conclusion: Preliminary data shows that patients are keen to be involved in their care regarding checking drug interactions and this data will inform a larger study.
Further results from those already taught and professional's attitudes to this innovation will be also be presented.

P264

Social media as a health promotion tool: a detailed analysis of social media networks during #HIVTestWeek using five different analytic tools

S Taylor[1], T Hayes[2], D Hartland[2], M Page[1], A Tomkinson[2], C D'Aguilar[2] and D Mackenzie[3]
[1]Birmingham Heartlands HIV Service, UK, [2]The Saving Lives Charity, Birmingham (Base), UK, [3]NHS Lothian, Edinburgh, UK

Background: Digital technology & social media are increasingly used within health promotion campaigns. The potential for dynamic & rapid dissemination of health information is significant. Understanding how individuals & groups within HIV & public social media networks behave is poorly described.
Methods: We conducted a prospective planned analysis of social media networks & activity on Twitter during #HIVTestWeek using 'Symplur Healthcare Hashtags', 'Follow the Hashtag', NodeXL, Twitter & Google Analytics. Full Twitter activity containing #HIVTestWeek was captured & analysed from17-11-2017 to 26-11-2017. Descriptive statistics on total tweet activity, retweets & impressions were compared across platforms. Interactions (retweets, replies, & mentioning other users) were studied using NodeXL.
Results: 3090 individual accounts produced 7457 tweets & retweets creating >46 million impressions. Of the top 10 retweets, 9 were dominated by Prince Harry's involvement with the national campaign.
High impact users

Top 5 Influencers by Betweeness Centrality (NodeXl)	Top 5 Influencers by mentions (n) Symplur	Top 5 Impressions (Symplur)
@thtorguk	@thtorguk 1398	@heatherpatterson 10.5M
@pozladlincolnuk	@startswith_me 695	@lgbtfdn 4M
@startswith_me	@yorkshiremesmac 325	@nhsengland 2.1M
@savinglivesuk	@savinglivesuk 276	@thtorguk 1.5M
@lgbtfdn	@HIVprevention 271	@heroic 1.4M

Besides #HIVtestweek (2979) other hashtags ranked highly in network analysis, including #GiveHIVtheFinger by HIVPE & #GetTested by the Saving Lives Charity.
Social media network analysis demonstrated well defined 'Community Clusters' with 10 large clearly connected groups. Within these clusters influential hub individuals/groups can be identified (mainly HIV charities & organisations). Individuals including footballers & media celebrities with large followings were identified within the networks. While their impact on tweet impressions was significant, interactions with other users in the network were highly variable. Many individuals formed important bridges between local & national campaigns.
Analysis of re-direction to pre-specified websites showed an increase in website activity. On one site 214 of 295 visitors were first time users, 75 & 69 were identified as direct & Twitter referrals respectively.
Conclusions: The use of simple & sophisticated social media network analysis tools can provided unique insights with respect to patterns of network interactions & identifying key influencers for future HIV awareness campaigns.

P265

Survey of patient access of services across a Scottish sexual and reproductive health board

H Pollitt and C Oroz
Chalmers Sexual Health Centre, Edinburgh, UK

Background: We present the results of a survey carried out throughout a Scottish sexual and reproductive health board. The results consist of surveys from a central clinic and 6 local clinics. The services provided in each location vary depending on local resources. We aimed to assess patient's views of access to services and what barriers they faced.
Methods: A paper survey was formulated and handed to patients at triage during walk-in clinics. It was decided against using an online survey due to

lack of sufficient IT resources in local clinics. The results were analysed using excel.

Results: 146 surveys were returned; 47 from central and 99 from local clinics. 81% of patients were seen on the same day at the central clinic and 61% in local clinics. Of the turnaways, 22% (n=9) at the central clinic had symptoms and 17% (n=29) at local clinics.

20% of patients waited over 7 days after deciding they needed to be seen before attending the central clinic and 30% in local clinics. Of these 10% were delayed by the central clinic itself and 20% by local clinics.

STI related issues were the main reason for attendance in 76% of patients attending centrally and 48% locally. Contraception was the main reason in 12% of those attending centrally and 44% at local clinics.

At the central clinic 36% of patients found out about the service online, 28% by word-of-mouth and 11% from other services. In local clinics 22% found out about the clinic online, 23% by word-of-mouth and 25% from other services.

Conclusion: This was likely to be a self-selected group of patients; they had already attended and most were seen on that day. Generally patients reported finding access to services easy, although feedback suggests clinic times need to be more flexible as 'work' and 'childcare' were cited as reasons for delaying over 7 days before attending. Further work looking into all patients attending triage and reasons for turning patients away will be useful. More data is needed to assess the seeming difference in need between central and local clinics. It may be that the need is more in GUM services centrally and contraception locally. However, it could also be a difference in triage systems or availability of appointments. Many patients found out about the service online and feedback suggested clarification of local clinic information online was needed. Patients were directed to the clinic from other services, showing the importance of maintaining links between sectors to improve accessibility.

P266

The acceptability of artificial intelligence (AI)-led chatbot, an automated advice system for sexual health

T Nadarzynski[1], J Bayley[2], C Llewellyn[3], C Graham[4] and S Kidsley[1]

[1]Solent NHS Trust, Southampton, UK, [2]Barts NHS Trust, London, UK, [3]Brighton and Sussex Medical School, UK, [4]University of Southampton, UK

Background: Artificial Intelligence (AI)-led chatbots, automated advice systems delivered in a conversational way, could improve the uptake of STI screening and self-help resources by mediating health literacy and decision-making for those concerned about sexual health (SH). As the use of popular Internet search engines is related to incorrect self-diagnosis, there is a need to explore the feasibility of AI chatbots for SH promotion and advice to facilitate better access to accurate health information and clinical services.

Methods: A pen-and-paper survey was distributed to attendees of three SH clinics in Hampshire, UK, between May and December 2017. The survey consisted of 34 items exploring attitudes towards digital services for SH. The survey was voluntary and no incentive was offered. Chi-square and Wilcoxon signed-rank tests were performed to identify factors associated with the acceptability of SH chatbots. Out of 148 respondents, most were aged 18–24 years, White, full-time employed, asymptomatic and with no previous history of an STI.

Results: Only 40% would be willing to use a chatbot to assist with finding SH information. The main predictors of chatbot acceptability were: (i) preferences towards mobile phone app use as opposed to website, (ii) willingness to enter symptoms on an online form, (iii) preferences for using remote services such as video-consultations and live web-chat as the first point of contact for SH, (iv) lower levels of concern about electronic security and privacy for storage of medical information, and (v) for communication with health professionals. The two main reasons for hesitancy towards chatbots were concerns about privacy and the preferences for discussing health issues with medical professionals rather than computers. No demographic factors were associated with chatbot acceptability.

Conclusion: SH chatbots are moderately acceptable amongst clinic attendees. Due to the lack of direct experience with health bots, most patients might not perceive their benefits and usability. Future research needs to assess attitudes of the Internet users and hard-to-reach individuals who might be at the greater risk of STIs but face multiple barriers to accessing SH services.

P267

The launch of a new in-house, prescribing pharmacist-led smoking cessation clinic in the HIV outpatient setting

S Guard and R Simons

Guy's and St Thomas' NHS Foundation Trust, London, UK

A national audit undertaken by BHIVA in 2015, identified a 45.2% adherence rate to the BHIVA recommendation that HIV-positive patients should be encouraged to stop smoking cigarettes. With a reduction in AIDS mortality and a resultant ageing population of people living with HIV following the introduction of cART, death from cardiovascular disease (CVD) and non-AIDS malignancies is now a major concern. It has been reported that 40–70% of HIV positive patients in developed countries are current smokers, at least a 2 to 3 fold increased rate relative to the general population (D:A:D Study), and smoking has been independently associated with pulmonary disease, lung cancer and CVD.

The D:A:D study found a 2 fold increase in risk of myocardial infarction (MI) among current and previous smokers compared with non-smokers and reported a reduction in risk of MI, CVD and coronary heart disease with every year following stopping smoking.

Between June 2016 and May 2017, 60 HIV outpatients at our clinic were referred to the local community smoking cessation team, however only 7 patients (12%) reported quitting smoking according to subsequent documentation of their smoking status. Documentation rates of current smoking status were also noted to be low – 11 patients (18%) did not have a further smoking status documented following their referral. The number of referrals does not appear to reflect the number of current smokers within the cohort – an audit of patients over 60 years old found 43/300 to be current smokers, with a further 32 patients lacking a documented smoking status. In addition, referred patients self-report low rates of engagement with the community smoking cessation team and must also reside within the local boroughs to be eligible for their services.

To decrease smoking rates and reduce CVD and non-AIDS malignancy risk, a weekly pharmacist-led smoking cessation clinic was started from January 2018, to which practitioners are able to refer all patients who are motivated to quit, or patients can self-refer. The in-house clinic provides behavioural support, acknowledging the needs and barriers that HIV patients may face in their quit attempt, and as an independent prescriber the pharmacist is able to provide prescriptions for nicotine replacement therapy and varenicline to be dispensed on-site. This required training and accreditation by the National Centre for Smoking Cessation & Training. Patient uptake and cessation rates will be reported.

P268

Training NMPs to prescribe PEPSE: improved accessibility for all

S Mensforth, N Dufty and N Stewart

Umbrella Sexual Health, University Hospitals Birmingham, UK

Background: We sought to improve equity of care across the large geographical area that Umbrella Sexual Health Service covers by making Post Exposure Prophylaxis after Sexual Exposure to HIV (PEPSE) available in all nurse-delivered clinics, thereby reaching beyond the central sexual health 'hub clinic' and the Emergency Department. Training nurse non-medical prescribers (NMPs) working in those satellite clinics to prescribe PEPSE would improve access geographically, but also temporally as the satellite clinics have extended opening hours during week days and are also open at weekends.

Methods: A 1-day training and assessment programme was designed and delivered to 14 NMPs. The local PEPSE guideline was updated to reflect this increase in service provision alongside training updates for doctors. Change was evaluated by case note review of the electronic patient records in the 6-month time period following training. All PEPSE assessments and prescriptions completed by NMPs were assessed against our local guidelines. A sample of assessments completed by doctors was randomly selected from the same time period for comparison.

Results: The training package was completed with excellent feedback, the NMPs reported feeling confident, empowered and enthused. In the designated time frame 27 PEPSE assessments were completed by 9 NMPs across 6 satellite clinics. NMPs became the second highest prescriber group of PEPSE. 19/27 patients received PEPSE, with 18/19 of those prescribing decisions

meeting criteria in local prescribing guidelines. The NMPs' prescribing was comparable, if not better, than the doctors' prescribing.
Conclusions: The majority of trained NMPs are prescribing PEPSE and in line with local guidelines. PEPSE prescribing within the satellites clinics has been established, ensuring timely access for patients in all areas of the city. We have identified excellent examples of difficult cases for future training of both NMPs and doctors, and will be conducting refresher-training sessions in the near future. We plan to re-evaluate in coming months to ensure that changes endure. We also identified that the majority of patients seen by doctors for PEPSE had been correctly identified as needing this by nurses. We are considering the need, value and implications of introducing a PGD for those nurses who are routinely performing PEPSE assessments, especially those working in satellite clinics.

P269

Understanding why people attend specialist sexual health services: can we change how service users access care?

H Isotta-Day and H Wheeler
Unity Sexual Health, University Hospitals Bristol NHS Foundation Trust, UK

Background: Funding cuts for sexual health services (SHS) are widespread, yet demand remains high. Commissioners require us to see more complex patients within our level three service, with the expectation that patients requiring 'routine' sexual health (SH) care will access their GP. Asymptomatic patients are expected to use our recently introduced online testing service. The aim of this study was to assess who is accessing our service, what their SH needs are, and why patients choose to attend for 'routine' care.
Methods: We did a prospective study of patients attending for a new episode of care. Clinicians recorded: reasons for attendance; why service users chose our SHS; the services we provided and whether additional complexities were identified. We separated the patients for analysis into the following three categories: A- patients attending with needs requiring a specialist service; B- patients requiring clinician review who could have needs met outside SHS; C- patients who could have needs met by online self-testing.
Results: Of 101 surveys completed, six did not meet the inclusion criteria. Of the 95 included, 58 were male and 38 female. All female patients were heterosexual and 17 males were men who have sex with men (MSM). Categorisation: A=54, B=21 and C=20. All C patients presented for an asymptomatic screen (Female=4, Male=20), 3 were MSM. Themes for choosing our service: quicker to come to the clinic; didn't want to bother the GP; confidentially assurance. Category B patients: 16 females and 5 males (1 MSM). The most common reason for a female attendance in this group was altered vaginal discharge: all of these were low risk for sexually transmitted infections with <2 sexual partners in previous 3 months. 26% of category B patients were not registered with a GP.
Conclusion: The majority of patients attending our SHS do so appropriately. High numbers of asymptomatic attendances are surprising, particularly in light of our recent launch of an online self-testing service: this service clearly needs further promotion. There are a significant group of patients whose needs could be met outside SHS. This is a more challenging issue: How can we signpost people to their GP, when primary services continue to be stretched? It is important to recognise that patients continue to value specialist SHS, and that those presenting often have complex needs that are not apparent on initial questioning. Continued evaluation of services as they evolve is required.

P270

Use of the primary care electronic record in sexual health

S Brady and N Fearnley
Locala CIC, Bradford, West Yorkshire

Background: In 2015 our service moved to an organisation whose strategy is to use SystmOne (S1) in all its services. S1 is in use in over 6000 NHS organisations including, crucially, most general practices (GP) in our locality. However S1 is not in regular use across integrated sexual health services. Our experience of up to 4 different EPR makes us well placed to summarise the pros and cons of the clinical utility of the current system.
Methods: Qualitative review of clinical utility of current EPR.
Results: Advantages: 1. Ability to view GP S1 record—e.g. medication, past medical history, allergies, cytology, test results, attendances. Note that in order to maintain our patients' anonymity and confidentiality we set up a closed unit of S1 so it is impossible to view the sexual health record from elsewhere. 2. Safeguarding- Facility to view and add safeguarding information which can be seen by all clinicians who use S1. This is the only part of our clinical record that is viewable externally. 3. Ease of communication with: a) patient using text messaging- all recorded within the EPR. We routinely send: links to information leaflets and a feedback site, information about appointments, results of STI screening and follow up reminders; b) GP using the S1 'task', a facility to directly send a short electronic message which is delivered to the practice S1 unit. Complexity was added to this function by our decision to use a closed unit, but it is our opinion that this remains an advantage both in the ease of use, making communication of relevant medical information back to the GP simpler, and the reduction in administration. 4. Intuitive design with user friendly interface- this is a subjective opinion of the clinicians who use it and believe it compares favourably to other EPR. Disadvantages: 1. SRHAD and GUMCAD mandatory reporting is not a function of the original system. Without pre-existing sexual health specific modules use-ability depends on having local skilled personnel to create templates. 2. Inability to create anonymous identifiers- we use an external programme to create a number for patients to enable sample labelling etc. 3. Lab-link is hindered by the use of S1 and anonymised identifiers- we continue to work on a solution.
Conclusion: Moving our EPR to S1 has been positive overall. Services considering the move should note the pros and cons and ensure skilled staff experienced in S1 are available to support the service throughout its use.

P271

West of Scotland sexual health managed clinical network: partnership working for service improvement

L Gillespie[1] and G Laird[2]
[1]Sandyford, Glasgow, UK, [2]Managed Clinical Network, West of Scotland, UK

Background: The West of Scotland Sexual Health Managed Clinical Network (MCN) was established in 2009 with the aim of continual improvement in the provision of sexual health services across five NHS Boards: Ayrshire & Arran, Dumfries & Galloway, Forth Valley, Greater Glasgow & Clyde and Lanarkshire. The MCN comprises a Lead Clinician, manager, administrator, and support from the five NHS Board Sexual Health Lead Clinicians.
Methods: The MCN has supported services via:

- Audits and surveys
- Workshops and training events
- Establishment and support of regional clinical guidelines group
- Establishment of working group on young peoples services
- Development of patient activity and clinical governance reports on NaSH (National Sexual Health) electronic record system
- Support of national groups e.g. Scottish Abortion Care Providers Network
- Specific Projects eg. Gay mens' health and wellbeing project; My Body Back West of Scotland
- Lobbying and support at local, regional and national level

Results: The MCN has delivered consistent support for service development and joint working between the five Boards including:

- Providing peer support for lead clinicians across Board boundaries
- Improved performance in Quality Improvement Scotland (QIS) Standard reviews
- Awareness raising and support of the needs of MSM in primary care
- Comparative data including: comparing clinical practice around HIV testing; young people; services; implant clinical practice;
- Specific clinical governance and activity information via purpose designed NaSH reports
- Composition and maintenance of 33 regional clinical guidelines
- Composition and maintenance of 9 patient information leaflets
- Support for local services in securing appropriate clinical accommodation
- Stronger influence on national bodies including PrEP working group, HIV Lead Clinicians and Sexual Health Lead Clinicians

Conclusion: As one of the largest clinical networks in Scotland, the MCN was established to actively support partnership working. Relationships between member Boards have been strengthened; joint working and communication has improved; and services are working to common clinical standards backed up by regional guidelines and training appropriate to service needs

P272

What do men who have sex with men think about their local sexual health service?

A Currie and C Courtney
Lanarkshire Sexual Health, Lanarkshire, UK

Background: We cover a large rural and urban geographical area. We are seeing increasing numbers of men who have sex with men (MSM) but are aware that many still attend neighbouring health boards. We now offer pre-exposure prophylaxis for HIV (PrEP) and HPV vaccination to certain MSM. We wanted to know how aware our MSM were about these new services and how they evaluated our service.
Methods: A paper survey was distributed, over a 3 month period, in both our booked and drop-in generic clinics, for MSM clients to complete anonymously at the end of their consultation. The survey had a number of questions including reasons for attendance, clinic choice, awareness of PrEP and HPV vaccination, service improvements and if a dedicated MSM clinic was required. The results were then loaded onto a Microsoft excel spreadsheet and analysed.
Results: 33 questionnaires were returned. The total number of MSM clients attending the service during the 3 month period was not able to be calculated as many men attended multiple times.
When asked how patients knew about the clinic, 42% said they had previously attended whilst 42% found the clinic information on our sexual health website. 57% attending were aged between 20 and 39 years.
The main reason for attending the clinic was for an asymptomatic sexual health screen (39). In relation to 'same day HIV testing' availability, 54% agreed that they would prefer this.76% were aware of PrEP and 85% were aware of HPV vaccination.100% of respondents were very satisfied with the service provided.
On asking why they had chosen to attend that specific clinic, 30% had attended the clinic previously, 33% advised that clinic had the first available appointment while 21% stated it was near to home.
Clients were asked if they would prefer to be seen in a dedicated MSM clinic but only 24% preferred this with 54% replying 'no' and 21% 'being unsure'. Free text comments advised that the service was friendly, non-judgmental and staff were very pleasant.
Comments in relation to service improvement included: introducing evening 'drop in' clinics and improving waiting times in current 'drop in' clinics.
Conclusion: We are pleased that our generic service evaluated well amongst our MSM and there does not seem to be a high demand for a dedicated MSM clinic. However, we need to progress same day HIV testing and do further work to see why some MSM choose to go to neighbouring health boards.
Conclusion: We are pleased with the satisfaction rate which MSM have on our generic service and we do not feel that a clinic specifically for MSM is required at this time. However we need to progress POCT for HIV and do further research with other health boards to see why MS from our board access care in neighbouring boards.

P273

What impact do UKCAB representatives on guideline writing committees and academic/clinical research study boards make?

L Kwardem[1], J Shepherd[1] and R James[2]
[1]UKCAB, National, UK, [2]Sussex University, South East, UK

Background: HIV community engagement in the health care sector has a long history. The UK Community Advisory Board (UKCAB) is a network of HIV advocates with over 800 members and 120 HIV groups and source for community representatives (CRs).
Methods: Building on from previous research amongst health care professionals (Kwardem *et al. HIV Medicine* 2017; 18 (Suppl 1): P168.) about UKCAB community reps (CRs) impact, a further series of 14 semi-structured interviews with CRs were arranged. CRs were purposively sampled to provide a diversity of role, experience and demography.
Results: Interim results from the 8 transcribed interviews show CRs have multiple involvement across organisations, trials and guideline groups and over a number of years ranging from 3 to 21.
Impacts described included changes in trial designs, particularly on exclusion and inclusion criteria, clinical guidelines development to include issues relevant to patients' health, improved dissemination of information through user friendly changes in language, overcoming self-defeating bureaucratic rules, and improvements of environments in clinic areas. Development of guidelines, good practice, role remits and standards for PPI. Co-production of academic papers/posters. Meaningful inclusion of patients' perspective in relevant conferences.
Most frequently cited benefits included the respect and support from HIV professionals, increased learning opportunities for those taking the CR role, strong feelings of wanting to 'make a difference'.
Lack of funding was most commonly cited challenge, including coverage of expenses for CRs, for sustaining the UKCAB structure, but also the psychological paralysis to action it can induce. Concerns were high for sustainability of new and younger CR. A desire for more training for CRs for both initial and ongoing development and concerns about ensuring support, diversity, and sustainability for CRs and better use of feedback mechanisms within UKCAB.
Conclusion: As with results from professionals there was unanimity that people living with HIV must be directly involved in decision making on service delivery and clinical care that will have a direct impact on their lives. A number of specific examples of impacts beneficial to people with HIV were highlighted along with valuing the co-production methods but concerns about sustainability remain. 'We can do a lot as a network with little funding but can't do anything with no funding'.

P274

What sexual health information is requested online? The content analysis of sexual health web-chat as a model for online triage

T Nadarzynski[1], P Hellawell[2], D Zimmermann[1], K Henderson[1], K Roseaman[1] and S Kidsley[1]
[1]Solent NHS Trust, Southampton, UK, [2]Positive Action, Southampton, UK

Background: Due to a rise in STI diagnoses and funding cuts for sexual health, digital interventions provide affordable opportunities for health promotion and education. Solent NHS Trust and Positive Action have piloted a web-chat service to facilitate information exchange between medical professionals and those seeking credible sexual health advice. Our evaluation explored the potential for behaviour change as a result of online discussions.
Methods: Web-chat scripts from May to November 2017 were analysed qualitatively, using basic content analysis, to identify issues raised by web-chat users and advice provided by web-chat operators. In total, 62 scripts were analysed and 15 users provided demographic data.
Results: 62% of web-chats were related to HIV: testing (14), HIV risk and transmission routes (13), HIV symptoms (3), advice for HIV+ (3), information about PEP (2), PrEP (1) and HIV support groups (1). The remaining chats were related to concerns about STIs (6), available services (5) and booking clinic appointments (4). As a result, 10 users were signposted to in-clinic screening, 8 were assisted with booking, 17 were provided with education about sexual health, 5 were signposted for a conversation with a health advisor and 5 were recommended for STI home-sampling.
Conclusion: The majority of discussions empowered high-risk individuals to make better decisions whether to seek STI/HIV screening. The service provided opportunities for Internet users to post questions that they might not be able to ask in a telephone or face-to-face consultation. Sexual health web-chat is a feasible and acceptable digital intervention for sexual health advice.

P275

Women and the criminal justice system: a sexual health needs assessment

S Cochrane, A Steele-Nicholson and N Jeal
University Hospitals Bristol NHS Foundation Trust, Bristol, UK

Background: Our service was recently retendered with commissioned service emphasis being placed on high risk groups. We were approached by a local day centre that supports women involved in the criminal justice system asking that we consider delivering targeted care for their service users.
The Corston Report 2007 highlighted the extensive vulnerabilities of women within the criminal justice system: amongst other factors, this included poor sexual health. A subsequent 10-year review strongly recommends expansion

and sustainability of community women's centres as 'one stop shops'. These centres should facilitate coordinated working between women and relevant agencies, supporting our approach of health service delivery in partnership with the day centre.
This health needs assessment was undertaken to inform development of a new outreach sexual health service for a group of hard-to-reach women at high risk of poor sexual health.
Methods: A survey was undertaken over a 10-week period. The initial draft was piloted via a focus group. Following feedback, questions were reworded, support agency information added and options to choose not to answer questions were included. The 8-page paper questionnaires were offered to day centre service users by staff. Questionnaires were self-completed by participants or with support from staff if requested, and returned in a sealed envelope.
Results: Up to 50 women regularly attend the day centre. Half (n=25) accepted a questionnaire: 28% (n=14) of service users completed it. When asked about service use 100% (n=14) said they were registered with a GP and 79% (n=11) reported they would find it acceptable to visit their GP about sexual health. However, only 18% (n=2/11) had ever done so. 29% (n=4) had ever attended a sexual health clinic. Nearly all respondents (93%; n=13) had been pregnant and the number of pregnancies ranged from 1 to 11 (mean=5.4). 62% (n=8/13) had experienced serious adverse pregnancy outcomes including ectopic pregnancy, second trimester miscarriage and stillbirth. 43% (n=6) disclosed intimate partner violence.
Conclusion: This is a vulnerable group of women and the health needs assessment identified significant sexual health needs. However the small number of services users completing questionnaires highlights the challenges of accessing marginalised populations. In order to gather meaningful data to ensure development of appropriate targeted services adequate time, resource and staff training must be allocated.

P276

Youth voices: engagement in sexual health redesign

S Cochrane[1], A de Burgh-Thomas[2], K Parker[2] and R MacDonald[2]
[1]University Hospitals Bristol NHS Foundation Trust, UK, [2]Gloucestershire Care Services NHS Trust, UK

Background: A 26% reduction in the funding of local Sexual Health Services (SHS) has led to an extensive service re-design process involving clinicians, patients and communities. This has involved moving from walk-in clinics to booked appointments with telephone triage for urgent issues and vulnerable patients. Young people (YP) are disproportionately affected by sexually transmitted infections. As part of the redesign we wanted to identify how to ensure YP are aware of SHS available locally and how to access them, and explore running a dedicated YP clinic.
Methods: Two mixed-sex focus groups of YP were held in April and May 2017. One was of 13 sixth form students and the other a group of three young carers. Each group was facilitated by a doctor and partnership manager. Discussion focussed on three themes: (i) How to access services (ii) Types of clinic YP wanted (iii) How to promote YP services.
Results: *Accessing services:* All YP supported online booking and ordering of tests as it provided anonymity. Telephone contact raised anxiety about others overhearing personal information. A professional, online chat facility was suggested.
Types of clinic: Booked appointments were preferred to walk-in to reduce waiting in clinic. YP preferred attending larger centres for anonymity. There were mixed feelings regarding designated YP clinics with concern about seeing people you know vs. anxiety of waiting with adults. Optimum time of clinic varied between the two groups with school students preferring 4 pm weekdays and young carers Saturday afternoons.
Promotion of Services: YP felt delivering information in trusted areas e.g. schools and youth clubs gave them confidence in the service. Discrete information such as business cards or placing posters in toilets was popular, allowing privacy to read the detail. Social media was strongly supported, in particular Facebook.
Conclusion: Anonymity, particularly facilitated by online services were rated highly by the YP. We now offer online clinic booking and STI screening which has proved popular. We introduced eye catching posters and business cards which have been put up in the suggested venues. In addition, we have updated our website and linked it to a YP specific sexual health website.
As there was no consensus on a YP clinic, we aim to hold further focus groups to gain wider responses. We will continue to monitor YP uptake and acceptability of our triage service through questionnaires of those attending and groups working with YP.

Psychosocial issues and quality of life

P277

'We're touching the topic, but we're not opening the book.' A grounded theory study of sibling relationships in young people with perinatally acquired HIV

H Deakin[1], G Frize[2], C Foster[2], A Teague[3] and M Evangeli[1]
[1]Royal Holloway, London, UK, [2]Imperial College Healthcare NHS Trust, London, UK, [3]Mortimer Market Centre, London, UK

Background: With access to antiretroviral therapy, increasing numbers of children with perinatally acquired HIV (PaHIV) are successfully transitioning through adolescence into early adult life. However, the psychosocial impact of PaHIV on relationships and well-being requires further investigation. The role of siblings in psychological adjustment to living with PaHIV has not been a focus of research, despite findings that siblings play an important role in therapy management and care for adults with HIV. This Grounded Theory study aimed to explore PaHIV young people's experiences of their sibling relationships.
Methods: The sample consisted of 10 young people with PaHIV with at least one sibling. Four male and six female participants aged 17–23 years took part in individual semi-structured interviews. Interviews were recorded, transcribed and analysed using Grounded Theory.
Results: The data were condensed into three dominant theoretical codes, within which existed several focused codes.
Table 1: Theoretical codes and focused codes

PaHIV disclosure in the sibling relationship	Patterns of communication about PaHIV between siblings	Patterns of coping and support in the PaHIV sibling relationship
- Growing up as HIV+ siblings - Direct/indirect sibling disclosure - Guessed/non-disclosure to sibling	- Finding ways to talk about HIV - Times of increased sibling communication - Keeping the secret	- Feeling normal - Valuing the sibling relationship - Sources of support

Sibling relationships were generally a positive source of support. There was a lack of clear HIV-related impact on the relationship, with HIV rarely discussed within families or between siblings.
Participants with HIV-negative siblings reported disclosure resulting in increased social support from their sibling, particularly at times of ill health. Having a sibling aware of their HIV status was not however necessary for participants to perceive the sibling relationship as highly valued and close.
Direct experiences of sharing PaHIV status with siblings was rare, with only two examples in the sample. Participants described a perceived lack of control around the sharing of their status to siblings, which was most commonly shared by their mother or close family member without consent or prior discussion.
Conclusion: PaHIV young people are infrequently involved in sibling disclosure decisions. Support for parents about how to involve the PaHIV young person in sharing their status with family members would be beneficial.

P278

Ageing with HIV: exploring the experiences of women in London

J Stevenson[1], J Smith[1], E West[1] and P Keogh[2]
[1]University of Greenwich, London, UK, [2]Open University, Milton Keynes, UK

Background: The UK has an ageing population of PLWH, with over 34% of people accessing HIV care in 2015 aged ≥50 years. In 2016, 8523 women aged

≥50 years were seen for HIV care in the UK, 24.5% of the total from that age cohort. Women ageing with HIV may face a range of medical and social challenges, including managing side effects and co-morbidities, isolation, stigma and other issues. The experiences of women ageing with HIV are under-explored in the literature.
Methods: A doctoral study was undertaken to explore the experiences of women ageing with HIV in London, using feminist, participatory and assets-based methods. The study was constructed in phases, and included qualitative data collection through: three creative workshops; participatory literature review; 10 stakeholder interviews; 14 life story interviews; and, a participatory analysis workshop.
Results: Women ageing with HIV have developed resilience and adapted to meet evolving challenges. Participants noted the value of peer and other forms of HIV specific support, and identified both reductions in the availability of this support due to funding pressures, and gaps in specific provision for older people and/or women. Isolation can be a significant challenge for women ageing with HIV, driven by stigma in some cases. Stakeholders and women living with HIV identified the relative invisibility of older women with HIV, and the need for greater advocacy and inclusion to address this. Women who have lived long-term with HIV described the complex challenges of negotiating an unexpected old age, and the burden of being the amongst the first to be diagnosed, the first to access treatment and now the first cohort to reach old age, with all the uncertainty that brings.
Conclusion: Women's experiences of ageing with HIV are complex, and influenced by gendered challenges including gendered stigma and discrimination. For women living long-term with HIV, there are specific health and social care needs that are not being adequately met. Women more recently diagnosed also face challenges in accessing support and information that meets their needs.

P279

Continued high prevalence and burden of pain in people living with HIV (PWHA): baseline findings from a pain education trial

K Nkhoma and R Harding
King's College London, Cicely Saunders Institute, London, UK

Introduction: Although pain has previously been identified as a prevalent and burdensome problem in PWHA, little recent research into pain has been generated. We describe the prevalence and burden of pain and associated factors in a pain education intervention study.
We aimed to measure (1) the prevalence of pain and burden of pain (2) determine the effects on daily activity.
Methods: We conducted a randomised controlled trial consisting of an information leaflet, face-to-face discussion and a phone call among adults PWHA attending outpatients in northern part of Malawi. The analysis is drawn from the baseline data of the trial. BPI was used to record current pain and interference with activity. Ordinal logistic regression assessed the association of current pain controlling for pain interference, demographic variables (age, gender, education, marital status) and clinical variables (WHO clinical stage, TB treatment status).
Results: We recruited n=182 participants (n=92 intervention, n=90 control). Mean age (SD) 40.89 (11.45) years, range 18–75 years. Just over half n=99 (54%) were males. The majority n=135 (74.18%) were at WHO stage III/IV. Another majority n=151 (83%) reported current pain. Just over half n=98 (53.9%) reported mild pain, while n=26 (14.29%) reported moderate and n=27 (14.84%) reported severe pain.
Current pain negatively interfered with participants activities of living (odds ratio .36, 95% CI .27 to .48; p<0.001). Current pain was not associated with age, gender, clinical stage, TB treatment status.
Conclusion: Pain among PWHA still persist with negative effects on daily activities. Person-centred care is needed among PWHA.

P280

Do under 16s who are known to social services present differently to sexual health than those with no history of social services connections?

F Keane[1], A Pearce[1], K Ellis[2] and M Crarer[1]
[1]Royal Cornwall Hospital, Truro, UK, [2]University of Exeter Medical School, UK

Background: There has been a 130% rise in recordings of child sexual abuse by the police from 2011/12 to 2015/16. Risk factors for sexual exploitation include being known to social care. Ensuring sexual health (SH) services are accessible for vulnerable young people is essential for managing the consequences of abuse. We aimed to discover if there were differences in how adolescents accessed SH services depending on whether or not they were known to social services.
Methods: A retrospective review of electronic health records of first time <16 attendees in an 11 month period was conducted. Results were analysed using IBM SPSS v24 and Persons/Fishers tests as appropriate.
Results: Adolescents not know to social services (NKTSS) were more likely to attend appointments on their own compared to those known to social services (KTSS) (28% vs. 14%). This increased to 63% attending without an adult (ie with a friend or partner) vs. 43% of those KTSS. Adults attending with those KTSS were primarily family members or foster carers (43%) or other healthcare or social care professional (14%). It was noted that 32% (12/37) of appointments booked for those KTSS were booked by someone other than the patient themselves compared to 9% (6/66) of those NKTSS. Those KTSS were more likely to attend a genitourinary medicine (GUM) than family planning (FP) appointment compared to those NKTSS (<0.05). They were also more likely to attend a booked rather than drop-in appointment than those NKTSS (46% vs. 29%) and also be seen at the main sexual health hub compared to peripheral sites (43% vs. 32%). It was also noted that 18% (19/103) of the adolescents were on treatment for mental health conditions. All of these were from within the KTSS group, as were all 7 of the patients who were seen post sexual assault. Only 22% (8/37) of those KTSS and 12% (8/66) of those NKTSS had reliable contraception at their initial presentation.
Conclusion: Having greater insight into how adolescents KTSS access SH services, will allow us to work on improving services for this vulnerable group. Further work is required in this area. Particularly, we need to understand reasons for more attendance to GUM over FP in those KTSS and whether contraceptive needs are adequately addressed at the time of the clinic visit in both groups.

P281

EU patient experience and views on antiretroviral treatment: findings from the Positive Perspectives study

S Marcotullio[1], B Spire[2], D Garcia[3], M Krehl[4], M Muchenje[5], A Namiba[6], K Parkinsion[7], B Young[8], B Allan[9], Y Punekar[10], A de Ruiter[10], S Barthel[11], J Korteff[12], R Shah[10], A Ustianowski[13] and A Murungi[10]
[1]Nadir Onlus, Rome, Italy, [2]French National Institute for Medical Research (INSERM), Paris, France, [3]European AIDS Treatment Group, Madrid, Spain, [4]European AIDS Treatment Group, Berlin, Germany, [5]Women's Health in Women's Hands Community Health Centre, Toronto, Canada, [6]Salamander Trust, London, UK, [7]USM-Project ARK, Missouri, USA, [8]International Association of Providers of AIDS Care, Washington, USA, [9]Living Postive, Victoria, Australia, [10]ViiV Healthcare, Brentford, UK, [11]GlaxoSmithKline, Uxbridge, UK, [12]ViiV Healthcare, Research Triangle Park, NC, USA, [13]Pennine Acute Hospitals NHS Trust, Manchester, UK

Background: While advances in treatment have dramatically improved the life-expectancy of people living with HIV (PLHIV), a number of unmet needs remain. We conducted an international survey of PLHIV, including 14% from UK, to explore their level of satisfaction with current treatment and potential areas of improvement for ARVs.
Methods: Qualitative in-depth interviews were performed with PLHIV to identify key hypotheses. A steering group developed the survey questions which was fielded online (Nov 2016/April 2017) in 9 countries across North America, Europe & Australia. European patients included highest proportion from UK, with UK (n=160), Germany (n=140), Spain (n=132), Italy (n=121), Austria (n=50), and France (n=7) A mixed sampling/recruitment approach was

used to ensure a broad cross-section of PLHIV. Respondents were screened for eligibility before receiving access to the online survey
Results: 609 PLHIV completed the survey in Europe forming 56% of respondents. 77% were men, 26% ≥50 years, 42% diagnosed >10 years ago, 71% with co-morbidities (42% ≥3). 97% were currently taking ARVs with almost a quarter on their first regimens. Overall, 46% were taking a Single Tablet Regimen (STR) with rates ranging from 33% (Austria) to 53% (Germany). Median number of pills taken were 3 (ARVs: 1.1). 86% of PLHIV on treatment were very/quite satisfied with their HIV regimen. 43% of those who had ever changed treatment had done so in the last 12 months, with switching to reduce severity or frequency of side effects (46%) being the main reason. 73% of those on treatment were worried about the long term effects of ARVs. 54% of participants reported that the decision to switch was made jointly with their HCP; 90% of European participants were 'very' or 'quite' comfortable raising issues of concern with their HCP (range, 86% [Spain] to 96% [UK]).
Reducing these long term effects and the potential availability of new longer lasting treatments were both identified as the two most important potential improvements to current regimens. 66% were open to changing to an ARV regimen with fewer drugs as long as their HIV remained suppressed
Conclusion: Despite general satisfaction on their current ARV regimen, PLHIV identified, the reduction of long term ARVs adverse effects and new longer lasting treatment, as the most important potential improvements

P282

Evaluating the impact of a specialist community care centre for people living with HIV on mental wellbeing and quality of life

K Forcer[1], E Youssef[1], E Nixon[2], J Warriner[3], A Marshall[3] and J Vera[2]
[1]Brighton and Sussex Medical School, UK, [2]Brighton and Sussex University Hospitals, Brighton, UK, [3]The Sussex Beacon, Brighton, UK

Background: This is a specialist community care centre in a city with a high prevalence of HIV, providing holistic inpatient and outpatient services for people living with HIV (PLWH). It receives around 150 inpatient admissions per year and supports physical wellbeing, mental health, medication adherence and independence in daily living. To assess the benefits of this model of care in managing an ageing population of PLWH, we investigated the impact it has on inpatients' mental wellbeing and quality of life (QOL).
Methods: This was a mixed-methods observational study. Inpatients' mental wellbeing and health-related QOL were assessed at admission and discharge using validated questionnaires, the Warwick-Edinburgh Mental Wellbeing (14 Item) Scale (WEMWBS) and EuroQol 5-Dimension 5-Level Questionnaire (EQ-5D-5L) respectively. Semi-structured one-on-one interviews were conducted with 6 inpatients to explore views about the impact of the centre. Data was transcribed verbatim and thematically analysed. Questionnaires assessing the importance of the centre were distributed and completed by healthcare professionals (HCP). Their responses were descriptively analysed.
Results: 37 participants were enrolled in the study. Median age (range) was 50 (29–72). 86% (32) participants were multimorbid and 59% (22) had psychiatric history of depression. 70% (26) participants were unemployed. 41% (15) participants were referred to the centre for anti-retroviral support, 41% (15) for medical and/or surgical convalescence, 38% (14) for maintenance and monitoring of health, 38% (14) for mental health support and 22% (8) for detox. 57% (21) participants completed the WEMWBS at admission and discharge, which showed a significant improvement in mental wellbeing score; $p<0.001$. 46% (17) participants completed the EQ-5D-5L at admission and discharge, which showed a significant improvement in QOL; $p=0.002$. Semi-structured interviews identified the following themes: the perception of the centre as a place of safety, privacy and dignity, promoting independence and as a support network for PLWH. 23 HCP completed the questionnaires. 91% (21) reported positive experiences with the services provided by the centre and 70% (16) felt it has a pivotal role in managing PLWH.
Conclusion: The centre has a positive impact on inpatients' mental wellbeing and QOL. This model of care may be central in managing an ageing population of PLWH who have complex psychological needs.

P283

Expanding definitions of mental health related risk in people living with HIV

S Zetler, M Yates, L Yong, N Sarjveladze-Weeks, C Best, A Kentridge and I Reeves
Homerton University Hospital NHS Trust, London, UK

Background: PLWHIV can express risk in diverse ways which do not always match the way risk is measured in mental health (MH) services. Non-adherence to ARVs, UPSI with a detectable viral load (VL) or problematic drug/alcohol use are examples of risk that are frequently referred to HIV psychology services. This study aims to classify MH presentations in an inner city HIV service using an established severity/chronicity matrix, often used to determine referral pathways in general adult MH services.
Methods: A retrospective case note audit of all psychology referrals made between July 2016 and June 2017 was completed. Referrals, notes and assessment reports were evaluated and classified by 5 psychologists. MH and psychosocial features, VL, drug/alcohol use, history of trauma and previous use of MH services was captured. A standard DSM-IV-TR derived matrix, incorporating a measure of MH risk was used to classify the patients. Comparisons were made using chi-squared.
Results: 122 referrals were analysed. Mean age 42 (range 21–77). 73 heterosexual, 46 MSM, 2 bisexual, 1 unknown. 51 White British/European, 71 BAME. 10 referrals were classified as Mild, 98 as Moderate and 14 Severe. There was no correlation between detectable VL and severity/chronicity rating when categorized as above. However additional factors ('Moderate+') linked to HIV in those categorized as moderate, e.g. inability to adjust to diagnosis, inconsistent ARV use and drug/alcohol use (particularly chemsex) were associated with detectable VL: VL >40 in 15/22 'Moderate+', 2/14 'Severe', 10/76 'Moderate', $p<0.001$. Therefore severity of 22 referrals may have been under-rated using the original MH matrix.
Conclusion: We identified a subset of individuals with specific HIV related mental health features who were more likely to have a detectable VL and therefore at greater risk of poorer physical health outcomes. Broadening the definition of harm/risk that incorporates ways that risk is expressed in PLWHIV could allow greater recognition of need. We suggest that these individuals would benefit from enhanced MH support. We recommend that services work together to more accurately capture risk to ensure access to the most appropriate therapies/services. Currently patients run the risk of falling into a 'gap' between primary and secondary MH care and MH and physical health care with the risk of poorer HIV related outcomes.

P284

Health-related quality of life of adults living with HIV in England and Wales: a utility analysis of EQ-5D-5L compared to the general population

C Kelly, M Kall, M Auzenbergs and V Delpech
Public Health England, London, UK

Background: The life expectancy and clinical outcomes of people living with HIV is almost equivalent to that of the general population, with appropriate monitoring and antiretroviral treatment. However, relatively little is known about the health-related quality-of-life (HRQoL) of people with HIV and how it compares to the general population.
Methods: Positive Voices is a cross-sectional, probability survey of people with HIV, conducted between January and September 2017. Using the HIV surveillance database (HARS) as a national sampling frame, a representative sample of people attending 73 HIV clinics in England & Wales was invited to take part, and 4415 people responded (51% response rate). The survey included questions on diagnoses of non-HIV comorbidities, including mental health conditions, and quality of life. HRQoL data was collected using the generic Euroqol (EQ-5D-5L) instrument. Unweighted HRQoL utility values were calculated and compared to the recently published EQ-5D-5L value set for England (Devlin *et al*, 2017). Values range from 0 to 1, where 0 represents dead and 1 represents the best possible health.
Results: The overall utility score for quality of life (EQ-5D index) in the population of people with HIV in the UK was 0.602, compared to 0.856 in the general population of England (Szende *et al*. 2014). When comparing the HRQoL scores by risk group, the range was extremely varied. People who inject drugs had an extremely low HRQoL score of 0.211, followed by people infected through blood and blood products with a score of 0.464. Gay and bisexual men

had a score of 0.582, and heterosexuals slightly higher at 0.637. The only HIV risk group that had a score at a similar level to the general population average was those who acquired HIV through mother-to-child transmission with a score of 0.889. The relationships between the quality of life of the participants and their various demographics, co-morbidities including anxiety and depression, unmet needs, health support, disclosure and adherence will also be explored.
Conclusion: Despite near-normal life expectancy and excellent HIV treatment and management in the UK, quality of life remains significantly worse than the general population. Health inequalities remain, and a holistic, patient-centred approach to health should be adopted by all providers of care for people with HIV, as well as programs to address stigma and discrimination, in order to improve the quality of life of people with HIV.

P285

High incidence of psychosis in a cohort of adults with perinatally acquired HIV infection: a case series

T Pasvol[1], S Ayres[2], G Frize[2], S Fidler[1] and C Foster[2]
[1]Imperial College London, UK, [2]Imperial College Healthcare NHS Trust, London, UK

Background: Psychotic disorders represent a group of severe mental health disorders characterised by delusional thought processes and hallucinations. The annual incidence for all psychotic disorders in the UK is around 32 cases per 100,000 people. Psychosis is more common in men, black, minority ethnic groups (BME), areas of economic deprivation and those who abuse illicit drugs. Many adults with perinatally acquired HIV (PaHIV) fit into these at risk groups but have additional risk factors including underlying brain disease and high rates of depression. We describe a case series of psychotic disorders in a cohort of adults with PaHIV.
Methods: A retrospective case note review of all individuals with PaHIV aged over 18 years attending a UK service. Data collated included demographics, immunology, virology and antiretroviral therapy (ART).
Results: 161 patients were included. 12 (7.5%) had suffered at least one psychotic episode, 6 (50%) male, 11 (92%) BME. Median age at 1st psychotic episode was 21 years (range 14–26). 4 (33%) patients had previously been diagnosed with depression. At least 4 (33%) patients had a 1st degree relative with mental health problems. 3 (25%) had severe learning difficulties. 4 (33%) had excess drug/alcohol use. 7/11 (66%) had HIV VL <20 c/ml at first psychotic episode with a median CD4 count of 701 cells/μl (IQR 51–923). In 8 (67%) no organic cause was identified. Of the remaining 4; 2 (17%) had psychosis associated with illicit drug use, complicated by HIV viraemia and CD4 counts below 50 cells/μl. A patient with severe autism had positive plasma anti-NMDA antibodies. A patient with pseudohypoparathyroidism developed psychosis on increasing thyroxine. 10 (83%) received antipsychotic medication. 8 (67%) are receiving on going mental health support. One switched away from efavirenz following the psychotic episode.
Conclusion: Cross-national data from the World Mental Health Survey has projected a lifetime risk (at age 75) of psychosis of 7.8% with 50% of 1st presentations occurring before age 26. In our much younger cohort (median age 23 years) 7.5% had already experienced a psychotic episode. Multiple risk factors frequently co-exist in this population and it can often be challenging to exclude organic disease, particularly in the context of advanced immunosuppression and poor adherence to ART. It is imperative that HIV services are closely linked to psychiatric teams in order to best serve this at risk group.

P286

How good are we at 'spotting the signs'?

V Jessop, A Fernandes and K Horn
Royal United Hospital, Bath, Somerset, UK

Background: Article 34 of the United Nations Convention on the Rights of the Child states that 'governments must protect children from sexual abuse and exploitation' (United Nations Convention on the Rights of the Child)
In 2014, the British Association for Sexual Health and HIV (BASHH) and Brook developed a proforma for use in sexual health services around the UK, designed to help health professionals identify those individuals under 18 years of age at risk of child sexual exploitation. (Rogstad K, Johnston G. Spotting the signs: a national proforma for identifying risk of child sexual exploitation in sexual health services. April 2014BASHH/Brook.)
Methods: A retrospective audit of completion of the 'Spotting the Signs' proforma for clients under 18 years was conducted using computerised records from Lilie Live for the 12 months of 2017, and compared with data for a 6 month period in 2016. Local practice was compared against published guidelines from BASHH and Brook, by auditing key components including: assessment of Fraser competence, discussion of confidentiality clause and name of social worker obtained.
Results: There were 101 attendances by clients under 18 years, with 74 different individuals seen. Of these, the majority were female, with a total of seven referrals to social care made. Completion of the proforma and the key components within it was good, although the 100% target was not reached. However, compliance had improved in 2017 as compared to 2016, following the introduction of compulsory fields; which require completion before the electronic record can be saved.
Conclusion: As increasing numbers of clients under 18 years are seen in Sexual Health Departments it is imperative that signs are spotted so that concerns can be escalated and young people can be protected. Results of this audit and the importance of this proforma have been presented to healthcare professionals working in the Sexual Health Clinic, with recommendations made for changes to future practice.

P287

How is sexual wellbeing defined and measured? A rapid review with implications for evaluation of complex sexual health interventions

J Dalrymple, L De Amicis and K Lorimer
Glasgow Caledonian University, UK

Background: The concept of sexual wellbeing is included in the World Health Organisation's (WHO) definition of sexual health, which has been adopted at policy level across the UK. However, do we yet truly understand what sexual wellbeing is or how to measure it? A measure that embraces complexity would facilitate the evaluation of interventions, to ensure all relevant outcomes are captured. We conducted a rapid review to assess how the concept of sexual wellbeing has been defined and measured, and the factors associated with it, to inform the development of a multidimensional measure of sexual wellbeing.
Methods: A rapid review across five key databases for studies focused on exploring experiences of or measuring sexual wellbeing (or proxies, e.g. satisfaction, function). All study designs were eligible for inclusion, but we utilised English language and date limiters (from 2007 to the year a WHO report stated there were no measures of sexual wellbeing), and we restricted the search to studies with adults aged 16–65. Included studies were mapped to capture definitions, measures and attributes of sexual wellbeing. A purposeful selection of studies was identified for detailed extraction to understand in greater depth the factors associated with people's sexual wellbeing, employing narrative synthesis.
Results: A total of 1208 studies were screened against title and abstract and 440 for full text eligibility. Of the 169 studies included for mapping, almost none offered a working definition of sexual wellbeing and 73 focused on sexual function, sexual satisfaction, or a combination of both. Data were extracted from the 101 papers that went beyond function or satisfaction. Most focused at the individual-level, such as self-esteem, anxiety, as well as relationship issues; very few embraced wider social determinants of sexual wellbeing, such as socio-structural influences (e.g., poverty, gender, violence).
Conclusions: Despite an increasing number of studies purporting to measure sexual wellbeing, there is still no definition as to what this is, which impacts on measurement. We require a broader, more complex measure of sexual wellbeing so that all relevant outcomes associated with an intervention to improve sexual health and wellbeing can be captured. In our paper, we will suggest key domains a multidimensional measure of sexual wellbeing requires if it is to help researchers look beyond sexual function towards holistic sexual health.

P288

Introducing the 'five times sit to stand' test into a group rehabilitation intervention for adults living with HIV in the UK

D Brown[1], K Neate[1], J Mugambwa[1], R Harding[2], M Nelson[3] and M Bower[4]
[1]*Chelsea and Westminster Hospital NHS Foundation Trust, Physiotherapy Department, London, UK,* [2]*Kings College London, Cicely Saunders Institute of Palliative Care, Policy and Rehabilitation, London, UK,* [3]*Chelsea and Westminster Hospital NHS Foundation Trust, Department of HIV Medicine, London, UK,* [4]*Chelsea and Westminster Hospital NHS Foundation Trust, National Centre for HIV Oncology, London, UK*

Background: A physiotherapy-led group rehabilitation intervention for adults living with HIV, combines twice weekly exercise and education, improving physical function and quality of life. Existing measures completed week-0 and 10, present time and space burden, with low completion of post-intervention measures. Identification of appropriate measures is required to minimise burden and optimise data collection, when accommodating for fluctuations in attendance dependent on episodes of disability. 'Five times sit to stand' (FTSTS) test is a functional performance measure of lower extremity strength and balance, measuring disability and recommended to support standard HIV care.
Methods: From October 2015, during routine services, a 12-month trial of FTSTS at every attendance was performed. We determined test compliance, median baseline performance and change over time near week-10 (between 18 and 24 sessions), for 'adherent'; attending ≥8/20 sessions, and 'non-adherent'. We determined median proportion of longitudinal attendance beyond 10-weeks.
Results: 66 patents attended; male (73%, n=48), mean age 55 years (range 40–78), mean CD4 689, undetectable viral load 92% (n=59/64). FTSTS completed during 99% (875/888) of attendances. FTSTS baseline score 13.3s (range 6.6–64), with 47% (n=31) not requiring upper limb support. Median 5 (range 1–20) attended sessions within 10-weeks, with 28 patents attending near week-10. Adherence achieved by 33% (n=22), attending 12 sessions (range 8–20), scored baseline FTSTS 12.5s (range 6.9–34) with change over time 7.0s (range 5.0–14.2) (p=0.0018) and improvement 5.3s (range 1.8–28.5). 'Non-adherent' attending near week-10 (n=10) attended 4 sessions (range 2–7), scored baseline FTSTS 16.15s (range 9.4–28.3), change over time 10.35s (range 6.1–18.0) (p=0.003) and improvement 6.5s (range 0.3–18.3). No significance difference between baseline FTSTS and median improvement between 'adherent' and 'non-adherent'. Significant improvement observed in those progressing to no upper limb support to complete FTSTS (p=0.0016). Open-access beyond 10-weeks utilised by 39% (17/44) 'non-adherent' and 77% (17/22) 'adherent'. 'Adherent' attended 19 sessions (range 1–57) and 'non-adherent' attended 2 sessions (range 1–30) beyond 10-weeks (p=0.001).
Conclusion: The FTSTS showed excellent compliance. Baseline FTSTS scores demonstrate worse performance compared to community dwelling older adults and Parkinson's disease. Both 'adherent' and 'non-adherent' achieved significant improvement in FTSTS, exceeding minimal clinically important difference for COPD, vestibular disorders and older adults. With open-access 'adherent' attended more sessions than 'non-adherent' beyond week-10. Improved FTSTS indicate the value in attending some sessions and providing open-access services accommodating episodes of disability.

P289

Measuring empowerment among people living with HIV: a systematic review of available measures and their properties

V Cooper[1], J Clatworthy[2], R Harding[3] and J Whetham[2]
[1]*The Research Unit Limited, Brighton, UK,* [2]*Brighton and Sussex University Hospitals NHS Trust, Brighton, UK,* [3]*King's College London, UK*

Introduction: Patient empowerment is increasingly recognised as an important outcome of healthcare interventions and policy. It is thought that empowered patients will make more rational decisions about their health, be less dependent on health care services and use services in a way that is more cost-effective than less empowered individuals. The aim of this study was to identify and appraise measures of empowerment used in peer-reviewed research with people living with HIV (PLWH).
Methods: A systematic review of the published literature was conducted. Papers were identified via keyword and citation searches of electronic databases and hand searching of reference lists. Papers were included if the study measured patient empowerment or an overlapping construct (e.g. patient activation, self-management self-efficacy) and if more than 50% of the sample comprised PLWH. Two researchers independently conducted title and abstract review and extracted data from identified papers and from the primary validation paper of each empowerment measure identified. Psychometric quality criteria assessing content validity, internal consistency, criterion validity, construct validity, reproducibility, responsiveness, floor and ceiling effects, interpretability were applied to the primary validation papers
Result: Thirty articles reporting on 12 scales were identified. The instruments captured a wide range of constructs, including self-efficacy, perceived knowledge/information seeking, self-management behaviours, belief in an active patient role and tolerance of uncertainty. All but one measure (HCEI) included items on self-efficacy. Many addressed multiple aspects of self-efficacy, including perceived capacity to manage symptoms, manage treatment, communicate effectively with health professionals, obtain information, access support and manage emotional wellbeing. Three measures assessed perceived knowledge/information seeking (HCEI, PAM-22, PAM-13), three assessed self-management behaviours (HCEI, PAM-22, PAM-13), three assessed belief in an active patient role (HCEI, PAM-22, PAM-13) and one assessed tolerance of uncertainty (HCEI). Most of the identified measures had acceptable construct validity, however there were insufficient data to determine the reliability or responsiveness of many of the scales.
Conclusion: The findings highlight the need for a more concrete definition of empowerment and for further validation of existing measures with PLWH.

P290

Measuring quality of life among people living with HIV: a systematic review of reviews

V Cooper[1], J Clatworthy[2], R Harding[3] and J Whetham[2]
[1]*The Research Unit Limited, Brighton, UK,* [2]*Brighton and Sussex University Hospitals NHS Trust, Brighton, UK,* [3]*King's College London, UK*

Introduction: Improving quality of life is central to the care of people living with HIV (PLWH). A systematic review of reviews was conducted to identify and appraise the properties of brief measures of health-related quality of life (HRQoL) that have been used with PLWH.
Methods: 1) Search of electronic databases to identify systematic reviews of tools used to measure HRQoL in PLWH, published since the year 2000; 2) selection of HRQol scales from those identified in the reviews. Inclusion criteria: scales that could be self-administered in 10 min or less, covering at least 3 domains of quality of life (physical function, social/role function and mental/emotional function), normative data available (generic measures only), evidence of patient input into the development of the scale (HIV-specific measures only).
Results: 544 papers were identified by the electronic search. After removal of duplicates, 278 abstracts were subjected to review of which 27 were obtained for full text review. Ten reviews met the inclusion criteria. Nine generic scales were identified: the EuroQol five dimensions questionnaire (EQ-5D); Health Utilities Index; McGill Quality of Life questionnaire; Medical Outcomes Study (MOS) Short Form (SF)-12; SF-36; World Health Organisation Quality of Life (WHOQOL-BREF), Questions of Life Satisfaction (FLZM) and SF-20. Available psychometric data supported the EQ-5D and SF-36. Seven HIV-specific scales met the inclusion criteria: the AIDS Clinical Trials Group (ACTG)-21; HIV-QL-31; MOS-HIV; Multidimensional Quality of Life Questionnaire for Persons with HIV/AIDS (MQOL-HIV), PROQOL-HIV, Symptom Quality of Life Adherence (HIV-SQUAD) and the WHOQOL-HIV BREF. Of the HIV-specific measures, the MOS-HIV was considered to have the most well-established psychometric properties, however limitations identified in the reviews included insufficient input from people living with HIV in the scale development, cross-cultural relevance and continued applicability. Two relatively new measures, the WHOQOL-HIV BREF and PROQOL-HIV, were considered to have promising psychometric properties and may have more relevance to PLWH.
Conclusion: The findings highlight the need for further validation of HRQoL measures in PLWH. The choice of one measure over another is likely to be influenced by the purpose of the quality of life assessment and the domains of HRQoL that are most relevant to the specific research or clinical question.

P291

Modelling the relationships between APOE-e4, physical frailty, and cognitive profiles in an HIV-positive cohort

A Stuart[1], J Rusted[1], J Wright[2] and T Levett[3]
[1]University of Sussex, Falmer, UK, [2]Brighton and Sussex Medical School, UK, [3]Royal Sussex County Hospital, Brighton, UK

Background: Frailty and cognitive decline are pervasive problems in the ageing community, particularly for those infected with the *human immunodeficiency virus* (HIV). Research suggests that HIV patients may experience accelerated multi-systemic decline or 'biological ageing', of which frailty may be a useful metric. The possession of an apolipoprotein E epsilon 4 (e4) allele has also been associated with cognitive decline, though its aetiology is complex. Crucially, age-related decline in cognition may arise subtly around mid-age and may be exacerbated in e4-carriers. This study aimed to characterise the relationships between cognition, APOE-status and frailty, in a mid-aged HIV positive cohort, who may be experiencing accelerated biological ageing.
Methods: 230 HIV positive patients from an ongoing prospective study underwent extensive testing on a range of cognitive and health related markers. Univariate multiple regression analyses tested the predictive validity of APOE-status and frailty for performance in individual cognitive tests, controlling for potential risk factors, including chronological age, comorbidity, vascular and metabolic conditions, immunity profiles, serum inflammatory biomarkers, and cognitive reserve.
Results: The regression analyses revealed no significant differences in cognition between e4-carriers and non-carriers. However, frailty was strongly predictive of reaction time (RT) mean and variability. Frailty also predicted day-to-day memory problems. Chronological age showed a different pattern of loading to frailty, predicting global cognition, task-switching ability and mean RT. While comorbidity and cognitive reserve were also significant predictors of cognition, no other factors added explanatory power.
Conclusion: The lack of e4 differentiating effect of cognition may reflect the more aggressive management of vascular risk factors in HIV patients, or lack of e4-related pathological acceleration in HIV. This study provides some support for frailty as a metric of biological ageing that may be sensitive to particular cognitive domains. Mechanistically, these effects may be explained by sarcopenia or alterations in white matter integrity. Future studies should prioritise longitudinal follow-up of frail and pre-frail patients to monitor cognitive and structural changes in the brain.

P292

Pain prevalence, symptoms and concerns among people living with HIV attending outpatient in Malawi: baseline findings from a pain education trial

K Nkhoma and R Harding
King's College London, Cicely Saunders Institute, London, UK

Introduction: Pain has previously been identified as a prevalent and burdensome problem in HIV population. However little recent research into pain in the modern ART era exists. We describe the prevalence and burden of pain, symptom and concerns and associated factors in a pain education intervention study.
We aimed to measure (1) 3 day period intensity of problems and concerns and (2) identify predictors of problems and concerns.
Methods: We conducted a randomised controlled trial consisting of an information leaflet, face-to-face discussion and a phone call among adults PWHA attending outpatients in northern part of Malawi. The analysis is drawn from the baseline data of the trial. Multi-dimensional palliative care problems and concerns were collected using African Palliative Care Outcome Scale (APOS). Ordinal logistic regression assessed the association of multi-dimensional problems and concerns controlling for demographic variables (gender, education, marital status) and clinical variables (WHO clinical stage, TB treatment status).
Results: The items with worst score responses were physical symptoms (45.6%), help and advice (44.51%), share feelings (39.02%), worry (34.62%), and pain (33.52%).
TB treatment status was associated with higher (better) score for factor 3 (existential and spiritual wellbeing: odds ratio 2.89, 95% CI 1.28 to 6.55; p=0.011). Advanced HIV infection was associated with higher (better) score for APOS total (odds ratio 1.33, 95% CI 1.10 to 1.61; p=0.003) and factor 1 (physical and psychological symptoms: odds ratio 1.39, 95% CI 1.16 to 1.68; p<0.0001). Female gender was associated with higher score for factor 1 (2.62, 95% CI 1.42 to 4.83; p=0.002).
Conclusion: Pain, symptoms and concerns still persist at all stages of HIV infection. Person-centred care is needed among PWHA regardless of treatment status, and clinical stage.

P293

Prevalence of adverse childhood experiences in people living with HIV in London: a preliminary study

R Brennan and K Forbes
Body & Soul, London, UK

Background: Amidst growing evidence for the effects on mental and physical health associated with adverse childhood experiences (ACEs) (Felitti et al. 1998), there has been little research into the impact of ACEs in people living with HIV. Experiencing more ACES is correlated with lower mental wellbeing, and higher rates of chronic illness including cancer and heart disease. A third sector organisation that supports people living with and affected by HIV in the UK sought to evaluate the prevalence of ACEs in people living with HIV as an initial investigation.
Methods: 43 members of a central London organisation working with children and families living with and affected by HIV completed the questionnaire. Respondents were aged 19–58 (median age=32 years), 72% were female and 91% were of black and minority ethnicity. These demographics are representative of the population this organisation supports. Questionnaires were completed at registration with new adult members (since October 2017) and after a workshop focusing on the effects of ACE throughout the life course. Participants responded 'yes' or 'no' to questions about experiencing different forms of childhood adversity. The questionnaire was based off the 10-question survey used in 'The Adverse Childhood Experience (ACE) Study', with 3 additional questions relating to experience of discrimination, community violence and experience of foster care. For the purposes of comparison, only data related to the original 10-question survey (abuse, neglect and family dysfunction) is used in this report.
Results: 93% of respondents had experienced at least 1 ACE with 62.8% having experienced 4 or more. The most commonly experienced ACEs were emotional neglect (58.1% of respondents experienced this), physical abuse (55.8%) and witnessing domestic violence (53.5%). The least experience ACE was incarceration of a member of their household (7%). Bellis et al. (2014) found wider UK prevalence of ACEs to be significantly lower than in our population, with 47.1% of their sample having experienced at least 1 ACE, and 12.3% experiencing 4 or more.
Conclusion: This study demonstrates a significantly higher prevalence of ACEs among a subset of people living with HIV compared with the wider UK population. With the risks associated with both higher ACEs and HIV infection, their interrelations must be examined and can be used to inform targeted support for people living with HIV.

P294

Prevalence of diagnosed depression and anxiety in adults living with HIV in England and Wales compared to the general population

C Kelly, M Kall, M Auzenbergs and V Delpech
Public Health England, London, UK

Background: Although HIV is now considered a manageable condition, a diagnosis can still be psychologically traumatic due to stigma and other issues. Additionally, HIV disproportionately affects vulnerable populations such as migrants and gay men who have higher rates of poor mental health. We present national population-level prevalence estimates of diagnosed depression and anxiety in people living with HIV compared to the general population and by demographic groups and time since HIV diagnosis.
Methods: Positive Voices is a cross-sectional, probability survey of people with HIV, conducted between January and September 2017. Using the HIV surveillance database (HARS) as a national sampling frame, a representative sample of people attending 73 HIV clinics in England & Wales was invited to

take part, and 4415 people responded (51% response rate). Respondents were asked to self-report any lifetime clinical diagnoses of depression and anxiety. Unweighted prevalence estimates are presented, and compared to self-reported lifetime diagnosis data from the 2014 Health Survey for England general population survey.
Results: The prevalence of diagnosed depression was 34% among people living with HIV, compared to 19% in the general population ($p<0.0001$). The prevalence of diagnosed anxiety was 26% compared to 15%, respectively ($p<0.0001$). Males had higher rates than females of both depression (35% vs. 28%; $p<0.0001$) and anxiety (28% vs. 19%; $p<0.0001$). The prevalence of both conditions were also higher (depression 49%; anxiety 41%) among those diagnosed with HIV before 1996 when highly active antiretroviral therapy (HAART) was introduced. The ratio of male to female participants diagnosed during this time was much greater (5:1 compared to 2:1 in those diagnosed after), which may partly explain higher prevalence of depression and anxiety in early years. Gay and bisexual men had more than two-fold higher rates of depression (41%) and anxiety (33%) compared to the general population. Heterosexual females also had high rates of these conditions (28% depression, 19% anxiety).
Conclusion: Although people with HIV have longer and healthier lives than earlier in the epidemic, support for long-term psychosocial needs is still needed. Meeting these mental health needs is an essential component of HIV treatment and care, in order to mediate the effects of depression and anxiety on longer-term health outcomes.

P295

Provision of sexual difficulties service within sexual health services: postcode lottery and commissioning casualty?

J Ashby[1], N Ahmed[2] and D Goldmeier[3]
[1]Central and North West London NHS Trust, UK, [2]Desmon Tutu HIV Foundation Centre, Cape Town, South Africa, [3]Imperial College Healthcare NHS Trust, London, UK

Background: Provision of services for Sexual Difficulties (SD) within sexual health services (SHS) has historically been subject to local variation. Changes in the commissioning arrangements for SHS have resulted in a reduced budget for service provision in many areas. We describe the provision of SD services within SHS in the UK and the effect of commissioning changes in SHS on the availability of SD services in this setting.
Method: A questionnaire was disseminated widely through UK networks using survey monkey. Services providing sexual health care in the UK were eligible to participate. Answers were collated and analyzed.
Results: A total of 121 responses over a 4-week period between March and April 2017 were received. 98% of respondents defined themselves as SHS. 31% reported providing HIV services, 19% community contraception and 8% young person's services. Respondents were widely geographically dispersed through England, Wales, N Ireland and Scotland.
82% of respondents reported pathways in place to refer patients with SD, 78% provided services within their own SHS. For those providing in house SD services 83% also accepted referrals from primary care.
55% of those providing services responded that they were specifically funded to do so. The funding source and structure was variable and included NHS, CCG and Local Authority, and block and GUM tariff funding.
45% of respondents offered a Multidisciplinary Team approach and included as minimum both medical and psychology input; 20% reported medical only and 18% were psychology only.
33% of respondents reports experiencing reduced ability to provide SD services as a result of recent commissioning changes and just 4% reported an increase in SD service provision within their service. This is despite 56% of respondents expressing that there was unmet need for SD services within their locality. 81% of respondents felt that provision of SD service was appropriate and 80% felt it was feasible within their SHS.
Conclusion: Results highlighted vast regional and local differences in service provision and funding arrangements. This indicates disparity of access for patients and a 'postcode lottery'. Many services reported reduction in SD provision within SHS since commissioning changes despite local unmet need and patient demand. Responses highlighted national differences e.g. universal service provision within Scotland. Implications of changes to commissioning are in the early stages and may evolve over time.

P296

Quality of life and prevalence of depression among people living with HIV attending an ART centre in India

S Parimoo[1], SM Majjige[1] and V Sivaraj[2]
[1]Mysore Medical College and Research Institute, Mysore, India, [2]Guy's and St Thomas' Hospital, London, UK

Background: Implementation of widespread ART program in India has prolonged life of people with HIV (PLWH). However mental health and quality of life of surviving PLWH attending ART centre in India is less studied.
Objectives: To determine the quality of life and prevalence of depression amongst PLWH attending an ART center in Southern India.
Methodology: It is a single centre questionnaire based survey conducted through one to one interview with participants.101 Adult PLWH were recruited randomly over a period of 1 year (2014–2015) after informed consent for a semi structured one to one interview for 30 min to fill in a questionnaire based proforma. Data was collected for age, sex, marital status, CD4 count, Quality of Life questionnaire using WHO QOL-BREF and PHQ-9 questionnaire for depression screening. The anonymised data collected was entered into Microsoft Excel and analysed.
Results: A total of 101 participants (92 Male and 9 female) were included. Majority of them (70.3%) were of age group 31 to 40 years and the mean age being 32.4 ± 5.9 years and 72% of them were married. It was found that 56.4% participants had mild depression (5–9 PHQ scores).17.8% had moderate depression (score10–14) and 1% had severe depression. In all, 75.3% of participants had depression on PHQ-9 screening. A positive correlation co-efficient (r value=0.240) was obtained between PHQ-9 score and CD4 count. A negative correlation coefficient was obtained for the overall Quality of Life (r value=−0.240) and CD4 count separately for each domain and it was statistically significant for Physical, Psychological and Social domains of QOL.
Conclusion: The prevalence of depression was found to be 75.3% in the study sample. There was a positive correlation between severity of depression and CD4 count and a negative correlation between overall quality of life and CD4 count.

P297

Self-reported function and disability of people living with HIV and/or cancer during acute hospital admissions in the UK, using the World Health Organization Disability Assessment Schedule (WHODAS) 2.0

D Brown[1], K Neate[1], J Mugambwa[1], T Newsom-Davis[2], M Nelson[3] and M Bower[4]
[1]Chelsea and Westminster Hospital NHS Foundation Trust, Physiotherapy Department, London, UK, [2]Chelsea and Westminster Hospital, Department of Oncology, London, UK, [3]Chelsea and Westminster Hospital NHS Foundation Trust, Department of HIV Medicine, London, UK, [4]Chelsea and Westminster Hospital NHS Foundation Trust, National Centre for HIV Oncology, London, UK

Background: During acute hospital admission, patients receiving HIV and Oncology care can access specialist Physiotherapy. Measures of function and disability were not routinely used. The World Health Organization Disability Assessment Schedule (WHODAS) version 2.0, measures function and disability across 6 domains; *cognition*, *mobility*, *self-care*, *getting along*, *life activities* and *participation*. Measuring function and disability can support service delivery.
Method: We evaluated 12-month trial, from August 2015, using 12-item self-administered WHODAS 2.0, when assessed by specialist Physiotherapy. Exclusion criteria; significant cognitive impairment, incompatible language and emotional distress. WHODAS 2.0 was evaluated for item *simple* score (0=none, 1=mild, 2=moderate, 3=severe, 4=extreme) and *complex* severity score (0–100), between 3 subgroups; *HIV*, *Cancer* or *Dual* diagnosed HIV and cancer. Comparisons of age, length of stay, time to WHODAS 2.0 completion, median Viral Load and CD4 were conducted and correlations were evaluated between severity score, length of stay and receiving Physiotherapy interventions (>1 visit).
Results: Total 224 questionnaires completed among *HIV* (n=84, 38%), *Cancer* (n=92, 41%) and *Dual* (n=48, 21%). Sample was mostly male (n=159, 71%), mean age *HIV* (52 years), *Cancer* (67 years) and *Dual* (49 years) ($p<0.0001$). WHODAS 2.0 completed median 3 days from admission, with median length of stay *HIV* (7 days), *Cancer* (8 days) and *Dual* (11 days). Undetectable viral load in

65% *HIV* (n=53/81) and 77% *Dual* (n=36/47), median CD4 *HIV* 362 (range 2–2100) and *Dual* 172 (range 6–1160). Most common cancer was Lymphoma (34%, 47/139). Median domain *simple* scores within subgroups (*HIV*/*Cancer*/*Dual*) were; 'standing long periods' (2/2/2); 'household responsibilities' (2/2/2); 'learning a new task' (1/0/0); 'joining community activities' (2/1/2); 'emotionally affected' (3/2/3); 'concentrating 10 minutes' (1.5/0/1.5); 'walking a long distance' (3/3/3); 'washing whole body' (1/1/2); 'getting dressed' (1/1/1); 'dealing with people' (0/0/1); 'maintaining friendships' (0/0/0) and 'day-to-day work' (2/2/2). Median number of items scoring 'mild' level or above for *HIV* (8), *Cancer* (7) and *Dual* (8). Median *complex* severity scores between *HIV* (42%), *Cancer* (32%) and *Dual* (45%) demonstrated no significant difference (p=0.16). A positive correlation was observed between higher severity score and longer length of stay (p<0.0001) and patients requiring Physiotherapy (>1 visit) had worse severity scores (p<0.0001).

Conclusion: People living with HIV, Cancer or Dual diagnosis self-report high functional disability during acute hospital admission; worst scores within *mobility* and *life activity* domains. Walking a long distance was the worst scored challenge. Disability severity correlated with length of stay and receiving Physiotherapy interventions.

P298

Stable or complex: psychological needs following early initiation of ART

R Wilkins and T Barber

Chelsea and Westminster NHS Foundation Trust, London, UK

Background: Prior to the Strategic timing of AntiRetroviral Treatment (START) study newly diagnosed HIV patients were physically and psychologically monitored for some time prior to ART commencement, allowing time to build therapeutic relationships and adjust to the diagnosis. Earlier introduction of ART may mean a more medical approach and less focus on psychological care. When patients have an undetectable viral load they may be deemed stable and seen less frequently. To better define stable patient pathways and support multidisciplinary management we reviewed psychological symptoms in those recently diagnosed with HIV. We consider if patients should be seen more regularly in the first year to avoid neglecting psychological needs.

Method: A retrospective notes review of new HIV diagnoses Sep-Dec 2015 to assess when/-whether psychological issues were raised, management of these and when patients received a 6 month ART prescription, indicating stability.

Results: 15 new patients (80% male, 66% homosexual), mean age 40 years, median CD4 399, median viral load 88,000, 3 recent infections. 33% regularly used recreational drugs.

60% initiated ART within 1 month of diagnosis, 20% in 1–3 months, 6.6% in 3–6 months, 6.6% in 6–12 months. 1 patient was lost to follow up. 66% reported mood/adjustment difficulties. Of these 50% were immediately, 30% within 1–3 months, 20% in 3–6 months.

50% of those reporting mood difficulties were supported by peer support, 20% required psychiatric liaison, 10% supported by Health Advisors, 10% required no additional support.

Of those remaining in care 43% received a 6-month script ≤6 months after diagnosis and were thought of as stable. 36% did not receive 6-month prescriptions in their first year.

Discussion: Mood difficulties remain common following HIV diagnosis. Peer support is invaluable: half of those with mood disturbances benefitted from their input. Health Advisors input was also significant. Some patients required psychiatric support. The effect of recreational drug us is worth considering.

Early introduction of ART means HIV can be medically managed but it remains a life-changing diagnosis. Early medical intervention should not divert attention from assessing psychological impact. We need an holistic approach to ensure we offer the best care and that patients are not labelled as stable before adequate mood assessment.

P299

Stigma Survey UK: an intergenerational comparison of positive self-image across the UK

I Lut[1], C Smith[2], A Hudson[1], V Delpech[3], A Ely[4], A Williams[5] and C Foster[6]

[1]Family Planning Association, London, UK, [2]University College London, UK, [3]Public Health England, London, UK, [4]Children's HIV Association, Bristol, UK, [5]London North West Healthcare NHS Trust, London, UK, [6]Imperial College Healthcare NHS Trust, London, UK

Background: HIV-related stigma affects self-esteem and quality of life among people living with HIV. We report on the intergenerational differences in HIV-related self-image among adults and young people (YP) living with HIV in the UK.

Methods: *The People Living with HIV* Stigma Surveys UK were co-produced by people living with HIV (PLWH), clinicians and researchers. Two cross-sectional studies [adults (18+) and YP (15–24)] were conducted, exploring stigma and discrimination experienced by PLWH in the UK. Participants were recruited through community organisations and HIV clinics. A composite binary self-image score was created from responses to 9 questions on positive (4) and negative (5) feelings in the past 12 months. Descriptive and multivariate analyses are presented.

Results: Data from 1450 adults and 300 YP was analysed; median ages 45 years (37,52) and 20 years (17,22) respectively. 76% and 53% identified as male (including trans men) and 67% and 39% of sexually active participants were men who have sex with men (MSM). 62% of adults identified as White British while 79% of YP identified as Black, Asian or Minority Ethnic. 65% of YP acquired HIV at birth and 29% were infected sexually. 92% of participants in both studies were currently on ART. Reported feelings in relation to HIV status and positive self-image scores are presented below:

	Adults (n=1450)	Young people (n=300)	p	Adjusted OR (95% CI)* YP vs. Adults
In control of health	900(62.1%)	223(74.3%)	<0.001	1.57 (1.08–2.29)
As good as anyone else	857(59.1%)	220(73.3%)	<0.001	1.75 (1.2–2.58)
Shame	710(49.0%)	65(21.7%)	<0.001	0.29 (0.21–0.39)
Guilt	670(46.2%)	50(16.7%)	<0.001	0.29 (0.21–0.4)
Positive self-image	720(49.7%)	211(70.3%)	<0.001	2.95 (2.11–4.12)

*Adjusted for gender, sexuality, ethnicity, religious activity, ART, high PHQ2 score, time since told about diagnosis.

Conclusions: YP report significantly more feelings of control over their health and feeling as good as anyone else while reporting less feelings of shame or guilt about their diagnosis compared to older adults. They are more likely to have a positive self-image and better adjustment to their diagnosis. Strategies that translate positive youth self-efficacy into improved health-seeking behaviours and reduced risk-taking require further exploration.

P300

The development of an intervention to support uptake and adherence to antiretroviral therapy in people living with HIV: the SUPA intervention

R Horne[1], K King[1], V Cooper[1], Elizabeth Glendinning[1], Susan Michie[2] and Trudie Chalder[3]

[1]University College London School of Pharmacy, UK, [2]University College London, UK, [3]King's College London, UK

Introduction: The effectiveness of antiretroviral therapy (ART) depends on prompt uptake of treatment and a high level of adherence over the long-term, yet these behaviours are suboptimal. Previous interventions have significantly improved adherence but effect sizes are generally small. The aim of this study was to describe the development of an intervention to support uptake and adherence to treatment in people living with HIV (PLWH) (the SUPA intervention).

Methods: The intervention was developed in line with the Medical Research Council (MRC) guidance for the development of complex interventions. Intervention content was informed by the Necessity-Concerns Framework, empirical evidence, preparatory research with target populations and user testing. Behaviour change techniques were mapped to perceptual and practical barriers to uptake and adherence to ART identified in preparatory research. Intervention materials were developed and user tested with members of the target group. The intervention was described using the Template for Intervention Description and Replication checklist.

Results: Intervention materials (patient and nurse manuals and digital animations) were developed by a multidisciplinary panel of experts in

adherence, behaviour change, cognitive behavioural therapy, HIV medicine and HIV advocacy. The intervention is targeted towards ART naïve PLWH at risk for low engagement with ART. Risk for low adherence is determined using the Beliefs about Medicines Questionnaire (HIV-specific). The intervention aims to:

(1) Communicate a common-sense rationale for ART;
(2) Elicit and address specific Necessity beliefs and Concerns about ART
(3) Identify and address practical barriers to ART uptake and adherence.

PLWH receive 4 individual sessions delivered face-to-face or over the telephone by HIV specialist nurses or pharmacists who receive training in cognitive behavioural therapy (CBT) and motivational interviewing (MI) techniques. CBT and MI techniques are used to ensure that the intervention is tailored to address barriers to address idiosyncratic beliefs and behaviours. Preliminary content was modified following user testing of intervention content in focus groups with PLWH.

Conclusion: We have reported transparently on the development of a theory-based intervention to support uptake and adherence to ART. The efficacy of the SUPA intervention is currently being evaluated in a randomised controlled trial.

P301

Understanding the impact of e-services on health advisers providing support to patients with complex sexual health needs

L Snider, T Griffiths, N Turner, S Halley, M Mironski and E Svensson
Chelsea and Westminster Hospital NHS Foundation Trust, London, UK

Background: With the imminent move to e-services for asymptomatic patients a large number of people will be directed to home testing. Although there will be some safeguarding built into the online triage system there is the potential for those with needs beyond just testing to be missed. Health Advisers aim to offer patients an opportunity to discuss aspects related to their sexual health beyond just testing and treatment as well as identifying those with safeguarding needs.

It is important to understand how the move to online services will impact the potential opportunities to address patients' safety and overall welfare.

Methods: A retrospective review was conducted of complex patients presenting to see the Health Advisers between the 1st September 2016 and the 31st August 2017. Information collected included original reason for attendance, who referred the patient to see the Health Advisers, why they were referred and the outcome of the consultation.

Results: Of 326 recorded complex patients, 84 (25.8%) of them attended originally for an asymptomatic screen.

18 patients identified themselves as female, 61 as male and for 5 the information was not available. The age range was 15–72 years old with a mean age of 34.

41 patients (48.8%) had two or more complex issues to discuss.

The four most common consultations involved discussing HIV/STI anxiety (14 cases), discussing/initiating PrEP (23 cases), providing sex education (17 cases) and having a sexual risk reduction intervention (16 cases).

Additionally 7 cases required mental health input and 13 patients reported either domestic or sexual abuse/violence (23.8%).

Conclusion: The information collected shows that when asymptomatic screening is moved to the e-service, patients requiring additional input may potentially be missed. This includes those with some level of vulnerability or safeguarding requirement.

Clinics need to ensure that information is available to patients so that they can be sign posted to attend clinic or to another appropriate service.

P302

What did we learn from BHIVA audit on psychological well-being and support?

S Munatsi, M Pammi and A Darley
Nottingham University Hospitals NHS Trust, UK

Background: 2016 National BHIVA audit focussed on psychological well-being and support, use of alcohol and recreational drugs of people living with HIV. The audit results showed an increasing need for routine monitoring of psychological health and implementation of robust pathways and guidance for clinicians.

Aim: To understand the impact and significance of psychological health in HIV patients in our cohort, improve access and quality of care by using clear pathways for these patients.

Methods: The national audit results including comparative local data was presented to the HIV clinicians within the service. A search was conducted within the CLIMATE database looking for number of patients with psychiatric illness. The most recent viral load was retrieved for all those patients. For those patients with a detectable viral load, more information was gathered as to why this was the case.

Results: Of the total cohort of 1060 patients, the database search yielded 150 patients were diagnosed as having a mental health issue. Of these, 121 (86.6%) were diagnosed to have mild to severe depression, 3 (2%) were diagnosed with anxiety, 9 (6%) had a diagnosis of mixed anxiety and depression, 6 (4%) patients had organic/non-organic psychosis, 11 (7.3%) patients had other diagnoses including psychogenic fugue, schizophrenia and personality disorders. Of the 150, 129 (86%) had undetectable viral load, 21 (14%) had detectable viral load of which 5 were not on treatment as they had good CD4 counts, 2 had viral blips, 14 (66.6%) had difficulty in engaging in care.

Discussion: The psychiatric diagnosis data obtained from the database was based on the physician input into the database. We believe the actual incidence of psychiatric illness within our service is projected far less than accurate. Of the patients with a known psychiatric illness, it shows that those that are engaged (86.6%) in care have excellent outcomes. 100% of the patients with detectable viral load are those that struggle to engage in care. A clear pathway, documented assessments and dedicated clinical lead for these patients will improve the outcome of these patients and also in diagnosing the undiagnosed. Following the audit, we have identified the needs of these patients in our cohort and have devised a clear pathway for onward referrals and support. We aim to re-audit in 6 months to assess quality improvement.

Reproductive health and contraception

P303

(Meno)pause and reflect: assessment of sexual and reproductive health and menopause in older women living with HIV (WLWH) in a community HIV clinic

E Dwyer
Berkshire Healthcare NHS Foundation Trust, East Berkshire, UK

Background: The population of WLWH is ageing due to improvements in life expectancy associated with antiretroviral therapy.

Until now, gender specific care of WLWH concentrated on contraceptive and maternal needs. WLWH are reaching menopause, requiring a shift in the issues we address to optimise patient care and quality of life. This is reflected in amendments to the proposed BHIVA guidelines for sexual and reproductive health, which now include recommendations regarding menopause. The need for HIV clinicians to address menopause is reinforced by research indicating primary care physicians lack confidence managing this in WLWH.

Aim: To review current practice in assessment of menopause and sexual/reproductive health of WLWH aged 45–55 attending our clinic including:

- Documentation of menstrual cycle, pre/peri/post menopausal status and age of menopause onset
- Review of menopausal symptoms
- Documentation of advice regarding hormone replacement therapy (HRT) and number of patients taking HRT
- Contraception in pre/perimenopausal women
- Documentation of sexual activity
- STI screening
- Cervical screening

Method: Retrospective review of electronic/paper records of WLWH aged 45–55 attending in 2017.

Results: 94 women aged 45–55 attended in 2017 (16.4% of total cohort). Notes reviewed for 91/94 (96.8%). Median age=49. 81.3% Black African. Median CD4 count=610. HIV viral load <50 in 89/91 (97.8%).

Menstrual cycle reviewed in 72/91 (79%). 23/72 regularly menstruating/premenopausal, 25/72 perimenopausal, 24/72 postmenopausal. Age of menopause onset documented for 48/49 (median=48 years).

24/49 peri/post menopausal had documented assessment of menopausal symptoms. 13/91 had a recorded discussion about HRT (14.2%). 5/91 (4.5%) reported HRT use.
89/91 were asked about sexual activity, with 44/89 reporting as sexually active.86/91 had documented cervical screening. 84/91 had chlamydia/gonorrhoea screening (all tests negative). In pre/peri menopausal/unknown status, contraception was reviewed in 62/67.
Conclusion: Results demonstrate good practice in assessment of factors traditionally associated with sexual/reproductive health of WLWH (cervical/STI screening, and contraception). Screening for menopausal symptoms and discussion of HRT needs improvement and HRT prescribing was low, potentially indicating undertreatment. Areas of good documentation are supported by proforma use, which should be altered to reflect the changing demographics of WLWH.

P304

Are women living with HIV being offered appropriate contraceptive methods? An audit of clinical practice

J Tattsbridge[1] and R Caswell[2]
[1]University of Birmingham Medical School, UK, [2]Department of HIV, University Hospital Birmingham, UK

Background: Women of childbearing age, living with HIV, should be made aware of the full range of contraceptive methods and of safer sex, during consultations with their HIV care provider. With the ever-increasing range of antiretroviral medications (ART) clinicians should be aware of potential drug-drug interactions that may reduce contraception efficacy. In addition complacency regarding risk of HIV transmission, where HIV viral load is detectable, must be avoided.
Methods: National standards were reviewed. A retrospective analysis of 120 case notes from women aged 50 years and under, for a one year was performed. On-line resources were used to check potential interactions. In-depth case note reviews were carried out when potential interactions identified. Women were excluded if they were already using DMPA (depot medroxyprogesterone acetate)/LNG-IUS (levonorgestrel intrauterine system)/Cu-IUD (copper intrauterine device) (effective contraception choices largely unaffected by drug-drug interactions), had past tubal ligation, were pregnant or planning to conceive, did not want to discuss contraception, or were post-menopausal (total n=34).
Results: Contraception was addressed in 91% of cases within the past year and in 62% at the most recent consultation. 32% of women on ART were offered DMPA, LNG-IUS or Cu-IUD. Condom use was discussed or practiced in 29% of patients. Where women had a detectable viral load only 17% had condom use discussed. 3% (n=3) of women were prescribed contraceptive methods where there is a known drug-drug interaction with an established risk of reduced contraceptive efficacy, or where uncertainty exists, as studies have not been performed.
Conclusions: The findings highlight the need for on-going healthcare professional training to ensure women living with HIV are offered appropriate contraceptive choices and robust checks are in place to ensure correct provision. Additionally, increasing condom use should be encouraged to reduce HIV transmission, incidence of sexually transmitted infections and to provide optimal contraception in conjunction with other contraception methods.

P305

Fertility amongst young women with perinatally acquired HIV: data from a London cohort

J Teh[1], T Pasvol[2], S Ayres[2], C Foster[2] and S Fidler[2]
[1]Imperial College London, UK, [2]Imperial College Healthcare NHS Trust, London, UK

Background: Increased rates of infertility have been reported in horizontally infected, HIV-positive women compared to population age-matched normative data. However, little data exists for adults with perinatally acquired HIV (PaHIV), who have been exposed to antiretroviral drugs and/or HIV-associated illhealth through childhood and puberty. We describe fertility outcomes for women with PaHIV attending a London clinic between 2006 and 2017.
Methods: Case note review of fertility amongst all female PaHIV patients aged over 16 attending a London clinic between 2006 and 2017.
Results: One-hundred and nineteen patients were included. Median age at most recent visit was 20 (IQR 18–24) years. Median CD4 count was 666 (IQR 479–853) cells/mm^3. All patients were currently prescribed anti-retroviral therapy (ART), with 93 (78%) HIV viral load (VL) <50 copies/ml at their last visit. Median years of ART exposure was 13 (IQR 9–17). 3/119 (2.5%) patients had confirmed infertility, whilst an additonal 5/116 (4.3%) were under investigation for difficulty conceiving or for abnormalities in their menstrual cycle. 17/111 (15%) patients had successfully conceived. Amongst those with infertility or subfertility there was no correlation with current CD4 count, HIV VL or length of ART exposure. However, there was an increased prevalence of BMI above 25 (63% vs. 6%) for those with fertility issues.
Conclusion: Despite years of exposure to HIV and ART agents we observed similar rates of infertility and subfertility amongst a small cohort of young PaHIV+ group of women to age matched UK females (2–5%).

P306

Four-site audit of the menopause care of female patients living with HIV aged ≥45 years taking tenofovir-DF based antiretroviral therapy

E Clarke[1], R Mani[2] and C Taylor[2]
[1]Royal Liverpool University Hospital, UK, [2]St Mary's Community Health Campus, Portsmouth, UK

Background: Osteoporosis is more common in people living with HIV, who may have additional risks such as TDF use and post-menopausal status. This audit was conducted across 4 UK HIV clinics, with a total cohort of 2500 patients. The aims were to determine whether BHIVA guidelines were being followed for:

- Assessing for osteoporosis risk: 3-yearly fracture risk assessment using the FRAX tool in women aged ≥50 years or post-menopausal, with DEXA scans requested as required.
- Annual enquiry into the menstrual cycle, and menopausal symptoms in women aged ≥45 years old.

Methods: Electronic patient records were reviewed for female patients aged ≥45 years receiving TDF. Where no FRAX score or menopausal status was recorded, all available data was reviewed to determine this.
Results: 379 women aged ≥45 years were seen for HIV care, of whom 184 (48.5%) were receiving TDF. 19/97 (19.6%) patients aged ≥50 years had a FRAX score calculated in the last 3 years. Mean FRAX score was 6.08 (IQR 2.7, peak score 19). Those with a clinic calculated FRAX score requiring a DEXA were more likely to have this requested than those with a FRAX score calculated by the authors (66.7% vs. 5.4%, p=0.00022).
A post-menopausal state was determined in 12/87 patients (13.8%) aged 45–49 years, of whom 3 (25.0%) had a FRAX score calculated. 43 (49.4%) were pre-menopausal. In 32 (36.8%) patients it was not possible to determine menopausal status and therefore the need for FRAX was unknown.
15/184 (8.2%) patients had an enquiry made about menopausal symptoms, 8/15 (53.3%) had symptoms, and HRT was discussed with 6/8 (75.0%).
54/142 (38.0%) women aged 45–54 years had an enquiry into the menstrual cycle made in the previous year, 24/142 (16.9%) were post-menopausal, with 64 (45.1%) women neither determined to be post-menopausal nor having a menstrual symptoms enquiry made.
Conclusions: FRAX scores were not routinely calculated for this group of women at higher risk of osteoporosis. When a DEXA scan was required, this was significantly more likely to be requested if the FRAX score had been calculated. Enquiry about menopausal and menstrual symptoms was infrequent. UK data has demonstrated that women living with HIV frequently do not seek help despite significant menopausal symptoms. Many risks associated with a post-menopausal status are also associated with HIV, and we suggest that HIV clinics are an ideal venue to provide menopause advice to patients living with HIV.

P307

HIV-positive women and contraception; efficacy versus acceptability

N Sutton and N Gupta
Rotherham NHS Foundation Trust, UK

Background: There is a perception that women with HIV may be offered fewer contraceptive choices than their HIV-negative peers due to potential drug interactions. Provision of effective contraception is crucial, as unintended pregnancy is associated with adverse health outcomes.
Methods: We performed a retrospective case note review of women attending the HIV service between December 2016 and December 2017. We reviewed whether a contraceptive history had been obtained and whether any drug interactions had been identified.
Results: 82 patients were identified of which 18 were excluded (hysterectomy, postmenopausal, wishing to conceive). Of the remaining 64, 100% had had a contraceptive needs assessment at a recent visit. 22 stated that they were not sexually active.
42 required contraception of which 23 (55%) were using reliable contraception with no interactions. Drug interactions were highlighted in 4 (10%) (see table). 9 were using condoms and 6 (14%) were not using any contraception.
1 patient had switched ART to avoid interaction with Nexplanon.
There was one case of unintended pregnancy in a patient who was using condoms only.

Contraception	Drug interaction identified	Change of contraception advised	Change of ART suggested to accommodate preferred contraception
Nexplanon	DRV/r	Yes but declined	No
Nexplanon	DRV/r	Yes but declined	No
COCP	EFV	Yes but declined	Yes but declined and accepted the risk of pregnancy
POP	DRV/r	Yes but declined	No – but patient had resistant virus

Conclusion: It is essential that the woman's preferred contraceptive choice is ascertained and accommodated where possible. Limitations on contraceptive method, while well intentioned, may increase risk of unintended pregnancy if remaining contraceptive options are unacceptable. Women should be counselled on the expected rates of unplanned pregnancy associated with all contraceptive methods, in order to make an informed choice. Contraceptive efficacy is not the only factor that patients consider when choosing a method; in our cohort, all 4 women were motivated to continue hormonal contraception despite taking ART that would decrease contraceptive efficacy. ART change had been discussed in only 2 cases in order to enable the patient to continue their preferred contraception.
HIV clinicians must take a more proactive approach in suggesting alternative ART where feasible in order to facilitate use of a method that is both efficacious and acceptable.
Women should be counselled on the expected rates of unplanned pregnancy associated with all contraceptive methods, in order to make an informed choice. Contraceptive efficacy is not the only factor that patients consider when choosing a method; in our cohort, all 4 women were motivated to continue hormonal contraception despite taking ART that would decrease contraceptive efficacy.
ART change had been discussed in only 2 cases in order to enable the patient to continue their preferred contraception.
HIV clinicians must take a more proactive approach in suggesting alternative ART where feasible in order to facilitate use of a method that is both efficacious and acceptable.

P308

HIV, gay men and reproduction: how does the awareness of sperm washing and viral undetectability influence thinking about parenthood?

R Pralat[1], M Johnson[1], S Franklin[1], E Yarrow[1], T Freeman[1], F Burns[2], J Anderson[3], M Boffito[4] and T Barber[4]
[1]University of Cambridge, UK, [2]Royal Free London NHS Foundation Trust, London, UK, [3]Homerton University Hospital NHS Foundation Trust, London, UK, [4]Chelsea and Westminster Hospital NHS Foundation Trust, London, UK

Background: Being 'undetectable' has significant consequences for the intimate lives of people living with HIV as it greatly reduces the risk of HIV transmission. HIV-positive men who plan to become parents, and who would previously rely on sperm washing, are increasingly advised to conceive 'naturally'. Despite the advancements in antiretroviral treatment and the growing social acceptance of gay fatherhood, reproductive issues of HIV-positive men who have sex with men remain largely unexplored.
Methods: Qualitative interviews were conducted with 25 patients and 16 healthcare practitioners in four London HIV clinics. Patients were HIV-positive men aged 20–45; all but two self-identified as gay, and none had children. Practitioners included nurses, physicians, psychologists and health advisors. Interviewees were asked how being HIV-positive might affect men's decisions about having or not having children and how thinking about parenthood might relate to other considerations about intimacy and the future. Interviewees were not specifically asked about either sperm washing or undetectability.
Results: Whilst patients often emphasised the implications of being undetectable for sexual relationships, few saw undetectability as significant for their reproductive decision making. Instead, when asked about the possibility of biogenetic fatherhood, men frequently mentioned sperm washing as the go-to method for HIV-positive men who want to become parents. Healthcare practitioners also often referred to sperm washing but they uniformly described the technique as historical. They regarded sperm washing as unnecessary when viral load is undetectable. The interviews thus revealed a discrepancy in perceptions of how relevant sperm washing and viral undetectability are to HIV-positive parenthood.
Conclusion: Sperm washing, a technique generally regarded as redundant by HIV clinicians, features prominently in men's thinking about parenthood – it often constitutes the main point of reference when parenthood is considered as a possibility. Asking men about parenthood reveals complexity in their understanding of undetectability and, by extension, of HIV transmission. Knowledge about sexual relationships does not seem to translate easily to knowledge about reproductive relationships. Including parenthood in discussions about the meanings of being undetectable has potential implications beyond reproductive health.

P309

Holistic healthcare for women with HIV infection. Are we asking the right questions?

L Hookham, B Patani, MI Samuel and C Taylor
Department of HIV and Sexual Health, King's College Hospital NHS Foundation Trust, London, UK

Background: Of the 88,769 people living with HIV accessing care in the UK in 2016, 27,672 (31%) were women. BHIVA sexual and reproductive health and monitoring guidelines advise regular discussion with women about their risk of sexually transmitted infection (STI), HIV transmission, contraception, reproductive health choices and assessment of bone and cardiovascular health.
Methods: Electronic notes of women routinely attending an inner London HIV outpatient service between 05-11/2016 were reviewed. Demographics, HIV variables and women's health issues were collected (including transmission risk, bone health and cardiovascular risk) and reviewed against BHIVA guidance.
Results: 600/996 notes were reviewed from women attending during 2016/17; 83 (14%) were excluded due to attendance at emergency, antenatal or paediatric clinics only. Of the 517 (86%) women reviewed, median age was 45 (range 20–77) years, 69% were of black ethnicity, 96% were on ART and 92% on ART had an HIV RNA <200 cps/ml. Sexual history was taken at every visit in 368 (28.8%). 45% had no documented sexual history and only 44% had gynaecological history taken in the preceding year. 171 (33%) were

documented to be sexually active; of those 31 (19%) were offered an STI screen due to STI risk. 63 (36.8%) of sexually active women of reproductive age were asked annually about conception and 54 (31.6%) about contraception. Only 2 were asked about sexual dysfunction. Of the 500 aged 25–65, 66% were advised to have annual cervical cytology. Of women with a VL of <200 HIV RNA on treatment (n=455) 26 (5.7%) had a U=U conversation documented over the preceding year. Of the 274 over 45 years, 58 (21%) were asked about menopausal symptoms. Of the 171 women over 50, 20 (12%) had FRAX and 34 (19%) a cardiovascular risk score documented. 5 women were noted to experience domestic violence.
Conclusion: Although these data were collected during a period where the clinic moved from using paper notes with a specific proforma for women to a paperless system with free text documentation, clinical information specific to women's health was poorly recorded. Discussion regarding transmission risk with an undetectable viral load was particularly low in women whose health literacy and access to HIV related health information may be less than other risk groups.

P310

Improving access to sexual and reproductive health in women living with HIV: an audit and quality improvement project

E Chung, N Uthayakumar and S Roedling
Mortimer Market Centre, London, UK

Background: Women living with HIV (WLH) should be able to have healthy and fulfilling sex lives with access to relevant information, contraception and cervical smear testing. Joint BHIVA/BASHH/FSRH Sexual and Reproductive Health (SRH) Guidelines recommend WLH are offered contraception options and enquiry at every visit and annual smears between 25 and 65 years old. Cervical cancer is almost always associated with human papilloma virus (HPV) infection and is more common in WLH, hence annual rather than 3 yearly screening. We aimed to audit our practice and carry out a quality improvement project pertaining to the results.
Methods: A random sample of 82 women aged 18–49 years old having attended the service in the preceding 12 months was selected and their attendances within the previous year reviewed. Data collected included demographics, STI screen within last 12 months, antiretroviral treatment (ART), HIV viral load, documentation on sexual partners/contraception and last smear test and result were collected.
Results: Median age was 40 years. 62% were Black African, 15% White European. 88% were suppressed on ART. 70% reported previous pregnancies. Regarding contraception, 84% had a documented discussion, of which 36% were documented as not sexually active; 16% had no discussion documented. Of the women in whom contraception was documented, 19/35 used condoms only, 5/35 used the intrauterine device, 4/35 used intrauterine system, 3/35 used depo-provera. Those on hormonal methods had no drug-drug interactions with their ART. 50% reported cervical cytology within the last 12 months; of those who were tested, 78% had normal results, 14% had abnormal results and 8% did not have a result documented.
Conclusion: Contraception was reasonably well documented with condoms most commonly used and often used to protect a negative partner, but pathways to improve availability of long-acting reversible contraception should be supported. Cervical cytology was less well documented. Given that 14% of those having had smears had abnormal results, in contrast with 5% in the general population, it is important to ensure that WLH are having annual smears. To facilitate this we plan to develop a women's SRH information card, with information on rationale for annual smears, how to access contraception information and appointments and menopause information. Departmental women and HIV guidelines have been updated. We aim to re-evaluate after implementation.

P311

National survey of practice and experience of mandatory reporting of female genital mutilation (FGM) amongst sexual health care professionals

J Ashby[1], A Richardson[1], D Brawley[2] and E Hamlyn[3]
[1]Central and North West London NHS Trust, UK, [2]NHS Grampian, UK, [3]Kings College Hospital, London, UK

Background: Mandatory reporting of under 18's with FGM to the police was introduced in England and Wales in October 2015. We aimed to capture practice and experience of FGM reporting in UK sexual health clinics and affiliated services.
Methods: A survey monkey survey was sent out to sexual health care professionals via BASHH, BHIVA and FSRH networks.
Results: 76 responses were received over 4 weeks from March-April 2017 from services in England (81%), Scotland (10%), Wales (8%) and N Ireland (1%). Respondents described their service as providing sexual health (90%), contraception (17%) and HIV care (16%); responses were also received from 2 SARCs, 5 young person services, and 1 GP, 1 O&G and 1 psychosexual clinic. 40% respondents estimated their service seeing >1000 female patients/month; 46% saw >100 females aged under 18/month. Female clients were routinely asked about FGM in 36% of services. Written FGM guidance was available in 81% of services. 99% respondents had received FGM training within their service. FGM was captured with local codes in 50% of services. From Oct 2015-Oct 2016, 36% of services had not identified any FGM, 33% identified 1–5 cases and 30% identified >6 cases in over 18's. In under 18's, 91% of services had not identified any FGM and 8% of services had identified 1–5 cases.
66 responses were received from services in England and Wales. Of these 97% were aware of a mandatory duty to report to police via 101 in under 18's; 88% had receiv ed training on 101 reporting. A total of 5 cases were reported from 4 services. All were referred to social care in addition to police. Feedback regarding the outcome of the 101 referral was received by 2 services. Concerns raised by respondents included distress caused to patients, lack of confidence in police management and concern regarding reporting for Type 4 FGM including genital piercing.
Within Scotland and N Ireland, currently exempt from 101 reporting, under 18's were referred to social care, police and primary care in 4, 2 and 2 cases, respectively.
Conclusion: High levels of knowledge and training on FGM were reported. The numbers of under 18's identified and referred via 101 were small; all cases were also referred to social care. Health care providers expressed concern regarding the utility and appropriateness of automatic reporting of under 18's to 101, especially for genital piercing. Results were fed back to the National Policing Child Protection and Abuse Investigation Working Group

P312

Outcomes of the treatment of women with vulvar symptoms associated with non-albicans candidiasis in a sexual health service

S Davies, J Shaw and R Amherst
Northern Devon Healthcare Trust, UK

Background: Scant evidence exists to support any particular strategy in the management of vulvar symptoms associated with non-*Candida albicans* candidiasis (NAC). We examined the outcomes of women treated for this condition in our Sexual Health Service (SHS) over a two-year period (2015–2017).
Methods: A list of NAC cultures isolated from female genital swabs in the SHS was obtained, including type and sensitivity data. Data reviewing demographics, reported symptoms, gram-stained microscopy findings, treatment details and clinical outcomes were collected.
Results: NACs were isolated from 66 specimens in 62 individuals. 25 were speciated from 22 women (age range 17–70, 4 diabetic, 2 on long-term antibiotics and 1 with co-existing lichen sclerosus): *C. glabrata* 12 (48%), *C. parapsilosis* 4, *C. krusei* 3, *C. lusitaniae* 3, *C. tropicalis* 2, *C. kefyr* 1. All 22 were symptomatic; itch was the most common symptom (64%). Soreness, discharge, burning, dysuria, dyspareunia, swelling and or dryness were also reported. 20 had microscopy on at least one occasion when a NAC was

isolated. In 14 of these (10 *glabrata*) microscopy demonstrated spores alone - frequently very numerous. Microscopy was negative in 5. 14 women received specific treatment for NAC at least once in our service (9 flucytosine/nystatin (F/N) vaginal cream (14 days), 4 received fluconazole alone (various regimens), and one received miconazole vaginal cream (14 days) with fluconazole 50 mg od for a month). 2 women received NAC treatment twice within the analysis period. 8/9 women receiving F/N were mycologically cured at or beyond 2 weeks of completing treatment. However, only 4 had any improvement in symptoms during this time, and in 2 this was short-lived. Women with the most marked symptoms (n=2) were re-treated: one with voriconazole and the other with F/N concurrently with high dose fluconazole. Both were subsequently mycologically and symptomatically cured.

Conclusions: The majority of non-*C.albicans* candidiasis is likely to be an 'innocent bystander' even in the context of vulvo-vaginal symptoms. Despite the effectiveness of flucytosine/nystatin vaginal cream at inducing mycological cure few women had significant improvement in their symptoms. It may be useful to treat in some circumstances to help interpret the aetiology of complex vulval syndromes.

P313

Provision of oral contraceptives across a sexual health network

S Tulip[1], D Williams[2] and J Whetham[2]
[1]Brighton and Sussex Medical School, UK, [2]Brighton and Sussex University Hospitals NHS Trust, UK

Background: This local sexual health (SH) service is commissioned to provide open-access contraception and sexual health care, and faces a ~20% cut in local authority income from April 2018. Initiatives must be sought to improve efficiencies, without compromising service access and patient safety. The oral contraceptive pill (OCP) is the most popular contraceptive method. We evaluated current OCP provision by this SH service to identify patients who could potentially obtain repeat pills from community pharmacies or online.

Methods: Demographic and clinical data of patients attending for the OCP between 1st December 2016 and 30th November 2017 were reviewed. Attendances were divided into 3 groups based on where the OCP could potentially be provided: 'online' (aged ≥18, repeat pill, asymptomatic, simple STI screen), 'pharmacy' (as online plus oral emergency contraception, pregnancy tests) and 'SH' (complex patients, e.g. aged <18, symptomatic, starting the OCP, complex diagnostic tests or procedures).

Results: Of 33,197 patient attendances, 4440 (13.4%) were to obtain the OCP. Of these, 36.8% (n=1635) were to start the OCP, and 63.2% (n=2805) were to obtain a repeat pill. Of the repeat pill attendees, 27.9% (n=782) were aged ≤19; 44.4% (n=1246) aged 20–24 and 27.7% (n=777) aged ≥25. Based on GUMCAD and SRHAD coding, 68.3% (n=1915) of repeat OCP attendances could be provided online. An additional 176 repeat OCP attendances could be provided at pharmacies (74.5%). Of the 'pharmacy' attendances, 72.3% (n=1512) required no other SRH services, whilst 21.8% (n=456) required simple STI screens, 4.7% (n=99) required oral emergency contraception and 4.4% (n=91) required a pregnancy test. Nearly 70% of 'pharmacy' or 'online' patients were aged 18–24.

Conclusion: Repeat OCP provision constitutes a high proportion of the workload at this SH service. The majority of patients attending for repeat pills do not have complex needs and could potentially be managed by alternative services, including a large number in the 18–24 age group. The opinions of patients on changes to OCP provision should be sought. In a climate of budget cuts, it is vital to maintain open-access SH services. Provision of the OCP online or by pharmacies could enhance patient choice, whilst increasing the capacity of the SH service to accommodate patients with more complex needs.

P314

Reviewing the management of post-menopausal HIV positive women at a diverse HIV clinic

D Friday, R Meade and K Verma
Northwick Park Hospital, Harrow, UK

Background: High active anti-retroviral therapy (HAART) has significantly reduced the morbidity and mortality of individuals infected with HIV. As life expectancy increases a growing number of women will experience menopause. There is some evidence that HIV positive women will experience an earlier menopause (mean age between 47 and 48 years). There remains a paucity of data on how to manage HIV and the menopause. The British HIV Association (BHIVA) routine investigation and monitoring guidelines suggest following the National Institute for Clinical Excellence (NICE) menopause guideline. New guidance is emerging from BHIVA specific to the management of HIV and menopause. The aim of the review was determine how well post-menopausal women were being managed within the HIV service.

Method: A retrospective review of the electronic patient records (EPR) was conducted and all HIV positive women aged 45 and over were selected. Fifty women were selected during the 12 month audited period from 2016 to 2017. The following were recorded: demographics, length of diagnosis, CD4 count, viral load, antiretroviral treatment, menopausal symptoms, FRAX score, DEXA scan, cervical screening, cardiovascular risk assessment, co-morbidities and smoking history.

Results: Of the fifty women audited, 4 (8%) had documented symptoms of menopause between the ages of 47–49. 34 (68%) were of Black African origin, 6 (12%) Indian, 3 (6%) Black Caribbean, 2 (4%) White British and the remaining 5 (10%) were of other mixed backgrounds. The majority of patients 46 (92%) were diagnosed >10 years and 4 (8%) between 5 and 10 years. The mean CD4 count percentage was 27%. 46 of the 50 women had an undetectable viral load (VL), the other 4 were low level viraemia between 65 and 72. Half were on Tenofovir. 28 (60%) had an annual cervical smear, 14 (28%) failed to comply, 4 (8%) were >65 and 2 (10%) had hysterectomies. FRAX scores were calculated in only 4 of 46 women (46 pts were >50). Only 17 of 40 women at increased CVS risk had a score calculated. 8 of 46 women had a DEXA scan performed. 6 (12%) women were lifelong smokers.

Conclusion: Based on the findings in our review there is need to better understand how to effectively manage an aging diverse cohort of post-menopausal women. Key areas were not clearly documented in our proforma such as post-menopausal symptoms. The effects of menopause, HIV infection, and anti-retroviral treatment on the bone, lipids and glucose metabolism need to be researched further.

P315

Tailoring care for women living with HIV: experience of a dedicated medical gynaecology clinic

MI Samuel, V Sullivan, L Hamzah, M Poulton and C Taylor
King's College Hospital NHS Foundation Trust, London, UK

Background: Of the 88,769 people living with HIV (PLWH) in the UK in 2016, 31% are women. BHIVA guidelines advise regular discussion about reproductive health but data on the reproductive needs of female PLWH are lacking. We describe the presentation, diagnosis, management and outcomes of patients attending a dedicated medical gynecology clinic for female PLWH.

Methods: Electronic patient records and case notes were reviewed at a dedicated HIV medical gynaecology clinic between 1/1/2014 and 31/12/2016. Demographics, HIV markers, antiretroviral therapy (ART), reason for referral, diagnosis, management and outcomes were described. Haemoglobin (Hb) pre and post medical management of menorrhagia were compared using paired t-tests.

Results: 165 women attended for 201 new appointments during the 3 year period. Of these 139 (84%) were of black ethnicity, and at first visit had a mean (SD) age 40.8 (8.0) years, median (IQR) current CD4 571 (423, 740) cells/μl, 151 (93%) on ART of whom 84% were undetectable. The commonest reason for referral was bleeding (38%), followed by contraception (34%), amenorrhoea (10%), other gynaecological disorders (13%) and vulval issues (4%) including dermatoses, vulval intraepithelial neoplasia and infection. 86% with bleeding problems reported menorrhagia, mainly due to fibroids (55%), dysfunctional uterine bleeding (14%) and adenomyosis (5%). 40% were managed medically, 27% had a levonorgestrel intrauterine system (IUS) inserted. 13 (17%) were referred for surgical consideration. Following intervention, mean Hb of women reporting menorrhagia increased from 86.1 g/l to 99.9 g/l (p=0.0027). 13 (22%) women with abnormal bleeding had endometrial biopsies: no malignancies were found. All contraceptive methods were offered. 125 women (81%) on ART had potential for drug-drug interactions (DDI) with hormonal treatment. 17 (25%) of women requesting contraception were postnatal; their uptake of long acting reversible contraception was high (76%).

Conclusions: The reproductive needs of female PLWH are wide-ranging. The commonest reason for referral was bleeding problems, the medical management of which prevented need for surgery in most and significantly corrected anaemia. Contraceptive management differs from HIV negative women as DDIs with ART need to be considered. This dedicated, in-house service facilitates improved access and rapid delivery of care to female PLWH.

P316

What provision is there for vulval pain nationally? A mixed methods study

C Stanbridge[1], G Dean[2], S Soni[2], E Derrick[2], P Henshaw[3] and L Stuart[3]
[1]Brighton and Sussex Medical School, UK, [2]Brighton and Sussex University Hospitals, UK, [3]Sussex Partnership Trust, Brighton, UK

Background: European guidelines and the British Association for Sexual Health and HIV (BASHH) recommend that vulval conditions are managed in a specialist vulval service with multidisciplinary support.
The aim of this study is to explore the availability of specialist vulval pain services in the UK and to identify operational differences in practice of specialists for vulval pain conditions.
Methods: A questionnaire was distributed to clinicians via the newsletters of the British Association of Dermatologists and the BASHH.
Free Text answers were analysed by identifying themes to create an analytical framework. Data was then inputted into a framework matrix. Dichotomous and nominal categorical variables were entered into an Excel spreadsheet and frequencies of variables calculated.
Results: Twenty-four clinicians replied to our initial posting of the questionnaire. Nine were genito-urinary doctors, fourteen were dermatologists and one was a clinical psychologist. Four clinicians did not participate in a vulval pain service. Twenty respondents did participate in a vulval pain clinic. Five of these clinicians had clinics based in London, Fourteen were in England and one was in Scotland.
Access to allied services was variable: 50% of the clinicians had access to an NHS pain service and 50% did not; 15 (75%) had access to psychosexual therapy and 5 (25%) did not; 12 (60%) had access to physiotherapy and 8 (40%) did not. 2 (10%) clinicians had access to none of these services.
Framework analysis of qualitative data obtained from free-text answers identified key themes. Firstly, difficulty in obtaining Clinical Commissioning Group funding to maintain and run a vulval pain clinic. Secondly, a lack of knowledge from GPs and general gynaecologists on how to manage complex chronic pain cases and services availability, which impacted on patients ability to access specialist support.
Conclusions: Clinicians are keen to provide specialist vulval Pain services in the UK, despite the challenges of funding cuts and access to MDT support.
This was an initial study to identify different approaches for managing vulval pain with a multidisciplinary approach amongst different trusts across the UK. Further studies investigating and comparing regions, both with access to vulval pain clinics and those without, would be useful in this relatively understudied area of medicine.

Sexually transmitted infection (including HIV) testing, epidemiology and surveillance

P317

'Positive Voices' 2017: methods and participant characteristics of a national cross-sectional probability survey of people living with HIV

M Kall, C Farey, C Kelly, M Auzenbergs and V Delpech
Public Health England, London, UK

Background: The UK's HIV surveillance programme provides comprehensive data on the clinical outcomes of people attending HIV specialist services. However, robust data are needed on lifestyle, general health status, and unmet needs of people with HIV to understand the wider determinants of poor health outcomes and to inform service planning and provision. We present the methods, response rate, and respondent characteristics of the Positive Voices 2017 survey of people living with HIV.
Methods: Positive Voices is a cross-sectional, probability survey designed to produce nationally representative data on the health and well-being of adults with HIV receiving care. Positive Voices uses a two-stage sampling design in which all HIV clinics in England and Wales reporting ≥5 patients in 2015 were invited to take part, followed by a random sample of patients drawn from the 2015 attendance list of participating clinics to a predetermined sample size based on clinic size. Sampled patients are then approached by local hospital staff in person, by email or by post to self-complete a survey on a broad range of topics taking ~20 min to complete. Paper surveys could be returned in clinic or via Freepost to PHE, or can be completed online. An unconditional £5 voucher was included in all survey packs.
Results: 73 of the 185 (39%) invited HIV clinics agreed to participate, with diverse case mix, geographic distribution and size. Of the original 12,114 sample, 8608 (71%) patients were successfully contacted and of those, 521 (6.2%) declined. During the recruitment period, 4415 patients completed the survey (87% paper and 13% online), representing a 51% response rate. Participant characteristics were 2379 (54%) MSM, 1235 women (28%) and 801 (18%) heterosexual men. Median age was 48 years (range: 18–85). By ethnicity, 2659 (60%) white and 1736 (40%) BAME. Compared to SOPHID, Positive Voices respondents were closely representative (±5%) on sex, age, and ethnicity, but somewhat overrepresented MSM (54% vs. 47%).
Conclusion: Positive Voices 2017 is the first probability survey of people living with HIV in the UK, which produced a good response rate and representative respondent sample. Weighting on a range of respondent characteristics will further improve representation and generalisability of estimates. Forthcoming results from Positive Voices will be a key resource for understanding the lifestyles, general health status, and unmet needs of people living with HIV.

P318

'To test or not to test, there's no question'. HIV testing and oesophageal *Candida*

B Davies[1], DW Jones[2], M Sethupathi[1], U Andrady[1] and O Williams[2]
[1]Ysbyty Gwynedd Hospital, Bangor, UK, [2]Ysbyty Glan Clwyd Hospital, St Asaph, UK

Background: The proportion of late diagnosis of HIV patients in Wales is 47%, one of the highest incidences in the UK. Late diagnosis is associated with increased morbidity, mortality and greater economic burden to health care. Several patients with late diagnosis in our cohort had a history of oesophageal Candida but did not have a HIV test. The current BASHH/BHIVA guidelines recommend HIV testing in this situation. We conducted a study to see if patients with oesophageal Candida on endoscopy were being offered HIV testing.
Method: This was a retrospective review of notes and blood results of patients diagnosed with Oesophageal Candida on endoscopy. Patients diagnosed in 2016 from three District General Hospitals within the region were included. We looked at sexual history, predisposing factors for oesophageal Candida and whether HIV testing was considered or offered and their results within 3 months of endoscopy.
Results: 100 patients were included in the study. The median age was 67, 3% were <40 years of age, 50% between the ages of 40–69 and 47% >70 years of age. Only three patients had possible cause for oesophageal Candida documented at the time of endoscopy. After reviewing the notes, inhaled or oral steroids, diabetes, chemotherapy and immunosuppressive therapy were noted and may have been a contributing factor for 55% of patients. Only two patients (2%) were considered for HIV testing of which only one had an HIV test. Only one patient had sexual history documented but was incomplete. 34% of patients had additional indicator conditions which could have prompted an HIV test. Two other patients had HIV testing within the 3 month period but these were performed by different departments for unrelated reasons and therefore not included in the data.
Conclusion: HIV testing is not offered routinely to patients with oesophageal Candida in the endoscopy setting. On discussion with the endoscopy lead this may be due to clinician inexperience in routinely risk assessing for HIV and offering the test. The older patient cohort may be a factor since they are considered as lower risk despite rising number of older patients diagnosed with HIV. NICE oral Candida guidelines advise to exclude risk factors e.g. HIV but the British Society of Gastroenterology guidelines do not refer to management of oesophageal Candida or HIV testing. It may be beneficial to develop

endoscopy guidelines in regards to oesophageal Candida with sexual health input regarding HIV testing.

P319

A positive partnership? An audit to evaluate partner notification processes at a community sexual health clinic for individuals with a new diagnosis of HIV infection

J Rees, E Foley, R Patel and M Wotman
Solent NHS Trust, Royal South Hants Hospital, Southampton, UK

Background: Following a new diagnosis of HIV, partner notification (PN) is recommended to facilitate early identification and testing of individuals at risk of exposure. Studies have shown a 10–37% new diagnosis rate in those tested as a result of PN in the UK. Prompt testing allows for both the early detection of HIV infection and reduction of risk of onward transmission.
Aim: We designed an audit to evaluate PN processes at a large community sexual health service, comparing current practice against standards outlined in the national guideline 'HIV partner notification for adults: definitions, outcomes and standards' BASHH/BHIVA 2014.
Methods: A GUMCAD code search was used to identify patients presenting to the service between 01/01/16 and 31/12/16 coded as H, H1A, H1B (new HIV diagnosis, new diagnosis primary HIV, new diagnosis late HIV infection). Exclusion criteria were outlined as initial HIV diagnosis made before 2016 or patient failure to attend the first clinic review. A total of 57 patients were identified, 11 met exclusion criteria leaving 46 patients included for analysis.
Results: Of the 46 patients, 34/46 (74%) had documentation within the clinical notes of a partner notification discussion within 1 week of a positive HIV test. A further 4/46 (9%) had a discussion within 1 month and 3/46 (7%) had a discussion after 1 month. 5/46 (10.8%) had no documented discussion. 5 patients had no new sexual partners within 10 years of diagnosis therefore were excluded from further analysis. Of the remaining 41 patients, 69 sexual partners were identified, (mean 1.68 partners per diagnosed patient). 3 partners were known to have a diagnosis of HIV and therefore excluded from further analysis. Of the remaining 66 partners, 49/66 (74%) were documented as contactable. Of the 49 contactable partners, 34/49 (69%) were contacted and 25/49 (51%) tested for HIV. Of those tested, 7/25 (28%) tested positive and 18/25 (72%) tested negative. Patients diagnosed in settings outside of Sexual health were more likely to have delays or omissions in partner notification.
Conclusion: In this audit the service failed to achieve the BASHH/BHIVA recommended standards for PN. As a result we have developed a standard operating procedure and plan a re-audit in September 2018. As 28% of contactable partners tested, were newly diagnosed as positive, this audit highlights the importance of partner notification and the need for robust care pathways to optimise testing those at risk of exposure.

P320

A re-audit of HIV testing: where are we now?

L Henderson, N McInnes, N Kennedy and C McGoldrick
NHS Lanarkshire, Lanarkshire, UK

Background: A previous 2012 audit looked at whether or not appropriate HIV testing was done in Monklands Hospital, Lanarkshire in accordance with the 2008 BHIVA testing guidelines. The first audit found that 36.2% of medical inpatients had a clinical indicator condition requiring HIV testing whilst only 11% of those people requiring a test, were actually tested. The first audit identified the need for further education amongst staff in order to increase the diagnosis rate of undetected HIV. Following various educational interventions (mainly educational events/teaching sessions), a similar second round of audit was completed in 2017 within the same hospital, to evaluate effectiveness.
Methods: The notes of all medical inpatients within pre-defined wards, were reviewed on a single day (24th November 2017) to assess whether they had evidence of any indicator conditions, and whether they had been tested during that admission or during the preceding 3 months. The results of this audit were then compiled and compared to the first round of audit.
Results: In total 168 (n=93) case notes were analysed with a median age of 69 years and a range of 18–97. Of the 168 patients, 55 (32.7%) had at least one indicator condition including one who had an AIDS defining illness should their HIV test have been positive. Of the 55, 18 (32.7%) were tested during this admission, 10 (18.1%) already had a negative test within the preceding 3 months and 27 (49.1%) had an indicator condition but were not tested. The results are shown in comparison to the first round of the audit in *Table 1*.

	Audit 1 (2012)	Audit 2 (2017)
Total inpatient number	174	168
Inpatients with indicator condition	63/174 (36.2%)	55/168 (32.7%)
With indicator condition and tested	7/63 (11.1%)	18/55 (32.7%)

Table 1 - Comparison between patients tested in audit 1 and audit 2
Conclusion: Overall HIV testing has improved and indicates some degree of success in the educational initiatives that have already been used. However, a high proportion of people who should have the opportunity to be tested are not being tested. We therefore plan to continue educating peers about HIV testing but are currently employing Quality Improvement methodology to further improve testing e.g. through use of automatic lab comments, considering how to make education compulsory and opt-out testing within the Infectious Diseases unit.

P321

A review of barriers to HIV testing in Scotland: strengthening HIV testing initiatives via an expert advisory group

N Sparling[1], J Hirono[1], A Eriksen[2] and G Valiotis[1]
[1]HIV Scotland, Edinburgh, UK, [2]NHS Tayside, Tayside, UK

Background: There are approximately 6000 people living with HIV in Scotland, yet, despite 30 years into the HIV epidemic and availability of effective treatment, one in eight (13%) are unaware of their positive serostatus. People in Scotland are being diagnosed late, making treatment less effective. There is a need to better understand the barriers to HIV testing with the aim to significantly decrease rates of late diagnoses and overall HIV prevalence in Scotland. We also wanted to better understand how stigma and social deprivation may affect access to HIV testing services.
Methods: Recommended by the SHBBV Framework Executive Leads, a Short Life Working Group (SLWG) involving the community, academia, third sector, Scottish Government and Scottish NHS was convened to develop key strategies relating to HIV testing in Scotland. The SLWG researched available evidence to develop and recommend innovative strategies to address testing barriers for HIV-vulnerable populations and to strengthen HIV testing policies. A review of literature on HIV testing barriers in Scotland was conducted using relevant parameters and search terms within several academic bibliographic databases.
Results: 26 studies published in international peer-reviewed journals and meeting the review's eligibility criteria were identified and represented within a socioecological model characterised by four settings (individual, community, institutional, and structural) where barriers may be experienced. 18 articles reported on HIV testing barriers at the individual level; 11 at the community level; 11 at the institutional level; and five at the structural level. Normalising HIV testing has the potential to overcome clinical level barriers.
Conclusion: A diversity of factors that contribute to HIV testing barriers are evident in literature. Implementing accountability measures at a national level to ensure that HIV testing is normalised within health care provision and to ensure that testing options are widely available has the potential to greatly decrease the rates of late diagnoses and overall HIV prevalence. Because diverse groups may experience different barriers to HIV testing, future interventions must be grounded on ideals of equality and fairness. These measures may assist health providers to better assess and address the possible barriers associated with HIV testing.

P322

A single centre's experience of HIV testing in patients with lymphoma

D Davies, P Ishimwe and M Roberts
Worcestershire Acute Hospitals NHS Trust, Worcester, UK

Background: An individual with HIV is approximately 70 times more likely to develop a non-Hodgkin's lymphoma and 10–20 times more likely to develop a Hodgkin's lymphoma than an individual without HIV. Patients with lymphoma are an important cohort in the drive to improve HIV testing as positive tests will change management and reduce late HIV diagnosis, a key objective in Public Health. A previous audit conducted in 2013 demonstrated only 10% of new lymphoma diagnoses were tested for HIV at our centre (n=970). A 'New Lymphoma' panel of blood tests including HIV serology was introduced to our electronic request system as the main intervention in response to this audit along with education of our clinicians.
Methods: Our centre re-audited, 3 years later, whether all newly diagnosed lymphoma patients confirmed at MDT meetings between 2016 and 2017 had HIV serology undertaken. NICE document: NG60 published December 2016 was taken as the standard: that 100% of new lymphoma diagnoses are tested for HIV.
Results: 135 new cases of lymphoma (18=Hodgkin, 117 Non-Hodgkin) were diagnosed in the study period. 75% of all new diagnoses were tested for HIV at first clinic/specialist review (n=135). No new cases of HIV were identified.
Conclusion: HIV testing in newly diagnosed lymphoma has improved substantially from 10% to 75% since introduction of a 'lymphoma panel' on electronic requesting, however we are still not achieving the standard target of 100% testing. Barriers to this standard being met are currently being investigated with a deeper analysis of those notes where testing was not undertaken to inform what further interventions can be introduced. Further educational efforts will be employed and a re-audit is scheduled for 2 years.

P323

A year in the life of a sexual health service within a men who have sex with men (MSM) public sex environment (PSE)

J Boylan and M-Y Tung
Kent Community Health NHS Foundation Trust, Canterbury, UK

Background: ME1 sauna is a PSE that has been open for 5 years. I have been offering sexual health screening, hepatitis B vaccinations, minor treatment and sexual health promotion from its launch. This abstract looks back on 12 months activity from 1st October 2016 until 30th September 2017. The clinics occur on the 2nd and 4th Thursday of the month, for 4 h per session. 22 clinics ran through this period, and clinics are open for individuals using the venue as well as people walking off the street. I am the sole practitioner running this clinic.
Methods: All clinical data is entered onto the Lilie system, and data has been extracted from Lilie reports and from yearly reports provided to our local Sexual Health commissioners.
Results: There were a total of 195 attendances, broken down into health promotion without screening 65, new patients 31, rebook patients 76 and follow up patients 23. 60% of attendees were aged between 40 and 59 years, 33% were aged 60+ years and only 7% were aged 20–39 years.
There were a total of 131 screening and follow up attendances. These individuals identified as MSM 97, Bisexual 33, and heterosexual 1. Of these attendees, 21 MSM, 10 Bisexual and 1 Heterosexual had never been tested before anywhere. Of those that had been tested before 78% had not had a full STI screen for over 2 years. Of the 107 screens undertaken: 9 declined HIV testing, 3 of these were known to be HIV positive, the other 6 people thought they were not at risk as they only received oral sex.

STIs/conditions	Cases
GC	2
CT	1
HSV	2
NSU	1
DERMATOLOGY	10
PNH/PNS/PNG	4
HEPATITIS B VACCINES	23

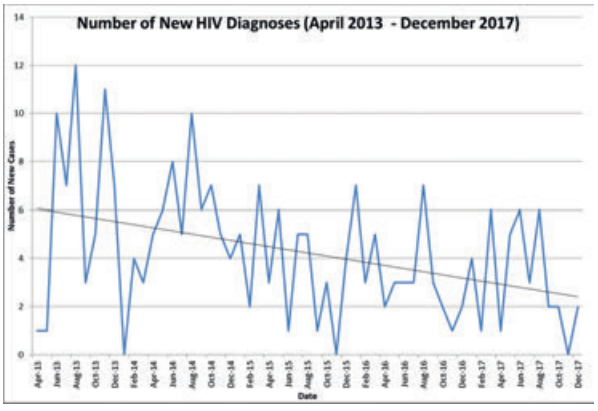
Conclusions: This data shows the importance of venue based screening and STI management for high risk populations, who often do not attend main line sexual health services. The diagnosis of STI's and seeing contacts of STI's including HIV and STS demonstrates how high risk this population is, and the importance of services like this being part of mainstream integrated sexual health commissioning.

P324

An earlier fall in new HIV diagnosis seen in a local centre prior to the 2017 PHE data for large fall clinics in London

S Cavilla, D Churchill and G Dean
Lawson Unit, Brighton and Sussex University Hospitals NHS Trust, UK

Background: In 2017 Public Health England figures showed a significant decline in new diagnoses of HIV in the UK in men who have sex with men (MSM). The trend started in 2015 with 5 London clinics reporting large falls (>20% decrease in diagnoses between Oct 2014 and Sept 2016).
Methods: New diagnoses of HIV were identified from electronic records and cross checked with paper and computerised notes at a single large centre outside London.
Results: We saw a 50% decline in HIV incidence in all patients between 2013 and 2017; there was no significant fall from 2015. Compared to the large fall London clinics, the decline started earlier but was less rapid, and was associated with a much smaller increase in repeat HIV tests in high risk MSM. However, over a longer period locally, there was a progressive increase in the proportion of new diagnoses made in non-GUM settings (27.0% in 2000 to 58.8% in 2012; $p < 0.001$, Mahendran et al 2015) and more rapid adoption of early ART; 92% within 90 days of diagnosis compared with 76% nationally. This centre has a higher proportion of patients on treatment with an undetectable viral load; 98% on ART and 98% of those are undetectable compared with nationally; 96% and 97%.
This centre has a lower proportion of late diagnoses; 33.8% had a CD4 <350 at diagnosis locally compared with 38.4% nationally in 2015 and a lower rate of loss to follow up; 0.5% compared with the national figure of 2.6% (1.1% not accessing care and 1.5% with an unknown outcome, BHIVA audit 2012-3).
Conclusions: This centre has seen a 50% reduction over 4 years in new HIV diagnosis in all patients. This started earlier than the more dramatic declines seen in large fall London clinics and resulted from differing factors. In contrast to the rapid fall London clinics, the lack of a continued fall after 2015 may be due to a relative lack of increase in repeat testing in high risk MSM.



P325

Assessing self-taken vaginal swabs compared to clinician sampling in women presenting with vaginal discharge only in our central London location

H Beckett, K Nulty and T Barber

John Hunter Clinic, Chelsea and Westminster Hospital, London, UK

Background: Vaginal discharge is a common presentation in women attending GUM services. Some may have an STI. A large proportion will have vulvovaginal candidiasis (VVC) or bacterial vaginosis (BV). Both have typical symptoms; diagnosis can be confirmed on microscopy, and treatment (VVC) is available over the counter in pharmacies. BASHH recommends vaginal, cervical and wet mount microscopy in all symptomatic female patients, which requires speculum examination. We wanted to know whether females self-diagnose correctly based on symptoms, and whether speculum examinations affect diagnosis or treatment.

Method: Females attending a London sexual health clinic between 10/11/17 and 7/12/17 presenting with vaginal discharge only were selected. They were asked to self-take blind vaginal swabs for microscopy (SS) prior to a full clinician examination with clinician-taken vaginal swab (CS). Slides were read separately by trained staff using Hay's criteria and presence of spores/mycelia.

Results:

Total patients=71	Treated for VVC/BV	SS VVC/BV	CS VVC/BV
Self-diagnosis VVC/BV (37)	24 (65%)	15 (41%)	19 (51%)
Self-diagnosis-unknown (34)	25 (74%)	17 (50%)	22 (65%)
Total	49	32	41

Overall 76% (54) of SS and CS results matched. Of the 9 women with negative SS who had positive CS, 5 were treated for BV, 4 for VVC. 8 (36%) patients were treated for symptomatic VVC with negative microscopy (SS and CS).
6 patients (8%) had chlamydia confirmed on vulvovaginal NAATs. In addition, 1 patient was treated for gonorrhoea based on cervical microscopy but had a negative vulvovaginal NAAT, 1 had a retained tampon and 1 had TV (though this patient later admitted to unusual bleeding).

Conclusion: Most patients with vaginal discharge only did not have an STI. Only 23% of negative SS results were not consistent with the CS samples. Therefore 5 women may not have been treated for BV (4 with VVC may have been treated symptomatically). The number of other missed diagnoses was low, wet mount and cervical microscopy added no diagnoses. On the basis of this we see no reason to recommend a change in current practice but self-taken swab may be suitable for women with discharge only who would prefer not to be examined.

P326

Assessing the performance of a *Trichomonas vaginalis* (TV) point of care test (POCT) in the management of vaginal discharge

V Pradhan[1], S Legg[1], J Temu[2], E Gebru[2], J McSorley[2] and G Brook[2]

[1]Imperial College School of Medicine, London, UK, [2]Dept of GUM/HIV, Central Middlesex Hospital, LNWH Trust, London, UK

Introduction: Methods of detection of TV include wet mount microscopy of vaginal swabs or NAATs. TV POCTs detect TV antigen from vaginal swabs. We assessed the utility of the TV POCT in our cohort at a North London GUM clinic.

Methods: From July to December 2017, women presenting with vaginal discharge to the GUM clinic had vaginal swabs taken for wet mount microscopy and a vaginal pH. For 3 weeks all women had a TV POCT (OSOM® Trichomonas Test) irrespective of vaginal pH following which the POCT was only done at a vaginal pH ≥4.5. Results of vaginal microscopy, vaginal pH and TV POCT were documented either in electronic patient records or in paper records which were analysed retrospectively.

Results: A total of 611 TV POCTs were performed. 81 women were diagnosed with TV using the composite reference standard (either TV POCT positive or vaginal microscopy positive) and 534 patients were negative for TV using both detection methods. Four TV positive patients were excluded as no TV POCT was documented. Of those with both POCT and microscopy results, 77 were TV positive and 534 TV negative.

Table 1: TV positive cases by detection method (wet prep and/or TV POCT). Sensitivity, Specificity, PPV and NPV of both detection methods.

	No. of cases	Wet prep	TV POCT
77 TV positive patients	66	+	+
	8	−	+
	3	+	−
Sensitivity		(69/77) 89.6%	(74/77) 96.1%
Specificity		(534/534) 100%	(534/534) 100%
Positive predictive value		(69/69) 100%	(74/74) 100%
Negative predictive value		(534/542) 98.5%	(534/537) 99.4%

The prevalence of TV was 4.6% (81/1743) in women presenting with vaginal discharge; prevalence increased to 14% (77/564) in women with a vaginal pH ≥4.5. The positive predictive value (PPV) of the TV POCT was 100% with no false positives assumed from previous published work, equivalent to that of vaginal microscopy. In 64 patients, a TV POCT or vaginal microscopy was performed despite a vaginal pH <4.5, of which all were TV negative.

Conclusion: The OSOM® TV POCT is a rapid, sample-in result-out test that requires minimal training to use and is highly accurate. In our analyses, the TV POCT has a higher sensitivity and negative predictive value in comparison to vaginal microscopy and can be used as a suitable alternative to microscopy to aid the diagnosis of TV. It can be particularly helpful in clinics that don't have the resources and staff to perform vaginal microscopy.

P327

Asymptomatic screening of women reporting site-specific oral/anal sexual contact: a cost effective policy?

C Ryan

Doncaster and Bassetlaw Hospitals NHS Trust, UK

Background: Prior to 2016, all women presenting to Doncaster sexual health were screened site specifically for chlamydia (CT) & gonorrhoea (GC) as per BASHH guideline 'consider GC/CT testing asymptomatic women reporting oral/anal contact'. The cost effectiveness of this was reviewed by looking at all extra-genital CT/GC tests (EGTs) from 2014/15 to ascertain the potential number of infections missed, if taking EGTs only from those with a specific set of additional risks.

Method: A) Lab data was extracted for women tested for CT/GC combined SDA™ NAAT at pharyngeal &/or rectal sites between 1/12/14 and 30/11/15. Numbers of positive and negative CT and GC tests from these sites were established. Case notes of women with +ve EGTs were reviewed to see whether those tests would have been supported by a +ve vulvo-vaginal swab (VVS), an additional risk factor (RF*) to indicate EGTs, or whether treatment for infection would have been given regardless of EGT result (eg. PID). The number of +ve CT or GC tests from women with −ve VVS and no additional reasons to test was ascertained to calculate how many infections would have been missed/untreated by abandoning this policy. B) A separate case note review of women with EGTs taken between 1/12/14 and 31/12/14 was done to find numbers of women tested due to reporting site specific sex vs. those with additional risks to establish the reduction in EGT numbers assuming abandonment of the policy.

*RFs: symptoms at site, GC contact, sex. assault victim, commercial sex worker.

Results: A) Between 1/12/14 and 30/11/15, 1606 throat and 385 rectal CT/GC samples were taken. There were 68 positive EGTs from 58 women:

	Rectal CT	Pharynx CT	Rectal GC	Pharynx GC
+ve EGT	30	14	10	14
+ve EGT/−ve VVS	5	4	0	1
+ve EGT/−ve VVS/No extra RF/No indication for treatment	2	1	N/A	0

B) Between1/12/14 and 31/12/14, 76 women had 94 EGTs (76 throat, 18 rectal), with 14/96 (15%) EGTs indicated by RFs alone.
Conclusions: By abandoning asymptomatic EGTs, 3 CT and 0 GC infections would have been missed/untreated.
Assuming an 85% reduction in EGTs, as calculated in B, a £16,960 saving would have been made (£5652/+ve 'missed' EGT) from a total spend of £19,950 on EGTs in the period of A. (Cost per CT/GC test £10.02).
For improved cost efficiency, our clinic chose to abandon the policy of EGT screening in women reporting site-specific sex, & screens only those with RFs.

P328

Audit of the HPV vaccination programme for men who have sex with men (MSM) in the north east of Scotland: current progress and challenges

B Chirambasukwa, S Baguley and D Brawley
Sexual Health, Aberdeen Health Village, Aberdeen, UK

Background: The national HPV vaccination program for men who have sex with men (MSM) was launched in Scotland in July 2017. The program recommends the HPV vaccine to all MSM under and including 45 years old attending specialist sexual health and HIV services. The National Sexual Health IT system (NaSH) is used to document vaccine offer and uptake, in addition to allowing collation of national data. Vaccination records for eligible MSM attending a sexual health clinic or attending for HIV related care should be recorded in the National Scottish Sexual Health EPR (NaSH) [1].
This audit assesses the offer, uptake and documentation of this intervention in eligible individuals attending a specialist sexual health service in the North East of Scotland, which provides care for urban and rural populations.
Methods: Electronic records for all eligible MSM were identified from the 2nd of July 2017 to the 31st of August 2017 from NaSH.
Data captured included:

1 Age at attendance
2 Evidence of offer of the vaccine
3 Reason for declining the vaccine when offered
4 Date of commencement of vaccination.
5 Whether data captured was accurate.

Results: In total, ninety-two MSM were seen from the 2nd of July to the 31st of August.
Thirteen were older than 45 years and were thus excluded from the audit.
Seventy-nine eligible MSM were identified. Documentation of vaccine offer was found in 85% (67/79) of individuals. Vaccination uptake was 95% (64/67) and commenced on the day of attendance for all cases. Reasons for vaccine refusal included needing time to consider the intervention and concerns for side effects. Two of the three decliners accepted the vaccine on a later date improving uptake to 99% (66/67). The electronic record vaccination special form was correctly completed in 55% (44/79) of cases.
Conclusions: Vaccine uptake is excellent and demonstrates the acceptability of this intervention in its target group. Service improvements are required to increase vaccine offer and to improve documentation to allow maximal uptake and accurate national reporting.

P329

Baseline low- and high-risk HPV prevalence in rectal swabs from men prior to selective immunisation with the HPV vaccine in Scotland

K Pollock[1], R Cameron[1] and K Cuschieri[2]
[1]Health Protection Scotland, Glasgow, UK, [2]Scottish HPV Reference Lab, Edinburgh, UK

Background: The quadrivalent vaccine prevents infection with HPV types 6, 11, 16 and 18 and has been shown to induce strong and sustained neutralising antibody responses that confer protection against infection and associated disease. Such data stem from population-based surveillance of women who have largely been part of catch-up cohorts from a school-based programme. We aimed to collect baseline data on rectal HPV prevalence from a cohort of men who attended sexual health services, prior to implementation of a selective immunisation programme for men-who-have-sex-with men (MSM) up to age 45.
Methods: ~1200 rectal swabs were obtained from males attending for sexual health services in Edinburgh, Scotland. Swabs had originally been collected for (routinely indicated) *Chlamydia trachomatis* testing. Residual material was subject to molecular HPV genotyping using automated extraction and a luminex-based assay which detects 24 HPV types including all established high-risk types and all those included in the quadrivalent vaccine. At time of abstract preparation, results are available for 1064 samples.
Results and Conclusions: HPV prevalence in this population was high; 782/1064 (73%) were HPV positive and 531/1064 (50%) were positive for at least 1 of the types within the quadrivalent vaccine. When vaccine types were counted individually (including as part of a mixed infection) HPV 6, 11, 16, and 18 accounted for 156, 74, 362, and 80 infections respectively. Of those positive for at least 1 of the 4 vaccine types, none were positive for all 4 types. These preliminary data indicate that the quadrivalent vaccine has the potential to have a significant impact on the prevalence of HPV in this population given that 50% are infected with one of the types included in the quadrivalent vaccine. Comprehensive data which stratify HPV status by age and CT/NG status will also be presented.

P330

Can local information on coverage and positivity using geomapping better inform targeting of chlamydia screening in young people?

M Crofts[1], M Sandhu[2], M Gobin[2], J Lewis[3], H Erswell[4], K Liva-Pye[5], K Turner[6], P Muir[7], L Thomas[4], T Raj[7], J Macleod[6], P White[3], H Wheeler[1] and P Horner[6]
[1]Unity Sexual Health, Bristol, UK, [2]Field Epidemiology Service, Public Health England, Bristol, UK, [3]Imperial College London, UK, [4]South Gloucestershire Public Health, Bristol, UK, [5]National Chlamydia Screening Programme, Bristol, UK, [6]University of Bristol, UK, [7]Public Health England, Bristol, UK

Background: Demonstrating cost-effectiveness of chlamydia screening is of increasing importance; public health budgets under pressure resulting in cuts to sexual health services. The National Chlamydia Screening Programme (NCSP) is central to Public Health England's strategy to improve sexual health. The aim of this project was to produce geomaps of chlamydia screening coverage and positivity at the Middle Layer Super Output Area (MSOA) level from routinely-collected data in order to determine which factors are associated with high to low coverage and positivity.
Methods: All tests for chlamydia undertaken in 2016 were extracted from Chlamydia Testing Activity datasets and Genitourinary medicine clinic activity datasets. Only records with a valid MSOA of residence were kept (91%–93% of records). Positivity was calculated dividing the total number of positive tests by the total number of tests performed. Positivity was then grouped into quintiles (<3%, 3–4.99%, 5–6.99%, 7–8.99% and >9%). Coverage was calculated by dividing the total number of tests performed in each MSOA by the Office for National Statistics estimated population of women <25 years tested in each MSOA. Coverage was grouped into 4 categories (<19.99%, 20–29.99%, 30–39.99% and >40%). Coverage was estimated assuming all women were tested only once. Lower Layer Super Output Area (LSOA) were grouped into quintiles of deprivation using 2015 Index of Multiple Deprivation scores. Using ArcGIS, MSOA positivity and coverage were mapped to deprivation. MSOA with less than 5 positives were excluded to prevent deductive disclosure.
Results: There was a wide range in coverage and positivity ranging from 26% to 56% and 3%–14% respectively. Three MSOAs were excluded because each had less than 5 positive cases. There was no strong association of increasing deprivation with high coverage and positivity (Spearman correlation $\rho = 0.05$, $p = 0.74$ and $\rho = 0.26$, $p = 0.066$, respectively).
Conclusion: There was considerable variation in positivity and coverage which could not be explained by deprivation alone. We are currently investigating how age, change of partner and testing practices are related to coverage and positivity in order to determine how targeting can be improved. This information is available from our local NCSP Office (which continued to record reason for testing after the change in national specification) and electronic patient records of patients attending sexual health services.

P331

Cause of death among HIV patients in London in 2016: a retrospective audit

S Croxford[1], R Miller[2], F Post[3], J Figueroa[1,4], I Harrison[4], R Harding[3], V Delpech[1], S Lucas[5], S Dhoot[6] and A Sullivan[6]

[1]Public Health England, London, UK, [2]University College London, UK, [3]Kings College London, UK, [4]NHS England, London, UK, [5]Guy's and St Thomas' NHS Foundation Trust, London, UK, [6]Chelsea and Westminster NHS Trust, London, UK

Background: Since 2013, the London Mortality Study Group has conducted annual reviews of deaths among people with HIV to reduce avoidable mortality and improve the quality of patient care.
Methods: All London trusts commissioned by NHS England to provide HIV care reported 2016 data on patients who died at their centre or who attended for routine care prior to death. Data were submitted using a modified Causes of Death in HIV (CoDe) reporting form including information on: comorbidities, antiretroviral therapy (ART), clinical markers, cause of death and end of life care. Cause of death was categorised by a pathologist and two clinicians.
Results: All trusts provided data; after de-duplication there were 206 deaths; 77% of deaths were among men and the median age at death was 56 years. At the time of death, 81% (134/165) of people were on ART, 61% (113/185) had a CD4 < 350 cells/mm^3 and 24% (47/192) a VL ≥200 copies/ml. Cause was established for 80% (164) of deaths (Table 1). Non-AIDS malignancies were the most common cause of death followed by AIDS-defining illnesses. Where reported (n=181), risk factors in the year before death included: smoking (37%), excessive alcohol consumption (19%), non-injecting drug use (IDU) (20%), IDU (7%) and opioid substitution therapy (6%). Co-morbidities were commonly reported (n=200): 39% had a history of depression, 33% had chronic hypertension, 27% dyslipidemia, 18% co-infection with HBV and/or HCV and 14% diabetes. Almost half of deaths were reported as sudden (44%; 79/177) and 36% (64/178) as unexpected; 60% (63/104) of expected deaths were in hospital. Two thirds of expected deaths (48/72) had a prior end-of-life care discussion, though this information was only available for 57%.
Table 1: Causes of death among people with HIV: London, 2016

	Total (n=206)	
Cause of death	n	%
AIDS	37	23
Non-AIDS infections	14	9
Non-AIDS malignancies	39	24
Liver disease	14	9
Cardiovascular disease	12	7
Stroke	9	5
Respiratory disease	11	7
Accident/suicide	10	6
Substance misuse	4	2
Other	14	9
Unknown	42	-

P332

Changing face of the syphilis epidemic in men who have sex with men (MSM)

S Taine[1], N Pinto-Sander[2], C Norcross[2], C Fitzpatrick[2] and D Richardson[2]

[1]Brighton and Sussex Medical School, UK, [2]Brighton and Sussex University Hospitals NHS Trust, UK

Introduction: There has been an epidemic of syphilis in men who have sex with men (MSM) in the UK since 2000. Locally we recognised another significant increase in syphilis in 2014 and developed a public health strategy. We aimed to describe any change in presentation of infectious syphilis in MSM in 2014 to 2017.
Methods: Using the clinic database, we identified MSM diagnosed with early infectious syphilis in two 6 month time periods: January-June 2014 and January - June 2017. Anonymized clinical data was extracted from electronic patient records.
Results: There were 297 cases of infectious syphilis (173 in 2014 and 124 in 2017) in each 6 month period. There was no difference in testing rates between the two time periods (7895 in 2014 and 7704 in 2017). 230 MSM with infectious syphilis had complete data for analysis (119 in 2014 and 111 in 2017). The median age was 42 years, MSM with primary syphilis were significantly younger in 2014 (36 years) than in 2017 (43 years) [p=0.02]. There was no difference in the HIV status (2014:59/119 (50%) v 2017:59/111 (53%)). Significantly more MSM presented with secondary syphilis in 2014 v 2017 (37/119 (31%) v 20/111 (18%)) [p=0.02], numerically more presented with both primary and secondary combined in 2014, but this did not quite reach statistical significance (72/119 (61%) v 53/111 (48%)) [p=0.052]. Furthermore significantly more MSM presented with anal lesions in 2014 v 2017 (10/35 (29%) v (2/33 (6%)) [p=0.015] and numerically less likely to have penile lesions (20/35 (57%) v 26/33 (79%) [p=0.057].
Conclusion: Significantly fewer MSM presented with secondary syphilis in 2017 compared to 2014. Men in 2014 were also more likely to have penile than anal primary lesions and were significantly older. The pattern of presentation of syphilis appears to be changing although reasons for this are unclear. Increased use of doxycycline, changing healthcare & MSM awareness about syphilis or use of HIV PrEP may explain some of these changes.

P333

Characteristics of a South London cohort of adults with HIV-2 and HIV-1/HIV-2 dual infection

V Sivaraj[1], E Mabonga[2] and O Davies[1]

[1]Guy's and St Thomas' NHS Foundation Trust, London, UK, [2]Queen Elizabeth Hospital, London, UK

Background: Endemic in West Africa, HIV-2 has only limited spread outside this area. Cases of HIV-2 mono-infection and HIV-1 and 2 dual-infection in the UK are estimated to be fewer than 200. HIV-2 is thought to be less infectious with substantially lower horizontal and vertical transmission rates than HIV-1. Plasma viral loads are lower and the infection has a longer asymptomatic phase.
Aim: To describe a cohort of HIV-2 positive individuals receiving HIV care at two South London Hospitals.
Methods: All patients coded with a diagnosis of HIV-2 or with a positive HIV-2 antibody test at the two hospitals were included. Demographic, medical history and treatment history data were collected retrospectively and analysed.
Results: 33 patients were identified. 25 had HIV-2 mono-infection and 8 had dual infection. 22 were female, 26 identified as Black African and 31 were heterosexual. The most common reason for testing was symptoms or AIDS defining illness (12/33). Four were detected through antenatal screening. Other reasons for testing included partner notification and routine GP or A&E testing. In 28 the likely region of acquisition was West Africa. One patient acquired it vertically. The median number of years since diagnosis was 9. HIV-2 VL and CD4 counts are summarised in the tables below.

HIV-2 VL c/ml	<40	40–3,000	3,001–10,000	>10,000	NK
Baseline	16	3	1	3	10
Latest	24	3	1	1	4

CD4/μl	<50	50–200	200–400	>400	NK
Baseline	4	3	4	15	7
Latest	3	3	3	21	3

Seventeen patients were on antiretroviral therapy (all protease inhibitor based), of which 3 have been intensified with raltegravir, and 2 include maraviroc. Five had evidence of resistance mutations with 3 being multiresistant. Patient outcomes are illustrated below.
Seven patients had a history of an AIDS defining illness (ADI). The most common was TB. High rates of comorbidities were observed especially haematological, malignancies, infection, metabolic and mental health.

ART status	n	Median baseline CD4	Median no of years diagnosed	Latest median CD4	CurrentHIV2 VL <40	AIDS defining illness	Dual infection	Mortality
ART naive	12	455	9	593.5	8	3	2	3
On ART	17	455	9	578	14	6	6	4

Conclusion: A proportionally high number of the UK population of people living with HIV-2 were seen at these 2 London clinics. Most had HIV-2 VL <40 and CD4 >400 at diagnosis and subsequently. Despite this, 36% had symptoms or ADI at diagnosis. Those with ADI or dual infection were most likely to be on ART.

P334

Come again? A review of chlamydia re-testing in under 25s

J Cardell[1], S Currie[2], A Watkins[1] and E Morgan[1]
[1]Bolton NHS Foundation Trust, UK, [2]Royal Liverpool and Broadgreen University Hospitals Trust, UK

Background: *Chlamydia trachomatis* is the most common bacterial STI. The highest prevalence is among young people (1.5–4.3% NATSAL). Young adults who have a positive *chlamydia* test are 2–6 times more likely to have a subsequent positive *chlamydia* test. Repeated episodes of *chlamydia* have a higher probability of causing complications such as PID and tubal infertility. The 2015 BASHH National Guidance recommends that patients under 25 years of age who test positive for *chlamydia* should have a repeat *chlamydia* test at 3–6 months after their initial diagnosis. We assessed whether our patients are being advised to re-test and if they re-attend following advice.
Methods: A retrospective case note review of patients <25 who tested positive for chlamydia Aug 2015 - Jan 2016. Healthcare professionals were informed about the findings of this initial review and the importance of documenting re-testing advice. The case note review was repeated July 2016–Dec 2016.
Results: 115 patients met inclusion criteria and had notes available for review during both data collection periods. Initial case note review showed that advice about re-testing was only documented in 13 (11%) cases. Of these, 10 (77%) were correctly advised re-testing at 3 months as per national guidelines). In the repeat review advice about re-testing was documented in 39 (34%) cases (p=0.0001), with 31 (79%) of these being advised to attend at 3 months as per guidelines.
In the first patient group, 5 (38%) of those advised to re-test returned to clinic; 1 (20%) returned in the time frame advised by the clinician; 3 (60%) returned later and 1 (20%) earlier than advised. In the second patient group following clinic education 4 (10%) of those advised to re-test returned to clinic; 3 (75%) of which returned during the time frame advised by the clinician.
Conclusion: There was a statistically significant increase in the number of patients advised to re-attend following our initial review; suggesting awareness of guidance can improve clinical practice. However, documentation of advice to re-test remained limited. Patient re-attendance did not improve, highlighting the difficulties engaging this population and following up their care – they may well have attended elsewhere for a re-test. Further improvement could be achieved by incorporating a reminder into clinic proformas, text reminder of re-test to patients and home re-testing.

P335

Comparing, by HIV status, characteristics of syphilis infection in an inner-city clinic

Z Ottaway, C Kirby, R Kirby, C Allen, I Samuel and M Brady
Kings College Hospital NHS Foundation Trust, London, UK

Background: Syphilis diagnoses are increasing in the UK. By reviewing all syphilis cases in our HIV positive and HIV negative patients we aimed to describe and compare differences in baseline demographics, sexual health risk factors and serological and clinical presentations of syphilis infection.
Methods: We undertook a retrospective case note review of all HIV positive and HIV negative patients diagnosed with syphilis between 1st January and 31st December 2016.

Results: Table 1 Characteristics of patients diagnosed with syphilis

	HIV positive n=49* (%) *accounting for 52 diagnoses	HIV negative n=46 (%)	p-value
Median Age	42 Range: 24–58	43 Range: 16–79	
Male	49 (100)	35 (76)	<.005
MSM	46 (94)	25/35 (71)	0.005
STI screen at baseline	43 (88)	43 (93)	N/S
Concurrent STI at diagnosis	10/43 (23)	8/43 (19)	N/S
Reports chemsex	22 (45)	9 (20)	0.008
Previous Syphilis	33 (67)	11 (24)	<.005
Negative or neat baseline RPR	4/52 (8)	30 (65)	<.005
Symptomatic	27/52 (52)	11/46 (24)	.005

The commonest ethnicity in the HIV negative group was 'Black Caribbean': 9/36 (25%). Most of the HIV positive group described their ethnicity as 'White Other' 20/49 (41%). 15/33 (45%) of the HIV positive patients with a previous syphilis diagnosis had a repeat infection within a year. In the HIV negative group one patient was diagnosed with HIV on baseline STI screen. HIV positive individuals often had high initial RPR titres: 2 patients had titres of 1:64 and 20 patients had RPR titres of 1:32. Eight of the HIV positive individuals failed to have a drop in RPR titre 3 months following treatment.

P336

Complex approach and improving quality of care for patients attending integrated sexual health (ISH) service after sexual assault (SA)

L Quinlan[1] and L Gwatkin[2]
[1]ECCSH, MDGH, East Cheshire NHS Trust, Macclesfield, UK, [2]Nevill Hall Hospital, Abergavenny, UK

Background: 25% women experience sexual violence in their life time, 36% people told no one, only 13% reported to police.
Methods: We performed a retrospective audits of adult and children, attended ISH service in 2016 by analysing their electronic records in order to improve recognition and management of the patients who experienced recent SA. Data was compare with SA audit undertaken in 2015.
Study population: 36 female patients (15–70 y. o.) and 4 (20–37 y. o.) males with SA who attended ISH clinics. Median age was 24.3, including 4 (10%) patients younger than 16 y. o . CSE risk assessment was undertaken. Of the total group, 4 (10%) reported mental health issues, including depression, anxiety, etc, with mental health team involvement reported in half cases, 2 (5%) patients had disability.17 patients (42.5%) had a positive sexually transmitted infections (STIs) results. STIs were diagnosed in 17 (42.5%) cases, including Chlamydia in 5 (12.5%) cases, pelvic inflammatory disease – in 2 (5%) cases, genital herpes in 4 (10%), trichomoniasis in 1 (2.5%) case. The number of the patients attended SA referral centres (SARCs) has increased: 9 (22.5%) in 2016 (4 (16.7%) in 2015). The number of cases with police involvement increased as well: 17 (42.5%) and 8 (33.3%) respectively. Domestic abuse reported only by 5 (12.5%) patients in 2016. Reports about previous SA were approximately the same: 3 (7.5%) and 2 (8.3%) respectively in 2016 and 2015. IUD was offered as 'gold standard' for emergency contraception for patients after SA and accepted in 62.5% cases of acute SA in 2016. In view of improving care of the patients with SA, the recommendations were given: to improve documentation by using improved SA template in all cases, including non acute SA; to use the SA pathway; to perform self harm

risk indemnification as a high number of vulnerable adults and children were found in SA group.
Conclusion: The number of the patients attending ISH clinics with SA doubled in recent years. A high proportion of STIs found in SA group. A prevalence of young and vulnerable adults was found. Questions about non-consensual sex are important to identified those patients who have experienced SA, especially where individuals are hesitant to disclose, or are not aware about definition of SA. These data highlight the importance of following comprehensive pathway in ISH clinics to identify and appropriately manage adults and children who experienced SA.

P337

Congenital syphilis prevention in Uganda; a randomised trial of three different approaches to partner notification for pregnant women: OVERRIDE

R Parkes-Ratanshi[1], KJ Mbazira[1], E Nakku-Joloba[2], M Namawejje[1], A Kiragga[1], JB Kayogoza[3], A Rompalo[4], C Gaydos[4] and Y Manabe[4]
[1]Infectious Diseases Institute, Makerere University, Kampala, Uganda, [2]School of Public Health, Makerere University, Kampala, Uganda, [3]School of Medicine, Makerere University College of Health Sciences, Kampala, Uganda, [4]Division of Infectious Diseases, Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, USA

Background: Maternal syphilis is a major cause of poor birth outcomes including congenital syphilis. There is a growing momentum for increased syphilis testing and treatment of pregnant women in sub-Saharan Africa. Testing and treatment of the partners of pregnant women is important to prevent re-infection, however partner attendance is poor. This study aimed to determine the effectiveness of 3 different strategies for partner notification of pregnant women with syphilis in Uganda on partner treatment.
Methods: Pregnant women identified with a positive rapid, point-of care treponemal test at the antenatal clinic were randomized in at 1:1:1 manner to receive a) notification slips (standard of care) b) notification slips and phone calls c) notification slips and text messages. The primary outcome was the proportion of partners who attended clinic and were treated for syphilis. 601 pregnant women with a positive treponemal result were identified. Women were treated on the same day and given the notification slip.
Results: Of the 446 pregnant women who were enrolled, 81 partners attended a study clinic for follow up. Overall, the partner attendance was very low at 18% and there was no statistical difference between the arms. Of those women who did not enrol, 12% had attended antenatal clinic with their partner and, therefore, were excluded; the number of women who attended clinic with their partner increased over the course of the study. 367/445 (82.5%) had a healthy delivery; there was a non-statistically significant difference in adverse outcome in those with no partner treatment (25/282; 8.7%) compared to partner treatment (4/85; 4.7% RR 1.81 (95% CI 0.6–5.1), p=0.355).
Conclusions: Partner notification from women testing positive for syphilis in pregnancy is low despite reminders and encouragement. Relying on women to inform their partner will not break the cycle of re-transmission of syphilis between partners, and increases the risk of congenital syphilis to unborn children. Encouraging men to accompany women to antenatal clinic and concomitantly testing them may address this issue. Direct notification of men by clinical services may help, but locally available resources and legislation are barriers to this.

		Randomization arm			
Site	Enrolled Mothers (n=445)	Notification slip (n=23)	Slip + sms reminder (n=31)	Slip + nurse phone call (n=27)	Overall (n=81)
IDI AIDC	10 (2.2%)	0	1	1	2 (20.0%)
Mulago	365 (82.0%)	16	25	22	63 (17.3%)
Kasangati	70 (15.7%)	7	5	4	16 (22.9%)

P338

Does annual attendance at a specialist service for women living with HIV address both sexual and reproductive health issues?

R Murdock[1], G Mundowa[1], L Clarke[1], J Roberts[1], H Yannaghas[2], S Raffee[1], J Jenner[1] and Y Gilleece[1]
[1]Brighton and Sussex University Hospitals NHS Trust, United Kngdom, [2]Sussex Beacon, Brighton, UK

Background: Following the inception of a specialist woman's HIV outpatient service in October 2016 an audit was undertaken to review the impact the clinic had on women's health and compare this data with women who only attended routine HIV outpatient's services.
Aim: To assess whether designated women's service can address women's health needs in HIV care.
Methods: Case notes of 50 women who attended the specialist women service were collected; this was compared with 50 case notes of women who attended the routine in HIV outpatients' unit clinic.
We used both standard 7 from the BHIVA standards for people living with HIV and the draft BHIVA/BASHH/FSRH guidelines (2017)
Results:

Demographics of Clinic attendees	Specialist Women's Clinic No=50	Routine HIV OPD No=50
Age median (range)	44 (21–84)	48 (26–64)
Ethnicity		
Black African	28 (56%)	33 (66%)
White UK	19 (38%)	4 (8%)
White Non UK	1 (2%)	9 (18%)
Asian	1 (2%)	2 (4%)
CD4 median (range)	666 (147–2277)	548 (233–1589)
Viral Load <40 (%)	44 (88%)	46 (92%)

Issue addressed	Specialist Women's clinic	Routine HIV OPD
Sexual health screening	49/50 (98%)	34/50 (68%)
Cytology	50/50 (100%)	35/50 (70%)
Domestic Violence	50/50 (100%)	7/50 (14%)
Psych Assessment	43/50 (86%)	32/50 (64%)
Contraception	37/41 (90%)	2/44 (56%)

Conclusion: Our specialist Women's clinic is more effective in addressing the needs of HIV positive women. If women are not referred or choose not to attend this service staff within generic HIV services need to ensure that these issues are addressed in an annual health check. Training staff within the routine HIV OPD around domestic violence needs to be a priority.

P339

Eliminating HIV transmission: opt-out testing in Accident and Emergency results in a higher rate of new diagnosis than that seen in the sexual health service in a high prevalence area

M Stargard, I Reeves, D Millett and J Hale
Homerton University Hospital, London, UK

Introduction: BHIVA testing guidelines recommend routine, opt out-testing in high prevalence areas. Our A + E has tested opportunistically but in 1.5.17 began opt-out testing. Our aim was to evaluate the uptake of HIV testing and new diagnosis rate in A + E compared with the sexual health service (GUM).
Methods: All new HIV diagnoses between 1.11.16 and 31.10.17 were reviewed from laboratory and clinical records. Place of first diagnosis, demographics and clinical markers were recorded. Testing rates in A + E vs. the sexual health service were compared for the same period of time. Uptake

was defined from coding in GUM and as a proportion of all those having blood tests in A + E. Comparisons of proportions were made with Chi-squared.
Results: 26,231 tests were done in GUM in these 12 months, the uptake was 88% with a new diagnosis rate of 0.07% (n=19 out of 26,231) compared with A&E where 8105 HIV tests with an uptake of 32% were done and new diagnosis rate of 0.17% (n=14 out of 8105), p=0.01. The average uptake of HIV testing in A + E was 8% (n=180) per month Nov-16 – Apr-17, but after the introduction of opt out testing this increased to 57% (n=1171). The first 6 months in A + E saw 4 new positive diagnoses; post opt out testing there were a total of 10: a 150% increase. There were a total of 56 new HIV diagnoses overall in 12 months, 17% of which were acute infections. Out of the total, 2 were HIV2. The majority (66%) of new diagnoses were made in settings other than GUM. The median CD4 counts were 359 and 323 in GUM and A&E, respectively. Of the new diagnoses, 5 from A&E were not linked to care vs. 1 in sexual health. In the 12 months, 31 positive tests in A + E were in those already known to have HIV (31/45, 69%), compared to 22 in GUM (22/41, 54%).
Conclusions: Routine opt out testing in A + E is feasible and results in reasonable uptake with a high rate of diagnosis; significantly greater than in the sexual health service. Over the year more diagnoses were made in 'non-traditional' settings than GUM. Limitations include the lower uptake in A + E, so that the higher proportion of new diagnoses could be due to more targeted testing, and the lower linkage to care. A significant proportion of all positive tests in both settings were re-tests of those already diagnosed. Currently, the cost pressure of this approach is borne by the Trust, which raises uncertainty about its sustainability in the longer term.

P340

Ethnic minority inequalities in sexual health amongst gay, bisexual and other men who have sex with men

A Hegazi[1], W Whittaker[2], J Avery[1], F Lander[1], D Richards[1], E Vooght[1] and M Pakianathan[1]
[1]St George's University Hospital, London, UK, [2]Centre for Health Economics, University of Manchester, UK

Background: There are limited published data from the UK on gay, bisexual and other men who have sex with men (GBMSM) of Black and Minority Ethnic (BME) background accessing sexual health (SH) clinics.
Methods: Retrospective case-notes review of all GBMSM attending an inner London SH clinic 1/6/14-30/9/17. Demographic, behavioural and diagnosis data extracted from a standardised clinic proforma analysed in STATA.
Results: Of 2752 GBMSM 63.6% (n=1751) were UK-Born. Median age=32 (range 14–85). GBMSM identified ethnicity as White 75.9% (n=2088), Black 10.1%, Asian 9.9% and Other 4.1%. 17.6% (n=485) identified as bisexual. Those identifying as Asian or Black had higher odds of reporting bisexual orientation (AOR 2.4 (95% CI: 1.7–3.5) and 2.0 (1.5–2.7) respectively adjusting for age and religion $p < 0.001$. Mean reported number of sexual partners in preceding 3 months was 3.7 (n=2262) and this was highest in those identifying as 'Black other' 6.5 or 'other' ethnicity' 5.1 c.f. those as White Irish 2.9, Black African 2.9 or Bangladeshi 2.2 (p=0.04).
38.4% (n=723/1885) disclosed recreational drug use of whom 58% (n=407) disclosed chemsex. Recreational drug use was reported most commonly by Black 51% or Other (54%) ethnic groups GBMSM compared to White (37%) ethnicity (AOR 1.67 (1.21–2.29 p=0.002) and 1.87 (1.17–2.98 p=0.009) respectively). Chemsex disclosure was similar for Black and Asian compared to White ethnicity but higher for Other groups (AOR 1.85 (1.12–3.03 p=0.02). Chemsex disclosure rates were highest in GBMSM born in Catholic majority countries 22.9% c.f. those born in those born in Muslim 15.3% or other Christian denomination 18% majority countries (p=0.03). Fisting and group sex was also more commonly disclosed by this population.
49% (n=1060) were diagnosed with an STI in the study period with highest STI rates diagnosed in those of Black ethnicity (60%) (AOR 1.54 (1.13–2.09 p=0.006) relative to White ethnicity). Rates of acute bacterial STIs were also highest in this population (AOR 1.48 (1.08–2.02 p=0.01).
3.0%% HIV-negative patients were newly diagnosed with HIV in the study period, this was greatest for Black (7.6%) and Other (9.7%) ethnic groups compared to White ethnic (2.3%) (AOR 4.20 (2.04–8.66 $p < 0.001$) and 3.52 (1.44–8.59 p=0.006) respectively)
Conclusion: This analysis identified sexual health discrepancies between White and BME GBMSM with Black GBMSM in particular disproportionately affected by HIV and STIs

P341

Evaluating syphilis point of care tests for utility in outreach screening

D Goode[1], C Foulk-Jones[1], P Hands[2], A Chady[2], S Foster[3], E Page[1] and A Evans[1]
[1]Leeds Sexual Health, UK, [2]Yorkshire Mesmac, Leeds, UK, [3]Leeds City Council, UK

Background: We previously reported a 3-fold rise in early infectious syphilis (EIS) diagnosed in our centre over 1 year (to 2016). Early case finding became a priority. In line with national epidemiology, 84% were MSM with 60% HIV co-infected. Notably, 75% was first episode of Syphilis. In partnership with third sector colleagues, we decided to trial syphilis point of care tests (POCT) to evaluate the utility in outreach settings and sensitivity in EIS.
Method: Staff and volunteers in outreach and clinic settings were trained to use and interpret INSTI Multiplex HIV-1/HIV-2/Syphilis Antibody (T.pallidum Ab)Tests. After 1st infection the test remains positive, so those known to have previous syphilis were not offered a test. Outreach aimed to test all clients willing to have a POCT test as part of screening to assess for usability in non-clinic settings Patients in clinic with current syphilis, clinical suspicion of EIS or syphilis contacts were to have a POCT and serology.
Results: In the outreach setting, 51 tests were taken, with 1 unsuccessful attempt reported. Of the 51 tests, 49 were negative, 1 reactive and 1 inconclusive. The service user with reactive POCT was treated subsequently for secondary syphilis (RPR 1:128). In clinic, 50 of the total 52 tests had corresponding serology. Serology and POCT was negative in 20 cases, but one of these had a positive PCR swab. Of the 25 with positive serology, 6 (24%) had negative POCT. Median RPR for false negative POCTs was 'not detected'(ND) (range 'ND to 1 in 8). Of the 6 false negative POCT, 3 were associated with a PCR positive lesion and later confirmed on serology.
Discussion: In our small field study, this POCT was useful for outreach testing in those who may otherwise not test. The tests were easily used by non-clinicians. There are recognised limitations, particularly the inability to distinguish active from prior infection. In EIS, particularly prior to a rise in RPR, the POCT may be falsely reassuring.
There is a potential future role in outreach settings to increase screening coverage, especially for 'never-testers'. However, appropriate counselling regarding the tests limitations would be essential.
The POCT's utility within a UK sexual health clinic is likely to be limited. Although it was of some help to support immediate treatment, a negative POCT may cause reluctance to treat genital ulcers, in both clinician and patient. Cautious interpretation of results with suspected EIS should be advised.

P342

Factors associated with testing for HIV in people age 50+: a qualitative study

E Youssef[1], J Wright[1], V Delpech[2], K Davies[1], A Brown[2], V Cooper[3], M Sachikonye[4] and R De Visser[1]
[1]Brighton and Sussex Medical School, UK, [2]Public Health England, London, UK, [3]University College London, UK, [4]UK Community Advisory Board (UK-CAB), London, UK

Background: Despite a decline in new HIV infections in the UK, the proportion of new diagnoses in people age 50+ continue to rise. This group are disproportionately affected by late diagnosis of HIV, increased healthcare costs, treatment complexity and poorer health outcomes. This study aimed to identify factors associated with testing for HIV in people aged 50+. This is part of a larger study also identifying clinician-related factors associated with offering tests to patients' age 50+. Only patient data are presented here.
Methods: Semi-structured interviews were conducted with patients diagnosed late with HIV age 50+ in South-East England. Data were transcribed verbatim and thematically analysed.
Results: Twenty people were recruited: mean age 60 years (range 52–80); 80% White, 20% Black African/Caribbean, 55% heterosexual and 45% MSM. Seven factors associated with testing were identified:

- Experiences of early HIV/AIDS campaigns: These shaped people's beliefs/behaviours. Heterosexual men/women and bisexual men had no other exposure to HIV-related information and therefore held on to misconceptions about HIV

- HIV knowledge prior to diagnosis: A lack of information outside gay venues facilitated ignorance particularly among heterosexual men/women. Some reported not knowing where they could test for HIV. Gay men were more likely to seek information
- Presence of symptoms & symptom attribution: Lack of symptoms or attributing them to something else was a barrier to testing. Most associated them with ageing or illnesses they had experience of or knew about
- Risk & risk perception: No perceived risk meant no motivation to test. Universally people agreed that older people were at low risk of HIV
- Generational approaches to health & sexual health: Older people did not prioritise their sexual health, but would accept a test if offered by a non-judgemental clinician
- Stigma: All participants perceived an HIV diagnosis in older age to be stigmatising. HIV was often perceived as a 'gay disease'. Women feared social isolation
- Type of testing & testing venue: Many participants felt primary care was most appropriate, although gay men valued sexual health services. Most felt adding HIV to routine screens or blood tests would facilitate testing

Conclusion: Services need to adapt to increase HIV testing among people age 50+ by addressing misconceptions and being sensitive to stigma.

P343

HIV opt-out testing in TOP services: experience in the north east of Scotland

D Brawley, A Samuel and S Brechin
Grampian Sexual Health, Aberdeen, UK

Background: HIV testing in Termination of Pregnancy (TOP) services is recommended by BHIVA in all cases and by the RCOG if clinically indicated. Our service is a community based TOP service which is part of the wider specialist sexual health service, providing care for urban and rural populations. The TOP service has an opt out testing protocol for HIV. The HIV testing rate was audited to assess adherence to the protocol and testing uptake.
Methods: Prospective audit from 01/03/2016 till 30/8/2016. Each clinician in the TOP service was asked to complete a blood request summary form indicating whether an HIV test was requested and if not the reason for omitting this. The National Sexual Health IT System (NaSH) was used to assess patient records for contributing factors when an HIV test was omitted and for baseline demographics for both tested and non tested women.
Results: The service reviewed 508 women during the audit period, of which 70% received an HIV test (357/508). Of the 149 (30%) not tested, 61% (91/149) had already had a recent test and no new risks and 14% (21/149) declined a test, representing an overall 4% decline rate. Two women decided to delay an HIV test until outside the window period and 1 woman was known to be HIV positive. In 23% (34/149) of the non tested women there was no reason given for the test being omitted, representing 7% of all women. Regarding baseline demographics, all women who declined an HIV test or if the test was omitted with no reason, were from the UK, with current data showing 6% of women tested identified as non British. Furthermore the median age of the non tested group was 29 years vs. 24 years in the tested group. There were no positive HIV tests during the audit.
Conclusions: Routine HIV testing has a reasonable uptake in our service population however improvements are required to reduce missed opportunities for testing and to engage women declining the test.

P344

HIV testing black African service users within a newly integrated sexual health service: a re-evaluation

J Glascodine and D Goode
Leeds Sexual Health, UK

Background: HIV testing is recommended in all sexual health clinics, and in other services for high risk groups, especially in areas of high HIV prevalence, such as ours. We performed a service evaluation of HIV testing rates among Black African patients following the integration of contraception and STI services in July 2015. We found that the rates of HIV testing had fallen from over 80% to 57.6% in the first quarter of integration. Those not offered tests were mostly females attending for contraception and those seen at a spoke site which were historically contraception and sexual health clinics (CASH).
To improve HIV testing rates in this group we discussed guidelines and results at team meetings, adjusted our electronic patient record and in August 2017 introduced HIV champions (members of our nursing team working at spoke sites) to encourage testing. Posters were sent to the spoke sites to inform patients of our routine HIV testing policy.
Aim and Objectives: We aimed to assess our HIV testing rates among Black African patients 2 years after the initial audit. We wanted to evaluate whether changes would facilitate the 90% target of offering a HIV test.
Methods: We conducted a retrospective case note review of attendees identifying as Black African regarding offer and uptake of HIV testing over a 3 month period.
Results: Between 01/07/17 and 30/09/17, 414 patients identified as Black African. We have looked at the patients attending in July in the first instance. 2/60 patients were known to be HIV positive so were excluded. A HIV test was offered and accepted in 19/24 men. 14/34 women were tested including 1 new HIV diagnosis. Of the 20 women who did not test, 13 were offered and declined. Of the 7 remaining women, 2 tested at a follow-up appointment and 1 came to reception for condoms only. There were 4 missed opportunities, all seen by staff previously based in CASH clinics and 3/4 were seen at spoke sites.
Discussion: The initial evaluation of HIV testing in Black African patients shows some improvement in the offer of a HIV test at 79.3% but with 60.3% testing. Possible barriers to testing include patients attending for contraception not expecting a HIV test as part of their consultation and staff members from CASH backgrounds not feeling as comfortable discussing HIV testing. We hope the ongoing evaluation will show further improvements in numbers in both the offer of and uptake of HIV testing.

P345

HIV testing in the UK

S Croxford[1], L Tavoschi[2], L Combs[3], SF Jakobsen[3], A Sullivan[4], D Raben[3], V Delpech[1] and S Desai[1]
[1]Public Health England, London, UK, [2]European Centre for Disease Prevention and Control, Stockholm, Sweden, [3]University of Copenhagen, Copenhagen, Denmark, [4]Chelsea and Westminster Hospital NHS Foundation Trust, London, UK

Background: In recent years, new technologies and new approaches to the implementation of HIV testing have emerged. The objective of this systematic review was to critically appraise and synthesise the body of recent evidence on strategies/approaches aimed at increasing the uptake and coverage of HIV testing in Europe.
Methods: Systematic searches were run in Medline, Embase, PsycINFO, Cochrane and Scopus including studies published between January 2010 and March 2017. Abstracts from relevant conferences (2014–2017) were also reviewed. Title and abstract screening was used to select studies presenting strategies to improve HIV testing. Study selection, data extraction and critical appraisal were performed by two independent reviewers. Results presented here are from the UK (UK).
Results: The systematic searches resulted in a total of 162 studies from the UK. A number of approaches to improve HIV testing were identified including: HIV testing implementation (n=69), audits to identify gaps in testing (n=55), education interventions (n=12), campaigns (n=10), economic evaluations (n=6), communication technologies (n=3), clinical decision making tools (n=5), and others (n=1). Testing implementation included 23 studies targeting risk groups (19–98% tested for HIV), 62 in non-traditional settings (18 community (19–100%), 12 self-testing/sampling (10–78%), 9 emergency departments (31–66%) and 6 primary care (17–70%)), 33 utilised novel testing technology (16–100%) and 5 focussed on indicator condition testing (17–85%). Audits revealed only 11–90% of people eligible were tested for HIV. Only 27 studies presented before and after intervention data, which led to a 10–55% improvement in testing rate. Education interventions focussed on medical staff or students (n=5) and inpatients (n=7). The majority of campaigns were run to promote HIV testing week (n=6). Innovative use of technology to increase HIV testing included: use of social media to offer testing (n=1), active testing recall via text message (n=1), educational videos for testing offer (n=1), computer testing prompts (n=2), and automatic test ordering (n=2).
Conclusion: This review has identified several promising strategies to achieve high HIV uptake across a variety of settings in the UK. However, audit data show considerable missed opportunities for earlier HIV diagnosis. Few

intervention studies reported before/after data, making it difficult to evaluate the improvement in test coverage.

P346

How often do people attend for HIV care?

P Kirwan, M Kall, C Chau, A Brown and V Delpech
Public Health England, London, UK

Background: In the UK, clinical guidelines recommend how frequently people attending HIV services should be monitored. 'Stable' patients are recommended to attend only 1–2 times per year. We use national HIV cohort data to examine attendance patterns and factors associated with more frequent consultation among patients accessing HIV care in England.
Methods: We used quarterly attendance-based data on adults (aged 15+) attending a specialist HIV clinic in 2016. Clinics submitting all 4 quarters (167/183; 91%) of data were included and attendances linked across quarters. Attendances for diagnostic tests only were excluded. Consultation frequency was analysed by clinical and patient characteristics using multivariable regression. An unsuppressed viral load (VL) was defined as ≥200 copies/ml at the first attendance in 2016. Stable patients were diagnosed and/or on treatment for more than 1 year with no co-morbidity/co-infection reported.
Results: An eligible cohort of 65,109 adults was analysed, comprising 229,557 consultations. Demographic characteristics of the cohort were representative of all people in care, and 80% were classified as stable.
The median number of annual consultations in 2016 was 3 (IQR [2–4]); 15% attended once (9721), 29% twice (19,084) and 56% attended ≥3 times (36,304). The median number of annual consultations was similar by gender or ethnicity, but greater among those diagnosed or starting treatment in the past 12 months (4 [2–5] and 5 [3–7] respectively).
In multivariable regression, unsuppressed VL was a predictor of increased consultation frequency (β=1.7, 95% CI [1.6, 1.8], $p < 0.001$) (β refers to the change in consultations for a given characteristic i.e. β of 1.7 means an increase of 1.7 consultations). Living outside of London was associated with fewer consultations (β=−0.6, [−0.6, −0.5], $p < 0.001$), as was each additional year on treatment (β=−0.04, [−0.05, −0.04], $p < 0.001$). Black African heterosexual men and women had significantly fewer consultations compared to white gay men (β=−0.7, [−0.8, −0.6], $p < 0.001$). Consultation frequency was not affected by age, region of birth (UK vs. abroad) or residential deprivation.
Conclusions: An unsuppressed VL and recently starting treatment were the most important predictors of more frequent attendance. Despite a largely stable cohort, over half of people attended three or more times in a year: evidence for disparity between clinical recommendations and practice which requires further exploration.

P347

How well are the NICE recommendations for community HIV testing being implemented in England?

S Nash, H Mohammed, A Nardone and N Connor
Public Health England, London, UK

Background: National Institute for Health and Care Excellence (NICE) recommends that community HIV testing services should be set up in areas of high or extremely high diagnosed HIV prevalence. However, there are no national surveillance data from these services. We present the results of a national survey of community services assessing the level of implementation of this NICE recommendation, as well as the volume and reactivity rate of HIV tests by these services in England.
Methods: Data were obtained from a survey of English community services identified through stakeholder networks. Services were asked to provide data on HIV testing in 2016, including breakdowns by gender, sexual orientation, ethnicity, local authority (LA) of residence and service location. A logistic regression was used to analyse differences in reactivity.
Results: We identified 64 potential community testing services in England; 19 organisations were excluded because they did not perform HIV testing or were reporters to the GUMCAD Surveillance System. HIV testing data were submitted by 33/45 (73%) eligible services, which carried out 20,134 HIV tests in 2016, with an overall reactivity of 0.6%. HIV testing carried out by community services was conducted in 54% of 152 LAs: this included all (19) LAs in extremely high prevalence areas (diagnosed HIV prevalence >5/1000 persons aged 15 to 59 years), 57% of 44 LAs in high prevalence areas (diagnosed prevalence 2–5/1000) and 43% of 89 LAs in low prevalence areas (diagnosed prevalence <2/1000). 13,922/20,134 (69%) of tests were carried out in males and 12,023/20,134 (60%) in heterosexuals. Reactivity rates were similar among men and women (0.6% and 0.5%, p=0.2), but they were higher in men who have sex with men than heterosexuals (0.8% and 0.4%, p=0.001). Test reactivity was highest in residents of high prevalence LAs at 0.9%, followed by 0.6% in extremely high prevalence LAs and 0.4% in low prevalence LAs.
Conclusion: This first national survey of community services reveals that HIV testing is being carried out by a large number of services in roughly half of all LAs. This survey provides a baseline measure of how well NICE recommendations to provide community HIV testing services are being implemented in throughout England.

P348

Increasing testing for HIV in patients with confirmed *Streptococcus pneumoniae* infection

F Hirst and K Saeed
Royal Hampshire County Hospital, Winchester, UK

Background: HIV infection is associated with an increased risk of invasive pneumococcal disease. The National Institute for Health and Care Excellence (NICE) guidance on HIV testing in secondary care is to offer and recommend HIV testing in all patients presenting with an indicator illness; of which pneumococcal disease is one.
We created an electronic alert on our infection control electronic (ICE) records to prompt physicians to offer HIV testing in adult patients with pneumococcal positive blood cultures or urinary antigens with a view to increasing the chance of early detection of HIV.
Methodology: All *S. pneumoniae* blood culture isolates from January 2015 to October 2017 were retrospectively identified using microbiology and ICE records.
An alert was then created on ICE prompting physicians to offer and recommend HIV testing in all pneumococcal positive adults. Electronic hospital and microbiology records were used to identify those who had been tested for HIV pre and post intervention.
Results: Patient ages ranged from 18 to 93. Mean age 67. Between January 2015 and October 2017, 96 patients had a positive blood culture result for *S. pneumoniae*. 35 (36%) of the cases were subsequently tested for HIV, none of these were positive. 17 (28%) of the 61 untested were aged under 70. None had a previous HIV test.
Since the introduction of the electronic alert, there have been 54 pneumococcal positive patients. Of these, 30 (56%) have had an HIV test. None were positive. 5 (28%) of the 24 untested were under 70 however all but one had prior HIV testing.
Conclusion: Prior to introduction of the electronic alert, only 36% of all patients with *S. pneumoniae* bacteraemia had an HIV test performed. With the known association between HIV and invasive pneumococcal disease, this represents a missed opportunity for HIV diagnosis.
With the introduction of an online alert and education, the percentage of pneumococcal positive patients tested for HIV has risen by 20% suggesting this is a useful prompt for physicians to consider HIV testing.
Of those who had neither been tested in the past nor upon testing positive for *S. pneumoniae*, all but one were over the age of 70 years. This demonstrates reluctance in physicians to offer testing in the older population. With a wealth of literature describing a significant proportion of older people with HIV being late diagnoses and thus suffering poorer outcomes as a result, this would be an important demographic to target in the future.

P349

Influence of recreational drug use on STI risk in heterosexuals attending SHCs: evidence from a pilot of enhanced STI surveillance

P Vanta, P Blomquist, H Mohammed and G Hughes
Public Health England, London, UK

Background: A robust evidence base on risk factors for sexually transmitted infections (STIs) exists for MSM but not for heterosexuals. Our study aimed to

analyse the association between behavioural risk factors, including recreational drug use, and STIs in heterosexuals attending sexual health clinics (SHCs).
Methods: An eight-week pilot of behavioural data collection to enhance the GUMCAD STI Surveillance system was carried out at four SHCs, starting in July 2015. We examined records of attendees ≥15 years old who reported sex with only opposite-sex partners in the previous 3 months. We conducted binary logistic regression to determine the association between an acute STI diagnosis (gonorrhoea, chlamydia, syphilis, anogenital herpes or anogenital warts) and number of sexual partners, record of a recent new sexual partner, condom use at last sex, problematic alcohol use, and recreational drug use in the last 3 months. Odds ratios (OR) were calculated with and without adjustment for gender, age-group and ethnicity.
Results: Among 12,137 heterosexual attendees, 72.0% reported one and 28.0% reported two or more sex partners; 44.1% reported at least one new sexual partner; 62.5% reported not using condoms at last sex; 1.2% were assessed as problematic alcohol users, and 9.1% reported use of recreational drugs in the previous 3 months. There was no association between acute STI diagnosis and reporting 2 or more sexual partners (adjusted OR [(95% CI] 0.95 [0.85–1.07] vs. one partner); having a new sexual partner (0.99 [0.88–1.12] vs. not having a new sex partner); condomless sex (1.10 [0.97–1.23] vs. reporting use of condoms) and being assessed as a problematic alcohol user (1.03 [0.66–1.61] vs. non problematic alcohol use). The odds of an acute STI diagnosis was higher in those reporting recreational drug use (1.22 [1.02–1.44] vs. those not reporting recreational drug use).
Conclusion: Recreational drug use may amplify STI risk among heterosexuals. Comprehensive collection of enhanced and standardised behavioural data from SHCs through GUMCAD will provide robust and timely evidence to inform development of clinical and public health interventions.

P350

It's not what you say, it's how you say it: increasing HIV testing uptake by individual clinician feedback

M Eisner and M Lawton
Royal Liverpool University Hospital, UK

Background: An estimated 13% of people living with HIV are unaware of their diagnosis. In 2014 MEDFASH set standards for HIV testing in GUM clinics: 97% of patients with needs relating to STIs should be offered a HIV test at their first attendance and 80% should have a test. We audited our teaching hospital's GUM clinic to see if this was being met and if variability between health care professionals (HCPs) was affecting testing uptake.
Methods: All new and reregistering patients attending for an STI screen, between October 2016 and March 2017, were reviewed. The proportion of those patients who were offered HIV testing and whether they accepted the test was recorded. The data was then grouped by the HCP seeing the patient. The findings were presented along with teaching about the importance of HIV testing and HCPs offered individual feedback. We then audited the July 2017–December 2017 data following this intervention.
Results: Pre-intervention 8312 pts; 3053 of patients new to the service attended the clinic. 99.2% (99.5% of new) were offered a HIV test and 80.1% (86.2% of new) accepted the test. We found large variability between clinicians. Uptake of test varied from 70% to 97%. There was no correlation between numbers of patients seen by the HCP over the period and percentage of patients agreeing to a test. There was no significant difference between gender of HCP or type of HCP (doctor vs. nurse practitioner). Following the intervention there was a statistically significant (p=0.001) increase in HIV testing uptake from 80 to 83% overall (86 to 89% of new patients). The HCPs who had the intervention and saw significant numbers of patients had an increased rate of testing by 6% (p=<0.001). 17 of 22 HCPs increased their patients HIV testing uptake (range 0.3 to 17%). The offering of HIV tests remained high (99.2%).
Conclusion: Our clinic surpasses the standards for offering HIV testing and uptake of tests. Clinic based interventions have potentially further improved patient uptake of HIV tests. We have identified wide variation between clinical staff in the uptake of HIV testing. We suggest one method to address this which is to provide anonymised group teaching on the issues and individualised feedback on uptake. Factors such as workload, gender or clinician type do not seem to affect the uptake of HIV testing. This approach may be applicable to increasing the offering of other investigations and services.

P351

It's what's inside that counts: review of sexual health care provision in a large high-security men's prison

S Currie, E Nicol, T Thompson, S Tomassi and O McQuillan
The Northern Contraception, Sexual Health and HIV Service, Manchester, UK

Background: We know very little about sexual health care provision within prisons nationally. We aimed to use the BASHH 2016 Standards for the Management of Sexually Transmitted infections (STIs) in Outreach Services to assess the provision of sexual health care in our local prison; one of the largest high-security men's prisons in the UK.
Methods: We reviewed the BASHH guidance for outreach services and summarised the relevant standards for prisons. We then conducted a retrospective review of patient notes between 1st July 2016 and the 30th April 2017. For diagnostic and management standards all those with a positive result and a further 32 were selected at random for analysis (total 50).
Results: 209 individual male patients were included in the audit with 245 individual episodes of care. Median age 28 years (range 21–47).
Of those tested no one had HIV (0/163); 2.4% had syphilis (4/169); 15.1% had Hepatitis B (8/53); 4.8% had HCV (1/21). (4%) 7/191 positive urine chlamydia; 25% (2/8) positive rectal chlamydia tests; 0/5 pharyngeal chlamydia infections; no positive gonorrhoea tests from any site (0/203).
Access was below BASHH standards with only 16% (32/196) (BASHH standard 98%) being offered an appointment within 2 days and 16% (32/196) being reviewed by a health care professional within 2 days (BASHH standard 80%). 85% (178/210) were offered an HIV test (BASHH standard 97%), with 80% (167/210) accepting an HIV test on their first attendance (BASHH standard 80%).
96% (48/50) of reports were issued within 5 days of receipt of the sample (BASHH standard 97%); and 100% (50/50) of supplementary testing reports were issued within 10 days (BASHH standard 97%).
Patients' access to results within 10 days was below BASHH standards of 95% at 72% (36/50).
Conclusion: STIs are present in prisons. It is imperative we do not penalise patients' sexual health care so as to reduce complications from STIs and transmission of STIs. However, in this financially fraught time how do we maximise provision with minimal cost? Further reviews such as this need to be completed nationally to inform BASHH how to improve sexual health care in prisons. In the meantime, we are looking to provide the prison with self-testing postal kits for prisoners and meeting to discuss other innovative ideas to improve sexual health care in a cost effective way.

P352

Linkage to HIV care following diagnosis in the WHO European Region: a systematic review and meta-analysis, 2006–2017

S Croxford[1], Z Yin[1], F Burns[2], A Copas[2], K Town[1], S Desai[1], A Skingsley[1] and V Delpech[1]
[1]Public Health England, London, UK, [2]University College London, UK

Background: Timely linkage to specialist care after HIV diagnosis is crucial as delayed access can result in poor patient outcomes. The aim of this systematic review was to better understand what proportion of people diagnosed with HIV is linked to care promptly and what factors impact linkage in Europe.
Methods: Systematic searches were run in six databases (Embase, Medline, PubMed, PsycINFO, Cochrane Library and the Web of Science Core Collection) up to the end of February 2017. The grey literature was also reviewed. Inclusion criteria were: sample size ≥50 people (aged ≥15), from the WHO European Region, published 2006–2017 and in English. Linkage to care was defined as a patient seen for HIV care after diagnosis. Study selection, data extraction and quality assurance were performed by two independent reviewers. Random-effects meta-analysis was carried out to summarise prompt linkage to care within 3 months of diagnosis. In meta-analysis, data were analysed separately based on care status of the study population; whether studies included: (i) all new diagnoses, including those not linked to care or (ii) only people in care with care information available.
Results: Twenty-four studies were included; 22 presented linkage to care data and seven examined factors for linkage. Linkage among 89,006 people in 19 countries was captured. Meta-analysis, restricted to 12 studies and measuring prompt linkage within 3 months, gave a pooled estimate of 85% (95% CI:

75%–93%). Prompt linkage was higher in studies including only people in care (94%; 95% CI: 91%–97%) than in those including all new diagnoses (71%; 95% CI: 50%–87%). Heterogeneity was high across and within strata (>99%). Factors associated with delaying or not linking to care included: acquiring HIV through heterosexual contact and injecting drug use, younger age at diagnosis, lower levels of education, feeling well at diagnosis and diagnosis outside a sexual health clinic.
Conclusion: Overall, few countries in Europe have investigated linkage to care at a national level. Where available, estimates vary and reflect diverse health care systems, as well as political and socio-economic factors that may hinder people living with HIV from seeking care. Further development of public health monitoring systems and adoption of a standard definition with a 3 month cut-off to measure prompt linkage to care are needed to monitor equitable access to HIV care and treatment in the era of effective therapy.

P353

Litigation and HIV medicine: what's going on?

M Phillips
Cumbria Partnership NHS Foundation Trust, Cumbria, UK

Background: HIV and issues surrounding its diagnosis have been present for years within the specialty. Ten years ago, BHIVA published a guideline on HIV testing and indicator diseases that was supported by medical professional bodies outlining who should receive a test, and under what circumstances. After the test is performed, more medico-legal and ethical challenges may wait with who to tell, and whether disclosure is necessary to third parties. In 2013, the MPS published an opinion piece that suggested that in some circumstances, failing to diagnose HIV might be construed as negligent. There exists a place between HIV Medicine and the Law where clinicians are afraid to tread. This piece of work aimed to reveal actual themes of legal conflict, from sources where information could be held centrally.
Methods: The Medical Defence Union, Medical Protection Society and NHS Resolution (formerly NHS Litigation Authority) were approached to consider information sharing for this analysis.
Results: All three agencies responded positively.
MDU: 'Over the past 10 years, there are only a very small number of cases in which we have been involved, they relate to alleged delayed diagnosis, or inadequate treatment'.
MPS: Types of requests seen include advice re confidentiality, delay in diagnosis and prescribing/monitoring issues.
NHS Resolution: Shared information via a Freedom of Information pathway. Between 2009 and 2017, a number of claims were settled via the NHS LA where HIV was named as one of the injuries. Sum is rounded up to nearest pound

Cause of claim	Damages paid (£)	Legal costs paid (£)	Total paid (£)
Fail/delay of treatment	430,718	293,898	724,616
Fail Antenatal Screening	625,000	268,215	893,215
Fail to act on abnormal test results	40,000	92,739	132,739
Failure to inform test results	620,000	530,302	1,150,302
Failure to perform tests	550,000	82,638	632,638
Failure/Delay Diagnosis	110,358	142,871	283,229
Wrong diagnosis	574,000	343,306	917,306
Grand Totals			5,181,298

Conclusion: Notwithstanding that claims may be being settled by individual trusts without recourse to NHS Resolution, there are individuals successfully finding legal recourse where diagnosis and management has not gone to plan. The issues being settled by NHS Resolution relate to appropriate diagnosis and acting on abnormal results. This should be a cautionary tale within the specialty and our allied specialties. Ten years on from BHIVA's publication, timely and appropriate testing and diagnosis remains a Gordian knot.

P354

Making the case for community HIV testing: a comparison of targeted community testing demographics, reactivity and testing frequency across level 2 and 3 services, online self-sampling and community provision within East London

Y Dunkley, B Swift, F Chiu, J Warwick and S Worrall
Positive East, London, UK

Background: This study assesses the impact of community testing on HIV diagnoses and mobilising communities at risk, reviewing HIV testing within East London across level 2 (SRH), 3 (GUM), online and community outreach services.
Methods: Data collected between 2016 and 2017 from HIV POCT within community outreach clinics at an HIV charity in E.London was compared with 2016 data from level 2 and 3 services, and online self-sampling data in Hackney, Waltham Forest, Newham and Tower Hamlets (from 2016 until end of September 2017).
Community outreach clinics test clients who have been approached to test at a community setting.
Results: Community outreach testing

- 3537 clients tested for HIV with 17 testing positive (0.48%). 5 out of 1035 clients seen in an outreach clinic (0.48%) tested positive for HIV.
- 199 Black African clients presented for HIV testing at outreach clinics in 2016 (42% of all clients). 53% had never had an HIV test before (105), with 82% identifying as heterosexual males (86/105).
- 90 MSM presented for HIV testing at outreach clinics in 2016 (19% of all clients), of whom 68% had never had an HIV test before (61), and 24% being BME (24).

Level 2 and 3 services

- Black African clients accounted for 9.68% of the 50,496 tests carried out in E.London, with gender parity
- MSM accounted for 7.46% of HIV tests, with 29.82% identifying as BME.
- Level 2 services alone saw more African communities testing at 11.39% (505/4435), however African males accounted for 34.06% of tests (172/505)
- Level 2 services are less representative of MSM with 3.45% of tests identified as MSM (153/4435), although much high levels of BME MSM at 37.25%.

Demographics were not compared across community POCT and online self-sampling services, as online provision is restricted to demographics at risk:

- Fewer people screened for HIV through online services than tested in community services in E.London (1762/3537)
- 24% of higher risk clients screening online were first time testers (436/1762)
- 0.8% tested reactive with online services (15/1762)

Conclusion:
- Community testing sees higher numbers of tests and higher rates of first time testing amongst at risk demographics than online self-sampling in E.London.
- The value of community HIV testing lies within its initial mobilisation of communities at risk of HIV, who are not proportionally engaged in sexual health services, and are testing for the first time within the community, e.g. African heterosexual men.

P355

Men who have sex with men (MSM) eligible for the PrEP impact trial: do they differ from other MSM clinic attendees?

D Ogaz[1], H Mohammed[1], J Saunders[1], H Reaney[2], N Iyanger[1], P Blomquist[1], G Hughes[1], S McCormack[3], M Desai[4], L Waters[5], C Priestley[6], K Manavi[7], A Sullivan[3], A Nardone[1], B Gazzard[3] and N Gill[1]

[1]Public Health England, London, UK, [2]St Stephen's Clinical Research, London, UK, [3]Chelsea and Westminster Hospital NHS Foundation Trust, London, UK, [4]The National Institute for Health and Care Excellence, Manchester, UK, [5]Central and North West London NHS Foundation Trust, London, UK, [6]Dorset County Hospital NHS Foundation Trust, Dorset, UK, [7]University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

Background: The PrEP Impact Trial, a non-randomised, non-interventional study, began recruitment in October 2017. As part of routine care, HIV negative individuals are risk assessed for eligibility for PrEP. We report early findings from participating clinics on the demographic and clinical characteristics of MSM eligible for PrEP compared to other MSM clinic attendees.
Methods: We extracted data from the GUMCAD STI Surveillance System on HIV-negative MSM aged ≥16 years who attended one of the five trial sites open to recruitment and submitting data for October 2017. Analyses were restricted to attendances from recruitment start dates at each clinic through to 31 October 2017. We defined proxy measures for high-risk based on available GUMCAD history as: (i) a HIV-negative test in the preceding year (43–365 days) alone or in combination with (ii) a bacterial STI in the preceding year (0–365 days). Using Pearson's X^2 test, we compared MSM eligible for PrEP to others by ethnicity, age-group, and whether or not they met our proxy measures for high-risk.
Results: A total of 4134 MSM attended the five clinics during the time period analysed. Of these, 1270 men (31%) were defined as high-risk based on the combination of proxy measures. Of all attendees, 773 (19%) were coded as eligible for PrEP. In those with an eligibility code there was a greater proportion of MSM aged ≥35 years (49% vs. 41%; p<0.001) and of white ethnicity (79% vs. 71%; p<0.001) compared to MSM without an eligibility code. In MSM coded as eligible, there was a greater proportion who had a history of an HIV test in the previous year (85% vs. 63%; p<0.001) and those with the combination of proxy high-risk indicators (46% vs. 27%; p<0.001). MSM without an eligibility code were more likely to have neither proxy measure of HIV risk (37% vs. 15%; p<0.001).
Conclusion: Initial data indicates that MSM assessed as eligible for PrEP are at higher risk of HIV than those not eligible, suggesting that PrEP is being appropriately targeted. Over a quarter of MSM not coded as eligible for PrEP met the combination of our proxy high-risk indicators; this may represent missed opportunities for PrEP. There are significant demographic differences in those with and without eligibility codes for PrEP. Our proxy measures for high-risk are based on historical GUMCAD data in the first trial sites, a key limitation of our analysis. Clinical and demographic characteristics will need to be monitored as the trial continues.

P356

Mycoplasma genitalium: review of outcomes following introduction of selective testing

M Pinder[1], S Bushby[2] and J Hussey[2]

[1]Newcroft Centre for Sexual Health, Newcastle, UK, [2]Sunderland Royal Hospital, UK

Background: *Mycoplasma genitalium* (MG) is a recognised cause of urethritis in men, and is associated with upper genital tract infection in women. MG has a very similar prevalence to chlamydia in many countries, including the UK, but is currently not routinely tested for, likely due to a combination of cost implications and test availability. This project looked at the prevalence of MG amongst a selective symptomatic cohort of patients attending a level 3 sexual health service following test introduction. Testing was performed on women with persistent pelvic pain following pelvic inflammatory disease (PID) first line BASHH recommended treatment, and men with persistent urethritis symptoms following treatment with doxycycline 100 mg twice daily for 7 days and more complex cases including persistent vaginal discharge of unknown cause and chronic urogenital pain in both men and women.
Methods: Data on all patients where a MG test was requested in 2016 were obtained from the laboratory. These were then separated by gender, and randomly selected. Medical notes and results were reviewed, and reasons for performing the test were documented.
Results: A total of 75 patients, 38 female, 37 males were randomised. Of these 34% of women had symptoms of suspected PID and 40.5% of men had non-specific urethritis (NSU). MG was found in 21.6% of men (8 patients) all with persistent NSU following doxycycline treatment, including one co-infected with chlamydia. They received azithromycin (500 mg single dose, followed by 250 mg daily for 4 days). Two patients required further treatment with moxifloxacin before symptoms resolved. No patients returned for test of cure. There were no positive results in women
Discussion: In 2017 BASHH updated guidelines for management of NSU, and circulated draft guidance for PID (in consultation at the time of writing). These advise testing for MG in men presenting with urethritis where available and all women presenting with symptoms suggestive of PID. Our rates of MG in men were comparable to those found in other studies however we were surprised to find no MG in women. Prior treatment of 14 days of doxycycline may have treated any MG in this group. Although testing more complex patients is helpful in excluding infection prior to more expensive and often invasive investigations, such as laparoscopy, we will continue to monitor results in this group to inform future practice.

P357

Neurosyphilis diagnosis; is cerebrospinal fluid examination helpful?

F Shiva, D Goldmeier and A Winston

St Mary's Hospital, London, UK

Background: Accurate diagnoses of neurosyphilis (NS) are clinically challenging due to widely variable clinical presentations and cerebrospinal fluid (CSF) biomarkers which may be modified by intercurrent treponemacidal antibiotics and lack sensitivity and specificity. In individuals being investigated for possible NS, we assessed symptomatology and CSF test results.
Methods: Data were gathered on all individuals undergoing CSF examination to investigate possible NS since January 2017 and included demographics, HIV status, history of previous treatment, symptoms, CSF results and final clinical diagnosis.
Results: Of 23 individuals undergoing CSF examination, 16 were HIV positive and 13 were diagnosed with NS. Main symptom leading to CSF examination were headache (1/6), dizziness (3/4), visual disturbance (5/0), tinnitus (3/2) and other (2/1) in those with and without a diagnosis of NS, respectively; some individuals having more than one symptom (4/23). Serum RPR titre ranged from 'Neat' to '1:1024', 15 of which ≥1:32. Of the cases diagnosed with NS 4 had ocular syphilis, 1 case was asymptomatic NS and 12 had a positive CSF TPPA (1 with ocular syphilis had negative TPPA). Of cases without NS only 1 individual had a positive CSF TPPA and was not considered to have NS due to other CSF parameters being within the normal range (Table 1).
Conclusion: Within this clinical cohort, diagnosis of NS was predominantly based on CSF TPPA and clinical symptoms rather than other CSF parameters. Where CSF TPPA titres are not available, a positive CSF TPPA is equivalent to a titre of ≥1:32 whereas in guidelines a CSF TPPA titre of >1:320 is considered diagnostic of NS. We therefore may have over diagnosed NS. Our case series adds to the evolving evidence suggesting the availability of TPPA titres is required for the investigation of NS.
Table 1 Demographic and CSF results (n=23)

	NS (n=13)	Non NS (n=10)
Demographics		
Male	13	10
MSM	11	7
HIV Status Positive	10	6
Serum RPR: ≥1:32	10	5
CSF:		
TPPA +ve	12	1
RPR +ve	5	0
WCC ≥5 cells/uL	4	0
Protein ≥0.45 g/dl	9	2

P358

Oesophageal candidiasis as an HIV indicator: are we offering HIV testing routinely?

M Stevens, E Wesley and S Thomas-William
Musgrove Park Hospital, Taunton, UK

Background: National (BHIVA) and European (ECDC and WHO) guidance advise all individuals with a diagnosis of oesophageal candidiasis should be offered HIV screening routinely. We set out to establish whether this was the case in a large DGH in an area of low HIV prevalence (0.77 cases 16–59 years/1000).
Methods: We undertook a retrospective audit of patients with a diagnosis of oesophageal candidiasis electronically coded on their OGD report. The pathology database was then searched to determine whether the patient had undergone HIV testing.
We then performed a structured survey of all local upper GI endoscopists to determine their views and current practice with regards to HIV testing in this group of patients.
Results: 79 patients were diagnosed with oesophageal candidiasis on the basis of macroscopic appearances at the time of their OGD from 1st January 2016 to 31st December 2016. Median age was 69.
Five had undergone HIV testing within a month before or after the diagnosis of oesophageal candidiasis (6.3%). 12 patients (15.2%) had ever been tested for HIV. All of the test results were negative.
Of the 17 upper GI endoscopists in our institution 10 responded (59%); 6 were gastroenterology consultants, 2 surgical consultants, 1 nurse endoscopist and 1 gastroenterology trainee.
None of the respondents would routinely recommend HIV testing. A number of conditions were thought to adequately explain oesophageal candidiasis in the absence of HIV (see table 1 below). Three respondents indicated counselling regarding HIV testing was a barrier to arranging testing. All respondents indicated arranging testing was the role of the GP or referring clinician. Five respondents indicated that low local HIV prevalence affected their decision to arrange testing.

P359

Offer of testing for sexually transmitted infections in patients attending for contraception in an integrated service: does this reduce HIV test uptake rates?

S Bhaduri
Worcestershire Health and Care Trust, Worcestershire, UK

Background: With the recent closure of a contraception based clinic and subsequent attendances of this cohort of patients in a GUM based clinic it was noted that overall HIV uptake overall was decreasing for this clinic – was this related to a reduced offer of screening for sexually transmitted infections (STI) testing in the cohort or refusal of the offer?.
Methods: 102 patient records with GUMCAD P3 code (i.e. contraception) were analysed with respect to offer screening of sexually transmitted infections (STI) including HIV testing. Analysis was subdivided into patients attending because of symptoms and requiring contraception advice, patients attending for emergency contraception and patients attending for purely contraception issues.
Results: Of the subset of 57 patients requiring assessment of symptoms and contraception 55 were offered HIV testing with 38/55 accepting (69%). (2 were classified as HIV testing not appropriate), 54 were offered STI screening of which 49/54 accepted (89%). Of the subset of 7 requesting emergency contraception, all were offered HIV and STI testing however all declined. Of the subset of 38 patients attending for purely contraception issues, 33 were offered HIV testing of which 3 accepted (10%), 32 were offered STI screening of which 3 accepted (9%).
Conclusion: The cohort of patients attending an integrated clinic for purely contraception issues appears to have a different expectation as regards STI screening. HIV test uptake is one of number of Key Performance Indicators that local commissioners have set. Consequently the reduction of HIV test uptake has resulted in challenging dialogue during contract performance meetings. A local decision has therefore been made to exclude this subset of patients from GUMCAD coding output whilst retaining the record of the offer of both HIV and STI testing on the local SRHAD codes. Overall HIV test uptake will be monitored.

P360

Optimising follow-up at 7 months in ethnically diverse, sexually active 16–24 year olds taking part in the 'Test n Treat' feasibility trial of rapid chlamydia/gonorrhoea tests

A Green, S Kerry-Barnard, C Fleming and P Oakeshott
Population Health Research Institute, St George's, University of London, UK

Background: 'Test n Treat' is a NIHR funded cluster-randomised feasibility trial aiming to assess the feasibility of conducting a future trial in further education colleges to investigate if rapid, on-site testing and treatment reduces chlamydia/gonorrhoea rates in sexually active students aged 16–24 years. At the outcome assessment at 7 months, participants were asked to provide self-taken genitourinary samples and completed a questionnaire in college, and were given £10. However, over half of participants (57%, 143/252) from three colleges did not attend follow-up.
Aims:
- To investigate the final response rate in obtaining samples and questionnaires from 143 trial participants who did not attend follow-up at 7 months in three colleges.
- To measure the work involved in obtaining these samples and questionnaires.

Methods: We texted all 143 non-attenders a link to the follow-up questionnaire online. This included an option to meet in college to provide a sample or be sent a postal testing kit. Non-responders were telephoned a maximum of twice.
Ten days after sending postal kits, we called those who had not returned them and/or completed questionnaires up to twice more. Students providing samples were texted results, and given £10. Those with infections were contacted by the nurse health advisor.
Numbers followed up were recorded. All communication and the time taken was documented to assess work involved.
Results: We obtained data on 41 of 143 participants who did not attend follow-up at seven months in college. This increased the overall response rate in the three colleges from 43% (109/252) to 60% (150/252). This took 14 h 10 min to complete.
Conclusion: 'Test n Treat' is the first UK study using rapid chlamydia/gonorrhoea tests in further education colleges, focusing on a hard to reach population of ethnically diverse, sexually active teenagers. The results show that the methods used can achieve an important (17%) increase in response rate in this setting.

P361

Post exposure prophylaxis for HIV after sexual exposure is a marker of future risk of sexually transmitted infections among heterosexual GUM clinic attendees

P Blomquist, H Mohammed, J Saunders and G Hughes
Public Health England, London, UK

Background: The association between the use of Post Exposure Prophylaxis for HIV after Sexual Exposure (PEPSE) among heterosexuals and the future risk of sexually transmitted infections (STIs) is not well understood. We quantified this risk using a longitudinal analysis of routinely collected surveillance data.
Methods: We extracted data from the GUMCAD STI Surveillance System on heterosexuals aged ≥15 years who attended a GUM clinic in England from January 2014-December 2015. We selected one baseline attendance per individual: the day which PEPSE was provided for the PEPSE group or a random date for the non-PEPSE group. Inclusion criteria at baseline were HIV-negativity, no recorded history of PEPSE in the prior year, and ≥1 full sexual health screen (test for HIV, chlamydia, gonorrhoea, and syphilis) 43–365 days during follow-up. We used Pearson's chi-squared test to compare sociodemographic differences by PEPSE status at baseline and Cox proportional hazards regression to compare the risk of an STI (HIV, chlamydia gonorrhoea or syphilis) diagnosis within a year (43–365 days) of baseline, with and without adjustment for gender, age, ethnicity, and number of sexual health screens during follow-up.
Results: Among 315,074 eligible heterosexuals who attended a GUM clinic between 2014 and 2015, 814 were prescribed PEPSE. Total follow-up time was 194,000 person years. A higher proportion of individuals given PEPSE were male (57.9% vs. 36.8%, $p<0.001$), older (>25 years; 70.4% vs. 54.4%,

p<0.001), or had two or more full sexual health screens in the following year (21.0% vs. 11.5%, p<0.001), and a lower proportion were of white ethnicity (64.4% vs. 72.1%, p<0.001) compared to those not prescribed PEPSE. The incidence of an STI diagnosis during follow-up was 14.1 (95% Confidence Interval: 11.0–17.9) diagnoses per 100 person years in the PEPSE group and 5.2 (95% CI: 5.1–5.3) in the non-PEPSE group. On the adjusted model, individuals given PEPSE had almost a 3 times higher STI incidence (Hazard Ratio: 2.9 [95% CI: 2.3–3.7] vs. non-PEPSE group).

Conclusion: Heterosexuals receiving PEPSE are at high risk of subsequent STI acquisition and additional behavioural interventions should be considered. The collection of enhanced behavioural data through GUMCAD will improve understanding of risk patterns in heterosexuals.

P362

Prevalence of *Mycoplasma genitalium* (MG) and macrolide resistance mutations in MG in symptomatic patients attending a UK inner city sexual health clinic

J Llewelyn[1], M Chauhan[1], D Davidson[2], C Williams[2], J Perry[2] and M Valappil[3]
[1]New Croft Centre, Newcastle upon Tyne, UK, [2]Newcastle Hospitals NHS Trust, Newcastle upon Tyne, UK, [3]Perdana University, PU-RCSI, Malaysia, Malaysia

Background: Mycoplasma genitalium (MG) is a newly recognised sexually transmissible infection. It can cause non-gonococcal urethritis (NGU) in men and cervicitis and pelvic inflammatory disease (PID) in females. Data from Natsal 3 has shown a population prevalence of MG in the UK to be 1.2% in women and 1.3% in men. There is limited published data on the prevalence of MG in symptomatic patients attending sexual health services in the UK since routine testing for MG is not established. High levels of Macrolide resistance in MG has been reported from Europe and Australia. We undertook a study to estimate the prevalence of MG and the rate of Azithromycin resistance in symptomatic patients attending sexual health services in Newcastle upon Tyne.

Methods: Between July and September 2017, 66 patients with either NGU, cervicitis, PID or contacts of MG positive patients were tested for MG using the Resistance Plus™ MG (SpeeDx Pty Ltd, Sydney, Australia), which simultaneously detects Mycoplasma DNA and mutations in the 23s rRNA gene which confer resistance to Macrolides. All patients were also screened for chlamydia and gonorrhoea.

Results: 13 females and 53 males were tested during this period. Mean male and female age was 30 (range 20–55) and 24 years (range 17–20) respectively. The number of MG positive male and females were 9 (13.6%) and 7 (10.6%) respectively. Macrolide resistant mutations were detected in 60% of the cases. Two males and one female patients were positive for C. trachomatis. Co-infection with other STIs were not observed.

Conclusion: This data is from interim analysis of an on-going study. Preliminary data suggests that MG infection rates in symptomatic patients attending our clinic similar to those reported by other studies. High level of Azithromycin resistance (60%) observed in this cohort is of concern as this is a commonly prescribed antibiotic for the treatment of patients with NGU, PID and cervicitis. Initial findings from this study would support introduction of routine MG testing in symptomatic patients attending our clinic.

P363

Results of HIV-1 drug resistance tests performed in ART-experienced patients in the UK: patterns 2008 to 2015

A Tostevin[1], D Dunn[1], O Stirrup[1], N Mackie[2], D Asboe[3], A Pozniak[3], D Churchill[4], A Leigh-Brown[5], C Sabin[1], E Smit[6], D Pillay[7], S Collins[8] and AM Geretti[9]
[1]University College London, UK, [2]Imperial College Healthcare NHS Trust, London, UK, [3]Chelsea and Westminster Hospital NHS Trust, London, UK, [4]Brighton and Sussex University Hospitals NHS Trust, Brighton, UK, [5]University of Edinburgh, Edinburgh, UK, [6]Heart of England NHS Foundation Trust, Birmingham, UK, [7]Africa Health Research Institute, KwaZulu-Natal, South Africa, [8]HIV i-Base, London, UK, [9]University of Liverpool, UK

Background: Changes in antiretroviral prescribing practices over time are expected to affect patterns of HIV-1 drug resistance observed in tests performed in patients who are ART-experienced.

Methods: Genotypic drug resistance tests, collected by the UK HIV Drug Resistance Database (UKHDRD), conducted in ART-experienced individuals aged >16 between 2008 and 2015 were analysed. Major mutations (IAS 2015 list) were accumulated across all tests within individuals within each calendar year. Sequencing of the integrase gene was gradually introduced over the period of analysis. When integrase tests were missing, rates of Integrase inhibitor (INI) resistance were inferred from individuals tested in the same calendar year, conditional on previous exposure to INIs (ever/never), or inferred exposure to INIs where exposure status was unknown. Prevalence of resistance by drug class and individual mutations is presented as a proportion of tests with any resistance. ART regimens at time of testing were acquired by linkage to the UKCHIC study.

Results: Between 2008 and 2015, 29,969 resistance tests were conducted in 17,916 individuals; 27,688 Pro/RT tests and 2281 integrase tests. The overall number of tests performed per calendar year has remained stable but the number of integrase tests increased steadily, to 779 per year in 2015. In 2015, 25% of individuals tested for resistance were on a regimen that included an INI, 31% a NNRTI, 63% a PI, and 89% an NRTI. The proportion of tests with one or more mutation to any drug class declined from 39% in 2008–2009 to 33% in 2014–2015 (Table) (P_{TREND}<0.0001). NRTI and PI resistance has declined, NNRTI resistance remained stable, while INI resistance has increased. The five most frequently detected mutations in 2014–2015 were M184V (NRTI) 29%, K103N (NNRTI) 29%, E138A (NNRTI) 16%, TA (NRTI) 13% (decreased from 28% in 2008), and Y181C (NNRTI) 12%.

Year	2008–2009	2010–2011	2012–2013	2014–2015
Number resistance tests, accumulated	6209	6374	5881	5964
% any drug resistance	39	36	35	33
% NRTI resistance	59	50	50	49
% NNRTI resistance	71	73	72	69
% PI resistance	17	12	10	10
% INI resistance	1.6	3.4	6.3	9.3

Conclusion: Major drug resistance mutations were detected in only one-third of resistance tests performed in recent years. INI resistance is beginning to emerge, in parallel with wider use of this class of drug.

P364

Reviewing sexual health clinic attendees who decline HIV testing

S Naylor, A Tomkins and E Morgan
Royal Bolton Hospital, Bolton, UK

Background: The benefits of HIV testing as a strategy to ensure access to prompt treatment in those diagnosed and prevention of onward transmission are clear. Over one million people were tested for HIV in sexual health services in England in 2016. Despite a steady increase in testing and repeat-testing in men who have sex with men (MSM) over the last 5 years, there has been a decline in testing in both Black African heterosexuals and 'other' heterosexuals. Accordingly, we conducted a review in our service to identify characteristics of those individuals refusing HIV testing.

Methods: Using GUMCAD coding, a retrospective case note review was conducted on all clinic attendees who declined HIV testing, attending The Royal Bolton Hospital Sexual Health Service between 1st December 2017 and 15th January 2018. Key demographics, risk factors and documentation of refusal were recorded.

Results: The case notes of 80 sexual health attendees declining HIV testing were included, of whom 41 were male and 39 were female. Median age of male attendees was 33 (range 20–59) and female 30 (range 15–57), of whom 96% were heterosexual. Black African heterosexual attendees accounted for 6% (5/80) of those declining a test. Most frequently documented risk factors for HIV acquisition included either having a current STI (71/80) (of whom 8/80 presented with genital wart recurrence and 5/80 HSV suppression) or a previously diagnosed STI (15/80). Attendees with no previously documented HIV test accounted for 55%, and 40% had documented risk factors for HIV acquisition and no HIV test. No documentation of reason for HIV test refusal occurred in 61.25% of cases.

Conclusion: Findings of the review are consistent with national findings of populations declining HIV testing in sexual health settings. We plan to improve HIV testing uptake through trialling HIV testing as an 'opt out' clinic policy, the results of which are evident with the national antenatal screening programme. Improved documentation of reason for HIV refusal will be ensured through the introduction of mandatory fields in our electronic proformas.

P365

Service evaluation of the management of patients referred to sexual health services following initiation of PEP at a sexual health referral centre

D Payne[1], S Saiyed[1], R Patel[2] and E Foley[2]
[1]University of Southampton, Southampton, UK, [2]Genito-urinary Medicine Department, Royal South Hants Hospital, Southampton, UK

Background: Sexual assault is a crime that can have long-term health impacts on the victim. Victims of sexual assault are encouraged to attend their regional Sexual Assault Referral Centre (SARC) for treatment. If HIV transmission risk factors are identified, they are prescribed post-exposure prophylaxis (PEP). This project is a service evaluation on the compliance of patients with treatment when referred to a genito-urinary medicine (GUM) clinic by a SARC.
Aims: To identify patient engagement with treatment after being referred to GUM by a SARC.
Methods: The SARC referred 28 patients who were prescribed PEP between January 2016 and January 2017. Eleven patients were excluded due to ineligibility. From the remaining patient records, information was documented on a proforma including demographic information, assault details, PEP course and follow up information, dates of STI tests and test results. The information from the proformas was entered into Excel and analysed.
Results: 82% of patients were female and 18% were male. 71% reported one assailant, 18% reported two and in 11% it was unknown. In 35% of patients there was no documentation of condom use discussed in the patient notes. There were no cases of documented condom use. 53% of patients completed the 28-day course of PEP, two patients discontinued PEP and there was no data on completion of PEP for 35%. 100% of males and 43% of females completed PEP. 35% of patients had an HIV test at baseline and a second between 8 and 12 weeks, with no new infections. 35% of patients tested positive after the assault for a sexually transmitted infection, excluding HIV.
Conclusion: Patient notes often did not include sufficient detail about the sexual assault. Several patients did not complete STI and HIV follow up tests, leaving them potentially at risk of an undiagnosed infection. More women are not completing PEP than men. Therefore, GUM clinics should be discussing the risks of not attending follow up tests with patients. Additionally, more efforts should be made to properly document a sexual assault history to ensure patients are properly treated, and further research is needed into patient compliance with PEP post sexual assault.

P366

Sexual health needs of women who have sex with women (WSW) attending an outer London sexual health clinic

R Marchant and A Barbour
Croydon University Hospital, London, UK

Background: 1–2% British adults identify as lesbian, gay or bisexual (LGB). Natsal-3 found up to 8% women reported same-sex experience. LGB experience more depression, anxiety, suicidality and substance misuse. Sexual minorities are 1.5x more likely to report an unfavourable healthcare experience, and a large proportion feel unsafe disclosing their sexuality to healthcare professionals. A UK survey showed 54% unable to disclose their sexuality to their GP and 31% unable to disclose when attending sexual health clinics.
Methods: A retrospective analysis of all WSW attending the sexual health clinic from April 2016 to December 2017. A sample of heterosexual women were matched for age and ethnicity attending during the same period.
Results: 86/5067 (1.7%) unique female attenders identified as WSW: 26 (30%) lesbian, 60 (70%) bisexual. Mean age was 25y, range 14–46 year. Most common ethnicities were: Black Caribbean 35 (41%), Caucasian 30 (35%), Black African 7 (8%). 83 (97%) WSW were screened for infections (STIs) at attendance with 19 (23%) testing positive, compared with 86 (100%) heterosexuals testing with 24 (28%) having an acute STI. 45 (53%) WSW reported an STI ever, 29 (64%) chlamydia, followed by trichomoniasis 14 (31%). 52 (61%) heterosexuals had previous STIs, again chlamydia most prevalent 40 (77%), followed by gonorrhoea 13 (25%). 3.5% WSW had HIV, 2 of whom had contracted it sexually. Mean sexual partner number over the preceding 3 months was similar for heterosexuals (1.13) and lesbians (1.15), whilst bisexual women reported 2.22 partners over the same interval. Of those asked 26% WSW reported current drug use and 46% smoking compared with 11% heterosexual drug use and 28% smoking. 13% WSWs reported chemsex, compared to 1% heterosexuals. 26% WSW reported alcohol excess, compared with 17% heterosexuals. Comparable rates of sexual assault were seen between WSWs (33%) and heterosexuals (29%). WSWs also experienced greater mental health problems, with 48% affected compared to 17% heterosexuals asked.
Conclusion: WSWs are often perceived to be at greatly reduced STI risk and may not readily identify when presenting to services. However WSWs have comparable rates of STIs and sexual assault, and have increased alcohol, tobacco and drug misuse; WSWs also engage in chemsex at increased rates, with potential for adverse sequelae. Policy specifically addressing WSW unmet health needs would redress their health inequalities.

P367

SpeeDx PlexPCR™ – a syphilis, herpes and zoster multiplex PCR for diagnosis of genital ulcer disease

B Vipond, D Longhurst, N Green and P Muir
Public Health England, Bristol, UK

Background: Herpes simplex virus (HSV), Syphilis (Treponema pallidum, TP) and Haemophilus ducreyi (chancroid, HD) are recognised as major aetiological agents of genital ulcers worldwide although in the UK, HD is a relatively rare presentation. Differential clinical diagnosis typically relies on associated painful lesions in HSV while TP ulcers are regarded as painless. However this distinction may be an inaccurate predictor of aetiology. Furthermore, Varicella-zoster virus (VZV) reactivation (herpes zoster) may occasionally involve genital sites with a similar clinical presentation to HSV infection. The availability of multiplex PCR tests for HSV, VZV and TP may be cost-effective for simultaneous diagnosis of genital HSV, VZV and TP infections. In this study, we have evaluated the combined SpeeDx PlexPCR™VHS assay and compared the performance against singleplex Laboratory Developed Tests (LDT) for HSV, VZV and Syphilis.
Methods: A panel of 295 genital swabs submitted for HSV testing, 55 skin swabs submitted for VZV testing and 23 genital swabs submitted for TP testing were anonymised and tested in parallel by the commercial multiplex and LDT singleplex assays.
Results: The SpeeDx PlexPCR™VHS assay sensitivity and specificity was 96% and 99% for HSV-1 (kappa=0.95); 97% and 99% for HSV-2 (kappa=0.95), 100% and 99% for VZV (kappa=0.98) and 100% and 99% for TP (kappa=0.88). The prevalence of HSV-1, HSV-2, VZV and TP in genital ulcer swabs by multiplex PCR was 24%, 21%, 1.7% and 0.7% respectively.
Conclusion: The performance of the SpeeDx PlexPCR™VHS is similar to that of the LDT assays. A multiplex approach is operationally more efficient, and may provide a cost effective screen to support clinical management and contact tracing of cases of genital ulcer disease.

P368

STI incidence among MSM attending sexual health clinics in England: impact of an HIV diagnosis

S Desai, V Delpech and G Hughes
Public Health England, London, UK

Background: Despite a recent decline in HIV diagnoses among men who have sex with men (MSM), over 2200 were diagnosed with HIV in 2016 in England. Previous evidence suggests HIV diagnosed MSM continue to engage in risky sexual behaviours after diagnosis. We calculated STI incidence rates pre and post HIV diagnosis among MSM to inform prevention efforts and modelling work.

Methods: A cohort of MSM newly diagnosed with HIV at sexual health (SH) clinics between 2008 and 2014 were followed over time to determine annual acute STI incidence in the 3 years following HIV diagnosis using cox survival analysis. Annual STI incidence post-HIV was compared to the incidence of STI in the year prior to the HIV diagnosis. Incidence was calculated per 100 person-years (py) with 95% confidence intervals (CI). Multivariable cox regression analyses were performed to identify significant ($p<0.05$) predictors (e.g. demographics) of STI acquisition. Adjusted hazard ratios (aHR) with 95% CI are reported for predictors.
Results: There were 9835 MSM newly diagnosed with HIV between 2008 and 2014. Among those attending a SH clinic in the prior year to their diagnosis, STI incidence was more than 60/100 py. Post-HIV diagnosis, STI incidence significantly declined to 20–50/100 py and remained lower in the subsequent 3 years. STI incidence within a year of HIV diagnosis rose by year of diagnosis from 20/100 py in 2008 to 51/100 py in 2014 and was comparable to incidence 1–2 and 2–3 years after HIV diagnosis. Black African MSM were less likely to acquire a STI than white MSM (aHR: 0.7, 95% CI 0.5–0.9).
Conclusions: The sexual health of MSM newly diagnosed with HIV in England is poor. Despite a reduction in STI incidence immediately after HIV diagnosis, the results highlight on-going risky sexual behaviours in the years following the HIV diagnosis and emphasise the need for frequent STI screening and behavioural interventions among HIV diagnosed MSM.

P369

STIs in HIV-infected women: data from a cohort of women accessing HIV care at Newlands Clinic in Harare, Zimbabwe

M Pascoe[1], A Mandiriri[1], S Lowe[2], T Mudzviti[1], T Shamu[1], C Chimbetete[1] and R Luethy[1]
[1]Newlands Clinic, Harare, Zimbabwe, [2]Parirenyatwa OI Clinic, Harara, Zimbabwe

Background: There is a paucity of data on the co-infection rates of HIV and sexually transmitted infections (STIs) and no local guidelines exist regarding screening for STIs in people living with HIV. This study was conducted to determine the prevalence and associated factors for STI co-infection in a cohort of HIV-infected women.
Methods: This was a cross-sectional study in sexually active, non-pregnant adult women (≥18 years of age) attending for routine annual cervical screening. Socio-demographic, medical, gynaecological and sexual history data was collected. Breast, abdominal, gynaecological and cervical examination was conducted. Endocervical swabs were collected for *Neisseria gonorrhoea* (NG), *Chlamydia trachomatis* (CT) and *Trichomonas vaginalis* (TV) assay using the Cepheid GeneXpert® Instrument System. Serum samples were collected and tested for Herpes Simplex Virus (HSV) type 2 using PreCheck HSV 2 IgG test kits. The seroprevalence of syphilis was determined using a non-treponemal RPR carbon assay and treponemal SD Bioline rapid antibody test. A multiple logistic regression model was used to identify factors associated with a diagnosis of bacterial STIs.
Results: A total of 385 HIV-infected women with a median age of 41 (IQR: 35–47) years were enrolled in the study between January and June 2016. The majority (87%) of the women in this study were asymptomatic for any STI. Laboratory assays showed that 228 (59.2%) had a confirmed positive result for at least one STI, (HSV 2, TV, NG, CT, syphilis). The prevalence of HSV 2 infection was 52.5%, TV 8.1%, CT 2.1%, NG 1.8%, syphilis 7%. Among the 61 (16%) patients with these non-viral STIs, 38 (62.3%) did not have any signs or symptoms. Age >35 years and more than three lifetime sexual partners were significant predictors of a non-viral STI diagnosis.
Conclusions: There was a high prevalence of STIs in a cohort of largely asymptomatic HIV-infected women. Syndromic management of symptomatic genitourinary infections will result in under-diagnosis in asymptomatic patients and this may be associated with significant morbidity and onward HIV transmission. HIV positive women with more than 3 lifetime sexual partners are at high risk of having an STI and should be identified by routine sexual history taking and screened for STIs.

P370

Strongyloides stercoralis infection in HIV-positive men who have sex with men (MSM): a case series of seven patients

S Ross, J Hatcher, O Dosekun, G Cooke and A Bailey
St Mary's Hospital, Imperial College Healthcare NHS Trust, London, UK

Background: *Strongyloides stercoralis* is a helminth endemic to many tropical and subtropical areas. HIV infection is a known risk factor. Infection occurs through skin contact with material contaminated with infected human faeces. Sexual transmission of other gastrointestinal infections has been observed in men who have sex with men (MSM), with HIV infection a risk factor.
Methods: All male HIV positive individuals with a positive isolate for *Strongyloides stercoralis* between November 2013 and November 2016 at a single large NHS Trust were included. A database was created to collect information retrospectively from patient records on demographics, symptoms, laboratory results, STI testing, management and outcome.
Results: Seven cases of strongyloidiasis were identified. All patients had positive serology, with three positive on microscopy (two faeces, one colonic biopsy). Age ranged from 37 to 72 years (median 47). All patients identified as MSM. Six patients (85.7%) were taking antiretroviral therapy. Five patients (71.4%) had an HIV viral load <50 copies/ml. CD4 lymphocyte count ranged from 58 – 1418 cells/μl (mean 621 cells/μl). Two patients (28.6%) were born in an endemic region. Four patients (57.2%) were known to have travelled to an endemic region in the year preceding diagnosis. Four patients (57.2%) were diagnosed with sexually transmitted infections within a year of strongyloidiasis diagnosis. In total there were four diagnoses of syphilis, three of gonorrhoea, two of acute hepatitis C and one of chlamydia. Five patients (71.4%) engaged in chemsex, with four (57.2%) using drugs intravenously . The two patients who denied chemsex were born in an endemic region. Six patients (85.7%) were symptomatic. Most commonly reported symptoms were altered bowel habit (100%) and wheeze (33.3%). Eosinophilia was reported in five patients (71.4%). All patients received ivermectin with one also receiving albendazole. Three patients (50%) reported improvement in symptoms following initial treatment.
Conclusion: Although *Strongyloides stercoralis* is not endemic to the UK many HIV positive individuals have endemic risk from birth or through travel. As a treatable cause of debilitating symptoms strongyloidiasis should be considered in all HIV positive patients reporting altered bowel habit. We describe a cohort of MSM with high rates of concurrent STI and chemsex use. Further study is required to evaluate the burden of sexual transmission in the MSM population.

P371

The acceptability of different modalities of HIV testing amongst men who have sex with men (MSM) in the UK

L Parkes[1], F Burns[2], A Rodger[2], P Weatherburn[3] and C Witzel[3]
[1]Norwich Medical School, Norwich, UK, [2]University College London, UK, [3]London School of Hygiene and Tropical Medicine, UK

Background: Increasing the uptake and frequency of testing amongst men who have sex with men (MSM) is key in reducing the incidence of HIV in this group. Understanding the acceptability of different models of testing for HIV amongst MSM is fundamental in trying to achieving this. We aim to explore the acceptability of different models of testing for HIV amongst MSM in the UK. These models include genitourinary medicine (GUM) clinics, general practitioners (GPs), community testing, HIV self-testing (HIVST) and HIV self-sampling (HIVSS). This is the first research in the UK to include HIV self-testing when exploring the acceptability of different models of testing for HIV amongst MSM.
Methods: Six focus group discussions (FGDs) were conducted with 47 MSM from London, Plymouth and Manchester between July and November 2015. Different modalities of HIV testing were explored including GUM clinics, GPs, community testing, HIVST and HIVSS. Participants discussed the acceptability of each approach. The FGDs were audio recorded, transcribed verbatim and then analysed using a thematic framework approach.
Results: The ways individuals made decisions about testing influenced the acceptability of testing modalities. Modalities that were convenient, easily accessible and offered a high level of privacy and anonymity were preferred. Preference also existed for tests with high perceived accuracy and short window periods (e.g. 4th generation tests). Such tests were believed to be

mainly offered by GUM clinics and GPs. Tests with rapid results were preferred wherever possible. Participants valued having a choice of saliva or blood-based tests, especially for self-led tests (HIVST & HIVSS). Modalities with associated cost and no immediate personal post-test support were seen as problematic. There was also concern that community testing, HIVST and HIVSS neglect STI testing and that there could be sub-optimal linkage to HIV care.
Conclusions: There were a wide variety of complex factors that influenced the acceptability of different models of testing for HIV. Whilst there were some shared narratives surrounding acceptability, often the factors that determined the relative acceptability of different modalities varied amongst individual MSM. This highlights the importance of having a wide range of testing opportunities available for MSM.

P372

The impact of sexual health integration: screening for hepatitis C by country of birth

J Murira and E Page
Leeds Teaching Hospitals Trust, UK

Background: NICE (PH43) recommends screening for hepatitis C virus (HCV) in high-risk populations at sexual health clinics. One at risk group is people born/brought up in a country with a HCV prevalence of >2%. A 2013 audit at a genitourinary medicine (GUM) service indicated low screening rates of 5% which led to clinic specific guidelines and a staff education session. Nationwide integration of sexual health services bringing together family planning and GUM is underway, allowing service users that would primarily just attend family planning services to access GUM. This provides an opportunity to screen a population that may not have been offered screening in the past. Our aim was to determine the rate of screening by country of birth in clinic attendees before and after integration of a sexual health service.
Methods: All attendees seen between April 14 - October 14 (pre-integration), and January 17 - June 17 (post integration) that were born in a country of HCV prevalence of >2% were included (2014 n=1365, 2017 n=2006). This data was linked to whether a HCV serology test had been performed. The rate of screening before and after integration was compared.
Results: Integration increased the number of patients we saw who were born in a country of high HCV prevalence by 47%. However, integration led to a reduction in our screening rate (14% pre-integration vs. 11.8% post integration). After integration if the service user attended for 'GUM services only' the screening rate was 13% compared to a 'family planning services only' attendance of just 0.5%. In total 6 individuals had positive HCV serology during these time periods (3 were HCV RNA+).
Conclusion: Integration of the service more than doubled the numbers of those attending that could be potentially screened for HCV based on their country of birth. However, despite this the screening rate fell. Of those high risk individuals tested the prevalence of RNA+ HCV was 0.7%, therefore it is likely we missed 21 cases of active HCV in the audit period. Major factors identified leading to lack of testing were attendance for family planning services only, clinician knowledge of the countries that should be screened and asking the patient their country of birth. Further education sessions and increase in dual training within the integrated service have been implemented and aim to increase screening rates in the future.

P373

THINK HIV: promoting indicator-based testing in the Clinical Assessment Unit of a large teaching hospital

M McIntyre, E Kinghan, L Abernethy, C McCaughey, E McCarty, C Jackson, S Greenlees and C Johnston
Royal Victoria Hospital, Belfast, N.Ireland

Background: Numbers of new cases of HIV diagnosed per year in in our area continue to rise, in contrast to the successful reduction of diagnoses in London in 2017. In 2016, 47% of new diagnoses were at a late stage (CD4<350). Our local public health agency reported there was no discernible downward trend as has been seen elsewhere in the UK. A review of local late HIV diagnoses, published in 2014, found that the rate was higher compared with the rest of the UK: 59% vs. 42%. Clinical indicator conditions were present in 84.4% patients prior to their diagnosis. 57% had previous investigations for unexplained symptoms and signs that may have been due to undiagnosed HIV infection. Of the 76 patients diagnosed that year, 3 patients died and 31 had prolonged inpatient admission. In order to reduce rates of late diagnosis, guidelines from BHIVA, RCEM and NICE call for testing outside of the GUM setting. They state all physicians should be competent and confident to offer an HIV test.
Methods: THINK HIV was conceived as a quality improvement project aimed at decreasing rates of late diagnosis by increasing appropriate HIV testing in acute settings. The team included one Emergency Medicine and two Gentito-urinary medicine (GUM) doctors, two health advisors, one GUM nurse and one virologist. The project ran from May 2017 to November 2017 within the Clinical Assessment Unit. Initial anonymous staff surveying was carried out to identify barriers to testing and general staff attitudes. The project then delivered three tailored 1-h interactive educational workshops to address educational need, barriers to testing and misconceptions around HIV. These were coupled with the development of an inter-departmental HIV testing pathway. Triggers to encourage testing were developed and used within the department, including a clinical and demographic indicators card, weekly run chart displaying outcomes and posters highlighting the project. We measured the weekly number of HIV tests sent from the department.
Results: The project resulted in a slow but definite increase in HIV testing, from a baseline of one test per week to a peak of 15. In six months of the project, 2 patients were newly diagnosed with HIV from a total of 44 tests. No new diagnoses had been made in this unit in the preceding 2 years. Conclusion
Undiagnosed HIV positive patients are presenting with clinical and demographic indicators to our ED department. HIV testing of these patients is necessary and feasible, but barriers to testing exist both on the clinician and health system side. The THINK HIV approach is a successful strategy for empowering ED staff to offer a HIV test. Regional roll-out should be urgently considered to address rising late dingosis rates.

P374

To evaluate the uptake of pre-exposure prophylaxis against HIV (PrEP) in our sexual health service

A Currie
Lanarkshire Sexual Health, Lanarkshire, UK

Background: Pre-exposure prophylaxis (PrEP) against HIV has been shown in some studies to help reduce the chance of acquiring HIV through sexual transmission. In Scotland, in July 2017, PrEP in the form of Tenofovir and Emtricitabine (TDF/FTC) started to be dispensed free on the NHS from sexual health clinics to patients deemed to be at high risk of HIV acquisition. However, there are strict criteria which patients need to meet in order to get PrEP free.
Methods: We undertook a retrospective case note review of men who have sex with men (MSM) who had presented requesting PrEP between 3rd July 2017 and 14th January 2018.
Results: 42 MSM attended requesting PrEP during the time period. (Age ranges 15–64). Of these, 35 met the NHS eligibility criteria to commence PrEP free. The most common eligibility reason was having had 'unprotected anal sex with 2 or more people within the past 12 months and likely to do so again in the next 3 months.' Only 32 patients actually commenced PrEP as 2 patients never re-attended and 1 was unable to start it due to renal dysfunction. 2 stopped taking it within the first 4 weeks. 1 patient had to stop TDF/FTC due to a skin rash. 8 patients did not meet the NHS eligibility criteria and none of these have decided to purchase it online, so far.
Of the 32 patients who commenced TDF/FTC only 2 did not give consent for their GP to be informed by letter that they had commenced PrEP. Only 2 patients (6%) have been diagnosed with an STI since commencing PrEP.
Conclusion: Most men attending our service for PrEP are eligible for it free on the NHS in Scotland and the majority are happy for their GP to know they are on it. Only 1 patient in our cohort has had to stop it due to a serious side effect. So far, there are no signs that PrEP has led to a large increase in STIs but it may be too early to tell.

P375

Trichomonas vaginalis (TV) nucleic acid amplification testing (NAAT) pilot in an integrated southeast London sexual health clinic

B Vonau, S Mitchell, P Wharton and E Mabonga
Lewisham and Greenwich NHS Trust, London, London

Background: Microscopy for TV has a sensitivity of 45 to 60% in women and lower in men. Thus a negative result should be interpreted with caution. Due to their high sensitivity BASHH guidance states NAATs should be the test of choice where resources allow. Current standard in our service is microscopy at point of care, or through Microbiology by high vaginal swab. Patients attending peripheral clinics requiring microscopy have to travel to the level 3 clinic with some patients not travelling. This pilot study was carried out to evaluate TV NAAT for additional diagnostic value overall and specifically in peripheral clinics.
Methods: The pilot was carried out from 08/05/2017 to 06/06/2017 across the service consisting of one level 3 clinic and three level 2 peripheral integrated SRH clinics. Eligible patients were black African or Caribbean men and women or those who identify a partner in those groups, patients with recurrent discharge within a month of initial presentation, dysuria, urethritis and those having microscopy (symptomatic or asymptomatic), using the same sample (urine or Low Vaginal Swab) as used for chlamydia/gonorrhoea NAAT. Data were collected for microscopy carried out and whether positive, ethnicity and which service the patient attended.
Results: Of 637 samples 45 were positive. 42 were female and 3 were male (2 contact of TV, one had NGU with Chlamydia). The age range was 17 to 49. 15 patients attended peripheral clinics of which 3 symptomatic patients declined to travel for microscopy. 19 patients overall were symptomatic (one was male with NGU and chlamydia). 6 were female patients who had no microscopy (3 at peripheral clinics: one UTI symptoms only, 1 had mild non-offensive discharge, 1 was treated as a contact of gonorrhea and Chlamydia). Microscopy was carried out in 13 female patients and this was positive in 9. Table 1 Demographics and Ethnicity

	No. Positive TV
Female	42
African/Black African/White and Black African	8
Black Caribbean/Caribbean/White and Black Caribbean	22
White British/Irish/Other White	5
Pakistani/Asian-White	2
British/Mixed British	3
Other Black	1
Mixed	1
Male	3
African	1
Caribbean/Black Caribbean	2

Conclusion: Without NAAT 35 out of 45 positive TV results would have been missed. TV NAAT is a valuable test especially for sites without access to microscopy. The additional cost per test is £ 3.39. A business case development to introduce TV NAAT testing as standard clinical care for our service is currently under way.

P376

Understanding why patients decline HIV testing in primary care

J Scrivener[1], T Gonah[1], D Richardson[2] and I Gando[1]
[1]Brighton Station Health Centre, Brighton, UK, [2]Brighton and Sussex University Hospitals NHS Trust, Brighton, UK

Background: Uptake of HIV testing is thought to be one of the key factors in reducing incident HIV infection and avoiding negative sequelae of late diagnosis. An estimated 13,500 people are living with undiagnosed HIV in the UK. Sexual health clinics provide an ideal opportunity to offer confidential HIV testing, however, patients still decline tests. A Key Performance Indicator for this enhanced level 2 clinic is that HIV testing should be offered to all patients attending for screening, with a goal of 70% heterosexual patients and 90% Men who have sex with men (MSM) accepting a test. The screening template requires that clinicians give a reason for patients declining HIV tests.
Method: An audit of 200 patient notes was undertaken from randomly selected dates between August and November 2017. Patients attending a follow up appointment or for contraception only were excluded. Data was analysed looking at age, identified gender, sexuality and uptake of HIV testing. The reason for declining an HIV test was recorded where given.
Results: Of 200 patients, 141 (70.5%) accepted an HIV test. 81.6% (27/33) of previously HIV negative MSM patients accepted a test. Reasons for declining included: Pt self-assessed as low risk 15/59 (25%) 1 of whom was MSM having UPSI with a regular partner. Needlephobic (6.7%), Within Window Period (16.9%), Tested recently elsewhere (15.2%). 5 patients (8.4%) were already HIV positive. No reason was recorded for 13 (22%).
Conclusion: Although HIV testing uptake is good, more could be done to discuss risk factors with patients and encourage those in lower-risk groups to test. Patients within the WP should be offered an opportunistic test while in clinic and then booked a repeat test after the window period has passed.

P377

Variation in HIV service use by comorbidity, co-infection and persistent viraemia

P Kirwan, M Kall, C Chau, A Brown and V Delpech
Public Health England, London, UK

Background: As people with HIV are living longer, an increasing number may experience complex health issues, impacting upon HIV service use. Using national HIV cohort data we examine attendance patterns of patients with co-morbidity, co-infection and persistent viraemia accessing HIV care in England.
Methods: We used quarterly attendance-based data on adults (aged 15+) attending a specialist HIV clinic in 2016. Clinics submitting all 4 quarters (167/183; 91%) of data were included and attendances linked across quarters. Consultation frequency was analysed using multivariable regression to compare patients with and without key co-infections (on tuberculosis treatment, acute hepatitis B/C); co-morbidities (current AIDS-defining illness, on treatment for chronic viral liver disease, on cancer treatment, HIV-associated end organ disease and under psychiatric care) and persistent viraemia (>2 viral loads ≥200 copies/ml after >6 months on ART).
Results: An eligible cohort of 65,109 adults was analysed, comprising 214,792 face-to-face, 13,502 telephone and 1263 electronic consultations. A total of 10,027 (15%) adults had ≥1 co-morbidity (6761, 10%), co-infection (4958, 8%) and/or persistent viraemia (811, 1%). The median number of annual consultations was 3 (IQR [2–4]). This was elevated among people with persistent viraemia (5 [3–7]), acute hepatitis C (4 [2–6]) and on tuberculosis treatment (4 [2–6]) but not for other co-morbidities or co-infections.
In multivariable regression, consultation frequency was significantly increased for patients with: acute hepatitis C (β=0.4, 95% CI [0.3, 0.5], $p<0.001$) (β refers to the change in consultations for a given characteristic i.e. β of 0.4 means an increase of 0.4 consultations), persistent viraemia (β=0.4, [0.2, 0.6], $p<0.001$), on tuberculosis treatment (β=0.4, [0.2, 0.5], $p<0.001$), an AIDS-defining illness (β=0.2, [0.2, 0.3], $p<0.001$), on viral liver disease treatment (β=0.2, [0.1, 0.3], $p<0.005$) and end organ disease (β=0.1, [0.1, 0.2], $p<0.001$). Acute hepatitis B, cancer treatment and psychiatric care were not associated with additional consultations.
Conclusions: People with specific co-infections and co-morbidities attend more frequently for HIV care, indicating at least partial management within the HIV clinic. While persistent viremia and AIDS illness are expected to be managed by the HIV clinic, further investigation is needed to understand how caring for patients with complex clinical needs impacts the HIV service.

P378

West Midlands 2017 regional BASHH audit on HIV testing

L Goodall[1], K Fernando[1] and S Bhaduri[2]
[1]Staffordshire and Stoke-on-Trent Partnership NHS Trust, Stoke-on-Trent, UK, [2]Worcestershire Health and Care Trust, Redditch, UK

Background: Individuals promptly diagnosed with HIV, with effective care, can expect a normal or near-normal life expectancy. Data from PHE, however,

reveal that in 2016, 42% of adults diagnosed with HIV in England were diagnosed late. The West Midlands has a particularly diverse population, and contains three cities which have a high HIV population prevalence of 2.67, 2.97 and 3.2 per 1000 population.

Methods: GUM services in the West Midlands were requested to complete a one-off survey on general clinic policy for HIV testing; followed by a retrospective survey-monkey based case notes questionnaire of 50 individuals seen in 2016.

Results: 16 GUM services took part. 85% of services confirmed that they offer HIV testing to all new/rebook patients, and all recommend repeat testing to cover the window period. Reported frequency of HIV testing in MSM varied from 3 to 12 monthly, or with each new sexual exposure. HIV point of care testing (POCT) was reported as being available in 72% of services, but offered according to specific criteria.

Regionally, 573 cases were reviewed. 55% were male and 45% female; 78% were heterosexual. HIV testing was offered in 92% of individuals, and uptake was 68%. 41% presented within the window period, and of this group there was a plan for active recall for repeat testing in 34%. Recall was successful in 44%.

Conclusions: As many services in the West Midlands now operate as integrated sexual health clinics, we recognise limitations in the interpretation of our results with regards to patients attending solely for contraception reasons, and associated lack of consistency in activity coding for HIV testing. Challenges posed by differing electronic patient record systems are also noted in this respect.

Offer of HIV testing was high but uptake poor. There was also a lack of consistency of frequency of testing in MSM. Documentation on window period testing was sub-optimal, and efforts for active recall for testing often unsuccessful. Availability of POCT across the region is lacking.

Effective discussions are required at departmental and regional levels, involving local commissioners to ensure optimal utilisation of resources and strategic planning. As a region, we must work with general practices and secondary care to ensure HIV testing in line with NICE recommendations. Optimising HIV testing in the region and in the UK is vital in tackling the epidemic and achieving the UNAIDS 90:90:90 ambition.

P379

Where are people diagnosed with HIV? Ten year national trends in England, Wales and Northern Ireland

S Croxford[1], Z Yin[1], M Kall[1], F Burns[2], R Simmons[1], A Copas[2], G Ireland[1], P Kirwan[1], C Chau[1] and V Delpech[1]

[1]Public Health England, London, UK, [2]University College London, UK

Background: Timely diagnosis of HIV is of major public health importance, ensuring the full benefit of treatment, and minimising the risk of onward transmission. In an effort to reduce the number of people undiagnosed and the proportion diagnosed late in the UK (UK) there has been a shift in HIV testing strategies over the past ten years. In these analyses, we explore national trends in HIV diagnosis settings and identify factors associated with a diagnosis outside of traditional sexual health and HIV testing services.

Methods: Analyses of national HIV surveillance data were restricted to adults (aged ≥15 years) diagnosed between 2005 and 2014 in England, Wales and Northern Ireland. Trends in diagnosis setting were examined overall and by key risk group. Logistic regression was used to identify factors associated with diagnosis outside a sexual health clinic (SHC) from 2011 to 2014.

Results: Between 2005 and 2014, 63,599 adults were diagnosed with HIV (range: 5712–7398 diagnoses per year). Where diagnosis setting was reported (83%; 52,923), most diagnoses were made in SHCs (69%) followed by: medical admissions/accident and emergency (A&E) (8.6%), general practice (6.4%), antenatal services (5.5%), outpatient services (3.6%), infectious disease units (2.7%) and other settings (4.0%). The proportion of diagnoses made outside of SHCs increased from 2005 to 2014, overall (27–32%) and among MSM (14–21%) and black African men (25–37%) and women (39–52%) (all trend $p<0.001$). Median CD4 also increased across all settings but was highest in SHCs (384 cells/mm^3) and lowest in medical admissions/A&E (94 cells/mm^3). People diagnosed outside an SHC were more likely to have: acquired HIV through heterosexual contact (adjOR: 1.98; 95% CI: 1.80–2.17) or injecting drug use (adjOR: 3.32; 95% CI: 2.60–4.24), been diagnosed late (<350 cells/mm^3) (adjOR: 2.54; 95% CI: 2.36–2.74) and be of older age at diagnosis.

Conclusions: HIV diagnoses made outside of SHCs have increased over the past decade in line with evolving HIV testing guidelines. However, late diagnosis among this group is still high, indicating further expansion of testing is necessary since many people may have missed opportunities for earlier diagnosis.

P380

Who are we finding, and how are we doing? Meeting BHIVA 'new HIV diagnosis' assessment guidelines; a community clinic experience

L Seppings, M Hamill and E Dwyer

Berkshire Healthcare NHS Foundation Trust, East Berkshire, UK

Background: The 2016 British HIV Association (BHIVA) guideline has extensive advice on assessment and investigation of patients newly diagnosed with HIV. We audited assessment of 50 recently diagnosed patients (7/2015–4/2017) against this guideline.

Methods: Retrospective review of paper/electronic records.

Results: n=50. 76% were male; 60% were men who have sex with men (MSM). All male and 92% female infected sexually (1 case of iatrogenic transmission). There was no reported injection drug use.

Age range=18–73 years (median=39). 32% UK-born and 16 other birth countries represented. 20% were Eastern European, and 28% Sub-Saharan African.

29 referred from allied sexual health service, 10 local inpatient diagnoses, 9 from primary care. Baseline CD4 count median=285. 30/50 CD4≤350 and 12/50 CD4≤100, indicating high levels of late HIV diagnosis. Antiretroviral resistance testing was carried out in all patients, and 12% had transmitted drug resistance.

34% had comorbidities, including 5/50 psychiatric diagnoses.

56% had documentation of physical examination. This is concerning in view of the number of late diagnoses. 90% had medical and drug histories documented. There were no FRAX and 6% QRISK assessments. Domestic abuse and lifetime travel were documented in 16% and 8% respectively.

Table 1 Adherence to laboratory components of BHIVA guideline.

BHIVA recommendation completed	Yes	No
HIV confirmation	100%	0
Viral load	98%	2%
CD4 count	100%	0
HLA B5701	64%	36%
CCR5	0	100%
Hepatitis A	56%	44%
Hepatitis B	96%	4%
Hepatitis C	96%	4%
STI screen	94%	6%
FBC/renal	96%	4%
Urinalysis/UPCR	78%	22%
Cervical smear (women)	42%	42% (n/a 16%)
TB IGRA	50%	50%
Parasite testing	2%	98%

Conclusion:

- Our audit revealed a higher than expected proportion of non-UK-born cases and a majority of late diagnoses, indicating the need for expanded and proactive local testing.
- Our clinic met many BHIVA standards.
- Areas for improvement include: physical examination and aspects of the social/mental health history.
- Improved travel histories should increase TB/parasite screening.
- This review is limited by missing documentation, which may represent the patient response being negative/deemed normal.
- We anticipate improvement with the introduction of a new electronic proforma.

Viral and protozoal sexually transmitted infections

P381

A case series–successful treatment of persistent *Trichomonas vaginalis* with paromomycin

R Thomas, C Estcourt and R Metcalfe
Sandyford Service, Glasgow, UK

Summary: We describe two clinical cases of persistent trichomonas vaginalis (TV) infection in Caucasian women attending the same sexual health service requiring alternative treatment from the recommended current national guidelines. We report successful eradication of TV with intravaginal paromomycin in a case of true metronidazole allergy and a case non-responsive to oral metronidazole regimens.
Background: TV usually responds well to metronidazole or tinidazole treatment. The British Association of Sexual Health and HIV suggest an alternative treatment list for TV. Paromomycin is one of these recommended treatments, but is not licensed for this use. It has been successfully used in a small number of case reports.
Case 1: A 27-year old female with a 4-week history of vaginal discharge and severe vulval pruritis previously managed by her GP. She had a history of oral metronidazole anaphylaxis resulting in hospital admission. Metronidazole desensitisation was considered, but was not a viable option due to medical staffing shortages. Day 42 from first presentation, she was commenced on a trial of unlicensed paromomycin 6.25% intravaginal pessaries for 14 days twice daily. She tolerated 8 days of treatment only. She returned on day 76, and vaginal wet mount microscopy and culture in trichomoniasis medium were negative for TV.
Case 2: A 23-year-old female with a 4-week history of green malodorous vaginal discharge and vulval pruritis. Previously treated in the community with oral metronidazole, and re-treated with oral metronidazole on two further occasions at our sexual health service without success. Day 29 after first presentation her wet mount microscopy and TV culture were both positive. As testing for metronidazole resistance is not available in the UK, we decided to treat as a possible metronidazole resistant TV with tinidazole. Unfortunately, there was a drug supply issue for oral tinidazole. Given our previous successful experience with intravaginal paromomycin in treating case 1, she was given a 14-day course of 6.25% paromomycin intravaginal pessaries, and managed to complete 14 days. Day 117, the test of cure was negative for TV on wet mount microscopy and trichomonas medium.
Conclusion: Both cases illustrate successful eradication of TV using unlicensed paromomycin. We feel this supports the use of paromomycin in clinical cases of TV with limited treatment options.

P382

Genital herpes in pregnancy: how does the management in a community integrated sexual health clinic differ from national guidance, and is there room for improvement?

A Gill and K Fernando
Cobridge Community Health Centre, SSOTP NHS Trust, Stoke-on-Trent, UK

Background: Genital herpes simplex virus (HSV) in pregnancy is an important source of neonatal and maternal morbidity, and the consequences of an untreated primary presentation in the third trimester can be catastrophic. HIV/HSV co-infection in pregnancy can facilitate transmission of HIV therefore optimal management in this cohort of patients is also imperative. With fragmentation of services threatening multi-disciplinary functioning, we sought to evaluate local practice to determine whether women are receiving standardised care.
Methods: A retrospective case notes review of all females coded as C10A/B and/or PR1/2/3 from January 2014-October 2017 was carried out and audited against the joint BASHH/RCOG guidance published in 2014.
Results: 55 females were identified, of which 11/55(20%) were clinically primary presentations. 11/11(100%) of these were confirmed via HSV PCR swab, with simultaneous type-specific antibody testing in 2/11(18%) cases. 5/11(45%) cases presented in the third trimester. In 5/5(100%) cases, the need to inform the obstetricians regarding mode of delivery was documented, with method of communication variable. 2/5(40%) cases had a letter dictated to the obstetrics team with the remainder discussing with the patient and asking them to inform the midwife directly. Window period testing for HIV/syphilis was carried out in 3/55(5%) of cases. 19/55(35%) received written information regarding HSV in pregnancy. 1/55(2%) had HIV/HSV co-infection and presented in the third trimester with presumed primary presentation. Subsequent serotyping confirmed recurrence.
Conclusion: Type-specific antibody testing has a role, particularly in primary presentation in the third trimester, and is underutilised locally. Recognising dual pathology can co-exist, window period testing for syphilis and HIV should be offered in all cases.
Cross-site working is becoming the norm, and despite fragmentation of sexual health/HIV services as a result of financial constraints and commissioning intentions, we must ensure that multi-disciplinary working remains paramount. We recognise there is a need for robust communication between sexual health and antenatal services regarding management of this cohort. Ensuring letters are dictated to the antenatal team in all presentations, as well considering the role of a health advisor as an antenatal team liaison would facilitate two-way communication. To solidify links between both teams a dedicated obstetric infection lead is essential.

P383

Rising recalcitrant *Trichomonas vaginalis*; artefact or accurate?

R Scott, J Ashby and E Jungmann
Central and North West London NHS Foundation trust, London, UK

Background: Increased diagnoses of Trichomonas Vaginalis (TV) in our services, after the change from culture to Nucleic Acid Amplification Tests (NAATs) for the diagnosis of TV and the merger of local services, raised concerns of a possible increase of recalcitrant TV. TV positivity rates were compared after TV NAAT replaced TV culture within our service, with the aim to quantify and review the management of recalcitrant TV.
Methods: Patients diagnosed with TV within our inner city services between September-November 2016 and 2017 respectively were identified using national coding and local laboratory data. Case notes were reviewed of those with subsequent positive TV result/s following treatment (either positive microscopy 1 week after treatment, culture 2 weeks after treatment, or NAAT 3 weeks after treatment). Cases were excluded if NAAT samples were repeated within 3 weeks of treatment, or if reinfection and/or non-adherence were identified. Recalcitrant TV was defined as persistent infection after two episodes of treatment in the absence of re-infection and non-adherence.
Results: In 2016 there were 36 cases of TV identified by culture out of 2193 tests, of which none were recalcitrant. In 2017 there were 118 cases of TV identified by NAAT out of 2646 tests, of which six met the criteria for recalcitrant TV. First line metronidazole dosing choice was not a significant predictor of subsequent need for retreatment (Chi-squared 0.68, $p=0.4$). Four out of six recalcitrant cases cleared TV following varying dosages of tinadazole treatment. The positivity rate between 2016 culture and 2017 NAAT increased from 1.45% to 5.13% respectively, which was statistically significant on Chi-squared analysis at 48.47 ($p<0.0001$).
Conclusion: The significant increase in TV positivity rate is likely to reflect use of more sensitive diagnostic tools after the introduction of TV NAATs and expanded geographical area of service provision. The percentage of recalcitrant cases is small, but the trend appears to be increasing (0% in 2016 and 5% in 2017). We recommend introduction of enhanced monitoring and reporting of recalcitrant TV to ascertain the national picture and identify strategies to reduce treatment failure. The development of readily available laboratory tools to identify metronidazole resistance is urgently needed.

P384: Abstract withdrawn

P385

TV NAAT testing: NAAT seen in asymptomatic patients

R Thomson-Glover and A Neeson
East Cheshire NHS Trust, Chester, UK

Background: British Association for Sexual Health and HIV (BASHH) recommends testing for Trichomonas vaginalis (TV) in symptomatic women, TV contacts in men and considered in those with persistent urethritis. TV can occur in asymptomatic men and women. Nucleic acid amplification tests

(NAATs) offer the highest sensitivity for the detection of TV and were introduced to our sexual health clinic (SHC) in Feb 2016. Audits were carried out looking at the usage of TV NAATs since its introduction to clinic and results reviewed and compared.
Methods: Retrospective case note reviews of all patients having a TV NAAT was carried out. Information was collected on demographics, presentation and investigations. In the initial audit, 2016, data was collected over a 9 month period whilst in 2017 data was collected over a 1 year period.
Results: Since the introduction of TV NAATs their use has increased with 37 tests carried out in the first year compared to 84 in 2017. The majority of patients being tested continue to be women: 25/37 (68%) in 2016, 64/84 (76%) in 2017, as well as symptomatic: 26/34 (70%) in 2016, 60/84 (71%) in 2017. TV was detected in 2 symptomatic patients in 2016 and 1 symptomatic patient in 2017 (vulvovaginal sample from Caribbean patient, male partner TV NAAT: neg) on both wet mount microscopy and NAAT test. Nursing staff are increasingly using the test: 8/37 (22%) in 2016 compared to 41/84 (49%) in 2017. In 2017 wet mount microscopy was not carried out alongside NAAT testing in 26/60 (43%) of symptomatic patients.
Conclusion: Clinical staff are increasing confident using TV NAATs and use them when onsite microscopy is not available. In our cohort TV remains very low prevalence with no positive TV NAAT diagnoses found on asymptomatic patients.

P386

What are patient experiences of herpes simplex virus (HSV) health promotion?

V Manns[1], M Grundy-Bowers[1] and M Duso[2]
[1]Imperial College Healthcare NHS Trust, London, UK, [2]King's College London, UK

Background: In 2015 WHO stated over half a billion people have been diagnosed with HSV-1 and HSV-2. HSV is highly infectious and incurable. The diagnosis of genital herpes can cause distress. National, Local guidelines provide guidance on the information that needs to be cover in HSV health promotion. There has been limited research undertaken to explore patient's experience of HSV. The aim of this research is to explore the patient's experience of HSV health promotion. Including to:

- Explore patients' needs following diagnosis of HSV
- Explore what health promotion interventions were received, if acceptable, beneficial and had any potential unintended effects that can help develop future interventions.
- Explore patients perceived impact of health promotion on their diagnosis

Methods: A qualitative approach of Interpretative Phenomenology Analysis (IPA) was used. Seven participants were recruited from a London sexual health clinic. A semi-structured interview format was used. Interviews were audio-recorded and transcribed Verbatim. IPA thematic analysis was used to identify themes.
Findings: One male and six female participants were interviewed, with an age range of 20–87 years, and a history of HSV lasting between 3 weeks to 3 years. From the data analysis three super-ordinal themes were identified, namely: (i) Impact of Herpes, (ii) Healthcare Professional's Values and Skills, (iii) Patient Needs for Health Promotion.
HSV had a wide range impact on patient's lives. Patients valued if healthcare professional were empathetic and non-judgemental. Consistency and uniformity in health promotion information was an identified need. Additionally patients would like direction to credible sources including written and internet based. Patients discussed how support groups and patient experiences would help to humanise a HSV diagnosis. Majority of participants felt that more HSV health promotion to general public is need to increase knowledge and awareness whilst helping to tackle the stigma associated with HSV.
Conclusion: HSV can impact on a person in a multitude of ways. Health promotion delivered by empathetic non-judgemental and knowledgeable health professionals can make a positive impact on this patient group. Helping patients to access good quality additional sources e.g. websites, leaflets, support groups could improve their experience of health promotion.

Viral hepatitis and co-infection

P387

Acute hepatitis C infection in HIV-positive men: which treatment pathways are being selected in 2017?

C Sood[1], C Jones[2], E Thompson[3], G Cooke[2] and L Garvey[1]
[1]St Mary's Hospital, London, UK, [2]Imperial College London, UK, [3]MRC University of Glasgow, Centre of virus research, Glasgow, UK

Background: Episodes of acute hepatitis C (HCV) infection continue to be reported in UK HIV cohorts. Current treatment options in early infection include pegylated interferon and ribavirin (PEG IFN/RBV) or awaiting oral direct acting antivirals (DAAs). DAAs are not currently commissioned by NHS England (NHSE) until 6 months has elapsed from HCV diagnosis.
Methods: A retrospective cohort analysis of all patients diagnosed with acute HCV between 01.12.15 and 01.12.17 was performed. HIV-positive individuals were diagnosed with acute HCV if they tested HCV Ab and/or RNA positive with a previous negative test within 6 months. Demographic and clinical data were reviewed and analysed. Treatment pathway selected and HCV virological outcome at the end of the study period was recorded.
Results: 23 individuals were diagnosed with 25 episodes of acute HCV during the 2-year study period. 3 (13%) were HCV reinfections: 2 reinfections were within the study time-frame. Mean age was 44 years (range 34 to 55). Individuals were exclusively male (100%), MSM (100%) and use of chem-sex drugs (crystal meth/GHB/GBL/mephedrone) was reported in 18 (78%) of subjects. All subjects received harm-reduction advice and were offered support for partner notification procedures. HCV genotype distribution was G1a: 15 (60%), G1b:1 (4%), G3a: 2 (8%), G4: 7 (28%). Peak mean alanine aminotransferase (ALT) was 776 (range 37–2909) IU/ml. Two subjects were hospitalised for supportive measures.
Of 25 acute HCV episodes, 5 (20%) had spontaneous clearance and 13 (52%) achieved SVR-12 (self-funded generic DAAs (16%), PEG IFN/RBV (4%), NHSE DAAs after 6 months elapsed (28%), clinical trial (4%)). At the end of the study period 7 (28%) subjects are awaiting NHSE DAA treatment and remain viraemic.
Conclusion: Despite the increasing coverage of HCV DAA treatments across the UK, new episodes of acute HCV continue to present, suggesting the epidemic of sexually-transmissible HCV is ongoing. In the absence of funded oral treatment options in acute infection, patients have begun selecting self-funded generic medication as their HCV treatment pathway. Timely and effective therapies for this high-risk patient cohort are required.

P388

Evaluating hepatitis C core antigen as a screening test in populations at high risk of hepatitis C virus (HCV) infection

N Vora[1], C Houlihan[2], E Nastouli[3], R Gilson[4], D Nugent[4], I Ghosh[1] and L Waters[1]
[1]Mortimer Market Centre, CNWL NHS Foundation Trust, London, UK, [2]Virology, UCLH NHS Foundation Trust, London, UK, [3]Institute of Child Health, University College London, UK, [4]Institute of Global Health, University College London, UK

Background: Screening high-risk populations for HCV using antibody (anti-HCV) does not discriminate between active and resolved infections. The test may be negative in early infection and seroconversion prolonged further in HIV co-infection. Use of HCV RNA for screening is expensive. HCV core antigen (HCVAg) has been validated for screening in HIV negative patients, such as haemodialysis patients. We evaluated the use of Architect HCV Ag Assay (Abbott Diagnostics) in HIV positive and negative patients.
Methods: HCVAg testing was introduced in May 2015 at our centre for those HIV positive patients who reported recent HCV risk (previous 6 months) and for annual screening. During the 9 month evaluation phase, both HCVAg and HCV RNA were tested to determine the sensitivity and specificity of HCVAg relative to RNA as gold standard. Following the evaluation phase, HCVAg was introduced into local protocols for screening all high-risk individuals, including HIV negative. Anti-HCV tests were performed on HCVAg and/or RNA positive samples to determine the number of HCV diagnoses that would have been missed if only anti-HCV was used to screen.
Results: 399 samples had both HCV Ag and RNA tests; 308 were from HIV positive patients.

	Overall			HIV pos		
	Positive RNA	Negative RNA	Total	Positive RNA	Negative RNA	Total
Positive Ag	181	84	265	141	64	205
Negative Ag	7	127	134	5	98	103
Total	188	211	399	146	162	308

HCVAg sensitivity was 96.3% (95% CI 92.5%–98.5%), specificity 60.2% (53.2–66.9) with positive (PPV) and negative predictive values (NPV) of 68.3% and 94.8% respectively overall. Sensitivity was 96.6% (92.2–98.9) specificity 60.5% (52.5–68.1), PPV 68.8% and NPV 95.2% in the HIV-infected cohort. Sensitivity and specificity was unaffected by HIV status (p=0.65).
Of the 141 true positive HIV co-infected cases, 69 were acute hepatitis cases identified during asymptomatic screening. Of these, 42 had anti-HCV testing on initial diagnosis samples; 26 were anti-HCV positive (of which 7 were reinfections) whilst 16 were anti-HCV negative so would have been missed by anti-HCV screening alone. There were no false negative HCVAg results in the reinfection cases.
Conclusion: HCVAg or RNA screening leads to earlier diagnosis of acute hepatitis C in high risk patients. The specificity of HCVAg was lower than published (98.8% in one meta-analysis), but false positives were identified by HCV RNA testing of all HCVAg positive samples. NPV remains high including within our HIV positive at risk cohort and HCVAg was also able to correctly identify our small number of reinfections.

BHIVA Research Award Winner 2015, Nina Vora

P389

Characteristics and audit of the management of all new hepatitis C diagnoses made in a level 3 genitourinary medicine clinic over the last 5 years

R Tunney and C Saxon
Manchester University Hospital NHS Foundation Trust, UK

Background: Screening for hepatitis C (HCV) infection is recommended for all at risk patients attending level 3 genitourinary medicine (GUM) clinics in the UK. We reviewed the characteristics of all new HCV diagnoses from the last 5 years and audited management against the BASHH hepatitis guidelines.
Methods: All new diagnoses of HCV (acute, chronic or past resolved) between 03/2012 and 03/2017 were identified and case notes reviewed. Demographics, risk factors, HIV status, and details of management were recorded.
Results: During the study period 35 diagnoses of HCV were made with peak incidence in 2014 (14 cases). Median age was 41 years (20–77 years), 25 (71%) male, 16/25 (64%) men who have sex with men (MSM) and 27 (77%) white British. Potential risk factors for HCV included 8 (23%) MSM intravenous drug users (IVDU), 8 (23%) MSM non-IVDU, 6 (17%) heterosexual IVDU and 13 (37%) other (e.g. tattoo (4), contact of HCV (3)). There were 12 (34%) diagnoses of acute HCV (all MSM: 7 IVDU, 5 non-IVDU), 14 (40%) chronic HCV and 8 (23%) past resolved infections. One case was found to be a false positive HCV antibody on further testing. 11 (31%) patients were already known HIV positive, 23 (66%) tested HIV negative and 1 declined HIV testing.
For acute HCV 5/12 (42%) had clear documentation of notification to Public Health England and all patients had bloods tests taken for liver function. 34 (97%) patients were screened for hepatitis A (HAV) and 5/6 (83%) patients found to be susceptible were vaccinated, the remainder were immune. All patients were screened for hepatitis B (HBV), 10/13 (77%) of susceptible patients were vaccinated with 7/13 (54%) completing the full course.
Post test counselling was documented for the following: 29 (83%) partner notification (12/12 for acute HCV), 28 (80%) safe sex, 24 (69%) transmission advice, 17 (49%) alcohol and 9 (26%) leaflet provided.
Of those with acute or chronic HCV 25/26 (96%) were referred to specialists for further management, the remaining patient was monitored in HIV clinic and self-cleared.
Conclusion: We achieved the HCV auditable outcomes for HAV/HBV screening, onward referral to a specialist, and liver function testing (acute HCV). Documentation of written information provided was well below the recommended target (>95%) and post test counselling also requires improvement. Implementation of a checklist for HCV management is planned alongside a move to electronic records to improve these areas in our department.

P390

Clinical monitoring review of a unique case series of adults with perinatally acquired HIV and hepatitis B or C co-infection

I Mallik[1], S Ayres[2], S Fidler[2] and C Foster[2]
[1]Imperial College London, UK, [2]Imperial College Healthcare NHS Trust, London, UK

Background: There is an increased risk of hepatocellular carcinoma (HCC) in adults co-infected with HIV and Hepatitis B or C virus (HBV, HCV), but minimal data for those perinatally infected (PaHIV). A fatal HCC despite suppressive antiretroviral therapy (ART) in a PaHIV/HBV co-infected adolescent prompted an audit of HCC screening uptake in our cohort.
Methods: A retrospective case note audit of HCC screening in co-infected PaHIV aged >18 years from January 2014 to December 2017 including annual liver USS (LUSS) and fibroscans (FS), 6 monthly liver function test (LFT) and alpha-fetoprotein (aFP).
Results: 7/167 (4%) PaHIV were co-infected with HBV (6) or HCV (1); 4 female, 3 Caucasian, median age 27 (IQR 23–28). All attended at least 6 monthly for HIV, LFT and aFP monitoring. 6/7 consistently had an HIV viral load (VL) <20, one (HBV1) with HBV lamivudine resistance and dual class HIV resistance struggled with ART adherence. 4/7 had persistently abnormal LFTs, 5/7 ever had abnormal clotting. 20/25 (80%) LUSS and 11/27 (39%) FS were attended, all LUSS were reported as normal.

	HIV HBV/HCV VL (c/ml) Mean (range if detectable)	LFT IU/l aFP IU/ml Mean (range)	Imaging Attend/request Mean CAP (dB/m) (Mean IQR) E (kPa) IQR/med (%)
HBV1	Genvoya CD4 104 (35–149) HIV 14953 (<20–49922) HBV 42669414 (20035–17×10^6)	aFP 4.37 (2–6) ALT 94 (54–148), Albumin 33 (30–35)	LUSS 1/3 FS 1/3 CAP 184 (55) E 8.7 (1.1) IQR/med 13
HBV2	Truvada + dolutegravir CD4 590 HIV <20 HBV <20	aFP 2.1 (1.4–3) ALT 39 (27–46)	LUSS 4/4 FS 3/5 CAP 250 (22) E 5.6 (0.7) IQR/med 12
HBV3	Atripla CD4 1020 HIV <25 HBV <20	aFP 1.4 (<2) ALT 18 (13–23)	LUSS 2/3 FS 3/5 CAP 188(49) E 3.5 (0.5) IQR/med 13
HBV4	Descovy + efavirenz CD4 887 HIV <20 HBV <20	aFP 2 (1–3) ALT 29 (19–43) ALP 130 (94–186)	LUSS 4/4 FS 1/6 CAP 158 (16) E 5.6 (1.1) IQR/med 20
HBV5	Truvada + dolutegravir CD4 843 HIV <20 HBV <20 HDV co-infection.	aFP 2.8 (2–4) ALT 27 (21–39)	LUSS 3/4 FS 3/4 CAP 202 (40) E 4.65 (0.45) IQR/med 10
HBV6	Truvada + raltegravir CD4 823 HIV <20 HBV <20	aFP 1.1 (<2) ALT 30 (20–44) ALP 171 (117–219)	LUSS 4/4 FS 1/4 CAP 222 (35), E 4.5 (1.0) IQR/med 22
HCV1	Kaletra CD4 1089 HIV <20 3TC resistance HCV RNA (c/ml) 568281 (161804-1632594)	aFP 1.6 (<2) ALT 70 (48–108) ALP 120 (99–142)	LUSS 2/3 FS 0/4 Epclusa started 12/2017

Conclusion: Whilst the majority have good attendance at HIV services, 43% missed additional imaging visits compromising disease monitoring. We hope to address this by co-ordinating appointments to minimise hospital attendances.

P391

Direct-acting antiviral treatment of chronic hepatitis C: a single-centre outcome analysis in both HIV/HCV co-infected and HCV mono-infected patients

L Chen[1], TH Lee[2], N Vora[1], B Sultan[3], D Reid[1], S Dakshina[1], R Gilson[3], L Waters[1] and I Ghosh[1]

[1]Central and North West London NHS Foundation Trust, London, UK, [2]Institute of Infectious Diseases and Epidemiology, Tan Tock Seng Hospital, Singapore, Singapore, [3]University College London Institute of Global Health, London, UK

Background: Direct-acting antivirals (DAAs) represent the current standard of care for treatment of chronic hepatitis C (HCV), achieving rates of sustained virological response at 12 weeks (SVR12) above 95% in both HCV mono-infected and HIV/HCV co-infected patients. We present our single centre experience of DAA-treatment of chronic HCV in both co-infected and mono-infected patients.

Methods: We started 129 patients on DAA therapy between Jan 2016 to March 2017 at our central London clinic. Data collection involved retrospective review of electronic clinical notes and laboratory results. Standard baseline blood tests were obtained including HCV PCR. Monitoring was carried out according to NHS England (NHSE) guidelines. Primary outcome analysed was rate of SVR12. Fisher's exact test was used to assess difference in outcomes between HIV-positive and HIV-negative patients. A paired t-test was used to compare the alanine transaminase (ALT) and reduction in transient elastography score (TE) before and after DAA therapy.

Results: Of the 129 patients started on DAA therapy, 89 patients (69.0%) were co-infected with HIV. NHSE funded treatment for 115 patients, and 14 patients self-funded. Pre-treatment, the majority of patients 108/129 (83.7%) were non-cirrhotic; 21/129 (16.3%) had cirrhosis. 93/129 (72.1%) of patients were treatment-naïve and 36/129 (27.9%) patients were treatment experienced. Total number of treatment episodes was 130 (1 patient self-funded a second course of treatment post relapse). The HCV genotypes (GT) treated were: GT1a (n=73: 56.1%), GT1b (n=13: 10.0%), GT1-unspecified (n=2: 1.5%), GT2 (n=3: 2.3%), GT3 (n=18: 13.8%), and GT4 (n=21: 16.2%).

P392

Experience of hepatitis C Virus (HCV) treatment in a co-infected population

K Davidson[1], P Hayes[2], S Morris[1], D O'Shea[1], H Rae[1], R Sutherland[1], J Turner[1] and C Leen[1]

[1]Western General Hospital, Edinburgh, UK, [2]Royal Infirmary of Edinburgh, Edinburgh, UK

Background: Treatment of HCV in HIV patients should be prioritised due to increased liver related morbidity and mortality of co-infected patients. We describe interferon sparing/free HCV treatment utilising direct acting antivirals (DAA) in this cohort. Drug Drug interactions (DDI) are a key consideration in this patient cohort to ensure safe and effective use of antiviral medication.

Methods: From May '15 - December '17, DAA containing HCV treatment was commenced in 55 patients. Treatment choices were guided by local guidelines and DDI with cART and was led by a multidisciplinary team (MDT) of consultant physicians, specialist nurse practitioners and clinical pharmacist. DDI were deemed significant if categorised as amber or red by University of Liverpool DDI database. DAAs were supplied from community pharmacy which also provided patient support and adherence monitoring. HCV viral load (VL) was measured 12 weeks after cessation of treatment to ascertain Sustained Viral Response (SVR).

Results: Demographics are described in table 1. The mean baseline CD4 count was 491 cells/mm^3 and the mean baseline HCV VL was 1,656,093 IU/ml. DAA regimens used as follows Ombitasvir/Paritaprevir/ritonavir + Dasabuvir + ribavirin (RBV) 12 weeks(w); 5 (9.1%); Ledipasvir/Sofosbuvir (LDV/SOF) 12w; 12 (21.8%); LDV/SOF + RBV 12w; 24 (43.6%); LDV/SOF 8w; 1 (1.8%); SOF + Peg-Interferon + RBV 12w; 2 (3.6%); Sofosbuvir/Velpatasvir (SOF/VEL) 12w; 6 (10.9%) SOF/VEL + RBV; 2 (3.6%); Elbasvir/Grazoprevir 12w; 2 (3.6%). cART backbone was as follows TDF/TAF based 30 (54.5%); Abacavir (ABV) based 15 (7.2%); TDF/ABV based 1 (1.8%); Other 8 (14.5%); Nil 1 (1.8%). The number of patients with a significant DDI was 33 (60.0%) and 15 (27.2%) patients required a cART switch. SVR 12 was available in 49 patients; of whom 47 (95.9%) achieved SVR 12. The remainder (n=6) await SVR 12 over forthcoming months.

Table 1

Male (%)	Mean Age (±SD)	Genotype (%)	Treatment experienced (%)	Cirrhosis (%)
34 (61.8)	52.3 (±7.6)	1;44 (80) 3; 10 (18.2) 4; 1 (1.8)	17 (31.9)	28 (50.9)

Conclusion: Our results show excellent SVR rate in line with clinical trials and other real world data sets. Drug-drug interactions were managed to allow safe effective treatment of both viruses with no known detrimental outcomes. MDT working was key in the success of delivering treatment. Future steps are to engage with our HCV untreated cohort to achieve goal of HCV elimination.

P393

Hepatitis C testing in MSM: implementation of an electronic proforma improves identification of those at risk

M Pakianathan, L Ribeiro, A Maxwell, J Carr, V Liang, J Avery and A Hegazi

The Courtyard Clinic, Wandsworth Integrated Sexual Health, St George's Healthcare NHS Trust, London, UK

Background: Risk factors for Hepatitis C in men who have sex with men (MSM) are well described and include group sex, traumatic sexual practices such as fisting and event level drug use (chemsex). Current BASHH guidelines recommend that all MSM attending sexual health clinics should be risk assessed for blood-borne viruses (including Hepatitis C) and tested if at high-risk. In 2016 we carried out an audit in an open-access sexual health clinic of documentation of specific Hepatitis C risk factors. This audit identified potential omissions in assessing risk for and testing for Hepatitis C so a new clinical proforma was brought in which included a specific 'yes-no' tick list of Hepatitis C risk factors with a prompt to test for Hepatitis C if any risk factor present.

Methods: Retrospective audit of Hepatitis risk factor C documentation following introduction of a new clinical proforma in 2017. Documentation rates were compared with the original audit carried out in 2016 before the proforma introduction using Fisher's Exact test with $p<0.05$ considered significant. 150 clinical case notes were reviewed in each the initial audit and the repeat audit.

Results: Overall mean age of MSM was 35.4 years (range 15.5–77.3). 15% (n=45) were bisexual. 73.7% (n=221) were Caucasian. Documentation rates of other parameters are listed in table.

	% Documented in 2016 (n)	% Documented in 2017 (n)	p
Recreational Drug Use	54 (81)	94 (141)	<0.001
Chemsex	90 (135)	97 (145)	0.03
IVDU	52 (78)	92 (138)	<0.001
Fisting	29 (43)	83 (124)	<0.001
Group Sex	29 (43)	89 (133)	<0.001
Sex Toys	27 (41)	84 (126)	<0.001
HIV +ve Partner	30 (45)	66 (99)	<0.001
HepC +ve Partner	25 (37)	81 (122)	<0.001

Conclusion: We observed significant improvements in the documentation of risk factors for Hepatitis C following implementation of an electronic proforma. Further audit would need to be carried out to verify whether combined with the prompt this translated into targeted testing of those at risk. There is also an opportunity for patients to receive advice and prevention interventions.

P394

Liver ultrasound to evaluate patients with HIV and hepatitis B/C co-infection: coverage and findings from the UK CHIC Study

L Garvey[1], S Jose[2], A Thornton[2], A Rodger[3], S Baghani[3], R Gilson[2], J Main[4], C Taylor[3], D Dunn[2], D Chadwick[6], A Scarborough[7], E Youssef[8], C Leen[9], M Gompels[10], S Kegg[11], A Schwenk[12], M Nelson[13] and C Sabin[2]

[1]Imperial College Healthcare NHS Trust, London, UK, [2]Institute for Global Health, University College London, UK, [3]Royal Free Hospitals NHS Foundation Trust, London, UK, [4]Imperial College London, UK, [5]Kings College Hospital, London, UK, [6]South Tees Hospitals NHS Foundation Trust, Middlesbrough, UK, [7]Imperial School of Medicine, London, UK, [8]Brighton and Sussex Medical School, UK, [9]Lothian University Hospitals NHS Trust, Edinburgh, UK, [10]North Bristol NHS Trust, Bristol, UK, [11]Lewisham and Greenwich NHS Trust, London, UK, [12]North Middlesex Univerity Hospital NHS Trust, London, UK, [13]Chelsea and Westminster Hospital, London, UK

Background: Liver ultrasonography (US) is frequently used to evaluate HIV-positive patients with abnormal liver function tests (LFTs) or for hepatocellular carcinoma surveillance in selected populations. Coverage rates and findings of liver US in HIV and HBV or HCV coinfected UK cohorts are not known.
Methods: HBV or HCV coinfected individuals in the UK CHIC Study were included and followed from latest of: UK CHIC entry, date first known to be HBV or HCV coinfected or 01/01/2004, until last date seen in the dataset. Poisson regression (giving incidence rate ratios (IRR)) assessed rates and predictors of ever having a liver US. Associations between US findings and clinical and demographic factors were examined using logistic regression (giving odds ratios (OR)), with generalised estimating equations to account for repeated measures.
Results: 4037 HIV and HBV and/or HCV co-infected individuals were included; 2584 (64%) had HCV and 1596 (39.5%) had HBV infections. 1673 (41%) had 3366 US scans during FU (range 0–16) giving an incidence [95% CI] of 18.3 [17.6, 18.8] US per 100 person-years. Factors associated with undergoing US included HBV coinfection (adjusted IRR [95% CI]=1.2 [1.0, 1.3] vs. HCV), later calendar year (aIRR [95% I]=1.8 [1.5, 2.2] 2009–2011 vs. 2004–2005), not taking antiretroviral therapy, low CD4 count (aIRR [95% CI]=1.0 [1.0, 1.0] per 50 cells/mm^3), detectable viral load (aIRR [95% CI]=0.8 [0.7, 1.0] undetectable viral load vs. detectable), higher ALT (aIRR [95% CI]=1.1 [1.1, 1.1] per 20 U/l) and low serum triglycerides (TGI) (aIRR [95% CI]=0.9 [0.9, 1.0] per mmol/l higher). Of scanned individuals, 18% had steatosis identified and this was observed more frequently in HCV than HBV-infected individuals. Older age (aOR [95% CI]=3.9 [1.7, 9.2] ≥50 vs. <30 years), non-black ethnicity, higher ALT (aOR [95% CI]=1.0 (1.0, 1.0) per 20 U/l) and higher TGI (aOR [95% CI]=1.3 [1.2, 1.5] per mmol/l) were independently associated with steatosis. The lowest rate of steatosis was seen in people taking lopinavir when compared to efavirenz (aOR [95% CI]=0.5 [0.3, 0.9]).
Conclusion: We observed a low, widely variable rate of liver US in HIV and HBV or HCV coinfected patients that increased over time. US were performed more frequently in those with advanced HIV. Steatosis was identified in 18% of coinfected individuals scanned and was independently associated with ethnicity, age, ALT and TGI.

P395

Patients who discontinue direct-acting antiviral (DAA) treatment in an outreach setting: a case by case analysis

S Morrow[1], S Candfield[1], K O'Brien[2], B Hamilton[2], D Reid[1], J Surrey[3], E Collins[4], L Waters[1] and I Ghosh[1]

[1]Mortimer Market Centre, Central and North West London NHS Foundation Trust, UK, [2]Camden and Islington NHS Foundation Trust, London, UK, [3]Find & Treat, University College London Hospitals NHS Trust, UK, [4]Camden Health Improvement Practice, London, UK

Background: The burden of hepatitis C (HCV) infection is particularly high amongst the patients who struggle to engage with services, due to issues such as homelessness, psychiatric illness, drug and alcohol dependency. Our community-based outreach services aim to overcome such barriers. These operate alongside drug, alcohol and homeless GP services, BBV nurses, hostel and recovery workers, peer support networks and a mobile clinic ('Find & Treat' - rapid diagnostics and fibroscan). All outreach patients who completed treatment achieved sustained virological response (SVR) but a few discontinued, risking this. Here we analyse the causative factors, compared to the rest of the cohort, and consider how this should influence future patient management.
Methods: Data extracted from HCV Operational Delivery Network (ODN) referral database, identified number of outreach patients terminating treatment before scheduled completion (1.1.16–1.1.18). This was compared to the non-outreach cohort (t test). Root-cause analysis of the contributory factors was carried out for each patient, and their demographic and social characteristics compared to the rest of the outreach group.
Results: 5/71 (7%) outreach patients (A, B, C, D and E) stopped treatment, compared to just 3/185 (1.6%, p=0.03) in the non-outreach cohort. This is particularly important, given that 3/5 (60%) were cirrhotic, compared with 17/66 (25%) in the rest of the cohort.
All 5 were male with known mental health issues and housing issues. 3/5 were taking oral substitution therapy for drug addiction. 4/5 (80%) described current, heavy alcohol consumption, compared to 25/66 patients in the rest of the cohort (38%). Days from DAA referral to approval was high for A (47) and D (60) (median for cohort=2.5). Specific factors were identified; A was previously a prisoner in Australia, stopping treatment to return. He had a poor relationship with his GP. B lost motivation after emergency surgery. C had severe non-adherence, despite weekly BBV nurse visits and medication prompts from the hostel key-worker. D and E described severe side effects.
Conclusion: Multiple, inter-related factors contributed to each patient stopping treatment, demonstrating the need for particularly high levels of community support in such patients. Side effects should be addressed if possible. Prompt treatment is important for patients whose lifestyles may be unpredictable and psycho-social circumstances precarious; the opportunity may be short-lived.

P396

Routine blood-borne virus testing for HIV, hepatitis B and hepatitis C in patients starting chemotherapy for solid tumours

M Williamson[1], S Shah[1], L Tookman[2] and G Anand[1]

[1]North Midddlesex University Hospital, London, UK, [2]University College London Hospital, London, UK

Background: Patients with HIV infection are at higher risk of developing AIDS defining and non-AIDS defining cancers. The use of antiretroviral treatment (ART) in patients undergoing chemotherapy has been shown to reduce morbidity associated with opportunistic infections and improve overall survival. Routine HIV testing for all oncology patients has been recommended, but few institutions implement this practice.
Hepatitis B and C infection is associated with increased morbidity and mortality in patients undergoing chemotherapy. London Cancer guidelines recommend universal testing for Hepatitis B and C in these patients.
We implemented universal testing of blood-borne viruses (BBV) for all our patients starting on all adults starting chemotherapy in September 2017.
Methods: Uptake was defined as those undergoing BBV testing (HIV, HCV ab, Hep BsAg and core antibody) prior to starting chemotherapy. Diagnoses were grouped as known or unknown.
Results: 133 consecutive oncology patients started chemotherapy between September to December 2017. 69% (n=92) underwent BBV screening prior to starting chemotherapy. 14% (n=13) had a previous Hepatitis B infection (core pos, sAg negative), of which one was known. Patients were either started on Lamivudine or monitored. 1 patient had unknown chronic Hepatitis B infection (sAg and core positive, unquantifiable viral load). There were no patients with known or unknown HIV or Hepatitis C infection.
Conclusions: In our cohort, previous hepatitis B infection rates were high (14%). Preliminary results show that BBV testing can improve detection and management of BBV in patients undergoing immune suppression through chemotherapy. Further work is to be done to improve offering and uptake of BBV screening through physician training.

P397

Significant improvement in hepatitis C virus (HCV) reinfection knowledge: a multidisciplinary workshop approach

D Nugent[1], S Flavell[2], I Ghosh[2], C Sandford[2], HVD Walt[2] and L Waters[2]
[1]University College London, UK, [2]Mortimer Market Centre, London, UK

Background: Treatment for chronic HCV with direct acting antiviral (DAA) therapy is highly efficacious and cure rates approaching 100% are now commonplace. Treatment confers no long-term immunity against reinfection in individuals at on-going risk. Longitudinal data from treated cohorts in the interferon era suggests reinfection rates are high. Moreover, current NHS treatment pathways in England offer little provision for treatment for reinfection following curative DAA treatment. We addressed this issue in our treated patient cohort by developing a clinical intervention aimed at reducing reinfection risk.
Methods: We designed a multidisciplinary group workshop jointly delivered by a specialist doctor, patient representative and clinical psychologist. The workshop consisted of: (1) a medical overview of HCV including transmission, complications and general liver health; (2) a group exercise to rate different HCV exposures for their transmissibility and (3) case-based discussion drawing on cognitive behavioural therapy and lived experience of HCV. Finally, participants were given guidance on accessing on-going support and referral for specialist services. The workshop took place on a weekday evening and lasted 2.5 h. All patients completing DAA treatment were invited to attend and all attendees were invited to give written feedback.
Results: Five workshops have been held since January 2017 attended by 38 patients (mean 7.6 per workshop) of whom 27 returned feedback. The mean rating for overall workshop quality (scale 1–10) was 9.1. Using the same scale, attendees rated the workshop as 8.1 for usefulness, 9.0 for interest, 8.1 for provision of new information and 9.4 for effectiveness of the facilitators. Mean self-rated confidence in knowledge of HCV reinfection avoidance (scale 0–5) was 3.3 prior to the workshop and 4.2 afterwards (p=0.013, 2 sided sign test). Qualitative feedback from several participants highlighted the stigma they felt from their HCV diagnosis and the reassurance gained from discussion in a group setting.
Conclusion: Evaluation and support to avoid reinfection is an essential component of care following HCV treatment. A group workshop is a promising and novel intervention which demonstrated high acceptability in patients choosing to attend. The modest increase in attendee rated confidence in avoiding reinfection may reflect higher than expected baseline confidence related to education on transmission undertaken during clinical consultations.

P398

Success and challenges: outreach HCV treatment in North Central London

S Candfield[1], S Morrow[1], K O'Brien[2], B Hamilton[2], D Reid[1], J Surrey[3], E Collins[4], L Waters[1] and I Ghosh[1]
[1]Mortimer Market Centre, Central and North West London NHS Foundation Trust, London, UK, [2]Camden and Islington NHS Foundation Trust, London, UK, [3]Find & Treat, University College London, UK, [4]Camden Health Improvement Practice, London, UK

Background: HCV rates are high among homeless people & people with drug dependency. These marginalised groups do not easily navigate healthcare & outreach strategies are being prioritised to link this group into HCV care as Britain works towards HCV elimination. Our Hepatitis service has set up outreach clinics in a homelessness primary care centre (with drug and alcohol (D + A) services onsite), and a D + A unit in North Central London. Some patients are referred by the Find&Treat service which diagnoses HCV in homeless people, using peer support to augment linkage to care. There is little reported data on outreach HCV services in England.
Methods: A service evaluation notes review was conducted on all HCV patients who had accessed homeless and drug and alcohol services referred to our Operational Delivery Network (ODN) from 1/1/16 to 1/1/18 for treatment approval.
Results: There was no missing data. 71 people were referred to the ODN. Baseline demographics are shown:

Median age (range)	47	(26–63)
Male	52	73.0%
Current alcohol over recommended limits	35	49.3%
Heavy drinking (35U women; 50U men)	29	40.8%
Mental health history	66	93.0%
Homeless/hostel	51	71.8%
On opiate substitution therapy	53	74.6%
HIV positive	5	7.0%
Cirrhotic	20	28%

Median time from ODN discussion to approval was 2.5 days & median time from approval to treatment was 35 days (longest wait 294; IQR 20–91 days). Of the 71 patients referred 48 (67%) have so far started treatment and 5 patients in the whole cohort are known to have stopped treatment early. 24 have reached the 12 weeks post anticipated treatment cessation timepoint. 17/24 (71%) had Sustained Virological Suppression (SVR12), and cure appears likely in another 4, who cleared HCV 4 weeks post-treatment (overall 88% cure). One patient stopped treatment early and 2 others have so far not presented for monitoring, though they are both believed to have taken all their treatment. No patients have failed treatment other than by early cessation.
Conclusion: Outreach HCV treatment can be successfully delivered to people from dependency and homelessness backgrounds. Monitoring can be challenging; simplifying monitoring requirements may aid provision of effective HCV care to this group.

P399

TARGET3D: high efficacy of 8 weeks paritaprevir/ritonavir/ombitasvir and dasabuvir among people with recent genotype 1 HCV infection

M Martinello[1], M Cerrone[2], S Bhagani[3], E Gane[4], C Orkin[5], G Cooke[6], GJ Dore[1], K Petoumenos[1], TL Applegate[1], E Tu[1], P Marks[1], N Pagani[2], A Schoolmeesters[2], J Grebely[1], M Nelson[2] and GV Matthews[1]
[1]Kirby Institute, UNSW Sydney, Australia, [2]Chelsea and Westminster Hospital, London, UK, [3]Royal Free Hospital, London, UK, [4]Auckland City Hospital, New Zealand, [5]Royal London Hospital, London, UK, [6]Imperial College NHS Trust, St Mary's, London, UK

Background: Paritaprevir/ritonavir/ombitasvir and dasabuvir with or without ribavirin for 12 weeks is approved for treatment of chronic HCV genotype 1 infection. This study assessed the efficacy of shortened duration paritaprevir/ritonavir/ombitasvir and dasabuvir with or without ribavirin for 8 weeks among people with recent HCV infection.
Methods: In this open-label single-arm trial conducted in Australia, England and New Zealand, adults with recent HCV (duration of infection <12 months) received paritaprevir/ritonavir/ombitasvir and dasabuvir (with weight-based ribavirin for genotype 1a and 1, no subtype) for 8 weeks. The primary endpoint was sustained virologic response at 12 weeks post-treatment (SVR12) in the intention-to treat (ITT) population.
Results: Thirty people (median age 38 years, male 93%) commenced treatment (with ribavirin, 97%), of whom 77% (n=23) were HIV-positive, 93% (n=28) had genotype 1a infection and 53% (n=16) had ever injected drugs. Modes of HCV acquisition were sexual exposure in gay and bisexual men (70%), injecting drug use (27%) and occupational exposure (3%). Median maximum ALT in the preceding 12 months was 433 U/l (IQR 321, 1012). Acute clinical hepatitis with ALT > 10xULN was documented in 83% (n=25); one participant (3%) had jaundice. In those with HIV, median CD4 count was 640×10^6/l with HIV viral load ≤50 copies/ml in 100%. At baseline, median estimated duration of infection was 30 weeks (range 11, 51) and median HCV RNA was 5.7 $\log_{10}$ IU/ml (range 2.7, 7.3). SVR12 was achieved in 97% (29/30; modified ITT 100%, 29/29); one participant discontinued treatment at week 2 during hospitalisation for an unrelated event. Among HIV-positive participants and those with high baseline HCV RNA (>6 $\log_{10}$ IU/ml), SVR12 was 100% (23/23) and 100% (13/13), respectively. No relapse or reinfection was observed (with follow up to post-treatment week 24). Treatment was safe and well-tolerated; three serious adverse events were reported in three participants, none related to the study drug.
Conclusion: Paritaprevir/ritonavir/ombitasvir and dasabuvir (with ribavirin) for 8 weeks was highly effective among HIV-positive and HIV-negative

individuals with recent HCV infection. This data supports the use of this shortened duration direct-acting antiviral regimen in this population.

P400

Who are we diagnosing with hepatitis C during routine sexual health screening in GU clinic?

L Hawkins, N Antoniou, E Turner, F Ramzan and L Garvey
Imperial College Healthcare NHS Trust, London, UK

Background: New effective oral hepatitis C (HCV) therapies have enabled HCV elimination to become a realistic target. In order to treat undiagnosed HCV populations, opportunities for HCV screening should be taken to facilitate linkage to care. BASHH recommends HCV screening in new GU patients with identifiable risk factors. The diagnostic yield from this approach is not known. The aim of this project was to establish the rate of HCV infection diagnosed in GUM using BASHH screening guidelines and explore the demographics/risk factors of those diagnosed with HCV.
Method: Retrospective analysis of all HCV antibody tests in GU clinic between October 2016-September 2017 took place. Where individuals tested HCV antibody positive, demographic information and HCV risk factors were explored.
Results: During the study period 7090 patients were screened for HCV in GU clinic (range of 1–8 tests per patient). 58 (0.8%) individuals were found to be HCV antibody positive. Of those, 27 were diagnosed for the first time and 31 patients had a previous history of HCV. The mean age was 39.4 (range 18–65). 74% were male and 26% female. 28% were HIV positive and 50% MSM. 57% had endemic risk (26% UK, 16% Eastern Europe, 14% Western Europe, 10% Middle East, 14% Central/South America, 7% North Africa, 5% Continental Africa, 5% Asia, 2% Australia, 1% not identified).
Other risk factors identified 9 patients were injecting drugs (IDU) or had partners who were IDU, 8 patients had tattoos, 8 were MSM HIV+ with additional STIs, 3 had history of LGV/traumatic anal intercourse, 2 had alcohol excess, 3 were commercial sex workers and 2 were HCV sexual contacts.
Conclusion: A HCV prevalence of 0.8% was identified in this cohort of patients screened at this London GU clinic, similar to the national prevalence. Significant risk factors of HCV of this cohort included endemic origin (57%), MSM (50%) and HIV positive status (28%). However the wide variety of risk factors identified suggests a mixed cohort of individuals with treatable HCV infection exists in London.
Screening for HCV infection in GU clinics is feasible and presents an opportunity to identify a small number of individuals requiring treatment. However HCV antibody screening, in certain cases, is not the optimal diagnostic test in patients who have previously been treated or spontaneously cleared. Further work to refine rapid risk assessment tools in GU medicine is required.

Author Index

Symtuza®

(darunavir/cobicistat/emtricitabine/tenofovir alafenamide) tablets
800mg/150mg/200mg/10mg

single pill sustained efficacy at 48 weeks[1,2]

The first PI-based single tablet regimen (STR) for HIV-1 patients

EFFICACY
High virologic suppression** at 48 weeks[1,2]

RESISTANCE
Contains darunavir, which has a high genetic barrier to resistance at 48 weeks[1,2]

TOLERABILITY
Renal and bone safety consistent with known profiles of TAF▼ and cobicistat▼[1,2]

For treatment-naïve patients*
91.4% virologic suppression at 48 weeks[1]

For treatment-experienced patients‡
94.9% virologic suppression at 48 weeks[2]

SYMTUZA is indicated for the treatment of human immunodeficiency virus type 1 (HIV-1) infection in adults and adolescents (aged 12 years and older with body weight at least 40 kg).[3]

Genotypic testing should guide the use of Symtuza.[3]

janssen Infectious Diseases
PHARMACEUTICAL COMPANIES OF Johnson&Johnson

SYMTUZA® ▼ 800 mg/150 mg/200 mg/10 mg film-coated tablets
PRESCRIBING INFORMATION

ACTIVE INGREDIENT(S): darunavir, cobicistat, emtricitabine, tenofovir alafenamide. Please refer to Summary of Product Characteristics (SmPC) before prescribing. **INDICATION(S):** Treatment of human immunodeficiency virus type 1 (HIV 1) infection in adults and adolescents (aged 12 years and older with body weight at least 40 kg). Genotypic testing should guide use. **DOSAGE & ADMINISTRATION:** Initiate by physician experienced in management of HIV 1 infection. **Adults and adolescents aged ≥ 12 years weighing ≥ 40 kg:** one tablet daily with food in ART-naïve patients. *ART-experienced patients:* one tablet daily with food if no darunavir resistance associated mutations (DRV-RAMs) and plasma HIV-1 RNA < 100,000 copies/ml and CD4+ cell count ≥ 100 cells x 10^6/l. If dose > 12 hours late, do not take missed dose and resume usual dosing schedule. **Children:** Not established in children aged 3-11 years, or weighing < 40 kg. No data available. Should not be used below 3 years of age. **Elderly:** Limited information; use with caution in patients > 65 years of age. **Renal impairment:** $eGFR_{CG}$ ≥ 30 mL/min: no dose adjustment. $eGFR_{CG}$ < 30 mL/min: do not start/discontinue treatment as no data. **Hepatic impairment:** mild (Child-Pugh Class A)/moderate (Child-Pugh Class B) hepatic impairment: no dose adjustment; use with caution. Severe hepatic impairment (Child-Pugh Class C): not studied; do not use. **CONTRAINDICATIONS:** Hypersensitivity to active substances/excipients. Severe (Child-Pugh Class C) hepatic impairment. Co-administration with carbamazepine, phenobarbital, phenytoin, rifampicin, lopinavir/ritonavir, St. John's wort (*Hypericum perforatum*), alfuzosin, amiodarone, dronedarone, quinidine, ranolazine, colchicine (with renal and/or hepatic impairment), ergot derivatives (e.g. dihydroergotamine, ergometrine, ergotamine, methylergonovine), pimozide, quetiapine, sertindole, lurasidone, triazolam, midazolam administered orally, sildenafil (for treatment of pulmonary arterial hypertension), avanafil, simvastatin, lovastatin, lomitapide, ticagrelor. **SPECIAL WARNINGS & PRECAUTIONS:** Take precautions to prevent viral transmission. ***ART-experienced patients:*** not for treatment-experienced patients with one or more DRV-RAMs or with HIV-1 RNA ≥ 100,000 copies/ml or CD4+ cell count < 100 cells x 10^6/l. ***Co-infection with hepatitis B/C virus:*** increased risk for severe, potentially fatal hepatic adverse reactions. Safety/efficacy not established when co-infection with HIV-1 and hepatitis C virus (HCV). Tenofovir alafenamide active against HBV. Discontinuation of Symtuza may result in severe acute exacerbations of hepatitis if co-infection with HBV; monitor closely (clinical/laboratory follow-up for at least several months after stopping Symtuza). With advanced liver disease or cirrhosis, discontinuation not recommended; post-treatment exacerbation of hepatitis may lead to hepatic decompensation. Do not use concomitantly with medicinal products containing tenofovir disoproxil (e.g. fumarate, phosphate, succinate), lamivudine, or adefovir dipivoxil (for HBV). ***Mitochondrial dysfunction:*** mitochondrial dysfunction reported in HIV negative infants exposed *in utero* and/or postnatally to nucleoside analogues. Main adverse reactions (often transitory) are haematological disorders (anaemia, neutropenia) and metabolic disorders (hyperlactataemia, hyperlipasaemia). Late-onset neurological disorders have been reported (hypertonia, convulsion, abnormal behaviour); not known if transient or permanent. Follow up/investigate any child exposed *in utero*. Follow current national recommendations for pregnant women. ***Hepatotoxicity:*** Drug-induced hepatitis reported with darunavir/ritonavir. Increased if pre-existing liver dysfunction, including severe/potentially fatal hepatic adverse reactions. If concomitant antiviral therapy for hepatitis B or C, refer to relevant SmPCs. Conduct laboratory tests prior to initiating therapy; monitor during treatment. Consider increased AST/ALT monitoring with underlying chronic hepatitis, cirrhosis, pre-treatment transaminase elevations, especially during first months. Consider prompt interruption/discontinuation of Symtuza if evidence of new/worsening liver dysfunction. ***Nephrotoxicity:*** potential risk from chronic exposure to low levels of tenofovir alafenamide. ***Renal impairment:*** Cobicistat decreases estimated creatinine clearance. ***Haemophilia:*** reports of increased bleeding. ***Severe skin reactions:*** Discontinue Symtuza immediately if signs/symptoms of severe skin reactions. Drug Rash with Eosinophilia and Systemic Symptoms (DRESS), Stevens-Johnson Syndrome (SJS), toxic epidermal necrolysis (TEN) and acute generalised exanthematous pustulosis reported with darunavir/ritonavir. ***Sulphonamide allergy:*** caution; contains sulphonamide moiety. ***Immune Reactivation Syndrome (IRIS):*** Inflammatory response to asymptomatic or residual opportunistic pathogens may arise in patients with severe immune deficiency at start of combination antiretroviral therapy (CART); evaluate symptoms when necessary. Herpes simplex/zoster reactivation observed with darunavir/ritonavir. Autoimmune disorders reported. ***Opportunistic infections:*** can develop; close clinical observation required. ***Other:*** Increase in weight, levels of blood lipids and glucose may occur, monitor blood lipids and glucose; refer to HIV treatment guidelines. Do not use Symtuza in combination with another antiretroviral requiring pharmaco-enhancement, with ritonavir, cobicistat, tenofovir disoproxil (as fumarate, phosphate or succinate), lamivudine or adefovir dipivoxil. **SIDE EFFECTS: Very common:** headache, diarrhoea, nausea, rash (including macular, maculopapular, papular, erythematous, pruritic rash, generalised rash, and allergic dermatitis), fatigue. **Common:** hypersensitivity, anorexia, diabetes mellitus, hypercholesterolaemia, hypertriglyceridaemia, hyperlipidaemia, abnormal dreams, dizziness, vomiting, abdominal pain, abdominal distension, dyspepsia, flatulence, pancreatic enzymes increased, hepatic enzyme increased, angioedema, pruritus, urticaria, arthralgia, myalgia, asthenia, increased blood creatinine. **Other side effects:** IRIS, pancreatitis acute, acute hepatitis, cytolytic hepatitis, DRESS, SJS, TEN, acute generalised exanthematous pustulosis, osteonecrosis. **Refer to SmPC for other side effects. PREGNANCY:** Use only if potential benefit justifies potential risk. **LACTATION:** HIV infected women must not breast-feed under any circumstances. **INTERACTIONS:** Symtuza not studied; interactions identified in studies with individual components. Refer to the SmPC for full details before initiating therapy. See contraindications above. ***Do not use:*** voriconazole (unless positive benefit risk ratio). ***Not recommended:*** rifabutin, rifapentine, oxcarbazepine, efavirenz, bosentan, boceprevir, apixaban, dabigatran etexilate, rivaroxaban, everolimus, budesonide, fluticasone, simeprevir, salmeterol, tadalafil (for pulmonary arterial hypertension). ***Use with caution:*** systemic dexamethasone, clarithromycin, artemether/lumefantrine, dasatinib, nilotinib, vinblastine, vincristine, sildenafil, vardenafil, tadalafil (erectile dysfunction). ***Therapeutic drug monitoring advised:*** disopyramide, flecainide, mexiletine, propafenone, systemic lidocaine, ciclosporin, sirolimus, tacrolimus. ***Clinical monitoring recommended &/or dose adjustment:*** alfentanil, digoxin, warfarin (monitor INR), clonazepam, paroxetine, sertraline, amitriptyline, desipramine, imipramine, nortriptyline, trazodone, metformin, clotrimazole, fluconazole, itraconazole, isavuconazole, posaconazole, colchicine (patients with normal renal/hepatic function), perphenazine, risperidone, thioridazine, carvedilol, metoprolol, timolol, amlodipine, diltiazem, felodipine, nicardipine, nifedipine, verapamil, prednisone, atorvastatin, fluvastatin, pitavastatin, pravastatin, rosuvastatin, methadone, buprenorphine/naloxone, fentanyl, oxycodone, tramadol, buspirone, clorazepate, diazepam, estazolam, flurazepam, parenteral midazolam, zolpidem, hormone replacement therapy (with oestrogen), drospirenone-containing product. ***No dosing recommendations:*** oral contraceptives - alternative or additional contraceptive measures required. **Refer to SmPC for full details of interactions. LEGAL CATEGORY:** POM **PRESENTATIONS, PACK SIZES, MARKETING AUTHORISATION NUMBER(S) & BASIC NHS COSTS**

PRESENTATIONS	PACK SIZES	MARKETING AUTHORISATION NUMBER(S)	BASIC NHS COSTS
Bottle	30 tablets	EU/1/17/1225/001	£ 672.97

MARKETING AUTHORISATION HOLDER: Janssen Cilag International NV,Turnhoutseweg 30, B 2340 Beerse, Belgium. **FURTHER INFORMATION IS AVAILABLE FROM:** Janssen-Cilag Limited, 50-100 Holmers Farm Way, High Wycombe, Buckinghamshire, HP12 4EG UK.

Prescribing information last revised: February 2018

Adverse events should be reported. ▼ This medicinal product is subject to additional monitoring and it is therefore important to report any suspected adverse events related to this medicinal product. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard or search for MHRA Yellow Card in the Google Play or Apple App Store. Adverse events should also be reported to Janssen-Cilag Limited on 01494 567447 or at dsafety@its.jnj.com.

* In a Phase 3 study, treatment-naïve patients were randomized 1:1 to receive either Symtuza plus D/C and F/TDF placebo or D/C plus F/TDF and Symtuza placebo.
** Viral suppression defined as VL < 50 copies/mL
‡ In a Phase 3 study, treatment-experienced patients were switched from bPI plus F/TDF to Symtuza.

PI=Protease Inhibitor; TAF=tenofovir alafenamide fumarate; TDF=tenofovir disoproxil fumarate; F/TAF=emtricitabine/tenofovir alafenamide fumarate; STR=single tablet regimen; D/C/F/TAF=darunavir/cobicistat/emtricitabine/tenofovir alafenamide; D/C=darunavir/cobicistat; F/TDF=emtricitabine/tenofovir disoproxil fumarate.

References:

1. Orkin C et al. AMBER Oral presentation at 16th EACS Conference; 25-27 October 2017; Milan, Italy.

2. Orkin C et al. Lancet HIV 2018; 5(1): e23-e34. Doi: 10.1016/S2352-3018(17)30179-0. [Epub ahead of print].

3. Symtuza Summary of Product Characteristics, 2018. Available from https://www.medicines.org.uk/emc/ (Last Accessed: March 2018)

PHGB/SYM/0218/0001a(1) . Date of Preparation: April 2018.