HIV testing in General Practice

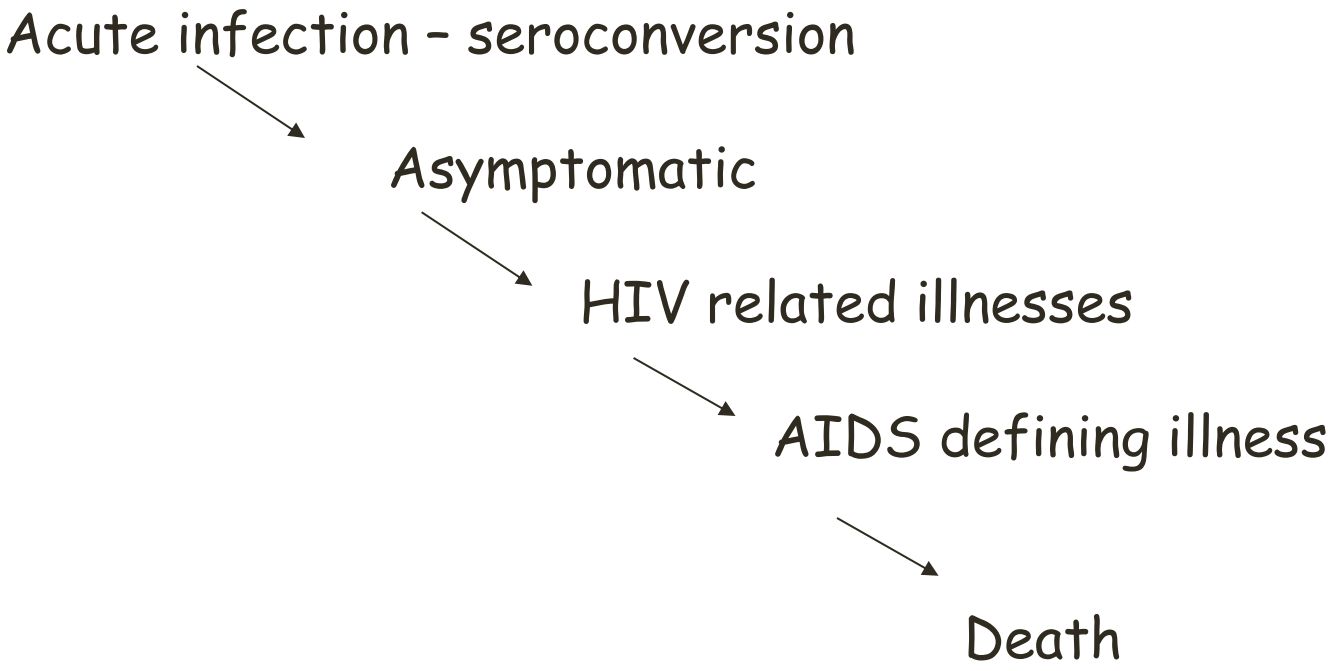
Dr Sylvia Bates

HIV – the basics

Acquisition

- Sex
- Vertical transmission
- Injecting drug use
- Blood transfusions with infected blood
- Percutaneous injury – needle stick

HIV infection



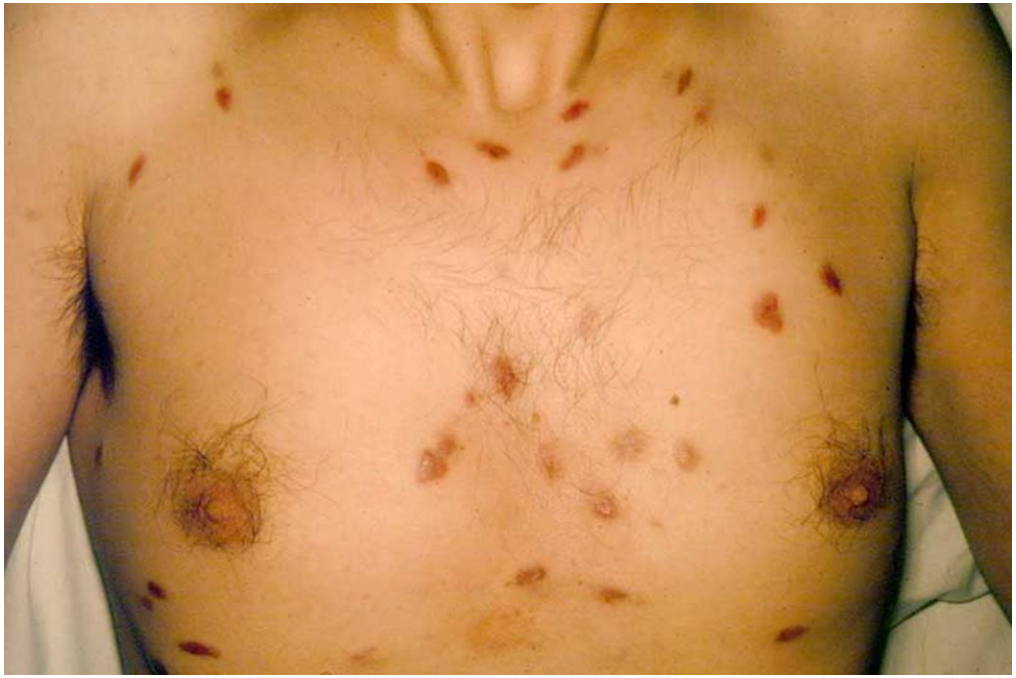
Sero-conversion	CD4 > 500	CD4 500 - 200	CD4 <200
○Fever ○Myalgia ○Arthralgia ○Adenopathy ○Malaise ○Rash ○Meningo-encephalitis	○Guillain-Barre syndrome ○Bell's palsy ○Polymyositis ○Chronic demyelinating neuropathy ○Idiopathic thrombo-cytopaenia ○Tinea	○Seborrhoeic dermatitis ○Gingivitis ○Warts ○Molluscum ○TB ○Herpes Zoster/ Simplex ○Oral candida ○KS ○CIN ○Primary CNS lymphoma	○Cryptosporidiosis ○PCP ○Toxoplasmosis ○Cryptococcal meningitis ○CMV ○MAC

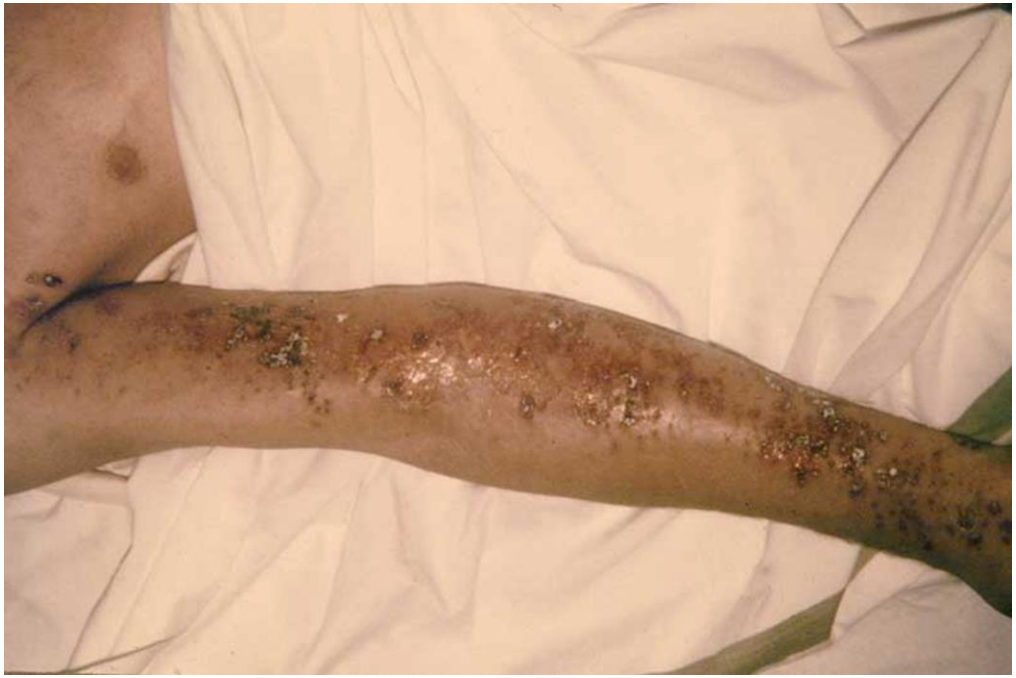
Primary HIV infection

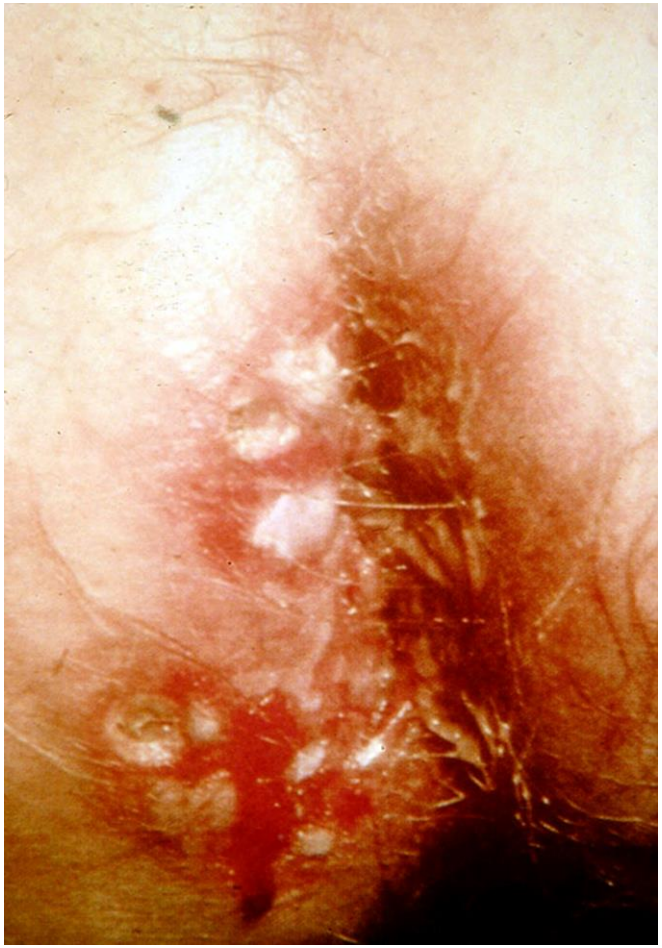
Classical triad of:

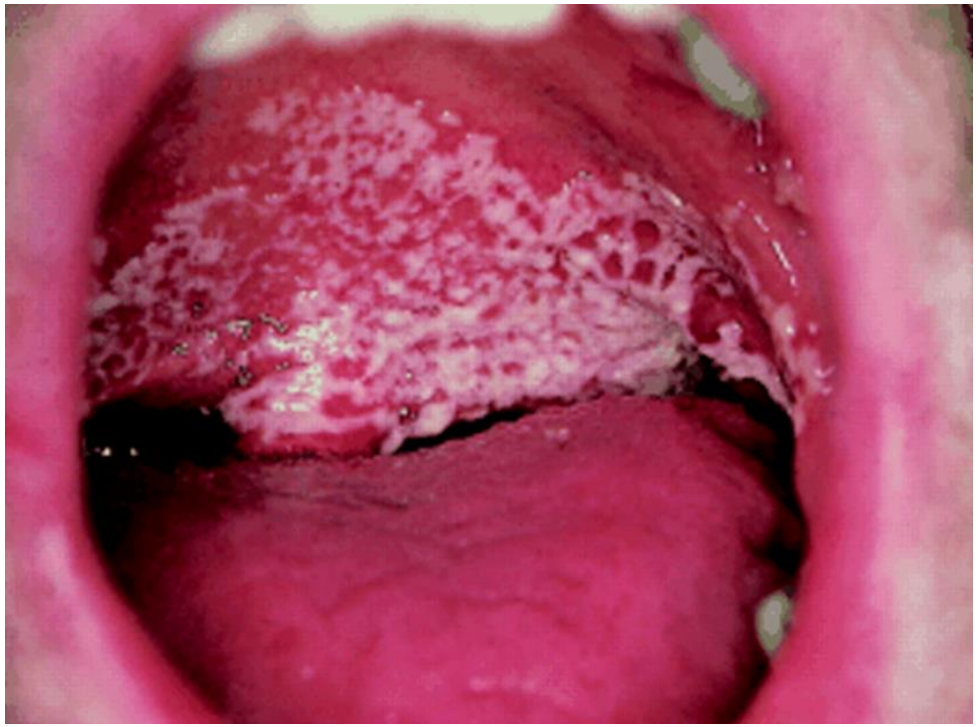
- Pharyngitis
- Rash
- Fever

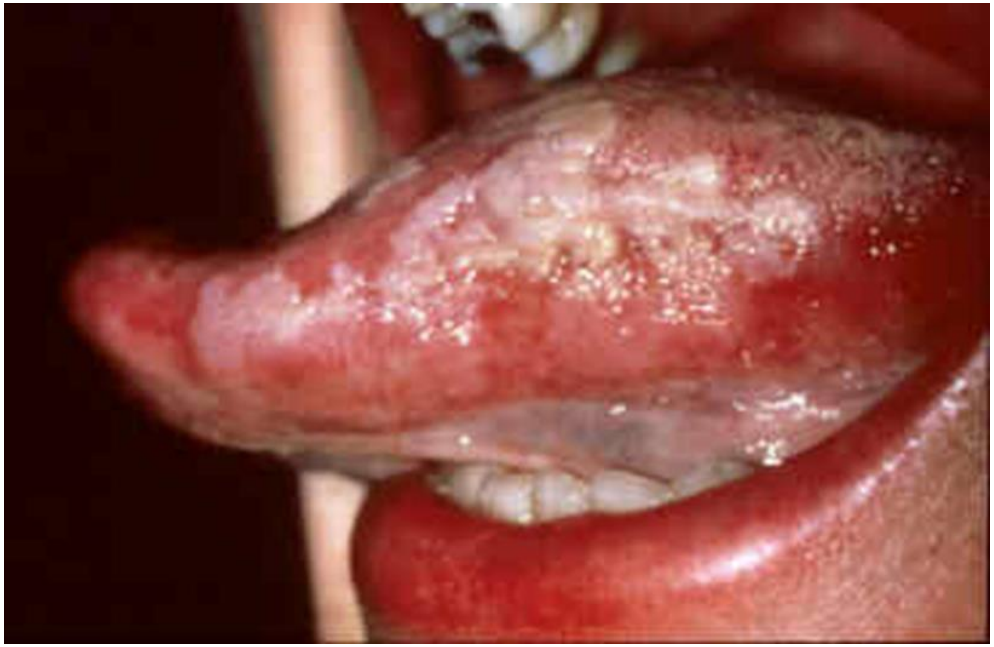
Clinical Manifestations

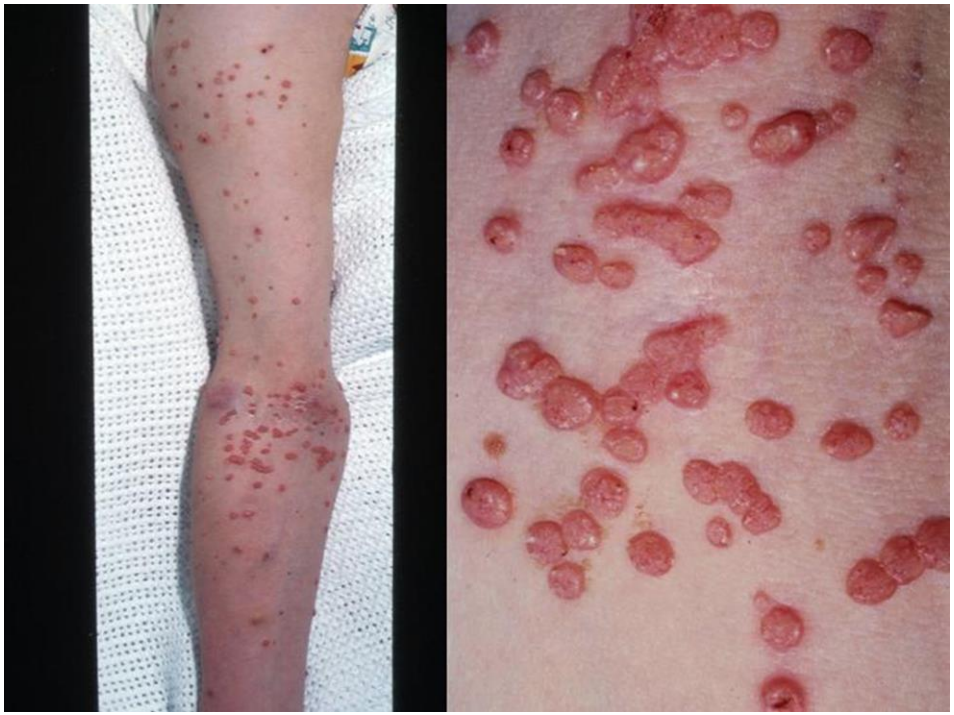












HIV in the UK

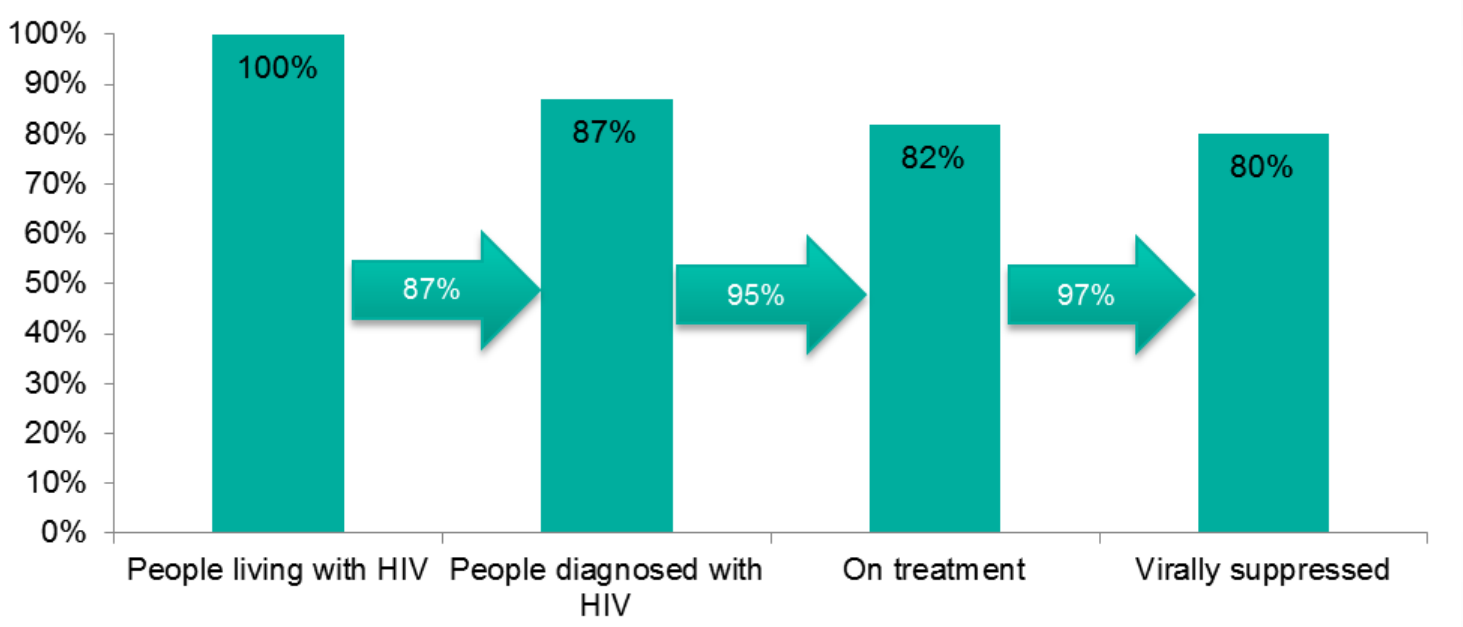
- There are currently an estimated 96,000 people living with HIV in the UK.
- 12% of those infected remain undiagnosed – HPA 2016
- 42% of new HIV diagnoses are diagnosed late (CD4 < 350).
- 35% of HIV-related deaths attributable to late diagnosis – BHIVA audit 2006
- Effective treatments greatly reduce morbidity
- Better response to treatment if started early
- Fully suppressed viral loads reduce PREVENT onward transmission

British HIV Association. Mortality Audit 2005-6.
www.bhiva.org/documents/ClinicalAudit/FindingsandReports/MortalityAudit.ppt

U=U

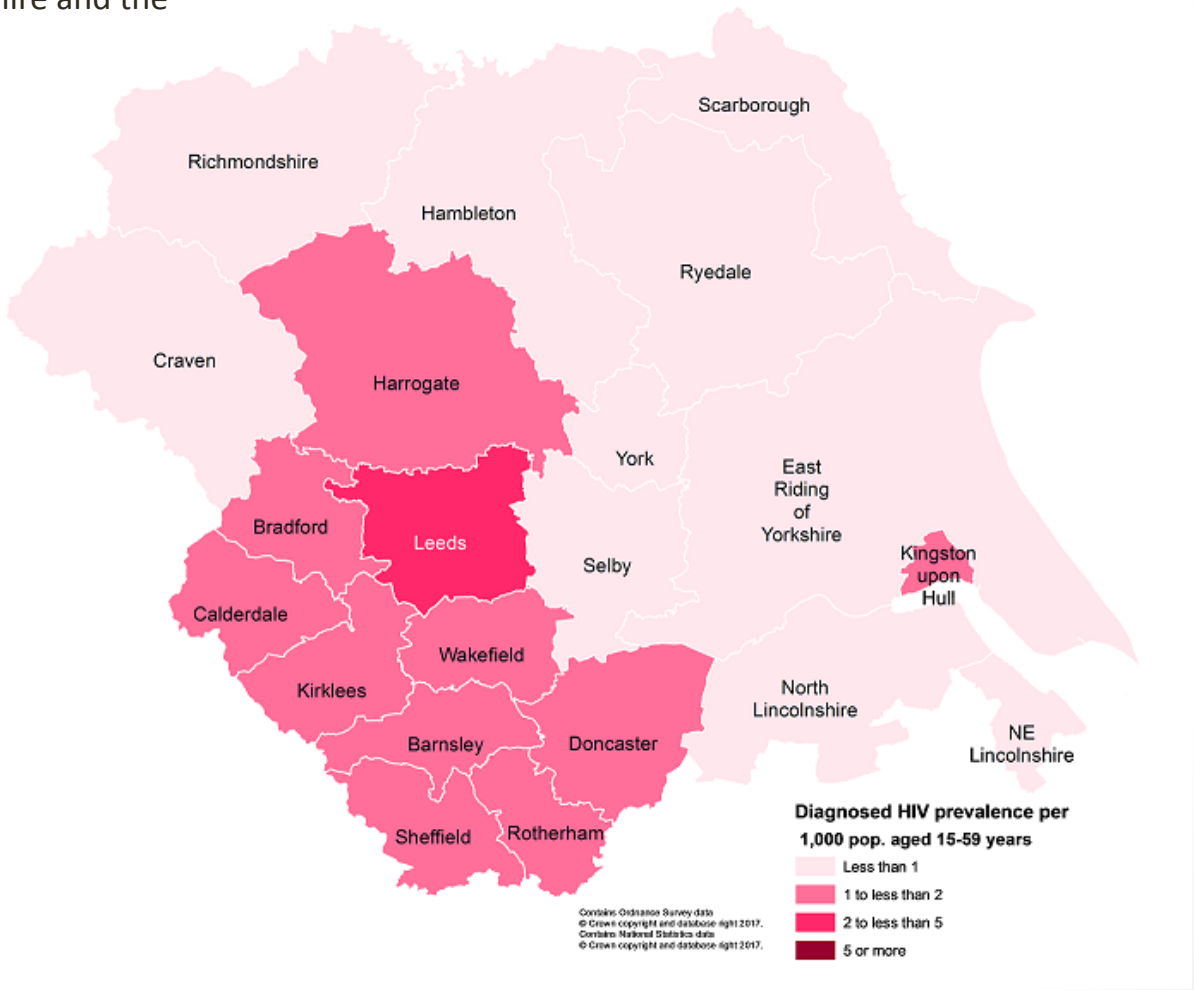
Undetectable = un-transmittable

Figure 18: The continuum of HIV care, England excluding London, 2016



90:90:90 target	90%	81%	73%

Figure 16: Diagnosed HIV prevalence per 1,000 residents aged 15-59 years by local authority, Yorkshire and the Humber, 2016



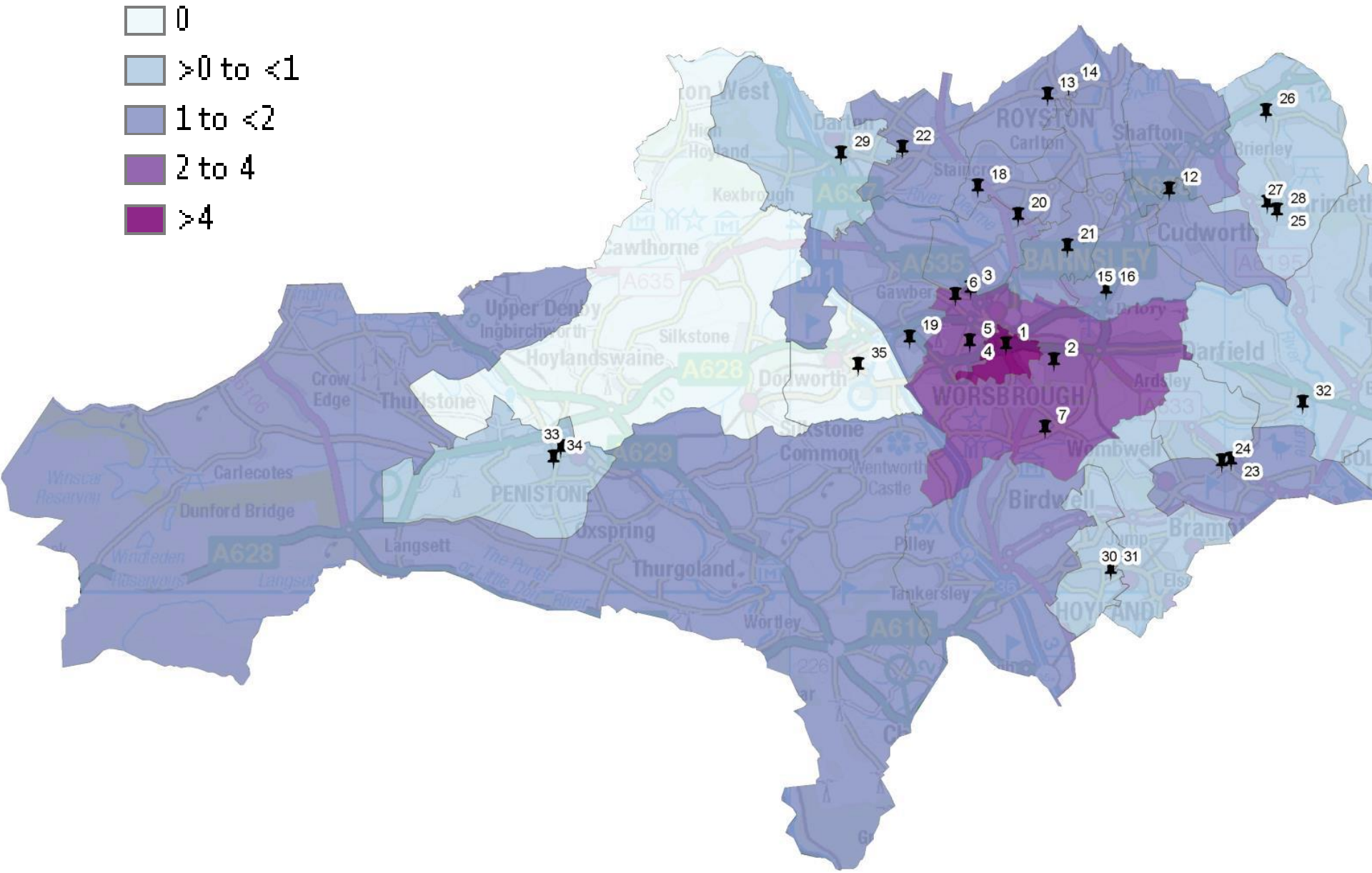

0
>0 to <1
1 to <2
2 to 4
>4
ROYSTON
Carlton
Shafton
Cudworth
BARNSLEY
Gawber
Darfield
WORSBROUGH
Ardsley
Wombwell
Birdwell
Upper Denby
Ingbirchworth
Silkstone
Hoylandswaine
Dodworth
Crow Edge
Thurlstone
Carlecotes
Dunford Bridge
PENISTONE
Oxspring
Langsett
Thurgoland
Wortley
Tankersley
Pilley
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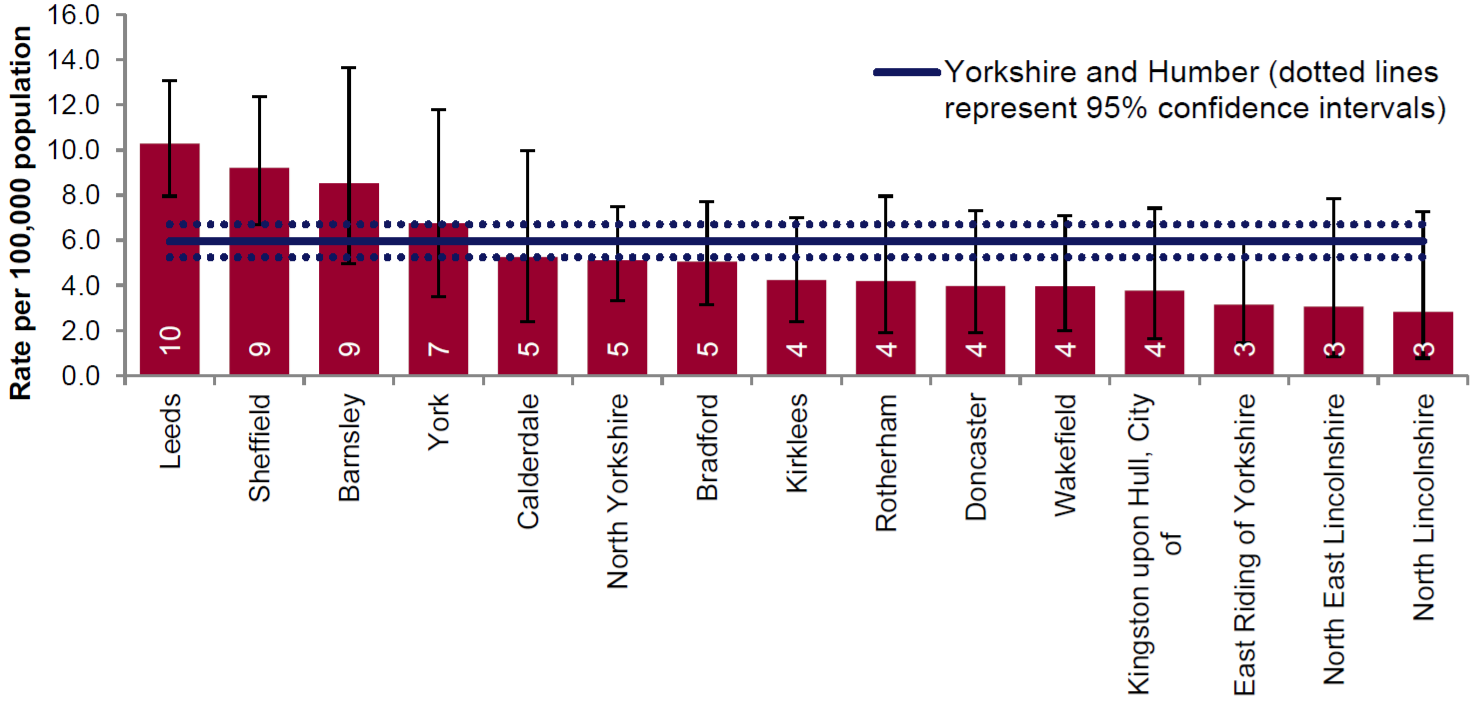
Figure 2: New HIV diagnoses per 100,000 population aged 15 years or older by upper tier local authority of residence, Yorkshire and the Humber residents, 2016



Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD).

The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.

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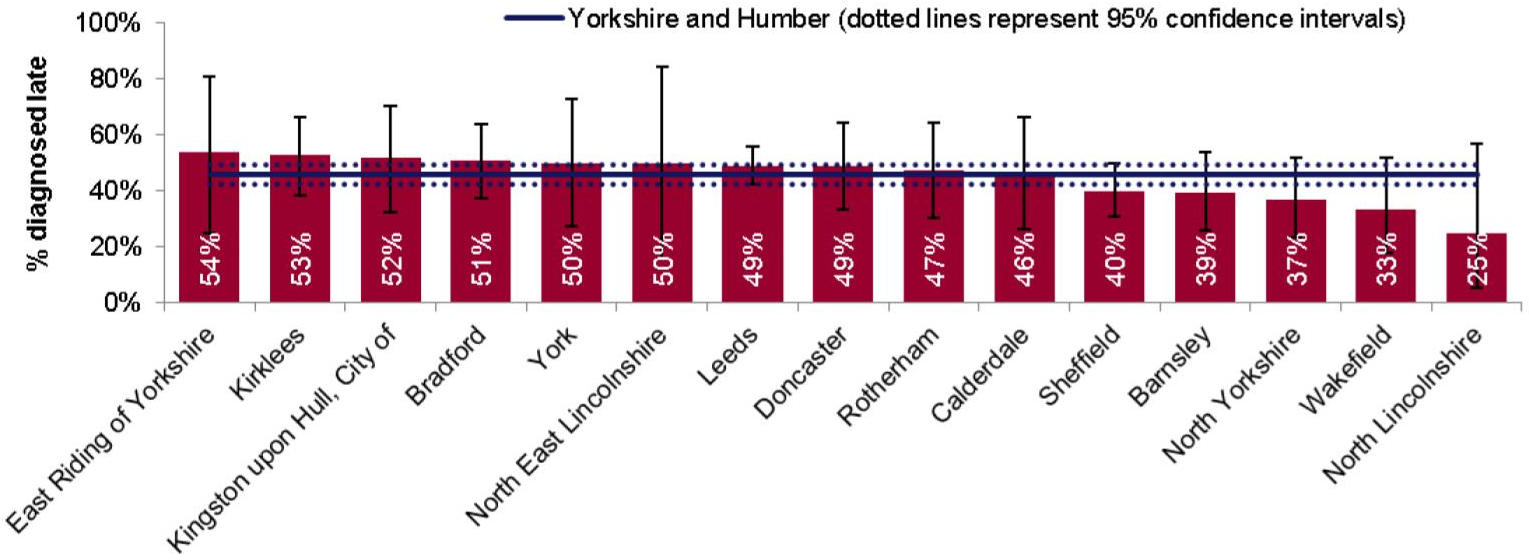
Figure 8: Percentage of new HIV diagnoses that were diagnosed late by upper tier local authority of residence, Yorkshire and the Humber, aged 15 years and over, 2014-2016 *

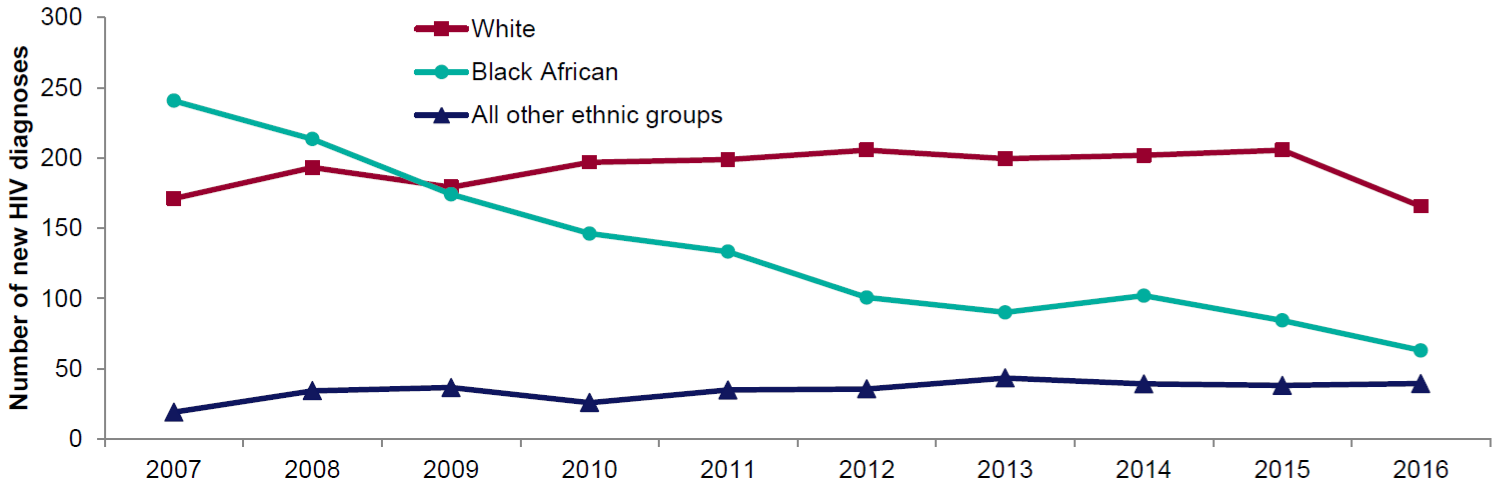


Source: Public Health England, HIV and AIDS New Diagnosis Database/System, HIV & AIDS Reporting System (HARS).

* Only includes new diagnoses for which CD4 count was reported within 91 days of diagnosis; late diagnosis defined as CD4 count <350 cells/mm^3.

The underlying population will impact on the proportion diagnosed late, e.g. MSM are less likely to be diagnosed late.

Figure 6: Number of new HIV diagnoses by ethnic group (adjusted for missing ethnic group information), Yorkshire and the Humber residents, 2007-2016 (please see footnote on interpreting trends)*



Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD).

The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.

*Numbers may rise as further reports are received and more information is obtained on area of residence of those diagnosed. This is more likely to affect more recent years, particularly **2016**. Please see important note on data earlier in this report. This will impact on interpretation of trends in more recent years.

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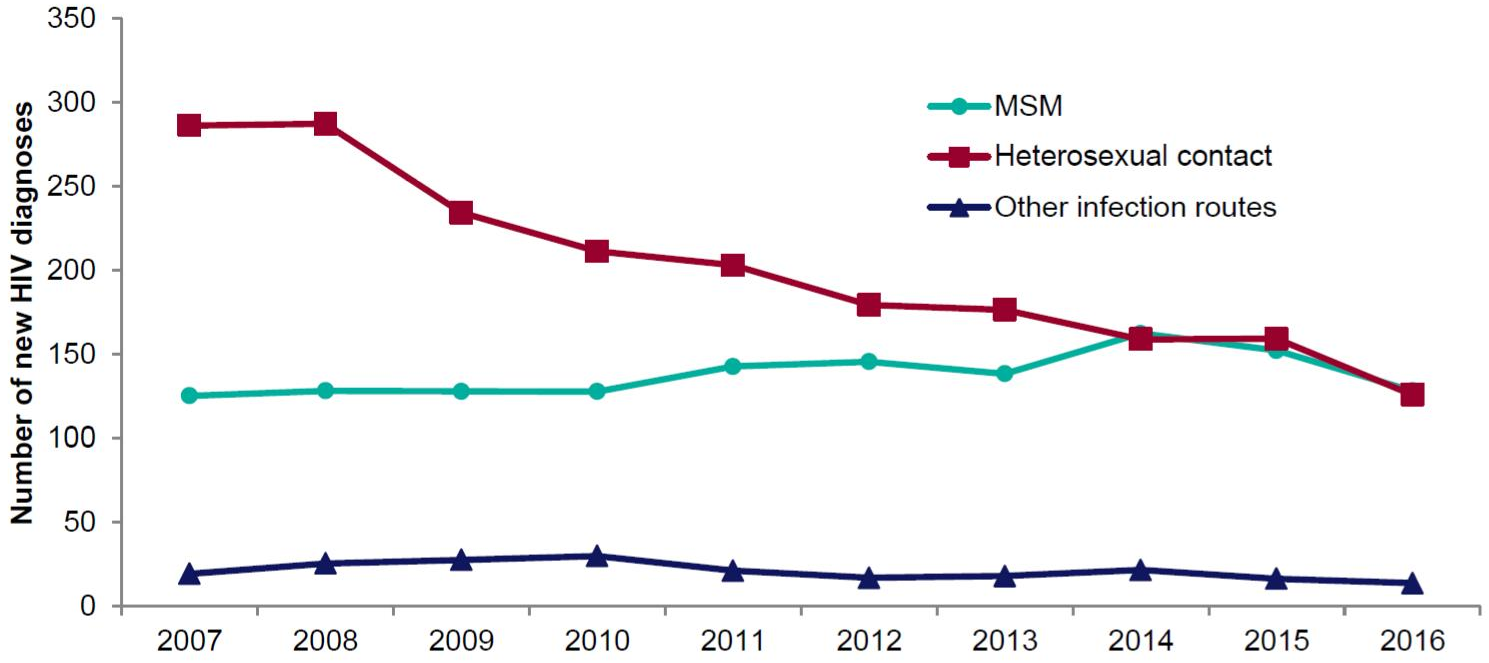
Figure 4: New HIV diagnoses by probable route of infection (adjusted for missing route of infection information), Yorkshire and the Humber residents, 2007-2016 (please see footnote on interpreting trends)*



Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD).

The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.

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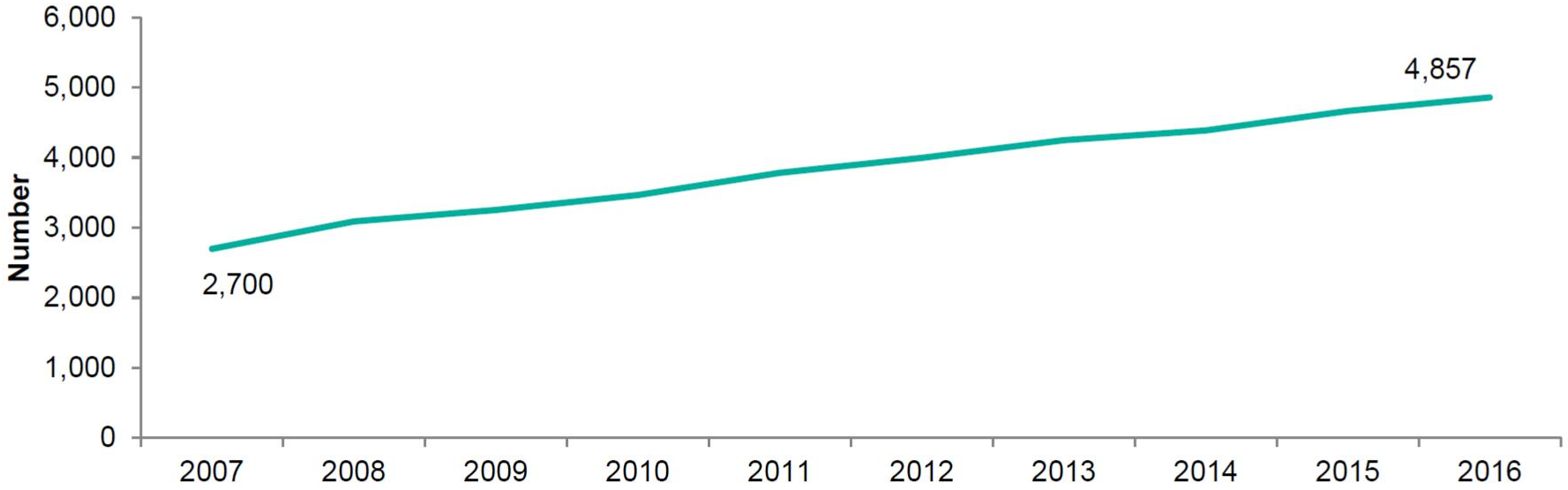
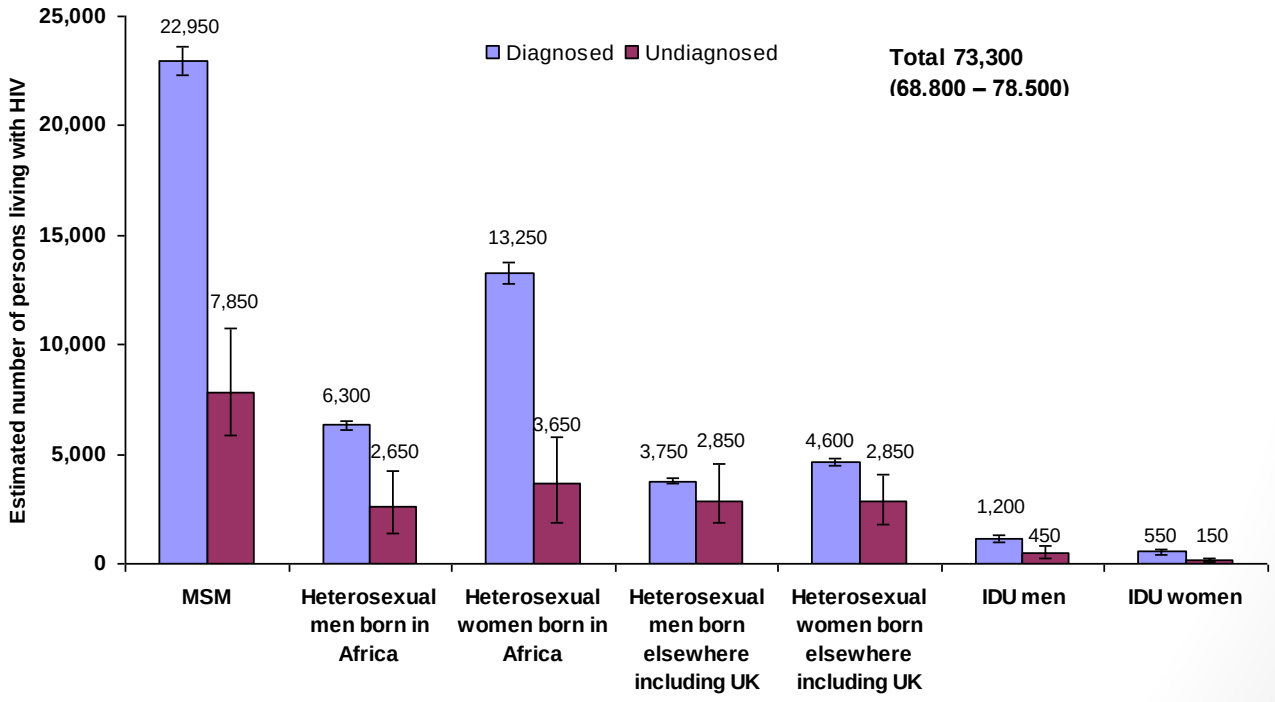
Figure 11: Number of residents living with diagnosed HIV and accessing care, Yorkshire and the Humber, 2007-2016



Source: Public Health England, HIV & AIDS Reporting System (HARS).

Estimated number of adults (15 to 59 years) living with HIV (both diagnosed and undiagnosed) in the UK: 2007



MPES

Why test in General practice?

1. Recommendations based on prevalence

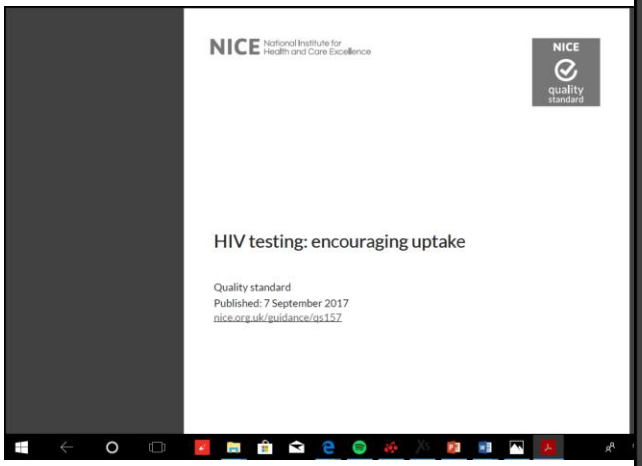
- 11 practices in Barnsley have an HIV prevalence of > 2/1000
- A further 10 Practices have a rate between 1-2 / 1000

NICE recommendations

BASHH recommendations

2. Testing for HIV saves lives - Look back review of late diagnosis

NICE guidance



- HIV testing should be seen as routine practice, says NICE in new draft quality standard

Millions of people could be offered HIV tests during routine appointments as outlined by NICE.

Quality statements

Statement 1 Young people and adults are offered an HIV test when admitted to hospital or attending an emergency department in areas of extremely high HIV prevalence, or when having a blood test when admitted to hospital or attending an emergency department in areas of high HIV prevalence.

Statement 2 Young people and adults in areas of high or extremely high HIV prevalence are offered an HIV test by their GP practice when registering or when having a blood test if they have not had an HIV test in the past 12 months.

Statement 3 Young people and adults newly diagnosed with an HIV indicator condition are offered an HIV test.

Statement 4 Young people and adults in at-risk groups who test negative for HIV are advised that the test should be repeated at least annually.

Statement 5 People who may have been exposed to HIV by a person newly diagnosed with HIV are offered an HIV test.

NICE has developed guidance and a quality standard on patient experience in adult NHS services (see the NICE pathway on patient experience in adult NHS services), which should be considered alongside these quality statements.

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12/12/2017

- Healthcare professionals should emphasise that having an HIV test is a routine procedure but if the test is declined, they should provide information on how to access other local HIV testing services.

- Local authorities with a diagnosed HIV prevalence of between

  - 2 and 5 per 1,000 people aged 15 to 59 years have a high HIV prevalence
  - 5 or more per 1,000 people aged 15 to 59 years have an extremely high HIV prevalence

Table 1: Definitions of indicator conditions and recommendations for HIV testing

1. Conditions which are AIDS defining among PLHIV*

Strongly recommend testing:

Neoplasms:
- Cervical cancer
- Non-Hodgkin lymphoma
- Kaposi's sarcoma

Bacterial infections
- Mycobacterium Tuberculosis, pulmonary or extrapulmunary
- *Mycobacterium avium* complex (MAC) or *Mycobacterium kansasii*, disseminated or extrapulmonary
- *Mycobacterium, other species or unidentified species, disseminated or extrapulmunary*
- Pneumonia, recurrent (2 or more episodes in 12 months)
- Salmonella septicaemia, recurrent

Viral infections
- Cytomegalovirus retinitis
- Cytomegalovirus, other (except liver, spleen, glands)
- Herpes simplex, ulcer(s) > 1 month/bronchitis/pneumonitis
- Progressive multifocal leucoencephalopathy

Parasitic infections
- Cerebral toxoplasmosis
- Cryptosporidiosis diarrhoea, > 1 month
- Isosporiasis, > 1 month
- Atypical disseminated leismaniasis
- Reactivation of American trypanosomiasis (meningoencephalitis or myocarditis)

Fungal infections
- Pneumocystis carinii pneumonia
- Candidiasis, oesophageal
- Candidiasis, bronchial/ tracheal/ lungs
- Cryptococcosis, extra-pulmonary
- Histoplasmosis, disseminated/ extra pulmonary
- Coccidiodomycosis, disseminated/ extra pulmonary
- Penicilliosis, disseminated

2a. Conditions associated with an undiagnosed HIV prevalence of ≥0.1

Strongly recommend testing:
- Sexually transmitted infections
- Malignant lymphoma
- Anal cancer/dysplasia
- Cervical dysplasia
- Herpes zoster
- Hepatitis B or C (acute or chronic)
- Unexplained lymphadenopathy
- Mononucleosis-like illness
- Community-acquired pneumonia
- Unexplained leukocytopenia/thrombocytopenia lasting >4 weeks
- Seborrheic dermatitis/exanthema
- Invasive pneumococcal disease
- Unexplained fever
- Candidaemia
- Visceral leishmaniasis
- Pregnancy (implications for the unborn child)

2b. Other conditions considered likely to have an undiagnosed HIV prevalence of >0.1%

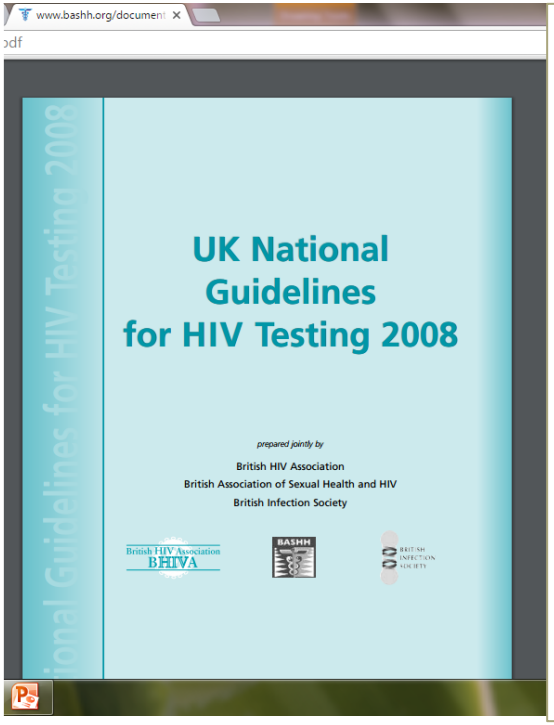
Offer testing:
- Primary lung cancer
- Lymphocytic meningitis
- Oral hairy leukoplakia
- Severe or atypical psoriasis
- Guillain–Barrè syndrome
- Mononeuritis
- Subcortical dementia
- Multiplesclerosis-like disease
- Peripheral neuropathy
- Unexplained weightloss
- Unexplained oral candidiasis
- Unexplained chronic diarrhoea
- Unexplained chronic renal impairment
- Hepatitis A
- Candidiasis

3. Conditions where not identifying the presence of HIV infection may have significant adverse implications for the individual's clinical management

Offer testing:
- Conditions requiring aggressive immuno-suppressive therapy:
  - Cancer
  - Transplantation
  - Auto-immune disease treated with immunosuppressive therapy
- Primary space occupying lesion of the brain.
- Idiopatic/Thrombotic thrombocytopenic purpura

* Based on CDC and WHO classification system

When to test?



TOP 3

1. TB
2. BBV – Hep B / C
3. Lymphoma

ssociation for Sex | www.bashh.org/document
ocuments/1838.pdf

B. An HIV test should be considered in the following settings where diagnosed HIV prevalence in the local population (PCT/LA) exceeds 2 in 1000 population (see local PCT data†):

1. all men and women registering in general practice
2. all general medical admissions.

The introduction of universal HIV testing in these settings should be thoroughly evaluated for acceptability and feasibility and the resultant data made available to better inform the ongoing implementation of these guidelines.

C. HIV testing should be also routinely offered and recommended to the following patients:

1. all patients presenting for healthcare where HIV, including primary HIV infection, enters the differential diagnosis (*see* table of indicator diseases and section on primary HIV infection)
2. all patients diagnosed with a sexually transmitted infection
3. all sexual partners of men and women known to be HIV positive
4. all men who have disclosed sexual contact with other men
5. all female sexual contacts of men who have sex with men
6. all patients reporting a history of injecting drug use
7. all men and women known to be from a country of high HIV prevalence (>1%*)
8. all men and women who report sexual contact abroad or in the UK with individuals from countries of high HIV prevalence.*

* for an up to date list *see*
http://www.unaids.org/en/KnowledgeCentre/HIVData/Epidemiology/latestEpiData.asp

Desktop 09:52

Testing in General Practice

- In 2016, HIV test positivity rates in general practice in high (0.5%) and extremely high (0.4%) diagnosed HIV prevalence areas, and those tested in A&E and other secondary care settings (0.6%), now exceed those seen in SHS.

- HIV Testing in general practice have increased by 17% between 2014 and 2016.

- In extremely high prevalence areas, 101 per 10,000 of the general practice population were tested for HIV in 2016 (positivity of 0.4%).
- In high prevalence areas, 44 per 10,000 of the general practice population were tested, 0.5% of whom were positive.

HIV testing saves lives!

Local epidemiology – new cases 2015/ 2016;

2015

- 21 male, 4 female;
- 17 white British, 14 MSM (82%);
- 3 Black African
- 5 Eastern European (20%)

- Africans in UK since 2015;
- E Europeans since 2003, 2003, 2004, 2007 and 2013;
- GP diagnosed 2 (x 1 MSM), 4 by medical admissions (1 died)

- Mean CD4 White British = **438**
- Mean CD4 non-white Br = **305**

2016

- 15 male, 4 female;
- 13 white British, 6 MSM (46%);
- 3 Black African
- 3 Eastern European (16%)

- Africans in UK since 1999, 2003,2007; E Europeans 2016;
- GP diagnosed 1 (African), 4 by medical admissions

- Mean CD4 White British = **458**
- Mean CD4 non-white Br = **263**

HIV testing saves lives!

- 35 year old male.
- Latvian.
- Previously under drug addiction services in Derby since 2013 – methadone programme.
- Migrant.
- Attended GP practice on 6 occasions April to October 2016 with bad skin.
- Diagnosed with psoriasis;
- Clippings showed fungal nails.
- Referred Dermatology – confirmed psoriasis and suggested treatment

HIV testing saves lives!

- October 2016: drug and addiction services performed a POCT:
  - HIV reactive; referred to BISH.
- BISH: “diagnosed with HIV 4 years previously; in UK 8 months; past history of IVDU and Hepatitis B”;
- O/E; florid oral candida; seborrhoeic dermatitis; psoriasis; fungal nails;
- HIV confirmed; also HCV genotype 1b, HCV VL 439,672c/ml; ALT 78; HepBcore Ab+ve;
- CD4 = 6 cells/ml; VL 4.04 x 10^6/ml;
- Commenced on prophylaxis with septrin, and ARVs
- March 17: CD4 78, VL 54 c/ml; skin & mouth much better;

HIV testing saves lives! –

with clues

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HIV testing saves lives!

- 47 year old female.
- Born in Zimbabwe. In Uk since 2007. previously in the Midlands until ~ 2013.
- On ramipril for hypertension.
- Admitted to BHNFT in July 2017 with appendicitis; asked for an HIV test. Believed also had one with GP in previous year.
- HIV detected, CD4 462 cells/$mm^{3,}$ VL 32,000c/$ml^{;}$ TPPA +ve;
- VL not detected, CD4 588;
- ICE records:
  - bloods 2013 for hypertension;
  - in 2014 “patient requested blood tests”;

HIV testing saves lives!

- with clues

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HIV testing saves lives!

- 37 year old male.
- Admitted to MAU with cough, SOB, fever; CXR showed small area of consolidation right base.
- Married, same partner 10 years, 2 children;
- Weightloss and malaise for 5 months.
- F2 performed an HIV test on admission
- CD4 count 8 cells/mm^3
- ICE reports:
  - Nil.

HIV testing saves lives!

- with clues

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- Admitted to MAU with cough, SOB, fever; CXR showed small area of consolidation right base.
- Married, same partner 10 years, 2 children;
- **Weightloss** and malaise for 5 months.
- F2 performed an HIV test on admission;
- CD4 count 8 cells/$mm^{3;}$ VL 2.9 x 10^{6}/L
- ICE reports:
  - Nil.
- CD4 count 180 cells/ml, VL not detected;

HIV testing saves lives!

Commonly reported clinical signs

- **Skin**
  - **Psoriasis;**
- **Recurrent fungal infections**
- **Herpes zoster**
- **Recurrent oral ulceration**
- **Weight loss;**
- **Persistent diarrhoea;**
- **Seroconversion symptoms;**
  - **Rash, fever, glands, sore throat, malaise, abdo pain;**

Laboratory clues

- **Abnormal FBC**
  - **Low** (or high) **platelets;**
  - **Low** (or high) **neutrophils;**
  - **High** (or low) **lymphocytes;**
- **Hepatitis C or B**
- **High total protein (esp globulins)**

HIV testing saves lives!

Local epidemiological clues

- **Born in Eastern Europe**
- **Born in Africa;**
- **IVDU;**
- **Hepatitis C or B;**
- **MSM;**
- **Clinical or laboratory features of HIV, regardless of age/race/gender;**

HAART

- Several widely available single tablet regimens
- ‘Cleaner’ drugs – fewer side effects
- Newer drug groups with fewer drug-drug interactions
- Compliance is the key to successful treatment

ART is for life – *please always contact the HIV unit before discontinuing a patients antiretroviral therapy*

Treatments


Eviplera®
200 mg/25 mg/245 mg
film-coated tablets
emtricitabine/rilpivirine/
tenofovir disoproxil
30 film-coated tablets.
Oral use.
Gilead Sciences Intl Ltd
Cambridge
CB21 6GT
United Kingdom
GILEAD
Eviplera®
200 mg/25 mg/245 mg
film-coated tablets
emtricitabine/rilpivirine/
tenofovir disoproxil
30 film-coated tablets.
Oral use.
EU/1/11/737/001
GILEAD


Triumeq
600 mg/50 mg/300 mg
Triumeq
30


Stribild


Atripla
Atripla
Atripla

Other commonly used combinations:

Darunavair ritonavir Truvada or Kivexa

+

or

Nevirapine
Truvada or Kivexa

+

Benefits of treatment

- Preservation of immune function
- Improved life expectancy
- Reduced onward transmission
- Reduction of mother to baby transmission
- Fewer hospital admissions

How to do an HIV test

You need one of these….

……verbal consent and a standard microbiology form – simply request HIV test!

You do not need….

Formal pre test counselling*, written consent, cat 3 stickers (unless other risk), special permission!

** If patient identified as being at high risk of infection GUM health advisors will come and see patient*

Resources for General Practice

- Patient information sheet
- Flow chart for testing
- Flow chart for management of positive results
- Practice sessions

Patient information sheet

Testing for HIV

At this practice we offer HIV testing to:

- ✓ Everyone wanting to register with us as part of standard medical care.
- ✓ Some people who are already registered and are having blood tests for other reasons.
- ✓ Sometimes your doctor may recommend an HIV test, for example if you are at increased risk of HIV or if you have a condition associated with HIV infection.

What is HIV infection?

HIV is a virus that can damage the body's defence system so that it cannot fight off certain infections.

HIV can be found in people who are fit and well, as symptoms can take years to develop.

AIDS is the condition that can occur if someone who is HIV positive goes on to develop certain other serious illnesses. AIDS can be prevented if HIV is diagnosed early enough.

Why do we offer HIV testing?

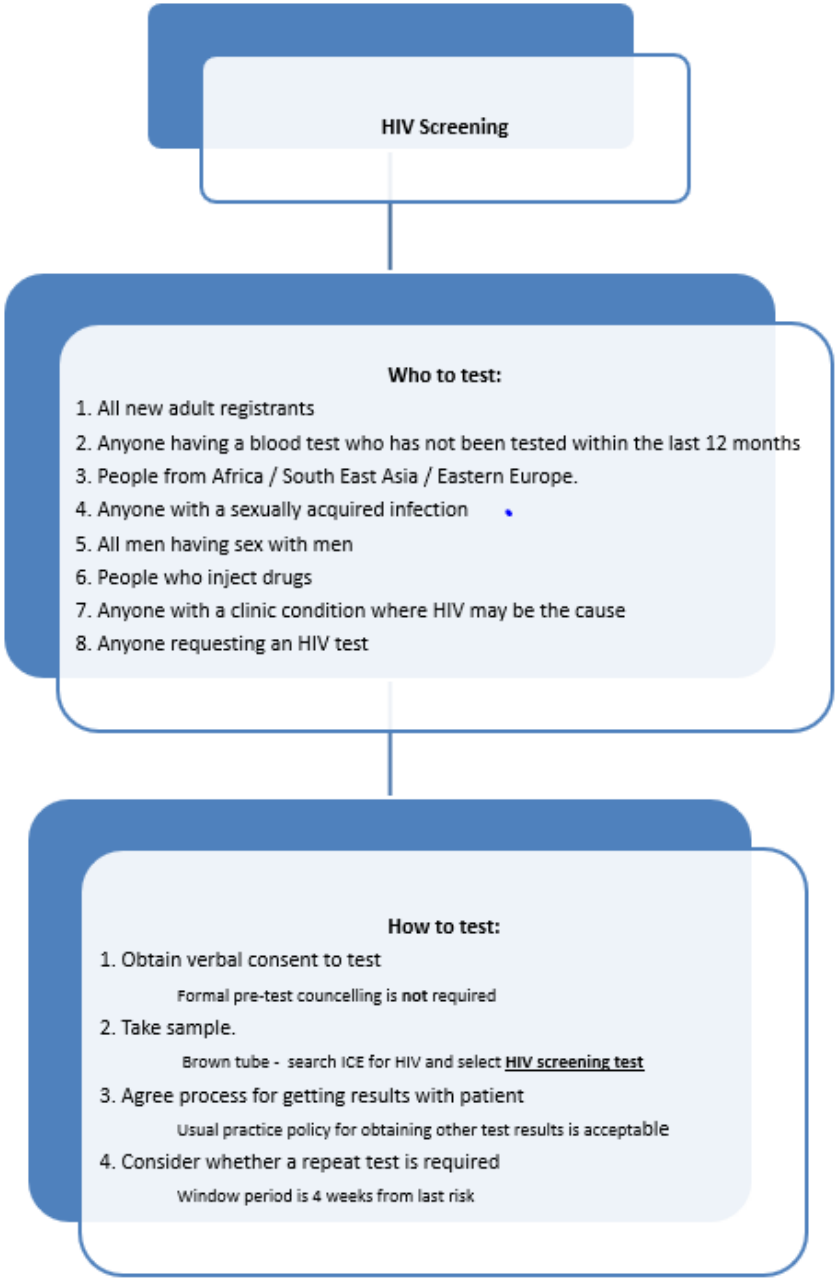
- ✓ In this area the number of people living with HIV is high enough for National organisations to recommend testing everyone registering with a medical practice
- ✓ Excellent medicines have now been developed for treating HIV. This treatment will help to keep you healthy and reduce the risk of you passing the virus on to another person.
- ✓ The earlier you find out about HIV infection, the better the chance of the treatment working.

Who is at risk of HIV?

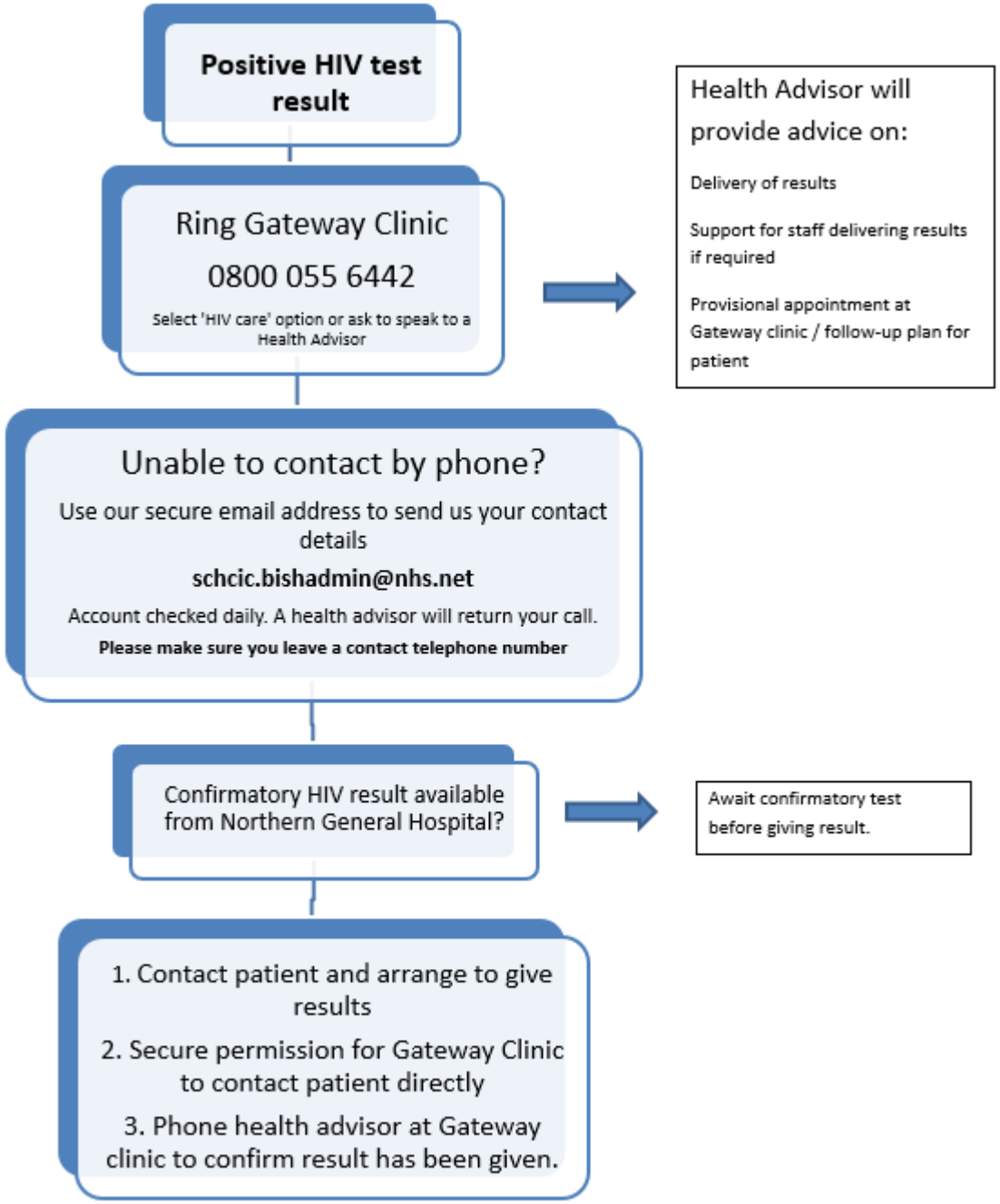
Anyone who has been in a sexual relationship or has had a needle or blood exposure can have HIV. However, some groups of people are at higher risk. These include:

- ✓ Men who have sex with men
- ✓ *People from countries such as Africa, South East Asia and parts of Eastern Europe where there are higher rates of HIV*
- ✓ *People who have injected drug*
- ✓ *People who have had a blood transfusion abroad*
- ✓ *Those with* other health problems known to be more commonly seen in those with HIV

If you want more information about HIV, please ask us. If you decided that you do not want to test for HIV please tell the doctor or nurse looking after you.



Gateway Clinic (Barnsley Integrated Sexual Health Services)	**0800 055 6442**


Positive HIV test result
Ring Gateway Clinic
0800 055 6442
Select 'HIV care' option or ask to speak to a Health Advisor
Health Advisor will provide advice on:
Delivery of results
Support for staff delivering results if required
Provisional appointment at Gateway clinic / follow-up plan for patient
Unable to contact by phone?
Use our secure email address to send us your contact details
schcic.bishadmin@nhs.net
Account checked daily. A health advisor will return your call.
Please make sure you leave a contact telephone number
Confirmatory HIV result available from Northern General Hospital?
Await confirmatory test before giving result.
1. Contact patient and arrange to give results
2. Secure permission for Gateway Clinic to contact patient directly
3. Phone health advisor at Gateway clinic to confirm result has been given.

What might you be asked by someone having an HIV test?

- What about insurance?
- How reliable is the test?
- Do I need another test?
- Where can I get more information?
- How do I get my results?
- What happens if I have it?

Prompts to encourage testing

- Add to templates
  - TB templates
  - Hepatitis templates
- New patient forms

Barriers to testing?

Terrence Higgins Trust @THTorguk · 16m

Prince Harry's message for #HIVTestWeek is clear: get tested and know your HIV status.

Prince Harry plays shopkeeper as he hands out free HIV testing kits

Prince Harry has made a cameo appearance in the job of shopkeeper, as he took a turn handing out free HIV testing kits to the public.

telegraph.co.uk

3 5

PEP(SE)
Post Exposure Prophylaxis
(following sexual exposure)

- PEP(SE) is a 4 week course of medication used to treat HIV infection
- Start within 72 hours of exposure risk

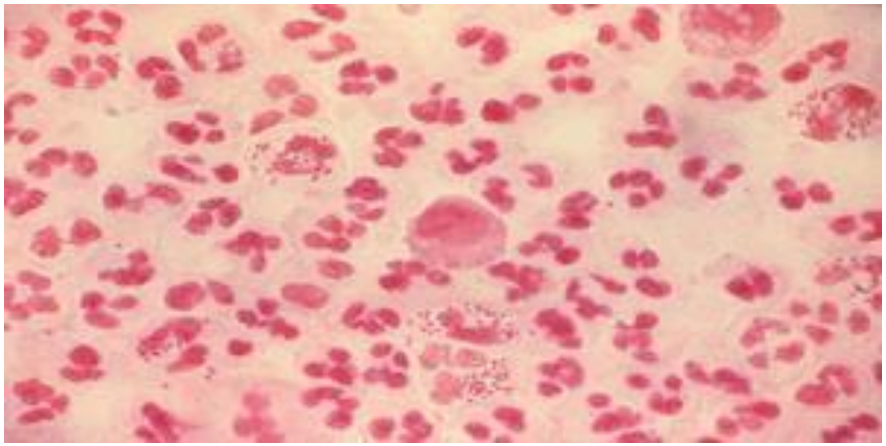
- Refer directly to Gateway clinic or A+E if we are closed

Pre Exposure prophylaxis to HIV infection (PrEP)

- PROUD study
- MSM having UPSI were randomised to either start PrEP immediately or delayed start of PrEP for 1 year
- 544 participants (275 in the immediate group, 269 in the deferred group)
- Three HIV infections occurred in the immediate group (1·2/100 person-years) versus 20 in the deferred group (9·0/100 person-years) despite 174 prescriptions of post-exposure prophylaxis in the deferred group
- Relative reduction 86%,
- 13 men (90% CI 9–23) in a similar population would need access to 1 year of PrEP to avert one HIV infection. (cost about £63 K vs cost HIV £380 k) Also improved broader sexual health and wellbeing

Chem Sex

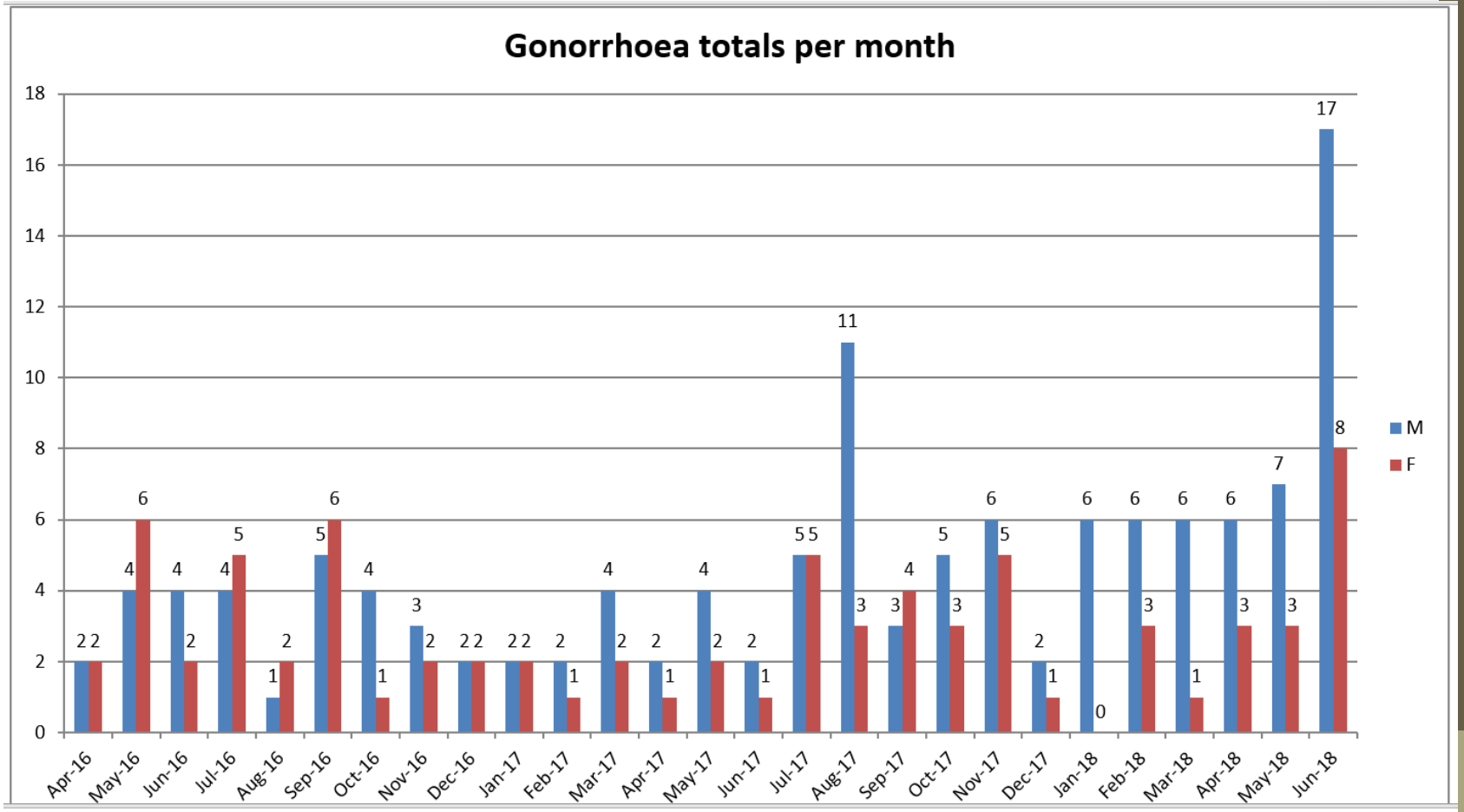
- Taking drugs and having sex
- Increasing prevalence in the UK
- Current focus on MSM (although HS may also practice Chem Sex)
- Common drugs include GHB, Methamphetamine (Crystal meth, Ice) , mephadrone (meow meow, M-CAT)



Gonorrhoea

Testing

Management


Gonorrhoea totals per month
18
16
14
12
10
8
6
4
2
0
M
F
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Apr-18
May-18
Jun-18

Background

- Gram negative intracellular diplococci
- 50% cases in < 25 yrs
- 36% cases in MSM
- Asymptomatic / dysuria, discharge, LAP pain, dyspareunia

Tests

Women

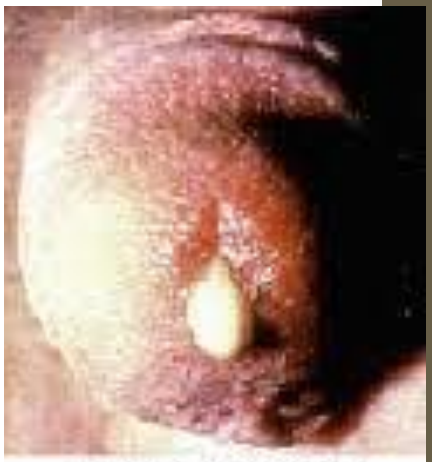
- Vulvo vaginal swab (CT and GC NAAT)

Men

- Urine (1st void) NAAT CT/GC

MSM

- Urine (1st void) NAAT CT/GC
- Pharyngeal swab NAAT CT/GC
- Rectal swab NAAT CT/GC



Genital Gonorrhoea in a male patient

Culture

- 100% specificity
- 100% positive predictive value
- 85-95% sensitivity

- Enriched medium, CO2 enriched environment,>90% humidity.
  - Contains antibiotic/antifungal to prevent overgrowth (combinations of vancomycin / linomycin, colistin/trimethoprim and nystatin/amphoteracin)
- Can do swabs and store at 4 degrees, loss of viability after 48 hours.

NAAT

- Better sensitivity for extra-genital sites
- Sensitivity good for:
  - urine and urethral swabs in men
  - Endocervical and vaginal swabs in women Not good for urine in women.
- False positives with other Neisseria species – test on 2 primers

Management of positive results

- Offer confirmed contacts epidemiological treatment at first visit
- Ensure 2 NAAT tests have been performed
- Ensure cultures taken form all relevant sites

- TOC following treatment:
  - 2/52 for NAAT tests
  - 3/7 for cultures
- HA for contact tracing

Treatment

First line:

- Cefixime 400mg po stat with azithromycin 1 g po stat or
- Ceftriaxone 500mg IM stat with azithromycin 1 g po stat

MSM or acquired overseas: ceftriaxone 500mg IM stat with azithromycin 1 g po stat

Alternatives: ciprofloxacin 500mg po stat with azithromycin 1 g po stat or azithromycin 2g po stat

Pregnancy/breastfeeding:

- Ceftriaxone 500mg IM stat with azithromycin 1 g po stat or
- Cefixime 400mg po stat with azithromycin 1 g po stat

(Manufacturers advise that azithromycin should only be used if no suitable alternatives.)

Penicillin allergy:

ciprofloxacin 400mg po stat with azithromycin 1g po stat or azithromycin 2g po stat

Pharyngeal infection:

ceftriaxone 500mg IM stat with azithromycin 1g po stat or discuss with Consultant.