STI & HIV Surveillance and Epidemiology

Outline

- Overview of surveillance systems
- Overview of HIV epidemiology
- Overview of STI epidemiology
- Where you can find the data
Surveillance systems

HIV/STI surveillance systems

- GUMCAD
- CTAD
- GRASP

- HARS
- HANDD
GUMCAD STI Surveillance System

- Mandatory data set, began in 2008 and full coverage of sexual health services in 2012
- Attendance based dataset
- Data submitted on a quarterly basis by:
  - GUM and Integrated services (Specialist / Level 3 services)
  - All commissioned Level 2 / non-specialist SHS
- Electronic pseudo-anonymised patient-level data
  - All STI tests, diagnoses and other services provided
  - Socio-demographic data
  - Residence information
  - Cannot link patients across clinics

CTAD (for NCSP)

- **Chlamydia testing activity dataset (2012 onwards)**
  - Data submitted by any lab commissioned to complete chlamydia testing
  - Electronic pseudo-anonymised patient-level data
    - Provides number of chlamydia tests & diagnosis
    - Residence information
- **National Chlamydia Screening Programme (NCSP)**
  - Opportunistic screening for 15-24 year olds in a variety of settings
  - Started 2003 with standard methods for implementation – ‘Core Requirements’
  - Chlamydia detection rate by local authority
GRASP

Gonococcal resistance to antimicrobials surveillance programme

• **Aim:** to determine the prevalence and geographic distribution of antimicrobial resistance in *Neisseria gonorrhoeae*

• Isolate collection undertaken from July to September

• Consecutive gonococcal isolates to be sent to reference centres for sensitivity testing

• Retrospective collection of clinical, demographic and behavioural data from clinics

HANDD

Reports of new HIV diagnoses, AIDS and Deaths

• Retrospective reports from 1979

• Voluntary submissions

• Data submitted throughout the year by laboratories, SHSs, GPs and other services where HIV testing takes place in England, Wales and Northern Ireland.
  • Scottish data (Health Protection Scotland) and data concerning paediatric infections (Institute of Child Health) are collected separately.

• Electronic individual-level data
  • Probable exposure route, date of diagnosis
  • Where the diagnosis/death was recorded
  • Socio-demographic data
  • Residence information
  • Able to de-duplicate by individual
HARS

HIV and AIDS Reporting System

- A consultation based, disaggregate dataset
- Began in 2014, replaced a previous system called SOPHID
- Data submitted on a quarterly basis by all outpatient HIV service providers in England
- Provides information about HIV treatment of people accessing HIV care
- Electronic patient-level data
  - Treatment status, VL monitoring, ART treatment
  - Socio-demographic data
  - Residence information
  - Able to link patients across clinics
- Note – Scotland has their own surveillance system. Wales and Northern Ireland submit a return similar to the old SOPHID return.

Surveillance overview

<table>
<thead>
<tr>
<th>System</th>
<th>Type</th>
<th>Services covered</th>
<th>Focus</th>
<th>Reporting pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUMCAD</td>
<td>Mandatory</td>
<td>All Level 2 &amp; 3 sexual health services (SHS)</td>
<td>All STIs</td>
<td>Clinics → PHE</td>
</tr>
<tr>
<td>CTAD</td>
<td>Mandatory</td>
<td>All testing venues</td>
<td>Chlamydia</td>
<td>Labs → PHE</td>
</tr>
<tr>
<td>GRASP</td>
<td>Sentinel</td>
<td>Level 3 sexual health services</td>
<td>Gonorrhoea</td>
<td>Clinics → PHE</td>
</tr>
<tr>
<td>HANDD</td>
<td>Voluntary</td>
<td>Services where HIV testing takes place</td>
<td>HIV</td>
<td>Clinicians &amp; Labs → PHE</td>
</tr>
<tr>
<td>HARS</td>
<td>Mandatory</td>
<td>All HIV outpatient services</td>
<td>HIV</td>
<td>Clinics → PHE</td>
</tr>
</tbody>
</table>
HIV epidemiology

New HIV Diagnoses
Continuum of HIV care: UK, 2017

[Diagram showing percentages of people living with HIV, diagnosed with HIV, on treatment, and virally suppressed.

Data Source: HANDD & HARS & MPES]

Estimated* number of people living with HIV (diagnosed and undiagnosed) all ages: UK, 2017

Total living with HIV = 101,600 (99,300 to 106,400)
Total diagnosed = 93,800 (93,200 to 94,400)
Total undiagnosed = 7,800 (5,600 to 12,600)

Undiagnosed (%)

Gay and bisexual men: 9%
Black African men: 5%
Black African women: 6%
Non black-African men: 9%
Non black-African women: 8%
People who inject drugs: 8%

*Estimates do not add to totals and subtotals due to rounding.

Data Source: HANDD & HARS & MPES
New HIV diagnoses* by exposure group: UK, 2008-2017

- Gay and bisexual men
- Heterosexual men
- Heterosexual women
- People who inject drugs
- Other exposures

*Adjusted for missing exposure information

Data Source: HANDD & HARS

New HIV diagnoses* in gay and bisexual men: UK, 2008-2017

31% decrease (3,390 – 2,330)

*Adjusted for missing exposure information

Data Source: HANDD & HARS

Data Source: HANDD & HARS & RITA

New HIV diagnoses* in Heterosexual men and women: UK, 2008-2017

*Adjusted for missing exposure information

Data Source: HANDD & HARS

55% decrease (4,000 – 1,810)
HIV diagnoses* among heterosexual men and women, by ethnicity: UK, 2008-2017

Data Source: HANDD & HARS

*Observed data, not adjusted for missing information.
Adjusted* number of people diagnosed late by risk group:
UK, 2008-2017

*Adjusted for missing CD4 count at diagnosis

Data Source: HANDD & HARS

52% of women were diagnosed late
69% of men were diagnosed late

Data Source: HANDD & HARS

STI & HIV Surveillance and epidemiology
People living with diagnosed HIV

People diagnosed with HIV receiving specialist care by age group: UK, 2008-2017

Data Source: HARS
One-year mortality rate among adults newly diagnosed with HIV by CD4 cells/mm$^3$ at diagnosis: UK, 2016

Data Source: HARS

STI epidemiology
2017 STI Data for England

In 2017 there were approximately 420,000 diagnoses of sexually transmitted infections (STIs) made in England.

Chlamydia 48%
Genital warts 14%
Gonorrhoea 11%
Other STIs 27%

Total number of STI diagnoses: England, 2008 to 2017

Data from specialist and non-specialist SHS (GUMCAD and CTAD returns)
Data for new STI diagnoses from 2012 onwards, and from 2015-16, are not comparable to data from previous years (please see Notes 3 to 5 in the 'Notes' slide for more details)
Data type: service data

Data Source: GUMCAD & CTAD
Rates of new STI diagnoses by gender and age group: England, 2017

- Data from specialist and non-specialist SHS (GUMCAD and CTAD returns)
- ONS Census mid-year 2016 estimates used for denominators
- Data type: service data

**STI trends in Gay, bisexual and other men who have sex with men**
Gay, bisexual and other men who have sex with men

Syphilis 303%↑

Gonorrhoea 716%↑

From 2008 to 2017
Data Source: GUMCAD

Number of STI diagnoses among MSM: England, 2008-2017

Data from specialist and non-specialist SHS (GUMCAD returns)
• * First episode; **Includes diagnoses of primary, secondary and early latent syphilis
• Chlamydia data from 2012 onwards are not comparable to data from previous years (please see ‘Notes’ slide for more details)
• Data type: service data

Data Source: GUMCAD
Number of STI diagnoses among MSM by HIV status: England, 2017

- Data from specialist and non-specialist SHS (GUMCAD returns)
- Percentages represent the proportion of STI diagnoses that were made in MSM known to be HIV positive
- * First episode; ** Includes diagnoses of primary, secondary & early latent syphilis
- Data type: service data

Rates of acute bacterial and viral STIs in MSM by HIV status, England, 2009-15

Sexual health of BAME populations

Black minority ethnic (BME) populations are disproportionately affected by STIs

3x

The rates of gonorrhoea and chlamydia in BME people is 3x that of the general population
Inequalities in poor sexual health

— Recognised since the 1950s\textsuperscript{1,2,3}

— Disparity was highlighted in work from Lambeth, Southwark and Lewisham (LSL) in the 1990s
  • BME people were 11x as likely as white people to be diagnosed with gonorrhoea\textsuperscript{4}

— Further research identified differences in STI rates amongst BME groups
  • Higher STI rates in black Caribbean and black ‘other’ ethnic groups\textsuperscript{5}

\textsuperscript{1} Beveridge 1962, 2 Laird 1962, 3 Watt 1958, 4 Low 1997, 5 Low 2001

- GC diagnoses in mixed 'other', Asian and black African GBMSM nearly doubled in the last 5 years
- Amongst non-white GBMSM, STI diagnoses most common in men of Asian and 'other' (25% Chinese ethnicity) groups

Data Source: GUMCAD

Gonorrhoea diagnoses in GBMSM, by ethnicity and HIV status, England, 2017

Data Source: GUMCAD
Using “Number needed to test” to understand HIV testing data

HIV testing and positivity in attendees at all SHS by sexual orientation: England, 2013-2017

Data Source: GUMCAD
Number needed to test in order to diagnose one person with HIV, all SHS attendees by sexual orientation: England, 2017

Risk group
- Gay and bisexual men: 112
- Heterosexual men: 956
- Heterosexual women: 1,298

Number of people tested in order to diagnose one positive

Data Source: GUMCAD

Trends in HIV testing and positivity for gay and bisexual male attendees at all SHS: England, 2013-2017

Data Source: GUMCAD
Gay and bisexual men testing for HIV at specialist SHS: previous HIV tests at the same clinic: England, 2013-2017

Number needed to test, gay and bisexual men at specialist SHS: previous HIV test: England, 2017

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1 previous year – 43 - 365 days previous to the last test in a calendar year or date of new diagnosis

2 1-2 years ago – at least one test in the 366 - 730 days and no tests in the 43 - 365 days previous to the last test in a calendar year or date of new diagnosis

Data Source: GUMCAD
HIV testing cascade among gay and bisexual men who have a high HIV risk\(^1\) who attended specialist SHS: England, 2016-2017

\(^1\) Includes gay and bisexual men with an anogenital STI diagnoses in 2016
\(^2\) Offered an HIV test at least once in the 90 - 365 days after their STI diagnosis

Data Source: GUMCAD
Outputs: Annual statistics

HIV data tables

Table 6: Persons seen for HIV care in the UK, by country and PHE region of residence: 2008-2017
Data to the end of December 2017

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>26,502</td>
<td>28,269</td>
<td>29,680</td>
<td>31,074</td>
<td>32,446</td>
<td>33,744</td>
<td>35,188</td>
<td>36,425</td>
<td>36,742</td>
<td>36,436</td>
</tr>
<tr>
<td>Midlands and East of England</td>
<td>10,602</td>
<td>11,559</td>
<td>12,448</td>
<td>13,387</td>
<td>14,320</td>
<td>14,927</td>
<td>15,016</td>
<td>15,668</td>
<td>17,940</td>
<td>18,556</td>
</tr>
<tr>
<td>North of England</td>
<td>9,672</td>
<td>10,409</td>
<td>11,148</td>
<td>11,851</td>
<td>12,877</td>
<td>13,143</td>
<td>13,839</td>
<td>14,659</td>
<td>15,343</td>
<td>15,520</td>
</tr>
<tr>
<td>South of England</td>
<td>9,177</td>
<td>9,882</td>
<td>10,491</td>
<td>11,174</td>
<td>11,874</td>
<td>12,479</td>
<td>13,151</td>
<td>13,813</td>
<td>14,474</td>
<td>15,025</td>
</tr>
<tr>
<td>England total</td>
<td>56,353</td>
<td>60,119</td>
<td>63,764</td>
<td>67,356</td>
<td>71,217</td>
<td>74,293</td>
<td>78,194</td>
<td>81,563</td>
<td>84,499</td>
<td>85,537</td>
</tr>
<tr>
<td>Wales</td>
<td>1,085</td>
<td>1,200</td>
<td>1,328</td>
<td>1,485</td>
<td>1,550</td>
<td>1,678</td>
<td>1,857</td>
<td>1,941</td>
<td>2,028</td>
<td>2,114</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>401</td>
<td>440</td>
<td>499</td>
<td>568</td>
<td>666</td>
<td>760</td>
<td>861</td>
<td>931</td>
<td>999</td>
<td>1,073</td>
</tr>
<tr>
<td>Scotland</td>
<td>2,885</td>
<td>3,080</td>
<td>3,319</td>
<td>3,615</td>
<td>3,761</td>
<td>3,999</td>
<td>4,067</td>
<td>4,251</td>
<td>4,328</td>
<td>4,640</td>
</tr>
<tr>
<td>UK total</td>
<td>60,737</td>
<td>64,044</td>
<td>68,009</td>
<td>73,232</td>
<td>77,205</td>
<td>80,776</td>
<td>84,992</td>
<td>88,704</td>
<td>91,877</td>
<td>93,385</td>
</tr>
</tbody>
</table>

Notes:
Figures may be different to those released previously due to improvements in the methods used to identify patients seen more than once within the survey year. This method has been applied to all survey years.
UK totals include those reported to reside in the British Isles, abroad, or no fixed address, and those with no region of residence reported.
STI data tables

STI & HIV Surveillance and epidemiology

Sexual and Reproductive Health (SRH) profiles

STI & HIV Surveillance and epidemiology
### HIV & STI indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia detection rate / 100,000 aged 15-24</td>
<td>STI testing rate (exc Chlamydia aged &lt; 25) / 100,000</td>
</tr>
<tr>
<td>Chlamydia detection rate / 100,000 aged 15-24 (Male)</td>
<td>STI testing positivity (exc Chlamydia aged &lt;25) %</td>
</tr>
<tr>
<td>Chlamydia detection rate / 100,000 aged 15-24 (Female)</td>
<td>HIV testing uptake, total (%)</td>
</tr>
<tr>
<td>Chlamydia proportion aged 15-24 screened</td>
<td>HIV testing uptake, MSM (%)</td>
</tr>
<tr>
<td>Syphilis diagnosis rate / 100,000</td>
<td>HIV testing uptake, women (%)</td>
</tr>
<tr>
<td>Gonorrhoea diagnosis rate / 100,000</td>
<td>HIV testing uptake, men (%)</td>
</tr>
<tr>
<td>CT diagnostic rate / 100,000</td>
<td>HIV testing coverage, total (%)</td>
</tr>
<tr>
<td>CT diagnostic rate / 100,000 (25+)</td>
<td>HIV testing coverage, MSM (%)</td>
</tr>
<tr>
<td>Genital warts diagnosis rate / 100,000</td>
<td>HIV testing coverage, women (%)</td>
</tr>
<tr>
<td>Genital herpes diagnosis rate / 100,000</td>
<td>HIV testing coverage, men (%)</td>
</tr>
<tr>
<td>All new STI diagnosis rate / 100,000</td>
<td>HIV late diagnosis (%) (PHOF indicator 3.04)</td>
</tr>
<tr>
<td>New STI diagnoses (exc Chlamydia aged &lt;25) / 100,000*</td>
<td>New HIV diagnosis rate / 100,000 aged 15+</td>
</tr>
<tr>
<td>HIV diagnosed prevalence rate / 1,000 aged 15-59</td>
<td>HIV diagnosed prevalence rate / 1,000 aged 15-59</td>
</tr>
</tbody>
</table>
## Proposed Indicators

### Testing

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV testing coverage (%)</td>
<td></td>
</tr>
<tr>
<td>HIV testing coverage (%) – MSM</td>
<td></td>
</tr>
<tr>
<td>HIV testing coverage (%) – Heterosexual men</td>
<td></td>
</tr>
<tr>
<td>HIV testing coverage (%) – Heterosexual women</td>
<td></td>
</tr>
<tr>
<td>Repeat HIV testing in MSM: proportion of MSM with &gt;1 test in the previous year (%)*</td>
<td></td>
</tr>
</tbody>
</table>

### Treatment & care

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prompt ART initiation in people newly diagnosed with HIV: treatment initiation within 91 days (%)*</td>
<td></td>
</tr>
<tr>
<td>Virological success in people newly starting ART: proportion with undetectable viral load (%)*</td>
<td></td>
</tr>
</tbody>
</table>

### HIV diagnoses

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>New HIV diagnosis rate / 100,000 aged 15+</td>
<td></td>
</tr>
<tr>
<td>HIV late diagnosis (%)</td>
<td></td>
</tr>
<tr>
<td>HIV late diagnosis (%) – MSM*</td>
<td></td>
</tr>
<tr>
<td>HIV late diagnosis (%) – Heterosexual men*</td>
<td></td>
</tr>
<tr>
<td>HIV late diagnosis (%) – Heterosexual women*</td>
<td></td>
</tr>
<tr>
<td>HIV late diagnosis (%) – PWID*</td>
<td></td>
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</tbody>
</table>

*New proposed indicator that would need to go through IMRG review and approval process
LA refers to availability at both Upper Tier Local Authority and Lower Tier Local Authority
Public Health Outcomes Framework (PHOF)

- Same interactive tool as the SRH profiles
- Displays a variety of public health outcomes
- Late diagnosis of HIV
- Released September
- [https://fingertips.phe.org.uk/profile/public-health-outcomes-framework](https://fingertips.phe.org.uk/profile/public-health-outcomes-framework)

HIV annual report

- Describes the HIV epidemic in the UK
- In-depth analysis and interpretation of trends in new diagnoses, clinical outcomes and estimates of HIV incidence
- Released in time for World AIDS Day
Regional HIV spotlight reports

- Produced by the London PHE FES team for all regions
- Present annual epidemiological data for HIV in England
- Released December

Outputs: Restricted access routine reports and datasets
Local Authority (LASERs) reports

- Made available to local commissioners to aid commissioning
- Inform local Joint Strategic Needs Assessments to aid commissioners in targeting service provision
  - STIs and HIV
  - Teenage conceptions
  - Abortions
  - Primary care contraception prescribing
- Released annually in November/December

STI & HIV Surveillance and epidemiology

Local authority annual reports
- Sent to FES who send to local authority public health teams
- Provide local HIV data to support commissioning alongside LASERs
- Patient demographics for new HIV diagnoses and people accessing HIV care
- Released September/October
Disaggregate datasets

- Sent to regional PHE Field Epidemiology Service (FES) colleagues
- Local patient-level dataset of all new HIV diagnoses and people accessing care
- Used by FES to analyse local data for data requests.
- Released June (GUMCAD) and September (HIV)

Clinical HIV Dashboard

- HIV care service reports for commissioners
- Clinic-level patient outcomes
  - Late and very late diagnosis
  - Linkage to care
  - Retention in care
  - Viral suppression
  - ART coverage and time to treatment
- Extensive follow-up with HIV care providers to validate data
- Released in March
### Preliminary results (2017)

<table>
<thead>
<tr>
<th>Description</th>
<th>North West</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV01: Late HIV diagnosis</td>
<td>43%</td>
<td>42%</td>
</tr>
<tr>
<td>HIV01a: Very late HIV diagnosis</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>HIV02b: Newly diagnosed adults seen for care within 1 month</td>
<td>88%</td>
<td>87%</td>
</tr>
<tr>
<td>HIV03a: Virological success in people established on ART</td>
<td>94%</td>
<td>96%</td>
</tr>
<tr>
<td>HIV03b: Virological success in people newly starting ART</td>
<td>94%</td>
<td>96%</td>
</tr>
<tr>
<td>HIV04a: ART coverage (all adults)</td>
<td>97%</td>
<td>98%</td>
</tr>
<tr>
<td>HIV04b: ART coverage (adults with the last CD4 count &lt;350)</td>
<td>97%</td>
<td>97%</td>
</tr>
<tr>
<td>HIV09aii: Retention in care (newly diagnosed)</td>
<td>93%</td>
<td>89%</td>
</tr>
<tr>
<td>HIV09bii: Retention in care (all adults)</td>
<td>92%</td>
<td>94%</td>
</tr>
<tr>
<td>HIV10: Time to treatment (initiating treatment within 91 days)</td>
<td>80%</td>
<td>77%</td>
</tr>
</tbody>
</table>

**HIV data requests**

- Requests for data by geographies, prevention groups and other demographic factors:
  - New HIV diagnoses
  - People receiving HIV care
  - STI diagnoses
  - People attending sexual health services

- Submit data request form to:
  - STIs: gumcad@phe.gov.uk
  - HIV: HARSQueries@phe.gov.uk

- Usually completed within 10 working days

**Notes**

- Clinic and patient level data not available to the public.

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**STI & HIV Surveillance and epidemiology**
Acknowledgements

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