



## Infection report

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### HIV-STIs

## Sexually transmitted infections<sup>1</sup> and chlamydia screening in England, 2014

- ▶ In 2014, there were approximately 440,000 diagnoses of sexually transmitted infections (STIs) made in England
- ▶ The impact of STIs remains greatest in young heterosexuals under the age of 25 years and in men who have sex with men (MSM)
- ▶ The most commonly diagnosed STI was chlamydia, with 206,774 diagnoses made in 2014
- ▶ The largest proportional increase in diagnoses between 2013 and 2014 were reported for syphilis (33%) and gonorrhoea (19%)
- ▶ Large increases in STI diagnoses were seen in MSM, including a 46% increase in syphilis and a 32% increase in gonorrhoea. High levels of condomless sex probably account for most of this rise, although better detection of gonorrhoea may have contributed
- ▶ There was a 4% decrease in diagnoses of genital warts (first episode) between 2013 and 2014
- ▶ During the year, over 1.6 million chlamydia tests were carried out and almost 138,000 chlamydia diagnoses were made in England among young people aged 15 to 24 years old, the target population for the National Chlamydia Screening Programme (NCSP). This represents a small reduction in overall testing and diagnoses from last year
- ▶ Twenty-nine percent of Upper Tier Local Authorities (UTLAs) achieved a chlamydia detection rate of at least 2,300 per 100,000 among 15 to 24 year olds, the recommended level for this Public Health Outcome Framework (PHOF) indicator. There was a strong relationship between chlamydia testing coverage and chlamydia detection rates in UTLAs

### Recommendations:

- ▶ Prevention efforts should include ensuring open access to sexual health services and STI screening and should focus on groups at highest risk
- ▶ The NCSP recommends sexually active under-25 year-old men and women should be screened for chlamydia every year, and on change of sexual partner
- ▶ MSM should have a full HIV and STI screen at least annually, or every three months if having condomless sex with new or casual partners
- ▶ Black African men and women should have a regular full HIV and STI screen if having condomless sex with new or casual partners
- ▶ Individuals can significantly reduce their risk of transmitting or being infected with an STI by:
  - Consistently and correctly using condoms until all partners have had a sexual health screen
  - If in a high-risk group, getting screened regularly to ensure early identification and treatment, as these infections are frequently asymptomatic
  - Reducing the number of sexual partners and avoiding overlapping sexual relationships

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<sup>1</sup> Please see the *Resources on the PHE website* section for available resources describing trends in HIV and antimicrobial resistance in *Neisseria gonorrhoeae*.

## Introduction

This report presents data on the recent trends and epidemiology of STIs in England. It was compiled using data on STI tests and diagnoses made in genitourinary medicine (GUM) clinics, integrated GUM and sexual and reproductive health (SRH) clinics and, for chlamydia, also from other community-based settings [1]. Data are submitted from GUM and integrated GUM/SRH clinics to the GUM Clinic Activity Dataset (GUMCADv2) and from laboratories to the Chlamydia Testing Activity Dataset (CTAD), both of which are managed by Public Health England.

GUM and integrated GUM/SRH clinics offer free, open-access HIV and STI testing, diagnosis and management services to anyone attending. The National Chlamydia Screening Programme (NCSP) offers opportunistic screening of sexually active young people aged 15 to 24 years and is mainly delivered through primary care (general practices and pharmacies), community SRH services (including termination of pregnancy services) and GUM clinics.

Tests performed in community-based settings are assumed to be largely asymptomatic screens; tests performed in GUM and integrated GUM/SRH clinics are assumed to be a combination of symptomatic tests and asymptomatic screens. The term 'test' is used herein to signify both asymptomatic screens and symptomatic tests. Local areas should work towards a chlamydia detection rate of at least 2,300 per 100,000 population among 15 to 24 year olds, the recommended level for this Public Health Outcomes Framework (PHOF) indicator [2]. Data from CTAD and GUMCADv2 are used by the NCSP to monitor progress towards the recommended PHOF indicator level.

## Overall trends in diagnoses in England

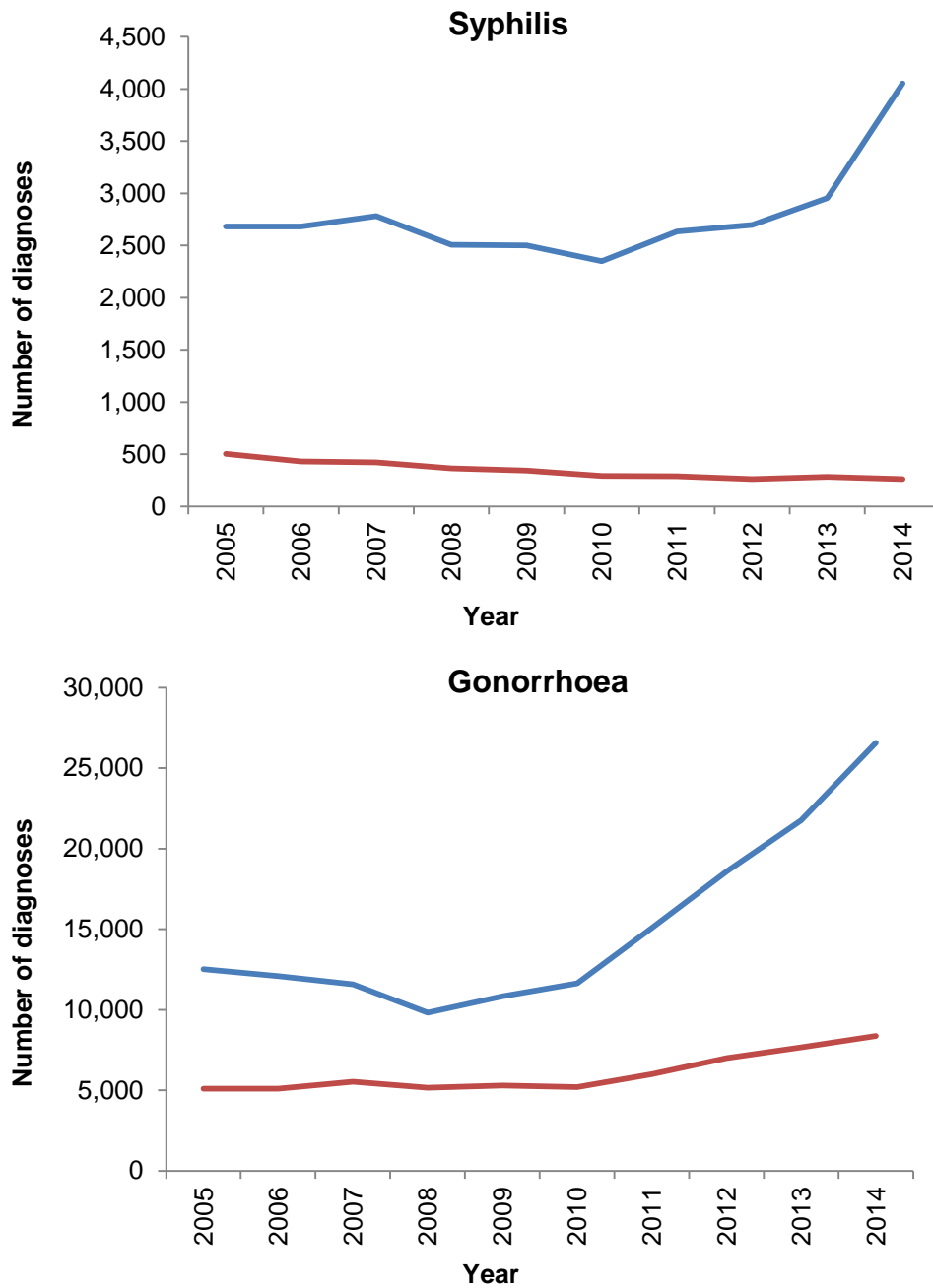
In 2014, the total number of new cases of STIs diagnosed in England decreased by 0.3% when compared to 2013 (439,243 vs. 440,707). Of the 439,243 new STI diagnoses made in 2014, the most commonly diagnosed STIs were chlamydia (206,774; 47%), genital warts (first episode; 70,612; 16%), gonorrhoea (34,958; 8%) and genital herpes (first episode; 31,777; 7%).

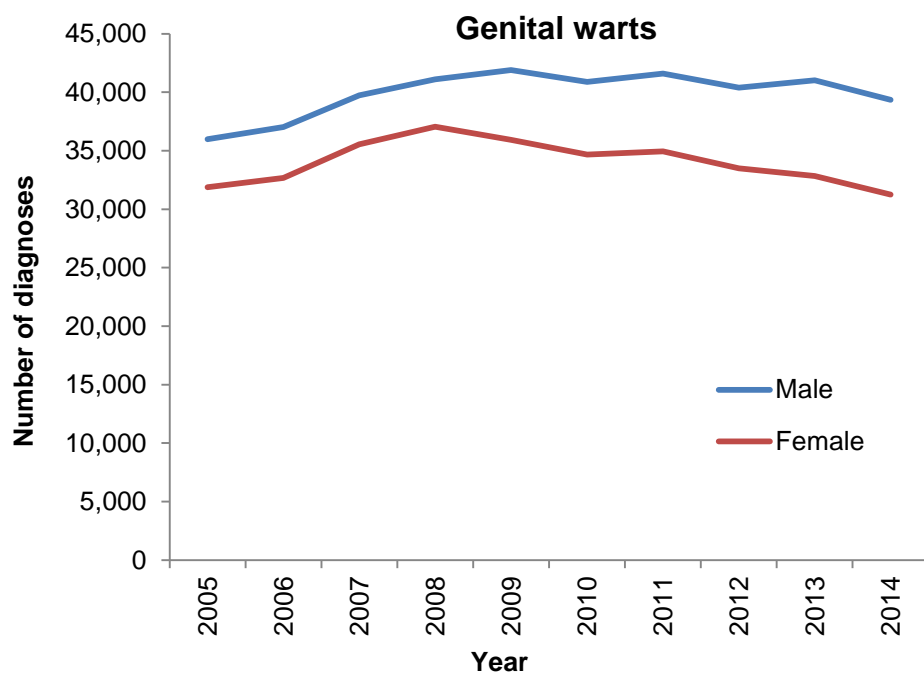
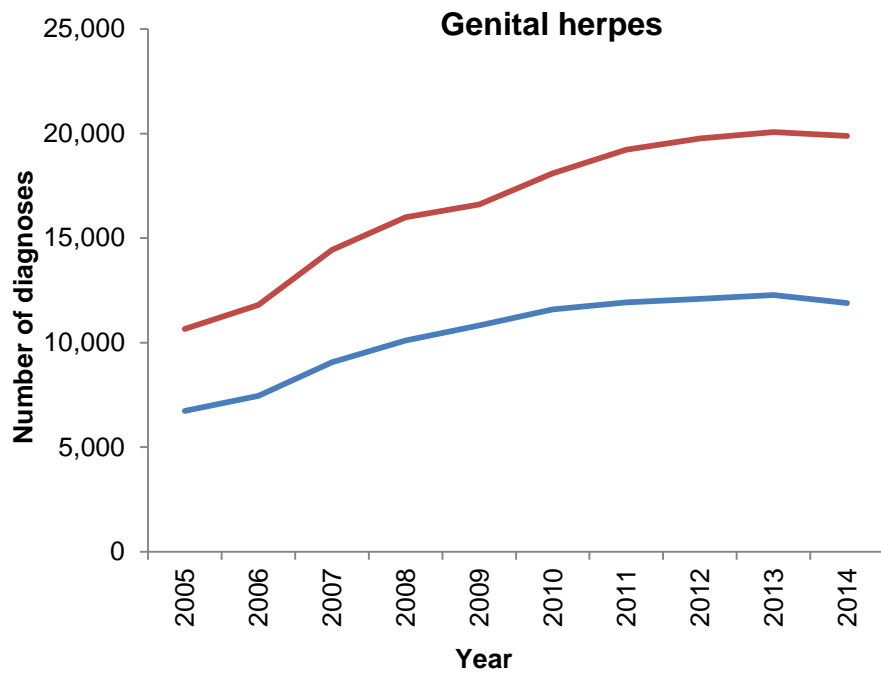
Between 2013 and 2014, there was an increase in diagnoses of infectious syphilis (33%; 3,236 to 4,317) and gonorrhoea (19%; 29,419 to 34,958). During the same period, diagnoses of non-specific genital infection (NSGI) fell by 5% (48,612 to 46,249), consistent with the decline reported since 2012.

Over the past decade, diagnoses of gonorrhoea, syphilis, genital warts and genital herpes have increased considerably, most notably in males [3] (figure 1; chlamydia is discussed in a later section). More STI testing in GUM and integrated GUM/SRH clinics and through the NCSP [4] and routine use of more sensitive diagnostic tests, such as nucleic acid amplification tests (NAATs), will partly explain these increases, although ongoing unsafe sexual behaviour will have played a role. The use of NAATs to detect chlamydia and gonorrhoea may also have contributed to the decreasing number of NSGI diagnoses.

Reliable data on the sexual orientation of patients is available from GUM and integrated GUM/SRH clinics' GUMCADv2 data returns. Among diagnoses made in these settings, there is substantial variation in the distribution of the most commonly diagnosed STIs by gender and sexual orientation. Men who have sex with men (MSM) accounted for 81% of syphilis and 52% of gonorrhoea diagnoses, while heterosexual men and women accounted for 92% of genital warts, 92% of genital herpes and 86% of chlamydia diagnoses. Almost twice as many heterosexual women as men were diagnosed with genital herpes.

**Figure 1. New diagnoses of syphilis (primary, secondary and early latent), gonorrhoea, genital herpes (first episode) and genital warts (first episode) at genitourinary medicine (GUM) and integrated GUM/sexual and reproductive health clinics by gender, 2005–2014, England**





## Epidemiology of STIs in England

### ***Men who have sex with men***

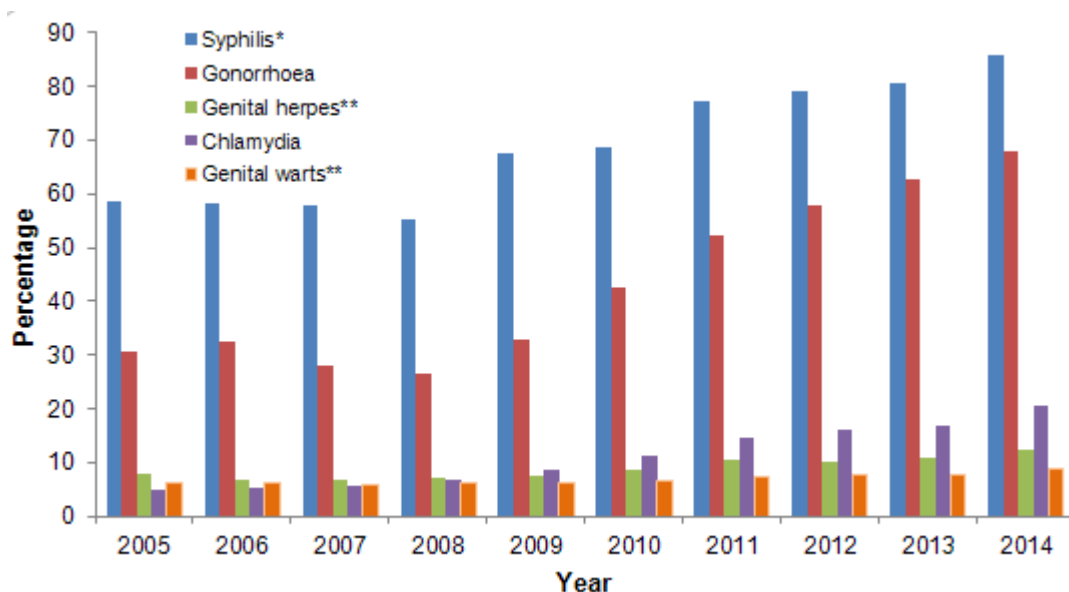
In England in 2014, among male GUM and integrated GUM/SRH clinic attendees, 86% (3,477/ 4,054) of syphilis diagnoses, 68% (18,029/ 26,575) of gonorrhoea diagnoses, 21% (11,468/ 55,807) of chlamydia diagnoses, 12% (1,474/ 11,889) of genital herpes diagnoses and 9% (3,456/ 39,349) of genital warts diagnoses were among MSM (figure 2a).

The number of diagnoses of STIs reported in MSM has risen sharply in recent years and accounts for the majority of increased diagnoses seen among men. Syphilis diagnoses increased by 46% in the past year (2,375 to 3,477), gonorrhoea diagnoses by 32% (13,629 to 18,029), chlamydia diagnoses (from GUM and integrated GUM/SRH clinics) by 26% (9,118 to 11,468), genital herpes diagnoses by 10% (1,339 to 1,474) and genital warts diagnoses by 10% (3,156 to 3,456) (figure 2b). Gonorrhoea was the most commonly diagnosed STI among MSM in 2014, and 27% (4,891) presented with rectal infections. High levels of gonorrhoea transmission are of particular concern, as data from the Gonococcal Resistance to Antimicrobials Surveillance Programme (GRASP) show the emergence of gonococcal isolates with resistance or decreased susceptibility to antimicrobials used for treatment [5].

Several factors are likely to have contributed to the sharp rise in diagnoses among MSM. It is likely that condomless sex associated with HIV seroadaptive behaviours, as has been reported in ongoing epidemics and outbreaks of LGV, *Shigella* spp. and syphilis, is leading to more STI transmission in this population [6,7]. There has been a steady increase in diagnoses of STIs in HIV-positive MSM since 2009, with a population rate of acute bacterial STIs up to four times that of MSM who were HIV-negative or of unknown HIV status. This suggests that rapid STI transmission is occurring in dense sexual networks of HIV-positive MSM [8]. More screening of extra-genital (rectal and pharyngeal) sites in MSM using NAATs [9], in response to current gonorrhoea testing guidance [10] and the Lymphogranuloma venereum (LGV) epidemic [6,11], will also have improved detection of gonococcal and chlamydial infections in recent years.

Men who have sex with men continue to experience high rates of STIs and remain a priority for targeted HIV and STI prevention and health promotion work. In June 2014, PHE published an action plan to promote the health and wellbeing of gay, bisexual and other MSM with the vision of all MSM enjoying long healthy lives, and creating and sustaining respectful and fulfilling social and sexual relationships [12]. An advisory group has also been convened to develop interventions to address the public health disparities faced by black and minority ethnic gay, bisexual and other MSM [13].

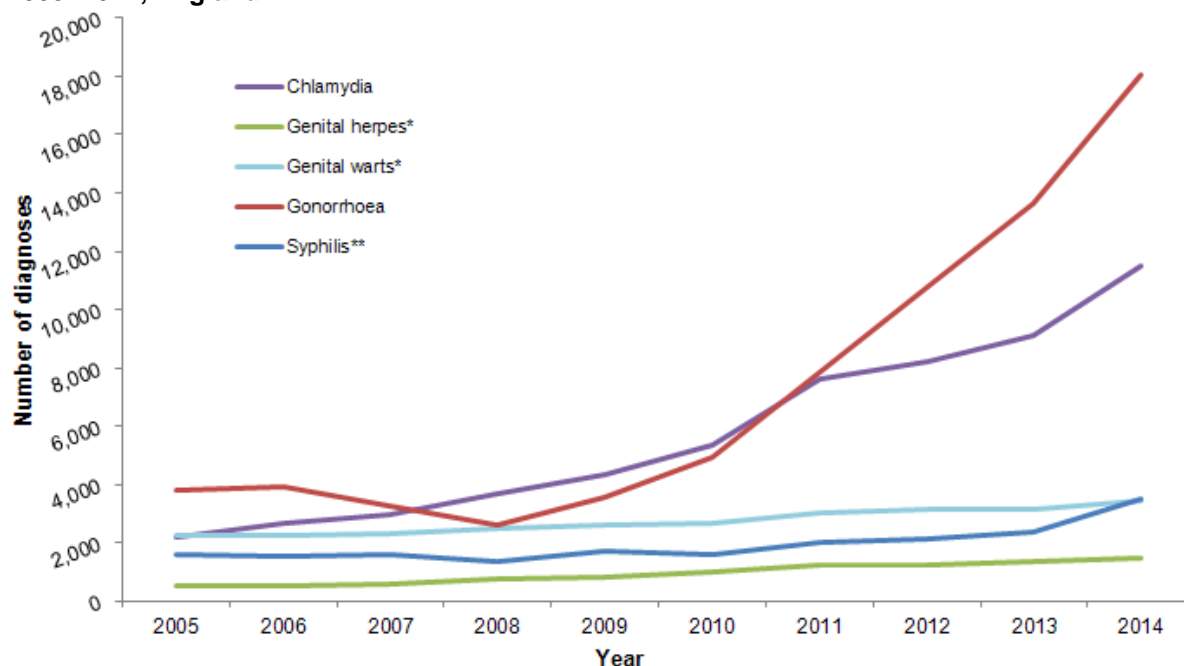
**Figure 2a. Proportion of all male STI diagnoses which are among men who have sex with men, genitourinary medicine (GUM) and integrated GUM/sexual and reproductive health clinics, 2005–2014, England**



\* Primary, secondary and early latent

\*\* First episode

**Figure 2b. Number of new diagnoses of selected STIs in men who have sex with men, genitourinary medicine (GUM) and integrated GUM/sexual and reproductive health clinics, 2005–2014, England**



\* Primary, secondary and early latent

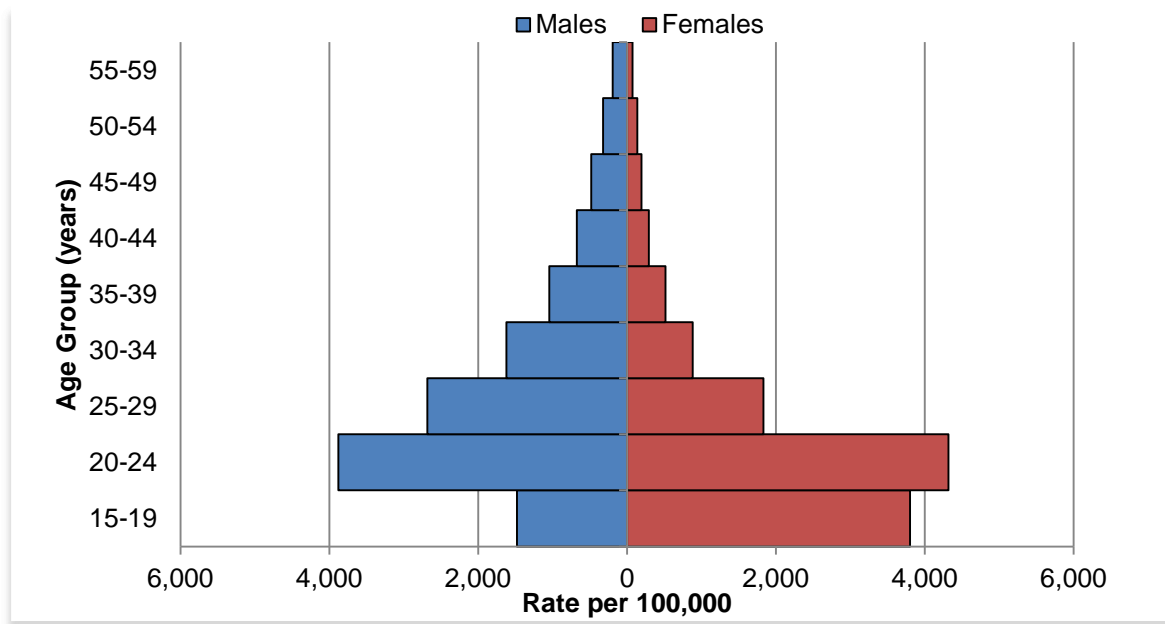
\*\* First episode

### Young heterosexuals and STIs

Data from Natsal-3 suggest that people aged 16-24 years were most likely to report at least one new sex partner of the opposite sex in the past year and at least two sex partners of the opposite sex (new or current) in the past year [14]. People of this age group continue to experience the highest rates of STIs (figures 3, 4a and 4b). In 2014, among heterosexuals diagnosed in GUM and integrated GUM/SRH clinics, 63% (57,558/91,901) with chlamydia, 55% (8,722/15,814) with gonorrhoea, 52% (33,862/64,666) with genital warts, and 42% (12,223/29,240) with genital herpes were aged 15 to 24 years. Chlamydial infection in young people is discussed further in a following section.

Although overall numbers of diagnoses in those aged 15 to 24 years have risen considerably in the last ten years, there has been some decline recently in cases of genital warts in young females (figure 4b). This decreasing trend is discussed in an accompanying article in this issue of the HPR [15].

**Figure 3. Rates of new\* STI diagnoses\*\* by age group and gender\*\*\*, 2014, England**

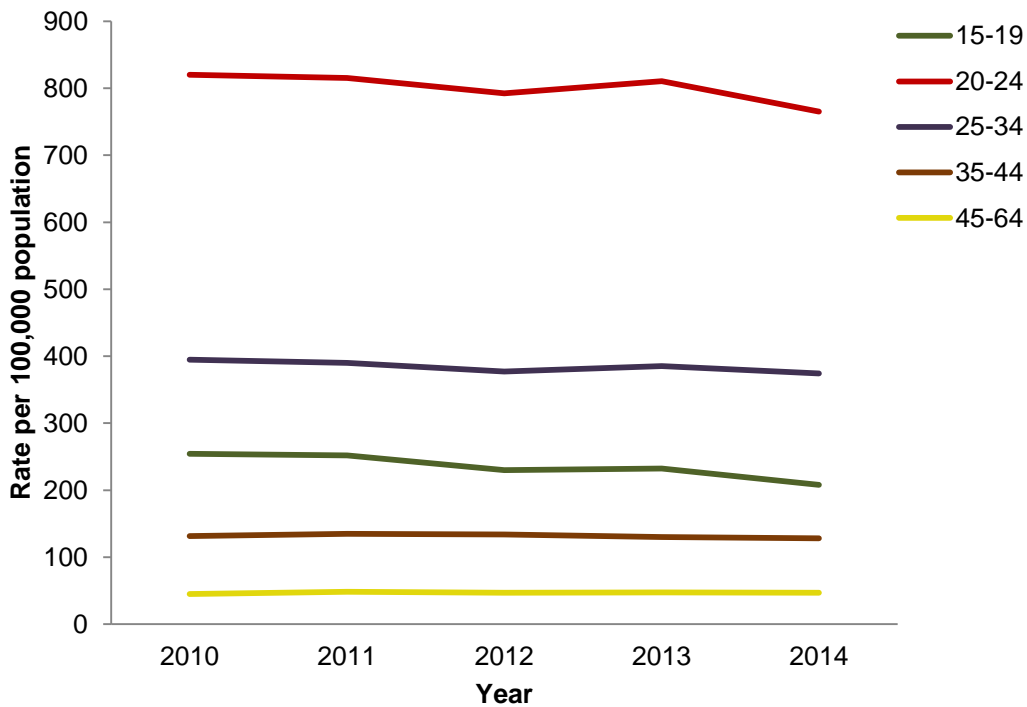


\* New STIs include Chlamydia, Anogenital Warts (first episode), Non-Specific Genital Infection, Anogenital Herpes (first episode), Gonorrhoea, Syphilis (primary, secondary & early latent), new HIV diagnoses (acute infection and AIDS-defining illness), as well as Chancroid/LGV/Donovanosis, Molluscum contagiosum, Pelvic Inflammatory Disease & Epididymitis, Scabies/Pediculosis pubis, and Trichomoniasis

\*\* Data from routine GUM and integrated GUM/SRH clinic returns; data from community services included for chlamydia only

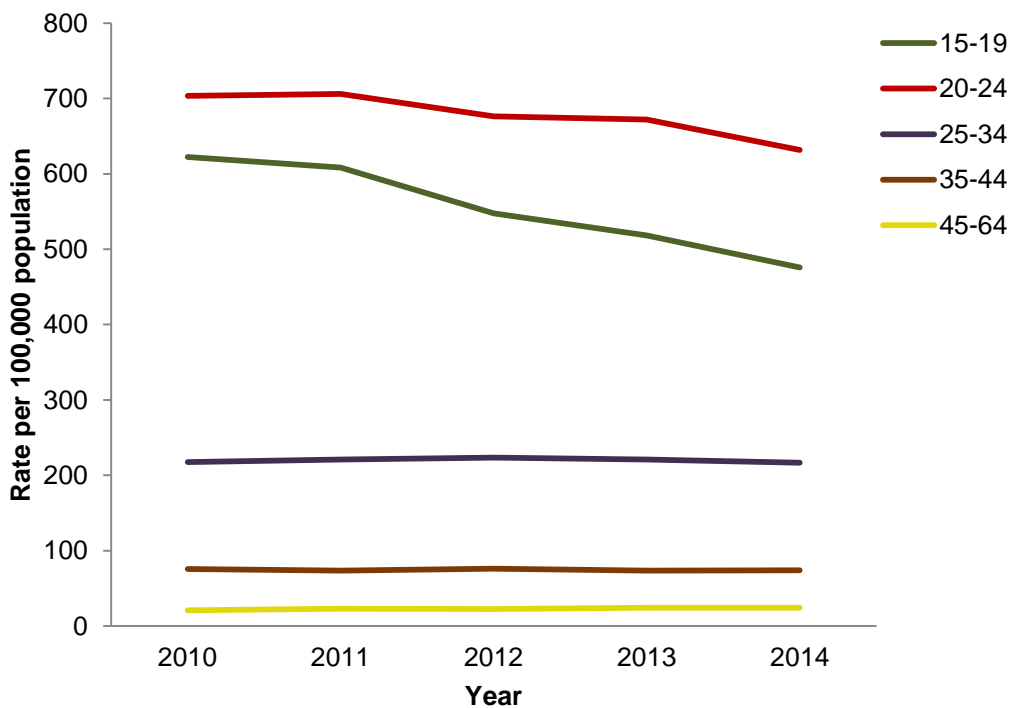
\*\*\* Excludes diagnoses where gender was reported as 'unknown'

**Figure 4a. Rates of genital warts (first episode) diagnoses\* in males by age group\*\*, 2010–2014, England**



\* Data from routine GUM and integrated GUM/SRH clinic returns; \*\* Years

**Figure 4b. Rates of genital warts (first episode) diagnoses\* in females by age group\*\*, 2010–2014, England**



\* Data from routine GUM and integrated GUM/SRH clinic returns; \*\* Years

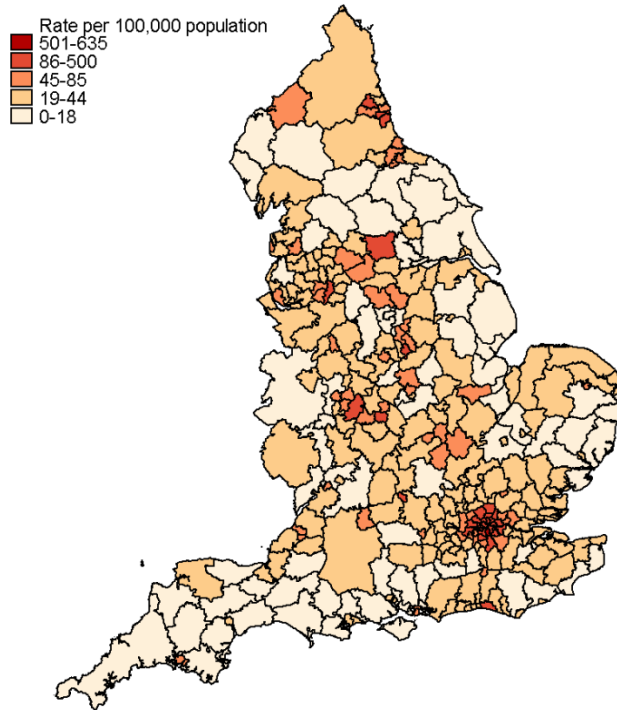


## ***STI distribution by local area of residence***

There is considerable geographic variation in the distribution of STIs both nationally and within local areas. Rates of diagnosis are higher in urban areas, especially London, largely reflecting the distribution of core groups of the population who are at greatest risk but also access to diagnosis and treatment services. Geographic variations are most pronounced for less common STIs. For instance, the results of a recent national probability survey highlight the relatively low prevalence of gonorrhoea (<0.1% in women and men aged 16-44 years) [16], but there is a high degree of geographical clustering of this infection [17,18]. In 2014, the rate of gonorrhoea diagnoses by lower tier Local Authority (LA) ranged from 0 (Isles of Scilly) to 634 (Lambeth) per 100,000 population. Rates were highest in residents of urban areas, especially in London, reflecting, to a large extent, the distribution of core groups of the population who are at greatest risk of infection and living in areas of higher deprivation [19-21] (figures 5a and 5b).

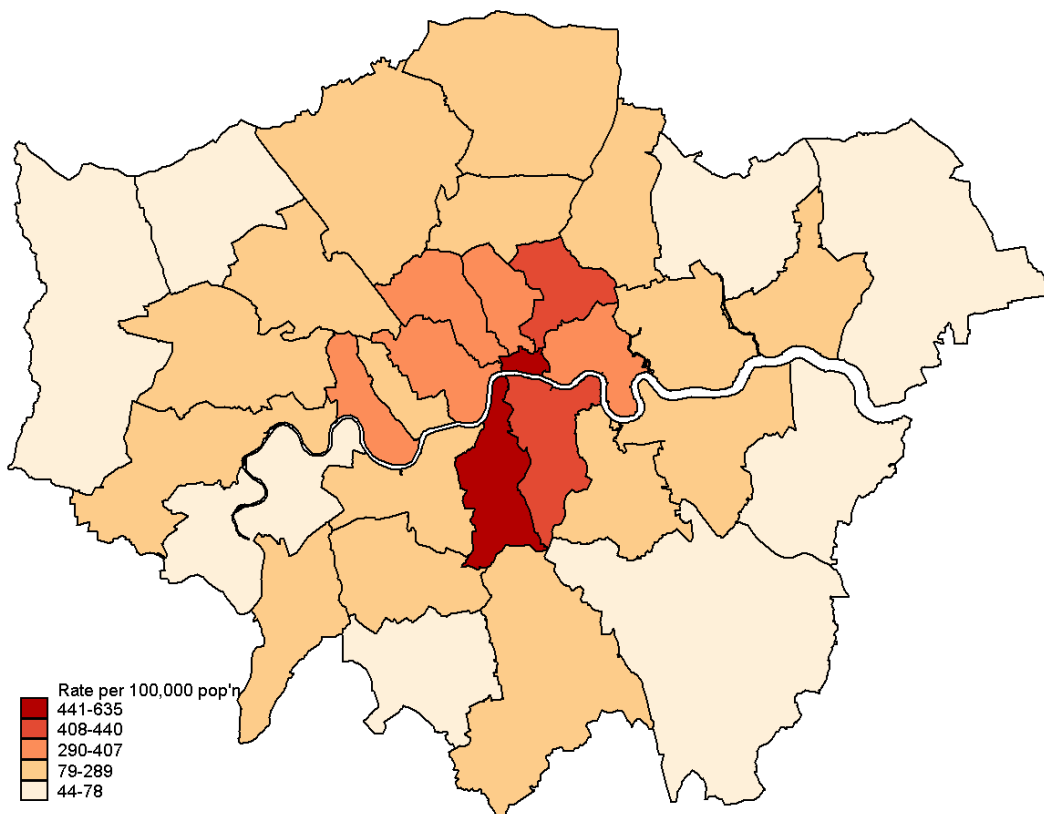
To allow LAs and public health leads to monitor the sexual and reproductive health of their population, PHE regularly updates the [Sexual and Reproductive Health Profiles](#). These profiles include interactive maps, charts and tables that provide a snapshot of sexual and reproductive health across a range of topics including teenage pregnancy, abortions, contraception, HIV, STIs and sexual offences. Wider influences on sexual health such as alcohol use, and other topics particularly relating to teenage conceptions such as education and deprivation level, are also included.

**Figure 5a. Rates of gonorrhoea diagnoses\* by lower tier Local Authority of residence, 2014, England**



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**Figure 5b. Rates of gonorrhoea diagnoses\* by lower-tier Local Authority of residence, 2014, London**



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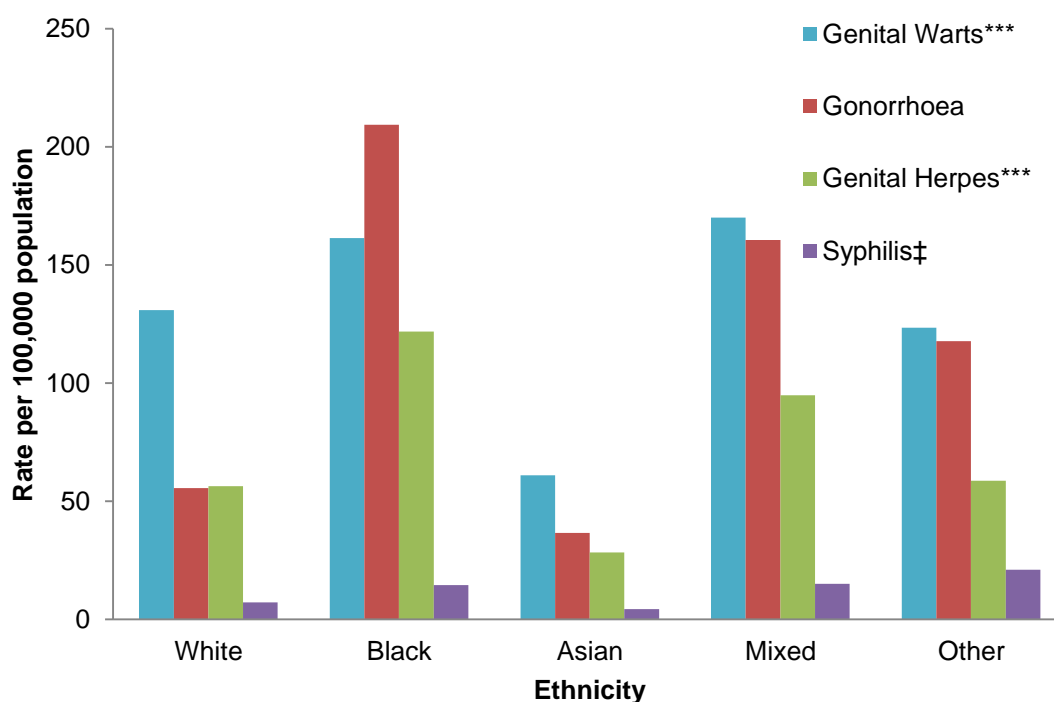
\* Data from routine GUM and integrated GUM/SRH clinic returns

## STI distribution by ethnicity

The highest rates of STI diagnoses were found among people of black ethnicity (figure 6), and the majority of these cases were among people living in areas of high deprivation, especially in urban areas (figures 5a and 5b) [21]. This high rate of STI diagnoses among black ethnic communities is most likely the consequence of a complex interplay of cultural, economic and behavioural factors [22]. Additionally, risk behaviours and STI epidemiology vary between black African and Caribbean ethnic groups [22,23].

To better understand these behavioural factors and address this disparity, Public Health England is collaborating with University College London and the London School of Hygiene and Tropical Medicine as part of the National Institute for Health Research (NIHR) Health Protection Research Unit (HPRU) on blood-borne and sexually transmitted infections. The research aims to improve understanding of the behaviours, attitudes, and other factors influencing STI risk and support the delivery of timely interventions which maximise patient and public health benefit.

**Figure 6. Rates of selected STI diagnoses\* by ethnicity and STI, 2014, England**



\* Data from routine GUM and integrated GUM/SRH clinic returns

\*\* First episode

‡ Primary, secondary and early latent

## Genital Chlamydia trachomatis tests and diagnoses in young people

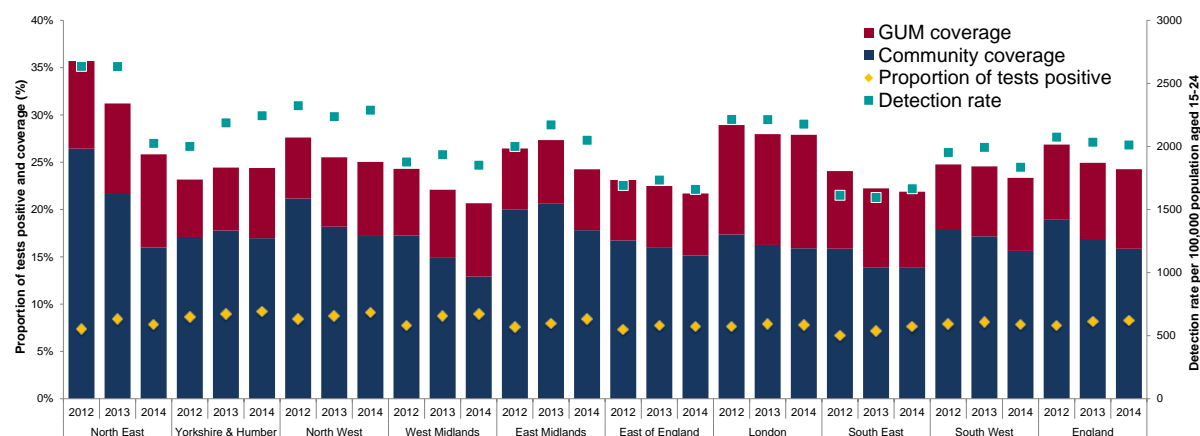
In 2014, over 1.6 million chlamydia tests were carried out in England among young people aged 15 to 24 years. A total of 137,993 chlamydia diagnoses were made among this age group, equivalent to a detection rate of 2,012 per 100,000 population. Assuming one test per person, an estimated 35% of young females and 14% of young males were tested for chlamydia.

Chlamydia testing coverage, detection rate and proportion testing positive varied by Public Health England (PHE) Centre area of residence (figure 7). The percentage of young people tested for chlamydia ranged from 21% in West Midlands to 28% in London. North West had the highest detection rate per 100,000 population (2,288) while East of England had the lowest (1,660). The proportion testing positive was relatively stable (range from 7.6% to 9.2%). Thus the variation in detection rates between the areas mainly reflects the different testing rates. For all areas the majority of tests were carried out in community-based settings (including primary care) (57% to 73% of tests from all sources).

Three years of data are now available and trends show a decline in testing coverage, a small increase in positivity and a small decline in the detection rate (Figure 7). It is likely that the trends seen at the PHE centre area and national levels are as a result of a combination of the following:

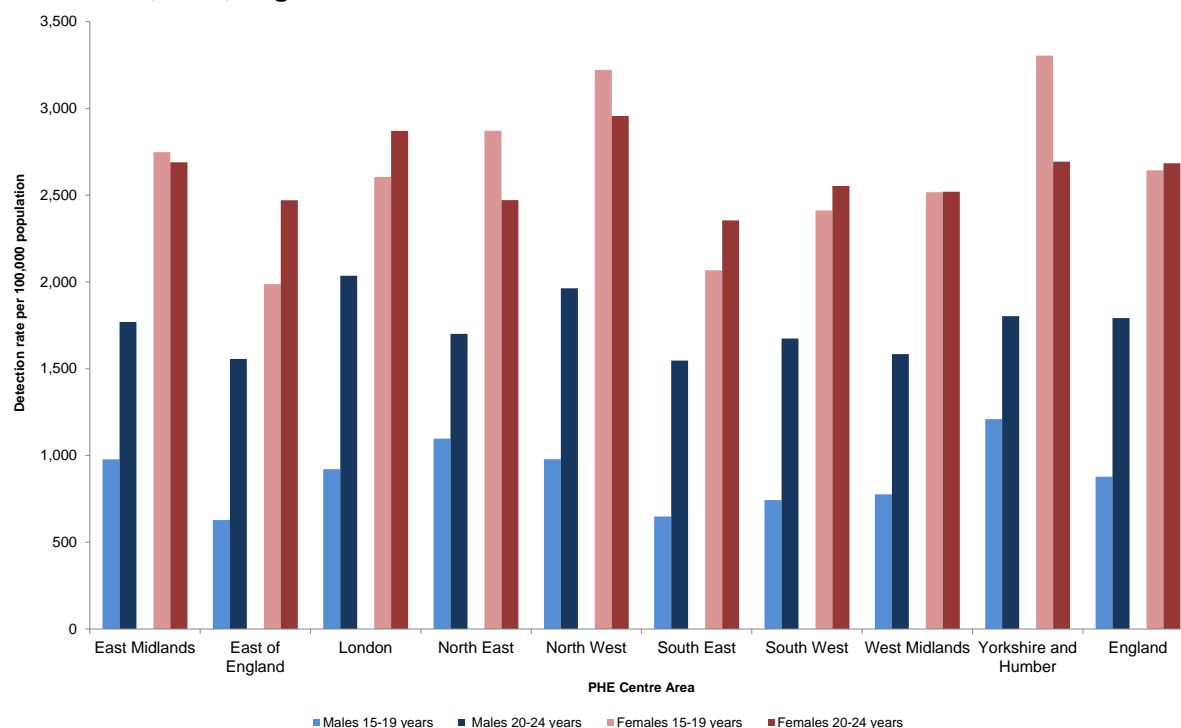
- I. Improvements in data quality: There has been a reduction in double counting of tests corresponding to improvements in coding of data by providers and laboratories prior to submission. Data for 2014 are more representative of true chlamydia testing activity when compared to previous years.
- II. A true decline in testing coverage: The decline in coverage shown in figure 4 is mostly attributable to fewer tests in community venues which may be, in part, a result of the integration of sexual health services in a number of programme areas.
- III. Targeted testing of populations at highest risk of infection: Sexual health services have focused testing efforts on core services where positivity rates are highest.

**Figure 7. Chlamydia testing coverage, detection rates and proportion of tests positive among 15 to 24 year olds by testing venue and PHE Centre area, 2012 - 2014, England**



Chlamydia detection rates were higher in females than males across all areas (1.8 to 2.1 times higher), reflecting higher testing rates in females (figure 8). Chlamydia detection rates among young females did not vary greatly between those aged 15 to 19 years and those aged 20 to 24 years. However, detection rates among males aged 20 to 24 years were 1.5 to 2.5 times higher than among males aged 15 to 19 years.

**Figure 8. Chlamydia detection rates among 15 to 24 year olds by gender, age-group and PHE Centre area, 2014, England**



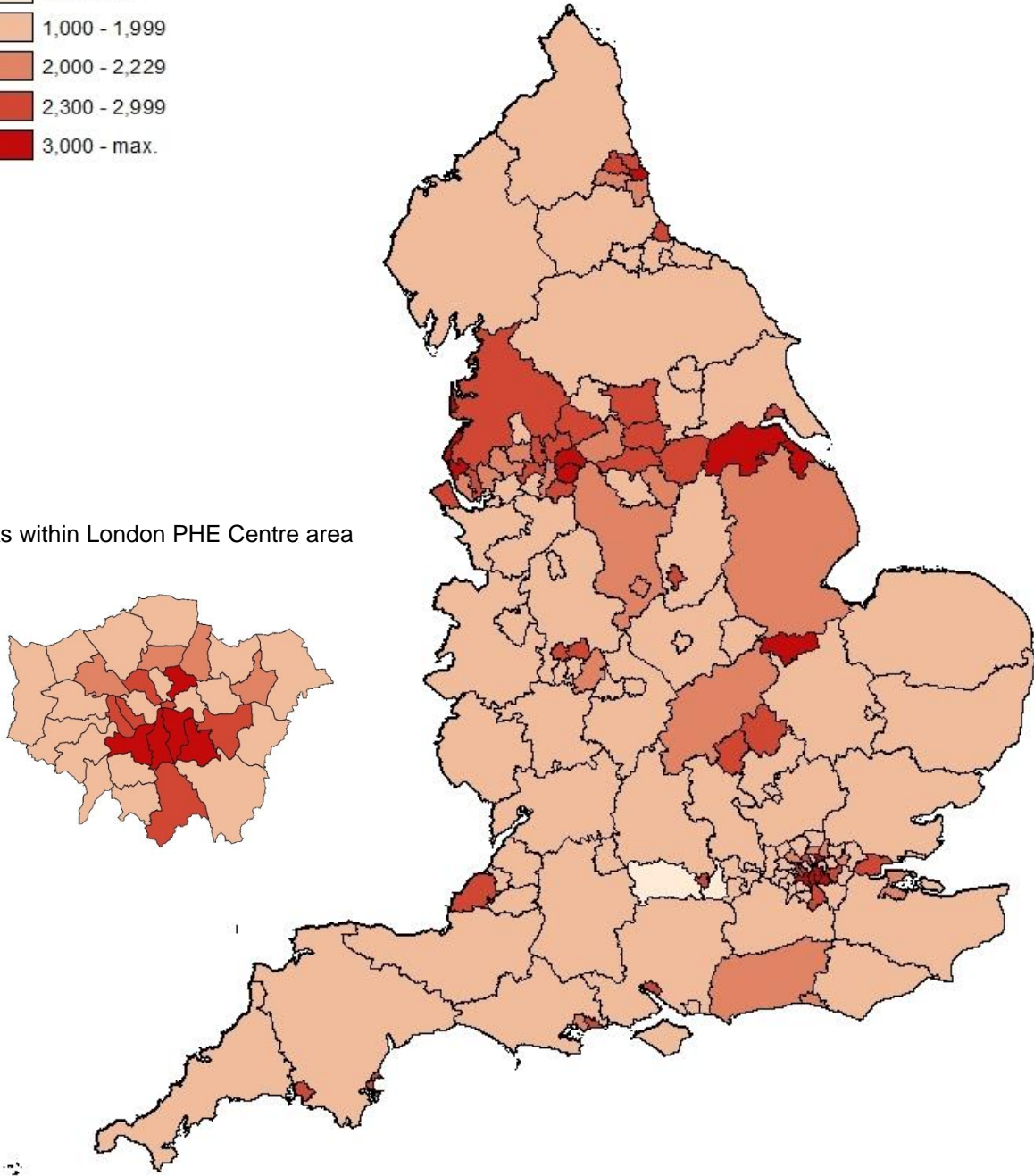
Chlamydia detection rates exhibit considerable geographic variation (figures 8 and 9) and in 2014 29% of Upper Tier Local Authorities (UTLAs) achieved a detection rate of 2,300 or above (table 1). In 2014, the rates by UTLA ranged from <530 (Isles of Scilly) to 4,270 (Hackney) per 100,000 population aged 15-24. Differences in detection rate could be due to differences in testing coverage (table 1), data quality variation, or heterogeneity in behavioural risk for chlamydia. In 2014 the range of detection rate by UTLA shows fewer outliers - with either very low or very high detection rates - indicating that data at the local level are a more accurate representation than in previous years. Public Health England works to support local authority's data quality improvement initiatives.

**Figure 9. Chlamydia detection\* rates among 15 to 24 year olds by Upper Tier Local Authority of residence, 2014, England and London PHE Centre area**

**Detection rate per 100,000 population aged 15 - 24**



UTLAs within London PHE Centre area



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\* Data from routine GUM and integrated GUM/SRH clinic returns and community services

**Table 1. Chlamydia testing coverage, and number and proportion of Upper Tier Local Authorities (UTLAs) achieving a chlamydia detection rate among 15 to 24 year olds of at least 2,300 per 100,000 population by PHE Centre (PHEC) Area, 2014, England\***

| PHEC Area            | Testing coverage (%) | Chlamydia detection rate/100,000 population |            |              |            |              |            |
|----------------------|----------------------|---|------------|--------------|------------|--------------|------------|
|                      |                      | ≥ 2,300                                     |            | 2,000-2,299  |            | < 2,000      |            |
|                      |                      | No. of UTLAs                                | % of UTLAs | No. of UTLAs | % of UTLAs | No. of UTLAs | % of UTLAs |
| North East           | 26                   | 4   | 33         | 2            | 17         | 6            | 50         |
| Yorkshire and Humber | 24                   | 7   | 47         | 3            | 20         | 5            | 33         |
| North West           | 25                   | 11  | 48         | 5            | 22         | 7            | 30         |
| West Midlands        | 21                   | 2   | 14         | 1            | 7          | 11           | 79         |
| East Midlands        | 24                   | 1   | 11         | 4            | 44         | 4            | 44         |
| East of England      | 22                   | 3   | 25         | 1            | 8          | 8            | 67         |
| London               | 28                   | 11  | 33         | 4            | 12         | 18           | 55         |
| South East           | 22                   | 2   | 11         | 3            | 17         | 13           | 72         |
| South West           | 23                   | 3   | 19         | 2            | 13         | 11           | 69         |
| <b>England</b>       | <b>24</b>            | <b>44</b>                                   | <b>29</b>  | <b>25</b>    | <b>16</b>  | <b>83</b>    | <b>55</b>  |

\* Data from routine GUM and integrated GUM/SRH clinic returns and community services

When considered by testing venue, the majority of chlamydia tests and diagnoses in England in 2014 were in GUM clinics (Table 2). Large numbers of tests and diagnoses also took place in Sexual and Reproductive Health venues (SRH) and primary care (GP). Only small numbers of tests were reported from pharmacy and termination of pregnancy (ToP) venues. This is considered to be an underestimate of the true figures, and tests from these venues have likely been reported with a venue of "other" or "unknown" due to difficulties in identification of testing venue type (GUM, SRH, GP etc.) when the tests are processed by laboratories. Positivity was highest in GUM which is expected as patients attending these services are more likely to be diagnosed with an STI than those attending community venues.

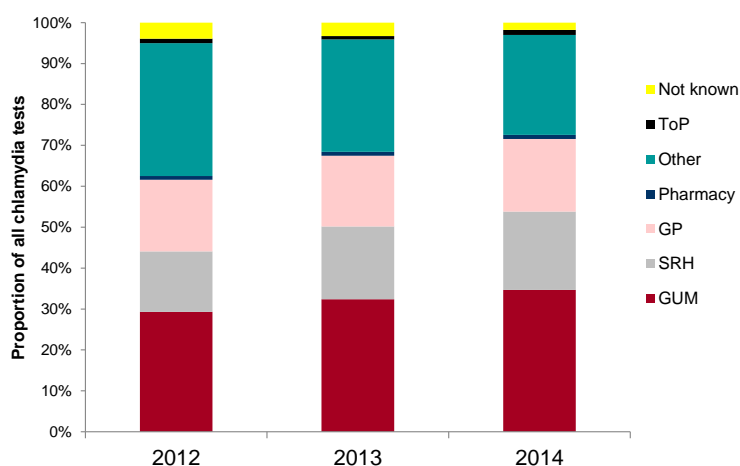
**Table 2 Chlamydia tests, diagnoses, and percentage tests positive by testing venue, 15-24 year olds, 2014, England\***

| Testing venue | Tests            | Diagnoses      | Proportion of tests positive (%) |
|---------------|------------------|----------------|----------------------------------|
| GUM           | 576,808          | 61,508         | 10.7                             |
| SRH           | 318,453          | 27,979         | 8.8                              |
| GP            | 295,447          | 17,334         | 5.9                              |
| Pharmacy      | 16,723           | 1,382          | 8.3                              |
| ToP           | 20,819           | 1,349          | 6.5                              |
| Other         | 406,425          | 26,423         | 6.5                              |
| Unknown       | 29,335           | 2,018          | 6.9                              |
| <b>Total</b>  | <b>1,664,010</b> | <b>137,993</b> | <b>8.3</b>                       |

\* Data from routine GUM and integrated GUM/SRH clinic returns and community services

Since 2012, the proportion of tests from GUM venues has increased (figure 10). This change is partly attributable to the increased accuracy in coding of testing venue in data reported to CTAD; as well as to a true increase in the number of tests reported from these clinics (6% increase). Since 2012, there has been a 16% increase in the number of tests reported from SRH venues. Overall testing reported from GPs has shown a 9% decline from 2012 to 2014.

**Figure 10. Chlamydia tests among 15 to 24 year olds by testing venue, 2012 - 2014, England\***



\* Data from routine GUM and integrated GUM/SRH clinic returns and community services



## Discussion and conclusions

Despite a small decrease compared to 2013, there were approximately 440,000 STI diagnoses made in England in 2014. Genital chlamydial infection was the most commonly diagnosed STI, accounting for 47% of diagnoses. New diagnoses of gonorrhoea continued the sharp rise seen in recent years, exceeding 34,000 cases in 2014. This increase may be partially explained by increased levels of testing with more sensitive NAATs. Notwithstanding this improvement in testing, the rise in diagnoses suggests high levels of gonorrhoea transmission. This is a cause for concern given the emergence of decreased susceptibility to frontline antimicrobials used for treating gonorrhoea and the depletion of effective treatment options [24].

Of particular concern is the continuing rise in STI diagnoses, especially of syphilis and gonorrhoea, among MSM, which may be due to ongoing high levels of unsafe sex. Furthermore, serosorting, the practice of engaging in condomless sex with partners believed to be of the same HIV status, increases the risk of infection with STIs, hepatitis B and C, and sexually transmissible enteric infections like *Shigella* spp. [6,7,8] For those who are HIV negative, serosorting increases the risk of HIV seroconversion as 16% of MSM are unaware of their infection [25].

There was notable variation in the chlamydia detection rate among 15 to 24 year-olds by geographic area, largely reflecting rates of testing. Areas with detection rates below the PHOF recommended indicator of 2,300 per 100,000 population should consider means to promote chlamydia screening to most effectively detect and control chlamydia infections. Local areas should focus on embedding chlamydia screening for 15 to 24 year-olds into a variety of community settings including primary care and sexual and reproductive health services. They should also emphasise the need for repeat screening annually and on change of sexual partner, as well as the need for re-testing after a positive diagnosis within three months of initial diagnosis [26]; and ensure treatment and partner notification standards are met [27].

There is considerable inequality in the distribution of STIs across the population. Health promotion and education remain the cornerstones of STI prevention, through improving risk awareness and encouraging safer sexual behaviour. Prevention efforts should include ensuring open access to sexual health services and STI screening and should focus on groups at highest risk such as young people, black ethnic minorities and MSM. Men who have sex with men should have an HIV and STI screen at least annually, or every three months if having condomless sex with new or casual or partners. Consistent and correct condom use, reducing the number of sexual partners and the avoidance of overlapping sexual relationships all reduce the risk of being infected with an STI. Effective commissioning of high quality sexual health services, as highlighted in the recently published Framework for Sexual Health Improvement in England [28], will promote delivery of these key messages.

## **Resources on the PHE website**

Further STI data are available on the PHE website in tables ([www.hpa.org.uk/stiannualdatatables](http://www.hpa.org.uk/stiannualdatatables), <http://www.chlamydia-screening.nhs.uk/ps/data.asp>) and in interactive maps on the recently launched *Sexual and Reproductive Health Profiles* (<http://fingertips.phe.org.uk/profile/sexualhealth>). The *Sexual and Reproductive Health Profiles* are presented using the Fingertips web tool.

Further information on the GUMCADv2 and CTAD surveillance systems is available at <https://www.gov.uk/genitourinary-medicine-clinic-activity-dataset-gumcadv2> and <http://www.chlamydia-screening.nhs.uk/ps/info-management.asp>, respectively.

Further information on the Gonococcal Resistance to Antimicrobials Surveillance Programme (GRASP) Action Plan for England and Wales is available at [http://webarchive.nationalarchives.gov.uk/20140714084352/http://www.hpa.org.uk/webc/HPAwebFile/HPAweb\\_C/1317138215954](http://webarchive.nationalarchives.gov.uk/20140714084352/http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317138215954).

Further information on trends in HIV diagnoses in the UK is available at: <https://www.gov.uk/government/statistics/hiv-in-the-united-kingdom>.

## **Statistical notes on the data analysis**

1. GUM clinic data covering diagnoses since 2009 and Level 3 integrated GUM/SRH clinic data since 2014 were collected through a new electronic surveillance system, the Genitourinary Medicine Clinic Activity Dataset (GUMCADv2). During years prior to this, data were collected on an aggregated, paper-based form, the KC60 statistical return. Unlike KC60 surveillance, GUMCADv2 enables errors in data coding submitted by clinics to be identified and corrected. The net effect has been to reduce slightly the number of diagnoses reported, as duplicates can be removed. To enable fair comparisons of trends in STI diagnoses reported over time using these two surveillance systems, numbers of diagnoses reported through KC60-based surveillance in years prior to 2009 were adjusted down. The adjustment was calculated using the estimated percentage difference in diagnoses reported through GUMCADv2 and KC60 for the same calendar quarters in 2008 and 2009. This was possible as both systems were run in parallel during these years.

2. Males reported with an unknown sexual orientation have been excluded from the heterosexual and MSM analyses. Females reported with an unknown sexual orientation have also been excluded from heterosexual analyses.

3. Several changes were made in 2012 to the way chlamydia data are reported. The Chlamydia Testing Activity Dataset (CTAD) is a universal disaggregate dataset that comprises data on all NHS and LA or NHS-commissioned chlamydia testing carried out in England. CTAD replaced the NCSP core data return and the non-NCSP non-GUM aggregate data return. Statistical notes specific for chlamydia data are summarised below:

- From 2012, total chlamydia diagnoses reported include community chlamydia data from all age-groups, and not solely the NCSP target age group of 15 to 24 year olds (as in previous years).
- From 2012, all chlamydia cases presenting to GUM clinics that were previously diagnosed at other services are no longer included in the chlamydia diagnosis totals, in order to decrease double counting in the data. As a result of this, the recommended level for the PHOF indicator chlamydia detection rate was revised down from 2,400 to 2,300 per 100,000 population in 15 to 24 year olds.
- Data include chlamydia tests and diagnoses among people accessing services located in England who are also resident in England.
- Data include tests where sex is reported as male, female, and unknown/unspecified.
- Data includes all screening tests, diagnostic tests and tests on contacts
- Where data on chlamydia are presented by testing venue 'GUM' includes integrated GUM/SRH clinics also.

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