Public Health England

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Infection report

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HIV-STIs

Sexually transmitted infections[1] and chlamydia screening in England, 2015

- In 2015, there were approximately 435,000 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 200,288 diagnoses made in 2015
- The largest proportional increases in diagnoses between 2014 and 2015 were reported for syphilis (20%) and gonorrhoea (11%)
- Large increases in STI diagnoses were seen in MSM, including a 21% increase in gonorrhoea and a 19% increase in syphilis. High levels of condomless sex probably account for most of this rise
- There was a 7% decrease in diagnoses of genital warts (first episode) between 2014 and 2015
- In 2015, over 1.5 million chlamydia tests were carried out and over 129,000 chlamydia diagnoses were made in England among young people aged 15 to 24 years, the target population for the National Chlamydia Screening Programme (NCSP). This represents a reduction in overall testing and diagnoses from last year
- Twenty 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

Key messages and recommendations:

- Prevention should focus on groups at highest risk, including young adults, MSM and black ethnic minorities
- Consistent and correct use of condoms can significantly reduce risk of infection
- Rapid access to treatment and partner notification can reduce infection spread
- Regular testing for HIV and STIs is essential for good sexual health:
    - Anyone under 25 who is sexually active should be screened for chlamydia annually, and on change of sexual partner
    - MSM should test annually for HIV and STIs and every 3 months if having condomless sex with new or casual partners

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 specialist and non-specialist sexual health clinics (SHCs; see statistical note for further details) and, for chlamydia, from SHCs and community-based settings[2] [1]. Data are submitted from SHCs to the Genitourinary Medicine Clinic Activity Dataset (GUMCADv2) and from laboratories to the Chlamydia Testing Activity Dataset (CTAD), both of which are managed by Public Health England.

*** A corrected version of figure 2b of this report was substituted prior to republication on 11 October 2016.**

[1] Please see the *Resources on the PHE website* section of this report for available resources describing trends in HIV and antimicrobial resistance in *Neisseria gonorrhoeae*.

[2] Specialist services include genitourinary medicine (GUM) clinics and integrated GUM/sexual and reproductive health (SRH) services, while non-specialist services include SRH Services, Young People's Services and Online Sexual Health Services. Community-based settings include Termination of Pregnancy clinics, Pharmacies, Outreach and General Practice.

SHCs 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 sexual and reproductive health (SRH) services (including termination of pregnancy services) and specialist SHCs.

Tests performed in community-based settings are assumed to be largely asymptomatic screens; tests performed in SHCs 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 2015, there were 434,456 new STI diagnoses made at SHCs in England. Of these, the most commonly diagnosed STIs were chlamydia (200,288; 46%), genital warts (first episode; 68,310; 16%), non-specific genital infections ([NSGI] 42,262; 10%), and gonorrhoea (41,193; 10%).

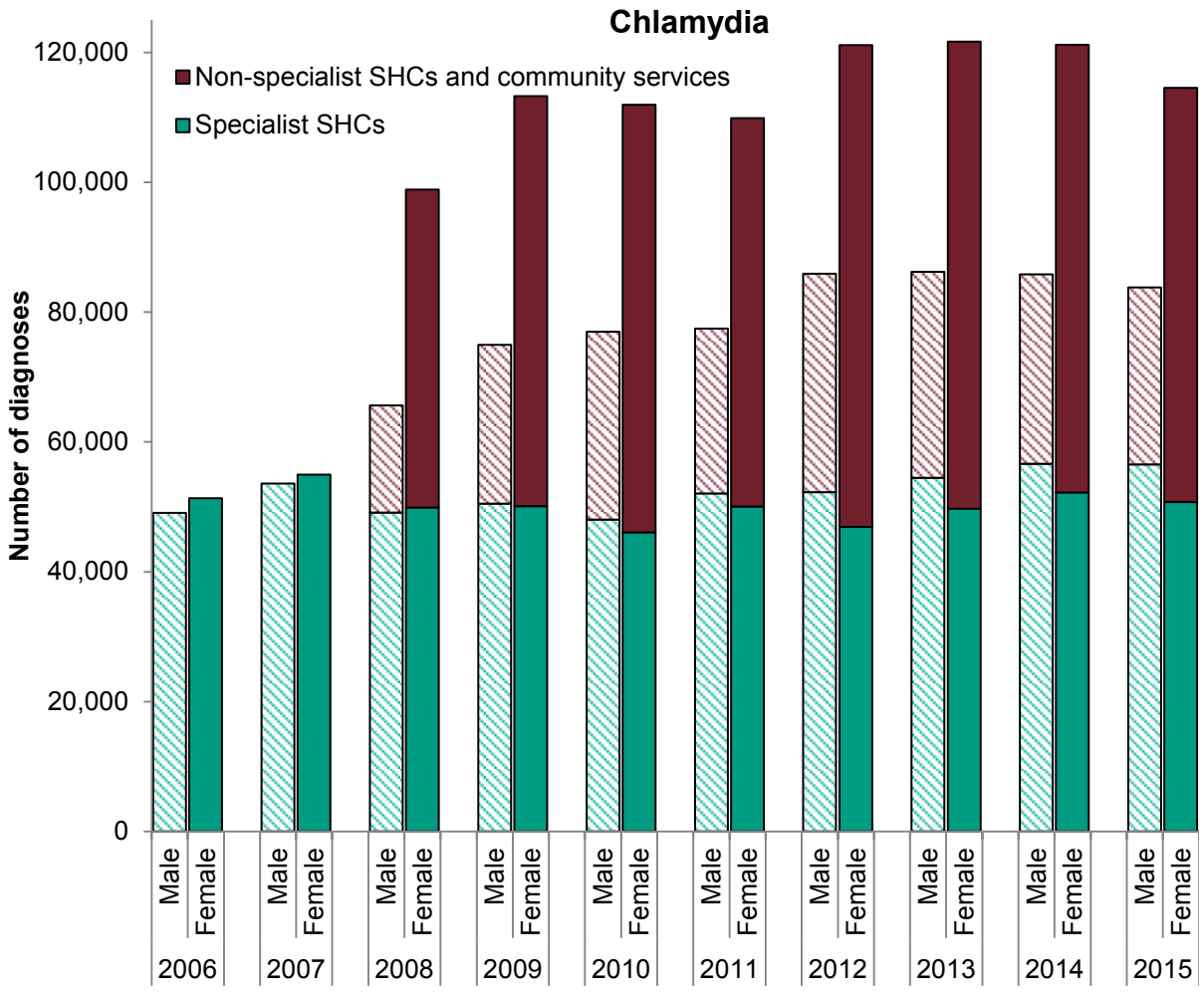
Compared to 2014, the total number of new STIs diagnosed in 2015 decreased by 3% (434,456 vs. 449,642). This is mostly explained by a decrease in the number of chlamydia diagnoses between 2014 and 2015 (4%; from 208,638 to 200,288). Most of the decrease in chlamydia diagnoses was due to a decrease in diagnoses from community-based settings (7%; 99,785 to 93,036). It may also be due to the reduction in heterosexual women testing in community-based settings, which could have had the effect of reducing the number of male partners attending for testing and treatment at specialist SHCs. A marked decrease in genital warts diagnoses between 2014 and 2015 (7%; from 73,086 to 68,310) also contributed to the overall decline in new STIs. Most of this is explained by a reduction in genital warts diagnoses in 15-19 year old females over the same time period (13%, from 7,921 to 6,878) associated with Human Papillomavirus vaccination. This and recent trends in genital warts are discussed in an accompanying article of this issue of the HPR [3]. Lastly, a reduction in NSGI diagnoses (10%; 47,183 to 42,262) also contributed to the overall decline in new STIs. This is consistent with the decline in NSGI reported since 2012 and may be due to the increasing use of nucleic acid amplification tests (NAATs) to detect chlamydia and gonorrhoea.

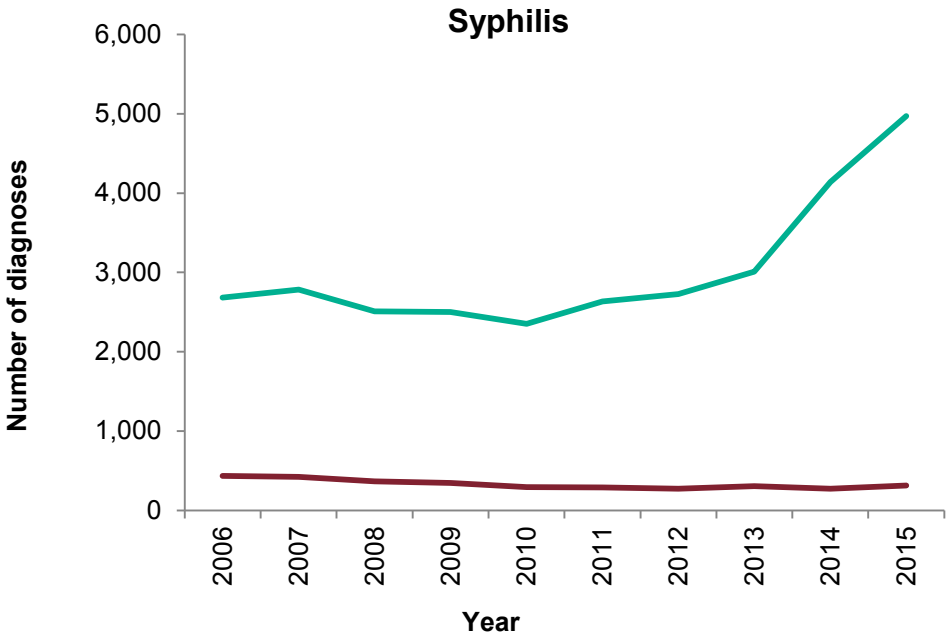
However, between 2014 and 2015, there were increases in diagnoses of syphilis ([primary, secondary and early latent stages] 20%; 4,412 to 5,288) and gonorrhoea (11%; 37,100 to 41,193), continuing the increasing trend in these infections seen in recent years: since 2012, syphilis diagnoses have risen by 76% (3,001 to 5,288) and gonorrhoea by 53% (26,880 to 41,193). These increases were maintained after adjusting for the corresponding increase in attendances at SHCs over the same period (17%; 2,616,730 to 3,055,385), as diagnosis rates per 100,000 attendances rose by 51% (114.7 to 173.1) for syphilis and 31% for gonorrhoea (1,027.2 to 1,348.2) from 2012 to 2015. Most of the increases in diagnoses of both infections are in men who have sex with men (MSM), the possible reasons for which are discussed in the following section of this report (*Men who have sex with men*).

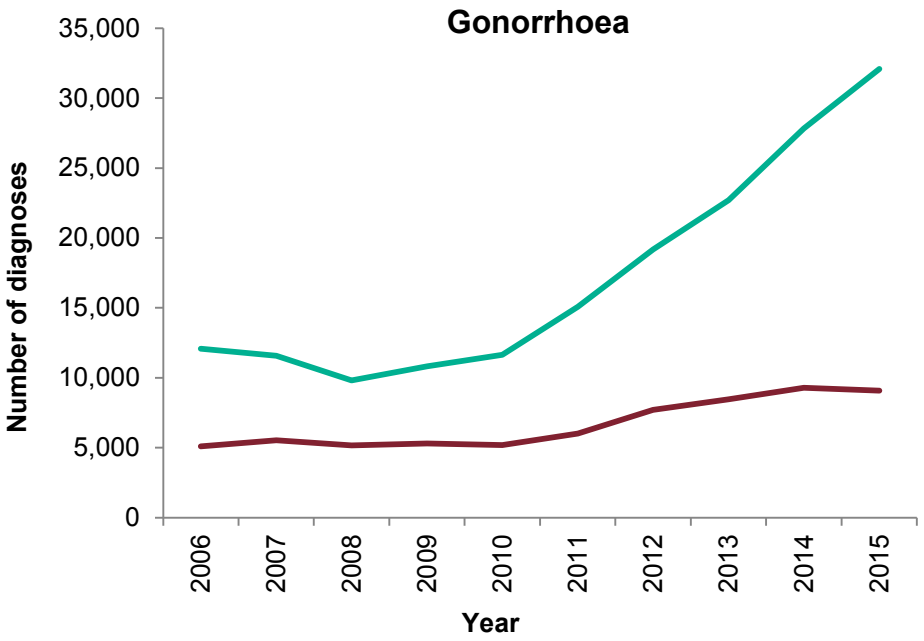
Over the past decade, diagnoses of gonorrhoea, syphilis, and genital herpes have increased considerably, most notably in males, while diagnoses of genital warts have decreased in females (figure 1). Since the full scale implementation of the NCSP in 2008, diagnosis rates of chlamydia have also increased in men and women. More STI testing in SHCs and through the NCSP [4] and routine use of more sensitive diagnostic tests, such as NAATs, partly explain these increases, although ongoing unsafe sexual behaviour has contributed. Chlamydia and genital warts diagnoses are discussed in later sections of this report (*Genital* Chlamydia trachomatis *tests and diagnoses in young people* and *Young heterosexuals and STIs*).

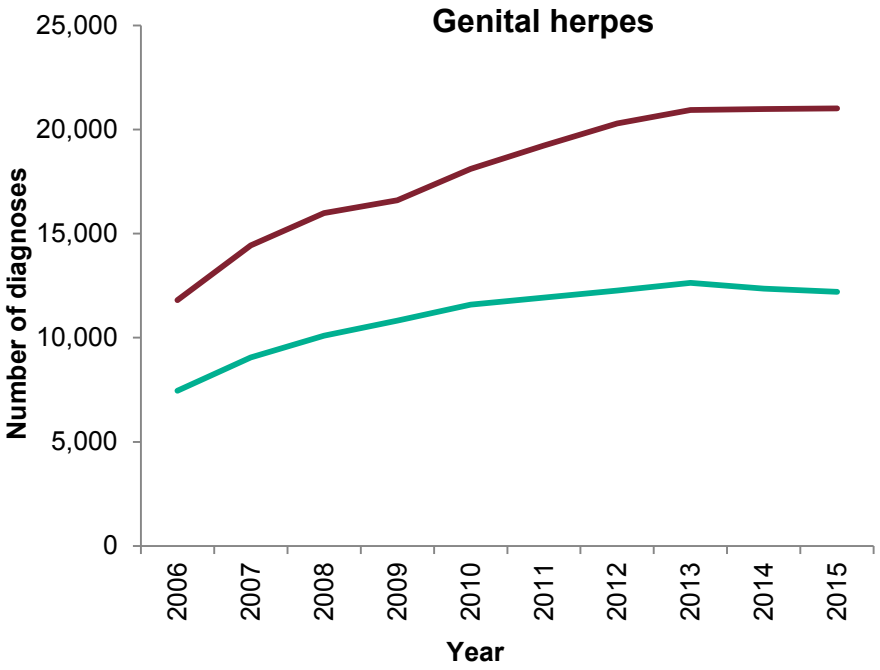
Reliable data on the sexual orientation of patients is available from SHCs' GUMCADv2 data returns. Among diagnoses made in these settings, there is substantial variation in the distribution of the most commonly diagnosed STIs by gender and sexual orientation. Men who have sex with men accounted for 79% of syphilis and 54% of gonorrhoea diagnoses, while heterosexual men and women accounted for 92% of genital warts, 92% of genital herpes and 85% of chlamydia diagnoses. Among heterosexuals, twice as many women as men were diagnosed with genital herpes.

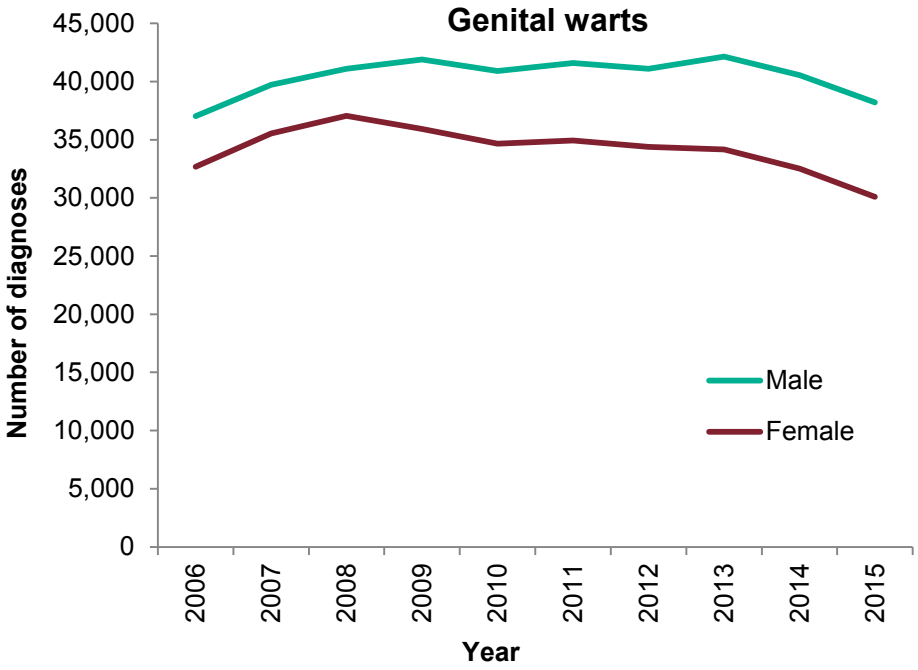
Figure 1. New diagnoses of chlamydia, syphilis (primary, secondary and early latent), gonorrhoea, genital herpes (first episode) and genital warts (first episode) at sexual health clinics* by gender, 2006–2015, England




Syphilis
6,000
5,000
4,000
3,000
2,000
1,000
0
Number of diagnoses
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year


Gonorrhoea
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Number of diagnoses
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year





* Data for chlamydia diagnoses from routine specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset (GUMCADv2) and non-specialist sexual health clinics' and community-based settings' returns to the chlamydia testing activity dataset; data for gonorrhoea, genital herpes, genital warts and syphilis diagnoses from routine specialist and non-specialist sexual health clinics' returns to GUMCADv2

Epidemiology of STIs in England

Men who have sex with men

In England in 2015, among male SHC attendees, 84% (4,192/4,971) of syphilis diagnoses, 70% (22,408/32,095) of gonorrhoea diagnoses, 21% (12,805/60,514) of chlamydia diagnoses, 12% (1,502/12,208) of genital herpes diagnoses and 9% (3,539/38,214) of genital warts diagnoses were in MSM (figure 2a).The median (interquartile range) age of MSM diagnosed with these STIs ranged from 28 (23-36) years for genital warts to 36 (29-44) years for syphilis (figure 2b).

The number of diagnoses of STIs reported in MSM attending SHCs has risen sharply in recent years and accounts for the majority of the increased diagnoses seen among men (figure 1). Gonorrhoea diagnoses increased by 21% (18,571 to 22,408), syphilis diagnoses by 19% (3,536 to 4,192), and chlamydia diagnoses by 8% (11,896 to 12,805) from 2014 to 2015 (figure 2c). This is consistent with recent trends as, by 2015, diagnoses of gonorrhoea (105%; 10,932 to 22,408), syphilis (95%; 2,147 to 4,192), chlamydia (52%; 8,416 to 12,805), genital herpes (21%; 1,246 to 1,502) and genital warts (12%; 3,149 to 3,539) had increased considerably since 2012

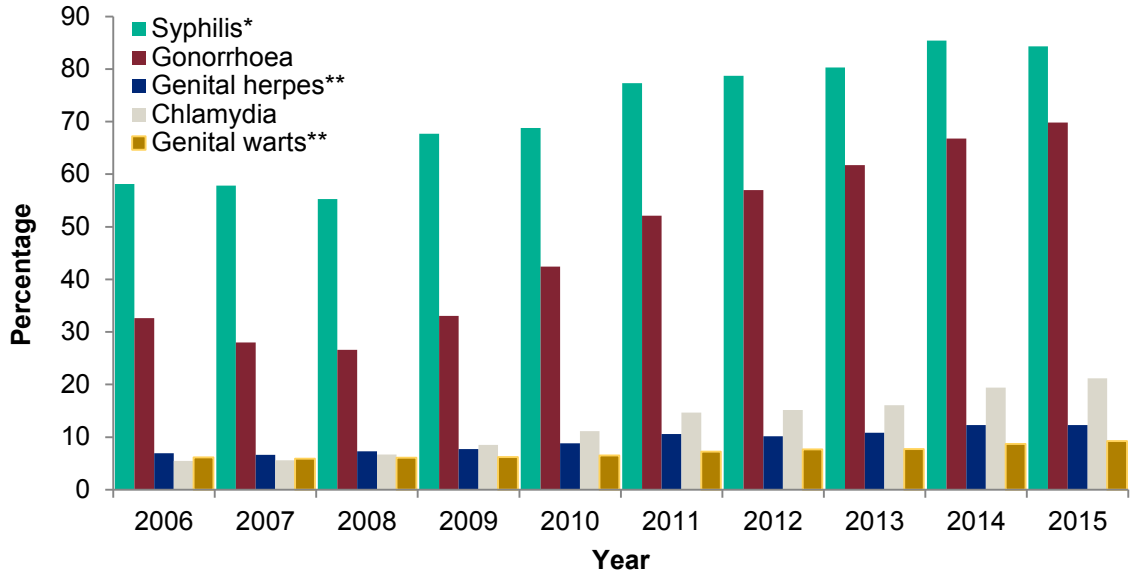
Gonorrhoea was the most commonly diagnosed STI among MSM in 2015: 10% (2,188/22,408) were infected at multiple anatomical sites. While 15% (3,400/22,408) were only infected in the pharynx, 25% (5,570/22,408) presented with rectal infections (figure 2d), suggesting significant numbers of transmissions occurred through condomless anal sex. High levels of gonorrhoea transmission are of particular concern, given the emergence of gonococcal resistance (including high-level resistance) to azithromycin, one of the antimicrobials used for treatment [5-7], and the first documented global case of treatment failure with first-line dual therapy reported recently in the UK [8].

From 2014 to 2015, diagnoses of lymphogranuloma venereum (LGV) increased by 39%, and a high proportion of patients diagnosed with LGV were co-infected with HIV (74%) and/or diagnosed with another STI or blood borne virus in the same year (63%) [9]. There is also increasing concern about sexually transmissible enteric infections in MSM. For example, from 2014 to 2015, non-travel associated diagnoses of *Shigella flexneri* 2a in men increased by 30% while diagnoses in women remained low and stable, suggesting high levels of sexual transmission between MSM [10]. Trends in LGV [11] and *Shigella* spp [12] are discussed further in accompanying articles in this issue of the HPR.

Several factors are likely to have contributed to the continued rise in diagnoses among MSM. Some of the increase in gonorrhoea and chlamydia diagnoses in MSM may be due to better detection through increased screening of extra-genital (rectal and pharyngeal) sites using NAATs [13], in response to current gonorrhoea testing guidance [14] and the LGV epidemic [15,16]. However, the impact of these developments will have progressively lessened in recent years as they have become more established. There is growing evidence 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 [10,15]. 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. In 2015, 40% (1,653/4,141) of syphilis, 24% (2,948/12,503) of chlamydia and 20% (4,404/21,915) of gonorrhoea diagnoses in MSM were in HIV-positive men. This suggests that rapid STI transmission is occurring in dense sexual networks of HIV-positive MSM [17]. Furthermore, the number of new HIV diagnoses in MSM rose to 3,360 in 2014, consistent with the steadily increasing trend observed since 2010; this is thought to be due to high levels of ongoing HIV transmission and increased levels of HIV testing [18].

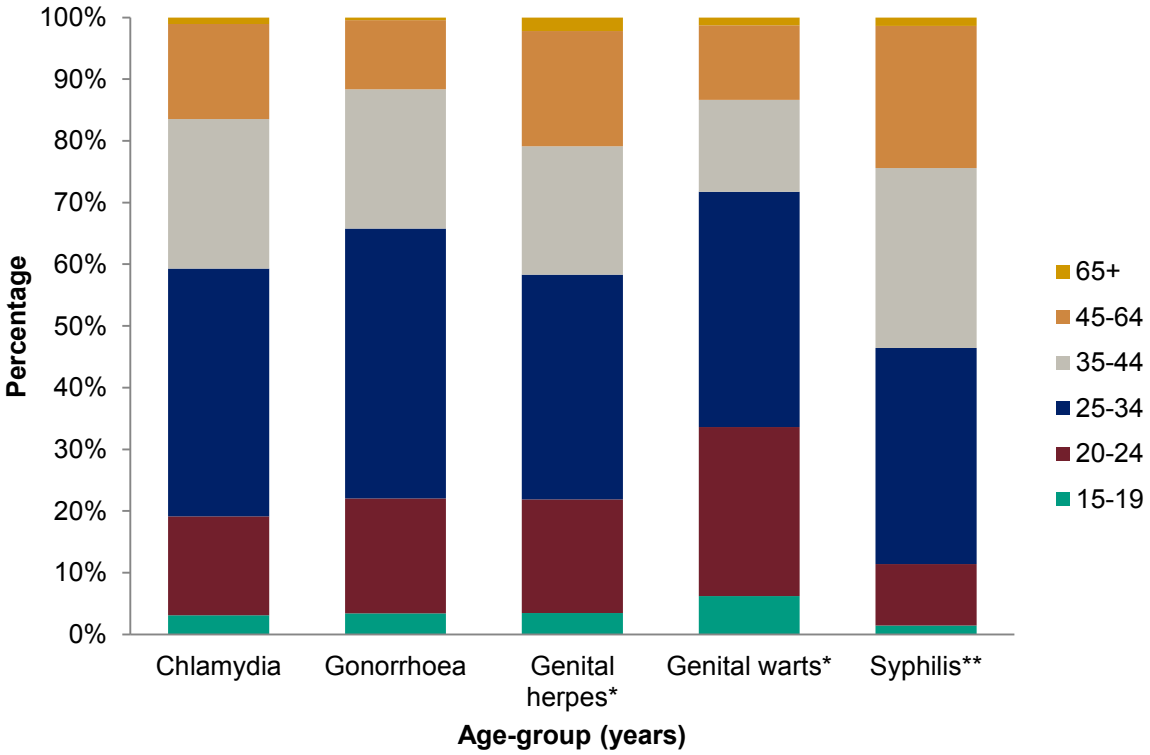
Men who have sex with men continue to experience high rates of STIs and remain a priority for targeted HIV and STI prevention and health promotion work. To address this need, HIV Prevention England (http://www.hivpreventionengland.org.uk/) have been contracted to deliver, on behalf of Public Health England, a range of activities that aim to reduce HIV incidence in MSM and other most at-risk populations. HIV Prevention England will provide system leadership, social marketing, amplification of local work and monitoring to promote among MSM and other most at-risk populations HIV testing, condom use, awareness of STIs and other evidence-based HIV prevention interventions as well as addressing stigma and discrimination. Additionally, a targeted HPV vaccination pilot programme for MSM is being introduced in England this year to evaluate whether a national programme can be rolled out across the country at a later date. HPV vaccination of MSM could provide MSM with direct protection against HPV infection with the aim of reducing the incidence of genital warts and HPV-related cancers.

Figure 2a. Proportion of all male sexually transmitted infection diagnoses which are among men who have sex with men, sexual health clinics†, 2006–2015, England



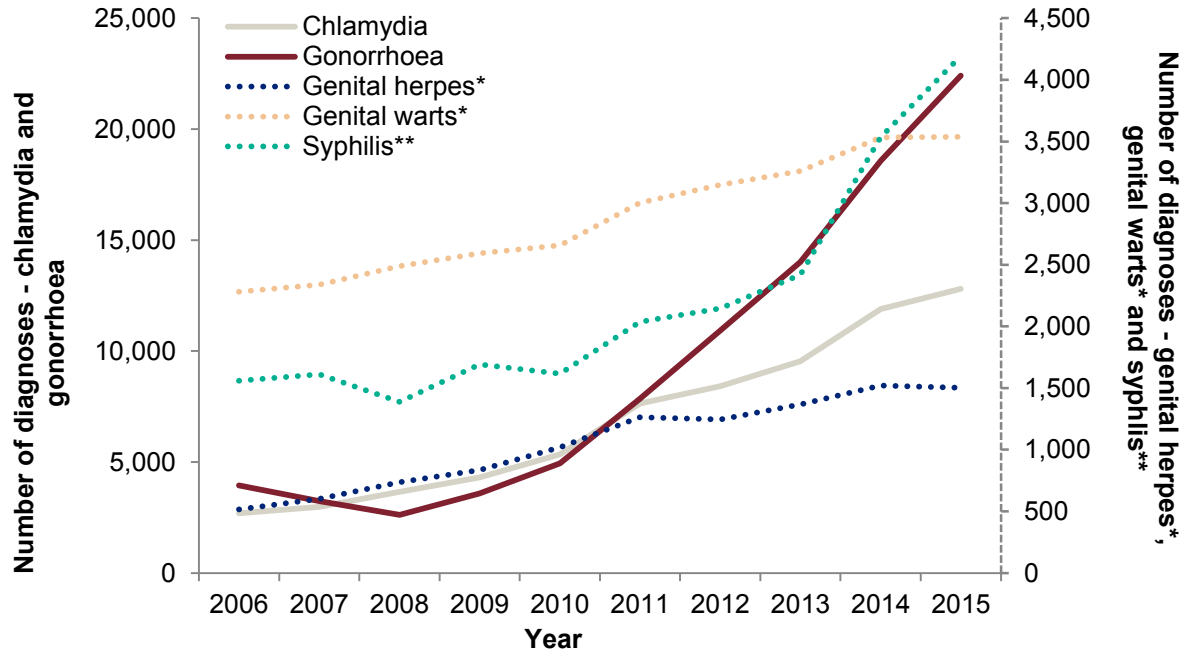
* Primary, secondary and early latent; ** First episode
†Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset

Figure 2b. Percentage of diagnoses of selected sexually transmitted infections (STIs) in men who have sex with men, sexual health clinics†, by age-group‡ and STI, 2015, England (*corrected 11 October 2016*)



* First episode; ** Primary, secondary and early latent; ‡ Years
†Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset

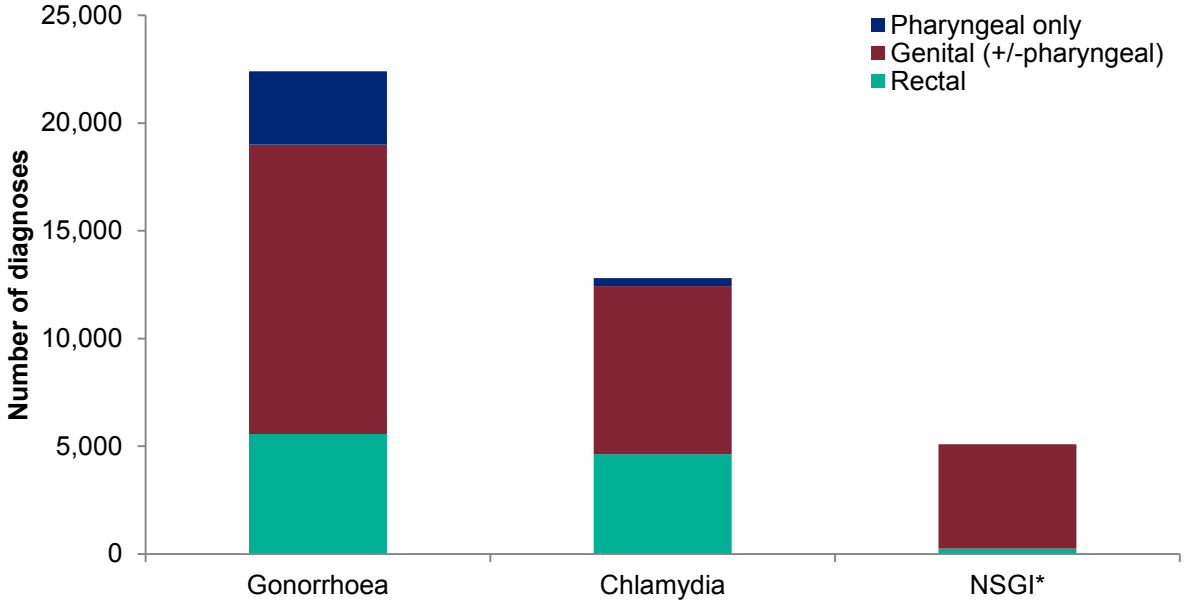
Figure 2c. Number of new diagnoses of selected sexually transmitted infections in men who have sex with men, sexual health clinics†, 2006–2015, England



* First episode; ** Primary, secondary and early latent

† Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset

Figure 2d. Number of new diagnoses of selected sexually transmitted infections in men who have sex with men, sexual health clinics†, by anatomical site of infection, 2015, England



* Non-specific genital infection

† Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset

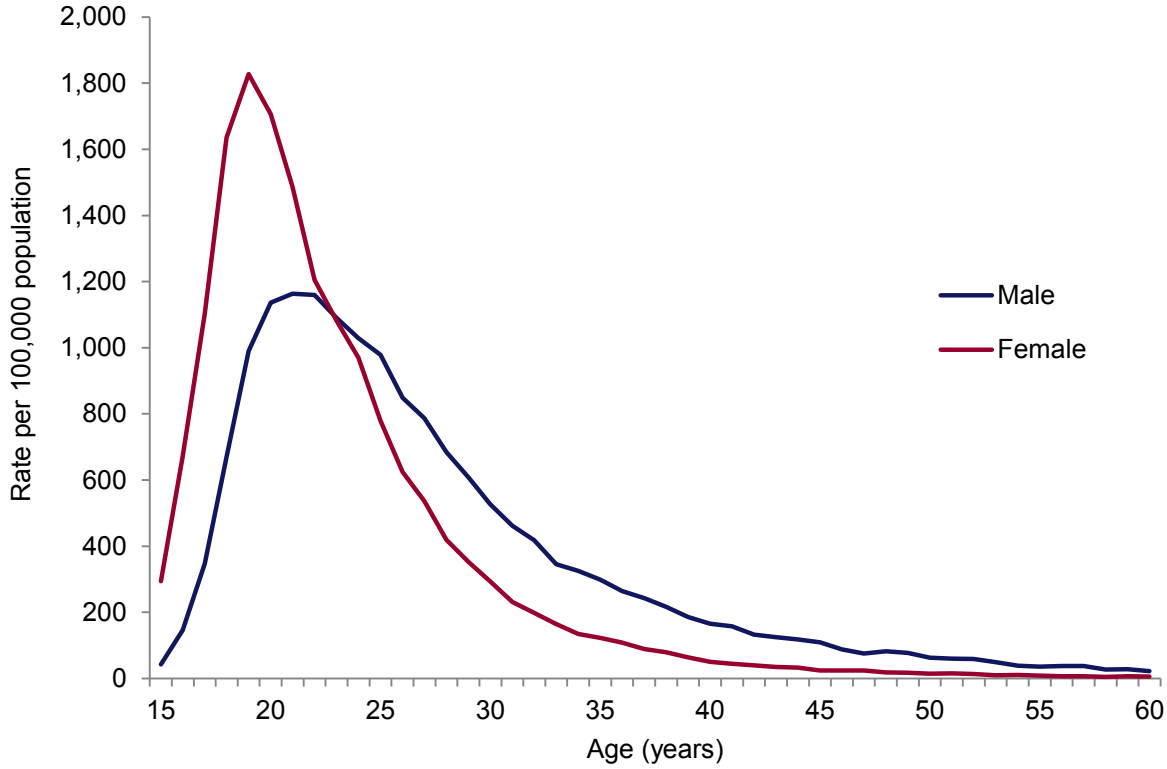
Young people and STIs

Data from a British population survey, the National Survey of Sexual Attitudes and Lifestyles (Natsal-3), suggest that people aged 16-24 years are most likely to report a new sex partner or two or more sex partners of the opposite sex in the past year [19]. People of this age group continue to experience the highest rates of chlamydia, genital herpes and genital warts, while the highest rates of gonorrhoea and syphilis in men occur in older age-groups (figure 3). In 2015, among heterosexuals diagnosed in SHCs, 62% (62,191/100,165) with chlamydia, 52% (9,088/17,414) with gonorrhoea, 51% (32,113/62,547) with genital warts, and 41% (12,591/30,658) with genital herpes were aged 15 to 24 years.

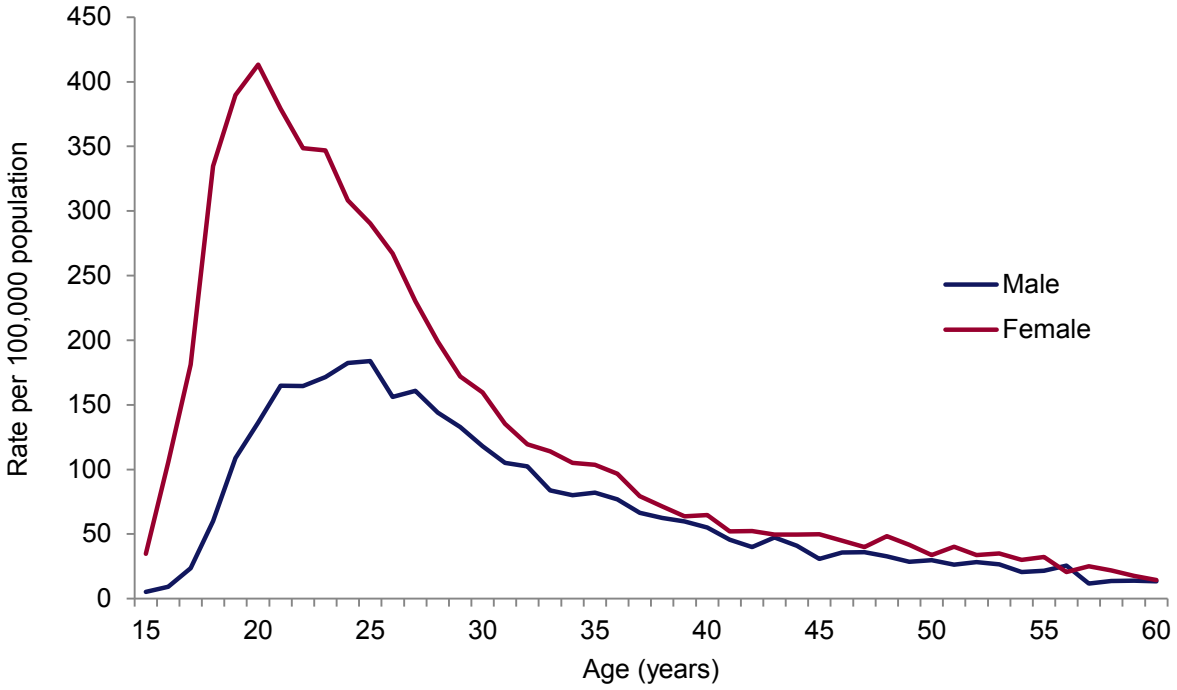
Although overall numbers of STI diagnoses in those aged 15 to 24 years have risen considerably in the last five years, there has been a decline recently in cases of genital warts in young females (figure 4). This decrease is associated with Human Papillomavirus vaccination and is discussed in an accompanying article in this issue of the HPR [3]. Similarly, there was a decrease in diagnosis rates of chlamydia among those aged 15 to 24 years (figure 4); this is discussed further in a following section of this report (*Genital* Chlamydia trachomatis *tests and diagnoses in young people*).

Figure 3. Rates of selected sexually transmitted infection diagnoses among people aged 15-60 years attending sexual health clinics† by single year of age and gender, 2015, England

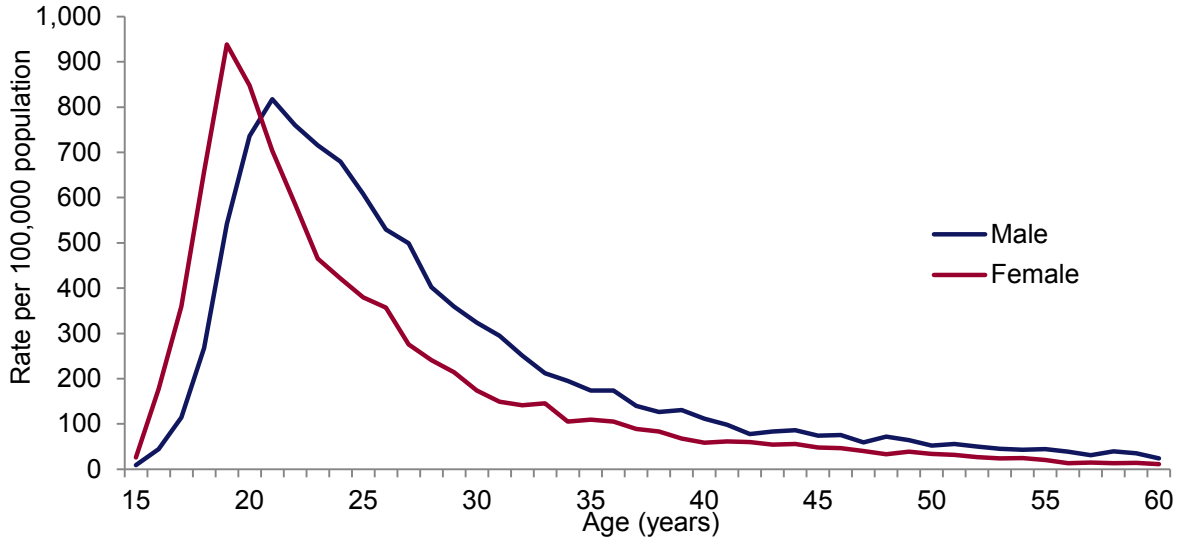
a. Chlamydia



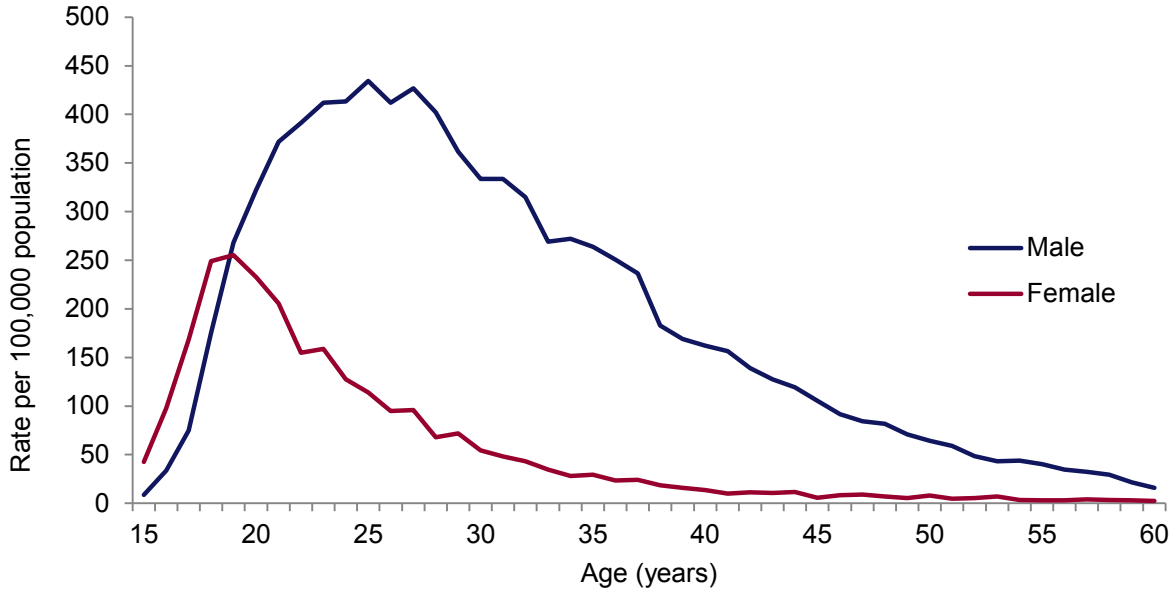
b. Genital herpes (first episode)



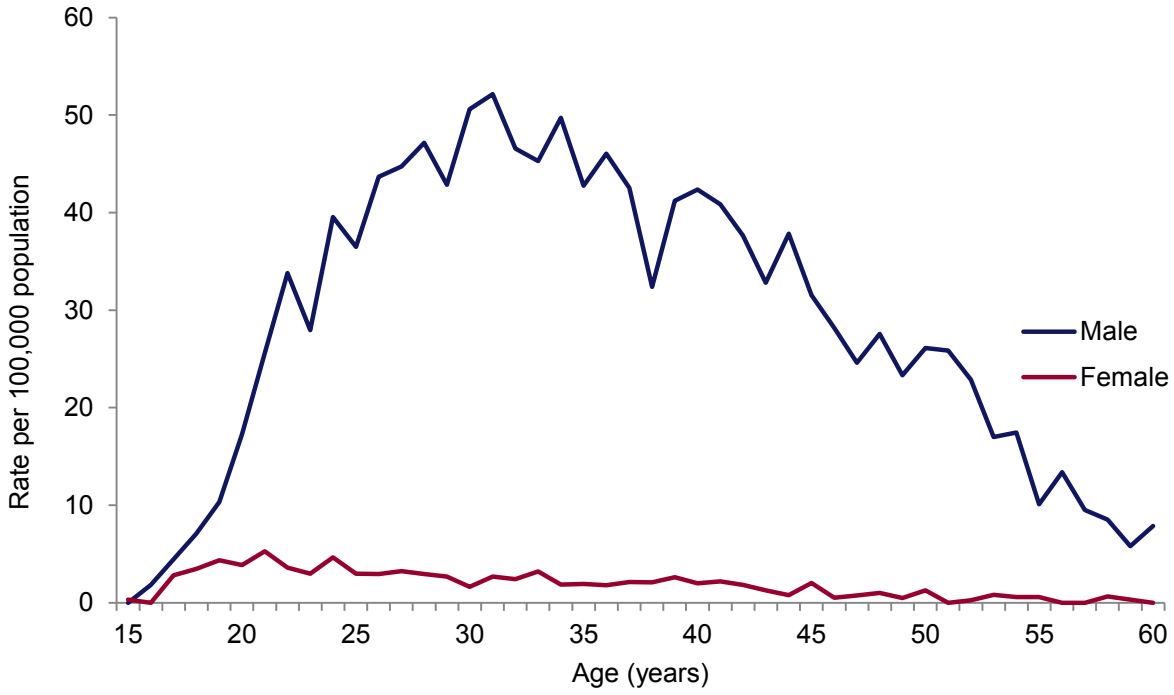
c. Genital warts (first episode)



d. Gonorrhoea



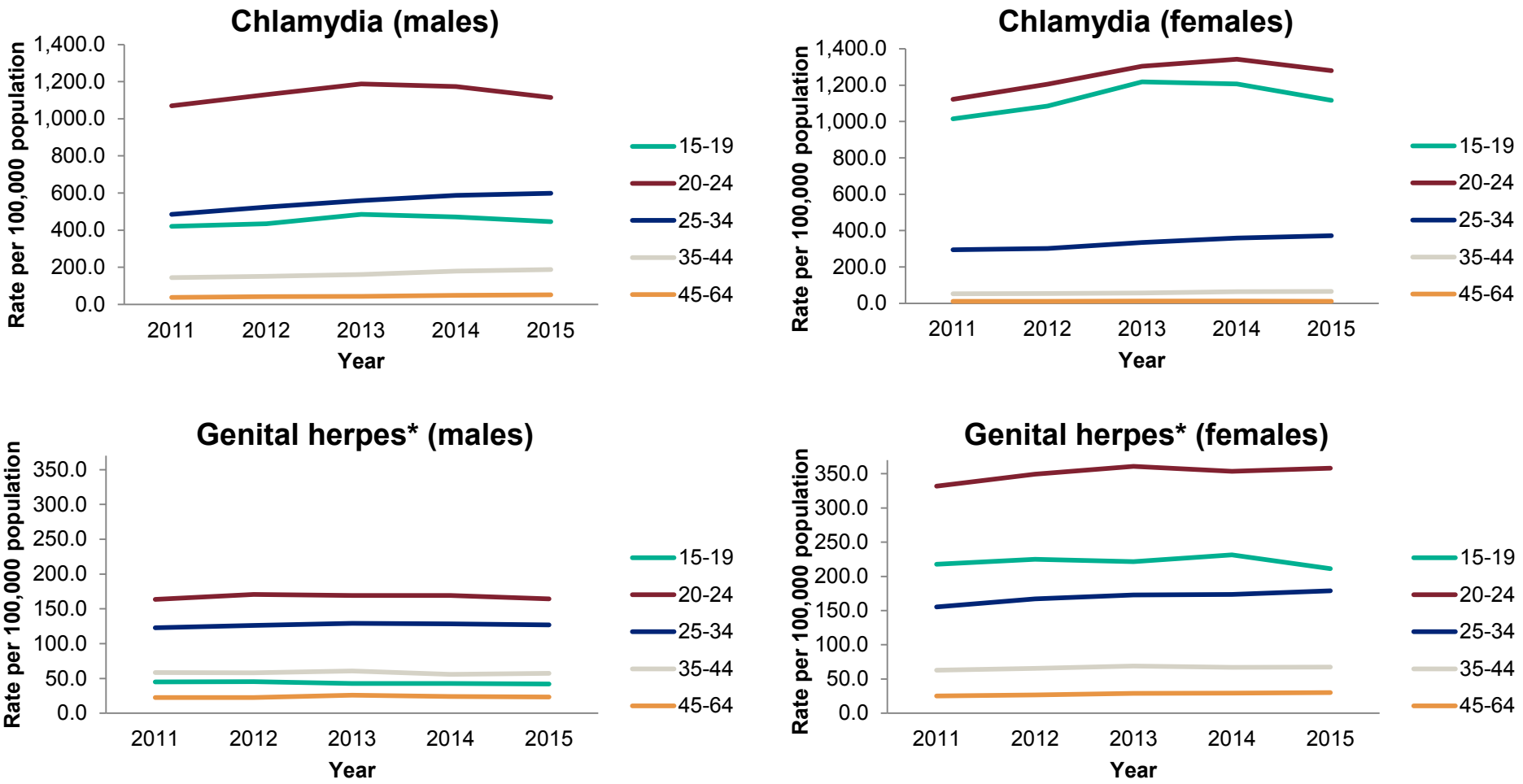
e. Syphilis (primary, secondary and early latent)

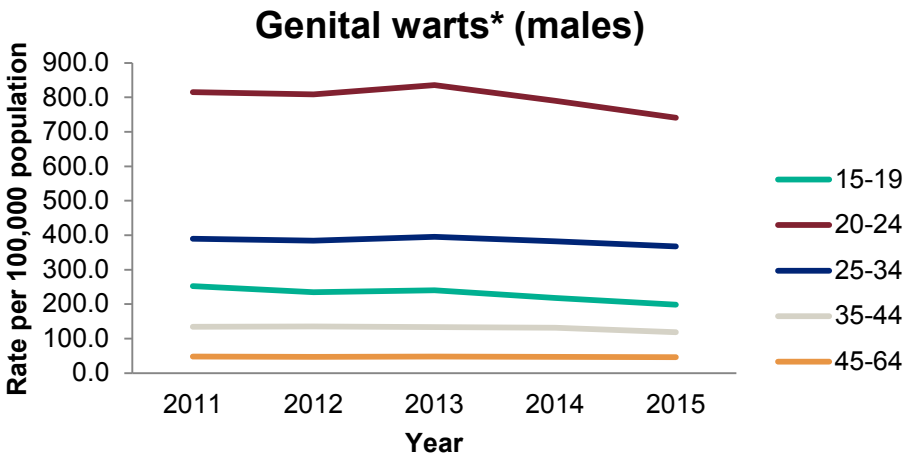


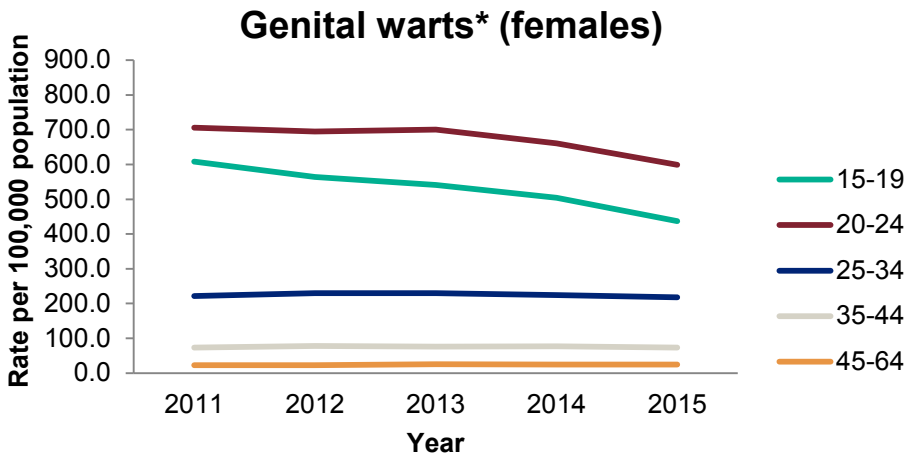
† Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset

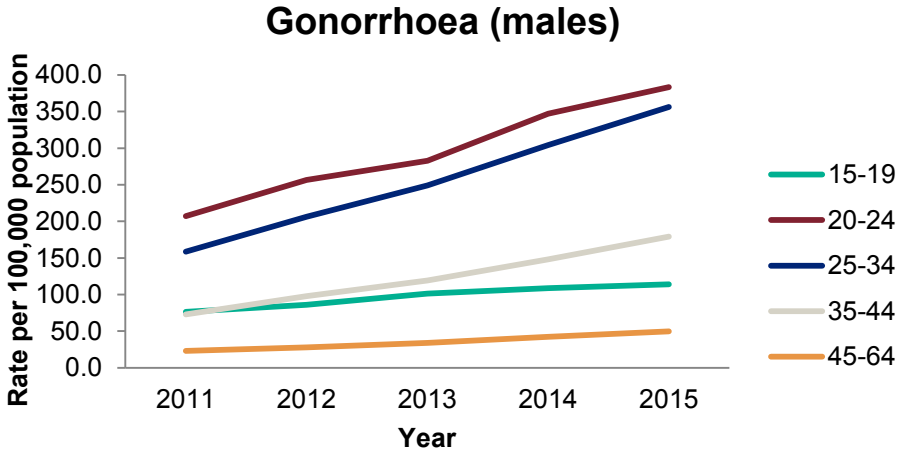
Different scales are used for the y-axes of different STIs.

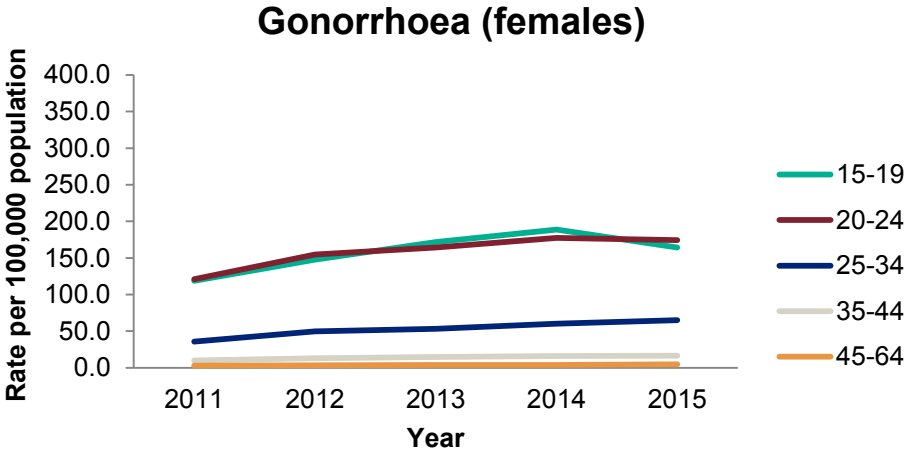
Figure 4. Rates of selected sexually transmitted infection diagnoses at sexual health clinics† by gender and age group‡, 2011–2015, England

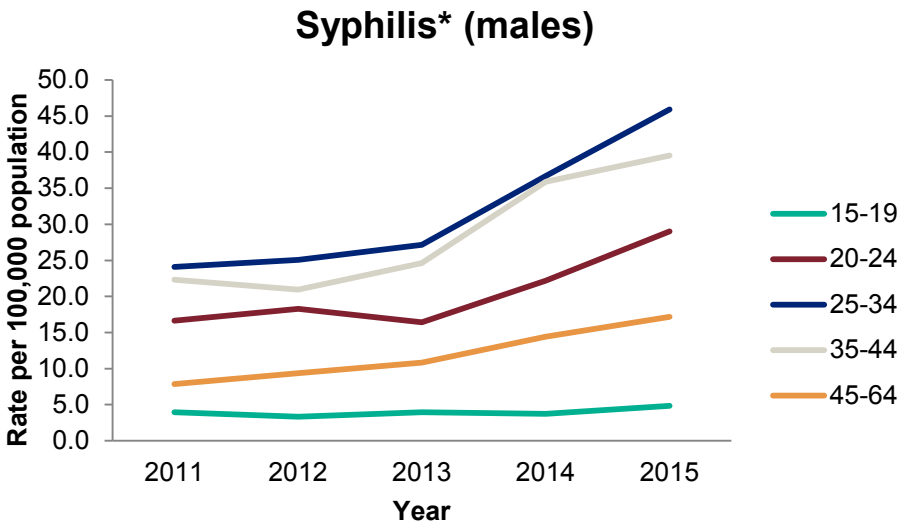


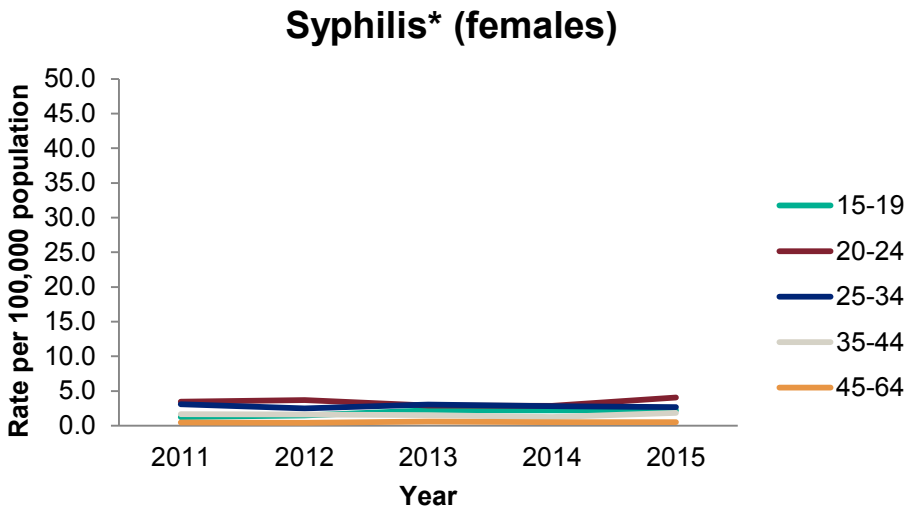

Genital warts* (males)
Rate per 100,000 population
900.0
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
2011
2012
2013
2014
2015
Year
15-19
20-24
25-34
35-44
45-64


Genital warts* (females)
Rate per 100,000 population
900.0
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
2011
2012
2013
2014
2015
Year
15-19
20-24
25-34
35-44
45-64


Gonorrhoea (males)
Rate per 100,000 population
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
2011
2012
2013
2014
2015
Year
15-19
20-24
25-34
35-44
45-64


Gonorrhoea (females)
Rate per 100,000 population
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
2011
2012
2013
2014
2015
Year
15-19
20-24
25-34
35-44
45-64





† Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset; ‡ Years

* First episode; ** Primary, secondary and early latent

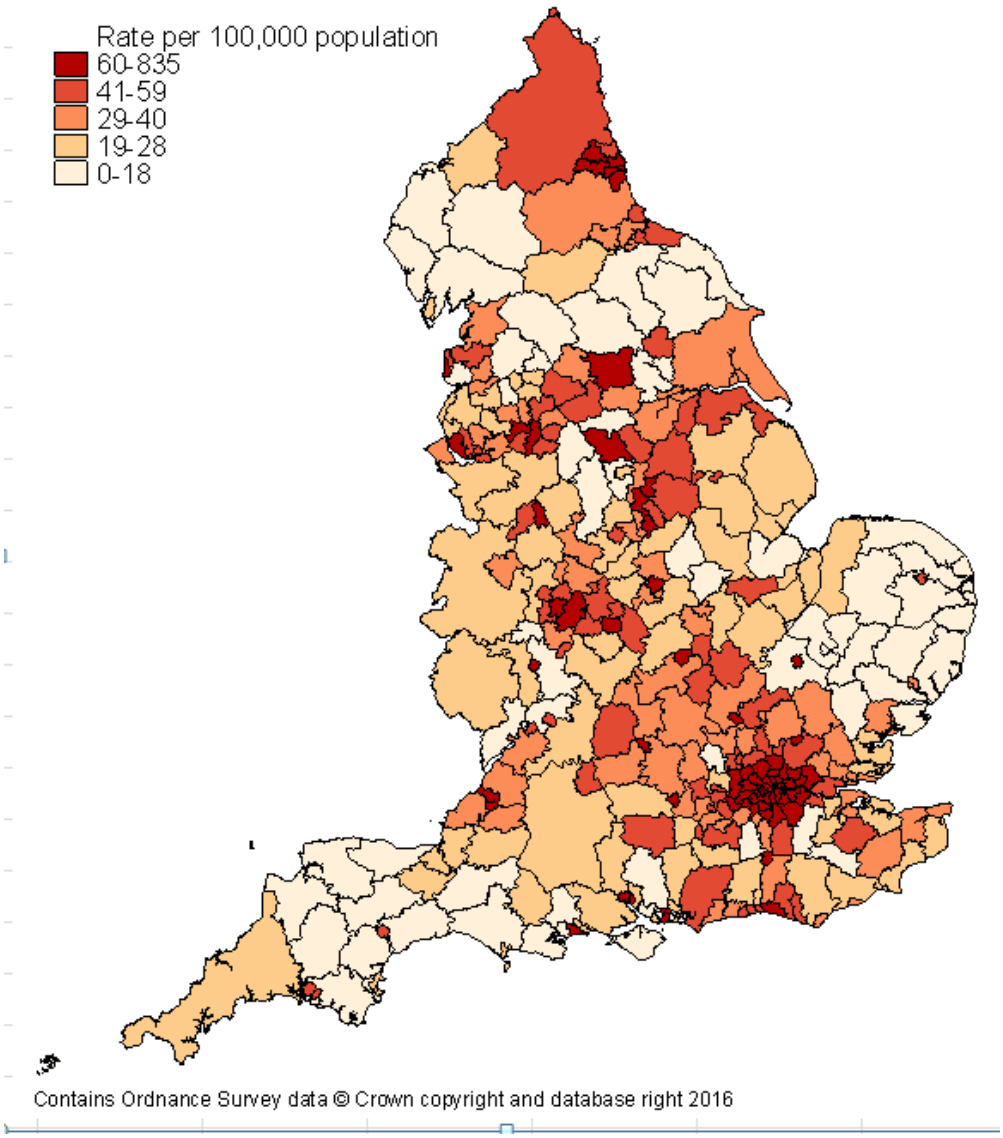
Different scales are used for the y-axes of different STIs.

Sexually transmitted infection 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 diagnosis and treatment services. Geographic variations are most pronounced for less common STIs. For instance, the results of the most recent Natsal survey highlight the relatively low prevalence of gonorrhoea (<0.1% in women and men aged 16-44 years) [20], but there is a high degree of geographical clustering of this infection [21,22]. In 2015, among lower tier Local Authorities (LAs) reporting at least one diagnosis of gonorrhoea, the rate of gonorrhoea diagnoses at SHCs ranged from 7.1 (Mid Suffolk) to 834.7 (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 socioeconomic deprivation [23-25] (figures 5a and 5b). Further, there is a strong association between poorer sexual health, as evidenced by higher diagnosis rates of STIs, and increasing levels of socioeconomic deprivation [26].

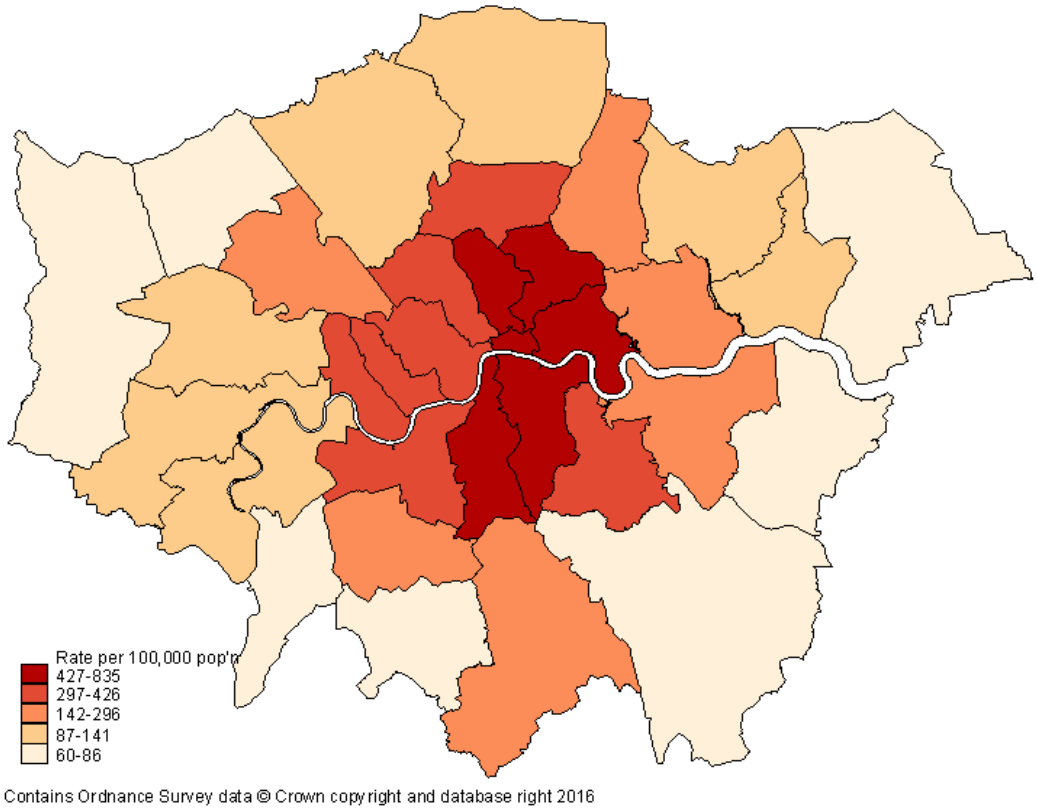
To allow LAs and public heath leads to monitor the sexual and reproductive health of their population, PHE regularly updates the Sexual and Reproductive Health Profiles. These profiles include interactive maps, charts and tables that provide a snapshot of sexual and reproductive health across a range 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, 2015, England



* Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset

Figure 5b. Rates of gonorrhoea diagnoses* by lower-tier Local Authority of residence, 2015, London



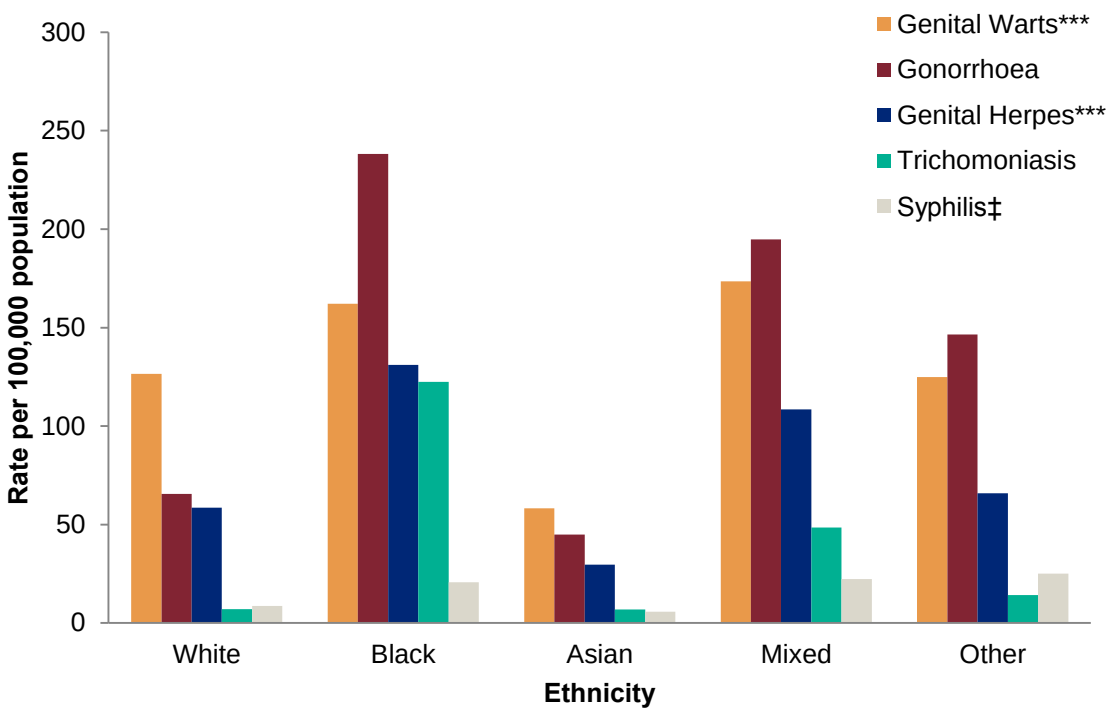
* Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset

STI distribution by ethnicity

The highest rates of STI diagnoses at SHCs 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 [25]. 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 [27]. Additionally, risk behaviours and STI epidemiology vary between black African and Caribbean ethnic groups [27,28].

To better understand these behavioural factors and address this disparity, Public Heath 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 (http://bbsti.hpru.nihr.ac.uk/our-research/research-themes/theme-overview-understanding-risk-and-risk-reduction-sexually). 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 sexually transmitted infection (STI) diagnoses* by ethnicity and STI, 2015, England



* Data from routine specialist and non-specialist sexual health clinics' returns to the genitourinary medicine clinic activity dataset. ** First episode. ‡ Primary, secondary and early latent

Genital Chlamydia trachomatis *tests and diagnoses in young people*

In 2015, over 1.5 million chlamydia tests were carried out in England among young people aged 15 to 24 years. A total of 129,022 chlamydia diagnoses were made among this age group, equivalent to a detection rate of 1,887 per 100,000 population. Assuming one test per person, an estimated 32% of young females and 13% of young males were tested for chlamydia.

Chlamydia testing coverage, detection rate and percentage testing positive varied by Public Health England (PHE) Centre area of residence (figure 7). The percentage of young people tested for chlamydia ranged from 19% in West Midlands and the East of England to 27% in London. The percentage testing positive ranged from 7.4% in the South East to 9.6% in Yorkshire and Humber. North West had the highest detection rate per 100,000 population (2,328) while South East had the lowest (1,501). 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 non-specialist SHCs and community-based settings (including primary care) although there is variation by area. For example in the North West 71% of tests were undertaken in non-specialist SHCs and community-based settings, in comparison to 52% in London where a much greater amount of testing was performed in specialist SHCs.

Four years of data are now available in CTAD and trends show a decline in testing coverage, a small change in positivity and a decline in the detection rate (figure 7). The biggest change in detection rate was seen 2014-2015 where the figure has fallen by 7.3%. It is likely that the trends seen at the PHE centre area and national levels 2012-2015 are as a result of a combination of the following:

I. A true decline in testing coverage: The coverage decline shown in figure 7 is mostly attributable to fewer tests in non-specialist SHCs and community venues which may be, in part, a result of the integration of sexual health services in a number of programme areas. There has also been a small decline in the number of tests (2%) and diagnoses (5%) from specialist SHCs.
II. Improvements in data quality: There has been a reduction in double counting of tests and diagnoses corresponding to improvements in coding of data by providers and laboratories prior to submission which has contributed to the decline in coverage seen 2012-2014. This does not influence the 2014-2015 decline in detection rate as data indicate only a very small proportion (<4%) of diagnoses are likely to have been double counted in both 2014 and 2015.

Chlamydia detection rates were higher in females than males across all areas (1.7 to 2.2 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 1.6 to 2.4 times higher than among males aged 15 to 19 years.

Figure 7. Chlamydia testing coverage, detection rates and percentage of tests positive* among 15 to 24 year olds by testing venue and PHE Centre area, 2012 - 2015, England

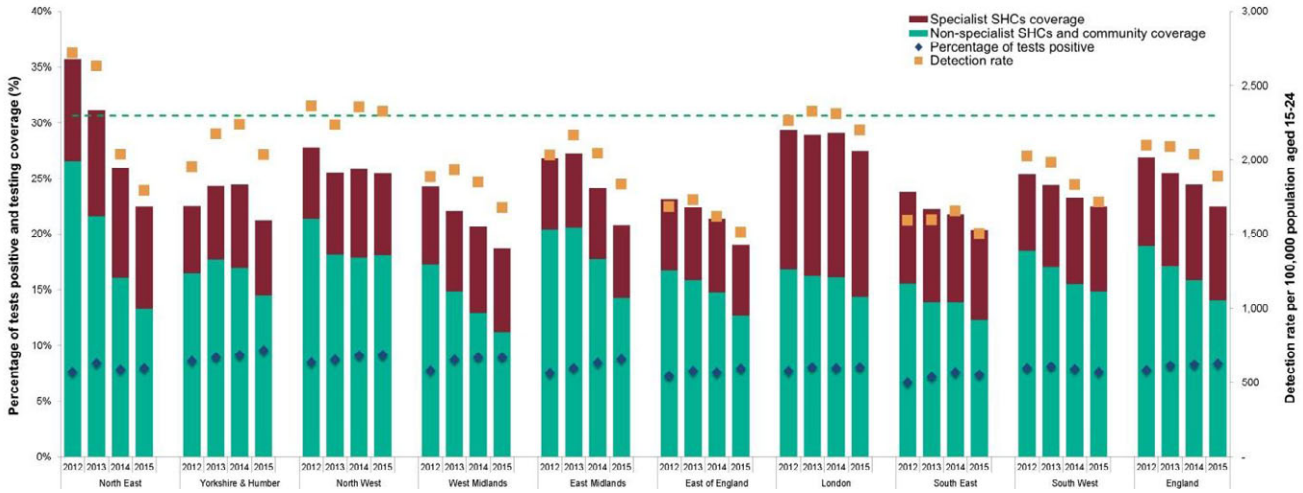
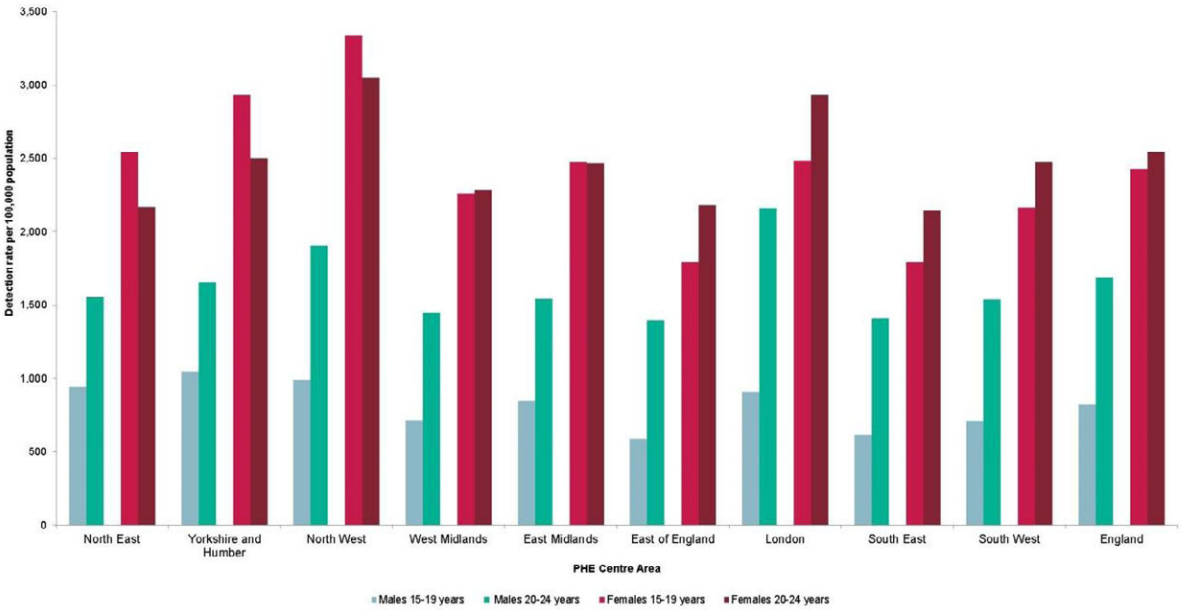


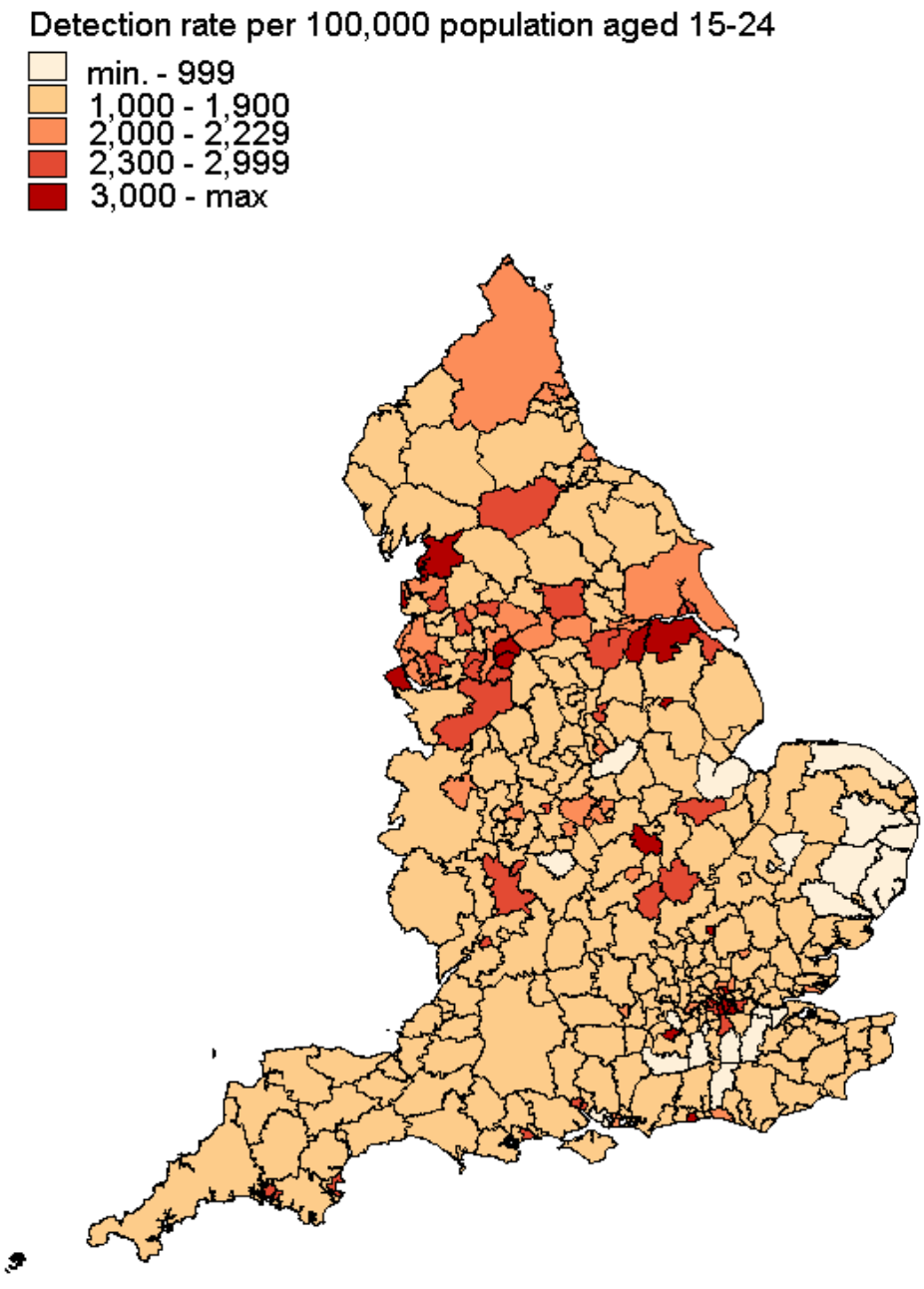
Figure 8. Chlamydia detection rates* among 15 to 24 year olds by gender, age-group and PHE Centre area, 2015, England



* Data from routine specialist and non-specialist sexual health clinics' returns and community-based settings

Chlamydia detection rates exhibit considerable geographic variation (figures 8-10) and, in 2015, 20% of Upper Tier Local Authorities (UTLAs) achieved a detection rate of 2,300 or above (table 1). Differences in detection rate could be due to differences in testing coverage (table 1), as chlamydia detection rate shows a strong relationship with chlamydia testing coverage (figure 10), or heterogeneity in behavioural risk for chlamydia. In 2015, the median UTLA detection rate was 1,837 per 100,000 population aged 15-24 (IQR 1,537-2,198). The 2015 rates show 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 actively works to support local authorities' data quality improvement initiatives.

Figure 9. Chlamydia detection rates* among 15 to 24 year olds by UTLA of residence, 2015, England and London PHE Centre area



* Data from routine specialist and non-specialist sexual health clinics' returns and community-based settings

Figure 10. Chlamydia testing coverage and detection rate* among 15 to 24 year olds by UTLA of residence, 2015, England

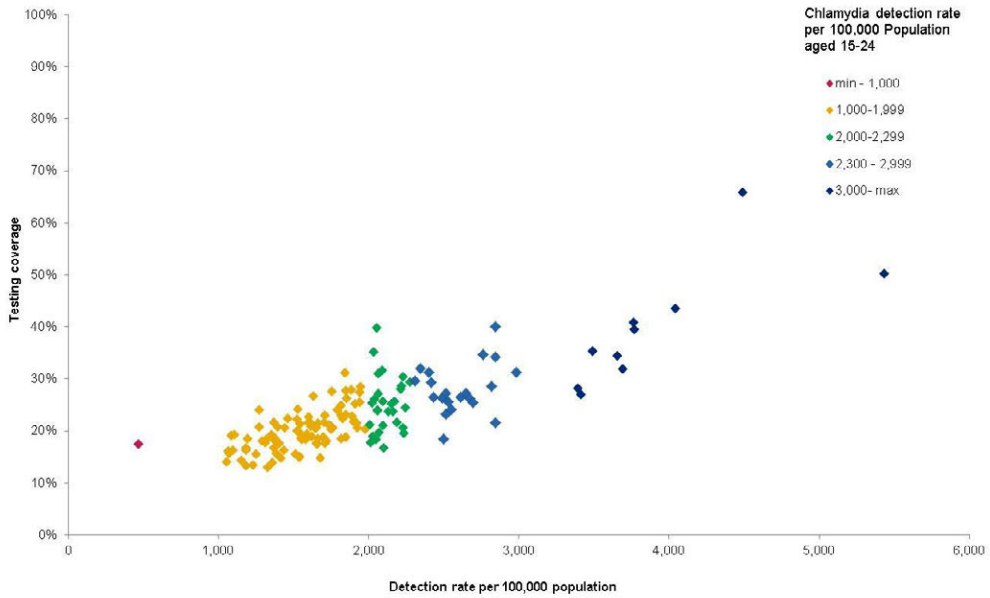


Table 1. Chlamydia testing coverage, and number and proportion of UTLAs achieving a chlamydia detection rate* among 15 to 24 year olds of at least 2,300 per 100,000 population by PHE Centre (PHEC) area, 2015, England

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	23%	0	0%	4	33%	8	67%
Yorkshire and Humber	21%	5	33%	4	27%	6	40%
North West	25%	10	43%	7	30%	6	26%
West Midlands	19%	0	0%	2	14%	12	86%
East Midlands	21%	0	0%	3	33%	6	67%
East of England	19%	3	25%	1	8%	8	67%
London	27%	9	27%	5	15%	19	58%
South East	20%	1	6%	3	17%	14	78%
South West	23%	3	19%	0	0%	13	81%
England	**23%**	**31**	**20%**	**29**	**19%**	**92**	**61%**

* Data from routine specialist and non-specialist sexual health clinics' returns and community-based settings

When considered by testing venue, the largest proportion of chlamydia tests and diagnoses in England in 2015 were in specialist SHCs (Table 2). Large numbers of tests and diagnoses also took place in SRH venues and primary care (GP). Only small numbers of tests were reported from pharmacy and termination of pregnancy (ToP) venues. Positivity was highest in specialist SHCs which is expected as patients attending these services are more likely to be symptomatic than those attending non-specialist SHCs and community venues.

Table 2 Chlamydia tests, diagnoses, and percentage tests positive* by testing venue, 15-24 year olds, 2015, England

Testing venue	Tests	Diagnoses	Proportion of tests positive (%)
Specialist SHCs	576,089	59,848	10.4
SRH	257,394	23,533	9.1
GP	298,263	17,741	5.9
Pharmacy	17,374	1,449	8.3
ToP	20,470	1,263	6.2
Internet	76,842	6,491	8.4
Other	276,900	17,669	6.4
Unknown	15,487	1,028	6.6
Total	**1,538,819**	**129,022**	**8.4**

* Data from routine specialist and non-specialist sexual health clinics' returns and community-based settings

Since 2012, the proportion of tests from specialist SHCs venues has increased (figure 11a). 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 2012-2014 due to integration of SRH and specialist SHCs services in many programme areas.

The 2015 figures show an overall 8% decline in the number of tests and a 7% decline in the number of diagnoses from all service settings compared to 2014 (figure 11b). This is mainly attributable to:

I. 20% fewer tests reported from 'other' settings in 2015 compared to 2014. Internet tests are also no longer categorised as 'other' so some decline was anticipated due to coding changes. However the rise in internet tests is not sufficiently large to explain the fall in tests from 'other' settings.

II. 18% fewer tests reported from SRH settings in 2015 compared to 2014.

III. The upward trend in specialist SHCs tests and diagnoses did not continue into 2015 and we saw a decline in specialist SHCs tests and diagnoses for the first time since CTAD was implemented in 2012. This may be due to the reduction in women testing in other venues which could have the effect of reducing the number of male partners attending for testing and treatment at specialist SHCs.

Figure 11a. Chlamydia tests* among 15 to 24 year olds by testing venue, 2012 - 2015, England

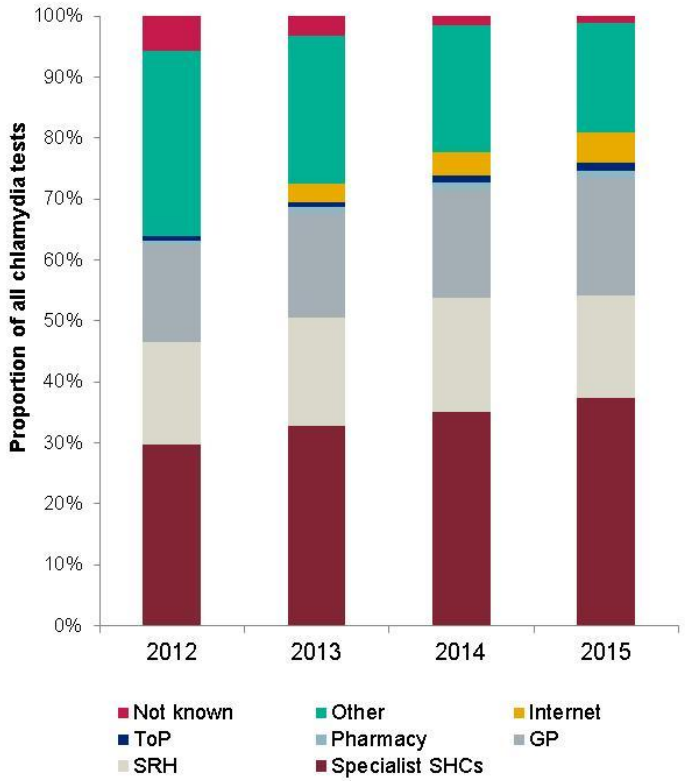
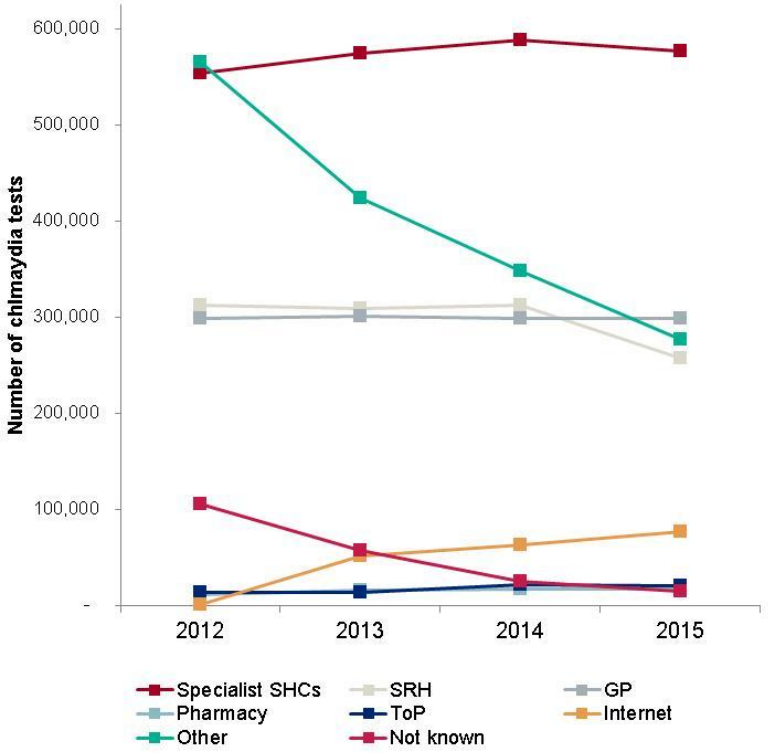


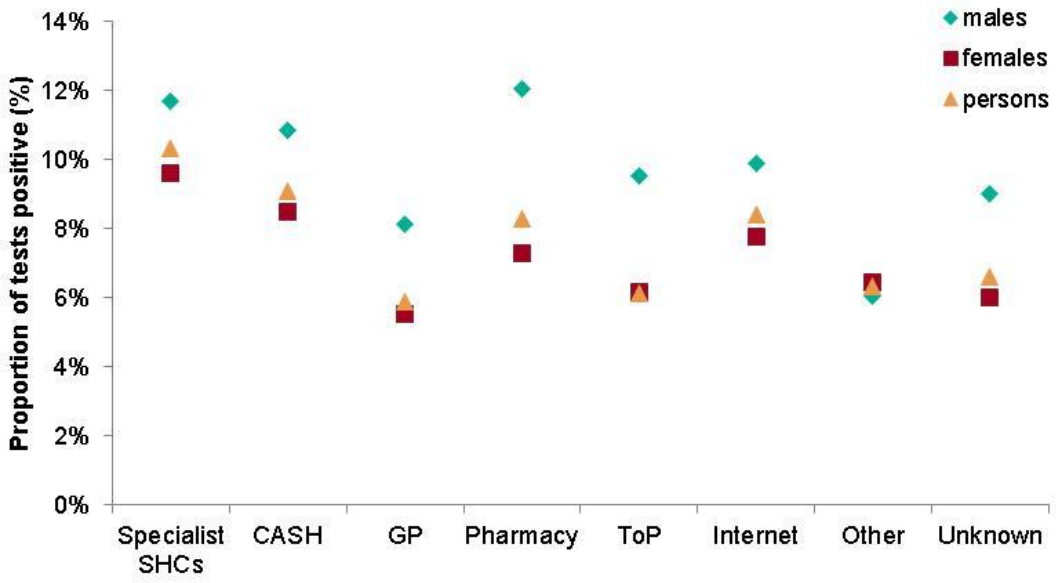
Figure 11b. Chlamydia tests* among 15 to 24 year olds by testing venue, 2012 - 2015, England



* Data from routine specialist and non-specialist sexual health clinics' returns and community-based settings

In recent years we have seen a rise in online sexual health services offered both as part of commissioned care and privately. In 2015 the CTAD surveillance system was amended to enable identification of NHS/LA commissioned tests ordered through an internet service due to the increasing use of this method of service delivery. Use of this coding has increased throughout 2015 and in total 76,842 tests and 6,491 diagnoses were reported in 2015. The proportion of internet tests that were positive was 8.4%, comparable to other testing settings (figure 12). Internet testing yielded good positivity for males and females, and was highest in 15-19 compared to 20-24 year olds (table 3).

Figure 12. Proportion of chlamydia tests positive* among 15 to 24 year olds by testing venue, 2015, England



* Data from routine specialist and non-specialist sexual health clinics' returns and community-based settings

Table 3. Chlamydia tests, diagnoses and the proportion of tests positive from internet services among 15 to 24 year olds, 2015, England

	Males			Females			Persons		
	15-19	20-24	15-24	15-19	20-24	15-24	15-19	20-24	15-24
Tests	5,898	17,758	23,656	14,580	38,394	52,974	20,525	56,317	76,842
Diagnoses	673	1,680	2,353	1,484	2,640	4,124	2,158	4,333	6,491
Proportion positive	11.4%	9.5%	9.9%	10.2%	6.9%	7.8%	10.5%	7.7%	8.4%

Discussion and conclusions

In 2015, there was a small (3%) decrease in STI diagnoses in England to approximately 435,000 cases. Fewer NSGI and genital warts diagnoses contributed to this, but this overall decline in the number of STIs was primarily due to a sharp decrease in chlamydia diagnoses, as this comprised 55% of the roughly 15,000 fewer STI diagnoses in 2015 relative to 2014. While the number of chlamydia diagnoses from SHCs remained relatively stable over this period, there was a 7% decrease in chlamydia diagnoses reported from community-based settings, emphasising the need for increased scale up of opportunistic screening through the NCSP.

There are a number of other key areas of concern. Gonorrhoea diagnoses continued the sharp rise seen in recent years, exceeding 40,000 cases in 2015. Although improved test sensitivity and uptake may have contributed, increased gonorrhoea transmission is likely playing a major role. Reversing this trend is a priority given the spread of resistance to frontline antimicrobials used for treating gonorrhoea and the depletion of effective treatment options [6,8,29,30].

Of particular concern is the continuing and rapid rise in syphilis and gonorrhoea among MSM, which strongly suggests high levels of condomless sex. HIV 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, and likely plays a role in the reported STI trends. For those who are HIV negative, serosorting increases the risk of HIV seroconversion as 14% of MSM are unaware of their infection [31]. A recent cluster of hepatitis B in MSM who identify as heterosexual highlights the diversity of the MSM population and the need for culturally appropriate and sensitive targeting of health promotion messages, including at cruising sites and sex on premises venues [32].

There was notable variation in the chlamydia detection rate among 15 to 24 year olds by geographic area, largely reflecting rates of testing. Local authorities 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 non-specialist SHCs and community-based settings focusing on those which serve the populations with the highest need based on positivity. 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 [33]; and ensure treatment and partner notification standards are met [34].

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 substantially reduces 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 [35], will promote delivery of these key messages.

Resources on the PHE website

Further STI data are available on the PHE website in tables (https://www.gov.uk/government/statistics/sexually-transmitted-infections-stis-annual-data-tables, https://www.gov.uk/government/statistics/national-chlamydia-screening-programme-ncsp-data-tables) 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 https://www.gov.uk/government/collections/chlamydia-surveillance-data-screening-and-management, respectively.

Further information on the Gonoccocal Resistance to Antimicrobials Surveillance Programme is available at https://www.gov.uk/government/publications/gonococcal-resistance-to-antimicrobials-surveillance-programme-grasp-report.

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. Specialist SHC data covering diagnoses since 2009 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 SHCs 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. From 2012, GUMCADv2 was expanded to include reporting from all commissioned level 2 sexual health services.

2. Routine returns from the following sexual health services (referred to as 'SHCs' in the main text above) were considered in this report:

i. Level 3 (specialist) services: genitourinary medicine (GUM) clinics and integrated GUM/sexual and reproductive health (SRH) services
ii. Level 2 (non-specialist) services: SRH, Young People's Services and Online and other sexual health Services.

Details on the levels of sexual health service provision are provided in appendix B of the Standards for the Management of STIs (British Association for Sexual Health and HIV/Medical Foundation for HIV and Sexual Health): http://www.medfash.org.uk/uploads/files/p18dtqli8116261rv19i61rh9n2k4.pdf.

3. 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.

4. 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 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, 'Specialist SHCs' also includes integrated GUM/SRH clinics.

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