Public Health England

Protecting and improving the nation's health

Syphilis epidemiology in London

2017 data update

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Summary

This report provides an update to the previous report on the epidemiology of syphilis in London which should be referred to for more detailed background.[1]

Syphilis is a sexually transmitted infection (STI) caused by the *Treponema pallidum* organism. Sustained syphilis transmission is a marker of high-risk behaviour. STI outbreak control and the management of syphilis cases follows the principles outlined in national guidelines, with a focus on the following.[2,3]

- surveillance and intelligence capture
- early testing and treatment of cases
- robust contact tracing
- health promotion to modify sexual risk behaviour, eg consistent condom use
- continued monitoring and evaluation

Burden and trend in London

London bears an disproportionate burden of syphilis cases and this is increasing.

In 2017, 3,397 London residents were diagnosed with syphilis, accounting for nearly half (49%) of all cases in England.[4]

- the rate of syphilis diagnoses in London in 2017 was 38.7 per 1,000 population which is over 200% higher than the rate in England and over 200% higher than any other region
- since 2013 the number of cases of syphilis in London residents has increased by 98%, with a 16% increase in the year from 2016 to 2017

Syphilis was diagnosed in residents of all 33 London local authorities (LAs) in 2017, and 23 LAs saw an increase in syphilis cases compared to the previous year.

- inner London boroughs continue to have the highest numbers of cases
- in 2017, London boroughs made up 17 out of the top 20 LAs in England with the highest rates of syphilis[1]

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[1] PHE. Syphilis epidemiology in London. www.gov.uk/government/publications/syphilis-epidemiology-in-london
[2] Kingston M, French P, Higgins S, McQuillan O, Sukthankar A, Scott C, et al. UK national guidelines on the management of syphilis. Int J STD AIDS OnlineFirst. 2015; 0(0):1-26
[3] PHE. Sexually transmitted infections. Managing outbreaks. www.gov.uk/government/publications/sexually-transmitted-infections-stis-managing-outbreaks
[4] PHE. Sexual and Reproductive Health Profiles. fingertips.phe.org.uk

- 19 boroughs in London had more than 50 cases of syphilis in 2017 and the following had more than 100: Brent, Camden, Greenwich, Hackney, Hammersmith and Fulham, Haringey, Islington, Kensington and Chelsea, Lambeth, Lewisham, Newham, Southwark, Tower Hamlets, Wandsworth, Westminster

Focus on men who sex with men

Gay, bisexual and other men who have sex with men (MSM) in London are disproportionately affected by syphilis and this is worsening.

- MSM accounted for 90% of syphilis cases in 2017
- in 2017, 2,969 syphilis cases were diagnosed in MSM in London
- from 2013 to 2017, the number of syphilis diagnoses in MSM increased from 1,363 to 2,969 (an increase of 118%), with an increase of 16% from 2016 to 2017 alone
- in 2017, just under half of MSM syphilis diagnoses were in individuals co-infected with HIV (45%), and 47% of MSM diagnosed with syphilis were diagnosed with another new STI during the same episode or within the previous year
- the median age of MSM diagnosed with syphilis in 2017 was 37 years old, the majority were white (74%) and 45% were born in the UK

Risk factors for syphilis among MSM

MSM with syphilis have reported high risk behaviours, similar to those described during recent outbreaks of *Shigella* and Lymphogranuloma Venereum. Men living with HIV describe higher risk behaviour than HIV negative men. This intelligence comes from enhanced surveillance of 107 MSM cases of infectious syphilis between October 2016 and January 2017 at 3 London specialist sexual health services (SHS).

- in the 3 months prior to diagnosis the median number of sexual contacts was 4, with a median of 2 being traceable
- a minority (18%) always reported always using condoms in the previous 3 months. Condom use was higher in the HIV negative men, with a third of HIV positive men never using condoms in the previous 3 months, compared to 7% of HIV negative men
- when asked about sex without condoms, 38% reported that this was always with people of the same status. Nearly half reported sero-discordant sex without using condoms
- overall, a third engaged in group sex (higher in HIV positive men)
- HIV positive men were almost twice as likely to report use of any of the 3 main ‘chemsex’ drugs (46%) compared to HIV negative men (26%). Use of injecting drugs was reported by only 5% of MSM overall

- the majority of respondents used apps and websites (79%) and venues (80%) to meet sexual partners. Grindr was the most frequently used app (60%) followed by Scruff (14%) and BBRT (14%)
- when asked about preferences for receiving health promotion messages, 63% reported this being from the sexual health advisor, 37% via Google/Wikipedia, 24% from leaflets/posters at SHSs and 22% from NHS choices. Only 14% preferred messages on apps and only 7% preferred messages on social media

Other risk groups

Diagnoses of syphilis in heterosexuals in London have also risen, although they account for a much smaller proportion of cases.

- 253 cases in heterosexual males in 2017 (7% of cases), a rise of 30% from 2016. It is noted that some MSM may identify as heterosexual
- 79 cases in heterosexual females in 2017 (2% of cases), a rise of 27% from 2016

Between 2015 and 2017, 16 congenital syphilis cases were reported in London, compared to 7 cases reported in the 3 year period prior.

Service activity

In 2017, a third of cases were diagnosed at the primary stage (33%) and 29% at the secondary stage. However, nearly two-fifths of cases (38%) were diagnosed at a later stage of infection (early latent).

In 2017, 416,340 syphilis tests were conducted among London residents in 2017, which is a 29% increase since 2012, and a 3% fall from 2016. The overall STI testing rate (excluding chlamydia aged <25 years) among Londoners (31,449 per 100,000) in 2017 was the highest in the country.

Two-thirds of syphilis cases were diagnosed in 5 specialist SHSs; Dean St Clinic (37%), John Hunter Clinic, Burrell St Clinic, Jefferiss Wing Centre and the Mortimer Market Centre.

Implications for prevention

Action is needed to address the sustained high numbers of cases of syphilis in London, by focusing on preventing transmission in MSM. Early testing and treatment is essential, in addition to robust contact tracing and promotion of safer sex, by both ensuring the ready availability of condoms and tackling the underlying drivers for a lack of consistent condom use during sexual activity.

The sustained transmission of syphilis among MSM in London is particularly concerning as this increase continues despite active campaigns targeted towards MSM to promote condom provision and use, and where a fully functioning sexual health care system provides open access to testing and treatment.

Sustained syphilis transmission is a marker of high-risk behaviour. The high-risk sexual behaviours driving the increases include multiple and concurrent partners facilitated through the use of apps, sero-adaptive behaviour (ie choosing a partner based on perceived HIV status) and chemsex (the use of drugs before or during planned sexual activity to sustain, enhance, disinhibit or facilitate the experience), associated with high levels of condomless sex. The complex underlying factors that lead to condomless sex in MSM need to be tackled, although these are challenging.

Syphilis is a curable infection, and continued high proportions of early latent infections suggest earlier detection and treatment is both required, and possible to achieve. Robust and accessible services should be available for syphilis testing, treatment and contact tracing. Regular and frequent testing should be recommended and awareness increased of syphilis symptoms.

Targeted health promotion with MSM is needed, including: awareness raising of syphilis infection symptoms and the risk of onward transmission; risk behaviour modification interventions, eg consistent condom use with all casual, new partners and main partners until they have all been screened, and that sero-sorting for HIV is unsafe for STIs.

Given the significant proportions of MSM with syphilis who are also HIV positive, this suggests that making the most of opportunities for prevention and testing at HIV treatment services should be encouraged. The preference for receiving advice from sexual health advisors suggests that this channel for advice should be optimised.

There has been an increase in syphilis diagnoses in heterosexuals which is of particular concern because of the potential for increased mother-to-child transmission of syphilis. Testing for syphilis is included as part of the routine antenatal screening

offered to all women in early pregnancy and there are clear guidelines for the management of syphilis in pregnant women.[5] However, in a number of recent cases,[6] the diagnosis of syphilis in the mother was made after that in the baby, and the diagnosis of congenital syphilis was only considered as part of differential diagnosis in babies who presented with non-specific symptoms which often led to a delay in diagnosis. Following the most recent cluster of cases of congenital syphilis, PHE has worked with Royal Colleges and professional networks to raise awareness among clinicians of syphilis in pregnancy, including in those women who have had a negative syphilis screening test in early pregnancy, and of congenital syphilis.

There are multiple drivers of this continuing epidemic and action needs to be taken by the health system as a whole, with partners working together and supporting each other to deliver an effective response. This must bring together preventive action, raising awareness of the disease, earlier diagnosis and treatment with intervention at all parts of the care pathway.

Syphilis is also increasing elsewhere in England[7] and PHE is drafting a Syphilis Action Plan to address this. Key areas for action include:

- increasing testing frequency and coverage in high risk populations (especially HIV positive MSM) in accordance with recommended guidelines to promote early detection and treatment, and reduce infection incidence
- improving understanding of other groups at risk of syphilis, especially those who may not recognise their risk eg heterosexual-identifying MSM and their female partners
- early detection and management of syphilis in pregnancy to reduce the risk of congenital syphilis
- ensuring recognition and prompt management of congenital syphilis, especially for non-typical presentations
- encouraging and increasing consistent condom use in those at risk of syphilis infection

Local authority health and wellbeing boards are advised to identify which segments of their populations would benefit from targeted action to address the sexual health needs of MSM and act accordingly as outlined in the 2014 PHE report ‘HIV and STIs in men

[5] www.bashhguidelines.org/current-guidelines/genital-ulceration/syphilis-2015/

[6] Furegato Martina, Fifer Helen, Mohammed Hamish, Simms Ian, Vanta Paul, Webb Sharon, Foster Kirsty, Kingston Margaret, Charlett André, Vishram Bhavita, Reynolds Claire, Gill Noel, Hughes Gwenda. Factors associated with 4 atypical cases of congenital syphilis in England, 2016 to 2017: an ecological analysis. Euro Surveill. 2017;22(49):pii=17-00750. doi.org/10.2807/1560-7917.ES.2017.22.49.17-00750

[7] PHE. STI and screening for chlamydia in England. 2017. assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/713944/hpr2018_AA-STIs_v5.pdf

who have sex with men in London'.[8] This covers a range of measures required to stem transmission of STIs in MSM in general including tackling the underlying causes such as chemsex and other aspects of harm reduction for substance misuse and raising awareness of the consequences of practices such as sero-adaptive behaviour.

In some areas a collaborative approach will be most appropriate and local authorities should consider work with PHE and NHSE to take action to increase MSM awareness of the following, especially among those who are HIV positive:

- the rise in syphilis in MSM
- the importance of consistent condom use in preventing STIs
- the benefits of frequent and early testing and treatment
- the importance of participation in contact tracing

PHE should work through its relationships with professional bodies and with the NHS to ensure clinicians beyond the sexual health field are aware of the increase in syphilis, and the different ways in which this may manifest in clinical settings, including awareness of syphilis infection late in pregnancy and congenital syphilis.

Commissioners of sexual health services (including HIV clinical services) are advised to ensure that proactive measures are taken to increase the frequency of testing among MSM, contact tracing at services they commission is optimised and that appropriate drug and alcohol services are available.

Providers of sexual health services should:

- offer sexual health screens including an HIV test annually to MSM, 3 monthly to MSM having unprotected sex with new or casual partners, and take proactive measures to increase the frequency of testing in their MSM service users
- make the most of health promotion opportunities when a test result is negative
- optimise contact tracing including development and application of appropriate standards for contacts per case for syphilis diagnoses
- train staff to rapidly assess drug and alcohol use in clients, provide harm minimisation advice and promptly refer to appropriate services if indicated

[8] PHE. HIV and STIs in men who have sex with men in London. www.gov.uk/government/publications/hiv-and-stis-in-men-who-have-sex-with-men-in-london

Charts, tables and figures

Figure 1: Syphilis rate per 100,000 population by (PHEC) of residence: England 2017.
Data source: GUMCAD

Figure 2: Syphilis diagnoses by year in London residents, 2010-2017.
Data source: GUMCAD

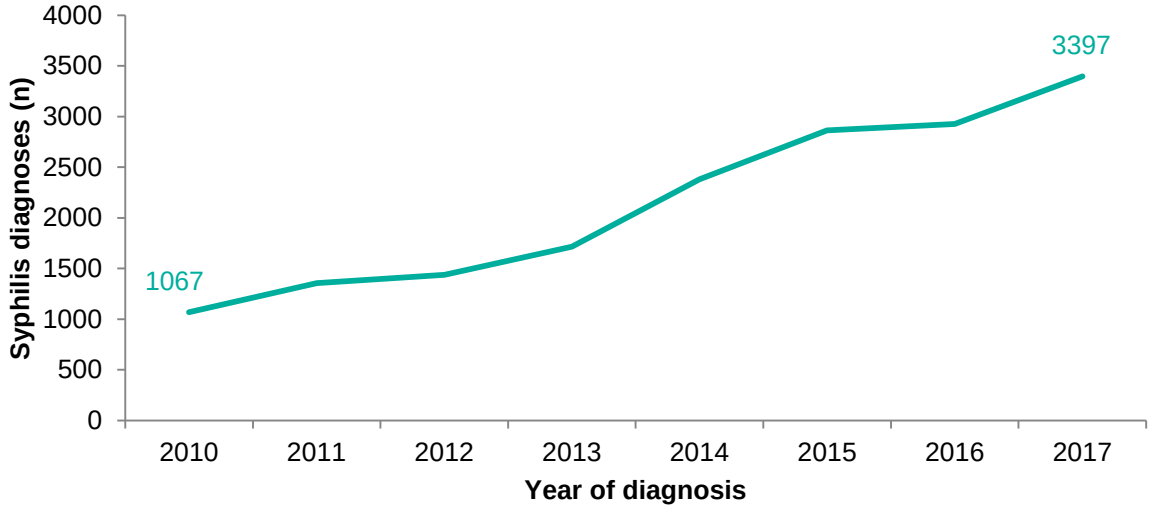


Figure 3: Syphilis diagnoses by year and month in London residents, 2016-2017. Data source: GUMCAD

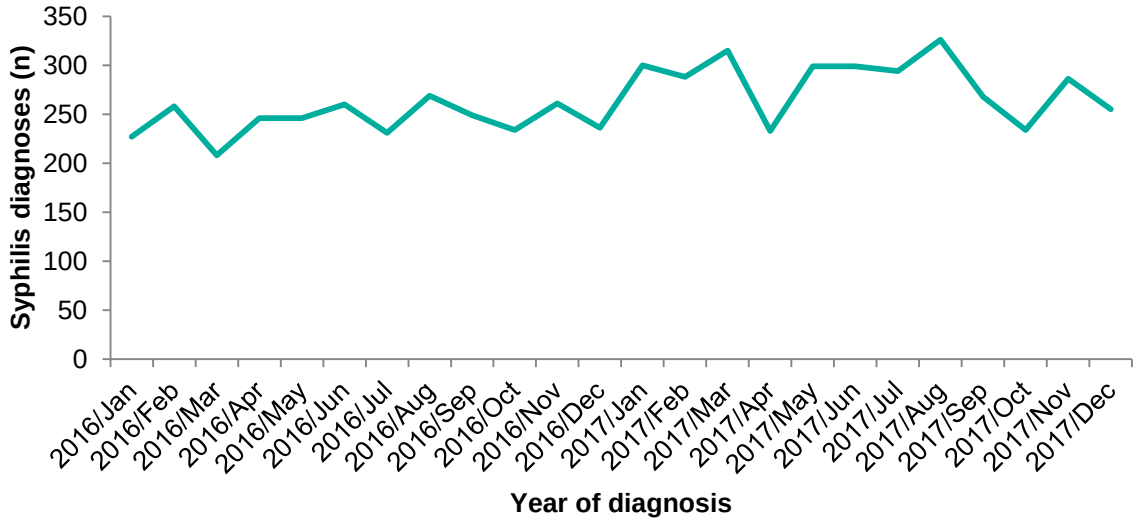


Figure 4: Number of syphilis diagnoses in MSM, heterosexual males and heterosexual females, London residents, 2010-2017. Data source: GUMCAD

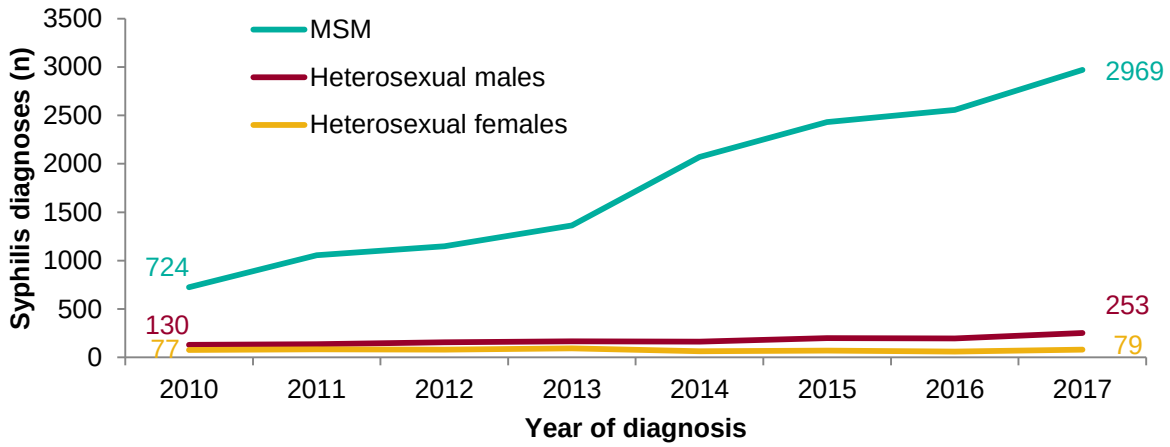
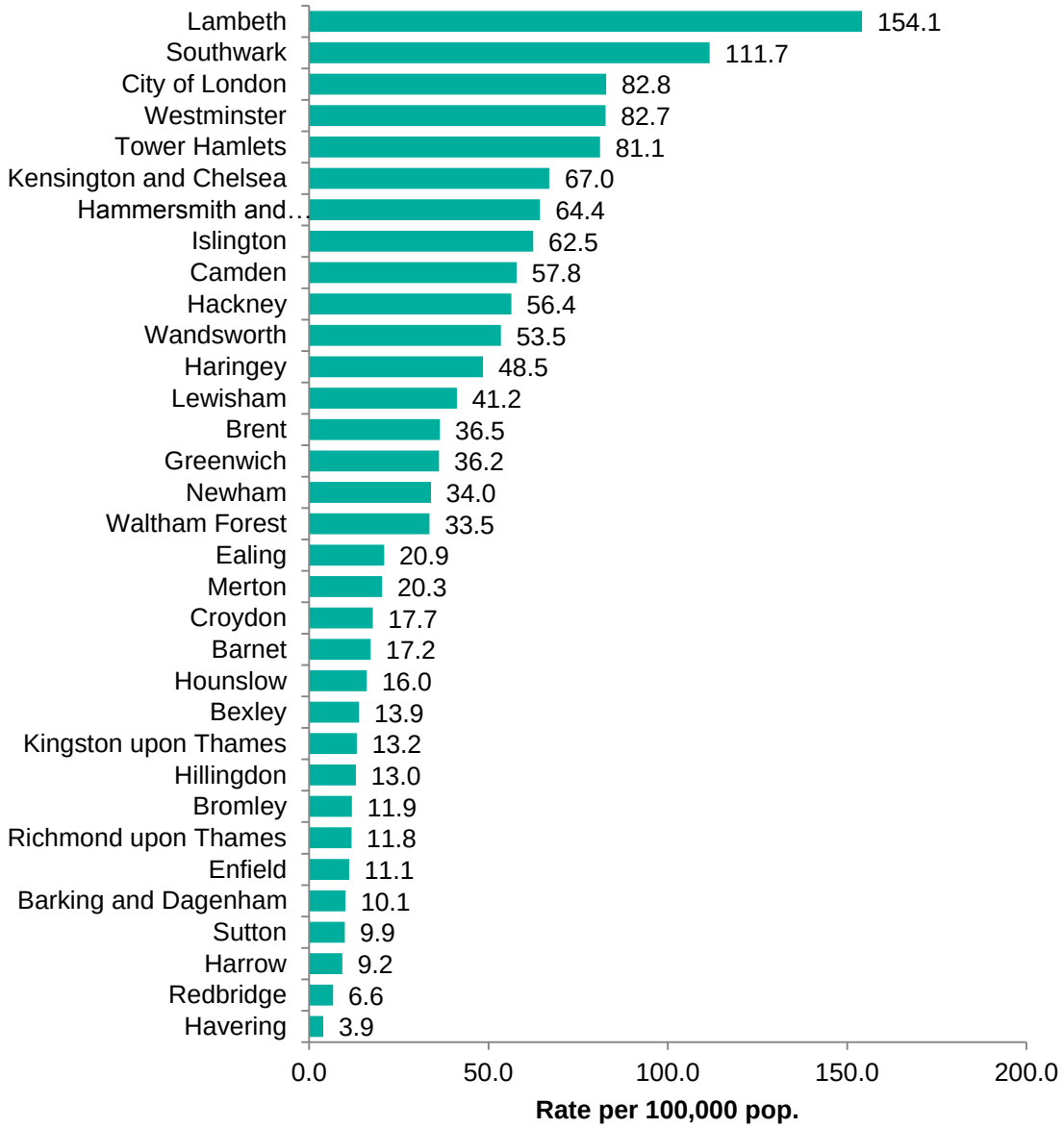


Figure 5: Syphilis rates per 100,000 population by local authority of residence in London, 2017.** Data source: GUMCAD



****** In local authorities with small numbers of cases/populations eg City of London, rate estimates are less precise and therefore have larger confidence intervals.

Table 1: Number of syphilis cases and rates per 100,000 population by local authority of residence in London, 2017.** Data source: GUMCAD

Local Authority	Number of syphilis cases (n)	Syphilis rate per 100,000 population
Barking and Dagenham	21	10.1
Barnet	66	17.2
Bexley	34	13.9
Brent	119	36.5
Bromley	39	11.9
Camden	144	57.8
City of London	6	82.8
Croydon	68	17.7
Ealing	72	20.9
Enfield	37	11.1
Greenwich	101	36.2
Hackney	154	56.4
Hammersmith and Fulham	117	64.4
Haringey	132	48.5
Harrow	23	9.2
Havering	10	3.9
Hillingdon	39	13.0
Hounslow	43	16.0
Islington	145	62.5
Kensington and Chelsea	105	67.0
Kingston upon Thames	23	13.2
Lambeth	498	154.1
Lewisham	123	41.2
Merton	42	20.3
Newham	117	34.0
Redbridge	20	6.6
Richmond upon Thames	23	11.8
Southwark	348	111.7
Sutton	20	9.9
Tower Hamlets	244	81.1
Waltham Forest	92	33.5
Wandsworth	172	53.5
Westminster	200	82.7

** In local authorities with small numbers of cases/populations eg City of London, rate estimates are less precise and therefore have larger confidence intervals. Mid-2016 ONS population estimates have been used for calculating 2017 rates.

Figure 6: Numbers of syphilis diagnoses by GUM clinic of diagnosis, London residents, 2017. Data source: GUMCAD

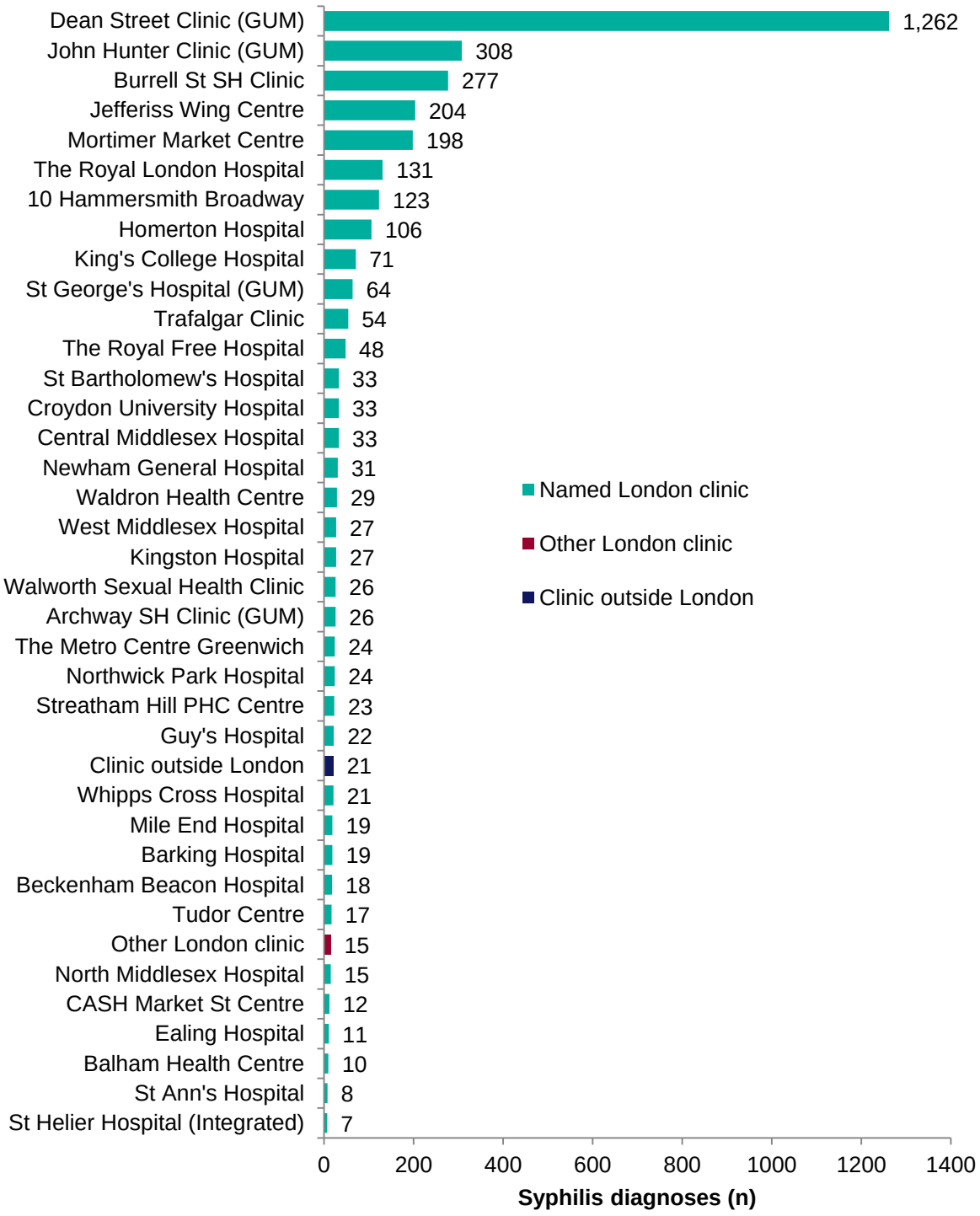


Figure 7: Map of syphilis rates per 100,000 residents by local authority in London, 2017.
Data source: GUMCAD

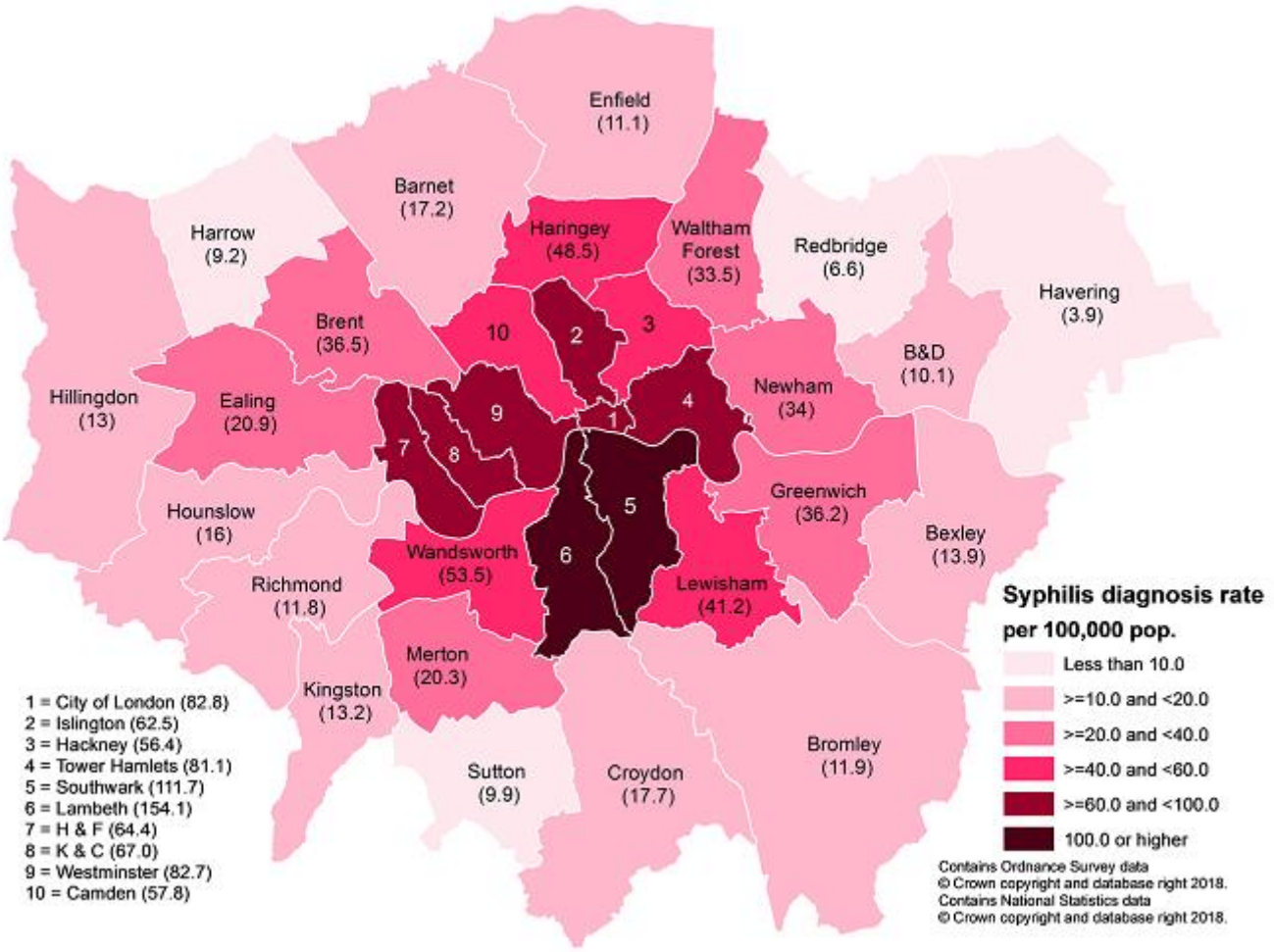


Figure 8: Map of percentage increase in rates of syphilis per 100,000 residents by local authority in London, from 2013 to 2017. Data source: GUMCAD

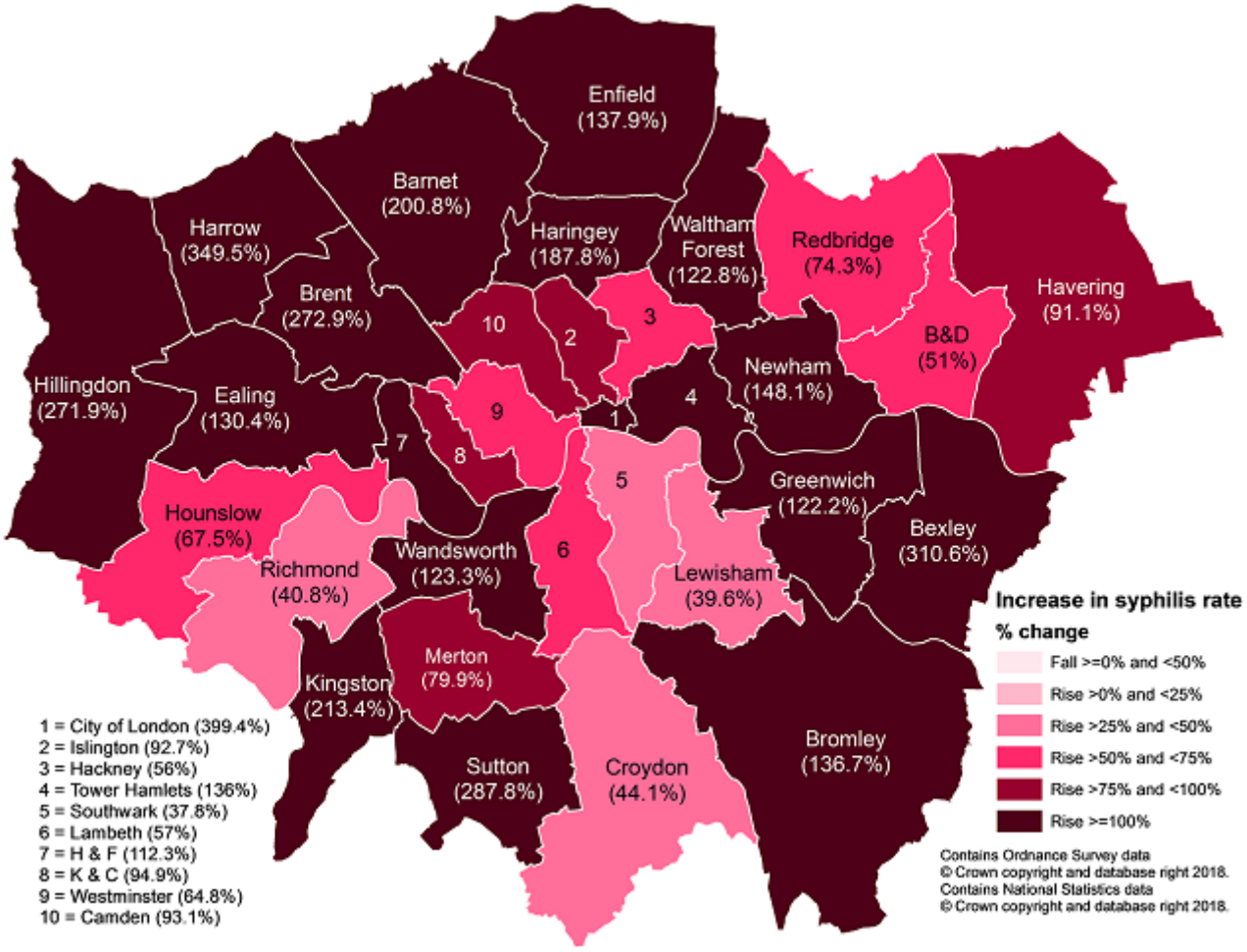


Figure 9: MSM, heterosexual males and heterosexual females diagnosed with syphilis, age distributions compared: London residents, 2017. Data source: GUMCAD

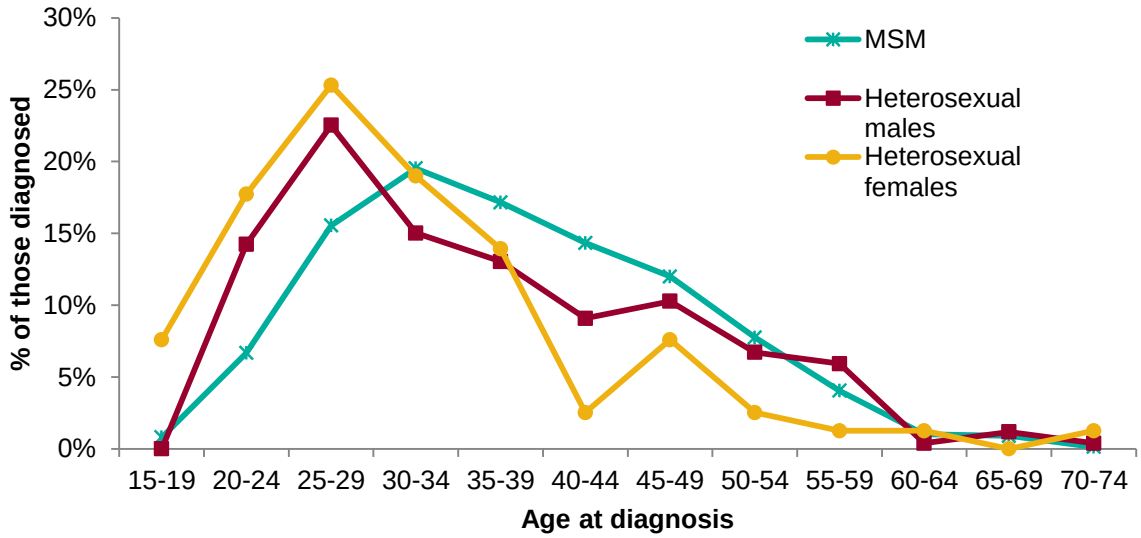


Figure 10: Map of the number of syphilis diagnoses in MSM by local authority, London residents, 2017. Data source: GUMCAD

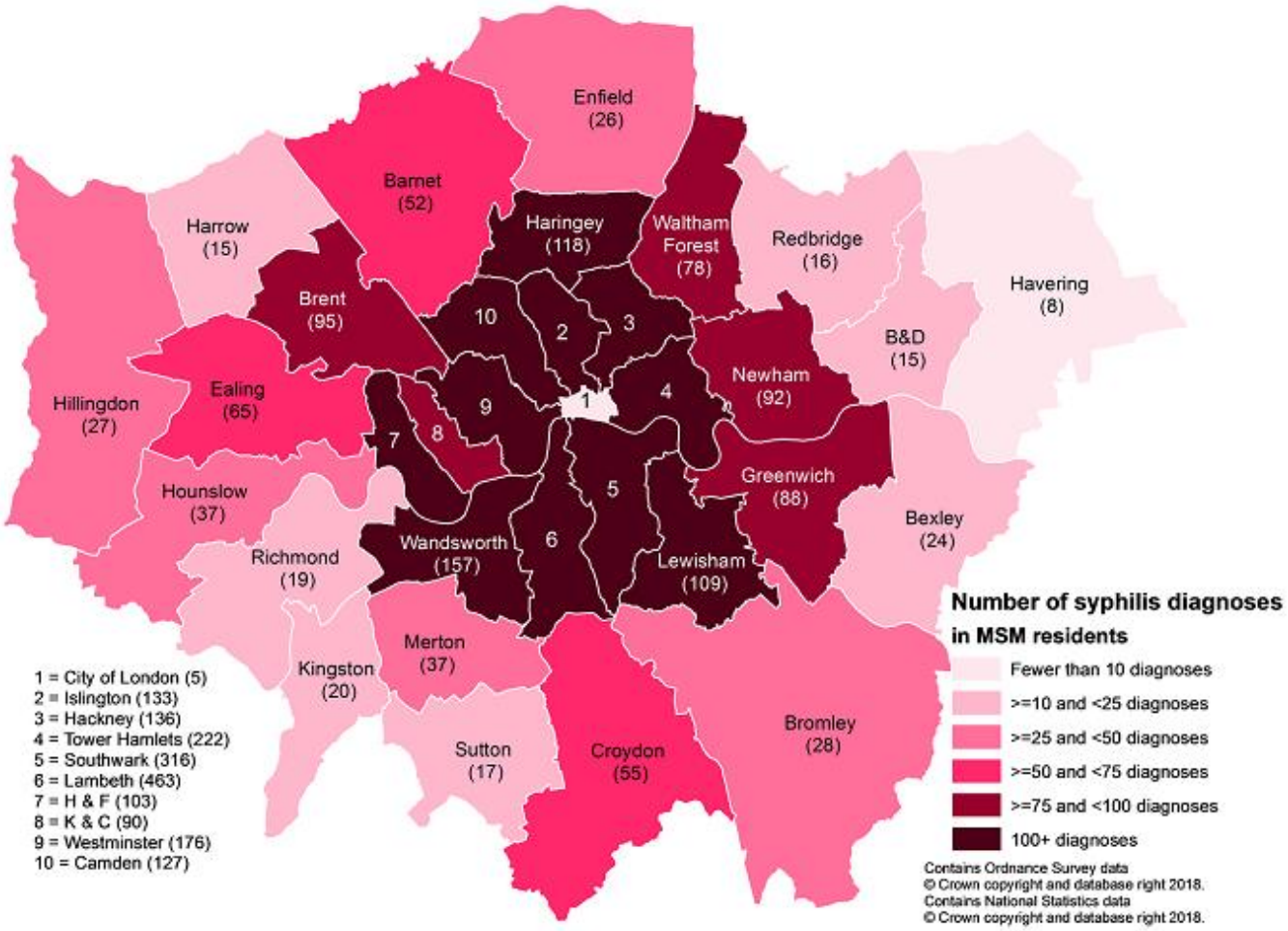


Figure 11: MSM, male heterosexuals and female heterosexuals diagnosed with syphilis in London by ethnicity, 2017. Data source: GUMCAD

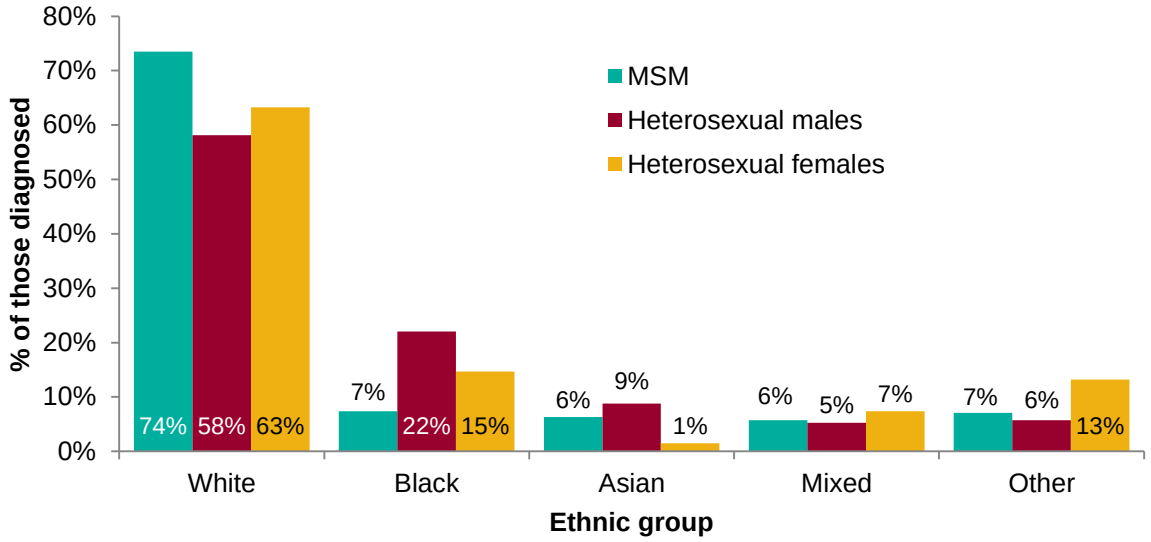


Figure 12: Region of birth of MSM, heterosexual males and heterosexual females diagnosed with syphilis in London, 2017. Data source: GUMCAD

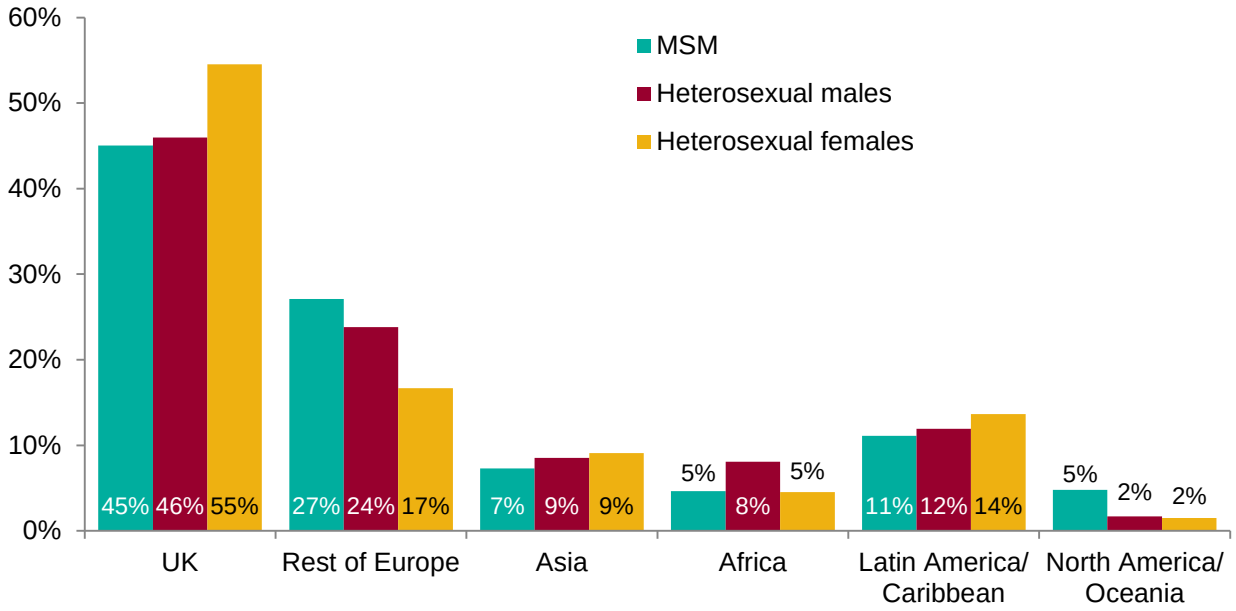


Figure 13: Country of birth of MSM diagnosed with syphilis (10 highest by number of cases), London residents, 2015-2017. Data source: GUMCAD

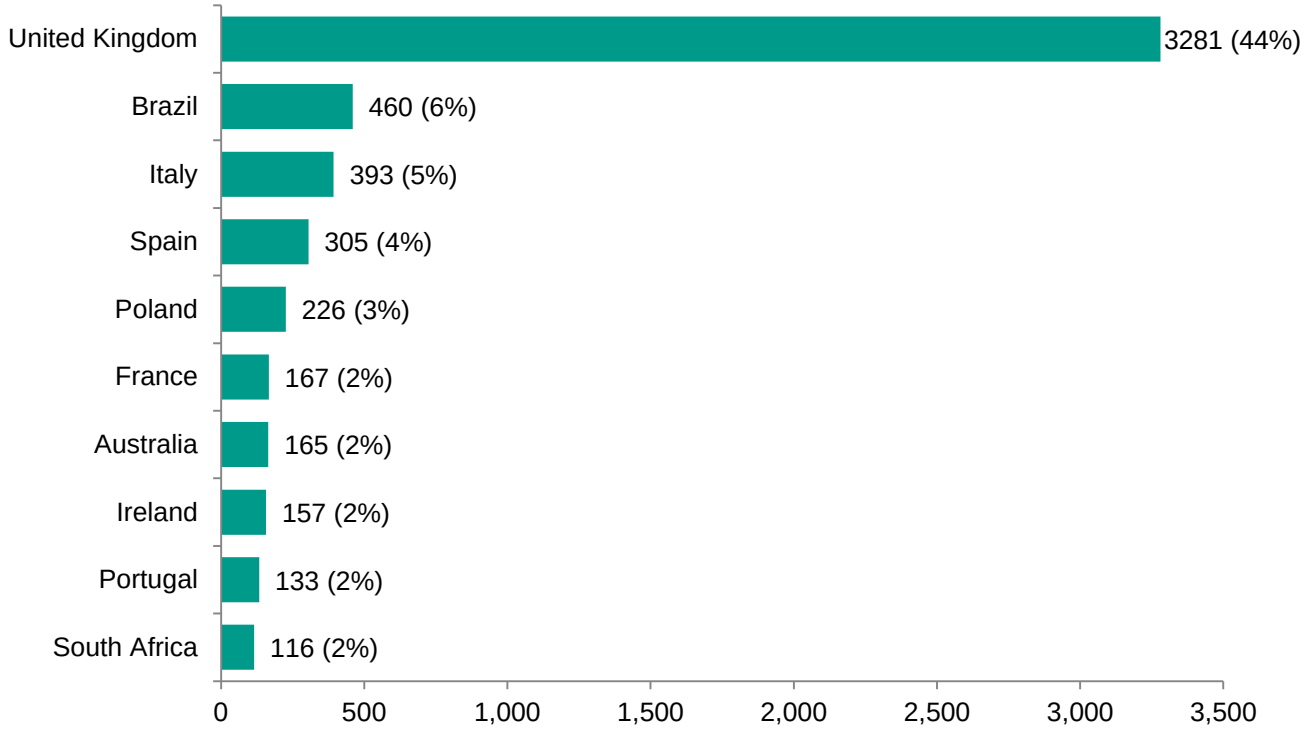
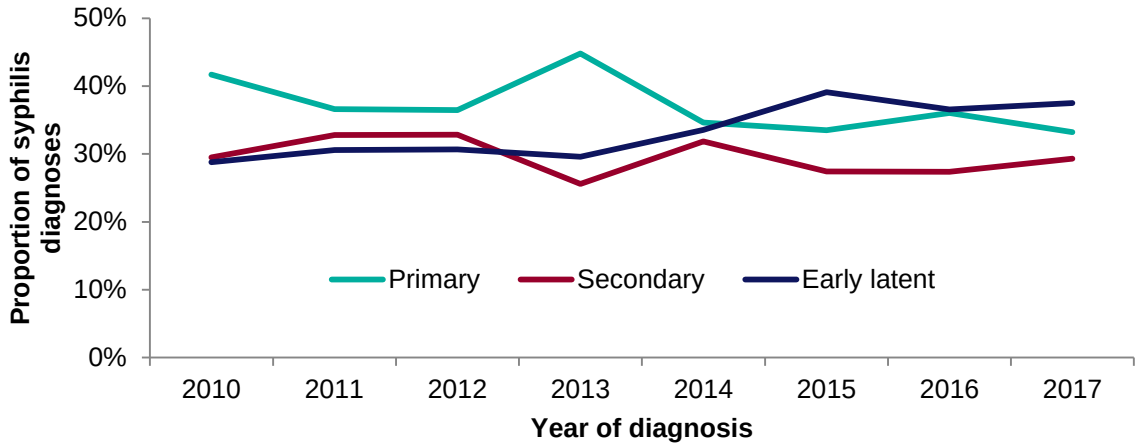


Table 2: Stage of syphilis infection at diagnosis in MSM, heterosexual males and heterosexual females, London residents, 2017. Data source: GUMCAD

Risk group	Primary	Secondary	Early latent
MSM	32%	30%	38%
Heterosexual males	42%	27%	31%
Heterosexual females	38%	16%	46%
Total	33%	29%	38%

Figure 14: Stage of syphilis infection at diagnosis by year of diagnosis, London residents, 2010-2017. Data source: GUMCAD



About the Field Service

The Field Service was established as a national service comprising geographically dispersed multi-disciplinary teams integrating Field Epidemiology, Real-time Syndromic Surveillance, Lead Public Health Microbiology and Food, Water and Environment Microbiology to strengthen our surveillance, intelligence and response functions. The Field Service also leads and co-ordinates the Global Health work of the National Infection Service (NIS) working with the Global Public Health Team and will lead and co-ordinate the national aspects of our port health functions.