

Rapid increase in gonorrhoea and syphilis diagnoses in England in 2011

E J Savage (emma.savage@hpa.org.uk)¹, K Marsh¹, S Duffell¹, C A Ison¹, A Zaman¹, G Hughes¹

1. Health Protection Agency, Colindale, London, United Kingdom

Citation style for this article:

Savage EJ, Marsh K, Duffell S, Ison CA, Zaman A, Hughes G. Rapid increase in gonorrhoea and syphilis diagnoses in England in 2011. *Euro Surveill.* 2012;17(29):pii=20224. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20224>

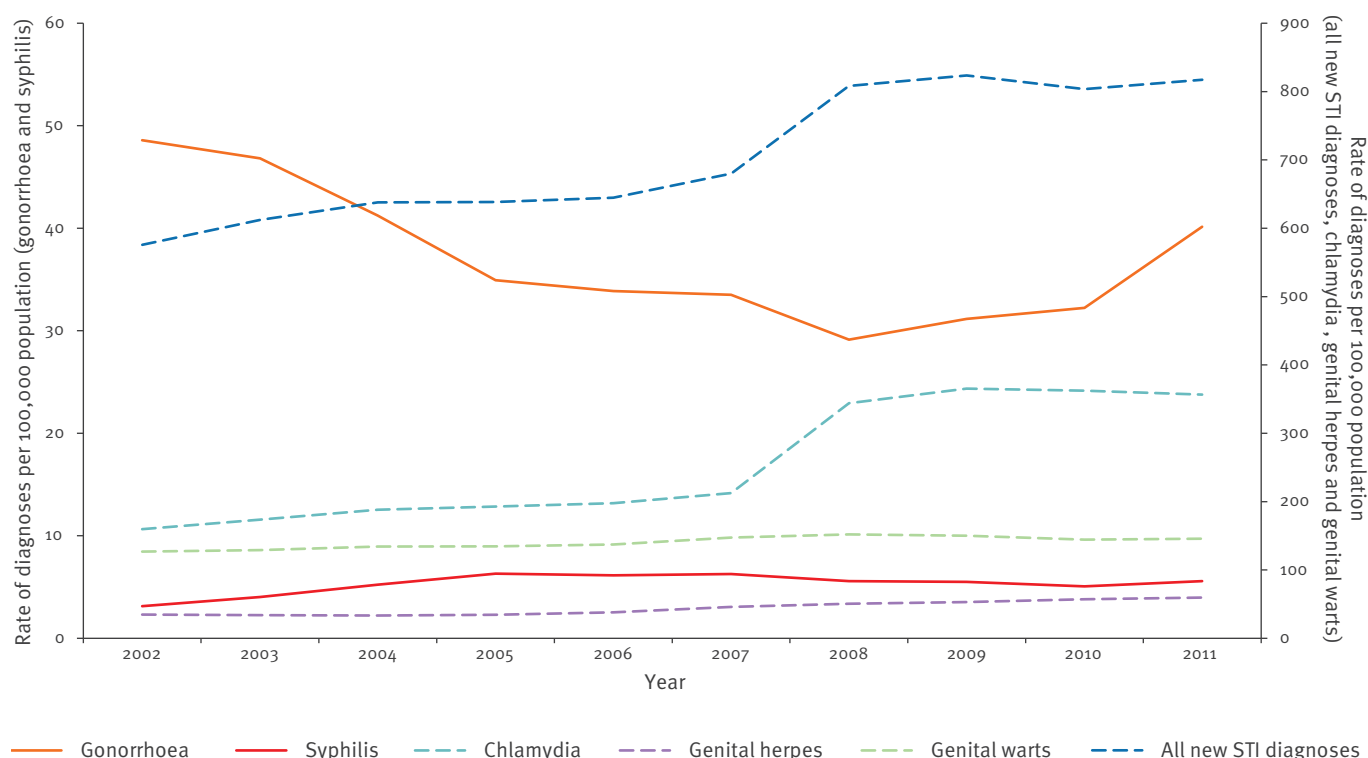
Article submitted on 13 July 2012 / published on 19 July 2012

There has been a rapid rise in the number of gonorrhoea and syphilis diagnoses in England during 2011, an increase of 25% and 10% respectively. Large increases of both gonorrhoea (61%) and syphilis (28%) were observed among men who have sex with men. Although these rises can partly be attributed to increased testing, ongoing high-levels of unsafe sexual behaviour probably contributed to the rise. The rise in gonorrhoea rates is worrying in an era of decreased susceptibility to treatments.

The number of new sexually transmitted infections (STIs) diagnosed in England during 2011 increased by 2% (419,773 to 426,867) from 2010. This rise in STIs followed a small decline in diagnoses seen in 2010 and is a return to the steady increase in STI diagnoses observed over the past decade. However, unlike previous years, in 2011 there was a particularly pronounced rise in the number of diagnoses of gonorrhoea (25%; 16,835 to 20,965) and infectious (primary, secondary and early latent) syphilis (10%; 2,650 to 2,915).

FIGURE 1

Rate of diagnoses per 100,000 population of selected sexually transmitted infections in England, 2002–2011



STI: sexually transmitted infection.

Source: Data from genitourinary medicine clinics; chlamydia data also include diagnoses made in the community. New STI diagnoses include chlamydia, gonorrhoea, syphilis (primary, secondary and early latent), genital herpes simplex (first episode), genital warts (first episode), non-specific genital infection/urethritis, chancroid, lymphogranuloma venereum (LGV), donovanosis, molluscum contagiosum, trichomoniasis, scabies, pediculus pubis, HIV new diagnoses, pelvic inflammatory disease (PID) and epididymitis (non-specific).

Only laboratory-confirmed diagnoses are reported. (Figure 1).

Surveillance of sexually transmitted infections in England

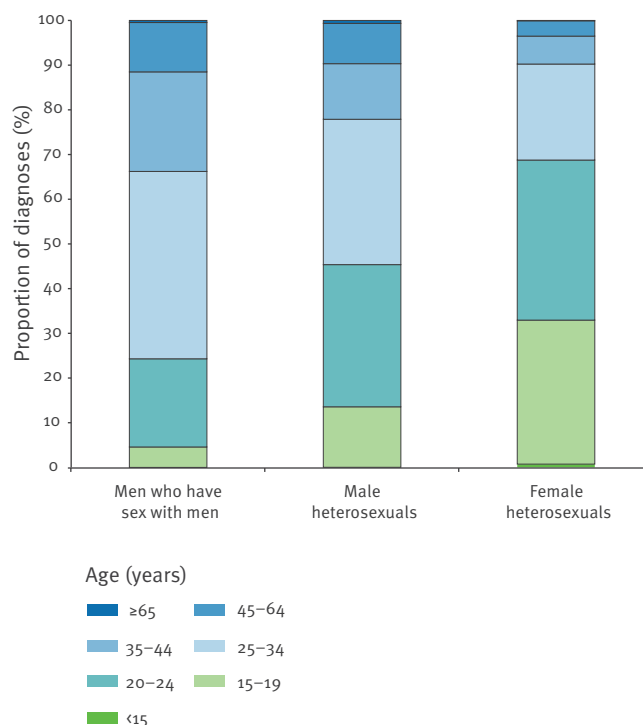
In England, all specialist sexual health clinics submit the mandatory Genitourinary Medicine Clinic Activity Dataset (GUMCAD) to the Health Protection Agency (HPA) every quarter. This dataset is an electronic pseudo-anonymised patient-level data return that contains information on all STI diagnoses made and services provided in the clinic (e.g. sexual health screening, HIV testing, hepatitis B vaccination and partner notification) along with patient demographic information (i.e. sexual orientation, age, sex, country of birth and patient-defined ethnicity, (based on national standard categories). GUMCAD is a new data return that started in 2009 and enables more detailed epidemiological analysis of STIs in England. Prior to GUMCAD, aggregated STI surveillance data were reported through a paper-based system. Data are also collected from community settings that carry out chlamydia screening as part of the National Chlamydia Screening Programme, which offers opportunistic chlamydia tests to people aged 15–24 years. The case definitions for gonorrhoea and syphilis are described in [1].

Trends in gonorrhoea

In 2011, gonorrhoea diagnoses increased by 25% with 20,965 cases reported (40.1 per 100,000 population). There were 14,992 male cases (58.2 per 100,000) and 5,972 female cases (22.6 per 100,000). Half of the male cases (7,487) were in men who have sex with men

FIGURE 2

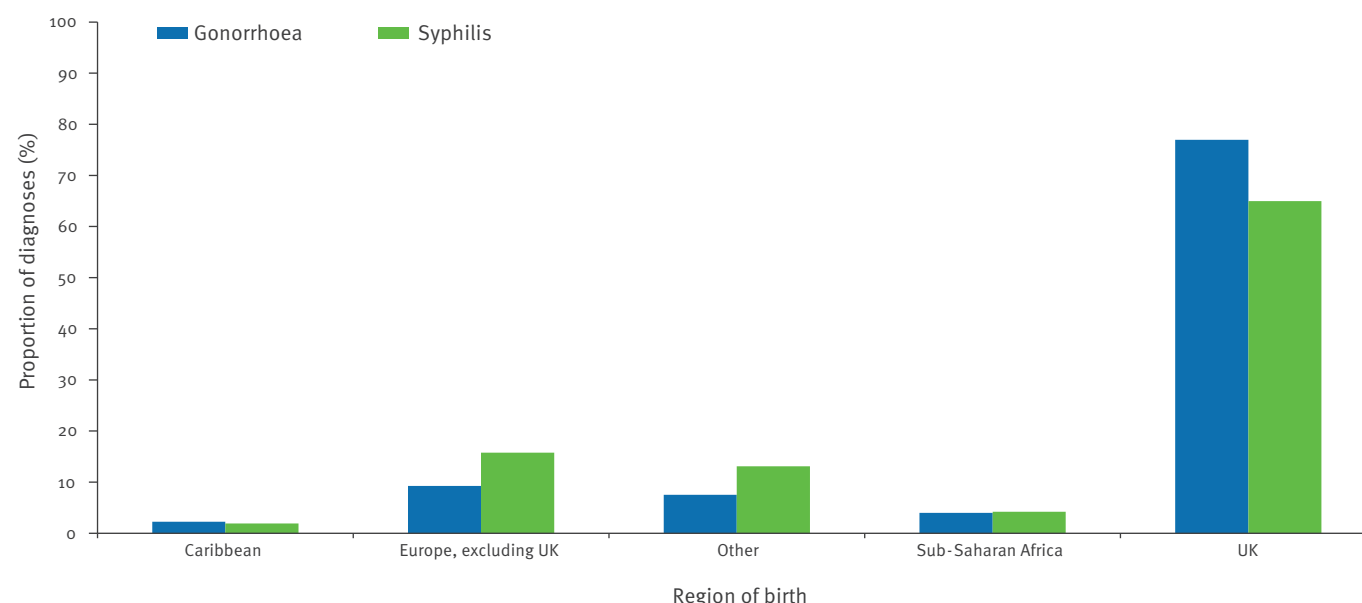
Proportion of gonorrhoea diagnoses in each age group by sexual orientation, England, 2011



Source: Genitourinary Medicine Clinic Activity Dataset (GUMCAD).

FIGURE 3

Proportion of gonorrhoea and syphilis diagnoses by region of birth, England, 2011



UK: United Kingdom.

Source: Genitourinary Medicine Clinic Activity Dataset (GUMCAD).

(MSM), among whom there was a substantial rise in diagnoses of 61% from 2010 (4,651 to 7,487). Among heterosexuals, 57% (6,678/11,778) of diagnoses were in those aged 15–24 years; however, in MSM, more diagnoses were reported in the older age groups, with 42% (3,128/7,487) of diagnoses in those aged 25–34 years (Figure 2). A total of 19% (1,389/7,487) of MSM diagnosed with gonorrhoea had previously been diagnosed with HIV infection.

For all gonorrhoea cases where country of birth was recorded, 77% (15,404/20,014) were born in the United Kingdom (UK) and 9% (n=1,854) were born elsewhere in Europe, primarily Italy (n=212), Poland (n=199), Spain (n=177), Ireland (n=173), France (n=169), Germany (n=127) and Portugal (n=101) and 4% were born in Sub-Saharan Africa (Figure 3). Rates of gonorrhoea were six times higher in those of black ethnicity compared with white ethnic groups.

A number of different factors will have contributed to the sharp increase in diagnoses particularly in MSM. Clinics are likely to have carried out more screening of extra-genital (rectal and pharyngeal) sites in MSM using nucleic acid amplification tests (NAATs) in response to new testing guidance [2] and the ongoing lymphogranuloma venerum (LGV) epidemic in England [3]. However, diagnoses among heterosexuals also increased by 14% in 2011 which cannot be attributed to changes in testing extra-genital samples, suggesting that there are continuing high levels of unsafe sexual behaviour among MSM and young adults in particular. The high rates of gonorrhoea infection are especially concerning given the backdrop of decreasing susceptibility to front-line antimicrobials seen in England [4] and across Europe [5] and the emergence of treatment failures [6–9].

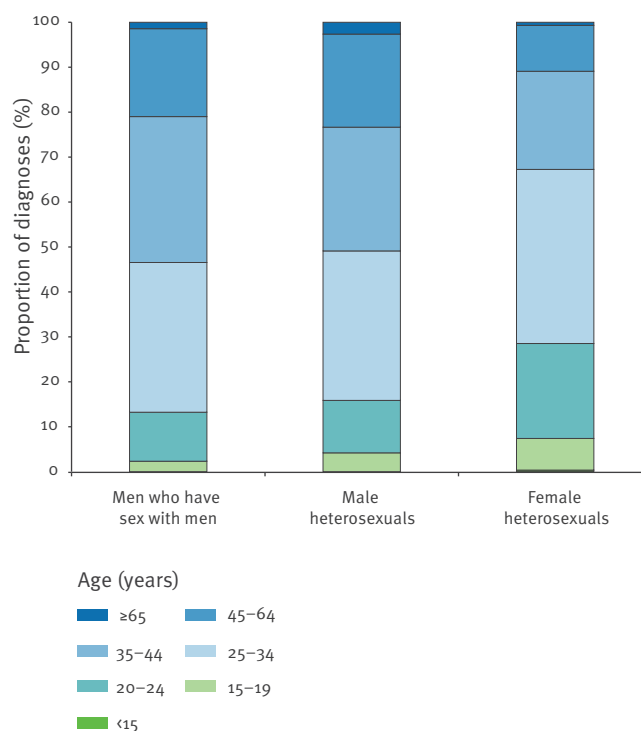
Trends in syphilis

Infectious syphilis diagnoses increased by 10% in 2011 with 2,915 cases reported (5.6 per 100,000 population). Rates of syphilis were nine times higher among men (10.2 per 100,000) than women (1.1 per 100,000 population). Syphilis continues to be predominantly seen in MSM, with 75% (1,955/2,622) of the male cases being in this group. Diagnoses among MSM rose by 28% (1,523 to 1,955) in 2011 but fell by 1% (749 to 739) among heterosexuals (Figure 4). Two thirds (1,283/1,955) of cases in MSM were in those aged 25–44 years. Almost a third (620/1,955) of MSM diagnosed with syphilis had previously been diagnosed with HIV infection.

For all syphilis cases where country of birth was recorded, 65% (1,789/2,753) were UK born and 16% (n=434) were born elsewhere in Europe, primarily Poland (n=59), Spain (n=50), France (n=43), Ireland (n=42), Italy (n=39) and Portugal (n=33). Just over 4% were born in Sub-Saharan Africa (Figure 3).

FIGURE 4

Proportion of syphilis diagnoses in each age group by sexual orientation, England, 2011



Source: Genitourinary Medicine Clinic Activity Dataset (GUMCAD).

Discussion

There was a large increase in the number of gonorrhoea and syphilis diagnoses reported in England during 2011. Of particular concern is the large rise in STIs observed in MSM. These rises can partly be attributed to increased STI screening and the testing of MSM for gonorrhoea and chlamydia at extra-genital sites and overall use of molecular testing for sexual health screens. However, the continuing LGV epidemic in England and outbreaks of other STIs such as shigellosis [10] suggests that ongoing high levels of unsafe sexual behaviour will have been an important factor behind the rise in diagnoses seen among MSM. People coinfecting with HIV and other STIs are more likely to be infectious, facilitating HIV transmission [11] and in England, a considerable proportion of syphilis (32%), gonorrhoea (19%) and LGV (78%) cases in MSM were HIV positive. HIV-positive MSM diagnosed with gonorrhoea are also more likely to report higher-risk sexual behaviours than HIV-negative MSM [4]. This suggests HIV sero-adaptive strategies may play an important role in STI transmission among MSM [12].

There is huge inequality in the distribution of gonorrhoea and syphilis across ethnic groups in England, with black ethnic minorities experiencing the highest rates of infection. This may be partly explained by higher levels of socio-economic deprivation although

other cultural influences on sexual behaviour may contribute [13,14].

Prevention efforts, such as greater STI screening coverage and easy access to sexual health services, need to be sustained and continue to focus on the groups at highest risk. Health promotion and education to increase public awareness and encourage safer sexual behaviour such as consistent condom use with all new and casual sexual partners remain vital in preventing STIs. This is of particular importance given the backdrop of emerging decreased susceptibility to gonorrhoea treatments and the publication of both a European response plan [15] and global action plan [16]. The HPA recommends that MSM having unprotected sex with casual or new partners should have an HIV/STI screen at least annually, and every three months if changing partners regularly [17].

References

1. Health Protection Agency (HPA), British Association for Sexual Health and HIV. GUMCAD Genitourinary Medicine Clinic Activity Dataset. Guidance to clinic staff. London: HPA; 1 Jan 2011. Available from: http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1234859711509
2. Health Protection Agency (HPA). Guidance for gonorrhoea testing in England and Wales. London: HPA; February 2010. Available from: http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1267550166455
3. Health Protection Agency (HPA). Epidemic of Lymphogranuloma venereum (LGV) in men who have sex with men in the UK intensifies. Health Protection Report. Volume 5, Number 24. London: HPA; 17 Jun 2011. Available from: <http://www.hpa.org.uk/hpr/archives/2011/hpr2411.pdf>
4. Health Protection Agency (HPA). Gonococcal Resistance to Antimicrobials Surveillance Programme in England and Wales (GRASP): report of 2010 data. Health Protection Report. Volume 5, Number 37. London: HPA; 16 Sep 2011. Available from: <http://www.hpa.org.uk/hpr/archives/2011/hpr3711.pdf>
5. European Centre for Disease Prevention and Control (ECDC). Gonococcal antimicrobial susceptibility surveillance in Europe – 2010. Stockholm: ECDC; 2012. Available from: <http://www.ecdc.europa.eu/en/publications/Publications/1206-Gonococcal-AMR.pdf>
6. Ison CA, Hussey J, Sankar KN, Evans J, Alexander S. Gonorrhoea treatment failures to cefixime and azithromycin in England, 2010. Euro Surveill 2011; 16(14):pii=19833. Available from: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19833>
7. Unemo M, Golparian D, Syversen G, Vestrheim DF, Moi H. Two cases of verified clinical failures using internationally recommended first-line cefixime for gonorrhoea treatment, Norway, 2010. Euro Surveill 2010. 15(47):pii=19721. Available from: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19721>
8. Unemo M, Golparian D, Hestner A. Ceftriaxone treatment failure of pharyngeal gonorrhoea verified by international recommendations, Sweden, July 2010. Euro Surveill. 2011. 16(6):pii=19792. Available from: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19792>
9. Unemo M, Golparian D, Sary A, Eigentler A. First *Neisseria gonorrhoeae* strain with resistance to cefixime causing gonorrhoea treatment failure in Austria, 2011. Euro Surveill. 2011;16(43):pii=19998. Available from: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19998>
10. Health Protection Agency (HPA). Ongoing outbreak of *Shigella flexneri* in men who have sex with men, England and Wales, 2011/12: interim findings. Health Protection Report. Volume 6, Number 14. London: HPA; 12 Apr 2012. Available from: <http://www.hpa.org.uk/hpr/archives/2012/hpr1412.pdf>
11. Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sex Transm Infect. 1999;75(1):3-17.
12. Snowden JM, Raymond HF, McFarland W. Seroadaptive behaviours among men who have sex with men in San Francisco: the situation in 2008. Sex Transm Infect. 2011;87:162-4.
13. Savage E, Leong G, Brady T, Peters L, Duffell S, Hughes G. Assessing the relationship between sexually transmitted infection rates, ethnic group and socio-economic deprivation in England. Sex Transm Infect. 2011;87:Suppl 1 A195-6.
14. Dean HD, Fenton KA. Addressing social determinants of health in the prevention and control of HIV/AIDS, viral hepatitis, sexually transmitted infections, and tuberculosis. Public Health Rep. 2010;125 Suppl 4:1-5.
15. European Centre for Disease Prevention and Control (ECDC). Response plan to control and manage the threat of multidrug-resistant gonorrhoea in Europe. Stockholm: ECDC; 2012. <http://ecdc.europa.eu/en/publications/Publications/1206-ECDC-MDR-gonorrhoea-response-plan.pdf>
16. World Health Organization (WHO). Global action plan to control the spread of antimicrobial resistance in *Neisseria gonorrhoeae*. Geneva: WHO; 2012. Available from: <http://www.who.int/reproductivehealth/publications/rtis/9789241503501/en/>
17. Health Protection Agency (HPA). Sexually transmitted infections in England, 2011. Health Protection Report. Volume 6, Number 22. London: HPA; 31 May 2012. Available from: <http://www.hpa.org.uk/hpr/archives/2012/hpr2212.pdf>