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Rapid communications

RECENT OUTBREAKS OF INFECTIOUS SYPHILIS, UNITED KINGDOM, JANUARY 2012 TO APRIL 2014

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Six outbreaks of infectious syphilis in the United Kingdom, ongoing since 2012, have been investigated among men who have sex with men (MSM) and heterosexual men and women aged under 25 years. Interventions included case finding and raising awareness among healthcare professionals and the public. Targeting at-risk populations was complicated as many sexual encounters involved anonymous partners. Outbreaks among MSM were influenced by the use of geospatial real-time networking applications that allow users to locate other MSM within close proximity.

Ongoing outbreaks

Six ongoing outbreaks of infectious syphilis in the United Kingdom among men who have sex with men (MSM) and heterosexual men and women aged under 25 years are being managed, two in the East of England, one in Yorkshire and Humber, one in north-west Wales and two in central Scotland (Figure). Information relating to the outbreaks is derived from a combination of the genitourinary medicine dataset (GUMCAD, England only), official data derived from genitourinary medicine services and local enhanced surveillance. Data for 2014 are incomplete and provisional. Initial data indicate that a total of 33 diagnoses were made for the six outbreak areas in January to April 2014, just under half the number (71) seen for the first half of 2013. This suggests that the number of diagnoses made in some of the outbreaks is falling, although diagnoses in north-west Wales continue at a raised level (16 cases). Continued surveillance through 2014 will be needed to confirm these observations and determine whether the outbreaks have been controlled.

[Figure temporarily unavailable]

Outbreaks among men who have sex with men

Two outbreaks, which began at the start of 2013, consisting of 22 and 19 cases respectively, are ongoing in two towns in the East of England. Of the 41 patients, 38 were of white ethnicity and the majority of cases were seen among UK born MSM, most of whom attended genitourinary medicine services with symptoms of primary syphilis (which generally presents as painless papules that ulcerate) or secondary syphilis (characterised by generalised lymphadenopathy, rash with lesions on the palms of the hands and soles of the feet and fever) [1]. Of the 22 cases seen in Town A, seven had met sexual contacts through social media, namely geospatial networking applications that allow users to locate other MSM within close proximity. In contrast, the 19 cases in Town B did not visit specific social media sites or use MSM targeted information sources.

In a further outbreak centred on Town C (in Yorkshire and Humber), the number cases increased from 11 in 2012 to 24 in 2013. In 2013, 15 cases were seen in MSM who used social media to meet sexual contacts. Data are not available for 2014.

Public Health Wales and Betsi Cadwaladr University Health Board are investigating a cluster of cases among residents on the north-west coast of Wales, a relatively rural area of the UK. In 2012, two cases were reported; the number rose to 31 in 2013. A further 16 diagnoses have been made to the end of April 2014. HIV status was known for 43 of the 49 cases, four of whom were HIV positive. White MSM accounted for 37 of the cases, with a median age of 33 years (range: 19–56). A third of MSM diagnosed with syphilis had used social network sites and mobile device applications to find sexual partners, suggesting that transmission had taken place locally, not in nearby cities. The local Outbreak Control Team (OCT) considered that infection probably originated through contact with sexual networks in Merseyside and Manchester (north-west England).

An increase in the number of syphilis diagnoses has also been seen among MSM in Lanarkshire (Scotland) as part of a larger outbreak among young heterosexuals (see below). From 2012 to 2014, 12 cases were MSM, some of whom were bisexual men, none of whom were coinfecting with HIV*.

Outbreaks among heterosexual men and women

Increases in the number of cases of infectious syphilis have been seen among young heterosexual men and women in Scotland between 2012 and 2014. In Lanarkshire, diagnoses increased towards the end of 2012 and continued into 2013. A total of 21 diagnoses were seen in heterosexual men and women, 18 of whom were aged under 25 years, with some individuals of school age (under 18 years). No obvious epidemiological links were seen between cases.

In the last quarter of 2013, an outbreak among young heterosexuals aged 15 to 25 years was also seen in Tayside*. At both locations, partner notification was considered to have been effective in identifying and treating new individuals among current sexual partners.

In the Welsh outbreak described above, infectious syphilis was seen in eight heterosexual men, five bisexual men and four heterosexual women.

No cases of congenital syphilis occurred in any of the outbreaks described here.

Background

Infectious syphilis comprises primary, secondary and early latent syphilis. The clinical criteria used in the UK to diagnose these conditions are described in the British Association for Sexual Health and HIV guidelines [1]. Within the UK, the syphilis epidemic consists primarily of primary, secondary and, to a lesser extent, early latent syphilis [2]. Between 2010 and 2012, the number of diagnoses of infectious syphilis increased by 13% (2,930 to 3,316). While the UK syphilis epidemic disproportionately affects white MSM, many of whom are coinfecting with HIV and have high numbers of sexual partners, a consistent minority of infections are heterosexually acquired [2,3].

Outbreak control measures

Responses to the outbreaks are coordinated by local multidisciplinary OCT using guidelines formulated by Public Health England and the British Association for Sexual Health and HIV [4]. The guidelines are based on published and unpublished investigations, but since each outbreak presents problems unique to the local context, an effective response relies on the knowledge and experience of the OCT members, together with that of national experts. A decrease in the number of case reports to 'baseline' levels can be considered a successful outcome, which is likely to be achieved as a result of prompt, multifaceted public health responses coordinated by the OCT formed when the outbreak was detected [4].

At all sites, control strategies aim to raise public awareness to syphilis infection, through the provision of information on condom use and safe sex, and to increase professional awareness of syphilis, improving service access and instigating comprehensive communications plans tailored to local at-risk populations. In England, targeting information to at-risk populations is challenging because of the high proportion of anonymous partners. Local outreach in Town C included paying for pop-up information adverts on selected geospatial networking applications as well as clinical services. In north-west Wales, interventions included case finding and, from June 2014, offering syphilis testing as part of an established HIV testing outreach service at a gay venue. Men with an initial diagnosis of syphilis will be referred to sexual health services for further testing and, where appropriate treatment and partner notification.

In the predominantly heterosexual outbreaks in Scotland, prevention and control action plans have concentrated on the provision of additional testing services that offered examination and diagnosis. Intensive efforts were made to identify and contact partners and ensure that positive laboratory results were followed up by specialist services. Leaflets, postcards, posters and Facebook adverts were used to increase awareness of syphilis among the public. Healthcare and community services were alerted to the outbreaks and opportunities for testing, such as in termination of pregnancy services or following miscarriage. In autumn 2013, presentations highlighting the risk of syphilis, prevention messages, the importance of testing, and sexual health services were made at schools in Lanarkshire.

Discussion

Infectious syphilis in the UK is endemic in London, Manchester and Brighton [2,3], but outbreaks are also a feature of the UK epidemic. In the years immediately before 2012 (2009–2011) around two outbreaks of infectious syphilis were investigated per year [5–9]. In contrast, in 2012 to 2014, six outbreaks have been investigated simultaneously at a diverse range of locations across the UK. All the outbreaks are considered ongoing although diagnoses have declined since the start of 2014. Since outbreaks highlight the presence of sexual networks capable of sustaining syphilis, increased vigilance by health services and timely surveillance will be needed to improve local case detection and early management after the current outbreaks are considered closed.

The UK infectious syphilis epidemic is an example of a metapopulation: a small number of endemic areas being connected to more peripheral persistent smaller endemic areas as well as outbreak areas. This structure is likely to be reflected in the epidemics seen in other European countries, with outbreaks being a key feature of public health importance. Meeting sexual partners through geospatial networking applications has been highlighted here and other recent studies as being an important driver in the transmission of sexually transmitted and transmissible infections, increasing the opportunity for rapid and easy access to new sexual partners [10,11]. The effect of this interaction has been to join previously isolated sexual networks, increasing the size of the sexual network and reducing the time taken for epidemics to evolve.

* Authors' correction

At the request of the authors, the following changes were made: the first sentence in the second paragraph in the section 'Outbreaks among heterosexual men and women' was amended on 23 June 2014; the last sentence in the section 'Outbreaks among men who have sex with men' was amended, on 24 June 2014.

Conflict of interest

None declared.

Authors' contributions

All the authors contributed to the outbreaks investigations described here, the presentation of information derived from the studies and creating the final version of the manuscript.

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