



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive



HPSC

SYPHILIS IN IRELAND, 2012

Key Points

- In 2012, there was a fall in both total and early infectious syphilis case numbers. Rates dropped from 14.3 per 100,000 population for total cases and 3.7 per 100,000 for early cases in 2011, to 11.3 and 2.5 per 100,000 respectively in 2012. In 2012, 22% of all cases notified were infectious cases. No congenital syphilis cases were notified in 2012.
- Enhanced information, enabling staging of syphilis infection, was available for 50% of cases in 2012. The data reported on early infectious syphilis may therefore not fully represent the total number of infectious cases, though we estimate that enhanced information was returned more comprehensively on infectious cases than on cases without any indication of recent infection.
- Focusing on early infectious syphilis:
 - Rates varied throughout the country, with the rate in HSE East (Dublin, Kildare and Wicklow) twice the national rate (4.8 per 100,000)
 - The majority of cases occurred in males, with a male to female ratio of 9:1.
 - The majority of cases (81%) were reported in people over 25 years of age
 - Nearly three quarters of cases (74%) were identified in STI clinics, with 10% being diagnosed in general practice.
 - Nearly three quarters (71%) of all cases occurred in men who have sex with men (MSM). In MSM, a significant proportion (29%) was co-infected with HIV at the time of their syphilis diagnosis. This proportion has increased since 2011, when it was 21%. Nearly a quarter of cases (24%) were re-infections, and in HIV positive MSM, 42% were re-infections.
 - Twenty one percent of cases were among heterosexuals. Eight percent of heterosexuals were co-infected with HIV and there were no re-infections in this group. Three of the female heterosexual cases were pregnant at time of diagnosis.
- These data demonstrate that cases of infectious syphilis are concentrated in the MSM population, with evidence of ongoing risky behaviour in some of those affected. They also illustrate the need for targeted health promotion and primary prevention activities for MSM, and the importance of regular screening in this group.
- Planned changes to syphilis surveillance, commencing January 2014 will focus enhanced surveillance on early infectious syphilis cases only, thereby hopefully leading to an improvement in the quality of the enhanced surveillance data.

Introduction

Syphilis is a sexually transmitted infection (STI) caused by the bacterium, *Treponema pallidum*. Despite availability of sensitive diagnostic tests and effective treatment, it remains a serious health problem. Syphilis has two routes of transmission; sexual transmission, which accounts for the vast majority of cases, and vertical transmission from mother to fetus in utero. Without treatment, infection will progress. Clinical symptoms may appear after an incubation period of 10 to 90 days (three weeks on average), at first a primary lesion at the site of infection (chancre), then a series of eruptions on mucous membranes and skin (secondary syphilis), followed by long periods of latency (latent or tertiary syphilis). The earlier an infection is diagnosed and treated, the greater the chance of preventing onward transmission. Early syphilis relates to the following clinical stages; primary, secondary and early latent. It should be noted that many people with early infectious syphilis may be asymptomatic. Individuals with late latent syphilis or tertiary syphilis are not sexually infectious.

This report presents national validated syphilis data for 2012. Additional tables are shown in Appendix 1.

Information on syphilis notifications in 2013 can be found in the weekly HIV and STI reports at <http://www.hpsc.ie/hpsc/A-Z/HIVSTIs/SexuallyTransmittedInfections/Publications/STIReports/STIWeeklyReports/>.

Data collection

In 2012, all cases of syphilis notified from laboratories and clinicians were entered into the Computerised Infectious Disease Reporting System, CIDR. Enhanced information was sought on all notified cases, including demographic information, reason for attending, stage of infection, HIV status, presence of symptoms, and probable country of infection. From July 2012, a question was added to the form asking whether the case had a history of treated syphilis with no indication of current infection. A copy of the current syphilis data collection form can be seen at

<http://www.hpsc.ie/hpsc/A-Z/HIVSTIs/SexuallyTransmittedInfections/Syphilis/SurveillanceForms/>

2012 data

During 2012, there were 561 notifications of syphilis made via CIDR. Enhanced surveillance forms were received for 49.7% of cases (279 forms). A breakdown of forms returned by HSE area can be seen in Table A1 in the Appendix. Of the 561 cases notified, it was indicated that 43 cases had a history of previously treated syphilis with no evidence of recent infection, including one case of tertiary syphilis. These 43 cases were removed from further analysis.

The remaining 518 cases were included for analysis in the 2102 report giving a crude incidence rate (CIR) in 2012 of 11.3 per 100,000 population. Of the 518 notifications, 116 were early infectious syphilis (primary, secondary and early latent), 28 were late syphilis (27 were late latent and one was tertiary), 103 were latent cases of undetermined duration, 12 were of unknown stage and the stage of infection was not specified for the remaining 259 cases. No congenital syphilis cases were notified in 2012.

Of the 518 cases, 399 were in males, 106 were in females and sex was unknown for 13 cases. Of the 106 cases in women, 32 were pregnant at diagnosis.

Figure 1 shows the trend in CIR for all cases and early cases from 2000 to 2012. Table 1 shows the breakdown of all notified cases of syphilis in 2012 by stage of infection and HSE area and Table 2 shows the return of forms by HSE area.

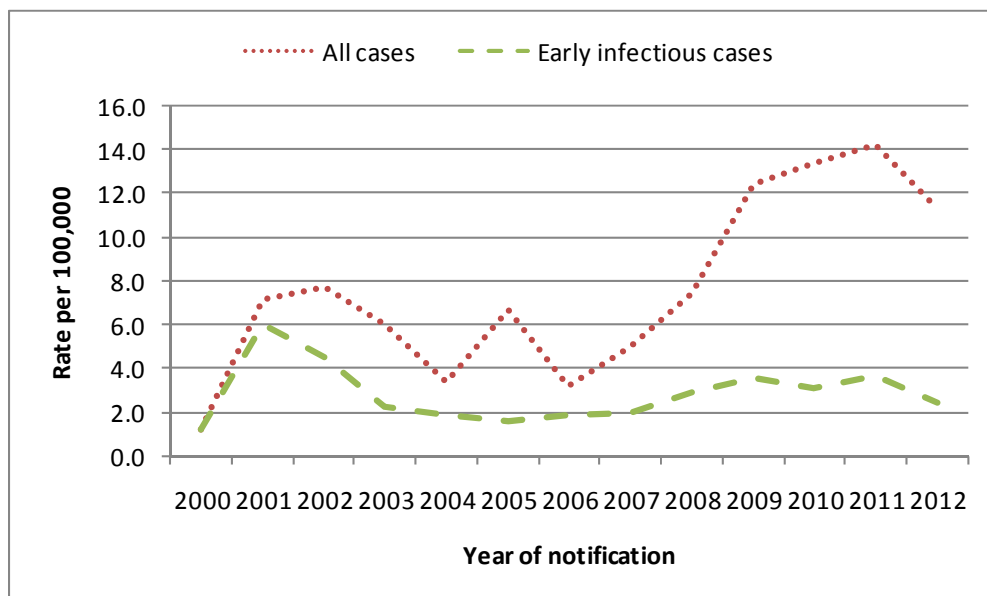


Figure 1: Crude incidence rate of total syphilis and early infectious syphilis (per 100,000 population), 2000-2012

Table 1: Number of syphilis cases by HSE area and stage of infection*, 2012

| Stage of infection | HSE E | HSE M | HSE MW | HSE NE | HSE NW | HSE S | HSE SE | HSE W | Total |
|--|------------|-----------|-----------|-----------|-----------|----------|-----------|-----------|------------|
| Congenital | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Primary | 45 | 3 | 6 | 1 | 2 | 0 | 4 | 0 | 61 |
| Secondary | 20 | 3 | 1 | 1 | 1 | 0 | 2 | 3 | 31 |
| Early latent | 12 | 1 | 2 | 2 | 2 | 0 | 5 | 0 | 24 |
| Early syphilis | 77 | 7 | 9 | 4 | 5 | 0 | 11 | 3 | 116 |
| Late latent | 17 | 1 | 4 | 0 | 0 | 1 | 2 | 2 | 27 |
| Tertiary | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Late syphilis | 17 | 1 | 5 | 0 | 0 | 1 | 2 | 2 | 28 |
| Latent of undetermined duration | 65 | 5 | 16 | 2 | 1 | 0 | 11 | 3 | 103 |
| Unknown | 5 | 1 | 2 | 0 | 2 | 0 | 1 | 1 | 12 |
| Not specified | 228 | 3 | 6 | 14 | 1 | 2 | 0 | 5 | 259 |
| Total | 392 | 17 | 38 | 20 | 9 | 3 | 25 | 14 | 518 |

* Excludes 43 cases with a history of treated syphilis and no evidence of recent infection

Early infectious syphilis

One hundred and sixteen cases of early infectious syphilis were notified in 2012, giving a crude incidence rate of 2.5 per 100,000 population (see figure 1 for trends). This compares to 171 early infectious cases in 2011 (CIR: 3.7 per 100,000) and represents a 31% decrease in notifications. Of the 116 early infectious cases notified in 2012, 61 (52.6%) were classified as primary syphilis, 31 (26.7%) as secondary syphilis and 24 (20.7%) as early latent.

A summary of early infectious syphilis cases diagnosed in 2010, 2011 and 2012 is shown in Table 2.

Table 2: Summary of early infectious syphilis cases, 2010, 2011 and 2012

| | 2010 | | 2011 | | 2012 | |
|----------------------------------|-------|------|-------|------|-------|------|
| | No. | % | No. | % | No. | % |
| Number of early infectious cases | 139 | - | 171 | - | 116 | - |
| Male | 127 | 91.4 | 154 | 90.1 | 102 | 87.9 |
| Men who have sex with men (MSM) | 111 | 79.9 | 136 | 79.5 | 82 | 70.7 |
| Heterosexuals | 27 | 19.4 | 28 | 16.4 | 24 | 20.7 |
| Symptomatic | 63 | 45.3 | 70 | 40.9 | 48 | 41.4 |
| Infection acquired in Ireland | 110 | 79.1 | 118 | 69.0 | 73 | 62.9 |
| Born in Ireland | 96 | 69.1 | 97 | 56.7 | 83 | 71.6 |
| HIV positive | 34 | 24.5 | 32 | 18.7 | 27 | 23.3 |
| Re-infections | 28 | 20.1 | 23 | 13.5 | 21 | 18.1 |
| Pregnant at diagnosis | 4 | 2.9 | 9 | 5.3 | 3 | 2.6 |
| Median age (years) | 33 | - | 31 | - | 33 | - |
| Age Range (years) | 18-70 | - | 17-68 | - | 19-68 | - |

HSE Area

Cases of early infectious syphilis were reported from all HSE areas except the South[†]. Table 3 shows the CIR of early infectious syphilis by HSE area. The CIR in the HSE East (4.8/100,000) was almost twice the national rate confirming that this region remains a centre of transmission within Ireland.

It is important to note that patient's area of residence was not provided for all cases reported through CIDR. As a result, the rates and numbers of cases by HSE area may reflect the location of STI services as well as differences in reporting practices by clinics, clinicians and laboratories from one area to another.

Table 3: Crude incidence rate of early infectious syphilis by HSE area, 2012

| HSE Area | Number | CIR (per 100,000 population) |
|--------------|------------|------------------------------|
| East | 77 | 4.8 |
| Midlands | 7 | 2.5 |
| Midwest | 9 | 2.4 |
| Northeast | 4 | 0.9 |
| Northwest | 5 | 1.9 |
| South | 0 | 0.0 |
| Southeast | 11 | 2.2 |
| West | 3 | 0.7 |
| Total | 116 | 2.5 |

[†] Although no early infectious cases were reported from HSE South during 2012, 8 cases were notified on CIDR in 2013 which had been diagnosed in HSE South in 2012 (giving a CIR of 1.2 per 100,000).

Age and Gender

There were 102 early infectious syphilis cases diagnosed in men and 12 in women, giving a male to female ratio of 9:1. The crude incidence rates in men and women were 4.5 and 0.5 per 100,000 population respectively.

One sixth of the early infectious syphilis cases (16%) were reported in young people aged between 15 and 24 years, while the majority of cases (81%) were people aged 25 years and older. The overall median age was 33 years (age range: 19-68 years), 35 years in males (age range: 19-68 years) and 26 years in females (age range: 19-52 years).

The highest age specific rate in 2012 was in 20-24 year olds (6.6 per 100,000 population). The highest rate in males was in 25-29 year olds (12.7 per 100,000 population) followed by those aged 45-49 years (9.9 per 100,000 population) and in females was in 20-24 year olds (2.7 per 100,000 population).

Figure 2 shows the age group and gender of early infectious syphilis cases in Ireland in 2012.

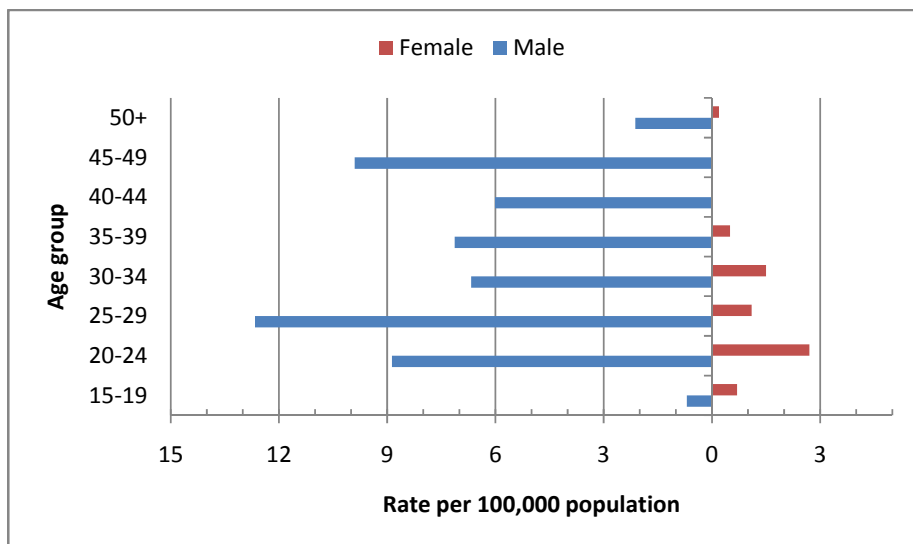


Figure2: Rate of early infectious syphilis (per 100,000 population) by gender and age group, 2012

Transmission mode

Of the 116 early infectious syphilis cases in 2012, 82 (70.7%) were among MSM and 24 (20.7%) were among heterosexuals (12 female and 11 male). For 10 cases (8.6%), the mode of transmission was unknown. Figure 3 describes the early infectious syphilis cases by mode of transmission, gender and age group and Table 4 describes the early infectious cases by mode of transmission.

Three of the 12 heterosexual women (25%) diagnosed with early infectious syphilis in 2012 were pregnant at diagnosis and were aged between 19 and 30 years old. Two were in the second trimester and one was in the third trimester of pregnancy. Two were early latent syphilis and one was primary syphilis. One case was born in Ireland and two other cases were born abroad.

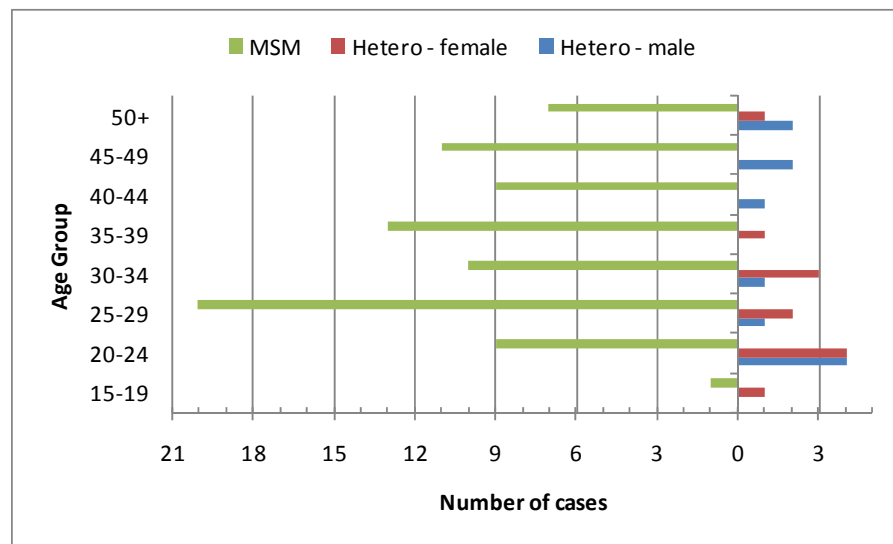


Figure 3: Early Syphilis cases by age group, gender and transmission mode.

Table 4: Early Infectious syphilis by mode of transmission

| | MSM | Hetero |
|-------------------------------|-------------|--|
| Total cases | 82 | 24 |
| Stage of Infection | | |
| - Primary | 44 (53.7%) | 11 (45.8%) |
| - Secondary | 22 (26.8%) | 6 (25.0%) |
| - Early Latent | 16 (19.5%) | 7 (29.2%) |
| Median Age | 34 years | 29 years (34 in males, 28 in females) |
| Age range | 19-69 years | 16-67 years |
| Pregnant at diagnosis | - | 3 (25% of female cases) |
| Symptomatic at diagnosis | 36 (44%) | 3 (12.5%) |
| Born in Ireland | 58 (70.7%) | 17 (70.8%) |
| Infection acquired in Ireland | 57 (69.5%) | 14 (58.3%) |
| Re-infection | 20 (24.4%) | 0 (0.0%) |

Country of birth/county of infection/ethnicity

The majority (71.6%) of early infectious cases were born in Ireland with 7% born in Western Europe and 5% born in Central and Eastern Europe. A breakdown by region of birth and mode of transmission can be seen in Table 5.

Just over 60% of early infectious syphilis acquired their infection in Ireland with 7% acquiring their infection in Western Europe. A breakdown by region where infection acquired and mode of transmission can be seen in Table 6.

Seventy one percent of cases were of white ethnic origin. Table 7 provides a breakdown of cases by ethnicity and mode of transmission.

Table 5: Early infectious syphilis cases by mode of transmission and country of birth, 2012

| Region of Birth | MSM | | Hetero | | Unk | | Total | |
|--------------------------|-----------|--------------|-----------|--------------|-----------|--------------|------------|--------------|
| | N | % | N | % | N | % | N | % |
| Ireland | 58 | 70.7 | 17 | 70.8 | 8 | 80.0 | 83 | 71.6 |
| Western Europe | 6 | 7.3 | 2 | 8.3 | 0 | 0.0 | 8 | 6.9 |
| Latin America | 5 | 6.1 | 0 | 0.0 | 0 | 0.0 | 5 | 4.3 |
| Central & Eastern Europe | 3 | 3.7 | 3 | 12.5 | 0 | 0.0 | 6 | 5.2 |
| Sub Saharan Africa | 3 | 3.7 | 1 | 4.2 | 0 | 0.0 | 4 | 3.4 |
| Other | 1 | 1.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.9 |
| Unknown | 6 | 7.3 | 1 | 4.2 | 2 | 20.0 | 9 | 7.8 |
| Total | 82 | 100.0 | 24 | 100.0 | 10 | 100.0 | 116 | 100.0 |

Table 6: Early infectious syphilis cases by mode of transmission and country of infection, 2012

| Country of infection | MSM | | Heterosexual | | Unknown | | Total | |
|--------------------------|-----------|--------------|--------------|--------------|-----------|--------------|------------|--------------|
| | N | % | N | % | N | % | N | % |
| Ireland | 57 | 69.5 | 14 | 58.3 | 2 | 20.0 | 73 | 62.9 |
| Western Europe | 5 | 6.1 | 1 | 4.2 | 2 | 20.0 | 8 | 6.9 |
| Central & Eastern Europe | 0 | 0.0 | 3 | 12.5 | 0 | 0.0 | 3 | 2.6 |
| Latin America | 1 | 1.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.9 |
| Other | 1 | 1.2 | 1 | 4.2 | 0 | 0.0 | 2 | 1.7 |
| Unknown | 18 | 22.0 | 5 | 20.8 | 6 | 60.0 | 29 | 25.0 |
| Total | 82 | 100.0 | 24 | 100.0 | 10 | 100.0 | 116 | 100.0 |

Table 7: Early infectious syphilis cases by mode of transmission and ethnicity, 2012

| Ethnicity | MSM | | Heterosexual | | Unknown | | Total | |
|---------------------|-----------|--------------|--------------|--------------|-----------|--------------|------------|--------------|
| | N | % | N | % | N | % | N | % |
| White | 56 | 68.3 | 19 | 79.2 | 7 | 70.0 | 82 | 70.7 |
| Black African | 2 | 2.4 | 0 | 0.0 | 0 | 0.0 | 2 | 1.7 |
| Black other | 1 | 1.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.9 |
| Indian subcontinent | 1 | 1.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.9 |
| Mixed background | 2 | 2.4 | 0 | 0.0 | 0 | 0.0 | 2 | 1.7 |
| Other | 3 | 3.7 | 1 | 4.2 | 0 | 0.0 | 4 | 3.4 |
| Unknown | 17 | 20.7 | 4 | 16.7 | 3 | 30.0 | 24 | 20.7 |
| Total | 82 | 100.0 | 24 | 100.0 | 10 | 100.0 | 116 | 100.0 |

HIV co-infection

Twenty three percent (n=27) of early infectious syphilis cases diagnosed in 2012 were co-infected with HIV at the time of their diagnosis. Seven of the 27 (25.9%) were diagnosed with HIV in 2012.

Table 8 describes HIV status by mode of transmission.

Almost 30% (n=24) of MSM were co-infected with HIV compared to 8% of heterosexuals. Five of the 24 MSM (20.8%) were diagnosed with HIV in 2012. HIV positive MSM were older (median age = 37 years) than those who were HIV negative (median age = 29 years). 42% of cases in HIV positive MSM were re-infections versus 16% among HIV negative MSM.

Two heterosexual cases (8%) were co-infected with HIV (1 male and 1 female). Both were diagnosed with HIV in 2012.

Table 8: Early infectious syphilis cases by mode of transmission and HIV status, 2012

| HIV Status | MSM | | Heterosexual | | Unknown | | Total | |
|--------------|-----------|--------------|--------------|--------------|-----------|--------------|------------|--------------|
| | N | % | N | % | N | % | N | % |
| Positive | 24 | 29.3 | 2 | 8.3 | 1 | 10.0 | 27 | 23.3 |
| Negative | 49 | 59.8 | 21 | 87.5 | 5 | 50.0 | 75 | 64.7 |
| Unknown | 9 | 11.0 | 1 | 4.2 | 4 | 40.0 | 14 | 12.1 |
| Total | 82 | 100.0 | 24 | 100.0 | 10 | 100.0 | 116 | 100.0 |

Re-infections

Eighteen percent (n=21) of early infectious syphilis cases in 2012 were re-infections. Table 9 describes re-infections by mode of transmission. Almost all (20/21; 95.2%) of the re-infections were among MSM. There were no re-infections among the heterosexual group.

Almost a quarter of early infectious cases in MSM were re-infections with two of the re-infected cases being previously infected with syphilis in 2012, three in 2011 and eight in 2010.

Table 9: Early infectious syphilis cases by mode of transmission and re-infection status, 2012

| Re-infection | MSM | | Heterosexual | | Unknown | | Total | |
|--------------|-----------|--------------|--------------|--------------|-----------|--------------|------------|--------------|
| | N | % | N | % | N | % | N | % |
| Yes | 20 | 24.4 | 0 | 0.0 | 1 | 10.0 | 21 | 18.1 |
| No | 28 | 34.1 | 16 | 66.7 | 4 | 40.0 | 48 | 41.4 |
| Unknown | 34 | 41.5 | 8 | 33.3 | 5 | 50.0 | 47 | 40.5 |
| Total | 82 | 100.0 | 24 | 100.0 | 10 | 100.0 | 116 | 100.0 |

Service where syphilis first identified

Almost three quarters of cases were identified at a dedicated STI clinic and 10% were identified in general practice. Table 10 describes the service at which cases were first identified by mode of transmission. Eighty one percent of MSM were first identified at a dedicated STI service compared to 50% of heterosexuals while 29% of heterosexuals were identified in general practice compared to 4% among MSM.

Table 10: Early infectious syphilis cases by mode of transmission and service where syphilis first identified, 2012

| Practice where syphilis first identified | MSM | | Hetero | | Unknown | | Total | |
|--|-----------|--------------|-----------|--------------|-----------|--------------|------------|--------------|
| | N | % | N | % | N | % | N | % |
| Antenatal | 0 | 0.0 | 1 | 4.2 | 0 | 0.0 | 1 | 0.9 |
| Dedicated STI clinic | 66 | 80.5 | 12 | 50.0 | 7 | 70.0 | 85 | 73.3 |
| General Practice | 3 | 3.7 | 7 | 29.2 | 2 | 20.0 | 12 | 10.3 |
| ID clinic | 4 | 4.9 | 0 | 0.0 | 0 | 0.0 | 4 | 3.4 |
| Other | 3 | 3.7 | 0 | 0.0 | 0 | 0.0 | 3 | 2.6 |
| Unknown | 6 | 7.3 | 4 | 16.7 | 1 | 10.0 | 11 | 9.5 |
| Total | 82 | 100.0 | 24 | 100.0 | 10 | 100.0 | 116 | 100.0 |

Appendix 1: 2012 tables

Table A1: Return of enhanced forms by HSE area[‡]

| HSE Area | Total cases | Forms returned | |
|-------------------|-------------|----------------|-------------|
| | | N | % |
| East [§] | 412 | 165 | 40.0 |
| Midlands | 19 | 17 | 89.5 |
| Midwest | 43 | 36 | 83.7 |
| Northeast | 21 | 6 | 28.6 |
| Northwest | 11 | 11 | 100.0 |
| South | 3 | 1 | 33.3 |
| Southeast | 27 | 23 | 85.2 |
| West | 25 | 20 | 80.0 |
| Total | 561 | 279 | 49.7 |

Table A2: Early infectious syphilis cases by age group and gender, 2012

| Age Group | Male | | Female | | Unknown | | Total | |
|--------------|------------|------------|-----------|------------|----------|------------|------------|------------|
| | N | % | N | % | N | % | N | % |
| 15-19 | 1 | 1 | 1 | 8.3 | 0 | 0 | 2 | 1.7 |
| 20-24 | 13 | 12.7 | 4 | 33.3 | 0 | 0 | 17 | 14.7 |
| 25-29 | 22 | 21.6 | 2 | 16.7 | 0 | 0 | 24 | 20.7 |
| 30-34 | 13 | 12.7 | 3 | 25 | 0 | 0 | 16 | 13.8 |
| 35-39 | 13 | 12.7 | 1 | 8.3 | 0 | 0 | 14 | 12.1 |
| 40-44 | 10 | 9.8 | 0 | 0 | 2 | 100 | 12 | 10.3 |
| 45-49 | 15 | 14.7 | 0 | 0 | 0 | 0 | 15 | 12.9 |
| 50+ | 13 | 12.7 | 1 | 8.3 | 0 | 0 | 14 | 12.1 |
| Unknown | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 1.7 |
| Total | 102 | 100 | 12 | 100 | 2 | 100 | 116 | 100 |

Table A3: Early infectious syphilis cases by mode of transmission and age group, 2012

| Age Group | MSM | | Heterosexual | | Unknown | | Total | |
|--------------|-----------|--------------|--------------|--------------|-----------|--------------|------------|--------------|
| | N | % | N | % | N | % | N | % |
| 15-19 | 1 | 1.2 | 1 | 4.2 | 0 | 0.0 | 2 | 1.7 |
| 20-24 | 9 | 11.0 | 8 | 33.3 | 0 | 0.0 | 17 | 14.7 |
| 25-29 | 20 | 24.4 | 3 | 12.5 | 1 | 10.0 | 24 | 20.7 |
| 30-34 | 10 | 12.2 | 4 | 16.7 | 2 | 20.0 | 16 | 13.8 |
| 35-39 | 13 | 15.9 | 1 | 4.2 | 0 | 0.0 | 14 | 12.1 |
| 40-44 | 9 | 11.0 | 2 | 8.3 | 1 | 10.0 | 12 | 10.3 |
| 45-49 | 11 | 13.4 | 2 | 8.3 | 2 | 20.0 | 15 | 12.9 |
| 50+ | 7 | 8.5 | 3 | 12.5 | 4 | 40.0 | 14 | 12.1 |
| Unknown | 2 | 2.4 | 0 | 0.0 | 0 | 0.0 | 2 | 1.7 |
| Total | 82 | 100.0 | 24 | 100.0 | 10 | 100.0 | 116 | 100.0 |

[‡] Includes all cases including those with a history of treated syphilis with no evidence of recent infection

[§] In the HSE East, due to the high number of cases, there was a focus on returning forms for early infectious cases of syphilis

References

1. European Centre for Disease Prevention and Control. Annual epidemiological report, reporting on 2012 surveillance data and 2011 epidemic intelligence data, 2012. Stockholm: ECDC; 2012. Available at <http://www.ecdc.europa.eu/en/publications/Publications/Annual-Epidemiological-Report-2012.pdf>

Technical note

1. Data are analysed by date of notification on CIDR.
2. Data for this report were extracted from CIDR on 29th August 2013 and were correct at the time of publication.
3. Percentages are rounded up in the text and are provided to one decimal place in the tables.

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