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EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

SURVEILLANCE REPORT

Sexually transmitted infections in Europe

2013

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2013

This report of the European Centre for Disease Prevention and Control (ECDC) was coordinated and written by Gianfranco Spiteri.

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Abbreviations

CSW	Commercial sex worker
CT	*Chlamydia trachomatis*
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
ESSTI	European surveillance of STI project
EU	European Union
GP	General practitioner
IDU	Injection drug users
LGV	Lymphogranuloma venereum
MSM	Men who have sex with men
NG	*Neisseria gonorrhoeae*
NAAT	Nucleic acid amplification tests
STI	Sexually transmitted infections
TESSy	The European Surveillance System

Summary

Sexually transmitted infections (STI) are a significant global burden. It is estimated that each year 146 million persons acquire *Chlamydia trachomatis* infection, 51 million get gonorrhoea, and 5 million contract syphilis worldwide. Apart from the burden of acute infection, STI may cause complications: chlamydia and gonorrhoea can lead to pelvic inflammatory disease and infertility among women, whereas syphilis in pregnant women can cause devastating consequences through congenital syphilis; STI also increase the risk for HIV acquisition.

This ECDC surveillance report on STI in Europe describes the epidemiological features and basic trends of the five STI under EU surveillance, *Chlamydia trachomatis* infection, gonorrhoea, syphilis, congenital syphilis, and lymphogranuloma venereum. It covers the years 2004 to 2013.

Chlamydia trachomatis infection remains the most frequently reported STI in Europe, accounting for the majority of STI cases reported. In 2013, 384 555 cases of *Chlamydia trachomatis* infection were reported in 26 EU/EEA Member States (182 notifications per 100 000 population). Chlamydial infections were reported more frequently in women than in men, with 207 notifications per 100 000 in women and 153 in men. The true incidence of *Chlamydia trachomatis* infection in Europe is likely to be considerably higher due to its asymptomatic nature and because of differences in testing methods and coverage, screening programmes, and surveillance systems. Such heterogeneity implies that many cases are not diagnosed or reported; in fact, 83 % of all cases were reported by four countries (Denmark, Norway, Sweden and the United Kingdom). More than two-thirds (67 %) of all cases were reported in young people between 15 and 24 years of age, and 88 % of cases were reportedly due to heterosexual transmission. The age and gender distribution of cases is significantly affected by testing and screening practices in the United Kingdom, which targets young people in its screening programme and reported 61 % of cases overall. The overall rate of *Chlamydia trachomatis* infection has increased over the last decade, while over the last five years rates seem to have stabilised. Among those countries reporting consistently between 2004 and 2013, the overall reporting rate has increased by 67 %, from 201 per 100 000 population in 2004 to 337 in 2013. This is most likely due to increased case detection, improved diagnostic tools, improved surveillance systems, and the introduction of chlamydia screening programmes in a few countries. Decreasing or low rates may reflect changes in healthcare systems, the lack of accurate diagnostic tools, or insufficient diagnostic capacity rather than a genuinely low or declining prevalence of *Chlamydia trachomatis* infection.

In 2013, 52 995 gonorrhoea cases were reported in 28 EU/EEA Member States (no data were available from Germany, Italy and Liechtenstein) – an overall notification rate of 16.9 per 100 000 population. In contrast to *Chlamydia trachomatis* infection, gonorrhoea was reported three times more often in men than in women, with 28.9 notifications per 100 000 in men and 9.7 in women. Young people between 15 and 24 years of age accounted for 39 % of all gonorrhoea cases. Nearly half of all gonorrhoea cases in 2013 (43 %) were reported in men who have sex with men (MSM). Since 2008, the overall rate has increased by 79 %, and trends show an increase in most EU/EEA Member States. Increasing rates appear to be mainly due to an increased number of diagnoses in men, especially among MSM.

Syphilis data were reported from 29 EU/EEA Member States in 2013 (no data available from Italy and Liechtenstein); a total of 22 237 syphilis cases were reported (5.4 notifications per 100 000 population). Syphilis was reported five times more often in men than in women, with an overall rate of 8.4 notifications per 100 000 in men and 1.6 in women. Only 14 % of cases reported in 2013 were among young people between 15 and 24 years of age; the majority of cases were reported in people 25 years and older. More than half (58 %) of the syphilis cases were reported in MSM. After a long-term decreasing trend, overall rates have stabilised. Among males, however, rates have started to increase again. Most countries reported increasing trends between 2008 and 2013.

In 2013, 64 cases of congenital syphilis were reported in nine countries; thirteen countries reported zero cases. The majority of the cases were reported from Bulgaria and Poland. Between 2004 and 2013, 1036 cases of congenital syphilis were reported in 24 countries. Following a decreasing trend, the notification rate has stabilised since 2006. Between 2012 and 2013, there were considerable reductions in the number of cases reported by Poland and Portugal.

In 2013, 1043 cases of lymphogranuloma venereum (LGV) were reported in 10 countries. From 2004 to 2013, 4761 cases of LGV were reported in 11 countries, with the majority reported from France, the Netherlands and the United Kingdom. Of the 338 cases with known mode of transmission reported in 2013, most were reported among MSM; however, three were reported among heterosexual men and two among women. Eighty-one per cent of the cases with known HIV status were HIV positive. The number of reported LGV cases increased between 2012 and 2013 by 22 %, mainly because of higher case numbers reported by Belgium, France and the United Kingdom.

These results show that young adults and MSM remain the key vulnerable groups for STI in the EU/EEA. The contribution of young adults is more important for *Chlamydia trachomatis* infection and gonorrhoea, although these rates are affected by chlamydia screening targeted at sexually active young people, particularly in England. MSM account for a larger proportion of the burden of gonorrhoea and syphilis. Judging by the reported rates for males and high male-to-female ratios, the contribution of MSM is likely to be underreported in many countries. Prevention messages targeting MSM and young adults need to be reinforced.

There are marked differences in trends across the EU/EEA Member States. The overall trends in gonorrhoea and syphilis over the past decade were initially decreasing, but have more recently stabilised and even started increasing again, particularly among males. Chlamydia rates showed a continuously increasing trend, which has now stabilised, most likely reflecting an increase in testing and changing screening practices in a number of countries.

These trends must be interpreted with caution due to the heterogeneity of reporting and different healthcare systems in EU/EEA Member States. Another limitation to the interpretation of the epidemiological situation of STI in EU/EEA is that many cases are either not diagnosed or not reported. In addition, cases from a number of countries cannot be included in the analysis because the surveillance systems cover only sentinel sites (e.g. STI clinics) and are neither comprehensive nor representative.

It is essential that surveillance of STI in Europe provides the information necessary to monitor the distribution of disease and evaluate the public health response to control the transmission of infections. In order to achieve this goal, countries in Europe need to ensure that the quality of surveillance data continues to improve.

1 *Chlamydia trachomatis* infection

Table A: *Chlamydia trachomatis* infection: data source, type of data surveillance, surveillance period, 2013

Country	Data source	Type	Period	Legal status	Coverage
Austria	AT-STISentinella	A	2007–2008, 2011	V	Se
	AT-STISentinella	C	2009–2010	V	Se
Belgium	BE-LABNET	C	2006–2013	V	Se
Bulgaria	BG-STI	A	2010–2013	C	Co
Croatia	HR-CNIPH	A	2012–2013	C	Co
Cyprus	CY-NOTIFIED_DISEASES	C	2006–2013	C	Co
Czech Republic	–	–	–	–	–
Denmark	DK-LAB	A	1990–1999	C	Co
	DK-LAB	C	2000–2013	C	Co
Estonia	EE-HCV/CHLAMYDIA	A	1991–2007	C	Co
	EE-HCV/CHLAMYDIA	C	2008–2012	C	Co
	EE-NAKIS	C	2013	C	Co
Finland	FI-NIDR	C	2000–2013	C	Co
France	FR-RENACHLA	C	2001–2013	V	Se
Germany	–	–	–	–	–
Greece	GR-NOTIFIABLE_DISEASES*	A	2008–2013	C	Co
Hungary	HU-STD SURVEILLANCE	A	2000–2013	C	Se
Iceland	IS-SUBJECT_TO_REGISTRATION	C	1997–2013	C	Co
Ireland	IE-AGGR_STI	A	1995–2012	C	Co
	IE-CIDR_STI	C	2013–2013	C	Co
Italy	IT-COA ISS- STI clin	C	2009–2013	V	Se
	IT-COA_ISS_STI lab	C	2009–2013	V	Se
Latvia	LV-STI/SKIN_INFECTIONS	A	1993–2007	C	Co
	LV-BSN	C	2008–2013	C	Co
Liechtenstein	–	–	–	–	–
Lithuania	LT-COMMUNICABLE_DISEASES	A	2003–2007	C	Co
	LT-COMMUNICABLE_DISEASES	C	2008–2013	C	Co
Luxembourg	LU-SYSTEM1	C	2006–2013	C	Co
Malta	MT-DISEASE_SURVEILLANCE	C	2006–2013	C	Co
Netherlands	NL-STI	C	2004–2013	V	Se
Norway	NO-MSIS_CHLAMYDIA)	C	2006–2013	C	Co
Poland	PL-NATIONAL_SURVEILLANCE	A	2006–2013	C	Co
Portugal	–	–	–	–	–
Romania	RO-RNSSy	A	2004–2009	C	Co
	RO-RNSSy	C	2010–2013	C	Co
Slovakia	SK-EPIS	C	2006–2013	C	Co
Slovenia	SI-SPOSUR	C	2006–2013	C	Co
Spain	ES-MICROBIOLOGICAL	C	1990–2013	V	Se
Sweden	SE-EpiBas	A	1990–1996	C	Co
	SE-SMINET	C	1997–2013	C	Co
United Kingdom	UK-GUM	A	1990–2007	C	Co
	UK-GUM-COM-LAB**	A	2008–2013	O	Co

Legend: type: aggregated (A); case based (C); legal status: voluntary reporting (V), compulsory reporting (C), other (O); coverage: sentinel system (Se), comprehensive (Co)

* Greece: In 2009, a new surveillance system was introduced which is designed to be comprehensive; at present, it includes mainly data from the public health sector.

** UK-GUM-COM: Includes data from STI clinics (all ages) and community-based settings (covering only 15–24-year-olds).

1 *Chlamydia trachomatis* infection

1.1 Key points

- *Chlamydia trachomatis* infection remains the most frequently reported STI in Europe.
- In 2013, 384 555 cases of *Chlamydia trachomatis* infection were reported in 26 EU/EEA Member States (an overall rate of 182 notifications per 100 000 population). *Chlamydia trachomatis* infections were reported more often in women than in men, with an overall rate of 207 notifications per 100 000 in women and 153 in men. The true incidence is likely to be considerably higher, due to the asymptomatic nature of the infection. Substantial differences in testing methods, coverage and surveillance systems across Europe mean that many infections are not diagnosed or not reported.
- Two-thirds (67 %) of all *Chlamydia trachomatis* infections were reported in young people between 15 and 24 years of age, with the highest rates reported among women aged 20 to 24 years (1717 cases per 100 000 population).
- Heterosexual transmission accounted for 88 % of cases.
- Increasing trends were observed in a number of countries. In countries reporting consistently between 2004 and 2013, the overall reporting rate has increased by 68 %, from 201 per 100 000 population in 2004 to 337 in 2013. This is most likely due to increased case detection, improved diagnostic tools, improved surveillance systems and the introduction of chlamydia screening programmes in small number of countries. Decreasing or low rates may reflect changes in healthcare systems or the lack of accurate diagnostic tools or diagnostic capacity rather than a genuinely low prevalence of *Chlamydia trachomatis* infection.

1.2 Data sources

Chlamydia trachomatis infection data for 2013 were reported by 26 countries; no data were reported by Austria, the Czech Republic, Germany, Liechtenstein and Portugal. Table A specifies the source of the data, the type of data (aggregate or case based), coverage (sentinel or comprehensive) and surveillance period. It also shows the existing heterogeneity in European surveillance systems, recent changes in these systems, and reporting periods.

1.3 Case reports, 2013

Demographic variables

In 2013, 384 555 *Chlamydia trachomatis* infections were reported in 26 countries, with 83 % of all cases reported in four countries (Denmark, Norway, Sweden and the United Kingdom) (Table 1). This resulted in an overall notification rate of 182 per 100 000 population for EU/EEA countries with comprehensive surveillance systems (Table 4). The United Kingdom continues to contribute a large proportion of reported cases: 61 % in 2013. This is due to the inclusion of data from a screening programme targeting 15–24-year-olds in England since 2008. This programme offers community-based testing services outside of STI clinics and has resulted in a large increase of chlamydia diagnoses from 2008 onwards.

In 2013, rates greater than 200 cases per 100 000 population were observed in Iceland (677 per 100 000 population), Denmark (461), Norway (440), the United Kingdom (369), Sweden (365) and Finland (244) (Table 4). All countries reporting rates above 200 per 100 000 had chlamydia control strategies recommending either screening (UK (England)) or opportunistic testing (Denmark, Finland, Iceland, Norway, Sweden and the rest of the United Kingdom) (Table B). Rates below 10 per 100 000 were reported by seven countries (Bulgaria, Croatia, Cyprus, Greece, Luxembourg, Poland and Romania).

The male-to-female ratio in 2013 was 0.7 to 1, which means that there were 42 % more cases reported in women (n=223 995) than in men (n=157 911), reflecting the different screening practices and testing possibilities. Among countries with comprehensive surveillance systems, the overall number of cases was 153 per 100 000 in men and 207 per 100 000 in women (Table 5). The male-to-female ratios, based on the number of cases, were below or close to 1 in the majority of countries. Male-to-female ratios above 1 to 1.5 were reported from four countries with comprehensive systems: Malta (1.6:1), Poland (2.5:1), Romania (8:1) and Slovenia (2.8:1). These countries report a relatively small number of cases. The lowest male-to-female ratios were reported by Greece (0.2:1) and Estonia (0.1:1) (Table 3, Figure 1.1).

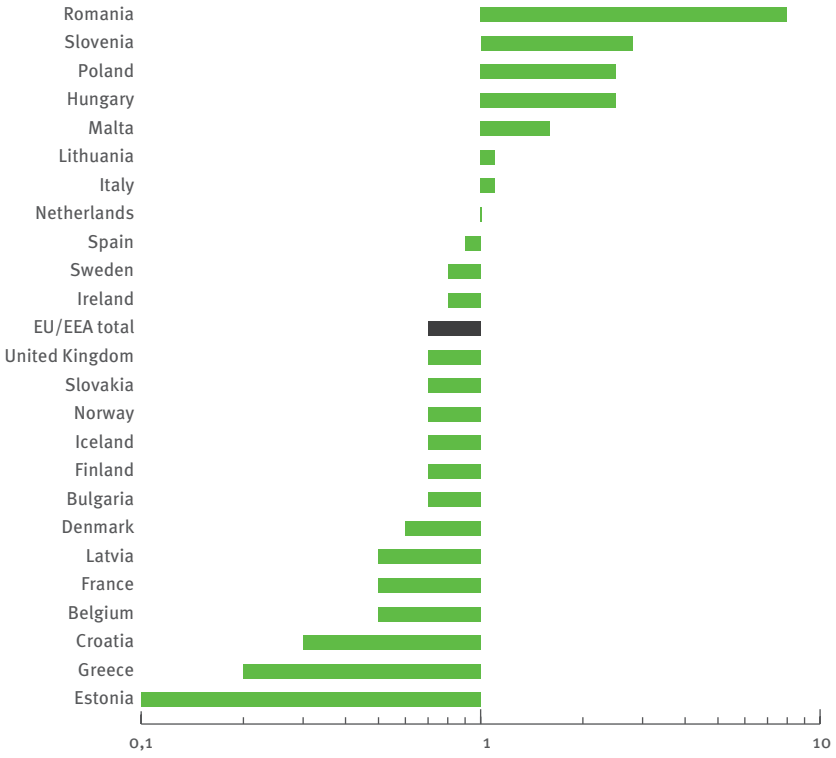
In 2013, information on age was not available from Croatia; data from Poland were excluded due to incompatible formats. These countries contributed 0.2 % of all cases. The use of incompatible age formats meant that data from the following countries were excluded for certain years: Austria (2007–2008), Hungary (2007–2008), and Poland (2006–2013). Lithuania did not report information on age between 2003 and 2007.

The largest proportion of cases reported in 2013 were among 20–24 year olds who accounted for 41 % of cases (Table 6). The second largest group was the age group 15–19 years accounting for 26 % of cases; young adults aged 15–24 therefore accounted for two thirds of cases

Table B: Chlamydia control activities in 28 EU/EEA countries, 2012 [1]

Category	Countries
Category 1: No organised chlamydia control activity (n=6)	Ireland*, Luxembourg, Malta, Portugal, Slovakia, Slovenia
Category 2: Case management guidelines (n=3)	Belgium, Cyprus, Italy
Category 3: Case management guidelines, including partner notification (n=5)	Czech Republic, Hungary, Liechtenstein, Romania, Spain
Category 4: Opportunistic testing (n=13)	Austria, Bulgaria, Denmark, Estonia, Finland, France, Germany, Iceland, Latvia, Lithuania, the Netherlands, Norway, Sweden, the United Kingdom (Northern Ireland, Scotland and Wales)
Category 5: Screening programme (n=1)	UK (England)

Figure 1.1: *Chlamydia trachomatis* infection, male-to-female ratio in 24 EU/EEA countries, 2013



[1] Adapted from: European Centre for Disease Prevention and Control. Chlamydia control in Europe: A survey in the Member States. Stockholm: ECDC; 2014.

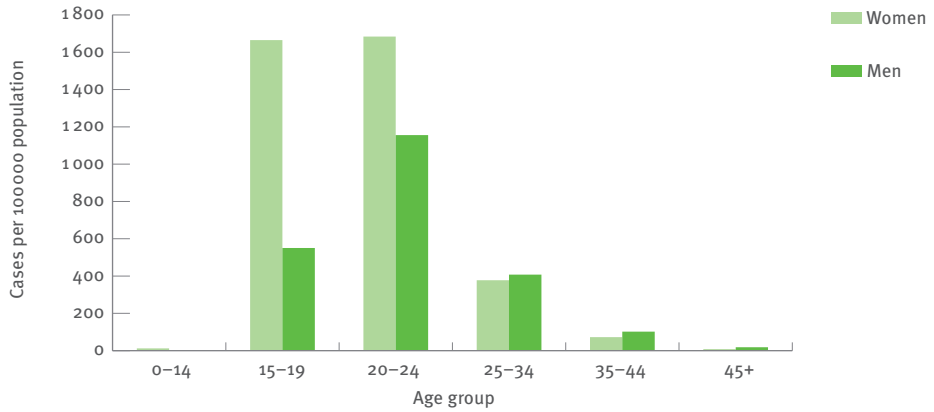
with known age (66 %). Between 2004 and 2013, the age distribution remained stable.

This pattern was also reflected in the age-specific notification rates. The highest rates for 2013 were seen in the 20–24 year age group, with 1438 cases per 100 000 reported by countries with comprehensive systems. Rates among 15–19-year-olds are also very high at 812 per 100 000 population, with females in this age group being almost four times more frequently affected than males (rate in women: 1621; rate in men: 417). The highest overall rates were reported among women aged 20 to 24 years (1717 cases per 100 000 persons) (Figure 1.2). Rates among men are also highest among 20–24-year-olds (1165 per 100 000 persons). Among countries reporting consistently over time, rates have increased by over 60 % among all age groups since 2004, with the largest proportional increases seen among those aged 45 and older (144 %) (Figure 1.3). When considering more recent years, age-specific rates show different trends: since 2009, rates among 15–19-year-olds have decreased from 641 to 539 per 100 000, whereas rates among 20–24-year-olds have remained stable. Rates among persons aged 25–34, 35–44 and those aged 45 years and older have continued to increase during this time.

Epidemiological variables

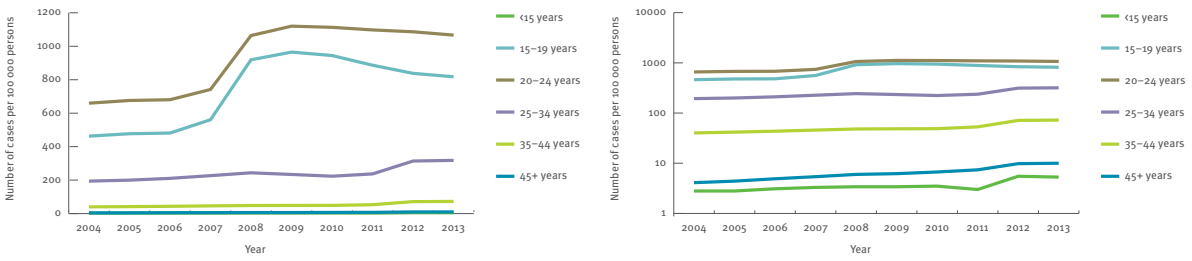
In 2013, information on transmission category was available for 46 % of reported cases of *Chlamydia trachomatis* infection (n=176 394). The low completeness for this variable is mainly a result of countries reporting high numbers of cases (Denmark, Norway, Finland and France) not reporting data on transmission. When excluding countries reporting transmission for less than 60 % of their case data (including the United Kingdom, which reported transmission category data for 53 % of cases), information was available for 53 894 cases from nine countries in 2013. Among these cases, transmission was indicated as heterosexual for 88 %, as MSM for 6 % and as 'unknown' for 6 % (Figure 1.4 and Table 7).

Figure 1.2: Age- and gender-specific rates of reported *Chlamydia trachomatis* infections per 100 000 population, 2013, EU/EEA



Note: Includes data from Bulgaria, Cyprus, Denmark, Estonia, Finland, Greece, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Norway, Romania, Slovakia, Slovenia, Sweden and the United Kingdom.

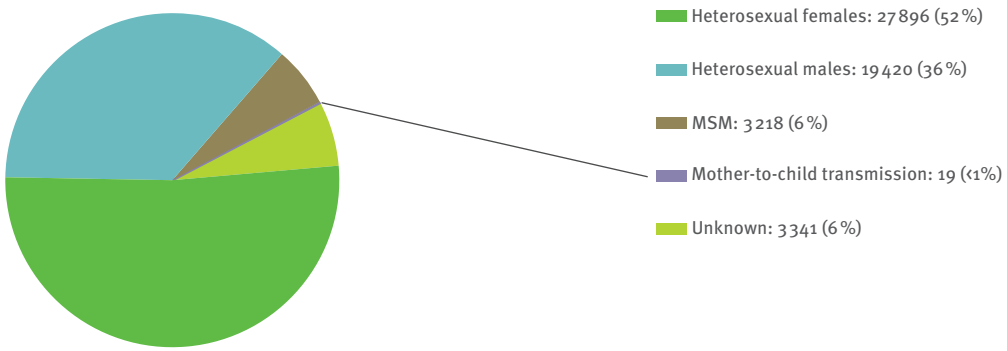
Figure 1.3: Rates of Chlamydia trachomatis infections by age group, 2004–2013, EU/EEA countries reporting consistently



Arithmetic scale to the left; semi-logarithmic scale right.

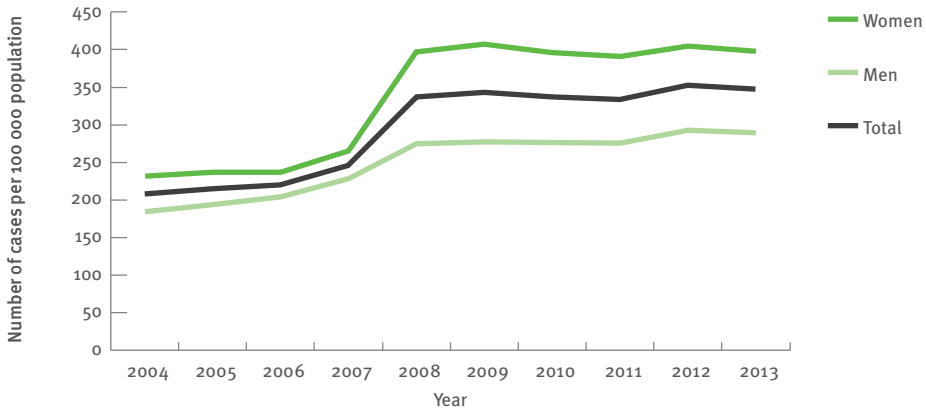
Note: Includes data from Denmark, Estonia, Finland, Iceland, Latvia, Sweden and the United Kingdom.

Figure 1.4: Number and percentage of *Chlamydia trachomatis* infections by transmission category and gender (n=53 894), 2013, EU/EEA



Note: Includes data from Greece, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Romania, Slovenia and Sweden.

Figure 1.5: Reported chlamydia cases per 100 000 population in nine EU/EEA countries with consistent reporting, by gender, 2004–2013

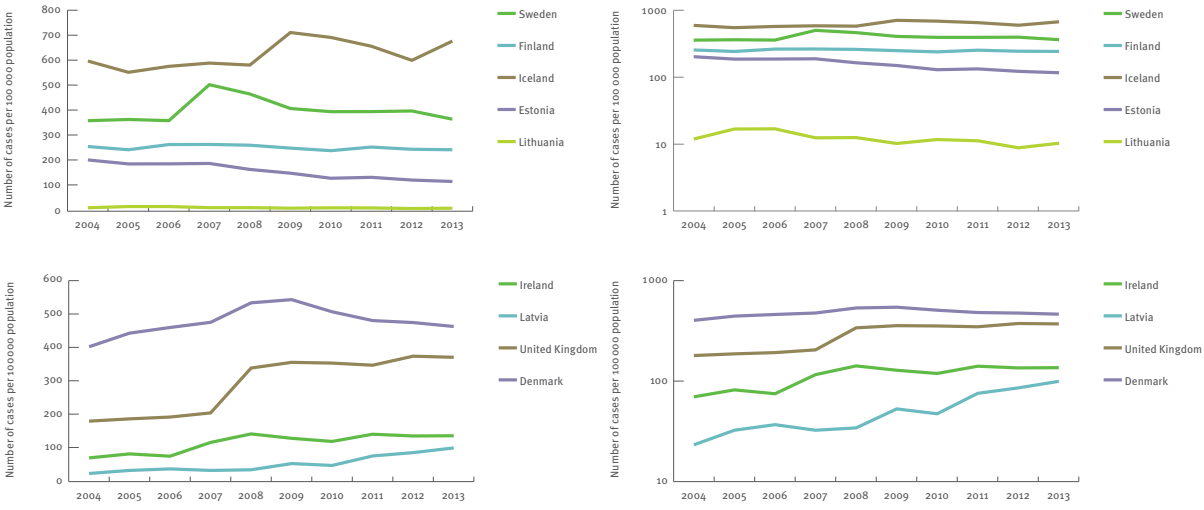


Note (1): Countries included: Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Sweden, and the United Kingdom.

Note (2): Lithuania also reported data between 2004 and 2013; these data were excluded as data on gender were not available for the entire time-period.

Note (3): In 2008, the United Kingdom started to include data from community-based test settings in its annual reports to ECDC; prior to 2008, data were based on STI clinic diagnoses only.

Figure 1.6: Number of *Chlamydia trachomatis* infections per 100 000 population in selected EU/EEA countries, 2004–2013



Arithmetic scale to the left; semi-logarithmic scale right

Note: In 2008, the United Kingdom started to include data from community-based test settings in its annual reports to ECDC; prior to 2008, data were based on STI clinic diagnoses only.

1.4 Trends 2004–2013

Between 2004 and 2013, 3 078 882 cases of *Chlamydia trachomatis* infection were reported from 27 countries. Completeness is clearly improving over time as surveillance systems were further developed in many countries during this period (Table 1). The overall rate of *Chlamydia trachomatis* infection in countries with comprehensive surveillance systems increased from 163 notifications per 100 000 population in 2004 to a peak of 190 in 2009. Since then, the overall rate has remained relatively stable. Changes in reporting rates are affected by the increasing number of countries reporting data over the years. The overall rate among countries which have reported consistently between 2004 and 2013 (Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Sweden and the United Kingdom) has increased by 68 % from 201 to 337 per 100 000 (Figure 1.5). Trends over time for the nine countries that have reported since 2004 are shown in Figure 1.6. Overall, rates among women have been consistently higher than among men during this time.

Although the rate of *Chlamydia trachomatis* infections per 100 000 population has remained stable between 2009 and 2013 (with only a 1 % increase), country-specific trends varied: countries that report the highest rates (e.g. Denmark, Iceland, and the United Kingdom) also show increasing trends until 2008/2009, and stable or decreasing rates thereafter. Other countries have consistently reported increasing trends since 2007 (e.g. Latvia, Malta, Slovakia and Slovenia), whereas a number of countries, generally those which report low numbers or rates, have reported stable or decreasing trends (e.g. Poland, Romania) (Table 4).

1.5 Discussion

The distribution of chlamydia diagnoses across Europe remains stable. The large variation in country-specific reported rates, ranging from below 1 to more than 500 cases per 100 000 population indicates a large heterogeneity in terms of availability of diagnostics, surveillance strategies, and testing policy and implementation. In fact, close to 90 % of cases are reported by the four countries with the largest number of cases. Geographically, the highest rates (200 per 100 000 persons) are reported by countries in the western and northern parts of the EU/EEA, while rates in the central and eastern parts (including Lithuania and Latvia) are much lower (30 or less per 100 000). All but four countries reported more female than male cases in 2013, which indicates a continuing effort to detect chlamydia among women as reproductive tract complications have a significant public health impact. The majority of cases continue to be reported among young people between 15 and 24 years of age, a reflection of the epidemiology of *Chlamydia trachomatis* infections and the applied testing strategies in many countries, which focus on this age group. The large majority of cases are due to heterosexual transmission; MSM account for 6 % of the reported cases with known transmission route. In recent years, trends in chlamydia cases appear to have stabilised in many countries, although some countries report that trends are still on the increase.

The varying rates of reported *Chlamydia trachomatis* infection across Europe are most likely driven by differences in the availability of appropriate diagnostics and different testing policies rather than true differences in prevalence of infection. Although only a few countries have actually implemented or pilot-tested chlamydia screening programmes, most of the countries reporting higher rates of infection have implemented policies which call for more routine testing in clinical services. This explains the high rates reported in the western and northern parts of the EU/EEA. The overall increase of cases in the past decade reflects the impact of these programmes, combined with improved diagnostic tools, the introduction and increased use of nucleic acid amplification tests (NAATs), increased case detection, and improved surveillance systems[2]. By the same token, the low or decreasing rates in eastern and central EU/EEA countries may be due to changes in healthcare systems (e.g. privatisation)[3] and changing reporting practices so that the number of infections that remain undiagnosed, or are underreported, have probably increased substantially. In addition, the low rates reported by a number of countries are likely to reflect a lack of effective national testing policies, a lack of accurate diagnostic tools, incorrect diagnostics, or a shortage of reporting capacity rather than a genuinely low prevalence of chlamydia. There are still countries where NAAT technology is not yet widely available, which hampers wider chlamydia case detection and case management.

[2] European Centre for Disease Prevention and Control. STI laboratory diagnostics in Europe. Stockholm: ECDC; 2013.

[3] Golinowska S, Sowa A, Topór-Mądry R. Health status and health care systems in central and eastern European countries: Bulgaria, Estonia, Poland, Slovakia and Hungary. ENEPRI Research Reports No. 31, 7 December 2006.

Surveillance of *Chlamydia trachomatis* infection presents a number of challenges which make the interpretation of the epidemiological situation across the EU/EEA difficult: the asymptomatic nature of *Chlamydia trachomatis* infection, especially in women, impedes the diagnosis. Consequently, as discussed above, the reported number of cases depends heavily on national screening or testing policies and practices. Many cases are therefore not diagnosed if asymptomatic young adults are not specifically targeted for testing. This also means that distributions reported above, such as age and gender, for example, should be interpreted with caution, as screening practices and testing strategies are often targeted at young people and vary across Europe. Changes in surveillance systems and testing/screening practices also mean that trends should be viewed with caution. For example, the sharp 2008 increase in the overall number of notified chlamydia cases can be explained by the introduction of a screening programme for 15–24-year-olds in the United Kingdom, which captures data from community-based test settings as well as from STI services.

Surveillance approaches for *Chlamydia trachomatis* infection also vary across the EU/EEA, with many countries opting for sentinel systems which collect data from a set of sentinel sites (e.g. STI clinics). Such systems may not be representative and comparable across counties, and data are therefore not used in trend and other analyses, particularly those reporting on rates. Also, the testing policies of those countries that report the largest numbers of cases significantly impact the overall rates and trends. The results reported above should therefore be viewed with these limitations in mind.

The difficulties in interpreting chlamydia surveillance data suggest that a change in focus is needed in order to monitor the epidemiology of *Chlamydia trachomatis* infections effectively at the European level. Alternative approaches, such as focusing more on measuring prevalence or developing a sentinel approach where more testing and denominator data are collected, should be considered. Such approaches would give a better understanding of the burden of infection across Europe. Sentinel systems would allow for the better monitoring of trends and comparisons across Europe and make it possible to take into account the effect of different testing policies.

2 Gonorrhoea

Table C: Gonorrhoea: data source, type of data surveillance, surveillance period, 2013

Country	Data source	Type	Period	Legal status	Coverage
Austria	AT-STISentinella	A	1996–2005, 2013	V	Se
	AT-STISentinella	C	2006–2012	V	Se
Belgium	BE-LABNET	C	2006–2013	V	Se
Bulgaria	BG-STI	A	1990–2013	C	Co
Croatia	HR-CNIPH	A	2012–2013	C	Co
Cyprus	CY-NOTIFIED_DISEASES	C	2006–2013	C	Co
Czech Republic	CZ-STD	A	1990–1998	C	Co
	CZ-STD	C	1999–2013	C	Co
Denmark	DK-LAB	A	1990–1999	C	Co
	DK-STI_CLINICAL	C	2000–2013	C	Co
Estonia	EE-GONOCOCC	A	1990–2007	C	Co
	EE-GONOCOCC	C	2008–2012	C	Co
	EE-NAKIS	C	2013	C	Co
Finland	FI-NIDR	C	2000–2013	C	Co
France*	FR-RENAGO	C	2001–2013	V	Se
	FR-STI	C	2004–2013	V	Se
Germany					
Greece**	GR-NOTIFIABLE_DISEASES	A	1990–2013	C	Co
Hungary	HU-STD SURVEILLANCE	A	1990–2013	C	Se
Iceland	IS-SUBJECT_TO_REGISTRATION	C	1997–2013	C	Co
Ireland	IE-AGGR_STI	A	1995–2012	C	Co
	IE-CIDR_STI	C	2013	C	Co
Italy	IT-NRS	C	1998–2012	C	Co
Latvia	LV-STI/SKIN_INFECTIONS	A	1990–2007	C	Co
	LV-BSN	C	2008–2013	C	Co
Liechtenstein					
Lithuania	LT-COMMUNICABLE_DISEASES	A	2003–2007	C	Co
	LT-COMMUNICABLE_DISEASES	C	2008–2013	C	Co
Luxembourg	LU-SYSTEM1	C	2006–2013	C	Co
Malta	MT-DISEASE_SURVEILLANCE	C	2006–2013	C	Co
Netherlands	NL-STI	C	2004–2013	V	Se
Norway	NO-MSIS_B	C	1993–2013	C	Co
Poland	PL-NATIONAL_SURVEILLANCE	A	2006–2013	C	Co
Portugal	PT-GONOCOCCAL	C	1990–2013	C	Co
Romania	RO-RNSSy	A	1990–2009	C	Co
	RO-RNSSy	C	2010–2013	C	Co
Slovakia	SK-EPIS	C	2006–2013	C	Co
Slovenia	SI-SPOSUR	C	2006–2013	C	Co
Spain	ES-STATUTORY_DISEASES_STI_AGGR	A	1990–2013	C	Co
Sweden	SE-EpiBas	A	1990–1996	C	Co
	SE-SMINET	C	1997–2013	C	Co
United Kingdom	UK-GUM	A	1990–2009	C	Co
	UK-GUM-COM-LAB	A	2010–2013	O	Co

Legend: type: aggregated (A); case based (C); legal status: voluntary reporting (V), compulsory reporting (C), other (O); coverage: sentinel system (Se), comprehensive (Co)

* France: Data used for analysis in this report are based on the 'FR-STI' data source.

** Greece: In 2009, a new surveillance system was introduced which is designed to be comprehensive; at present, it includes mainly data from the public health sector.

2 Gonorrhoea

2.1 Key points

- In 2013, 52 995 gonorrhoea cases were reported in 28 EU/EEA Member States (data were not available from Germany, Italy and Liechtenstein), with an overall rate of 17 cases per 100 000 population.
- Gonorrhoea was reported three times more often in men than in women (29 notifications per 100 000 in men and 9.7 in women).
- Young adults contributed 39 % of cases.
- MSM accounted for 43 % of all cases reported in 2013.
- Since 2008, the rate of gonorrhoea cases per 100 000 population has increased by 79 %, with most EU/EEA countries reporting increasing trends.

2.2 Data sources

Gonorrhoea data for 2013 were available from all countries except Germany, Italy and Liechtenstein. Table C specifies the source of the data, the type of data (aggregate or case based), coverage (sentinel or comprehensive) and surveillance period. Rates per 100 000 population were calculated for 22 countries with comprehensive or other systems. Countries with sentinel systems (Austria, Belgium, France, Hungary, and the Netherlands) were excluded from these calculations.

The table shows the existing heterogeneity in European surveillance systems, recent changes in these systems, and reporting periods. Due to the variations in the coverage, completeness and representativeness of these data, direct comparisons of absolute numbers and rates should be conducted with caution, because the proportion of diagnosed cases that are actually reported differs substantially across countries.

Reporting of gonorrhoea has improved over the years (Table 8): 12 countries have submitted data on gonorrhoea since 1990, 18 since 2000, and 28 provided data for 2013.

2.3 Case reports 2013

Demographic variables

In 2013, 52 995 gonorrhoea cases were reported in 28 countries; 61 % of all cases were reported by the United Kingdom (Table 8). This averages out to 17 notifications per 100 000 population for countries with comprehensive surveillance systems (Table 11).

Information on gender was missing in 8.5 % (n=4 483) of all reported cases in 2013, mainly due to missing information from Spain (3 314 cases) and Austria (1 148). The male-to-female ratio in 2013 was 2.9 to 1 (men: 36 189, women: 12 323) (Table 10). Among men, 29 cases per 100 000 population were reported; among women, 9.7 notifications were recorded per 100 000 (Table 12).

In 2013, the highest numbers (>15/100 000 population) were observed in the United Kingdom (51 per 100 000), Ireland (28) and Latvia (27). The lowest rates (≤1/100 000) were observed in Croatia, Cyprus and Luxembourg (Table 11; Figure 2.1). Only one country (Estonia) reported a male-to-female ratio below 2 (0.5:1). The highest male-to-female ratio was reported by Greece (43:1) (Figure 2.2).

In 2013, information on age was available for 24 countries, but in different formats. Information on age was not available for Austria, Bulgaria, Poland and Spain (9 % of all cases). Due to incompatibilities in data presentation and age formats, data from the following countries were excluded: Hungary (2007–2008), Poland (2006–2013) and Romania (2006).

Figure 2.3 presents the age distribution in 2004 and 2013 among countries reporting consistently during this time. The age group 25–34 years was the largest, representing 30 % of all cases in 2004 and 35 % in 2013, followed by 20–24-year-olds who accounted for 28 % of cases in 2004 and 26 % in 2013. Young adults aged 15–24 years contributed 39 % of cases in 2013. Between 2004 and 2013, the proportion of cases among those below 25 years of age decreased, with a corresponding increase in the proportion of cases among older age groups.

Among countries with comprehensive surveillance systems, age-specific rates of reported cases in 2013 were highest among 20–24-year-olds (100 per 100 000 population) overall and for both genders. Rates among males were higher in all age groups 20 years and above. The highest age- and gender-specific rates were among males aged 20–24 years (128 per 100 000) (Figure 2.4). Among countries reporting consistently between 2004 and 2013, age-specific rates decreased for all age groups between 2004 and 2008. Since 2008, however, age-specific rates have increased, particularly among those aged 20 years or over. The largest increases in rates between 2008 and 2013 have been among those aged 25–34 years (128 %), ≥45 years (125 %) and 35–44 years (124 %). Rates increased more among females than males below 25 years of age, but increased more among males than females in those aged 25 years or over.

Epidemiological variables

In 2013, information on transmission category was available for 19 countries (the Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway,

Figure 2.1: Number of gonorrhoea cases per 100 000 population, EU/EEA, 2013

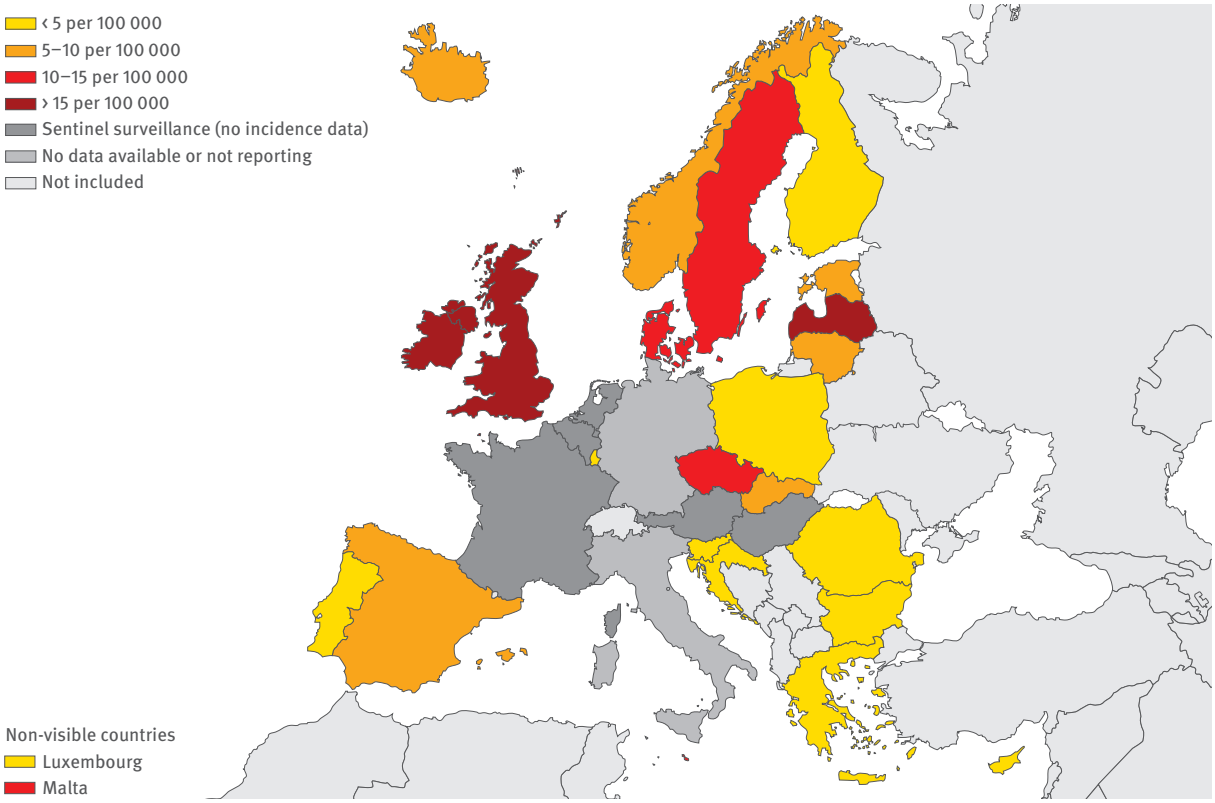
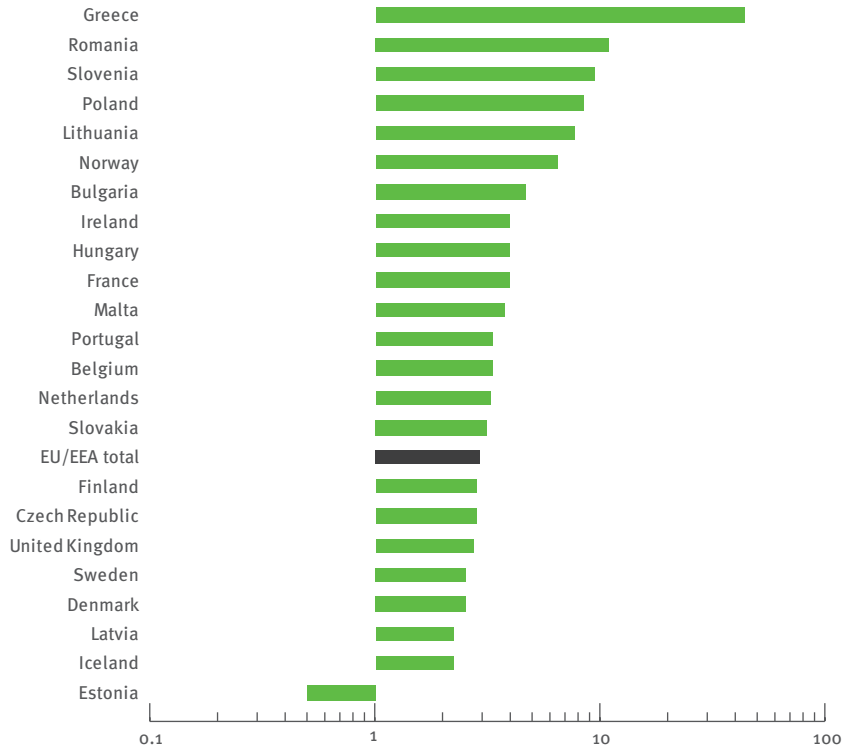


Figure 2.2: Gonorrhoea male-to-female ratio in 23 EU/EEA countries, 2013



Note: Croatia, Cyprus and Luxembourg did not report any cases among women and are therefore not listed above. Austria and Spain did not report data on gender.

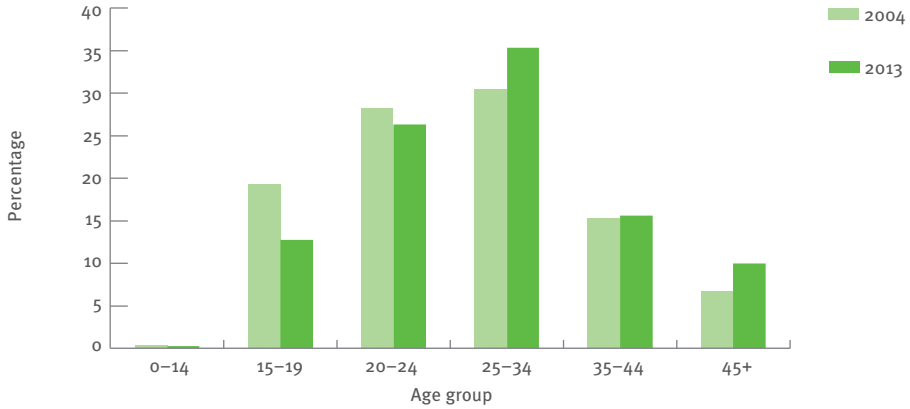
Portugal, Romania, Slovakia, Slovenia, Sweden and the United Kingdom). The number of reported gonorrhoea cases (n=45 316) from these 19 countries amounted to 86 % of the reported total (Table 14). The completeness of data on transmission category was over 60 % (43 427 cases) in 14 countries. In these 14 countries, transmission category was indicated as heterosexual (54 % of cases), MSM (43 %), and unknown (3 %) (Figure 2.5). Cases diagnosed in MSM represented 60 % (n=18 637) of all male cases diagnosed in these countries in 2013.

The percentage of all cases diagnosed in MSM (Figure 2.6) ranged from 10 % or below in Latvia, Lithuania, and Romania to over 50 % in the Netherlands (61 %), France (54 %) and Norway (52 %).

In 2013, information on HIV status was provided by ten countries (the Czech Republic, Denmark, Estonia, France, Latvia, Malta, the Netherlands, Norway, Portugal and Slovakia), representing 18 % of all reported gonorrhoea cases (9 412 cases). Of these cases, 961 (10 %) were HIV positive (either known or newly diagnosed), 62 % were HIV negative, and no further information was available for 28 %. Among MSM (4 168 cases), 22 % (923 cases) were HIV positive, 64 % were HIV negative and no further information was available for 13 %.

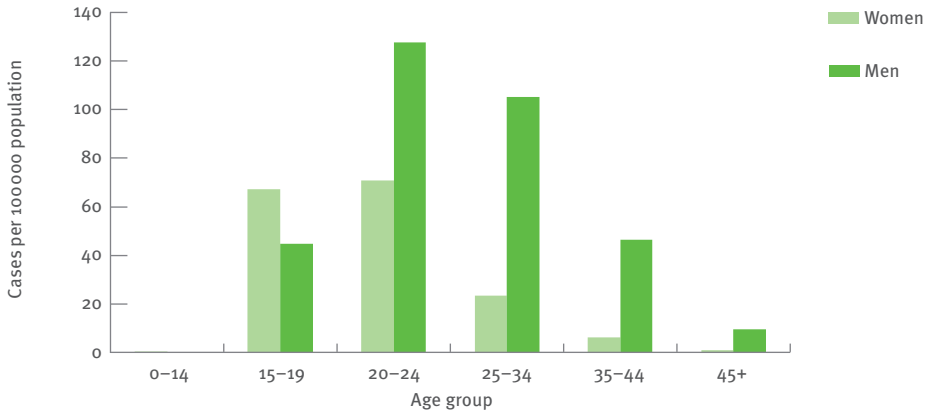
In 2013, information on country of birth (or, if not available, country of nationality) was reported in 15 countries (Cyprus, the Czech Republic, Denmark, Estonia, France, Iceland, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Portugal, Romania, Slovakia and Slovenia), which together reported 17 % of all cases (n=9 020). Of those cases, 78 % were born in (or had the nationality of) the reporting country, 16 % came from another country, and 6.5 % were of unknown nationality. The percentage of cases born outside (or with a nationality different from) the reporting country varied from 0 in Cyprus, Luxembourg, Norway and Romania to over 20 % in France, Malta and the Netherlands. The probable country of infection was reported by 12 countries in 2013 and was available for 12 % of all cases: among these cases, 58 % were infected in the reporting country, 8.3 % were infected outside the reporting country, and in 33 % of all cases the place of infection was unknown. The most frequently reported countries of infection were Thailand

Figure 2.3: Comparison of the percentage of gonorrhoea cases by age group, 2004 (n=29 285) and 2013 (n=43 234), EU/EEA countries reporting consistently



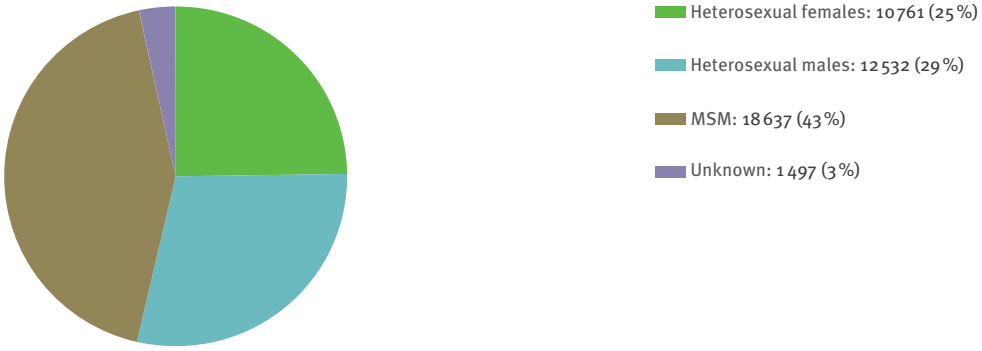
Note: Includes data from the Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, Latvia, the Netherlands, Norway, Portugal, Romania, Sweden, the United Kingdom.

Figure 2.4: Age- and gender-specific numbers of reported cases of gonorrhoea per 100 000 population, EU/EEA, 2013



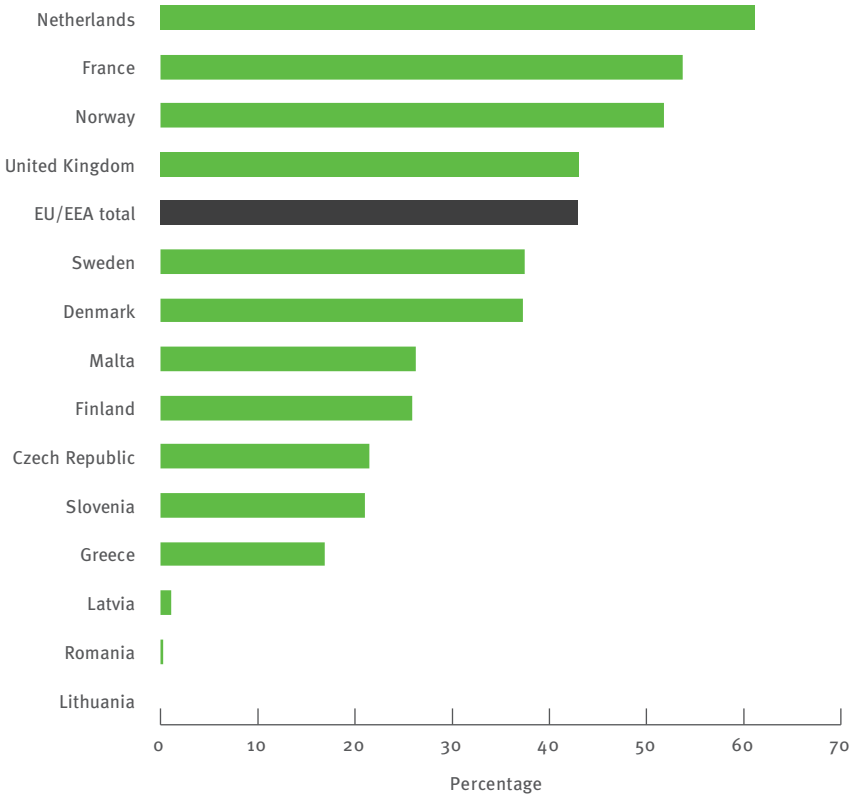
Note: Includes data from the Czech Republic, Denmark, Estonia, Finland, Greece, Iceland, Ireland, Latvia, Norway, Portugal, Romania, Sweden, and the United Kingdom.

Figure 2.5: Number and percentage of gonorrhoea cases by transmission category and gender (n=43 427), EU/EEA, 2013



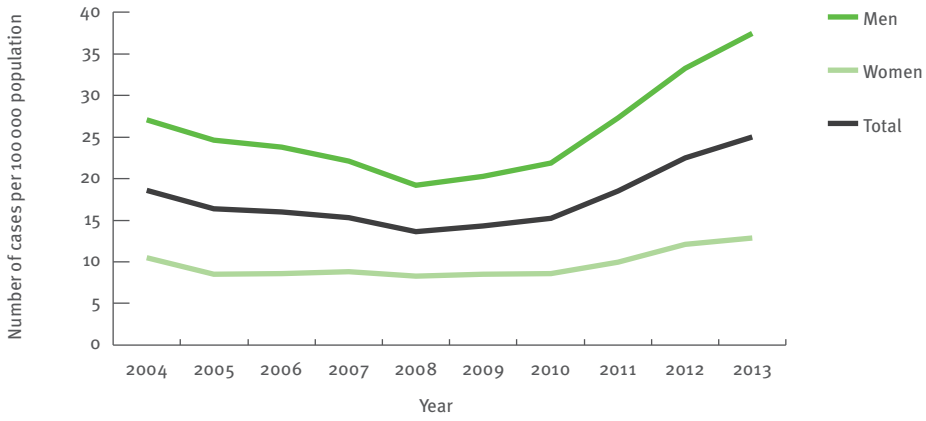
Note: Includes data from the Czech Republic, Denmark, Finland, France, Greece, Latvia, Lithuania, Malta, the Netherlands, Norway, Romania, Slovenia, Sweden and the United Kingdom.

Figure 2.6: Percentage of gonorrhoea cases diagnosed among MSM, EU/EEA, 2013



Note: Includes countries reporting transmission data for 60% or more of reported cases.

Figure 2.7: Trends in the rate of reported gonorrhoea cases per 100 000 population, EU/EEA, 2004–2013



Note: Includes Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Greece, Iceland, Ireland, Latvia, Lithuania, Norway, Portugal, Romania, Sweden and the United Kingdom.

(162 cases, 63% via heterosexual transmission), Spain (58 cases, 84% via heterosexual transmission) and Germany (56 cases, 64% via MSM transmission).

2.4 Trends 2003–2012

Between 2004 and 2013, 357599 cases of gonorrhoea were reported from 29 countries, with varying degrees of completeness over time. Rates were calculated for the 22 countries that maintain comprehensive surveillance systems for gonorrhoea (Table 11).

Figure 2.7 shows the overall and gender-specific trends among 15 countries with comprehensive systems and consistent reporting between 2004 and 2013. The number of gonorrhoea cases per 100000 population declined until 2008; after 2008, numbers increased overall and among both genders. Among countries reporting throughout the period, the overall rate has increased by 79% since 2008 (from 14 to 25 per 100000 population). Numbers almost doubled among men (+95%) but also increased considerably among women (+55%). Throughout the 2004–2013 period, rates among women were considerably lower than among men. Trends by transmission group among the limited number of countries that provided information on transmission category between 2004 and 2013 show initially stable trends between 2003 and 2007, with an increasing trend (strongest among MSM) since 2008 (Figure 2.8).

The three graphs in Figure 2.9 show the number of reported cases per 100000 population for selected countries which have comprehensive systems and reported consistently between 2004 and 2013. Among these countries, 14 have reported increasing rates of gonorrhoea since 2008, whereas only seven have reported decreasing rates (Figure 2.9).

Increasing numbers of cases between 2008 and 2013 were also reported by countries with sentinel systems. Figure 2.10 presents the relative change in reported cases between 2008 and 2013 among countries which reported sentinel or comprehensive surveillance data throughout the time period. When considering all reporting countries between 2008 and 2013, a total of 20 countries (69%) reported increasing numbers of cases of gonorrhoea, and of these, 15 reported an increase of 50% or more. Reported cases increased by 100% (i.e. doubled) or more in Austria, Denmark, France, Ireland, Netherlands and Slovakia. Decreases were mainly reported by smaller countries (Cyprus, Estonia, Iceland, Lithuania, and Luxembourg) or by countries in eastern Europe (Bulgaria, Romania).

2.5 Discussion

Case numbers of gonorrhoea vary considerably across countries, ranging from below 1 case up to 51 cases per 100000 population. The United Kingdom continued to report around 60% of all EU/EEA cases in 2013. Low rates (<5 per 100000) were generally reported in central and eastern Europe (Bulgaria, Greece, Poland, Romania, and Slovenia), but were also low in Finland, Luxembourg and Portugal. Higher rates were reported in the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden), the Baltic states, Ireland, Malta, Spain and the United Kingdom. This geographical pattern has been stable in recent years, although rates have increased in most of these countries.

In all countries with a comprehensive surveillance system (bar Estonia), more male than female cases were reported. Young people between 15 and 24 years of age accounted for 39% of cases, and the highest rate was reported among males between 20 and 24 years, with 128 cases per 100000. The proportion of gonorrhoea cases reported in MSM varied across the EU/EEA; higher proportions were mainly reported in western and Nordic countries.

The interpretation of these findings is hampered by incompleteness of reporting. In some countries, the high male-to-female ratio suggests underreporting of MSM as a transmission category (e.g. in Lithuania, Portugal and Romania). This is likely to be due to a lack of identification of homosexually acquired cases or a lack of reporting of such transmission. Results from the European Men-Who-Have-Sex-With-Men Internet Survey (EMIS) also show that a larger proportion of persons in the east of the region are not 'out' and might therefore not have disclosed their sexuality to healthcare providers[4]. The EMIS survey also identified that the appropriateness of STI screening procedures among MSM varies widely in Europe, with only a median of 16% of the respondents reporting anal swabbing as part of STI testing in the previous 12 months.

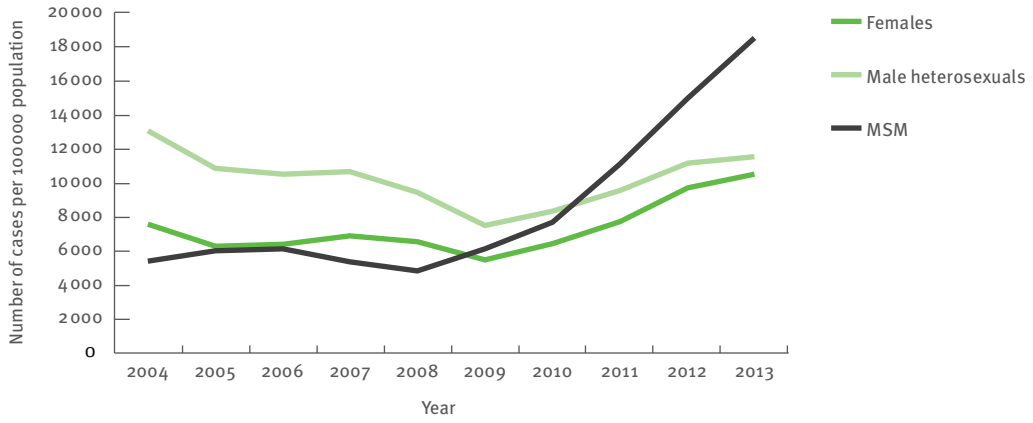
The trend in gonorrhoea notifications in the EU/EEA in the past decade varies among countries. A number of countries which reported high rates in the 1990s have either continued to show a decreasing trend or report stable rates, e.g. Bulgaria, Estonia, Latvia, Lithuania and Romania; other countries reported increasing trends, some throughout the past decade, but many more since 2008. The previously high rates in eastern and central EU countries may reflect the results of routine screening in certain clinical services and stable reporting systems. Subsequent declines may reflect changes in healthcare systems, including more privatisation and reduced reporting, and therefore substantially increased numbers of infections that remain either undiagnosed or unreported.

The increasing rates of gonorrhoea in many countries indicate ongoing unsafe sexual behaviour, which carries the risk of transmission of other STI, including HIV. In addition, the increased number of cases is worrying because of the possibility of antimicrobial-resistant *N. gonorrhoeae* strains[5]. The latest resistance data from the European Gonococcal Antimicrobial Surveillance Programme suggest stable levels of resistance to

[4] The EMIS Network. EMIS 2010: The European Men-Who-Have-Sex-With-Men Internet Survey. Findings from 38 countries. Stockholm: European Centre for Disease Prevention and Control; 2013.

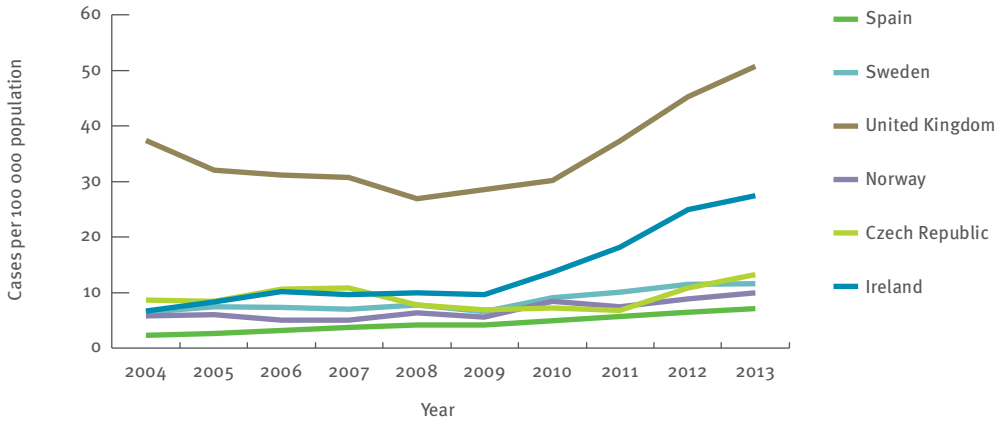
[5] European Centre for Disease Prevention and Control. Gonococcal antimicrobial susceptibility surveillance in Europe, 2013. Stockholm: ECDC; 2015.

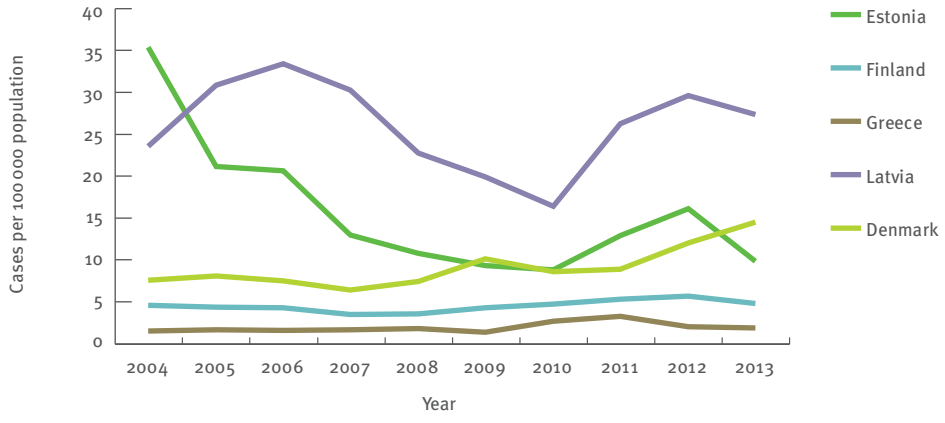
Figure 2.8: Trends in the rate of reported gonorrhoea cases by transmission group, EU/EEA, 2004–2013

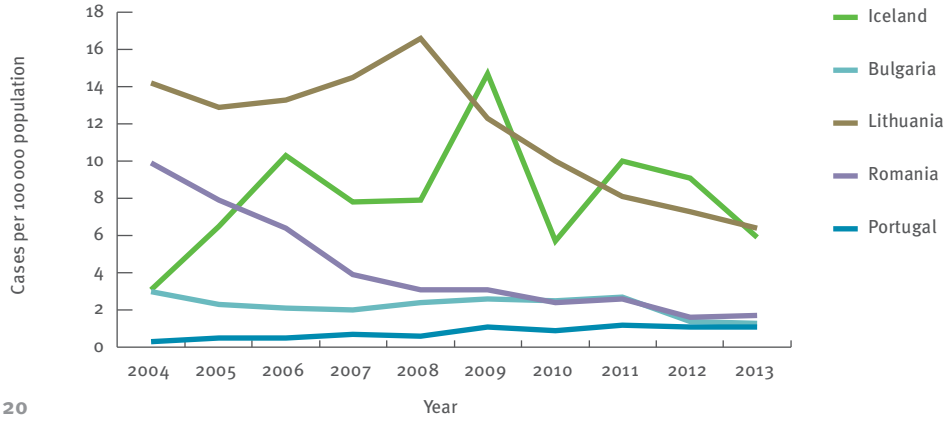


Note: Includes the Czech Republic, Denmark, France, the Netherlands, Norway, Sweden and the United Kingdom.

Figure 2.9: Number of gonorrhoea cases per 100 000 population in selected EU/EEA countries, 2004–2013







cefixime and no significant increase in resistance to ceftriaxone. Despite these data, the development of resistance to existing treatments is feared to be only a matter of time.

The majority of countries reporting gonorrhoea cases indicate that most of their data on STI are obtained from dedicated special services (STI clinics) rather than general practitioners. In addition, several countries obtain data through sentinel surveillance, which means that the actual number of cases is likely to be higher. Many cases are also either undiagnosed or not reported, due to differences in availability and use of appropriate diagnostics. These limitations also imply that comparisons between countries should be conducted with caution.

The growing number of reported cases in many countries in recent years can be partially attributed to the increased use of more sensitive diagnostic tests such as NAAT – and in particular the increased use of dual CT-NG NAAT – across the EU/EEA. Also, testing policies have changed (e.g. testing at multiple anatomical sites among MSM), resulting in improved case ascertainment. Increased high-risk behaviour is, however, likely to explain some of the increase in gonorrhoea notifications. This is in line with reports of a recent rise in other STI, particularly among MSM (e.g. syphilis and HIV).

Figure 2.10: Relative change in gonorrhoea notification rates between 2008–2013 (21 EU/EEA countries with consistent reporting)

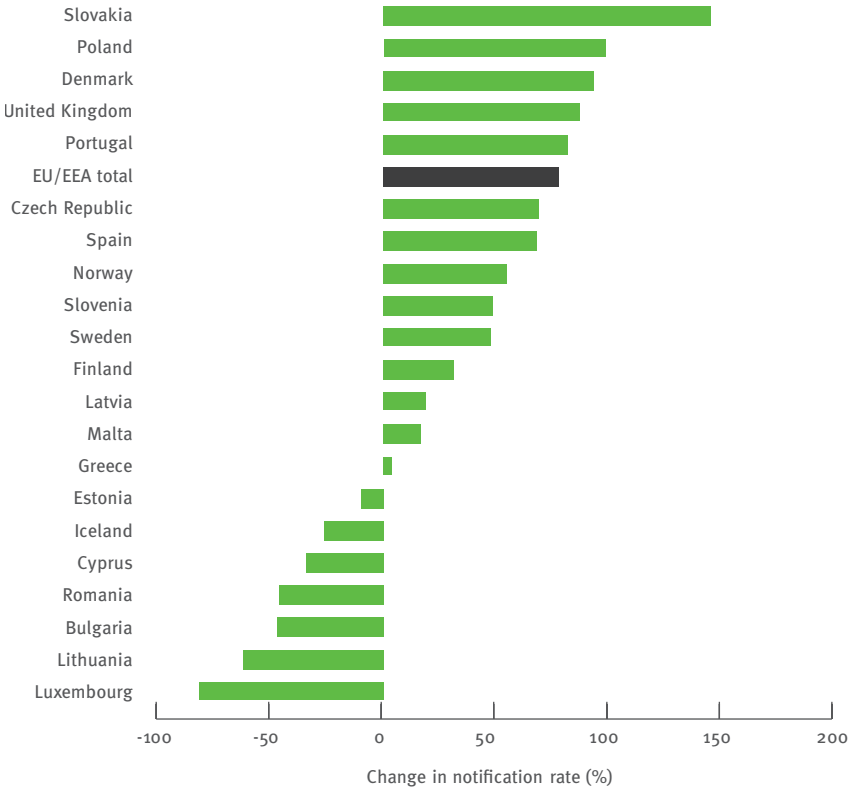
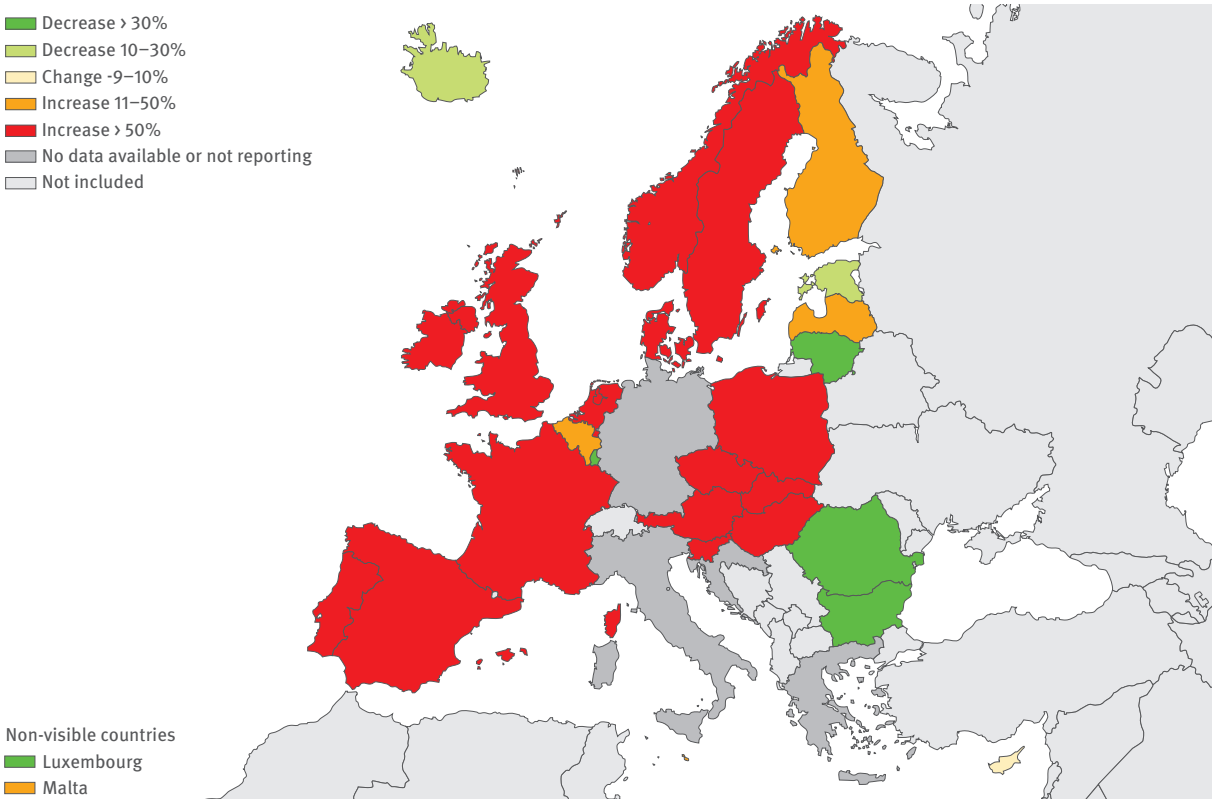


Figure 2.11: Relative change in the number of reported gonorrhoea cases, EU/EEA, 2008–2013



Note: Greece is not included, as a new surveillance system was put in place in 2010, and data are not comparable between the old and the new system.

3 Syphilis

Table D: Syphilis: data source, type of data surveillance, surveillance period, 2013

Country	Data source	Type	Period	Legal status	Coverage
Austria	AT-STISentinella	A	1996–2005, 2013	V	Se
	AT-STISentinella	C	2006–2012	V	Se
Belgium	BE-LABNET	C	2002–2013	V	Se
Bulgaria	BG-STI	A	1990–2013	C	Co
Croatia	HR-CNIPH	A	2012–2013	C	Co
Cyprus	CY-NOTIFIED_DISEASES	C	2006–2013	C	Co
Czech Republic	CZ-STD	A	1990–1998	C	Co
	CZ-STD	C	1999–2013	C	Co
Denmark	DK-LAB	A	1990–1999		
	DK-STI_CLINICAL	C	2000–2013	C	Co
Estonia	EE-PERTUSSIS/SHIGELLOSIS/SYPHILIS	A	1990–2007	C	Co
	EE-PERTUSSIS/SHIGELLOSIS/SYPHILIS	C	2008–2012	C	Co
	EE-NAKIS	C	2013	C	Co
Finland	FI-NIDR	C	2000–2013	C	Co
France	FR-STI	C	2000–2013	V	Se
Germany	DE-SURVNET@RKI-7.3	C	2001–2013	C	Co
Greece*	EL-NOTIFIABLE_DISEASES	A	2003–2013	C	O
Hungary	HU-STDSURVEILLANCE	A	1990–2013		
Iceland	IS-SUBJECT_TO_REGISTRATION	C	2000–2013	C	Co
Ireland	IE-SYPHILIS	C	2000–2011	C	Co
	IE-CIDR	C	2012–2013		
Italy	IT-NRS	C	1998–2012	C	Co
Latvia	LV-STI/SKIN_INFECTIONS	A	1990–2007	C	Co
	LV-BSN	C	2008–2013	C	Co
Liechtenstein	–	–	–	–	–
Lithuania	LT-COMMUNICABLE_DISEASES	A	2003–2007	C	Co
	LT-COMMUNICABLE_DISEASES	C	2008–2013	C	Co
Luxembourg	LU-SYSTEM1	C	2006–2013	C	Co
Malta	MT-DISEASE_SURVEILLANCE	C	2006–2013	C	Co
Netherlands	NL-STI	C	2004–2013	V	Se
Norway	NO-MSIS_B	C	1992–2013	C	Co
Poland	PL-NATIONAL_SURVEILLANCE	A	2006–2013	C	Co
Portugal	PT-SYPHILIS	C	1990–2013	C	Co
Romania	RO-RNSSy	A	1990–2009	C	Co
	RO-RNSSy	C	2010–2013	C	Co
Slovakia	SK-EPIS	C	2006–2013	C	Co
Slovenia	SI-SPOSUR	C	2006–2013	C	Co
Spain	ES-STATUTORY_DISEASES_STI_AGGR	A	1990–2013	C	Co
Sweden	SE-EpiBas	A	1990–1996	C	Co
	SE-SMINET	C	1997–2013	C	Co
United Kingdom	UK-GUM	A	1990–2009	C	Co
	UK-GUM-COM-LAB	A	2010–2013	O	Co

Legend: type: aggregated (A); case based (C); legal status: voluntary reporting (V), compulsory reporting (C), other (O); coverage; sentinel system (Se), comprehensive (Co), other (O)

* Greece: In 2009, a new surveillance system was introduced which is designed to be comprehensive; at present, it does not offer national coverage.

3 Syphilis

3.1 Key points

- In 2013, 22 237 syphilis cases were reported in 29 EU/EEA Member States (data were not available from Italy and Liechtenstein) – an overall number of 5.4 notifications per 100 000 population. Syphilis was reported five times more often in men than in women (8.4 notifications per 100 000 in men and 1.6 in women).
- The majority of cases were reported in people older than 25 years, with young people between 15 and 24 years of age accounting for only 14 % of cases.
- Over half (58 %) of the syphilis cases with information on transmission category were reported in MSM.
- There were marked differences in trends across the EU/EEA Member States. The overall rate decreased between 2004 and 2009, mainly due to a substantial decrease of cases in countries that reported very high rates of syphilis in the past decade. Since 2010, however, the overall syphilis rate has been increasing, particularly among men.

3.2 Data sources

Syphilis data were available from all countries except Italy and Liechtenstein in 2013. Table D specifies the source of the data, the type of data (aggregate or case based), the coverage (sentinel or comprehensive), the legal status (voluntary or compulsory) and the surveillance period. It also shows the existing heterogeneity in European surveillance systems, recent changes in these systems, and reporting periods. Due to variations in the case definitions, coverage, completeness and representativeness of data, direct comparisons of absolute numbers and rates must be undertaken with caution since the proportion of diagnosed cases that are actually reported differs substantially from country to country.

Case numbers per 100 000 population could be calculated for 23 countries with comprehensive or other systems; countries with sentinel systems (Austria, Belgium, Cyprus, France, Hungary, and the Netherlands) were not included. Due to missing Italian data for 'date of diagnosis' up until 2012 , the 'date used for statistics' was used in the analysis.

3.3 Case reports 2013

Demographic variables

In 2013, 22 237 syphilis cases were reported in 29 countries, with 62 % of all cases coming from four countries (Germany, Romania, Spain and the United Kingdom) (Table 15). The overall notification rate was 5.5 per 100 000 population (Table 18). The highest rate was recorded in Malta (9.3 per 100 000 population), followed by Lithuania (9.1) and Spain (8.0). Rates below 2.5 per 100 000 population were submitted by Croatia, Cyprus, Iceland, Portugal and Slovenia (Figure 3.1) (Table 18).

Information on gender was missing in 19 % (n=4 270) of all cases in 2013, mainly due to Spain not reporting this variable (n=3 720 cases). The male-to-female ratio in 2013 was 5.3 to 1; 15 096 cases were reported in men and 2 871 in women. There were 8.4 notifications per 100 000 in men and 1.6 per 100 000 in women.

There were marked differences in the male-to-female ratios across countries (Figure 3.2). Ratios above 10 to 1 were reported by Croatia, France, Germany, Ireland, Luxembourg, Malta, the Netherlands, Slovenia and the United Kingdom. Only six countries reported male-to-female ratios below 2 to 1 – Bulgaria, Estonia, Finland, Lithuania, Romania and Slovakia (Table 17). The male-to-female ratio has increased continuously over time from 2.1 to 1 in 2004 to 5.3 to 1 in 2013.

Information on age was available for 26 countries in 2013; no information on age was available for Austria, Bulgaria and Spain. Overall, 27 % of cases were reported without age or incorrectly. Because of incompatible formats, the data from three countries were excluded: Hungary (2007–2008), Poland (2006–2013) and Romania (2005).

In 2013, the largest proportion of cases was reported among 25–34-year-olds (30 %), with other age groups almost identical in size: 45 years of age or older (29 %) and 35–44 years of age (27 %). Young adults between 15 and 24 years of age accounted for only 14 % of reported cases (Figure 3.3). Between 2004 and 2013, the proportion of cases among age groups below 35 years decreased, while the age group 35 years and above showed an increase in case numbers. The largest increase was seen in those aged 45 years or over (from 17 % to 29 %). Age-specific case numbers were highest among 25–34-year-olds in 2013 (12 per 100 000 population), followed by 35–44-year-olds (9.9 per 100 000) and 20–24-year-olds (9.2 per 100 000). Between 2004 and 2013, age-specific rates decreased among age groups below 35 years but increased among 35–44-year-olds and those aged 45 years or over. The largest decreases were among 15–19-year-olds (-61 %) and 20–24-year-olds (-40 %). Age-specific rates increased by 10 % among 35–44-year-olds and 39 % among those aged 45 years or over. Gender- and age-specific rates were highest among 25–34-year-old males in 2013 (19.4 notifications per 100 000 population) (Figure 3.4).

In 2013, information on country of birth (or, if not available, country of nationality) was reported in 16 countries (Cyprus, the Czech Republic, Denmark, Estonia, France,

Figure 3.1: Number of syphilis cases per 100 000 population, EU/EEA, 2013

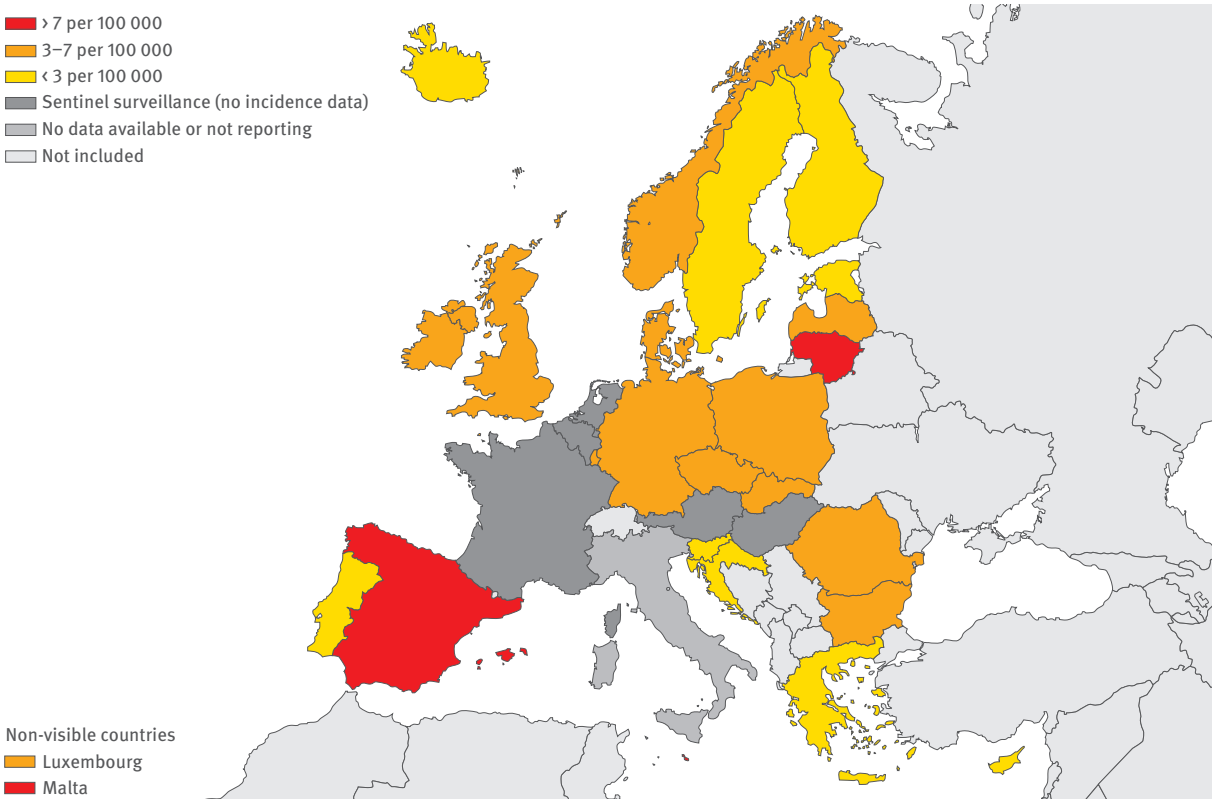
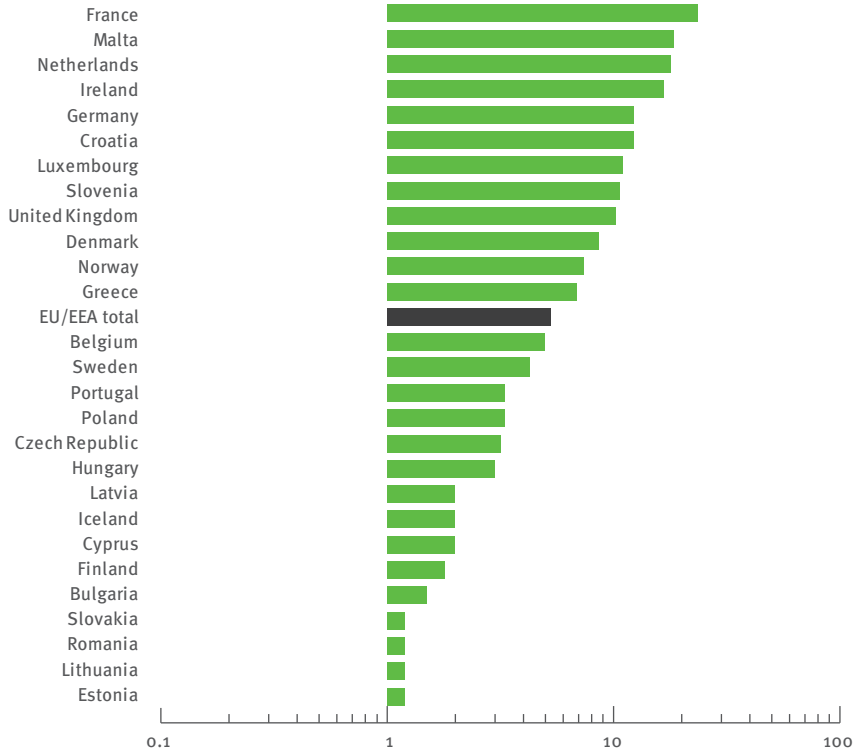


Figure 3.2: Syphilis male-to-female ratio in 27 EU/EEA countries, 2013



Iceland, Ireland, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Portugal, Romania, Slovenia and Slovakia), representing 22 % of the cases (n=4 938). In 79 % of all cases, the country of birth was identical with the reporting country, 11 % were born abroad, and for 9 % this information was unknown. The proportion of cases born abroad varied widely across countries, and more than 20 % of cases from abroad were reported in Cyprus, Ireland, Luxembourg, Malta and the Netherlands.

Epidemiological variables

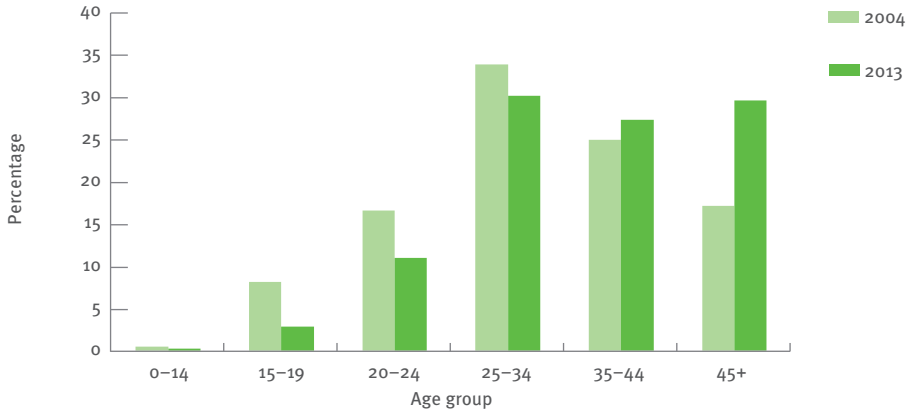
In 2013, information on transmission category was available for 18 countries; 14 of these reported known transmission category for 60 % or more of cases. These cases represent 40 % of the reported syphilis cases (n=8 805). Of these cases, transmission category was indicated as MSM in 58 %, heterosexual in 36 % and unknown in 7 % (Figure 3.5).

Among countries report transmission for 60 % or more of cases, the percentage of cases diagnosed in MSM ranged from below 10 % (Estonia, Lithuania, and Romania) to more than 70 % in Denmark, France, Ireland, the Netherlands, Norway and the United Kingdom (Figure 3.6). Cases diagnosed in MSM represented 73 % (n=5 074) of the male cases reported in 2013.

In 2013, the HIV status was known for 12 % of syphilis cases (data provided by 12 countries). Of these, 32 % were HIV positive (either known or newly diagnosed). Among MSM, 34 % of cases were HIV positive.

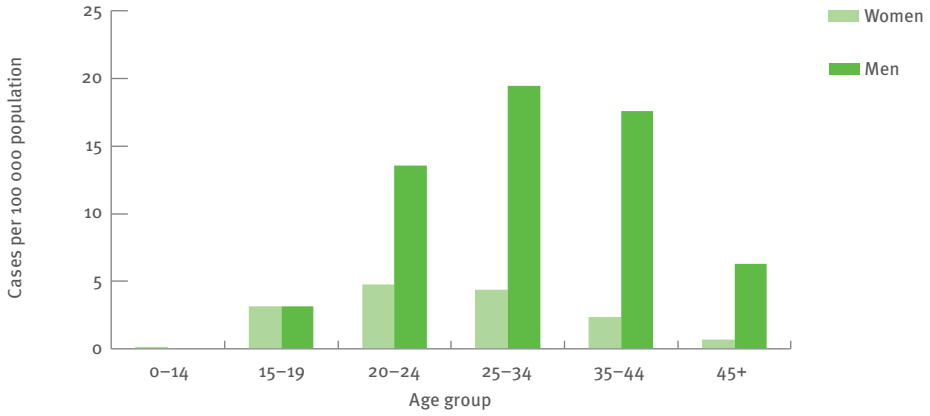
Details on the stage of syphilis infection were provided by 14 countries and represent 23 % of all reported cases in 2013. The distribution of syphilis cases by stage of infection is presented in Figure 3.7. The majority of cases were reported as primary, secondary or early latent infection. Some cases of late latent or latent (where the duration of infection was unknown) syphilis infection were reported; reporting of non-infectious cases may contribute to differences in overall numbers between countries. The distribution across countries varied: some countries such as Slovenia and Portugal reported the majority of cases as primary syphilis; others reported the majority of cases as secondary syphilis (e.g. Malta) or early latent syphilis (e.g. Romania).

Figure 3.3: Comparison of the percentage of syphilis cases by age group, 2004 (n=16 844) and 2013 (n=14 793), EU/EEA countries reporting consistently



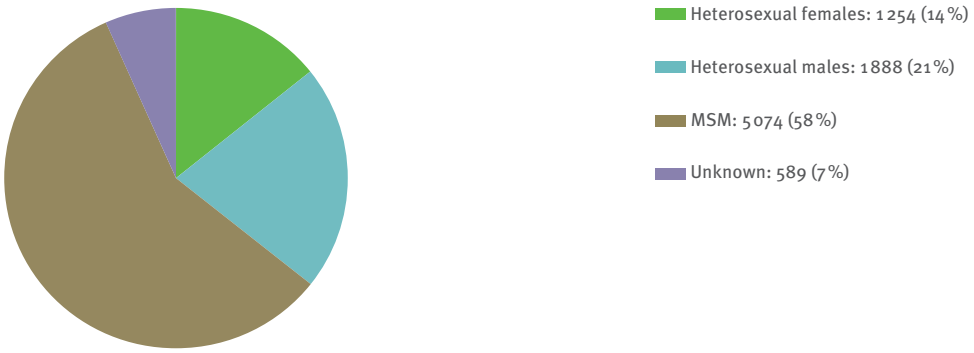
Note: Includes data from Belgium, the Czech Republic, Germany, Denmark, Estonia, Greece, Finland, France, Ireland, Latvia, the Netherlands, Norway, Portugal, Romania, Sweden and the United Kingdom.

Figure 3.4: Age- and gender-specific rates of reported cases of syphilis per 100 000 population, EU/EEA, 2013



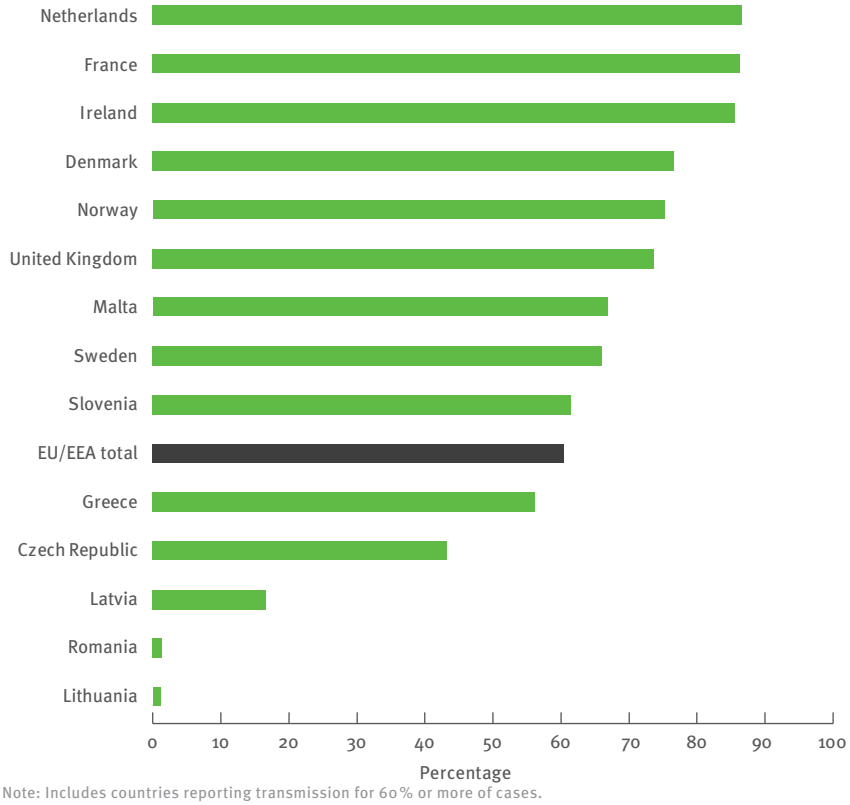
Note: Includes data from Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Norway, Portugal, Romania, Slovakia, Slovenia, Sweden and the United Kingdom.

Figure 3.5: Number and percentage of syphilis cases by transmission category and gender (n=8 805), 2013



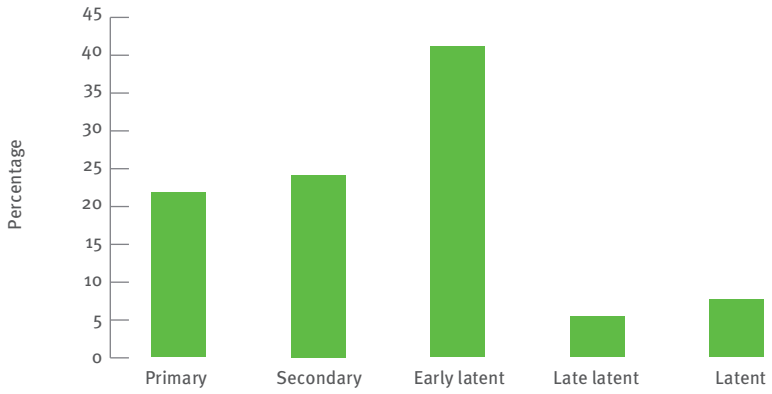
Note: Includes data from the Czech Republic, Denmark, France, Greece, Ireland, Latvia, Lithuania, Malta, the Netherlands, Norway, Romania, Slovenia, Sweden and the United Kingdom.

Figure 3.6: Percentage of syphilis cases diagnosed in MSM among cases with known mode of transmission, EU/EEA, 2013



Note: Includes countries reporting transmission for 60 % or more of cases.

Figure 3.7: Percentage of syphilis cases by stage of infection, as reported by 14 EU/EEA countries, 2013 (n=5 172)



Note: Includes data from the Czech Republic, Estonia, France, Ireland, Latvia, Lithuania, Malta, the Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia and Sweden.

3.4 Trends 2004–2013

Between 2004 and 2013, 204 252 cases of syphilis were reported in 30 countries. Since 2006, all 30 countries have consistently reported data (except for Italy in 2013) (Table 15). Rates per 100 000 population were calculated for a total of 23 countries which maintain comprehensive surveillance systems for syphilis (Table 18). Figure 3.8 shows a declining trend in the number of reported cases per 100 000 population from 2004 to 2009 among countries reporting consistently. Since 2010, however, trends have diverged, with marked increases among men and a decreasing trend among women (Figure 3.8b, logarithmic scale).

Data from 17 countries with comprehensive surveillance systems were available for the period 2004–2013. Figure 3.9 shows four graphs with trends over time for these countries. East European countries, which reported very high numbers per 100 000 population in the 1990s (Bulgaria, Estonia, Latvia and Romania, which previously reported the highest rate of syphilis in Europe), have continued to report decreasing numbers: a decrease by more than 30 % was reported in these countries and Iceland. In most other countries, rates fluctuated or increased during this period. The largest increases in reported rates (case numbers per 100 000 population) between 2004 and 2013 were observed in the Czech Republic, Greece, Norway and Spain. The increasing numbers in Greece are most likely related to improved coverage of the surveillance system.

More recent trends (2008–2013) show a sharp increase, particularly in western Europe where rates increased by more than 50 % in Germany, Denmark, Greece, Luxembourg, Malta, Norway, Portugal and Sweden (Figure 3.10).

As rates could not be calculated for countries with sentinel surveillance systems, the relative increase or decrease in the absolute number of reported syphilis cases per country in 2008–2013 was calculated. The number of reported syphilis cases increased in 19 countries and decreased in nine countries (Figure 3.12). The largest decreases were observed in Estonia, Latvia, Romania and Slovenia. Increases greater than 100 % were observed in Austria, Denmark, Luxembourg, Malta and Norway. The increases in cases reported in Austria are linked to a more comprehensive 2013 dataset.

Trends by transmission group (Figure 3.9) among the countries providing transmission category data between 2009 and 2013 show a steep increase in reported cases among MSM; cases among heterosexuals have been decreasing throughout this period.

3.5 Discussion

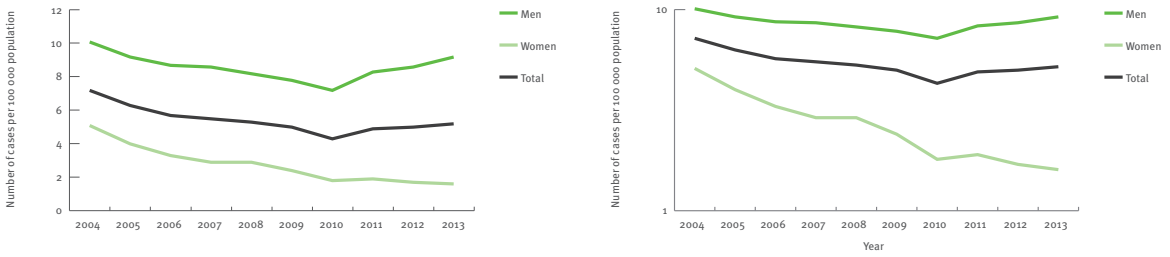
The distribution of syphilis varied across countries, with rates ranging from below 1 to 9.3 per 100 000 population. In 2013, the rate of reported cases per 100 000 population increased compared with 2012. The overall trend has been increasing since 2010, as documented by the increasing number of cases reported by most European countries over the last few years. The male-to-female ratio and gender-specific rates suggest that these increases are mainly due to cases among men, and increasing transmission among MSM has contributed significantly to this trend. The long-term declining rate seen until 2010 was strongly influenced by the decrease of reported cases in four countries (Bulgaria, Estonia, Latvia and Romania) where very high rates of syphilis were reported in the past decade. In Bulgaria, Estonia and Romania, these decreases may in part reflect changes in healthcare systems or reporting systems rather than an actual decrease in disease prevalence[3].

Less than one seventh of all syphilis cases were reported in young people between 15 and 24 years of age. This is the smallest proportion among reportable STI. Among MSM, the proportion of reported syphilis cases was higher than for gonorrhoea and chlamydia. The proportion of syphilis cases among MSM varies across the EU/EEA, with high proportions reported in western and northern countries (Denmark, France, Ireland, the Netherlands, Norway and the United Kingdom) but also in Malta, which reported the highest rates of syphilis in 2013. These findings suggest that syphilis is largely transmitted among MSM in the EU/EEA. However, this interpretation is hampered by incomplete reporting of the transmission mode. It is also likely that the transmission category 'MSM' is underreported in many countries, for the same reasons cited in the chapter on gonorrhoea.

The increasing trend in syphilis in many EU/EEA countries can be partly explained by increased case detection through, for example, more testing among HIV-positive MSM as recommended in current HIV management guidelines, or improved reporting. However, changes in sexual behaviour, particularly among MSM, are likely to have contributed considerably to the increasing trends in many countries, which is also reflected in increases in other STI such as gonorrhoea and HIV[6] among MSM.

[6] European Centre for Disease Prevention and Control/WHO Regional Office for Europe. HIV/AIDS surveillance in Europe 2013. Stockholm: European Centre for Disease Prevention and Control; 2014.

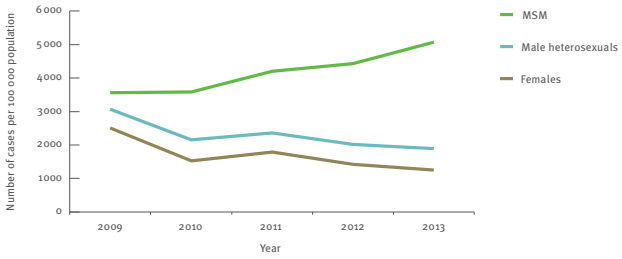
Figure 3.8: Trends in the number of reported syphilis cases per 100 000 population, EU/EEA, 2004–2013



Arithmetic scale to the left; semi-logarithmic scale right.

Includes data from Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Germany, Iceland, Ireland, Latvia, Lithuania, Norway, Portugal, Romania, Sweden and the United Kingdom.Note: Arithmetic scale.

Figure 3.9: Trend in the number of reported syphilis cases by transmission category, EU/EEA, 2009–2013



Note: Includes data from the Czech Republic, Denmark, France, Greece, Ireland, Latvia, Lithuania, Malta, the Netherlands, Norway, Romania, Slovenia, Sweden and the United Kingdom.

Figure 3.10: Syphilis cases per 100 000 population in selected EU/EEA countries, 2004–2013

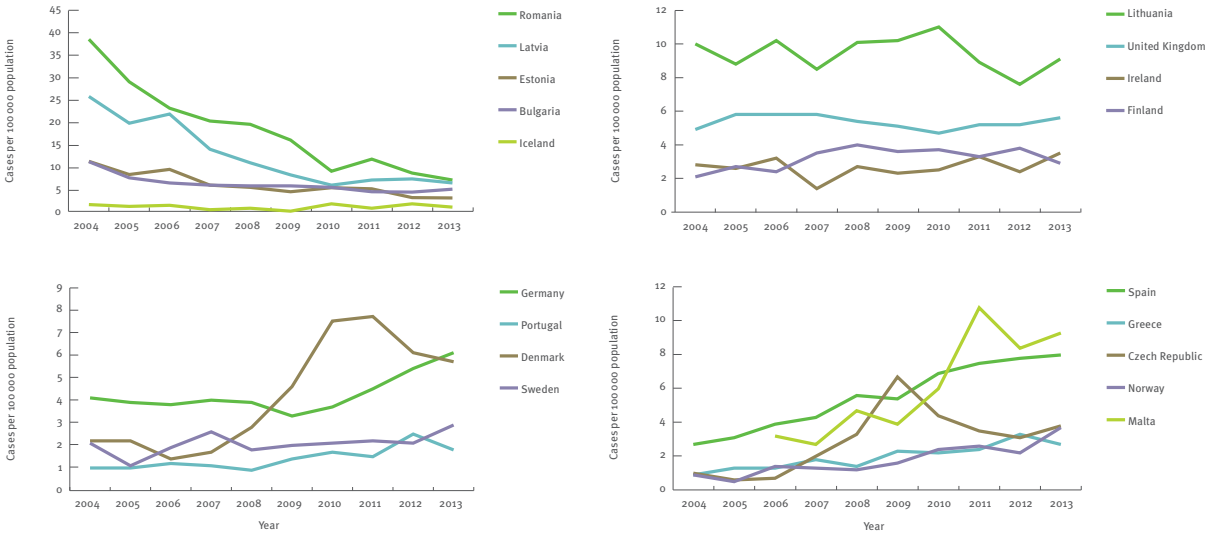


Figure 3.11: Relative change in notification rates between 2008 and 2013, 23 EU/EEA countries with consistent reporting

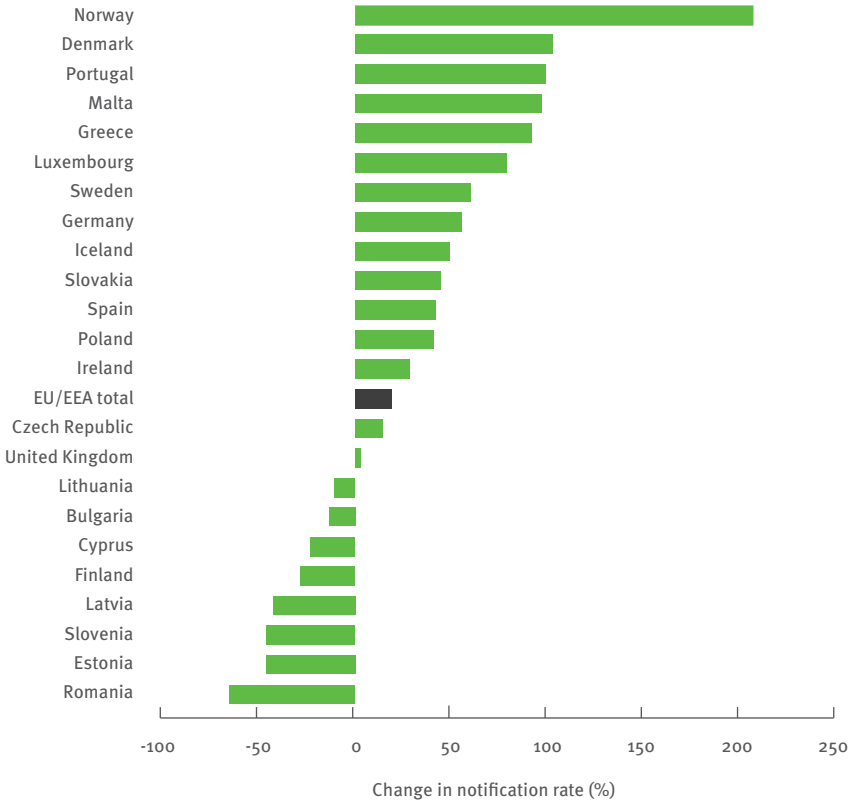
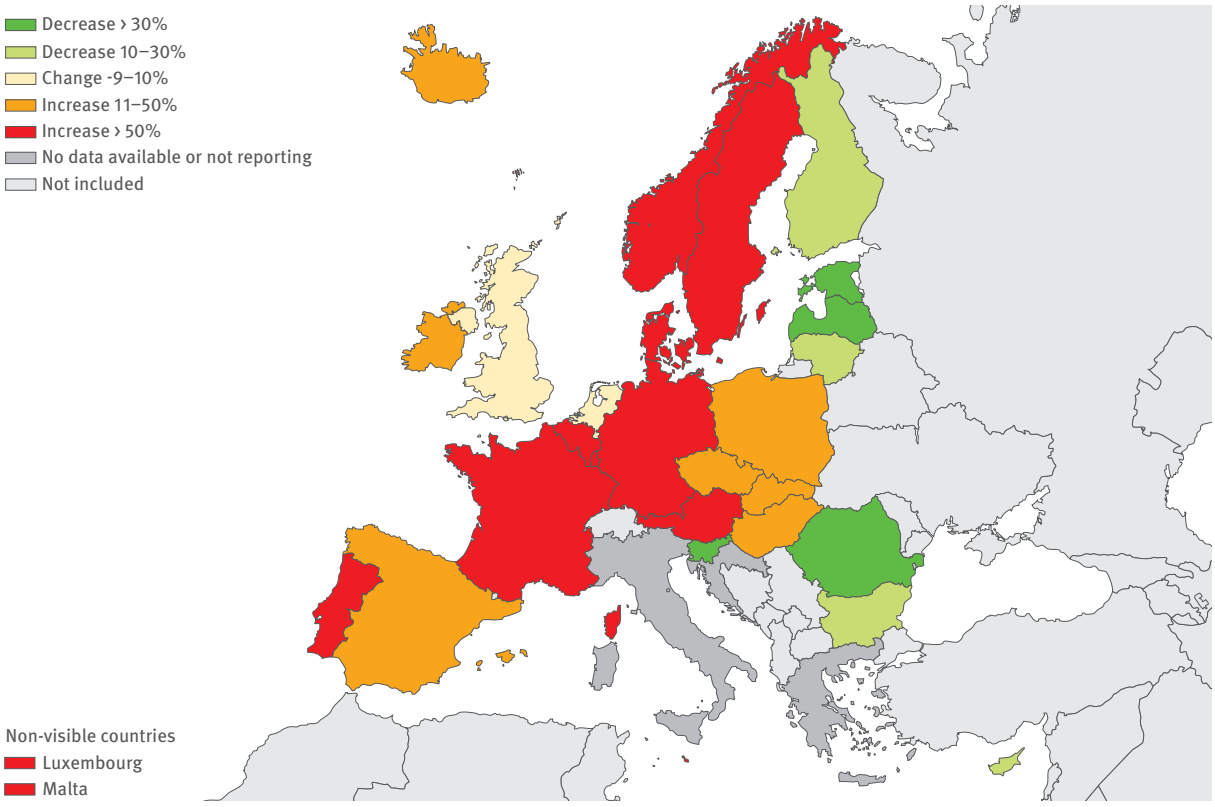


Figure 3.12: Relative increase or decrease in the number of reported syphilis cases, EU/EEA, 2008–2013



Note: Greece is not included because a new surveillance system was introduced in 2010; data between the old and new systems are incompatible.

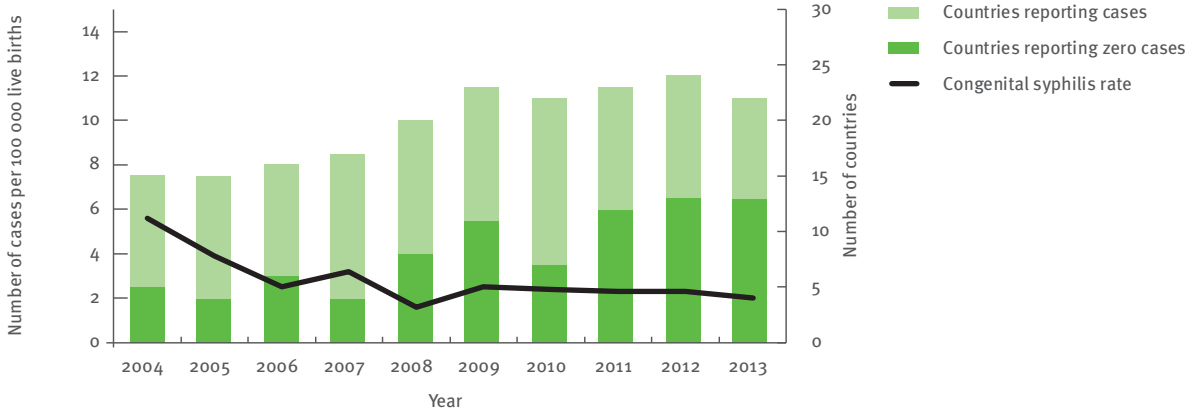
4 Congenital syphilis

Table E: Congenital syphilis: data source, type of data surveillance, surveillance period, 2013

Country	Data source	Type	Period	Legal status	Coverage
Austria					
Belgium					
Bulgaria	BG-STI	A	2005–2013	C	Co
Croatia	HR-CNIPH	A	2012–2013	C	Co
Cyprus	CY-NOTIFIED_DISEASES	A	2009–2013	C	Co
Czech Republic	CZ-STD	A	1990–1998	C	Co
	CZ-STD	C	1999–2013	C	Co
Denmark	DK-LAB	C	1991–2013		
Estonia	EE-CONSYPH	C	1998–2012	C	Co
	EE-NAKIS	C	2013	C	Co
Finland					
France					
Germany	DE-SURVNET@RKI-7.3	C	2001–2013	C	Co
Greece	GR-NOTIFIABLE_DISEASES	C	2008–2012	C	Co
Hungary	HU-STD SURVEILLANCE	A	1990–2007	C	Co
	HU-STD SURVEILLANCE	C	2008–2013	C	Co
Iceland	IS-SUBJECT_TO_REGISTRATION	A	2009–2013	C	Co
Ireland	IE-SYPHILIS	C	2000–2011	C	Co
	IE-CIDR	C	2012–2013	C	Co
Italy	IT-NRS	C	1998–2012	C	Co
Latvia	LV-STI/SKIN_INFECTIONS	A	1990–2007	C	Co
	LV-BSN	C	2008–2013	C	Co
Liechtenstein					
Lithuania	LT-COMMUNICABLE_DISEASES	A	2003–2007	C	Co
	LT-COMMUNICABLE_DISEASES	C	2008–2013	C	Co
Luxembourg	LU-SYSTEM1	A	2009–2013	C	Co
Malta	MT-DISEASE_SURVEILLANCE	A	2008–2013	C	Co
Netherlands					
Norway	NO-MSIS_B	C	1990–2013	C	Co
Poland	PL-NATIONAL_SURVEILLANCE	A	2007–2013	C	Co
Portugal	PT-CONGENITAL_SYPHILIS	C	1999–2013	C	Co
Romania	RO-RNSSy	A	1990–2009	C	Co
	RO-RNSSy	C	2008–2013	C	Co
Slovakia	SK-EPIS	C	2008–2013	C	Co
Slovenia	SI-SPOSUR	C	2006–2013	C	Co
Spain	ES-STATUTORY_DISEASES	C	1997–2013	C	Co
Sweden	SE-SMINET	C	2001–2013	C	Co
United Kingdom	UK-GUM	A	1990–2009	C	Co
	UK-GUM-COM-LAB	A	2010–2013	O	Co

Legend: type: aggregated (A); case based (C); legal status: voluntary reporting (V), compulsory reporting (C), other (O); coverage: sentinel system (Se), comprehensive (Co)

Figure 4.1: Number of reported congenital syphilis cases per 100 000 live births, and number of countries reporting congenital syphilis data, 24 EU/EEA countries, 2004–2013



4 Congenital syphilis

4.1 Key points

- In 2013, 65 congenital syphilis cases were reported from 23 EU/EEA Member States (an overall rate of two notifications per 100 000 live births).
- The trend of reported congenital syphilis cases has remained stable over recent years; recent data (2012 and 2013) show that the number of reported cases decreased; no country reported an increasing number of cases.
- It is suspected that there is considerable underreporting of congenital syphilis: eight countries did not participate in the surveillance for congenital syphilis, and a further 13 reported zero cases in 2013.
- The low rates of congenital syphilis – and the decreasing rates of reported syphilis among women – suggest that most Member States have systems in place to reach the elimination of congenital syphilis.
- Better indicator data are needed to assess the effectiveness of antenatal screening programmes in all EU/EEA countries.

4.2 Facts and figures

Congenital syphilis data were available from 23 countries. Congenital syphilis is not a reportable disease in Austria, France, Finland, Netherlands and Liechtenstein. In Belgium, syphilis, including congenital syphilis, is a reportable disease; however, underreporting exists, and Belgian databases do not support the unambiguous identification of congenital cases.

Table E specifies the source of the data, the type of data (aggregate or case based), the coverage (sentinel or comprehensive) and the surveillance period. It shows the existing heterogeneity in European surveillance systems, recent changes in these systems, and reporting periods. It also shows that 15 countries submitted data on congenital syphilis for the period 2004 to 2013. Reporting has improved over the years, but there are still eight countries which did not collect or report data for congenital syphilis in 2013.

In 2013, 65 confirmed cases of congenital syphilis were reported in 10 countries, while 13 countries reported zero cases. The majority of the cases was reported from Bulgaria (27) and Poland (19 cases). The number of congenital cases reported in 2013 was 30 % less than in 2012. Reductions in the number of cases were reported from Poland (-41 %) and Portugal (-58 %) (Table 22).

Between 2004 and 2013, 1041 cases of congenital syphilis were reported by 25 countries, with varying degrees of completeness over time (Table 22). Rates were calculated per 100 000 live births (Table 24) (Figure 4.1) and, following a period of rapid decrease in the early 2000s, appear to have stabilised since 2006. The rapid decline was mainly related to large decreases in the reported numbers of cases from Latvia and Romania. In 2013, the rate of congenital syphilis was two cases per 100 000 live births, with the highest numbers observed in Bulgaria (41 per 100 000), Portugal (6) and Poland (5). Eight countries did not report congenital syphilis data for 2013, and it is possible that a significant number of diagnosed cases were not reported.

4.3 Discussion

In the EU/EEA, congenital syphilis rates have been decreasing or stable since 2005. During this time, rates of syphilis among women have decreased by 50 %, from 3.2 per 100 000 in 2005 to 1.6 in 2013. Although the number of countries reporting congenital syphilis data has increased over time, it is likely that there is underreporting of congenital syphilis cases in some countries, which makes it difficult to evaluate the effectiveness of antenatal screening programmes for the disease. In conjunction with its call for the elimination of congenital syphilis[7], the World Health Organization has identified three indicators to monitor programme progress:

- the proportion of women tested for syphilis at their first antenatal care visit;
- the proportion of pregnant women with a positive test for syphilis; and
- the proportion of syphilis-positive pregnant women treated for syphilis, ideally by week 24 of gestation.

These three indicators let countries estimate programme effectiveness, defined as 'the estimated proportion of all syphilis-positive pregnant women treated by 24 weeks of gestational age'[8]. An ECDC project is currently investigating the effectiveness of national screening programmes.

7 World Health Organization, Department of Reproductive Health and Research. The global elimination of congenital syphilis: rationale and strategy for action. Geneva: WHO; 2007. Available from: http://www.who.int/reproductivehealth/publications/rtis/9789241595858/en/index.html

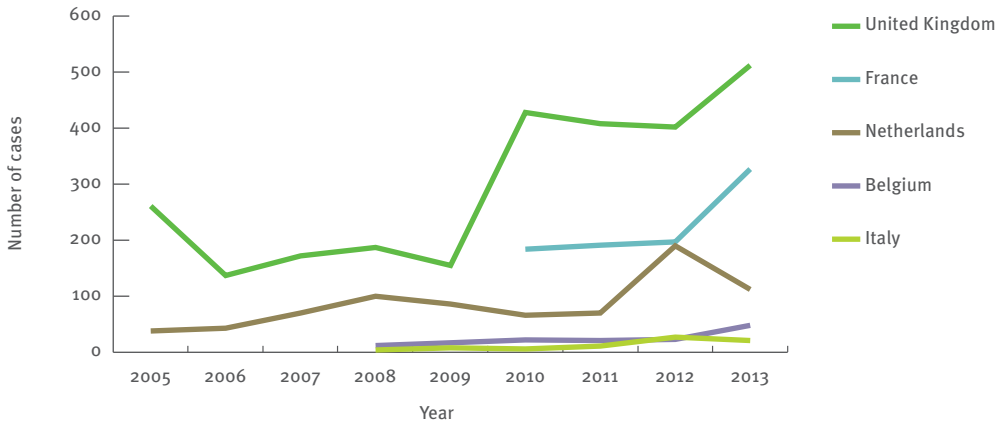
8 Kamb ML, Newman LM, Riley PL, Mark J, Hawkes SJ, Malik T, et al. A road map for the global elimination of congenital syphilis. Obstet Gynecol Int. 2010;2010.

5 Lymphogranuloma venereum

Table F: Lymphogranuloma venereum: data source, data type and surveillance period, 2013

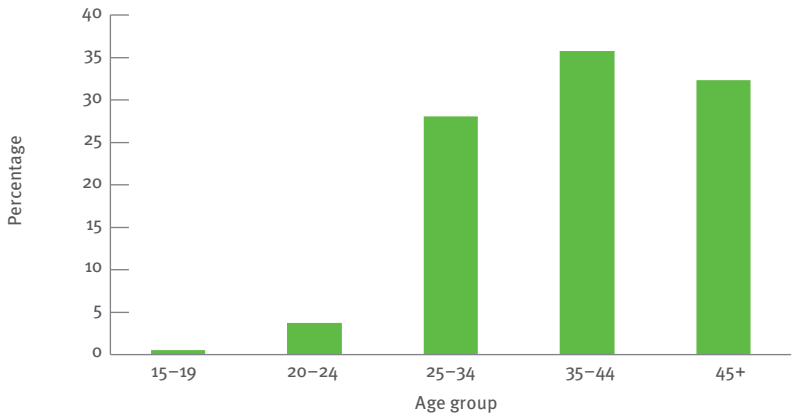
Country	Data source	Type	Period	Legal	Coverage
Belgium	BE-STD	C	2008–2013	V	Se
Czech Republic	CZ-STD	C	2010–2013	C	Co
Denmark	DK-LAB	C	2006–2008		
Finland	FI-NIDR	C	2011–2013	C	Co
France	FR-STI	C	2010–2013	V	Se
Hungary	HU-STD SURVEILLANCE	A	1990–2013	C	Se
Ireland	IE-AGGR_STI	A	1995–2008	C	Co
	IE-LGV	C	2010–2012	C	Co
	IE-CIDR	C	2013	C	Co
Italy	IT-COA ISS- STI clin	C	2008–2013	V	Se
Malta	MT-DISEASE_SURVEILLANCE	C	2008–2013	C	Co
Netherlands	NL-STI	C	2004–2013	V	Se
United Kingdom	UK-ENHANCED	A	2005–2010	V	
	UK-LGV	C	2011		
	UK-GUM-COM-LAB	C	2012–2013	O	Co

Figure 5.1: Number of reported LGV cases in five EU countries, 2005–2013



Note: Of the displayed countries, only the United Kingdom has a comprehensive surveillance system for LGV.

Figure 5.2: Percentage of LGV cases by age group, EU/EEA (n=1043), 2013



Note: Includes data from Belgium, the Czech Republic, Finland, France, Hungary, Ireland, Italy, Malta, the Netherlands, and the United Kingdom

5 Lymphogranuloma venereum

5.1 Key points

- In 2013, 1043 cases of lymphogranuloma venereum (LGV) were reported in 10 countries.
- Compared with 2012, the number of reported cases in 2013 increased by 22%.
- A number of countries (including Spain and Sweden) have reported no cases, but it is likely that there is considerable underreporting of LGV.

5.2 Facts and figures

Data on lymphogranuloma venereum were provided by 21 countries between 2004 and 2013, but only 11 reported cases (Belgium, the Czech Republic, Denmark, Finland, France, Hungary, Ireland, Italy, Malta, the Netherlands and the United Kingdom). Croatia, Cyprus, Estonia, Greece, Iceland, Latvia, Luxembourg, Poland, Slovenia, and Sweden reported zero cases of LGV. No information was available for the remaining countries (Table 25).

Table F specifies the source of the data, the type of data (aggregate or case based), the coverage (sentinel or comprehensive) and the surveillance period for the eight countries which actually reported LGV cases. It also shows the existing heterogeneity in European surveillance systems, recent changes in these systems, and reporting periods. Rates per 100 000 population were not calculated for LGV because very few countries conduct comprehensive surveillance for the infection.

In 2013, 1043 cases of LGV were reported in 10 countries (2012: 857 cases), including the first case of LGV ever to be reported in Malta. Between 2004 and 2013, 4761 cases of LGV were reported in 11 countries, with the majority of cases reported in the United Kingdom (56%; 2689 cases), France (19%; 899 cases) and the Netherlands (18%; 851 cases) (Figure 5.1).

The transmission category was known for 338 cases in 2013 (32% of all reported cases); 333 cases were reported among MSM, three cases were reported in heterosexual males, and two cases in females; an additional three female cases were reported with unknown transmission. Age was reported for 1040 cases, with the highest proportion (36%) in the age group 35–44 years (Figure 5.2).

In 2013, information on HIV status was available for 520 LGV cases (50%), of whom 62% were reported as HIV positive, 14% as HIV negative, and 24% as unknown. Of all cases with known HIV status, 81% were HIV positive. The United Kingdom did not report the HIV status of cases reported in 2013, which resulted in low completeness for this variable. Between 2004 and 2013, information on HIV status was available for 3396 cases (71%), of which 68% were reported as HIV positive, 17% as HIV negative, and 15% as unknown.

The overall trend for reported cases of LGV has increased between 2004 and 2013. This is due to an increase in the number of countries reporting data and an increasing number of cases of LGV in most of the reporting countries (Table 25). Compared with 2012, the number of cases reported in 2013 increased by 22%, with considerably increased reports from Belgium, France and the United Kingdom.

5.3 Discussion

In 2013, the number of reported cases of LGV continued to increase in western European countries. Malta reported its first case ever. The numbers of cases reported are certainly an underestimate, because many countries do not routinely report LGV; the diagnosis of LGV is further complicated by the fact that genotyping is necessary to confirm a case. The increase in reported cases indicates that LGV transmission continues mainly among HIV-positive MSM who engage in high-risk practices[9,10]. Different, and at times insufficient, testing strategies fail to detect a substantial number of asymptomatic cases[11].

[9] Macdonald N, Sullivan AK, French P, White JA, Dean G, Smith A, et al. Risk factors for rectal lymphogranuloma venereum in gay men: results of a multicentre case-control study in the U.K. Sex Transm Infect. 2014 Jun;90(4):262-8

[10] Rönn M, Hughes G, Simms I, Ison C, Alexander S, White P, et al. Challenges presented by re-emerging sexually transmitted infections: an observational study of lymphogranuloma venereum in the UK. The Lancet. 2013;382:S86.

[11] Koper NE, van der Sande MA, Gotz HM, Koedijk FD. Lymphogranuloma venereum among men who have sex with men in the Netherlands: regional differences in testing rates lead to underestimation of the incidence, 2006–2012. Euro Surveill. 2013 Aug 22;18(34).

6 General discussion and conclusion

Table G: Comparison of indicators: *Chlamydia trachomatis* infection, gonorrhoea and syphilis, EU/EEA, 2013

Indicators	*Chlamydia trachomatis* infection	Gonorrhoea	Syphilis
Rate per 100 000 population*	182	16.9	5.4
Number of countries reporting	26	28	29
Change in reported rates between 2008 and 2013*	-2.5%	+117%	+20%
Male-to-female ratio in reported cases**	0.7:1	2.9:1	5.3:1
Percentage in young people of 15–24 years**	66%	39%	14%
Rate for 20–24-year-olds per 100 000 population*	719	50	4.6
Percentage in MSM**	6%	43%	58%

* Calculated for countries with comprehensive surveillance systems

** Based on countries reporting the underlying data

6 General discussion and conclusion

This report presents EU/EEA-wide data on four STI and congenital syphilis for 2013, as reported by individual Member States through their STI surveillance systems. Historical data are given from 2004 to 2013. The results describe the epidemiology of STI in Europe, which, although blurred by the heterogeneity of surveillance systems across Europe, give a good indication of where the public health burden of STI lies.

In order to interpret the findings more accurately, a thorough understanding of the characteristics of national surveillance systems and national screening and testing policies is needed. Table G summarises a set of indicators which can be used to describe the key features of the three main STI under surveillance in the EU/EEA.

Rates (case numbers per 100 000 population) of *Chlamydia trachomatis* infection continue to vary widely among the 26 reporting EU/EEA countries, without any indication of an impending increase in those countries which currently report the lowest rates. When comparing the countries with the highest and lowest rates, the difference in rates is several thousandfold. This, however, does not reflect differences in prevalence, but rather the unavailability of appropriate diagnostics and differences in the implementation of testing and surveillance programmes. Continuously low rates are therefore likely to indicate limited expansion of testing policies and/or surveillance programmes and imply that the detection and reporting of chlamydia cases is incomplete in several countries. The implementation of sentinel surveillance systems to monitor trends in clinical testing services, rather than the establishment of mandatory comprehensive notification systems, also means that many countries only capture a subset of all diagnoses made in the country; interpretation of such data is affected by the populations targeted by these clinical testing services, and these populations differ across countries. ECDC is currently developing projects which aim to provide a better understanding of *Chlamydia trachomatis* infection epidemiology and build on previously published work[12]. An updated guidance document on chlamydia control is scheduled for 2015.

Syphilis appears to be the most completely reported disease among the STI covered in this report, probably because of the long-standing surveillance based on serology in most European countries. As a result, the difference in rates of syphilis across the EU/EEA is much lower than that for *Chlamydia trachomatis* infection and gonorrhoea. Data from the European Men-Who-Have-Sex-With-Men Internet Survey also show that blood sampling is carried out more routinely across Europe. A median of 89% of MSM (range 79–97%) provided a blood sample as part of STI testing in the previous 12 months, as opposed to those who underwent anal swabbing as part of STI testing (median 16%, range 10–>60%)[13]. This indicates that data on syphilis, based on serology, are likely to be more complete and comparable than data on *Chlamydia trachomatis* infection and gonorrhoea, at least among MSM.

Completeness of reported data is good across all STI for key demographic variables; completeness of epidemiological variables such as mode of transmission, is, however, relatively low, particularly for *Chlamydia trachomatis* infection and syphilis. Completeness varies by country, and the different contributions of countries to the overall reporting of infections affect these results. For all STI, the number of reported cases is most likely only a fraction of their true incidence, with many cases not diagnosed or not reported.

Surveillance data suggest that the ongoing epidemics of chlamydia, gonorrhoea and syphilis affect different subpopulations as characterised by age, gender and sexual orientation. *Chlamydia trachomatis* infection is the only STI of the three which is reported more frequently in women than men, although this ratio may be influenced by the greater exposure of women to screening and testing. Gonorrhoea and syphilis were reported more often among men, and the data suggest that this is due to a large proportion of cases among MSM. More intensive testing of MSM, even when asymptomatic, is likely to contribute to these gender differences.

The low and decreasing rates of syphilis in women are encouraging when considering the aim to eliminate mother-to-child transmission of syphilis; similarly, low rates of gonorrhoea in women are essential in order to prevent the reproductive health complications of gonorrhoea. The high rates of *Chlamydia trachomatis* infections among young women indicate that some countries are implementing effective case detection. Diagnosis and appropriate management of chlamydia is crucial to reduce the likelihood of reproductive tract complications from the infection. Consistently high rates suggest, however, that there is little, if any, effect of current chlamydia control activities on overall prevalence. On the other hand, low rates in many countries suggest that many *Chlamydia trachomatis* infections in young women are missed, as are opportunities to prevent reproductive tract complications.

The surveillance data also indicate differences in the affected age groups: while young adults contributed only 14% of all syphilis cases, persons between 15–25

[12] European Centre for Disease Prevention and Control. Chlamydia control in Europe: literature review. Stockholm: ECDC; 2014.

[13] The EMIS Network. EMIS 2010: The European Men-Who-Have-Sex-With-Men Internet Survey. Findings from 38 countries. Stockholm: European Centre for Disease Prevention and Control; 2013

years of age contributed almost 39% of gonorrhoea cases and 67% of chlamydia cases – reflecting not only the prevalence of the disease in these age categories but also testing and screening practices, particularly for *Chlamydia trachomatis* infections.

MSM clearly play a disproportionate role in transmission of gonorrhoea, syphilis and LGV in Europe, highlighting the importance of obtaining reliable epidemiological information to inform prevention measures targeted at this population. More than half of all syphilis cases (58%) were reported in MSM, compared with gonorrhoea (43%) and *Chlamydia trachomatis* infections (6%), which indicates a considerable burden of syphilis and gonorrhoea among MSM. Although the proportion of cases among MSM varies among countries for these two diseases, the high male-to-female ratio in some countries indicates that it is likely that transmission among MSM is even more important than reported here. The reasons for insufficient reporting of MSM transmission could be related to incomplete reporting at the national level. In some countries, stigmatisation of MSM might affect disclosure to clinicians and thus reporting. Gonorrhoea and syphilis infections among MSM appear to have increased over recent years. Practices such as HIV sero-sorting are likely to be having an impact on STI infections among MSM. New interventions such as pre-exposure prophylaxis for prevention of HIV infection could also have an impact on STI rates if they lead to increased high-risk behaviours among MSM. Early data indicate that this is not the case in the short term[14].

The epidemic of LGV among MSM in western Europe continues with a further increase in reported cases in 2013 over the previous year, mainly due to an increased number of diagnoses in France and the United Kingdom. The proportion of cases co-infected with HIV remains high. Although the number of countries reporting LGV has increased over time, no reports were received from Germany, Italy, Portugal, Spain and Sweden, which hampers monitoring the ongoing LGV epidemic. Enhanced surveillance systems and strengthened case ascertainment have been initiated in a number of countries, for example in France, the Netherlands, and the United Kingdom. Recent reports suggest that even where LGV testing and surveillance are well developed, cases may be missed due to regional differences in testing algorithms[15]. The fact that many other countries have no diagnostic tools available exacerbates the situation further. Following requests from the STI surveillance network, ECDC is planning to launch a pilot project on enhanced LGV surveillance in 2016.

Congenital syphilis is still a problem in a number of countries; however, in 2013, no country reported an increase in case numbers – a further step towards the elimination of congenital syphilis. ECDC is currently reviewing the effectiveness of antenatal screening programmes for syphilis, HIV and hepatitis B. Further guidance in this field is also planned. Although congenital syphilis rates in the EU/EEA appear to be below the threshold required by the World Health Organization for certification of the elimination of transmission of mother-to-child transmission, it is likely there is underreporting, and no EU/EEA country has so far undergone the formal validation process[16].

The changing use of diagnostics across the EU/EEA has affected STI surveillance findings. The increased use of more sensitive tests such as NAAT across Europe has contributed to an increased number of diagnoses of both chlamydia and gonorrhoea. However, there are still countries that do not use NAAT consistently, which leads to underdiagnosis. Asymptomatic infections are also missed, particularly among MSM, when appropriate sites are not sampled, for example the pharynx and the rectum for gonorrhoea. The use of NAAT, however, affects the capacity of some countries to perform susceptibility testing for *Neisseria gonorrhoeae*. With the threat from strains which are resistant to third-generation cephalosporins, it is essential to ensure that countries remain able to perform cultures and susceptibility testing. The European Gonococcal Antimicrobial Susceptibility Surveillance Programme[17] supports countries through a quality assessment programme on bacterial culture and drug susceptibility testing. In 2012, ECDC also launched a response plan to support EU/EEA Member States in controlling the threat of multidrug-resistant gonorrhoea in Europe[18].

National testing and screening policies have a major effect on reported cases. Chlamydia surveillance data in particular are affected by testing policies implemented at the national level, which vary substantially across Europe[19]. Countries with screening programmes or opportunistic testing policies tend to report higher rates of *Chlamydia trachomatis* infections. The target groups of these policies (e.g. young adults) clearly influence the surveillance results. A deeper understanding of the groups being tested across Europe would allow for better interpretation of surveillance data. In this sense, monitoring positivity results in selected settings and for specific groups over time would also provide better data on the epidemiology of infections across Europe. A wider implementation of prevalence surveys would also

[14] McCormack S, Dunn D. Pragmatic open-label randomised trial of pre-exposure prophylaxis: the PROUD study: proceedings of the Conference on Retroviruses and Opportunistic Infections, CROI, 23–26 February 2015, Seattle, Washington. Available from http://www.croiconference.org/sessions/pragmatic-open-label-randomised-trial-preexposure-prophylaxis-proud-study

[15] Koper NE, van der Sande MA, Gotz HM, Koedijk FD, on behalf of the Dutch STI clinics. Lymphogranuloma venereum among men who have sex with men in the Netherlands: regional differences in testing rates lead to underestimation of the incidence, 2006–2012. Euro Surveill. 2013;18(34)

[16] World Health Organization. The global elimination of congenital syphilis: rationale and strategy for action. Geneva: WHO; 2007. Available from: http://whqlibdoc.who.int/publications/2007/9789241595858_eng.pdf

[17] European Centre for Disease Prevention and Control. Gonococcal antimicrobial susceptibility surveillance in Europe, 2013. Stockholm: ECDC; 2015.

[18] European Centre for Disease Prevention and Control. Response plan to control and manage the threat of multidrug-resistant gonorrhoea in Europe. Stockholm: ECDC; 2012.

[19] European Centre for Disease Prevention and Control. Chlamydia control in Europe: literature review. Stockholm: ECDC; 2014.

provide more accurate and comparable information on the burden of *Chlamydia trachomatis* infections in the EU/EEA.

Testing policies directly affect gonorrhoea surveillance. Recent guidance from BASHH[20], for example, which included the use of NAAT to test rectal and pharyngeal specimens and recommended testing at multiple sites among MSM, is likely to have led to increased testing at these sites, where infection is frequently asymptomatic, leading to increased diagnoses. Similarly, inclusion of syphilis testing in the management of HIV-positive MSM might lead to more syphilis diagnoses in this high-risk group. Variations in policies across the EU/EEA result in different rates of underdiagnosis across Europe.

Changes in testing policies and coverage are likely to affect the interpretation of long-term STI trends. The increasing trend in notification rates of *Chlamydia trachomatis* infections over the last decade is most likely due to improved case detection, better diagnostic tools, more sensitive surveillance systems, and new chlamydia screening programmes in some countries. Decreasing or low rates may reflect the lack of accurate diagnostic tools or diagnostic capacity in a number of countries rather than an actual low prevalence of *Chlamydia trachomatis* infections.

In recent years, trends in the number of *Chlamydia trachomatis* infections appear to have stabilised, while gonorrhoea rates have gone up: since 2008, the overall numbers for gonorrhoea have shown an upturn, particularly among men. Significant increases have also been noted in many European countries – based on the male-to-female ratio and the proportion of cases among MSM (where reported). This appears to be most likely due to increased cases numbers among MSM. Syphilis rates showed a long-term decreasing trend overall, which has stabilised since 2010. Gender-specific trends, however, are divergent, and rates among men appear to have started increasing while rates among women have continued on a downward trend. Again, this is likely to be driven by increased notifications among MSM.

The quality of surveillance data in Europe needs to continue to improve to better monitor disease trends and evaluate public health responses, such as the prevention and control efforts for STI. Although the surveillance data presented in this report are strongly affected by the heterogeneity in healthcare and surveillance systems across Europe, some key points are clear. *Chlamydia trachomatis* infection remains the most prevalent STI, with high rates in the western and northern parts of Europe, where countries focus on testing young adults in order to decrease the number of complications from the infection. Trends in gonorrhoea and syphilis rates differ across countries, but increasing rates in most European countries are in large part due to an increasing number of diagnoses among MSM. While increased testing is likely to account for part of the increase, the concurrent increase in HIV among MSM and data showing high levels of risk behaviour suggest that increased transmission is also playing a role.

20 British Association of Sexual Health and HIV. United Kingdom national guideline for gonorrhoea testing 2012. Macclesfield: BASHH; 2012. Available from: http://www.bashh.org/documents/4490.pdf

Tables

Chlamydia trachomatis infections

Table 1: ***Chlamydia trachomatis*** **infection: number of cases by year of diagnosis, 2004–2013**

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria			537	822	742	597	1085	1004		
Belgium			2060	2480	2601	2942	3310	3566	4675	4983
Bulgaria							49	55	131	323
Croatia									305	356
Cyprus			6	0	1	4	3	6	10	2
Czech Republic										
Denmark	21628	23881	24866	25795	29116	29825	27950	26617	26385	25841
Estonia	2771	2541	2529	2536	2206	2003	1729	1775	1624	1542
Finland	13378	12744	13878	13968	13873	13317	12825	13666	13247	13216
France	3031	3340	3973	4725	6219	7516	9083	10969	13074	12932
Germany										
Greece					71	327	657	502	396	486
Hungary	431	585	598	699	754	711	710	858	1060	1130
Iceland	1736	1622	1728	1813	1834	2271	2197	2091	1918	2179
Ireland	2803	3353	3144	5023	6290	5781	5399	6407	6182	6230
Italy						610	736	715	946	953
Latvia	528	729	820	716	750	1142	1000	1565	1747	2009
Liechtenstein										
Lithuania	406	563	556	403	403	326	367	343	265	306
Luxembourg			1	0	4	0	2	1	4	1
Malta		5	43	70	108	67	138	146	157	123
Netherlands	5075	5937	7140	7821	9355	9652	11374	12918	14732	15794
Norway			21259	22847	23488	22754	22527	22530	21489	22249
Poland			612	627	695	908	539	319	314	406
Portugal										
Romania	5	155	238	115	127	91	97	133	59	18
Slovakia			61	91	105	228	188	305	754	917
Slovenia		9	146	198	120	135	176	232	249	248
Spain	120	148	139	223	402	846	947	1059	1033	1410
Sweden	32257	32824	32535	45858	42783	37771	36932	37262	37773	34909
United Kingdom	106384	111162	115257	123629	206339	218392	218540	216261	236595	235992
EU/EEA total	**190553**	**199598**	**232126**	**260459**	**348386**	**358216**	**358560**	**361305**	**385124**	**384555**

Numbers for Sweden use 'date used for statistics'.

Table 2: *Chlamydia trachomatis* infection: number of cases by year used for statistics, 2003–2012

Country	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Austria			537	822	742	597	1085	1004		
Belgium			2060	2480	2601	2942	3310	3566	4667	4991
Bulgaria							49	55	131	323
Croatia									305	356
Cyprus			6		1	4	3	6	10	2
Czech Republic										
Denmark	21628	23881	24866	25795	29116	29825	27950	26617	26385	25841
Estonia	2771	2541	2528	2480	2200	2015	1737	1763	1596	1625
Finland	13378	12744	13878	13968	13873	13317	12825	13666	13247	13216
France	3031	3340	3973	4725	6219	7516	9083	10969	13074	12932
Germany										
Greece					71	327	657	502	396	486
Hungary	431	585	598	699	754	711	710	858	1060	1130
Iceland	1736	1622	1728	1813	1834	2271	2197	2091	1918	2179
Ireland	2803	3353	3144	5023	6290	5781	5399	6407	6162	6250
Italy						610	736	715	946	953
Latvia	528	729	820	711	704	1127	1042	1576	1740	2029
Liechtenstein										
Lithuania	406	563	556	403	403	326	367	343	265	306
Luxembourg			1		4		2	1	4	1
Malta			45	71	107	61	138	155	139	141
Netherlands	5075	5937	7140	7821	9355	9652	11374	12918	14731	15795
Norway			21259	22847	23488	22754	22527	22530	21489	22249
Poland			612	627	695	908	539	319	314	406
Portugal										
Romania	5	155	238	115	127	91	97	133	59	18
Slovakia			61	91	105	228	186	306	754	918
Slovenia			144	201	127	136	176	232	249	248
Spain	120	148	139	223	402	846	947	1059	1033	1410
Sweden	32263	33035	32518	47081	41974	37775	36814	37290	37691	35886
United Kingdom	106384	111162	115257	123629	206339	218392	218540	216261	236595	235992
EU/EEA total	**190559**	**199795**	**232108**	**261625**	**347531**	**358212**	**358490**	**361342**	**384960**	**385683**

Table 3: *Chlamydia trachomatis* infection: number of cases by gender, 2004–2013

	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
Country	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Austria					159	378	392	430	388	354	315	282	631	454	604	400				
Belgium					542	1508	680	1786	809	1780	1020	1910	1133	2163	1296	2255	1642	3019	1690	3293
Bulgaria													20	29	23	32	55	76	133	190
Croatia																	54	251	87	269
Cyprus					4	2			1	0	0	4	2	1	3	3	3	7	0	2
Czech Republic																				
Denmark	7662	13943	8680	15168	9200	15650	9660	16106	10745	18338	11317	18493	10526	17401	10067	16508	10125	16241	10033	15787
Estonia	604	2167	473	2068	408	2121	438	2098	336	1870	365	1638	258	1471	276	1499	259	1365	167	1375
Finland	5322	8056	5053	7691	5621	8257	5673	8295	5656	8217	5482	7835	5298	7527	5570	8096	5444	7803	5421	7795
France	1036	1995	1162	2177	1263	2708	1555	3169	1817	4330	2152	5274	2581	6427	3238	7634	4112	8845	4126	8685
Germany																				
Greece									39	1	51	48	81	336	112	390	66	325	65	421
Hungary	255	176	348	237	375	223	438	261	500	254	490	221	487	223	598	260	735	325	810	320
Iceland	645	1019	612	949	648	1024	679	1068	703	1079	892	1367	841	1293	799	1247	731	1138	896	1241
Ireland	1264	1492	1518	1763	1454	1659	2042	2877	2481	3540	2303	3388	2409	2895	2761	3446	2715	3311	2740	3407
Italy											286	324	369	367	382	333	523	423	498	455
Latvia	364	164	516	213	533	287	454	262	404	346	524	618	359	641	508	1057	530	1217	658	1351
Liechtenstein																				
Lithuania									177	226	173	153	243	124	198	145	145	120	161	145
Luxembourg					1	0			2	0			0	2			2	2	0	1
Malta			4	1	21	22	47	21	64	38	38	28	83	55	90	56	101	56	75	48
Netherlands	2633	2441	3047	2889	3588	3551	3918	3901	4880	4473	5022	4628	5908	5463	6781	6134	7667	7062	7860	7929
Norway					8181	12932	8674	14003	9031	14346	8578	14088	8587	13868	8753	13701	8529	12912	9009	13219
Poland					473	139	462	165	490	205	544	364	406	133	247	72	236	78	291	115
Portugal																				
Romania	1	4	126	29	184	54	89	26	91	36	67	24	71	26	108	25	55	4	16	2
Slovakia					25	36	23	68	38	67	86	142	36	152	115	190	300	454	366	551
Slovenia			8	1	91	55	141	57	89	31	103	31	115	61	160	71	169	80	182	66
Spain	39	81	44	101	37	102	55	168	163	238	365	480	427	517	545	513	535	487	644	755
Sweden	14063	18165	14099	18681	14131	18402	19673	26185	18614	24162	16333	21434	15907	21022	16054	21206	16286	21487	15008	19901
United Kingdom	48695	57689	52148	59014	56336	58921	60953	62676	81906	123035	85429	131526	87714	130140	87773	127856	96758	137191	96975	136672
EU/EEA total	**82583**	**107392**	**87838**	**110982**	**103275**	**128031**	**116046**	**143622**	**139424**	**206966**	**141935**	**214300**	**144492**	**212791**	**147061**	**213129**	**157777**	**224279**	**157911**	**223995**

Note: Numbers for Sweden use 'date used for statistics'.

Table 4: *Chlamydia trachomatis* infection: number of cases per 100 000 population, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria										
Belgium										
Bulgaria							0.7	0.7	1.8	4.4
Croatia									7.2	8.5
Cyprus			0.8	0	0.1	0.5	0.4	0.7	1.2	0.2
Czech Republic										
Denmark	400.7	441.3	458.2	473.6	531.7	541.1	505.0	478.7	472.8	461.2
Estonia	202.8	187.0	187.2	188.8	164.8	150.0	129.7	133.5	122.5	116.8
Finland	256.3	243.4	264.1	264.7	261.7	250.0	239.7	254.2	245.3	243.5
France										
Germany										
Greece					0.6	2.9	5.9	4.5	3.6	4.4
Hungary										
Iceland	597.4	552.5	576.2	589.3	581.4	711.1	691.7	656.6	600.2	677.0
Ireland	69.6	81.6	74.7	115.7	141.1	127.9	118.7	140.2	134.9	135.7
Italy										
Latvia	23.2	32.4	36.8	32.4	34.2	52.8	47.2	75.4	85.4	99.3
Liechtenstein										
Lithuania	11.9	16.8	16.9	12.4	12.5	10.2	11.7	11.2	8.8	10.3
Luxembourg			0.2	0	0.4	0	0.4	0.2	0.8	0.2
Malta		1.2	10.6	17.3	26.5	16.3	33.3	35.2	37.6	29.2
Netherlands										

Table 4: *Chlamydia trachomatis* infection: number of cases per 100 000 population, 2004–2013 (continued)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Norway			458.1	488.1	495.8	474.1	463.7	457.9	431.0	440.5
Poland			1.6	1.6	1.8	2.4	1.4	0.8	0.8	1.1
Portugal										
Romania	0.0	0.7	1.1	0.5	0.6	0.5	0.5	0.7	0.3	0.1
Slovakia			1.1	1.7	2.0	4.2	3.5	5.7	14.0	16.9
Slovenia		0.5	7.3	9.8	6.0	6.6	8.6	11.3	12.1	12.0
Spain										
Sweden	359.4	364.3	359.6	503.2	465.9	408.1	395.4	395.7	398.3	365.3
United Kingdom	179.1	186.0	191.4	203.8	337.4	354.4	352.1	345.7	372.6	369.3
EU/EEA total	**162.8**	**165.7**	**132.6**	**149.1**	**186.4**	**190.3**	**179.5**	**178.2**	**183.3**	**181.7**

Note: Rates are only calculated for countries with comprehensive surveillance.
Numbers for Sweden use 'date used for statistics'.

Table 5: *Chlamydia trachomatis* infection: number of cases per 100 000 population by gender, 2004–2013

	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
Country	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Austria																				
Belgium																				
Bulgaria													0.6	0.8	0.6	0.8	1.5	2.0	3.8	5.1
Croatia																	2.6	11.6	4.3	12.5
Cyprus					1.1	0.5	0	0	0.3	0	0	1.0	0.5	0.2	0.7	0.7	0.7	1.6	0	0.4
Czech Republic																				
Denmark	287.0	511.2	324.2	554.8	342.5	570.8	358.2	585.6	396.1	663.7	414.2	665.4	383.7	623.4	365.2	588.7	365.9	577.2	361.0	559.1
Estonia	95.1	296.5	74.9	284.4	65.0	293.5	70.2	291.9	54.0	261.0	58.7	229.3	41.6	206.5	44.5	211.1	41.9	193.0	27.1	195.3
Finland	208.5	302.1	197.2	287.6	218.5	307.7	219.6	308.0	217.8	303.9	209.9	288.6	201.8	276.1	211.1	295.8	205.2	283.9	203.3	282.4
France																				
Germany																				
Greece									0.7	0.0	0.9	0.8	1.5	5.9	2.1	6.9	1.2	5.7	1.2	7.5
Hungary																				
Iceland	443.6	701.9	415.8	648.2	428.6	688.7	433.7	706.8	436.9	698.1	550.4	869.0	525.8	819.9	499.4	787.0	455.8	714.8	555.0	773.6
Ireland	63.1	73.7	74.1	85.5	69.1	78.8	94.0	132.7	111.4	158.7	102.2	149.3	106.5	126.5	121.7	149.7	119.6	143.2	120.6	147.0
Italy																				
Latvia	34.9	13.3	50.0	17.5	52.2	23.8	44.8	21.9	40.1	29.2	52.8	52.8	37.0	55.8	53.6	93.8	56.7	109.7	71.0	123.1
Liechtenstein																				
Lithuania									11.9	13.1	11.7	8.9	16.8	7.3	14.1	8.8	10.5	7.4	11.8	9.0
Luxembourg					0.4	0	0	0	0	0	0	0	0	0.8	0	0	0.8	0.8	0	0.4
Malta			2.0	0.5	10.5	10.8	23.3	10.3	31.6	18.5	18.6	13.6	40.3	26.5	43.6	26.8	48.6	26.7	35.7	22.7
Netherlands																				
Norway					355.4	553.1	372.9	594.5	382.7	603.4	358.2	586.0	353.8	570.4	355.7	557.1	341.3	519.2	355.3	525.5
Poland					2.6	0.7	2.5	0.8	2.7	1.0	3.0	1.8	2.2	0.7	1.3	0.4	1.3	0.4	1.6	0.6
Portugal																				
Romania	0.0	0.0	1.2	0.3	1.8	0.5	0.9	0.2	0.9	0.3	0.7	0.2	0.7	0.3	1.1	0.2	0.6	0.0	0.2	0.0
Slovakia					1.0	1.3	0.9	2.5	1.5	2.4	3.3	5.1	1.4	5.5	4.4	6.9	11.4	16.4	13.9	19.9
Slovenia			0.8	0.1	9.3	5.4	14.3	5.6	9.0	3.0	10.3	3.0	11.3	5.9	15.8	6.9	16.6	7.7	17.9	6.3
Spain																				
Sweden	316.3	401.1	315.7	411.0	315.0	403.4	434.9	570.5	407.9	523.1	354.8	460.7	342.2	448.1	342.3	448.8	344.5	451.8	314.9	415.5
United Kingdom	167.2	190.5	177.9	193.8	190.6	192.2	204.6	203.1	272.5	395.6	281.8	420.0	287.1	412.9	284.7	403.0	310.1	424.9	308.6	420.9
EU/EEA total	**148.3**	**185.7**	**153.0**	**186.3**	**123.8**	**145.7**	**139.2**	**163.5**	**152.5**	**218.6**	**154.3**	**223.3**	**147.8**	**208.9**	**147.8**	**207.2**	**152.9**	**209.2**	**153.3**	**207.4**

Note: Rates are only calculated for countries with comprehensive surveillance. Numbers for Sweden use 'date used for statistics'.

Table 6: *Chlamydia trachomatis* infection: number of cases by age category, 2004–2013

Age	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total number by age category										
0–14	851	866	981	1077	1121	1097	1122	1038	1791	1740
15–19	50412	52734	59535	70115	111857	117106	114661	107675	101261	98416
20–24	72043	75675	86448	95492	136006	145206	147466	149983	152896	155684
25–34	46167	47660	56388	59821	65767	65163	64184	68676	88807	93713
35–44	11164	11715	13648	14239	15526	15924	16037	17048	21669	22189
45+	3210	3501	4333	4855	5726	6213	6797	7695	9948	10479
NA	6706	7447	9775	14220	11688	6599	7754	8871	8438	1572
Total	**190553**	**199598**	**231108**	**259819**	**347691**	**357308**	**358021**	**360986**	**384810**	**383793**
Percentage by age category										
0–14	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.5	0.5
15–19	26.5	26.4	25.8	27.0	32.2	32.8	32.0	29.8	26.3	25.6
20–24	37.8	37.9	37.4	36.8	39.1	40.6	41.2	41.5	39.7	40.6
25–34	24.2	23.9	24.4	23.0	18.9	18.2	17.9	19.0	23.1	24.4
35–44	5.9	5.9	5.9	5.5	4.5	4.5	4.5	4.7	5.6	5.8
45+	1.7	1.8	1.9	1.9	1.6	1.7	1.9	2.1	2.6	2.7
NA	3.5	3.7	4.2	5.5	3.4	1.8	2.2	2.5	2.2	0.4

Note: NA includes data for countries which reported incorrect age groups or unknown case classification. Numbers for Sweden use 'date used for statistics'.

Table 7: *Chlamydia trachomatis* infection: number of cases by transmission category and gender, 2004–2013

Country	Transmission	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	HETERO_F						226				
	HETERO_M						271				
	MSM						6				
	UNK			537	822	742	94	1085	1004		
Belgium	UNK			2060	2480	2601	2942	3310	3566	4675	4983
Bulgaria	UNK							49	55	131	323
Croatia	UNK									305	356
Cyprus	HETERO_F								2		
	UNK			6		1	4	3	4	10	2
Denmark	UNK	21628	23881	24866	25795	29116	29825	27950	26617	26385	25841
Estonia	HETERO_F							19	132	245	217
	HETERO_M							2	9	25	29
	MSM										1
	UNK	2771	2541	2529	2536	2206	2003	1708	1634	1354	1295
Finland	UNK	13378	12744	13878	13968	13873	13317	12825	13666	13247	13216
France	UNK	3031	3340	3973	4725	6219	7516	9083	10969	13074	12932
Greece	HETERO_F					1	48	336	390	325	421
	HETERO_M					34	43	48	31	7	15
	MSM					4	8	11	10	1	0
	UNK					32	228	262	71	63	50
Hungary	UNK	431	585	598	699	754	711	710	858	1060	1130
Iceland	UNK	1736	1622	1728	1813	1834	2271	2197	2091	1918	2179
Ireland	HETERO_F										13
	HETERO_M										35
	MSM										6
	UNK	2803	3353	3144	5023	6290	5781	5399	6407	6182	6176
Italy	HETERO_F						71	64	123	123	135
	HETERO_M						120	168	191	261	257
	MSM						30	41	53	84	73
	UNK						389	463	348	478	488
Latvia	HETERO_F					1	192	359	497	847	919	950
	HETERO_M					1	276	376	260	419	414	510
	MSM					3	9	2	1	4	5
	UNK	528	729	820	714	277	395	239	296	406	543
	O					2	3	2	2	4	1
Lithuania	HETERO_F						195	124	110	118	101	129
	HETERO_M						169	160	238	190	142	154
	MSM						5				
	UNK	406	563	556	403	32	40	18	35	21	23
	O					2	2	1		1	
Luxembourg	HETERO_F									2	1
	HETERO_M									2	
	UNK			1		4		2	1		

Table 7: ***Chlamydia trachomatis*** **infection: number of cases by transmission category and gender, 2004–2013 (continued)**

Country	Transmission	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Malta	HETERO_F		1	21	21	36	27	55	56	56	48
	HETERO_M		4	19	39	55	27	60	61	65	61
	MSM			1	8	9	6	22	28	36	14
	MTCT								1		
	UNK			2	2	8	6	1			
	O						1				
Netherlands	HETERO_F	2441	2889	3551	3901	4473	4628	5463	6134	7062	7929
	HETERO_M	1865	2234	2630	2819	3319	3441	3908	4491	5076	5202
	MSM	752	803	951	1095	1556	1573	1996	2285	2567	2653
	UNK	16	10	7	4	5	8	4	5	24	6
	O	1	1	1	2	2	2	3	3	3	4
Norway	UNK			21259	22847	23488	22754	22527	22530	21489	22249
Poland	UNK			612	627	695	908	539	319	314	406
Romania	HETERO_F		11	16	26	30	24	25	20	4	1
	HETERO_M		42	46	89	46	66	70	66	55	13
	MSM						1				
	UNK	5	7	78		39		2	47		4
	O		95	98		12					
Slovakia	HETERO_F								188	270	264
	HETERO_M							2	110	214	221
	MSM									2	1
	MTCT									2	4
	UNK			61	91	105	228	186	7	266	427
Slovenia	HETERO_F		1	32	39	19	24	48	53	53	39
	HETERO_M		8	71	79	49	94	102	138	146	133
	MSM			6	35	14	5	2	6	5	9
	UNK			37	45	38	12	24	35	45	67
Spain	UNK	120	148	139	223	402	846	947	1059	1033	1410
Sweden	HETERO_F	17721	17906	17369	24582	22467	19836	19343	19409	19556	18378
	HETERO_M	13348	13304	13010	18202	17110	14757	14210	14219	14365	13332
	MSM	346	297	310	410	391	428	515	574	534	537
	MTCT					2	22	27	16	19	19
	UNK	795	1198	1664	2430	2629	2522	2685	2882	3116	2490
	O	47	119	182	234	184	206	152	162	183	153
United Kingdom	HETERO_F	57689	59014	58921	62676	74087	57561	59290	64653	61395	62764
	HETERO_M	48648	52077	56268	60881	65306	46811	48303	51717	51807	52767
	MSM	47	71	68	72	89	4312	5351	7631	8212	9077
	UNK	0	0	0	0	66857	109708	105596	92260	115181	111384
EU/EEA total	**HETERO_F**	**77851**	**79822**	**79910**	**91246**	**101500**	**82928**	**85250**	**92125**	**90111**	**91289**
	HETERO_M	**63861**	**67669**	**72044**	**82110**	**86364**	**66166**	**67371**	**71642**	**72579**	**72729**
	MSM	**1145**	**1171**	**1336**	**1620**	**2071**	**6378**	**7940**	**10588**	**11445**	**12376**
	MTCT	**0**	**0**	**0**	**0**	**2**	**22**	**27**	**17**	**21**	**23**
	UNK	**47648**	**50721**	**78555**	**85247**	**158247**	**202508**	**197814**	**186766**	**210777**	**207980**
	O	**48**	**215**	**281**	**236**	**202**	**214**	**158**	**167**	**191**	**158**

Note: Cases with known transmission mode 'heterosexual' and 'unknown gender' are classified as NA.

Numbers for Sweden use 'date used for statistics'.

Gonorrhoea

Table 8: Gonorrhoea: number of cases by year of diagnosis, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	848	660	171	142	263	143	331	470	402	1148
Belgium			535	585	718	734	752	842	931	1011
Bulgaria	235	181	165	149	178	191	184	197	99	96
Croatia									14	14
Cyprus			8	5	2	7	23	11	6	2
Czech Republic	885	856	1087	1108	809	716	749	714	1142	1402
Denmark	416	445	414	352	409	563	482	501	673	817
Estonia	484	288	280	176	146	126	118	173	215	131
Finland	247	235	231	192	198	237	255	289	312	267
France	99	153	196	217	236	395	534	737	936	1349
Germany										
Greece	177	197	190	201	208	164	312	378	238	219
Hungary	742	851	916	1041	892	872	1170	1369	1487	1526
Iceland	9	19	31	24	25	47	18	32	29	19
Ireland	270	342	431	417	444	434	625	834	1139	1264
Italy	418	427	392	243	221	667	365	356	289	
Latvia	537	694	746	670	500	433	349	545	607	554
Liechtenstein										
Lithuania	482	433	437	471	533	391	315	248	219	190
Luxembourg		0	4	1	18	6	3	2	5	4
Malta			33	52	50	62	48	46	29	61
Netherlands	1656	1603	1778	1830	1969	2411	2815	3576	3998	4171
Norway	264	278	236	238	301	269	412	368	443	506
Poland			395	330	285	402	301	298	733	549
Portugal	28	52	53	74	67	114	89	120	120	116
Romania	2119	1678	1348	815	631	622	479	510	323	341
Slovakia			66	101	152	174	130	212	286	374
Slovenia			34	42	40	30	44	25	45	62
Spain	981	1155	1423	1698	1897	1954	2306	2640	3044	3314
Sweden	579	680	658	642	720	613	847	952	1090	1111
United Kingdom	22234	19189	18801	18631	16451	17653	18718	23319	28787	32377
EU/EEA total	**33710**	**30416**	**31059**	**30447**	**28363**	**30430**	**32774**	**39764**	**47641**	**52995**

Table 9: Gonorrhoea: number of cases by year of statistics, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	848	660	171	142	263	143	331	470	402	1148
Belgium			535	585	718	711	775	842	930	1012
Bulgaria	235	181	165	149	178	191	184	197	99	96
Croatia									14	14
Cyprus			8	5	2	7	23	11	6	2
Czech Republic	914	852	1075	1129	805	718	748	709	1144	1410
Denmark	416	445	414	352	409	563	482	501	673	817
Estonia	484	288	280	174	146	127	109	176	217	136
Finland	247	235	231	192	198	237	255	289	312	267
France	99	153	196	217	236	395	534	737	936	1349
Germany										
Greece	177	197	190	201	208	164	312	378	238	219
Hungary	742	851	916	1041	892	872	1170	1369	1487	1526
Iceland	9	19	31	24	25	47	18	32	29	19
Ireland	270	342	431	417	444	434	625	834	1108	1295
Italy	418	427	392	243	221	667	365	356	289	
Latvia	537	694	746	669	487	433	357	550	602	560
Liechtenstein										
Lithuania	482	433	437	471	533	391	315	248	219	190
Luxembourg		0	4	1	18	6	3	2	5	4
Malta			32	53	49	63	47	47	29	61
Netherlands	1656	1603	1778	1830	1969	2411	2815	3576	3998	4171
Norway	264	278	236	238	301	269	412	368	443	506
Poland			395	330	285	402	301	298	733	549
Portugal	28	52	53	74	67	114	89	120	119	117

Table 9: Gonorrhoea: number of cases by year of statistics, 2004–2013 (continued)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Romania	2119	1678	1348	815	631	622	479	521	314	339
Slovakia			66	101	152	171	126	201	301	377
Slovenia			34	39	43	30	44	25	45	62
Spain	981	1155	1423	1698	1897	1954	2306	2640	3044	3314
Sweden	570	691	677	642	724	614	842	951	1098	1114
United Kingdom	22234	19189	18801	18631	16451	17653	18718	23319	28787	32377
EU/EEA total	**33730**	**30423**	**31065**	**30463**	**28352**	**30409**	**32785**	**39767**	**47621**	**53051**

Note: Probable cases for Austria/Slovakia are excluded. Microbiological data from Spain are excluded.

Table 10: Gonorrhoea: number of cases by gender, 2004–2013

	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
Country	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Austria	556	181	433	140	42	129	36	106	48	215	31	112	99	232	76	394	55	347		
Belgium					417	115	433	147	557	160	579	151	582	163	647	189	702	220	776	235
Bulgaria	187	48	152	29	135	30	137	12	143	35	167	24	156	28	147	50	79	20	79	17
Croatia																	12	2	14	0
Cyprus					8	0	4	1	2	0	6	1	21	2	10	1	4	2	2	0
Czech Republic	576	309	593	263	774	313	783	325	605	204	519	197	542	207	515	199	848	294	1033	369
Denmark	363	53	391	54	342	72	290	62	323	86	431	132	363	119	405	96	484	189	583	234
Estonia	221	263	114	174	90	190	65	111	54	92	54	72	41	77	58	115	99	116	42	89
Finland	197	50	191	44	171	60	156	36	158	40	179	58	190	65	201	88	222	90	197	70
France	97	2	148	5	186	10	196	21	212	24	337	58	445	89	557	180	718	218	1073	275
Germany																				
Greece	174	3	192	5	186	4	198	3	203	5	161	3	260	6	333	31	193	35	214	5
Hungary	539	203	614	237	713	203	790	251	647	245	669	203	898	272	1071	298	1130	357	1213	313
Iceland	3	6	14	5	21	10	19	5	14	11	24	23	12	5	23	8	21	7	13	6
Ireland	234	30	303	32	380	48	355	56	360	73	341	88	469	149	650	157	892	236	999	255
Italy	379	35	399	23	358	32	225	17	201	20	622	44	333	29	330	22	261	26		
Latvia	415	122	522	172	552	194	522	148	361	139	322	111	274	75	407	138	436	171	382	172
Liechtenstein																				
Lithuania									452	81	317	74	283	32	225	23	194	25	168	22
Luxembourg			0	0	4	0	1	0	12	4	4	1	3	0	1	0	4	1	4	0
Malta					27	6	43	9	42	8	45	16	43	5	44	2	23	5	48	13
Netherlands	1300	356	1270	333	1401	377	1405	424	1512	456	1875	536	2158	655	2668	907	3030	964	3174	993
Norway	227	37	226	52	205	31	208	30	260	41	235	34	365	47	314	54	392	51	438	68
Poland					351	44	295	35	257	28	358	44	273	28	267	31	535	198	490	59
Portugal	19	9	48	4	49	4	65	9	56	11	99	15	75	14	105	15	106	14	89	27
Romania	1671	448	1396	282	1114	234	696	119	553	78	549	73	433	46	460	50	292	31	312	29
Slovakia					53	13	75	26	121	31	132	42	100	30	151	60	221	65	283	91
Slovenia					32	2	37	5	39	1	25	5	42	2	23	2	42	3	56	6
Spain																				
Sweden	501	78	570	110	522	136	519	123	583	137	470	142	625	222	656	296	757	333	795	316
United Kingdom	15484	6750	13719	5470	13334	5467	12701	5930	10860	5591	11888	5747	12921	5784	16655	6660	20727	8059	23712	8659
EU/EEA total	**23143**	**8983**	**21295**	**7434**	**21467**	**7724**	**20254**	**8011**	**18635**	**7816**	**20439**	**8006**	**22006**	**8383**	**26999**	**10066**	**32479**	**12079**	**36189**	**12323**

Probable cases for Slovakia are excluded. Microbiological data from Spain are excluded.

Table 11: Gonorrhoea: number of cases per 100 000 population, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria										
Belgium										
Bulgaria	3	2.3	2.1	2	2.4	2.6	2.5	2.7	1.4	1.3
Croatia									0.3	0.3
Cyprus			1.1	0.7	0.3	0.9	2.8	1.3	0.7	0.2
Czech Republic	8.7	8.4	10.6	10.8	7.8	6.9	7.2	6.8	10.9	13.3
Denmark	7.7	8.2	7.6	6.5	7.5	10.2	8.7	9	12.1	14.6
Estonia	35.4	21.2	20.7	13.1	10.9	9.4	8.9	13	16.2	9.9
Finland	4.7	4.5	4.4	3.6	3.7	4.4	4.8	5.4	5.8	4.9
France										
Germany										
Greece	1.6	1.8	1.7	1.8	1.9	1.5	2.8	3.4	2.1	2
Hungary										
Iceland	3.1	6.5	10.3	7.8	7.9	14.7	5.7	10	9.1	5.9
Ireland	6.7	8.3	10.2	9.6	10	9.6	13.7	18.2	24.9	27.5
Italy	0.7	0.7	0.7	0.4	0.4	0.6	0.6	0.6	0.5	
Latvia	23.6	30.8	33.5	30.3	22.8	20	16.5	26.3	29.7	27.4
Liechtenstein										
Lithuania	14.2	12.9	13.3	14.5	16.6	12.3	10	8.1	7.3	6.4
Luxembourg			0.9	0.2	3.7	1.2	0.6	0.4	1	0.7
Malta			8.1	12.8	12.3	15.1	11.6	11.1	6.9	14.5
Netherlands										
Norway	5.8	6	5.1	5.1	6.4	5.6	8.5	7.5	8.9	10
Poland			1	0.9	0.7	1.1	0.8	0.8	1.9	1.4
Portugal	0.3	0.5	0.5	0.7	0.6	1.1	0.8	1.1	1.1	1.1
Romania	9.8	7.8	6.3	3.9	3.1	3	2.4	2.5	1.6	1.7
Slovakia			1.2	1.9	2.8	3.2	2.4	3.9	5.3	6.9
Slovenia			1.7	2.1	2	1.5	2.1	1.2	2.2	3
Spain	2.3	2.7	3.2	3.8	4.2	4.2	5	5.7	6.5	7.1
Sweden	6.5	7.5	7.3	7	7.8	6.6	9.1	10.1	11.5	11.6
United Kingdom	37.2	31.9	31	30.5	26.7	28.5	29.9	37	45.3	50.7
EU/EEA total	**11.8**	**10.5**	**9**	**8.7**	**7.8**	**8.2**	**8.7**	**10.5**	**12.5**	**16.9**

Note: Probable cases for Austria/Slovakia are excluded. Microbiological data from Spain are excluded.

Table 12: Gonorrhoea: number of cases per 100 000 population by gender, 2004–2013

	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
Country	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Austria																				
Belgium																				
Bulgaria	4.9	1.2	4	0.7	3.6	0.8	3.7	0.3	3.9	0.9	4.6	0.6	4.3	0.7	4.1	1.3	2.2	0.5	2.2	0.5
Croatia																	0.6	0.1	0.7	0
Cyprus					2.2		1.1	0.3	0.5		1.5	0.2	5.3	0.5	2.4	0.2	1	0.5	0.5	
Czech Republic	11.6	5.9	11.9	5	15.5	6	15.6	6.2	11.9	3.9	10.1	3.7	10.6	3.9	10	3.7	16.4	5.5	20	6.9
Denmark	13.6	1.9	14.6	2	12.7	2.6	10.8	2.3	11.9	3.1	15.8	4.7	13.2	4.3	14.7	3.4	17.5	6.7	21	8.3
Estonia	34.8	36	18	23.9	14.3	26.3	10.4	15.4	8.7	12.8	8.7	10.1	6.6	10.8	9.4	16.2	16	16.4	6.8	12.6
Finland	7.7	1.9	7.5	1.6	6.6	2.2	6	1.3	6.1	1.5	6.9	2.1	7.2	2.4	7.6	3.2	8.4	3.3	7.4	2.5
France																				
Germany																				
Greece	3.2	0.1	3.5	0.1	3.4	0.1	3.6	0.1	3.7	0.1	2.9	0.1	4.7	0.1	6.1	0.5	3.5	0.6	4	0.1
Hungary																				
Iceland	2.1	4.1	9.5	3.4	13.9	6.7	12.1	3.3	8.7	7.1	14.8	14.6	7.5	3.2	14.4	5	13.1	4.4	8.1	3.7
Ireland	11.7	1.5	14.8	1.6	18.1	2.3	16.3	2.6	16.2	3.3	15.1	3.9	20.7	6.5	28.6	6.8	39.3	10.2	44	11
Italy	1.4	0.1	1.4	0.1	1.3	0.1	0.8	0.1	0.7	0.1	1.1	0.1	1.2	0.1	1.1	0.1	0.9	0.1		
Latvia	39.7	9.9	50.6	14.1	54	16.1	51.5	12.4	35.8	11.7	32.4	9.5	28.2	6.5	42.9	12.2	46.6	15.4	41.2	15.7
Liechtenstein																				
Lithuania									30.4	4.7	21.5	4.3	19.5	1.9	16	1.4	14	1.5	12.3	1.4
Luxembourg					1.7		0.4		5	1.6	1.6	0.4	1.2		0.4		1.5	0.4	1.5	
Malta					13.4	2.9	21.3	4.4	20.7	3.9	22	7.8	20.9	2.4	21.3	1	11.1	2.4	22.9	6.1
Netherlands																				

Table 12: Gonorrhoea: number of cases per 100 000 population by gender, 2004–2013 (continued)

	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
Country	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Norway	10	1.6	9.9	2.2	8.9	1.3	8.9	1.3	11	1.7	9.8	1.4	15	1.9	12.8	2.2	15.7	2.1	17.3	2.7
Poland					1.9	0.2	1.6	0.2	1.4	0.1	1.9	0.2	1.5	0.1	1.4	0.2	2.9	1	2.6	0.3
Portugal	0.4	0.2	0.9	0.1	1	0.1	1.3	0.2	1.1	0.2	2	0.3	1.5	0.3	2.1	0.3	2.1	0.3	1.8	0.5
Romania	16	4.1	13.4	2.6	10.8	2.1	6.8	1.1	5.5	0.7	5.5	0.7	4.4	0.4	4.7	0.5	3	0.3	3.2	0.3
Slovakia					2	0.5	2.9	0.9	4.6	1.1	5	1.5	3.8	1.1	5.8	2.2	8.4	2.3	10.7	3.3
Slovenia					3.3	0.2	3.7	0.5	4	0.1	2.5	0.5	4.1	0.2	2.3	0.2	4.1	0.3	5.5	0.6
Spain																				
Sweden	11.3	1.7	12.8	2.4	11.6	3	11.5	2.7	12.8	3	10.2	3.1	13.4	4.7	14	6.3	16	7	16.7	6.6
United Kingdom	53	22.1	46.6	17.8	45	17.7	42.5	19	36	17.8	39.1	18.2	42.1	18.2	53.8	20.8	66.4	25	75.5	26.7
EU/EEA total	**20.1**	**7.6**	**18.3**	**6.2**	**14.8**	**5.2**	**13.7**	**5.3**	**12.2**	**5**	**12.9**	**5.1**	**13.8**	**5.1**	**16.9**	**5.9**	**20.3**	**7.2**	**28.9**	**9.7**

Note: Rates are only calculated for countries with comprehensive surveillance.

Table 13: Gonorrhoea: number of cases by age category, 2004–2013

Age	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total number by age category										
0–14	91	100	78	82	71	78	66	85	99	102
15–19	5723	4650	4635	4545	4372	4450	4318	4803	5411	5864
20–24	8534	7518	7558	7057	6823	7648	8175	9735	11578	12467
25–34	9388	8624	8827	7488	7383	8489	9413	11881	14427	16936
35–44	4664	4434	4542	3818	3581	4156	4507	5543	6637	7536
45+	2039	1956	2179	1972	1982	2553	2722	3541	4155	4818
NA	1200	1131	1814	3751	2243	1090	1255	1525	2141	1928
Total	**31639**	**28413**	**29633**	**28713**	**26455**	**28464**	**30456**	**37113**	**44448**	**49651**
Percentage by age category										
0–14	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
15–19	18.1	16.4	15.6	15.8	16.5	15.6	14.2	12.9	12.2	11.8
20–24	27	26.5	25.5	24.6	25.8	26.9	26.8	26.2	26	25.1
25–34	29.7	30.4	29.8	26.1	27.9	29.8	30.9	32	32.5	34.1
35–44	14.7	15.6	15.3	13.3	13.5	14.6	14.8	14.9	14.9	15.2
45+	6.4	6.9	7.4	6.9	7.5	9	8.9	9.5	9.3	9.7
NA	3.8	4	6.1	13.1	8.5	3.8	4.1	4.1	4.8	3.9

Note: NA includes data for countries which reported incorrect age groups.

Table 14: Gonorrhoea: number of cases by transmission category and gender, 2004–2013

Country	Transmission	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	HETERO_F			129		215	112	232	391	347	
	HETERO_M			30		26	23	63	49	49	
	MSM			10		12	6	34	20	6	
	UNK	848	660	2	142	10	2	2	10		1148
Belgium	UNK			535	585	718	734	752	842	931	1011
Bulgaria	UNK	235	181	165	149	178	191	184	197	99	96
Croatia	UNK									14	14
Cyprus	HETERO_F									1	
	HETERO_M					2	2				
	MSM									1	
	UNK			8	5		5	23	11	4	2
Czech Republic	HETERO_F	291	255	297	310	194	183	199	195	282	349
	HETERO_M	433	398	563	550	430	331	367	355	535	696
	MSM	96	167	183	200	145	169	161	151	293	301
	UNK	65	35	41	43	37	32	20	11	27	48
	O		1	3	5	3	1	2	2	5	8
Denmark	HETERO_F	51	50	72	61	84	122	110	96	189	234
	HETERO_M	129	143	152	142	174	235	174	201	262	256
	MSM	200	204	147	126	117	158	153	187	199	304
	UNK	36	48	43	23	34	48	45	17	23	23
Estonia	HETERO_F							3	10	18	21
	HETERO_M							5	5	7	10
	MSM										5
	MTCT						1				
	UNK	484	288	280	176	146	125	110	158	190	95
Finland	HETERO_F								64	63	59
	HETERO_M								81	93	87
	MSM								61	70	69
	UNK	247	235	231	192	198	237	255	83	86	52
France	HETERO_F	2	5	10	21	23	58	85	176	215	264
	HETERO_M	28	44	51	65	61	122	183	238	250	341
	MSM	68	104	132	128	149	214	254	308	458	724
	UNK	1		3	3	2	1	8	11	10	8
	O					1		4	4	3	12
Greece	HETERO_F					5	3	6	31	35	5
	HETERO_M					130	119	155	210	99	104
	MSM					45	39	53	35	41	37
	UNK	177	197	190	201	28	3	98	102	63	73
Hungary	UNK	742	851	916	1041	892	872	1170	1369	1487	1526
Iceland	HETERO_F			7	2	2					
	HETERO_M			12	6	4					
	MSM				1	1					
	UNK	9	19	12	15	18	47	18	32	29	19
Ireland	HETERO_F									1	63
	HETERO_M									6	92
	MSM									12	410
	UNK	270	342	431	417	444	434	625	834	1120	699
Italy	HETERO_F										
	HETERO_M										
	MSM										
	UNK	418	427	392	243	221	667	365	356	289	
Latvia	HETERO_F				1	83	78	58	118	149	138
	HETERO_M					214	218	185	333	367	300
	MSM					1	6	2	10	7	6
	UNK	537	694	746	669	202	131	104	84	82	108
	O									2	2
Lithuania	HETERO_F					77	68	30	22	24	20
	HETERO_M					435	282	265	217	184	162
	MSM					9	1	7	3	1	
	UNK	482	433	437	471	10	36	10	5	9	8
	O					2	4	3	1	1	
Luxembourg	HETERO_M									2	2
	MSM								1	1	
	UNK		0	4	1	18	6	3	1	2	2

Table 14: Gonorrhoea: number of cases by transmission category and gender, 2004–2013 (continued)

Country	Transmission	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Malta	HETERO_F			6	8	7	11	5	2	3	12
	HETERO_M			6	31	29	30	27	25	12	29
	MSM			20	11	7	12	14	17	10	16
	UNK			1	1	6	7	2	2	4	4
	O				1	1	2				
Netherlands	HETERO_F	356	333	377	424	456	536	655	907	964	993
	HETERO_M	511	418	432	436	417	481	545	711	728	623
	MSM	786	848	966	964	1095	1392	1612	1955	2291	2550
	UNK	3	4	3	5		2	1	2	11	1
	O				1	1		2	1	4	4
Norway	HETERO_F	37	52	31	30	41	34	45	54	51	68
	HETERO_M	115	139	126	130	162	135	148	137	149	175
	MSM	109	80	68	77	98	95	215	176	239	262
	MTCT						1	1			
	UNK	3	7	11	1		4	2	1	4	1
	O							1			
Poland	UNK			395	330	285	402	301	298	733	549
Portugal	HETERO_F								1	1	1
	HETERO_M								1	3	8
	MSM								5	3	3
	MTCT						1				2
	UNK	28	52	53	74	67	113	89	113	113	102
Romania	HETERO_F		281	234	119	63	73	46	39	30	27
	HETERO_M		1392	1107	694	423	547	433	392	285	277
	MSM		3	7	2	1	1		2		1
	UNK	2119				90			77	8	36
	O		2			54	1				
Slovakia	HETERO_F							1	35	39	43
	HETERO_M							6	84	106	134
	MSM									2	2
	MTCT								1	2	
	UNK			66	101	152	174	123	92	137	195
Slovenia	HETERO_F			2	4	1	5	2	1	3	5
	HETERO_M			19	9	27	16	24	14	16	38
	MSM			12	25	10	7	17	8	21	13
	UNK			1	4	2	2	1	2	5	6
Spain	UNK	981	1155	1423	1698	1897	1954	2306	2640	3044	3314
Sweden	HETERO_F	78	107	117	111	128	140	212	282	326	282
	HETERO_M	225	233	268	276	310	274	329	371	379	330
	MSM	267	322	191	197	242	172	279	265	359	416
	MTCT						1	3	1		
	UNK	7	16	80	50	34	24	22	23	19	72
	O	2	2	2	8	6	2	2	10	7	11
United Kingdom	HETERO_F	6750	5470	5467	5930	5591	4379	5096	6002	7670	8305
	HETERO_M	11629	9456	8919	9046	7890	5904	6564	7527	8861	9114
	MSM	3855	4263	4415	3655	2970	3903	5023	8078	11118	13938
	UNK	0	0	0	0	0	3467	2035	1712	1138	1020
EU/EEA total	**HETERO_F**	**7565**	**6553**	**6749**	**7021**	**6970**	**5813**	**6785**	**8426**	**10411**	**10889**
	HETERO_M	**13070**	**12223**	**11685**	**11385**	**10734**	**8863**	**9473**	**10951**	**12393**	**12778**
	MSM	**5381**	**5991**	**6151**	**5386**	**4902**	**6339**	**7824**	**11282**	**15132**	**19057**
	MTCT	**0**	**0**	**0**	**0**	**0**	**4**	**4**	**2**	**2**	**2**
	UNK	**7692**	**5644**	**6469**	**6640**	**5689**	**9401**	**8674**	**9085**	**9681**	**10232**
	O	**2**	**5**	**5**	**15**	**68**	**10**	**14**	**18**	**22**	**37**

Syphilis

Table 15: Syphilis: number of cases by year of diagnosis, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	312	267	25	58	61	62	59	72	78	538
Belgium	245	349	281	397	586	699	704	746	778	1030
Bulgaria	861	572	490	440	419	420	397	314	309	354
Croatia									28	80
Cyprus			13	10	14	15	20	16	6	12
Czech Republic	97	58	75	205	342	697	462	372	329	395
Denmark	119	117	77	92	151	255	413	427	343	317
Estonia	152	111	125	78	71	57	69	66	40	38
Finland	108	140	127	185	211	194	200	176	203	156
France	403	341	478	597	570	541	657	784	865	1014
Germany	3353	3233	3161	3277	3186	2738	3029	3692	4405	5010
Greece	103	139	141	197	155	259	241	272	363	300
Hungary	455	541	559	393	549	489	504	565	621	627
Iceland	4	3	4	1	2	0	5	2	5	3
Ireland	112	106	134	62	119	106	115	149	109	160
Italy	1339	1395	935	1001	923	1416	1060	898	596	
Latvia	583	440	483	305	236	175	122	143	148	127
Liechtenstein										
Lithuania	341	295	336	275	326	326	345	273	227	269
Luxembourg		0	10	14	12	13	13	28	19	24
Malta			13	11	19	16	25	45	35	39
Netherlands	845	751	806	657	792	709	695	545	649	743
Norway	43	24	67	61	56	76	118	130	109	185
Poland			924	847	929	1255	914	941	961	1324
Portugal	109	103	124	112	98	150	179	159	267	186
Romania	8268	6169	4879	4245	4006	3252	1809	2348	1717	1376
Slovakia			89	192	228	301	328	416	412	330
Slovenia			16	31	63	47	40	79	63	35
Spain	1152	1344	1711	1936	2545	2496	3187	3522	3641	3720
Sweden	186	102	168	237	165	182	198	206	197	275
United Kingdom	2924	3481	3486	3561	3309	3192	2930	3252	3326	3570
EU/EEA total	**22114**	**20081**	**19737**	**19477**	**20143**	**20138**	**18838**	**20638**	**20849**	**22237**

Table 16: Syphilis: number of cases by year of statistics, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	312	267	25	58	61	62	59	72	78	538
Belgium	245	349	281	397	586	699	704	746	776	1032
Bulgaria	861	572	490	440	419	420	397	314	309	354
Croatia									28	80
Cyprus			13	10	14	15	20	16	6	12
Czech Republic	101	59	77	203	329	702	470	361	339	399
Denmark	119	117	77	92	151	255	413	427	343	317
Estonia	152	111	125	75	71	59	68	67	41	38
Finland	108	140	127	185	211	194	200	176	203	156
France	403	341	478	597	570	541	657	784	865	1014
Germany	3355	3232	3160	3277	3187	2741	3028	3694	4405	5013
Greece	103	139	141	197	155	259	241	272	363	300
Hungary	455	541	559	393	549	489	504	565	621	627
Iceland	4	3	4	1	2	0	5	2	5	3
Ireland	112	106	133	62	119	106	106	146	112	171
Italy	1339	1395	935	1001	923	1416	1060	898	596	
Latvia	583	440	483	301	233	171	133	143	146	129
Liechtenstein										
Lithuania	341	295	336	275	326	326	345	273	227	269
Luxembourg		0	10	14	12	13	13	28	19	24
Malta			12	12	16	19	25	45	35	39
Netherlands	845	751	806	657	792	709	695	545	649	743
Norway	43	24	67	61	56	76	118	130	109	185
Poland			924	847	929	1255	914	941	961	1324
Portugal	109	103	124	112	98	150	179	159	267	186
Romania	8268	6169	4879	4245	4006	3229	1815	2381	1691	1386
Slovakia			89	191	225	299	331	385	445	331
Slovenia			15	28	65	49	40	79	63	35
Spain	1152	1344	1711	1936	2545	2496	3187	3522	3641	3720
Sweden	189	105	172	239	171	181	198	205	200	275
United Kingdom	2924	3481	3486	3561	3309	3192	2930	3252	3326	3570
EU/EEA total	**22123**	**20084**	**19739**	**19467**	**20130**	**20123**	**18855**	**20628**	**20869**	**22270**

Note: Probable cases for Austria/Slovakia are excluded. Microbiological data from Spain are excluded.

Table 17: Syphilis: number of cases by gender, 2004–2013

	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
Country	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Austria	116	100	121	61	17	8	16	42	23	38	8	54	13	46	35	37	26	52		
Belgium	198	44	290	57	234	47	329	66	511	73	610	88	585	119	614	129	643	135	859	171
Bulgaria	427	434	278	294	272	218	244	196	251	168	256	164	221	176	184	130	181	128	212	142
Croatia																	21	7	74	6
Cyprus					7	6	7	3	7	7	6	9	15	5	12	4	3	3	8	4
Czech Republic	56	41	39	19	58	17	154	51	287	55	496	201	324	138	264	108	247	82	300	95
Denmark	113	6	103	14	73	4	86	6	142	9	242	13	363	50	381	46	309	34	284	33
Estonia	39	113	36	75	46	79	27	51	30	41	33	24	35	34	37	29	23	17	21	17
Finland	55	53	83	57	65	62	120	65	135	76	143	51	126	74	102	71	126	77	100	56
France	384	19	317	24	447	31	562	34	535	35	507	34	617	39	739	44	829	35	972	41
Germany	3026	315	2895	335	2833	326	3010	265	2948	235	2571	162	2815	208	3452	233	4109	292	4632	374
Greece	76	27	109	30	106	35	162	35	123	32	226	33	209	32	240	32	306	55	261	38
Hungary	288	167	349	192	381	178	260	133	368	181	347	142	369	135	393	172	479	142	471	156
Iceland	3	0	3	0	2	2	1	0			0	0	3	1	2	0	4	0	2	1
Ireland	86	26	85	21	113	21	43	19	98	17	91	14	103	12	138	11	96	11	151	9
Italy	1090	227	1101	264	731	194	783	206	714	205	1117	282	842	184	823	72	540	53		
Latvia	271	312	241	199	256	227	150	155	121	115	98	77	87	35	84	59	97	51	85	42
Liechtenstein																				
Lithuania									184	142	189	137	210	135	152	121	106	121	145	124
Luxembourg			0	0	7	3	10	3	11	1	12	1	12	0	25	3	15	4	22	2
Malta					10	3	7	4	14	5	15	1	20	5	35	10	25	10	37	2
Netherlands	738	105	654	96	705	97	577	64	703	62	616	57	595	56	491	53	613	35	701	39
Norway	36	7	23	1	65	2	60	1	51	5	72	4	111	7	123	7	106	3	163	22
Poland					660	264	634	213	708	221	951	304	660	254	704	237	754	207	1015	309
Portugal	62	47	71	32	92	32	77	35	67	31	128	22	139	40	137	22	224	42	143	43
Romania	4244	4024	3227	2942	2550	2329	2191	2054	1896	2110	1589	1663	884	925	1168	1180	851	866	747	629
Slovakia					48	41	93	99	127	101	154	147	167	161	220	196	232	180	183	147
Slovenia					13	3	26	5	59	4	43	4	35	5	70	9	54	9	32	3
Spain																				
Sweden	154	32	82	20	120	44	196	39	122	42	135	44	160	34	170	34	160	37	221	51
United Kingdom	2460	464	2950	531	3016	470	3115	446	2905	404	2805	385	2607	319	2928	322	3042	284	3255	315
EU/EEA total	**13922**	**6563**	**13057**	**5264**	**12927**	**4743**	**12940**	**4290**	**13140**	**4415**	**13460**	**4117**	**12327**	**3229**	**13723**	**3371**	**14221**	**2972**	**15096**	**2871**

Table 18: Syphilis: number of cases per 100 000 population, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria										
Belgium										
Bulgaria	11	7.4	6.3	5.8	5.6	5.6	5.3	4.3	4.2	4.9
Croatia									0.7	1.9
Cyprus			1.7	1.3	1.8	1.9	2.4	1.9	0.7	1.4
Czech Republic	1	0.6	0.7	2	3.3	6.7	4.4	3.5	3.1	3.8
Denmark	2.2	2.2	1.4	1.7	2.8	4.6	7.5	7.7	6.1	5.7
Estonia	11.1	8.2	9.3	5.8	5.3	4.3	5.2	5	3	2.9
Finland	2.1	2.7	2.4	3.5	4	3.6	3.7	3.3	3.8	2.9
France										
Germany	4.1	3.9	3.8	4	3.9	3.3	3.7	4.5	5.4	6.1
Greece	0.9	1.3	1.3	1.8	1.4	2.3	2.2	2.4	3.3	2.7
Hungary										
Iceland	1.4	1	1.3	0.3	0.6	0	1.6	0.6	1.6	0.9
Ireland	2.8	2.6	3.2	1.4	2.7	2.3	2.5	3.3	2.4	3.5
Italy	2.3	2.4	1.6	1.7	1.6	1.8	1.8	1.5	1	
Latvia	25.6	19.6	21.7	13.8	10.8	8.1	5.8	6.9	7.2	6.3
Liechtenstein										
Lithuania	10	8.8	10.2	8.5	10.1	10.2	11	8.9	7.6	9.1
Luxembourg			2.1	2.9	2.5	2.6	2.6	5.5	3.6	4.5
Malta			3.2	2.7	4.7	3.9	6	10.8	8.4	9.3
Netherlands										
Norway	0.9	0.5	1.4	1.3	1.2	1.6	2.4	2.6	2.2	3.7
Poland			2.4	2.2	2.4	3.3	2.4	2.4	2.5	3.4
Portugal	1	1	1.2	1.1	0.9	1.4	1.7	1.5	2.5	1.8
Romania	38.4	28.9	23	20.1	19.4	15.9	8.9	11.6	8.5	6.9
Slovakia			1.7	3.6	4.2	5.6	6.1	7.7	7.6	6.1
Slovenia			0.8	1.5	3.1	2.3	2	3.9	3.1	1.7
Spain	2.7	3.1	3.9	4.3	5.6	5.4	6.9	7.5	7.8	8
Sweden	2.1	1.1	1.9	2.6	1.8	2	2.1	2.2	2.1	2.9
United Kingdom	4.9	5.8	5.8	5.8	5.4	5.1	4.7	5.2	5.2	5.6
EU/EEA total	**5.9**	**5.2**	**4.5**	**4.5**	**4.5**	**4.4**	**4.1**	**4.5**	**4.5**	**5.4**

Note: Rates are only calculated for countries with comprehensive surveillance.

Table 19: Syphilis: number of cases per 100 000 population by gender, 2004–2013

	2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	
Country	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Austria																				
Belgium																				
Bulgaria	11.3	10.8	7.4	7.4	7.3	5.5	6.6	5	6.9	4.4	7	4.3	6.1	4.6	5.1	3.4	5.1	3.4	6	3.8
Croatia																	1	0.3	3.6	0.3
Cyprus					1.9	1.6	1.9	0.8	1.8	1.8	1.5	2.2	3.8	1.2	2.9	0.9	0.7	0.7	1.9	0.9
Czech Republic	1.1	0.8	0.8	0.4	1.2	0.3	3.1	1	5.7	1	9.7	3.8	6.3	2.6	5.1	2	4.8	1.5	5.8	1.8
Denmark	4.2	0.2	3.8	0.5	2.7	0.1	3.2	0.2	5.2	0.3	8.9	0.5	13.2	1.8	13.8	1.6	11.2	1.2	10.2	1.2
Estonia	6.1	15.5	5.7	10.3	7.3	10.9	4.3	7.1	4.8	5.7	5.3	3.4	5.6	4.8	6	4.1	3.7	2.4	3.4	2.4
Finland	2.2	2	3.2	2.1	2.5	2.3	4.6	2.4	5.2	2.8	5.5	1.9	4.8	2.7	3.9	2.6	4.8	2.8	3.8	2
France																				
Germany	7.5	0.7	7.2	0.8	7	0.8	7.5	0.6	7.3	0.6	6.4	0.4	7	0.5	8.6	0.6	10.2	0.7	11.5	0.9
Greece	1.4	0.5	2	0.5	1.9	0.6	3	0.6	2.2	0.6	4.1	0.6	3.8	0.6	4.4	0.6	5.6	1	4.8	0.7
Hungary																				
Iceland	2.1		2		1.3	1.3	0.6						1.9	0.6	1.2		2.5		1.2	0.6
Ireland	4.3	1.3	4.1	1	5.4	1	2	0.9	4.4	0.8	4	0.6	4.6	0.5	6.1	0.5	4.2	0.5	6.6	0.4
Italy	3.9	0.8	3.9	0.9	2.6	0.6	2.8	0.7	2.5	0.7	2.8	0.8	2.9	0.6	2.9	0.2	1.9	0.2		
Latvia	25.9	25.3	23.4	16.3	25	18.8	14.8	13	12	9.7	9.9	6.6	9	3	8.9	5.2	10.4	4.6	9.2	3.8
Liechtenstein																				
Lithuania									12.4	8.2	12.8	8	14.5	8	10.8	7.4	7.7	7.5	10.6	7.7
Luxembourg					3	1.3	4.2	1.2	4.6	0.4	4.9	0.4	4.8		9.8	1.2	5.7	1.5	8.2	0.7
Malta					5	1.5	3.5	2	6.9	2.4	7.3	0.5	9.7	2.4	17	4.8	12	4.8	17.6	0.9
Netherlands																				
Norway	1.6	0.3	1	0	2.8	0.1	2.6	0	2.2	0.2	3	0.2	4.6	0.3	5	0.3	4.2	0.1	6.4	0.9
Poland					3.6	1.3	3.4	1.1	3.8	1.1	5.2	1.5	3.6	1.3	3.8	1.2	4	1	5.4	1.6
Portugal	1.2	0.9	1.4	0.6	1.8	0.6	1.5	0.6	1.3	0.6	2.5	0.4	2.7	0.7	2.7	0.4	4.5	0.8	2.9	0.8
Romania	40.5	36.4	31	26.8	24.7	21.3	21.3	18.9	18.9	19.9	16	15.8	9	8.8	11.9	11.3	8.7	8.4	7.7	6.1
Slovakia					1.8	1.5	3.6	3.6	4.9	3.7	5.9	5.3	6.4	5.8	8.4	7.1	8.8	6.5	6.9	5.3
Slovenia					1.3	0.3	2.6	0.5	6	0.4	4.3	0.4	3.5	0.5	6.9	0.9	5.3	0.9	3.1	0.3
Spain																				
Sweden	3.5	0.7	1.8	0.4	2.7	1	4.3	0.8	2.7	0.9	2.9	0.9	3.4	0.7	3.6	0.7	3.4	0.8	4.6	1.1
United Kingdom	8.4	1.5	10	1.7	10.2	1.5	10.4	1.4	9.6	1.3	9.2	1.2	8.5	1	9.5	1	9.7	0.9	10.4	1
EU/EEA total	**8.5**	**4.1**	**7.9**	**3.2**	**6.7**	**2.5**	**6.7**	**2.3**	**6.5**	**2.3**	**6.6**	**2.1**	**6**	**1.6**	**6.7**	**1.6**	**6.7**	**1.4**	**8.4**	**1.6**

Note: Rates are only calculated for countries with comprehensive surveillance systems.

Table 20: Syphilis: number of cases by age category, 2004–2013

Age	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total number by age category										
0–14	88	83	50	85	47	46	41	39	41	43
15–19	1418	1105	942	738	686	676	588	545	483	518
20–24	2916	2555	2049	1819	1909	2023	1784	1912	1832	1805
25–34	6275	5445	4949	4565	4435	4930	4322	4864	4739	4878
35–44	4627	4360	4320	4147	4303	4393	3937	4450	4384	4297
45+	3279	3099	2931	3005	3270	3651	3524	3945	4352	4669
NA	1170	1228	2709	3140	2942	1918	1445	1343	1343	2273
Total	19773	17875	17950	17499	17592	17637	15641	17098	17174	18483
Percentage by age category										
0–14	0.4	0.5	0.3	0.5	0.3	0.3	0.3	0.2	0.2	0.2
15–19	7.2	6.2	5.2	4.2	3.9	3.8	3.8	3.2	2.8	2.8
20–24	14.7	14.3	11.4	10.4	10.9	11.5	11.4	11.2	10.7	9.8
25–34	31.7	30.5	27.6	26.1	25.2	28.0	27.6	28.4	27.6	26.4
35–44	23.4	24.4	24.1	23.7	24.5	24.9	25.2	26.0	25.5	23.2
45+	16.6	17.3	16.3	17.2	18.6	20.7	22.5	23.1	25.3	25.3
NA	5.9	6.9	15.1	17.9	16.7	10.9	9.2	7.9	7.8	12.3

Note: Excludes data from countries which reported incorrect age groups.

Table 21: Syphilis: number of cases by transmission category and gender, 2004–2013

Country	Transmission	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	HETERO_F			8		38	54	46	37	52	
	HETERO_M			6		5	4	6	9	5	
	MSM			10		13	4	7	26	21	
	UNK	312	267	1	58	5					538
Belgium	UNK	245	349	281	397	586	699	704	746	778	1030
Bulgaria	UNK	861	572	490	440	419	420	397	314	309	354
Croatia	UNK									28	80
Cyprus	HETERO_F					4	5			1	
	HETERO_M					4	2			1	
	MSM					1					
	UNK			13	10	5	8	20	16	4	12
Czech Republic	HETERO_F	39	18	16	47	51	193	136	100	79	89
	HETERO_M	36	20	28	57	107	241	173	118	85	129
	MSM	19	17	29	94	176	242	142	137	157	166
	UNK	3	3	2	4	8	20	10	17	8	11
	O				3		1	1			
Denmark	HETERO_F	5	12	4	6	9	13	49	46	34	33
	HETERO_M	24	18	8	10	18	30	58	44	44	39
	MSM	86	78	62	75	120	208	299	322	254	234
	UNK	4	9	3	1	4	4	7	15	11	11
Estonia	HETERO_F							7	3	2	3
	HETERO_M							3	1	1	4
	MSM							1		1	
	UNK	152	111	125	78	71	57	58	62	36	31
Finland	HETERO_F								17	21	11
	HETERO_M								16	29	16
	MSM								30	29	26
	UNK	108	140	127	185	211	194	200	113	124	103
France	HETERO_F	19	24	30	34	34	34	39	44	33	41
	HETERO_M	44	44	50	80	88	49	74	92	74	97
	MSM	338	269	394	478	440	455	536	632	749	869
	UNK	2	4	3	4	7	3	7	15	6	6
	O			1	1	1		1	1	3	1
Germany	UNK	3353	3233	3161	3277	3186	2738	3029	3692	4405	5010
Greece	HETERO_F					32	33	32	32	55	38
	HETERO_M					70	77	80	102	117	90
	MSM					47	98	114	128	182	163
	UNK	103	139	141	197	6	51	15	10	9	9
Hungary	UNK	455	541	559	393	549	489	504	565	621	627
Iceland	HETERO_M	1									
	MSM	2	1								
	UNK	1	2	4	1	2	0	5	2	5	3
Ireland	HETERO_F	25	20	20	19	16	14	11	11	11	6
	HETERO_M	24	21	27	13	25	8	13	6	12	11
	MSM	61	60	83	30	70	82	89	126	74	105
	UNK	1	4	4		8	2	2	6	12	37
	O	1	1								1
Italy	HETERO_F										
	HETERO_M										
	MSM										
	UNK	1339	1395	935	1001	923	1416	1060	898	596	
Latvia	HETERO_F					48	66	30	53	49	40
	HETERO_M				1	54	73	55	61	50	56
	MSM					2	5	11	10	31	19
	UNK	583	440	483	304	131	28	26	19	18	12
	O					1	3				
Lithuania	HETERO_F					111	118	125	112	106	79
	HETERO_M					151	163	202	144	95	93
	MSM					2		1	4	1	2
	UNK	341	295	336	275	56	40	10	12	23	95
	O					6	5	7	1	2	
Luxembourg	HETERO_M								2		
	MSM							2	3		
	UNK		0	10	14	12	13	11	23	19	24

Table 21: Syphilis: number of cases by transmission category and gender, 2004–2013 (continued)

Country	Transmission	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Malta	HETERO_F			3	4	5	1	4	7	8	2
	HETERO_M			5	3	5	10	4	13	6	8
	MSM			4	4	6	4	13	19	16	20
	UNK			1			1	4	6	5	9
	O					3					
Netherlands	HETERO_F	105	96	97	64	62	57	56	53	35	39
	HETERO_M	113	110	101	80	82	86	79	50	65	59
	MSM	617	542	598	496	619	528	516	439	548	642
	UNK	8	2	10	17	29	38	40	2		
	O	2	1					4	1	1	3
Norway	HETERO_F	7	1	2	1	5	4	7	7	3	22
	HETERO_M	17	6	9	6	8	3	16	14	10	24
	MSM	19	17	56	54	43	69	95	109	96	139
Poland	UNK			924	847	929	1255	914	941	961	1324
Portugal	HETERO_F								8	21	13
	HETERO_M								12	33	16
	MSM								10	36	25
	UNK	109	103	124	112	98	150	179	129	177	131
	O										1
Romania	HETERO_F		2942	2329	2037	2097	1663	729	1008	713	543
	HETERO_M		3225	2550	2159	1863	1582	668	951	636	609
	MSM		2		17	6	5		30	16	16
	MTCT				32						
	UNK	8268				33	2	412	340	345	205
	O					7			19	7	3
Slovakia	HETERO_F								89	117	87
	HETERO_M							1	70	120	81
	MSM								4	15	23
	UNK			89	192	228	301	327	252	159	136
	O								1	1	3
Slovenia	HETERO_F			3	4	3	3	5	8	8	3
	HETERO_M			5	11	16	19	14	13	20	9
	MSM			5	13	30	14	17	45	25	19
	UNK			3	3	14	11	4	13	10	4
Spain	UNK	1152	1344	1711	1936	2545	2496	3187	3522	3641	3720
Sweden	HETERO_F	21	16	24	29	24	25	11	19	19	26
	HETERO_M	42	15	26	44	25	32	16	21	32	41
	MSM	99	55	62	112	72	74	112	114	105	134
	UNK	21	16	52	51	43	45	57	47	40	72
	O	3		4	1	1	6	2	5	1	2
United Kingdom	HETERO_F	464	531	470	446	404	283	289	287	268	293
	HETERO_M	2165	2536	2563	2596	2411	700	707	727	771	623
	MSM	295	414	453	519	494	1778	1639	2083	2172	2546
	UNK	0	0	0	0	0	431	295	155	115	108
EU/EEA total	**HETERO_F**	**685**	**3660**	**3006**	**2691**	**2943**	**2604**	**1576**	**1941**	**1635**	**1368**
	HETERO_M	**2466**	**5995**	**5378**	**5060**	**4932**	**3216**	**2169**	**2466**	**2206**	**2005**
	MSM	**1536**	**1455**	**1756**	**1892**	**2141**	**3730**	**3594**	**4271**	**4528**	**5148**
	MTCT	**0**	**0**	**0**	**32**	**0**	**0**	**0**	**0**	**0**	**0**
	UNK	**17421**	**8969**	**9592**	**9797**	**10108**	**10573**	**11484**	**11932**	**12465**	**13702**
	O	**6**	**2**	**5**	**5**	**19**	**15**	**15**	**28**	**15**	**14**

Note: Cases with known transmission mode 'heterosexual' and 'unknown gender' are classified as UNK.

Congenital syphilis

Table 22: Congenital syphilis: number of cases by year of diagnosis, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria										
Belgium										
Bulgaria	0	22	19	37	23	30	34	38	29	27
Croatia									0	0
Cyprus						0	0	0	0	0
Czech Republic	2	0	1	3	0	0	1	0	1	1
Denmark	0	0	0	1	0	0	2	1	0	1
Estonia	0	0	0	1	0	0	1	0	0	0
Finland										
France										
Germany	5	4	5	3	0	3	1	2	5	2
Greece					1	0	2	3	0	
Hungary	4	4	2	3	1	1	1	0	0	2
Iceland						0	0	0	0	0
Ireland	0	0	0	0	0	0	1	0	0	0
Italy	6	8	10	9	1	13	12	7	3	
Latvia	1	3	0	0	1	3		0	1	0
Liechtenstein										
Lithuania	0	3	2	1	2	4	2	0	1	2
Luxembourg						0	0	0	0	0
Malta					0	0	0	0	0	0
Netherlands										
Norway	0	0	0	0	0	0	0	0	0	0
Poland				4	0	12	18	14	32	19
Portugal	16	21	14	21	14	13	11	10	12	5
Romania	136	38	16	26	9	7	6	10	6	3
Slovakia					2	4	1	1	0	0
Slovenia			0	0	0	0	0	0	0	0
Spain	5	10	9	11	10	11	5	4	1	3
Sweden	2	1	0	1	1	2	1	1	1	0
United Kingdom	8	14	6	4	3	0	0	1	0	0
EU/EEA total	**185**	**128**	**84**	**125**	**68**	**103**	**99**	**92**	**92**	**65**

Table 23: Congenital syphilis: number of cases by year of statistics, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria										
Belgium										
Bulgaria	0	22	19	37	23	30	34	38	29	27
Croatia									0	0
Cyprus						0	0	0	0	0
Czech Republic	3	0	0	4	0	0	1	0	1	1
Denmark	0	0	0	1	0	0	2	1	0	1
Estonia	0	0	0	1	0	0	1	0	0	0
Finland										
France										
Germany	5	4	5	3	0	3	1	2	5	2
Greece					1	0	2	3	0	
Hungary	4	4	2	3	1	1	1	0	0	2
Iceland						0	0	0	0	0
Ireland	0	0	0	0	0	0	1	0	0	0
Italy	6	8	10	9	1	13	12	7	3	
Latvia	1	3	0	0	1	2	1	0	1	0
Liechtenstein										
Lithuania	0	3	2	1	2	4	2	0	1	2
Luxembourg						0	0	0	0	0
Malta					0	0	0	0	0	0
Netherlands										
Norway	0	0	0	0	0	0	0	0	0	0

Table 23: Congenital syphilis: number of cases by year of statistics, 2004–2013 (continued)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Poland				4	0	12	18	14	32	19
Portugal	16	21	14	21	14	13	11	10	12	5
Romania	136	38	16	26	9	7	6	10	6	3
Slovakia					2	4	1	1	0	0
Slovenia			0	0	0	0	0	0	0	0
Spain	5	10	9	11	10	11	5	4	1	3
Sweden	1	2	0	0	1	3	1	1	1	0
United Kingdom	8	14	6	4	3	0	0	1	0	0
EU/EEA total	**185**	**129**	**83**	**125**	**68**	**103**	**100**	**92**	**92**	**65**

Table 24: Congenital syphilis: number of cases per 100 000 live births, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria										
Belgium										
Bulgaria	0	31	25.7	49.1	29.6	37.1	45	53.6	42	40.6
Croatia	0	0	0	0	0	0	0	0	0	0
Cyprus	0	0	0	0	0	0	0	0	0	0
Czech Republic	2	0	0.9	2.6	0	0	0.9	0	0.9	0.9
Denmark	0	0	0	1.6	0	0	3.2	1.7	0	1.8
Estonia	0	0	0	6.3	0	0	6.3	0	0	0
Finland										
France										
Germany	0.7	0.6	0.7	0.4	0	0.5	0.1	0.3	0.7	0.3
Greece	0	0	0	0	0.8	0	1.7	2.8	0	0
Hungary	4.2	4.1	2	3.1	1	1	1.1	0	0	2.2
Iceland	0	0	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	1.3	0	0	0
Italy	1.1	1.4	1.8	1.6	0.2	2.3	2.1	1.3	0.6	0
Latvia	4.9	13.7	0	0	4.1	13.6	0	0	5	0
Liechtenstein										
Lithuania	0	10.2	6.8	3.3	6.3	12.4	6.5	0	3.3	6.7
Luxembourg	0	0	0	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	0	0	0	0
Netherlands										
Norway	0	0	0	0	0	0	0	0	0	0
Poland	0	0	0	1	0	2.9	4.4	3.6	8.3	5.1
Portugal	14.6	19.2	13.3	20.5	13.4	13.1	10.9	10.3	13.4	6
Romania	62.9	17.2	7.3	12.1	4.1	3.1	2.8	5.1	3	1.7
Slovakia	0	0	0	0	3.5	6.5	1.7	1.6	0	0
Slovenia	0	0	0	0	0	0	0	0	0	0
Spain	1.1	2.2	1.9	2.2	1.9	2.2	1	0.9	0.2	0.7
Sweden	2	1	0	0.9	0.9	1.8	0.9	0.9	0.9	0
United Kingdom	1.1	1.9	0.8	0.5	0.4	0	0	0.1	0	0
EU/EEA total	**5.5**	**3.8**	**2.4**	**3.2**	**1.6**	**2.5**	**2.4**	**2.3**	**2.3**	**2**

Lymphogranuloma venereum

Table 25: Lymphogranuloma venereum: number of cases by year of diagnosis, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria										
Belgium					12	17	22	21	23	48
Bulgaria										
Croatia									0	0
Cyprus						0	0	0	0	0
Czech Republic	0	0	0	0	0	0	1	6	9	8
Denmark			2	16	29					
Estonia					0	0	0	0	0	0
Finland	0	0	0	0	0	0	0	3	5	7
France							184	191	197	327
Germany										
Greece									0	
Hungary	0	0	0	0	0	0	0	0	1	2
Iceland										0
Ireland	0	1	0	2	0	0	1	0	3	5
Italy					4	8	6	11	27	21
Latvia	0	0	0	0	0	0	0	0	0	0
Liechtenstein										
Lithuania										
Luxembourg						0	0	0	0	0
Malta					0	0	0	0	0	1
Netherlands	76	38	43	70	100	86	66	70	190	112
Norway										
Poland						0	0	0	0	0
Portugal										
Romania										
Slovakia										
Slovenia			0	0	0	0	0	0	0	0
Spain										
Sweden	0	0	0	0	0	0	0	0	0	0
United Kingdom	27	261	137	172	187	155	428	408	402	512
EU/EEA total	**103**	**300**	**182**	**260**	**332**	**266**	**708**	**710**	**857**	**1043**

Table 26: Lymphogranuloma venereum: number of cases by year of statistics, 2004–2013

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria										
Belgium					12	17	22	21	23	48
Bulgaria										
Croatia									0	0
Cyprus						0	0	0	0	0
Czech Republic	0	0	0	0	0	0	1	6	9	8
Denmark			2	16	29					
Estonia					0	0	0	0	0	0
Finland	0	0	0	0	0	0	0	3	5	7
France							184	191	197	327
Germany										
Greece									0	
Hungary	0	0	0	0	0	0	0	0	1	2
Iceland										0
Ireland	0	1	0	2	0	0	1	0	3	5
Italy					4	8	6	11	27	21
Latvia	0	0	0	0	0	0	0	0	0	0
Liechtenstein										
Lithuania										
Luxembourg						0	0	0	0	0
Malta					0	0	0	0	0	1
Netherlands	76	38	43	70	100	86	66	70	190	112
Norway										

Table 26: Lymphogranuloma venereum: number of cases by year of statistics, 2004–2013 (continued)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Poland						0	0	0	0	0
Portugal										
Romania										
Slovakia										
Slovenia			0	0	0	0	0	0	0	0
Spain										
Sweden	0	0	0	0	0	0	0	0	0	0
United Kingdom	27	261	137	172	187	155	428	408	402	512
EU/EEA total	**103**	**300**	**182**	**260**	**332**	**266**	**708**	**710**	**857**	**1043**

Annexes

Annex 1. Data collection and reporting

Since 2009, the European Centre for Disease Prevention and Control (ECDC) has been coordinating the enhanced surveillance of sexually transmitted infections (STI) in Europe. The Centre strives to attain a high quality of standardised STI surveillance data from the 31 countries of the European Union (EU) and the European Economic Area (EEA).

Surveillance at the EU level is facilitated by ECDC's The European Surveillance System (TESSy), a web-based platform designed to offer Member States a single entry point for data submission and retrieval for all communicable diseases under EU surveillance. The reportable STI, namely syphilis, congenital syphilis, gonorrhoea, chlamydial infection and lymphogranuloma venereum (LGV) are included within TESSy, and Member States are expected to submit relevant data, if available, as stipulated by Decision 1082/2013/EU of the European Parliament and of the Council. Data collection in TESSy helps facilitate making surveillance data comparable, so that STI data can be shared across Europe in a meaningful way.

This ECDC surveillance report presents data from 2004 to 2013 and describes epidemiological features and trends of the five STI under EU/EEA surveillance. The data are presented in five disease-specific chapters, focussing on key risk groups and changes in trends over time.

Data reporting in TESSy for STI surveillance

STI data are reported to TESSy by appointed STI operational contact points at least once a year. Alternatively, Member States can upload data more frequently if validated data are available. For all five monitored STI, two data types are used: case-based and aggregate data. Case-based reporting is preferred; however, aggregate data are still accepted because some Member States cannot comply with the EU standard of case-based reporting. The STI variable set consists of i) the common variables used for all diseases and ii) an STI-specific set of variables. There are some differences between the STI with regard to the number of variables to be reported: chlamydia reporting, for example, uses a smaller number of variables. A complete list of variables used for STI data collection can be found in Annex 4.

Implementation of EU case definitions

As of 1 January 2009, the EU case definitions for chlamydial infection, gonorrhoea, LGV, syphilis and congenital syphilis should be used when reporting at the European level. However, since several Member States use STI case definitions which differ from the published EU case definitions, reporting according to national case definitions is acceptable as long as it is indicated when submitting data.

The case definitions are included in Commission Decision 2002/253/EC and were amended by subsequent commission decisions. The current case definitions are available from: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002D0253:20120927:EN:PDF.

The STI surveillance network agreed that only confirmed cases of gonorrhoea, syphilis, congenital syphilis, chlamydial infection and LGV should be reported at the EU level. The case definitions for STI are available in Annex 5.

Data collection

The data collection organised in 2014 marked the fifth time that Member States reported enhanced STI surveillance data to ECDC. The deadline for submitting 2013 data was 30 September 2014. Data presented in this report were retrieved from the database on 26 February 2015.

Data were collected in a case-based data format as described in the STI reporting protocol. If case-based data were not available, the aggregate format was accepted, broken down by i) gender, ii) age group, and iii) transmission category. Countries were able to modify previously uploaded historical data during the data collection period.

This report includes descriptions of national STI data sources in order to aid interpretation of data (Annex 3). Key features of the surveillance systems from which the data originate are presented in each disease-specific chapter and offer an overview of the heterogeneity between national reporting systems.

Data analysis

Case classification

As a rule, all confirmed cases – based on the agreed case definitions – were included in the analysis. As several countries submitted cases with 'unknown' or 'probable' case classifications it was not clear whether these cases were laboratory-confirmed in accordance with EU case definitions.

Cases were included when case confirmation was 'unknown' for all cases in a country. Cases were excluded when they were reported as 'probable' (except

when all cases were reported as 'probable'), and only the 'confirmed' cases were included. This affected the inclusion of submitted cases as follows:

- ***Chlamydia trachomatis* infection.** All cases from Austria were included, including the 406 'probable' cases from 2006. All cases from Poland were included as case classification was 'unknown' for all cases between 2006 and 2013.

  Only confirmed cases were included for Slovakia; 13 cases reported in 2007 as 'possible' or 'probable' were excluded.

- **Gonorrhoea.** All 'unknown' cases from Austria reported from 1996 to 2005 were included; 11 'probable' cases in Austria in 2007 were excluded. All cases from Bulgaria between 1990 and 2005 were included, as case classification was 'unknown' for all cases. All cases from Portugal were included, including the 588 'unknown' cases from 1990 to 2013. Only confirmed cases were included for Slovakia, excluding 20 cases reported in 2007 as 'possible' or 'probable'. Spain submitted data from two different data sources: all cases from Spain's mandatory notification system classified as 'unknown' were included for the period 1990 to 2013; data from the Spanish sentinel laboratory system were not used in the tables for gonorrhoea in Spain.

- **Syphilis.** All Austrian cases classified as 'unknown' reported between 1996 and 2005 were included. All cases from Bulgaria were included, as case classification was 'unknown' for all cases from 1990 to 2005. All cases for Ireland, including those classified as 'unknown' from 2000 to 2006, were included. All cases from Portugal were included, including the 485 'unknown' cases from 1990 to 2013. Only confirmed cases were included for Slovakia, excluding 39 cases reported as 'possible' or 'probable' in 2007. For Spain, data from two different data sources were submitted: all cases from the mandatory notification system classified as 'unknown' were included for the period 1990 to 2013; data from the Spanish sentinel laboratory system were not used in the tables for syphilis in Spain.

- **Congenital syphilis.** All cases with 'unknown' classification from Bulgaria (2005) and Portugal (1999, 2000, and 2004) were included.

- **LGV.** One 'unknown' case from France in 2010 was included.

Note that since a number of countries could not report the stage of syphilis, all reported cases of syphilis were included in the report, regardless of reported syphilis stage.

Analysis

In accordance with the STI reporting protocol (2014), STI data are presented by 'date of diagnosis' or, if unavailable, by 'date used for statistics'[21]. The date of consultation (for clinical STI services) can be used as a proxy for date of diagnosis, date of notification, or date of specimen taken. Due to a large amount of missing or incorrect information on 'date of diagnosis' for Sweden, chlamydia cases are presented by the 'date used for statistics'.

The various tables in this report use absolute numbers. Annual figures are calculated per 100 000 population for all countries that have comprehensive surveillance systems. Country population denominators are based on data from the Eurostat database (http://epp.eurostat.ec.europa.eu), as extracted on 14 October 2014[22]. Figures were not calculated for countries with sentinel surveillance systems. For congenital syphilis, annual figures are calculated per 100 000 live births (population data retrieved from Eurostat).

For aggregate reporting, the age groups requested were: <15, 15–19, 20–24, 25–34, 35–44, ≥45; if data on age were unavailable or in an incompatible format, the country was excluded from age data analysis.

21 The 'date used for statistics' can be any date that the reporting country finds applicable, e.g. date of notification, date of diagnosis or any other date.

22 Eurostat population data can differ from the population data published by national statistics offices; consequently, rates in this report may differ from those published by national surveillance institutes.

Annex 2. Data quality

The completeness of reporting is an important criterion for the quality and the interpretation of surveillance data. From 1990 to 2013, 4 402 469 cases of chlamydia were reported from 27 countries with varying degrees of completeness. In addition, 930 244 cases of gonorrhoea (29 countries) were reported, 416 558 cases of syphilis (30 countries), 3 346 cases of congenital syphilis (24 countries), and 4 770 cases of LGV (23 countries).

Liechtenstein did not provide any data on STI.

Case-based and aggregate reports

Member States have agreed to report STI surveillance data in an aggregate format (1990–1999); all 2000–2013 data, if available, were reported in a case-based format. The case-based format allows the use of additional variables covering more epidemiological characteristics (Annex 4).

The completeness of reported data is affected by the use of these two formats as the aggregated format provides only limited information (gender, age, transmission category). The proportion of cases reported through the case-based format differs between STI and over time (Tables A1-3) and is strongly influenced by a number of countries which report large numbers of cases in an aggregate format.

Completeness of data

Table A4 presents the completeness levels of data for 2004, 2012 and 2013. The completeness of reporting of basic variables such as 'age' and 'gender' has been very high for the whole time period and for all reported diseases. Completeness for age and gender was lower in aggregate data than in case-based data. There are still difficulties in analysing the 'age class' variable for countries reporting aggregate data, as the formats differ. Completeness of other variables was considerably lower, partly due to the amount of aggregate reporting, as most epidemiological variables are not included. Some variables, such as HIV status, were very incomplete even in case-based data.

Chlamydia trachomatis infection

The number of countries reporting chlamydia data has increased over the years (Tables 1a, A1): four countries reported data for 1990; this increases to 14 countries in 2004 and 26 in 2012 and 2013. For the period 2004 to 2013, 38 % of the data were provided in case-based format. The amount of case-based data has fluctuated between 36 and 48 % between 2004 and 2013.

The completeness of the basic variables 'age' and 'gender' has remained close to 100 % in 2013. Completeness of 'transmission category' was high among reporting countries in 2004, but only three countries reported. Since then, the number of countries reporting the variable has increased to 14, but data is only available for 46 % of cases in 2013. 'HIV status' continues to be poorly reported and only seven countries reported the data in 2013, with an overall completeness of 2.5 %. 'Site of infection' is available for 17 % of the reported cases in 2013 and is reported by 13 countries. The variable 'ClinicalServiceType' was reported for 12 % of cases in 2013. The usefulness of collecting variables which are only reported by very few countries needs to be re-evaluated.

Gonorrhoea

The number of countries that reported gonorrhoea data, which up until 2012 had shown an upward trend, dropped by one to a total of 28 in 2013 (Table A2). For the period 2004–2013, 22 % of the data were provided in a case-based format. The percentage of case-based reporting has increased over the years; in 2013, 26 % of the reported data were case-based, compared with 14 %

Table A1: Overview of chlamydia reporting, EU/EEA countries, 1990–2013

Year	Number of countries reporting data	Number of countries reporting case-based data	Number of cases reported	Percentage of cases reported as case-based data (%)
1990	4	1	71 696	0.3
2004	12	7	190 553	40.5
2012	26	20	385 124	36.4
2013	26	20	384 555	37.9

Table A2: Overview of gonorrhoea reporting, EU/EEA countries, 1990–2013

Year	Number of countries reporting data	Number of countries reporting case-based data	Number of cases reported	Percentage of cases reported as case-based data (%)
1990	12	1	64 933	0.4
2004	21	10	33 710	13.6
2012	29	22	47 641	25.5
2013	28	20	52 995	25.9

in 2004. The following countries reported aggregate data: Bulgaria, Croatia, Greece, Hungary, Poland, Spain and the United Kingdom.

Completeness of the variables 'age' and 'gender' was close to, or above, 90% between 2004 and 2013; in 2013, completeness was 90% and 92%, respectively. Completeness of the variable 'transmission category' increased to 81% in 2013 (of 19 countries that reported). The variable 'site of infection' is now reported by thirteen countries; however, completeness is still low at 17% of cases in 2013. 'HIV status' was reported by 10 countries in 2013, amounting to 13% of all cases, which is similar to 2012.

Syphilis

All countries except Liechtenstein and Italy provided data on syphilis in 2013. For the period 2004–2013, 44% of the data were provided in a case-based format. In recent years, four countries changed their reporting systems (Estonia, Latvia, Lithuania and Romania) so that 53% of the 2013 data are now available in a case-based format. Only eight countries still report syphilis data in an aggregate format.

Completeness of the variables 'age' and 'gender' was lower than for gonorrhoea or chlamydia, with 73% completeness for age and 81% completeness for gender. Completeness of the variable 'transmission category' is low at 38% (of 18 countries that reported) for 2013 data. The variable 'stage of infection' was reported for only 22% of cases. 'HIV status' was reported by 13 countries and for 12% of the cases reported in 2013.

Table A3: Overview of syphilis reporting, EU/EEA countries, 1990–2013

Year	Number of countries reporting data	Number of countries reporting case-based data	Number of cases reported	Percentage of cases reported as case-based data (%)
1990	11	1	8436	2.0
2004	23	13	22114	31.5
2012	30	23	20849	55.6
2013	29	21	22237	52.7

Table A4: Completeness of reporting for key variables; 2004, 2012 and 2013

	2004				2012				2013			
	Countries reporting variable	Overall completeness (%)	Min (%)	Max (%)	Countries reporting variable	Overall completeness (%)	Min (%)	Max (%)	Countries reporting variable	Overall completeness (%)	Min (%)	Max (%)
***Chlamydia trachomatis* infection**												
Age	12	96.5	92.7	100	24	97.7	0.3	100	24	99.4	38.3	100
Gender	13	99.7	95.9	100	26	99.2	97.4	100	26	99.3	98.1	100
Classification	14	100	100	100	25	99.9	100	100	24	99.8	100	100
Clinical service type	3	14.5	58.5	100	11	12.1	83.4	100	11	12.4	86.2	100
Transmission	3	75	97.5	100	13	45.3	16.6	100	14	45.9	0.9	100
HIV status	2	0.9	0.3	33.3	6	2.4	0.1	96.8	7	2.5	0	100
Site of infection	5	15.3	97	100	15	16.1	0.2	100	13	17.1	49.4	100
Gonorrhoea												
Age	16	90.3	85.9	100	25	89.1	2.7	100	23	90.1	67.1	100
Gender	19	95.3	86.9	100	28	93.5	95.8	100	26	91.5	99.2	100
Clinical service type	4	6.9	44.4	100	13	15.2	69.9	100	12	13.6	76.7	100
Country of birth	6	9.2	77.5	100	11	16.1	64	100	13	16	2.6	100
Country of nationality	2	2	98.8	100	10	3	2.5	100	10	2	5.2	100
Probable country of infection	5	4.3	81	98.1	13	8.4	0.5	100	12	8.8	0.9	100
Transmission	7	77.2	91.3	100	21	79.7	1.7	100	19	80.7	12.1	100
HIV status	5	4.9	20.1	81.6	10	12.9	0.5	100	10	12.7	0.8	100
Sex worker	3	6	4.1	97.6	10	11.7	1.1	99.8	9	10.5	0.4	100
Contact with sex worker	3	3.8	42.1	92.8	9	11.5	0.8	99.4	9	11.3	0.9	98.8
Site of infection	3	6	99.7	100	13	16.2	10.8	100	13	16.9	22.4	100
Syphilis												
Age	19	84.2	64.1	100	27	76.1	80	100	25	73	94.9	100
Gender	21	92.6	69.2	100	29	82.5	80	100	27	80.8	98.9	100
Clinical service type	5	4	71.6	100	13	19.1	33	100	14	16.8	74.5	100
Country of birth	7	16	60.5	100	13	21.2	0.4	100	12	19.4	73	100
Country of nationality	2	1	95.4	100	10	12.1	22.8	100	9	3	4.8	100
Probable country of infection	7	12.5	25	95.3	14	6.6	0.4	100	11	7.7	0.5	99.5
Transmission	9	21.2	75	100	20	40.2	10	100	18	38.4	18.4	100
HIV status	6	4.9	23.3	93.5	13	12.8	1.3	100	13	12	1.1	100
Sex worker	5	4.3	1.2	95.5	12	14.8	1.5	100	9	7.5	2.8	99.7
Contact with sex worker	4	3.1	0.9	84	11	7.7	1.1	98.9	10	7.5	2.9	98.7
Stage of syphilis infection	1	0	3.6	3.6	1	0.1	100	100	0	0		
Stage of syphilis infection (detailed)	6	6.6	50	100	15	23.8	65	100	14	21.7	66.7	100

Annex 3. Description of national STI surveillance systems

Austria

- One system provides data to TESSy: AT-STISentinella, a case-based, voluntary, sentinel laboratory system which applies EU-2008 case definitions. The system does not provide national coverage .
- Diseases under surveillance: chlamydia, gonorrhoea, syphilis

Case reporting

Mandatory universal (since 1945)

- Diseases covered: syphilis and gonorrhoea
- Coverage: Reporting is obligatory for all physicians in all settings (private and public), but only if there is a risk of onward transmission.
- Laboratory confirmation is not required.
- Variables: date of diagnosis

Voluntary

- Disease covered: syphilis and gonorrhoea

Aggregate

- Disease covered: syphilis and gonorrhoea
- Aggregate data for Austria reported from the district level

Laboratory test reporting

Voluntary universal

- Diseases covered: gonorrhoea, syphilis and chlamydia
- Aggregate reporting for chlamydia; case-based reporting for gonorrhoea and syphilis
- Variables: Number of positive results (only chlamydia)
- Reports from the national reference centre for syphilis and gonorrhoea: data not representative for Austria (data from one centre which mostly examines sex workers).
- *Chlamydia trachomatis* infection is reported by one centre, so data are not representative for Austria.

Belgium

Two surveillance systems reporting data to TESSy:

- BE-LABNET: voluntary, sentinel laboratory system reporting case-based data for chlamydia, gonorrhoea and syphilis with national coverage
- BE-STD: voluntary, sentinel clinician system reporting case-based data for determinants. Coverage unknown.

Case reporting

Mandatory universal (since 1946)

- Diseases covered: syphilis and gonorrhoea (congenital syphilis)
- Coverage: unknown. Reporting is obligatory for all physicians in all settings (private and public).
- Laboratory confirmation is not required.
- Individual-level reporting
- Variables: place of residence, gender, age, sexual orientation (Flemish community only), stage of syphilis

Sentinel (since 2000)

- 50 sites distributed throughout the country report. Voluntary participation by gynaecologists, dermatologists, GPs, urologists, STI clinics, student clinics and family planning centres.
- Diseases covered: syphilis, gonorrhoea, chlamydia, genital herpes, genital warts, PID, LGV, acute hepatitis B and acute hepatitis C (only in MSM). Coverage: unknown.
- Laboratory confirmation is required for all STI, in accordance with ECDC case definition 2008.
- Variables: age, sex, nationality, place or residence, level of education, reason for testing, symptoms, sexual orientation, number of partners in last six months, group sex, fellation, stable relationship, CSW, drug use, contact with CSW, place where infection was contracted, HIV testing situation, HIV status, HBV status, HCV status, HPV vaccination status, partner notification.

Laboratory test reporting

Sentinel (since 2001)

- Voluntary participation by private and hospital microbiology laboratories
- Diseases covered: syphilis, gonorrhoea and chlamydia
- Coverage: 101 of the 178 laboratories of microbiology currently participate, covering 60 % of the STI testing activities.
- Individual-level reporting
- Cannot be linked to case reports.
- Variables: place of residence, gender, age, test used
- Gonorrhoea AMR testing for all isolates

Bulgaria

Bulgaria reports STI cases through the BG-STI data source. This comprehensive system collects aggregated data on gonorrhoea, syphilis and congenital syphilis from hospitals and 'other' sources. Reporting is compulsory, and EU-2002 case definitions are applied. Geographical coverage is not reported.

Case reporting

Mandatory universal

Sentinel

Laboratory test reporting

Mandatory universal

Voluntary universal

Croatia

STI data are reported by the HR-CNIPH system from the national level to TESSy. The system was developed and coordinated by the National Institute of Public Health, which is, by law, responsible for epidemiological surveillance in Croatia. The case-based surveillance system for STI also covers hepatitis and HIV/AIDS and is integrated with the surveillance of all communicable diseases under surveillance in Croatia. Surveillance is regulated by law (notification of infectious disease/death – individual reports). The surveillance system collects reported cases of chlamydia, LGV, gonorrhoea, syphilis and congenital syphilis, hepatitis B, hepatitis C, and HIV/AIDS. The system is comprehensive and compulsory and provides national coverage. Case-based data are reported by physicians. EU-2012 case definitions are applied.

Case reporting

Diseases covered: syphilis (since 1986; historical data from 1958–1985), congenital syphilis (since 1986; historical data from 1958–1985), gonorrhoea (since 1986), chlamydia (since 1991), hepatitis B (since 1976), hepatitis C (since 1992), HIV/AIDS (since 1986)

There is universal, general and mandatory reporting in Croatia covering all physicians in all settings (private and public).

The current notification system is paper-based, but an integrated electronic system is under development.

There is a computerised database at the national level (infectious disease register).

Enhanced surveillance exists for HIV (HIV/AIDS register).

Each notification is based on clinical suspicion but laboratory confirmation is required for hepatitis B, hepatitis C, HIV infection and syphilis.

Each notification consists of the following variables: sex, age, patient's profession, name, place of education or workplace, date of birth, place and address of patient residence, disease, place of onset, causative agent, date of onset, date of death (where relevant), vaccination status, the date of last dose (if applicable), type of diagnoses (clinical or laboratory confirmed), the name of physician reporting the disease, the name of institution reporting, date of notification, the name of responsible epidemiologist.

Laboratory test reporting

Surveillance is based on clinical diagnoses; laboratory testing is part of the notification.

Mandatory universal

Screening of blood donations by the Croatian National Institute of Transfusion Medicine: HIV, hepatitis B and hepatitis C, syphilis

Screening of pregnant women: HBV, syphilis

Antimicrobial susceptibility testing of *N. gonorrhoeae* and gonorrhoea AMR surveillance is carried out by the National Institut of Public Health, other microbiological laboratories, and the Reference Centre for Antibiotic Resistance for the Ministry of Health. Croatia is preparing to join the Euro-GASP programme.

Cyprus

One surveillance system provides TESSy with data: CY-NOTIFIED_DISEASES

This system is a mandatory, comprehensive, case-based surveillance system based on clinician reporting. Coverage is national. The system reports data on chlamydia, gonorrhoea and syphilis, and applies EU-2008 case definitions.

Case reporting

Mandatory universal

- Diseases covered: syphilis, gonorrhoea (since 1984) and chlamydia (since 2005)
- Coverage: Reporting is obligatory for all physicians in all settings (private and public). An estimated total of 26–50 % of all diagnosed cases is reported through the system. It is also estimated that 76–99 % of cases diagnosed in the five STI/DV clinics in Cyprus are reported. There are no data available on the actual proportion of doctors who report.
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: place of residence, clinic/physician type, date of onset, date of diagnosis, place of diagnosis, gender, age, probable route of transmission, site of infection, nationality/country of birth

Sentinel (since 2004)

Convenience-based sample of 40 physicians (26 gynaecologists and 14 dermatologists) from all parts of Cyprus. Participation is voluntary in the private sector, but all STI clinics in the public sector must report.

- DDiseases covered: syphilis, gonorrhoea, chlamydia, genital herpes, genital warts
- Coverage: an estimated total of 26–50 % of diagnosed cases is reported through the system.
- Laboratory confirmation is required only for chlamydia.
- Variables: place of residence, clinic/physician type, date of diagnosis, place of diagnosis, gender, age, probable route of transmission, site of infection

Laboratory test reporting

Sentinel (since 2004)

It is obligatory for public laboratories to participate in STI surveillance. Participation is voluntary for private laboratories; an estimated 26–50 % participate.

- Diseases covered: syphilis, gonorrhoea and chlamydia
- Coverage: It is estimated that 26–50 % of all positive test results for STI in the country are reported in this system.
- Individual-level reporting
- Can be linked to case reports.
- Variables: place of residence, clinic/physician type, date of diagnosis, place of diagnosis, gender, age, nationality/country of birth
- Gonorrhoea AMR testing for all isolates

Czech Republic

The CZ-STD data source is used for reporting data on gonorrhoea, LGV, syphilis and congenital syphilis. The surveillance system for syphilis and gonorrhoea is described as case based, comprehensive, compulsory, and based on reporting by clinicians, laboratories, hospitals and 'other' sources. National case definitions are applied.

The characteristics of the surveillance systems for congenital syphilis and LGV are same as for syphilis and gonorrhoea. All infections are notified through identical IT tools.

Case reporting

Mandatory universal

Laboratory test reporting

Mandatory universal

- Diseases covered: gonorrhoea, chlamydia, syphilis
- Coverage: >99 % of all positive tests for chlamydia, >98 % for gonorrhoea and >99 % for syphilis are reported.
- Individual-level reporting
- Laboratory and clinical reports can be linked in about 95 % of all syphilis and gonorrhoea cases. There is no clinical reporting for chlamydia.
- Variables: place of diagnosis, date of diagnosis, age, gender, anatomical site of infection, laboratory test used, type of healthcare provider.
- Gonorrhoea AMR testing for all isolates

Denmark

Two systems report data to TESSy:

- DK-LAB: comprehensive, case-based, compulsory laboratory surveillance system for chlamydia and LGV (LGV part of data source is incomplete). National case definitions are applied.
- DK-STI_CLINICAL: comprehensive, case-based, compulsory, clinician-based surveillance system for gonorrhoea, syphilis and congenital syphilis. National case definitions are applied.

Both systems have national coverage.

Case reporting

Mandatory universal (since 1865)

- Diseases covered: syphilis, gonorrhoea, (congenital syphilis)
- Coverage: unknown. Reporting is obligatory for all physicians in all settings (private and public).
- Laboratory confirmation is required for syphilis (but some cases are notified without laboratory reports, e.g. partners traced because of clinical diagnosis)
- Individual-level reporting
- Variables: place of diagnosis, date of diagnosis, age, gender, country of birth/nationality, sexual orientation, HIV status, place where infection was contracted, mode of transmission, anatomical site of infection, type of healthcare provider

Estonia

Data are reported to TESSy through four data sources:

- EE-CONSYPH: congenital syphilis (1998–2012)
- EE-GONOCOCC: gonorrhoea (1990–2012)
- EE-HCV/CHLAMYDIA: *Chlamydia trachomatis* infection (1991–2012)
- EE-PERTUSSIS/SHIGELLOSIS/SYPHILIS: syphilis (1990–2012)
- EE-NAKIS: congenital syphilis, gonorrhoea, *Chlamydia trachomatis* infection and syphilis (since 2013)

All systems are comprehensive, case-based, compulsory and provide national coverage. Data are reported by hospitals, clinicians, laboratories and other sources. Estonia applies EU-2008 case definitions.

Case reporting

Mandatory universal (since 1950)

- Disease covered: syphilis, congenital syphilis, gonorrhoea, chlamydia
- Coverage: Reporting is obligatory for all physicians in all settings (private and public).
- An estimated total of 51–75 % of all physicians report.
- An estimated total of 76–99 % of all syphilis cases, 51–75 % of all gonorrhoea cases, 26–50 % of all chlamydia cases are reported.
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: age, gender, date of onset, date of diagnosis, place of diagnosis, stage of syphilis (ICD 10)

Sentinel

None

Laboratory test reporting

Mandatory universal (since 2004)

- It is obligatory for laboratories to participate in disease surveillance.
- Diseases covered: syphilis, gonorrhoea, chlamydia
- Coverage: unknown
- Individual-level reporting
- Can be, but is not always, linked to case reports.
- Variables: age, gender, place of residence (county level), date of test result

Finland

The data source NIDR reports cases of chlamydia, gonorrhoea, LGV, syphilis (including congenital syphilis) to TESSy. The system is case based and comprehensive. Data are collected from clinicians and laboratories, and reporting is compulsory. Geographical coverage and applied case definitions are not reported. No features are reported for congenital syphilis.

Case reporting

Mandatory universal

- Diseases covered: syphilis, gonorrhoea, LGV
- Coverage: >95 %
- Laboratory confirmation is required
- Individual-level reporting
- Variables: place of residence, gender, age, symptoms, sexual orientation, source country

Sentinel

- Six STI clinics, two gynaecological clinics, three healthcare centres and two student healthcare centres participate in this surveillance system
- Diseases covered: syphilis, HIV, gonorrhoea, chlamydia, LGV, genital herpes, genital warts
- Laboratory confirmation is required for chlamydia, syphilis, gonorrhoea, LGV.
- Individual-level reporting
- Variables: age, gender, symptoms, history of STI, number of partners during the last 12 months, sexual orientation, source country

Laboratory test reporting

Mandatory universal

- Diseases covered: syphilis, gonorrhoea, LGV and chlamydia
- Coverage: >95 %
- Individual-level reporting
- Gonorrhoea; LGV and syphilis can be linked to case reports.
- Variables: age, gender, date of diagnosis, place of diagnosis, sample type, laboratory test used
- Gonorrhoea AMR testing for all isolates

France

The data source FR-STI reports cases of gonorrhoea and syphilis to TESSy. The system is case based and sentinel. Data are collected from clinicians, and reporting is voluntary. Surveillance is national, but the coverage rate is unknown. National case definitions are applied, based on clinical and laboratory criteria. To date, no features are reported to TESSy for congenital syphilis, *Chlamydia trachomatis* infection and LGV, but these latter two are routinely monitored.

Case reporting

Mandatory universal (until 2000)

Mandatory notification for four STI (gonorrhoea, syphilis, LGV and chancroid) was stopped in 2000 due to very low completeness levels.

Voluntary sentinel (since 2000 for syphilis, 2004 for gonorrhoea)

- Diseases covered: syphilis (primary, secondary or early latent), gonorrhoea
- Coverage: Unknown. Sentinel network of clinicians in STI clinics, less often in hospitals; private practitioners.
- Laboratory confirmation is required.
- Individual-level reporting
- Common variables: place of diagnosis, date of diagnosis, age, gender, place of residence, country of birth, country of residence, sexual orientation, history of STI, HIV status, date of HIV test, reason for IST consultation, clinical symptoms, concurrent STI, condom use, number and gender of partners in the last 12 months; for syphilis: laboratory test used and stage of syphilis; for gonorrhoea: history of gonorrhoea in the last 12 months, site of infection, country of acquisition, treatment, partner status (casual, stable, CSW), drug/alcohol use.

Voluntary sentinel (since 2004)

- Diseases covered: LGV
- Coverage: unknown. Sentinel network of clinicians and public or private laboratories
- Laboratory confirmation is required (genotyping of anorectal chlamydial infections).
- Individual-level reporting
- Variables: place of diagnosis, date of diagnosis, age, gender, place of residence, country of birth, country of residence, sexual orientation, history of STI, HIV status, date of HIV test, reason for IST consultation, clinical symptoms, concurrent STI, condom use, number and gender of partners in last 12 months; for syphilis: laboratory test used, stage of syphilis; for gonorrhoea: history of gonorrhoea in last 12 months, site of infection, country of acquisition, treatment, partner status (casual, stable, CSW), drug/alcohol use.

Laboratory test reporting

Mandatory universal

None

Voluntary sentinel (since 1986 for gonorrhoea, 1989 for *Chlamydia trachomatis* infection, 2004 for LGV)

- Diseases covered: gonorrhoea (RENAGO), chlamydia (RENACHLA) and LGV
- Coverage: unknown. Sentinel network of public or private laboratories (~200 laboratories for RENAGO, ~80 laboratories for RENACHLA, ~30 laboratories for LGV network).
- Individual-level reporting. Cannot be linked to cases reported for gonorrhoea and for chlamydia.
- Common variables: place of diagnosis, date of diagnosis, gender, age, site of infection, clinical symptoms, reason for testing, concurrent STI, laboratory test used, category of clinic and of physician; for LGV: HIV status, sexual orientation, partner status (casual, stable, CSW), country of acquisition, number of partners in the last month. Antimicrobial resistance of strains tested through RENAGO (Reseau National du Gonocoque) in the reference laboratory is the basis for EuroGASP participation.

Germany

The data source DE-SURVNET@RKI-7.3 reports data for syphilis and congenital syphilis from Germany. The system is a comprehensive and compulsory system with national coverage providing case-based data. Data are reported by clinicians and laboratories. National case definitions are used.

There are no comprehensive data sources reporting data on chlamydia and gonorrhoea.

Case reporting

Mandatory universal

- New system introduced in 2001. Laboratory-reported cases are linked with reports from physicians.
- Diseases covered: syphilis
- Coverage: 75–99 % of syphilis cases are reported. Reporting is obligatory for all physicians in all settings (private and public).
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: three-digit postcode of residence, gender, age, laboratory results, clinical symptoms, date of infection, CSW, contact with CSW, sex between men, connatal infection, heterosexual transmission country of origin, place where infection was contracted.

Laboratory test reporting

Mandatory universal

- Diseases covered: syphilis
- Individual-level reporting
- Can be linked to case reports – see above
- Variables: see universal case variables above

Greece

Greece uses one data source for reporting STI data, the GR-NOTIFIABLE_DISEASES system, developed by the Hellenic Centre for Disease Control and Prevention (KEELPNO). KEELPNO is, by law, responsible for epidemiological surveillance in Greece. The new surveillance system for STI, established in 2009, collects case-based and aggregate data on chlamydia, gonorrhoea, syphilis, congenital syphilis and LGV. Data are collected from clinicians, laboratories, and hospitals in the public and private sector. Reporting is compulsory for all diseases mentioned above. EU-2008 case definitions are applied. The new system is intended to be comprehensive, but significant underreporting may exist in the private sector. GR-NOTIFIABLE_DISEASES has provided national coverage for chlamydia and gonorrhoea since 2011.

Case reporting

Mandatory and universal (since 1950) for syphilis, gonorrhoea, congenital syphilis, LGV and (since 2011) chlamydia

- Data presented in this report are subject to change if new evidence is provided by reporting centres. Due to the introduction of the new surveillance system, no time trends can be calculated at this point. The increase in the reported number of chlamydia, gonorrhoea and syphilis cases is mainly attributed to the inclusion of data from more reporting centres. Data on gonorrhoea were provided by the National Reference Centre for *N. gonorrhoea* until 2009 and by KEELPNO from 2010 onwards, incorporating data from more centres than before.
- Coverage: In theory, the system is comprehensive, as reporting is obligatory for all private and public physicians, laboratories and hospitals, but underreporting exists in the private sector. Active surveillance has been implemented since 2009 to increase case detection in, and reporting from, the public sector. Since 2011, the system provides national coverage of chlamydia and gonorrhoea for the entire public sector.
- Laboratory confirmation: required
- Variables (case based): age, gender, date of onset, date of diagnosis, date of notification, reporting centre, clinical service type, country of birth, possible country of infection, HIV status, reason for testing, transmission category, clinical symptoms, laboratory results, sex worker, contact with sex worker, site of infection, syphilis stage
- Variable (aggregate): age, gender, transmission category

Sentinel

none

Laboratory test reporting

Mandatory and universal (since 1987)

- Diseases covered: syphilis and gonorrhoea, chlamydia
- Antimicrobial susceptibility testing of *N. gonorrhoeae* and gonorrhea AMR surveillance is carried out by the National Reference Centre for *N. gonorrhoeae*, Laboratory of Bacteriology, Hellenic Pasteur Institute (NRCNG).

Hungary

Data are reported through the data source HU-STD SURVEILLANCE. This covers chlamydia, LGV, gonorrhoea, syphilis and congenital syphilis. This sentinel system reports aggregated data on all STI except congenital syphilis (case based). Data are reported by clinicians, and reporting is compulsory. The system has national coverage and applies EU-2008 case definitions.

Case reporting

Mandatory universal (since 1945)

Sentinel

Laboratory test reporting

Mandatory universal

Voluntary universal

Iceland

Iceland reports STI data to TESSy through one data source: IS-SUBJECT_TO_REGISTRATION. The system is compulsory, comprehensive and provides national coverage. Case-based data are reported to the system by hospitals, laboratories and clinicians. The system applies EU-2008 case definitions for all diseases under surveillance (chlamydia, gonorrhoea and syphilis).

Case reporting

Mandatory universal (since 1999)

- Diseases covered: syphilis, gonorrhoea, chlamydia and genital warts
- Coverage: Reporting is obligatory for all physicians in all settings (private and public). An estimated total of 76–99 % of all diagnosed syphilis and gonorrhoea cases are reported to this system.
- Laboratory confirmation is required for syphilis, gonorrhoea and chlamydia.
- Individual-level reporting for syphilis, gonorrhoea and chlamydia
- Aggregate reporting for genital warts and urethritis
- Variables: place of residence, clinic/physician type, date of onset, date of diagnosis, place of diagnosis, gender, age, probable route of transmission, site of infection, nationality/country of birth, IDU, reason for testing, country where infection was contracted, sexual orientation

Sentinel

None

Laboratory test reporting

Mandatory universal (since 1999)

- Obligatory for public laboratories to participate in this surveillance
- Diseases covered: syphilis, gonorrhoea and chlamydia
- Coverage: It is estimated that all positive test results for STI in the country are reported to the system.
- Individual-level reporting
- Can be linked to case reports
- Variables: place of residence, clinic/physician type, date of diagnosis, place of diagnosis, gender, age, reason for testing, site of infection, all clinical data from the clinician to laboratory
- Gonorrhoea AMR testing for all isolates

Ireland

Four data sources contain STI data from Ireland: the IE-AGGR_STI and IE-SYPHILIS systems apply EU-2002 case definitions. The current EU case definitions are used.

- IE-AGGR_STI: Between 1995 and 2012, the system reported aggregated data on chlamydia, gonorrhoea and LGV. The system was comprehensive, compulsory, had national coverage and collected data reported by clinicians, laboratories and hospitals. Starting in 2013, chlamydia, gonorrhoea and LGV reporting was integrated into IE-CIDR.
- IE-SYPHILIS: Between 2000 and 2011, the system reported case-based data on syphilis and congenital syphilis. The system was comprehensive, compulsory, has national coverage and collects data reported by clinicians, laboratories and hospitals. Starting in 2012, syphilis and congenital syphilis reporting was integrated into IE-CIDR.
- IE-CIDR: The system has been reporting case-based data on syphilis and congenital syphilis since 2012. Since 2013, the system has also been reporting data on chlamydia, gonorrhoea and LGV. The system is comprehensive, compulsory, has national coverage and collects data reported by clinicians, laboratories and hospitals.
- IE-LGV: The system reported case-based data on LGV between 2009 and 2012. The system was comprehensive, compulsory, had national coverage and collected data reported by clinicians, laboratories and hospitals. Starting in 2013, LGV reporting was integrated into IE-CIDR.

Case reporting

Mandatory universal (since 1981)

- Diseases covered: syphilis, congenital syphilis, gonorrhoea, *Chlamydia trachomatis* infection, LGV
- Coverage: national
- Laboratory confirmation is required.
- Aggregate reporting for chlamydia and gonorrhoea 1995–2012. Case-based reporting for chlamydia and gonorrhoea since 2013. Case-based reporting for LGV, syphilis and congenital syphilis since 2000.
- Variables: aggregate dataset for chlamydia and gonorrhoea 1995–2012: disease, neighbourhood where disease was notified, age group, gender, and geographical area. Case-based dataset: date of birth, gender, country of birth, county of residence, date of diagnosis, country of infection

Enhanced

- Diseases covered: syphilis and congenital syphilis (since 2000); LGV (since 2009)
- Coverage: national
- Laboratory confirmation is required for both syphilis and LGV.
- Variables: For syphilis, date of birth, gender, country of birth, county of residence, syphilis stage, place of diagnosis, date of diagnosis, re-infection or not, HIV status, country of infection, mode of transmission. For LGV, date of birth, gender, country of birth, county of residence, date of diagnosis, country of infection, mode of transmission.

Laboratory test reporting

Mandatory universal (since 2004)

- Diseases covered: syphilis, congenital syphilis, gonorrhoea, chlamydia, LGV
- Coverage: national
- Case-based reporting
- Variables: as reported above under ‘case reporting’

Italy

Italy reports STI data to TESSy through the IT-NRS data source. The system is comprehensive, compulsory, has national coverage and provides case-based data on gonorrhoea and syphilis. Data are reported by hospitals and clinicians. The case definitions applied were not reported.

Case reporting

Mandatory universal (since 1956)

- Diseases covered: syphilis and gonorrhoea
- Coverage: Unknown. Reporting is obligatory for all physicians in all settings (private and public).
- Laboratory confirmation is required for syphilis and gonorrhoea.
- Individual-level reporting
- Variables: place of residence, age group, gender, country of birth.

Sentinel (since 1991)

- 12 public STI clinics participate in this system. Non-random samples.
- Diseases covered: syphilis, gonorrhoea, chlamydia, genital herpes, genital warts, urethritis, PID, LGV
- Coverage: An estimated total of 50 % of all syphilis and gonorrhoea cases is recorded in the system.
- Laboratory confirmation is required for syphilis, gonorrhoea and chlamydia.
- Variables: date of diagnosis, place of diagnosis, site of infection, sexual orientation, country where infection was contracted, nationality, age, gender, place of residence, history of STI, HIV status, date of previous HIV test, number of partners in last six months, condom use in last six months, drug use lifetime.

Laboratory test reporting

Mandatory universal

None

Voluntary universal (since 2009)

- 13 large public laboratories located in major cities report to this system.
- Diseases covered: gonorrhoea, chlamydia, *trichomonas vaginalis*
- Individual-level reporting
- Variables collected: age, gender, nationality, site of infection, symptoms, pregnancy, use of condoms in the previous six months, number of partners in the previous six months, stable partner in the previous three months, date of diagnosis

Latvia

The data source LV-BSN reports cases of chlamydia, gonorrhoea, syphilis and congenital syphilis to TESSy. The system is case-based and comprehensive, compulsory and has national coverage. Data are collected from clinicians and laboratories. The current EU case definitions are used.

Case reporting

Mandatory universal

- Diseases covered: syphilis, gonorrhoea, chlamydia, LGV and genital HSV
- Coverage: obligatory for all physicians in all setting, private and public
- Laboratory confirmation is required for syphilis, gonorrhoea, chlamydia
- Individual-level reporting
- Variables: reporting centre, place of residence, age, gender, date of onset, date of diagnosis, date of notification, laboratory results and method of testing, transmission, contact with sex worker, drug use, stage of syphilis, etc.

Sentinel

None

Laboratory test reporting

Mandatory universal (since 2008)

- Disease covered: syphilis, gonorrhoea, chlamydia and genital HSV
- Individual-level reporting only for positive results in accordance with EU case definitions
- Variables: age, gender, place of residence, date of test result, method, etc.

Voluntary universal

None

Lithuania

The data source LT-COMMUNICABLE_DISEASES reports cases of chlamydia, gonorrhoea, syphilis and congenital syphilis to TESSy. LGV has been included in reporting since July 2011. The system is comprehensive and provides national coverage. Case-based data are reported by clinicians and reporting is compulsory. EU-2008 case definitions are used.

Case reporting

Mandatory universal (2003)

- Diseases covered: syphilis, gonorrhoea, chlamydia and LGV (since 2011), congenital syphilis
- Coverage: Reporting is obligatory for all physicians in all settings (private and public).
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: place of residence (county level), probable place where infection was contracted, date of onset, date of diagnosis, date of notification, place of diagnosis, reason for testing, gender, age, education, probable route of transmission, contact with CSW in the last six months, number of partners in the last 12 months, condom use

Sentinel

None

Laboratory test reporting

Mandatory universal

None

Voluntary universal

None

Luxembourg

Luxembourg reports STI data through two data sources:

- LU-CHLAMYDIA: sentinel, voluntary system reports case-based data from laboratories and hospitals. The system does not have national coverage. The case definitions in use are not reported.
- LU-SYSTEM1: comprehensive, case-based, compulsory notification system. Data are reported by clinicians. Geographical coverage is not reported. No case definitions are applied.

Case reporting

Mandatory universal (since 1945)

Sentinel

Laboratory test reporting

Mandatory universal

Voluntary universal

Malta

Malta reports STI data through the MT-DISEASE_SURVEILLANCE data source. The system is used for reporting case-based data on chlamydia, LGV, gonorrhoea, syphilis and congenital syphilis. Data are reported by clinicians, laboratories and hospitals. Other sources supply additional data on chlamydia, gonorrhoea and syphilis. The system is compulsory and comprehensive and applies EU-2008 case definitions. Geographical coverage is not reported.

Case reporting

Mandatory universal

- Diseases covered: syphilis, gonorrhoea and chlamydia (congenital syphilis)
- Coverage: unknown. Reporting is obligatory for all physicians in all settings (private and public).
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: place of residence, clinic/physician type, date of diagnosis, place of diagnosis, gender, age

Sentinel

None

Laboratory test reporting

Mandatory universal

- All laboratories participate in the surveillance system.
- Diseases covered: syphilis, gonorrhoea and chlamydia
- Coverage: An estimated total of 76–99 % of all positive test results for STI is reported to the system.
- Individual-level reporting
- Can be, but is not always, linked to case reports
- Variables: sex, age, mode of transmission, clinic/physician type, site of infection, date of report

The Netherlands

STI are reported through the NL-STI data source. Reports cover chlamydia, gonorrhoea, syphilis and LGV. This sentinel surveillance system covers all STI centres in the country. The system offers national coverage and is particularly sensitive towards high-risk populations by using a fixed set of criteria (i.e. young age, MSM, risk behaviour, having STI symptoms, notification, ethnic origin from a country with a generalised HIV epidemic).

All clients are tested for chlamydia, gonorrhoea, syphilis, HIV; other tests are done on indication. Since 2012, young people with no other risk factors are tested for chlamydia first. If positive, tests for gonorrhoea, syphilis and HIV follow. The surveillance system collects case-based data regarding the diagnosis, with national case definitions applied (laboratory confirmation), as well as demographic and behavioural data.

Case reporting

Sentinel (since 2006)

- Reporting by eight STI regions, representing all 36 municipal health services
- Diseases covered: syphilis, gonorrhoea, chlamydia, HIV, hepatitis B and C, genital herpes, genital warts, trichomoniasis, non-specific urethritis, LGV
- Coverage: national
- Laboratory confirmation is required for syphilis, gonorrhoea, chlamydia, LGV, HIV and hepatitis
- Variables: place of diagnosis, date of diagnosis, sex, age, place of residence, ethnic origin (by country of birth or parents' country of birth, reason for testing, sexual orientation, history of STI, CSW, contact with CSW, IDU, HIV status, date of HIV test, number of partners in the last six months, condom use at last sexual contact, laboratory test, site of infection, AMR (for gonorrhoea only).

Laboratory test reporting

Mandatory

None

Sentinel

None

Norway

The data source MSIS reports cases of chlamydia, gonorrhoea, syphilis and congenital syphilis to TESSy. The system is case based and comprehensive. Data (gonorrhoea and syphilis) are collected from clinicians and laboratories (chlamydia, gonorrhoea and syphilis). Reporting is compulsory.

NO-MSIS_B: This data source provides data for gonorrhoea, syphilis and congenital syphilis. For gonorrhoea and syphilis, the system is reported as being comprehensive and case based, collecting reports from clinicians, laboratories and hospitals. Notification is compulsory. For congenital syphilis, features of the data source are not reported.

NO-MSIS_CHLAMYDIA: The data source reports data on chlamydia. The system is comprehensive, compulsory and collects case-based data from laboratories (since 2005).

Case reporting

Mandatory universal (since 1922)

- Diseases covered: syphilis and gonorrhoea
- Coverage: >95 %
- EU-case definitions 2008
- Individual-level reporting
- Variables: place of residence, date of onset, date of diagnosis, place of diagnosis, gender, age, nationality/country of birth, type of clinic, a/symptomatic, reason for testing, site of infection, route of transmission, place/country of infection, relation to source partner

Sentinel

None

Laboratory test reporting

Mandatory universal

- Diseases covered: chlamydia, syphilis and gonorrhoea
- Coverage: >95 %
- Individual-level reporting for all three STI (chlamydia since 2005)
- Case definition chlamydia: one or more positive tests for chlamydia within a period of 60 days
- Aggregate data on total number of tests per year for chlamydia
- Variables
  - chlamydia: birth year, sex, municipality of residence, date of diagnosis, reporting laboratory
  - gonorrhoea/syphilis: age, gender, date of sending the report, reporting laboratory, reporting form's unique ID number
- Gonorrhoea AMR testing (PPNG, quinolones) for all isolates

Sentinel

None

Poland

In Poland, in 2013, two systems of data collection were in place. Both systems evolved from the integrated surveillance and care system introduced in 1949 (initially including syphilis, gonorrhoea and chancroid) and cover local (municipal) and regional STI clinics where STI patients are referred to care by individual clinicians.

STI clinics maintain a registry of all their STI patients and produce aggregated reports for the regional and central level. The individual referrals are the foundation of a case-based reporting system, initially based on the 16 regional STI clinics (the local/municipal level is no longer included in the surveillance), which received notifications from individual clinicians. In addition, aggregated reporting by all STI clinics was added to the healthcare statistics system. Data reported to TESSy come from the healthcare statistics branch of the system (aggregate reporting).

Case reporting (including laboratory test reporting)

Mandatory universal

- Date introduced: 2001, based on an earlier system established in 1949, modified in 2009 and 2015. Operational since 2013 and now integrated into the national infectious disease surveillance system.
- Mandatory for all clinicians and laboratories, reports are sent to local (*powiat*) sanitary-epidemiological stations.
- Diseases covered: syphilis, gonorrhoea, chlamydia
- Coverage: unknown
- Laboratory confirmation required
- Case definition: EU 2008
- Individual-level reporting to local level, aggregated reporting from local to regional and central level
- Variables: gender, date of birth, place of residence, date of diagnosis, laboratory test results, reason for testing, history of STI, transmission route

Aggregated reporting (healthcare statistics)

Mandatory, STI specialised clinics and practitioners

- Date introduced: evolved from a system introduced in 1949
- Includes reports from clinics and individual practitioners who are registered as providing STI services. Notifications are integrated into healthcare statistics system, separate from the infectious diseases surveillance system.
- Disease covered: syphilis, gonorrhoea, chlamydia, genital herpes, genital warts
- Coverage: 60–70 %
- Aggregate reporting, annual
- Variables: year of the first visit, number of cases, by age group and gender of: congenital syphilis, primary syphilis, secondary syphilis, late syphilis, gonorrhoea, chlamydia and NGU, genital warts, genital herpes, number of syphilis contact persons treated, number of gonorrhoea contact persons treated, number of patients tested for syphilis, number of patients from whom gonorrhoea culture was performed, number of gonorrhoea-positive cultures, number of hospitalised gonorrhoea patients, number of hospitalised syphilis patients

Portugal

Portugal reports STI data to TESSy through three data sources:

- PT-GONOCOCCAL: data on gonorrhoea
- PT-SYPHILIS: data on syphilis
- PT-CONGENITAL_SYPHILIS: data on congenital syphilis

All three systems are comprehensive, compulsory and have national coverage. Case-based data are reported by clinicians. National case definitions are applied.

Case reporting

Mandatory universal (since 1950)

- Diseases covered: syphilis, gonorrhoea, congenital syphilis
- Coverage: unknown. Reporting is obligatory for all physicians in all settings (private and public).
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: place of residence, date of onset, date of reporting, gender, age (date of birth), probable route of transmission

Sentinel (since 2002)

- GEIDST
- Diseases covered: syphilis, gonorrhoea, chlamydia and genital herpes (HPV, trichomoniasis, urethritis, chancroid, molluscum, pediculosis, HBV, HCV)
- Coverage: unknown
- Laboratory confirmation is required for syphilis, gonorrhoea and chlamydia
- Individual-level reporting
- Variables: place of residence, date of diagnosis, gender, age (date of birth), level of education, country of birth/nationality, type of clinic, reason for testing, site of infection, concurrent STI, HIV status, sexual orientation, number of partners in the last six months, drug use, CSW

Laboratory test reporting

- None
- Gonorrhoea AMR testing for all isolates in reference laboratory.

Romania

The data source RO-RNSSy collects data on STI from Romania. The system reports case-based data on chlamydia, gonorrhoea, syphilis and congenital syphilis. The system is comprehensive, compulsory and has national coverage. Data are reported by hospitals using the EU-2008 case definitions.

Case reporting

Mandatory universal

- The legislation for compulsory STI (gonorrhoea and syphilis) reporting started in March 1953 and was updated in 1971. Since 1 January 2005, the reporting of cases is compulsory (Ordinance Number 1060/25 Aug 2004). Only laboratory-confirmed cases are reported.
- Since 1 January 2014, STI cases have been reported according to Order 1342/25 Nov 2013. Epidemiological investigation formats were updated in accordance with the ECDC/TESSy requirements.
- Testing for syphilis is required for marriage health certificates, university enrolment, military service, employment, and if ordered by a clinician.
- Syphilis cases are confirmed by dermatovenereology specialists; reporting is mandatory universal with national coverage. There are no sentinel systems.
- Variables are identical for chlamydia, gonorrhoea and syphilis cases.
- Variables: place of residence, place of infection, date of diagnosis, gender, pregnancy (if female), age (date of birth), level of education, marital status, country of birth/nationality, diagnosis, site of infection, passive or active investigation, notification of the source infection, sexual orientation, number of contacts, risk behaviour (drug use, CSW), history of STI, testing of source and contacts, month of statistics

Laboratory test reporting

Mandatory universal

All positive cases of chlamydia, gonorrhoea and syphilis are reported to the District Public Heath Directorate.

Slovakia

Slovakia uses one data source to report STI to TESSy: SK-EPIS covers syphilis, congenital syphilis, gonorrhoea, chlamydia and LGV. It collects case-based data from hospitals, laboratories and clinicians, has national coverage, and is compulsory.

EU-2008 case definitions are used.

Case reporting

Mandatory universal (since 1945)

- Diseases covered: syphilis, gonorrhoea (since 1945), LGV (since 1960), chlamydia (since 2006)
- Coverage: Reporting is obligatory for all physicians in all settings (private and public). It is estimated that 90 % of all syphilis cases and 70–80 % of all gonorrhoea cases are reported to SK-EPIS.
- Laboratory confirmation: required
- Individual-level reporting
- Variables: date of birth, gender, permanent address, place of diagnosis, citizenship, country of birth, profession, marital status, sexual partners, history of STI, date of onset, date of diagnosis, site of infection, date of notification, laboratory test results.

Sentinel

None

Laboratory test reporting

Mandatory universal

- Diseases covered: syphilis, gonorrhoea and chlamydia (since 2006)
- Coverage: an estimated 70 % of all positive test results for STI are reported to the system.
- Individual-level reporting
- Can be linked to case reports.
- Gonorrhoea AMR testing for all isolates

Slovenia

The data source SI-SPOSUR reports cases of chlamydia, LGV, gonorrhoea, syphilis and congenital syphilis to TESSy.

The system is comprehensive, compulsory and provides national coverage. Case-based data are reported by clinicians. EU-2008 case definitions are applied.

Case reporting

Mandatory universal

- Diseases covered: syphilis, congenital syphilis, gonorrhoea (since 1948), chlamydia, LGV (since 1995)
- Coverage: Reporting is obligatory for all physicians in all settings (private and public). All 11 STI/DV clinics report. An estimated total of 76–99 % of all diagnosed syphilis cases is reported to the system. No reliable estimates of underascertainment and underreporting of STI are available.
- Laboratory confirmation is required for syphilis, gonorrhoea, chlamydia and LGV.
- Individual-level reporting
- Variables: Soundex code of surname; date of birth; gender; residence administrative unit; citizenship; country of birth; profession; marital status; previous STI; if previous STI, year of last STI; number and nationality of sexual partners in last three months, probable country of infection, paid for sex in the last three months (number of male and female partners), date of diagnosis, ICD code for STI diagnosis, date of notification, reporting physician, reporting physician's speciality

Sentinel

None

Laboratory test reporting

Mandatory universal

None

Voluntary universal

- None
- Gonorrhoea AMR testing for all isolates

Spain

Spain has two data sources reporting STI data to TESSy:

- ES-MICROBIOLOGICAL is a sentinel laboratory, case-based, voluntary system for chlamydia, gonorrhoea and syphilis (syphilis until 2008) and applies EU-2008 case definitions.
- ES-STATUTORY_DISEASES is a comprehensive, compulsory, clinician-based system reporting aggregate data on gonorrhoea and syphilis and case-based data on congenital syphilis. National case definitions are applied and it offers countrywide coverage.

Case reporting

Mandatory universal (since 1982)

- Diseases covered: syphilis, gonorrhoea
- Coverage: Reporting is obligatory for all physicians in all settings (private and public). Level of underreporting is unknown.
- Laboratory confirmation is not required.
- Aggregate reporting
- Variables: number of cases, province, region, year of diagnosis

Mandatory universal (since 1997)

- Diseases covered: congenital syphilis
- Coverage: Reporting is compulsory for all physicians in all settings (private and public). Level of underreporting is unknown.
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: sex, age, date of diagnosis, outcome, date of death, HIV status of the mother, province and region of notification, other variables.

Sentinel

- STI sentinel surveillance was implemented in July 2005: 14 centres of diagnosis and treatment in 13 cities.
- Diseases covered: syphilis, gonorrhoea
- Coverage: Around 20104% of all syphilis cases and 30 % of all gonorrhoea cases are reported to the mandatory system (2006–2008).
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: type of clinic, reason for testing, site of infection, date of diagnosis, place of diagnosis, age, gender, country of birth/nationality, concurrent STI, HIV status, history of STI, country where infection was contracted, transmission route, CSW contact, number of partners in the last 12 months, sexual contact with HIV-positive partner

Laboratory test reporting

Sentinel reporting

- Sistema de Información Microbiológica (SIM) since 1989
- Diseases covered: syphilis (until 2008), gonorrhoea, chlamydia, genital herpes
- Individual-level reporting
- Variables: sex, age, specimen type, site of infection

Sweden

Sweden uses the data source SMINET to report STI to TESSy. The comprehensive system collects case-based data on *Chlamydia trachomatis* infection, gonorrhoea, syphilis and congenital syphilis from laboratories; the system is compulsory and has national coverage. EU-2008 case definitions are applied.

Case reporting

Mandatory universal

- Diseases covered: syphilis, gonorrhoea (since 1912) and *Chlamydia trachomatis* infection (since 1988), congenital syphilis
- Coverage: >90 %
- Laboratory confirmation is required.
- Individual-level reporting
- Variables: place of residence, date of onset, date of diagnosis, place of diagnosis, gender, age, nationality/country of birth, type of clinic, a/symptomatic, reason for testing, site of infection, imported, country, route of transmission

Sentinel

None

Laboratory test reporting

Mandatory universal

- Diseases covered: syphilis, gonorrhoea and chlamydia (since 2004)
- Coverage: an estimated total of >95 % of all positive test results for STI in the country are reported to the system.
- Aggregated total test data on gonorrhoea and chlamydia
- Variables: clinic/physician type, gender, age
- Cannot be linked to case reports
- Gonorrhoea AMR testing for all isolates

United Kingdom

The United Kingdom uses four data sources to report STI to TESSy:

- UK-GUM: chlamydia, gonorrhoea, syphilis and congenital syphilis
- UK-LAB: gonorrhoea and syphilis
- UK-GUM-COM: chlamydia
- UK-ENHANCED: LGV

These sources report confirmed diagnoses and provide aggregated data. UK-GUM collects data on diagnoses made in all genitourinary medicine (GUM – also known as STI) clinics across the United Kingdom, and reporting is mandatory. GUM clinics have comprehensive coverage but some STI may be diagnosed in other settings.

UK-GUM-COM is comprehensive and collects data on all diagnoses of chlamydia made in GUM clinics and, for England and Wales, community-based test settings. UK-GUM-COM data are provided by GUM clinics, community-based testing sites and laboratories but reporting is only part-mandatory. UK-LGV collects laboratory reports for all LGV diagnoses made in the United Kingdom. Reporting is comprehensive and voluntary. Data are provided by the UK LGV reference laboratories.

Case reporting

Mandatory universal (since 1917) – UK-GUM

- Diseases covered: any condition diagnosed in a GUM clinic, including syphilis, congenital syphilis, gonorrhoea, chlamydia, genital herpes, genital warts, trichomonas
- Coverage: Comprehensive for GUM clinics but some STI may be diagnosed in other settings. All syphilis and most gonorrhoea diagnoses are confirmed by GUM clinics whereas almost half of chlamydia diagnoses are made in community-based test settings.
- Laboratory confirmation: required
- Data format: aggregated
- Variables: local geographic area, gender, age group, sexual orientation

Voluntary universal

- Diseases covered: chlamydia, LGV
- Coverage: comprehensive
- Laboratory confirmation is required
- Data format: aggregated
- Variables: local geographic area, gender, age group plus extensive enhanced variable collection for LGV

Sentinel

None

Laboratory test reporting

Mandatory universal

None

Voluntary universal

- Disease covered: chlamydia
- Coverage: comprehensive
- Laboratory confirmation is required.
- Data format: aggregated
- Variables: local geographic area, gender, age group

Variation in surveillance methods across the United Kingdom

STI surveillance methods vary across the countries of the United Kingdom. The following summaries briefly describe how these variations are reflected in the United Kingdom STI TESSy return.

England

For 2013, the English contribution to the United Kingdom datasets consisted of data on chlamydia, gonorrhoea, syphilis, and LGV diagnoses made in GUM clinics throughout England. The data are collected through the GUM Clinic Activity Dataset (GUMCADv2), a disaggregate patient-level dataset of all STI diagnoses and services at GUM clinics in England.

Scotland

The Scottish contribution to the United Kingdom datasets consisted of data on laboratory-positive diagnoses for chlamydia and gonorrhoea, and data from an enhanced syphilis surveillance system which collects both clinical and laboratory information.

Wales

Data reported to TESSy are collected through the *Sexual health in Wales surveillance system* (SWS). The SWS receives data from two sources: laboratories and integrated sexual health clinics. Laboratory data include tests requested from all healthcare settings, but most information captured by the clinical arm of SWS is from hospital clinics (previously known as GUM clinics). Data on syphilis, gonorrhoea and chlamydia are reported to TESSy.

Northern Ireland

Northern Ireland contributes data collected in all GUM clinics to the United Kingdom TESSy STI report. Data on syphilis, congenital syphilis, gonorrhoea and chlamydia are collected in aggregate format from GUM clinics (mandatory universal reporting).

Annex 4. Enhanced set of variables for STI surveillance

Variable name	Syphilis	Gonorrhoea	*Chlamydia trachomatis* infection	LGV	Congenital syphilis
Common set of variables					
1. RecordID	✓	✓	✓	✓	✓
2. RecordType	✓	✓	✓	✓	✓
3. RecordTypeVersion	✓	✓	✓	✓	✓
4. Subject	✓	✓	✓	✓	✓
5. Status	✓	✓	✓	✓	✓
6. Data source	✓	✓	✓	✓	✓
7. Age	✓	✓	✓	✓	✓
8. Gender	✓	✓	✓	✓	✓
9. Outcome	N/A	N/A	N/A	N/A	✓
10. DateofOnset	✓	✓	✓	✓	✓
11. DateOfDiagnosis	✓	✓	✓	✓	✓
12. DateOfNotification	✓	✓	✓	✓	✓
13. DateUsedForStatistics	✓	✓	✓	✓	✓
14. ReportingCountry	✓	✓	✓	✓	✓
15. Classification	✓	✓	✓	✓	✓
16. ClinicalCriteria	N/A	N/A	N/A	N/A	N/A
17. LaboratoryResult	✓	✓	✓	✓	✓
18. EpiLinked	N/A	N/A	N/A	N/A	N/A
Disease-specific variables					
19. ClinicalServiceType	✓	✓	✓	✓	
20. CountryOfBirth	✓	✓		✓	✓
21. CountryOfNationality	✓	✓		✓	
22. ProbableCountryOfInfection	✓	✓		✓	
23. Transmission	✓	✓	✓	✓	
24. HIVStatus	✓	✓	✓	✓	
25. SexWorker	✓	✓		✓	
26. ContactSW	✓	✓		✓	
27. SiteOfInfection	✓	✓	✓	✓	
28. StagesSYPH	✓				
29. StagesSYPHdetailed	✓				
30. CountryOfBirthOfMother					✓
31. CountryOfNationalityOfMother					✓
32. AgeMonth					✓

N/A = Not applicable

Annex 5. Case definitions for STI

Source: Commission Decision 2002/253/EC as updated by subsequent commission decisions, laying down case definitions for reporting communicable diseases to the Community network under Decision No 1082/2013/EU of the European Parliament and of the Council.

Available from: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002D0253:20120927:EN:PDF

Chlamydial infection

(*Chlamydia trachomatis* including Lymphogranuloma venereum (LGV))

Clinical criteria

Any person with at least one of the following clinical forms:

Chlamydial infection non-LGV

At least one of the following six:

- Urethritis
- Epididymitis
- Acute salpingitis
- Acute endometritis
- Cervicitis
- Proctitis

In newborn children at least one of the following two:

- Conjunctivitis
- Pneumonia

Lymphogranuloma venereum (LGV)

At least one of the following five:

- Urethritis
- Genital ulcer
- Inguinal lymphadenopathy
- Cervicitis
- Proctitis

Laboratory criteria

Chlamydial infection non-LGV

At least one of the following three:

1. Isolation of *Chlamydia trachomatis* from a specimen of the ano-genital tract or from the conjunctiva
- Demonstration of *Chlamydia trachomatis* by DFA test in a clinical specimen
- Detection of *Chlamydia trachomatis* nucleic acid in a clinical specimen

LGV

At least one of the following two:

- Isolation of *Chlamydia trachomatis* from a specimen of the ano-genital tract or from the conjunctiva
- Detection of *Chlamydia trachomatis* nucleic acid in a clinical specimen

AND

- Identification of serovar (genovar) L1, L2 or L3

Epidemiological criteria

An epidemiological link by human to human transmission (sexual contact or vertical transmission).

Case classification

- Possible case: N/A
- Probable case: Any person meeting the clinical criteria and with an epidemiological link
- Confirmed case: Any person meeting the laboratory criteria

Gonorrhoea

(*Neisseria gonorrhoeae*)

Clinical criteria

Any person with at least one of the following eight:

- Urethritis
- Acute salpingitis
- Pelvic inflammatory disease
- Cervicitis
- Epididymitis
- Proctitis
- Pharyngitis
- Arthritis

OR

- Any newborn child with conjunctivitis

Laboratory criteria

At least one of the following four:

- Isolation of *Neisseria gonorrhoeae* from a clinical specimen
- Detection of *Neisseria gonorrhoeae* nucleic acid in a clinical specimen
- Demonstration of *Neisseria gonorrhoeae* by a non-amplified nucleic acid probe test in a clinical specimen
- Microscopic detection of intracellular gram negative diploccocci in a urethral male specimen

Epidemiological criteria

An epidemiological link by human to human transmission (sexual contact or vertical transmission)

Case classification

- Possible case: N/A
- Probable case: Any person meeting the clinical criteria and with an epidemiological link
- Confirmed case: Any person meeting the laboratory criteria

Syphilis

(*Treponema pallidum*)

Clinical criteria

Primary syphilis

Any person with one or several (usually painless) chancres in the genital, perineal, anal area or mouth or pharyngeal mucosa or elsewhere extragenitally

Secondary syphilis

Any person with at least one of the following five:

- Diffuse maculo-papular rash often involving palms and soles
- Generalised lymphadenopathy
- Condyloma lata
- Enanthema
- Allopetia diffusa

Early latent syphilis (< 1 year)

A history of symptoms compatible with those of the earlier stages of syphilis within the previous 12 months

Late latent syphilis (> 1 year)

Any person meeting laboratory criteria (specific serological tests)

Laboratory criteria

At least one of the following four laboratory tests:

- Demonstration of *Treponema pallidum* in lesion exudates or tissues by dark-field microscopic examination
- Demonstration of *Treponema pallidum* in lesion exudates or tissues by DFA test
- Demonstration of *Treponema* in lesion exudates or tissues by PCR
- Detection of *Treponema pallidum* antibodies by screening test (TPHA, TPPA or EIA)

AND

- additionally detection of Tp-IgM antibodies (by IgM-ELISA, IgM immunoblot or 19S-IgM-FTA-abs) – confirmed by a second IgM assay

Epidemiological criteria

- Primary/secondary syphilis: An epidemiological link by human to human (sexual contact)
- Early latent syphilis (<1 year): An epidemiological link by human to human (sexual contact) within the 12 previous months

Case classification

- Possible case: N/A
- Probable case: Any person meeting the clinical criteria and with an epidemiological link
- Confirmed case: Any person meeting the laboratory criteria for case confirmation

Syphilis, congenital and neonatal

(*Treponema pallidum*)

Clinical criteria

Any infant <2 years of age with at least one of the following ten:

- Hepatospenomegaly
- Mucocutaneous lesions
- Condyloma lata
- Persistent rhinitis
- Jaundice
- Pseudoparalysis (due to periostitis and osteochondritis)
- Central nervous involvement
- Anaemia
- Nephrotic syndrome
- Malnutrition

Laboratory criteria

Laboratory criteria for case confirmation

At least one of the following three:

- Demonstration of *Treponema pallidum* by dark field microscopy in the umbilical cord, the placenta, a nasal discharge or skin lesion material
- Demonstration of *Treponema pallidum* by DFA-TP in the umbilical cord, the placenta, a nasal discharge or skin lesion material
- Detection of *Treponema pallidum*-specific IgM (FTA-abs, EIA)

AND

- a reactive non-treponemal test (VDRL, RPR) in the child's serum

Laboratory criteria for a probable case

At least one of the following three:

- Reactive VDRL-CSF test result
- Reactive non-treponemal and treponemal serologic tests in the mother's serum
- Infant's non-treponemal antibody titre is fourfold or greater than the antibody titre in the mother's serum

Epidemiological criteria

Any infant with an epidemiological link by human to human transmission (vertical transmission)

Case classification

- Possible case: N/A
- Probable case: Any infant or child meeting the clinical criteria and with at least one of the following two:
  - an epidemiological link
  - meeting the laboratory criteria for a probable case
- Confirmed case: Any infant meeting the laboratory criteria for case confirmation

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