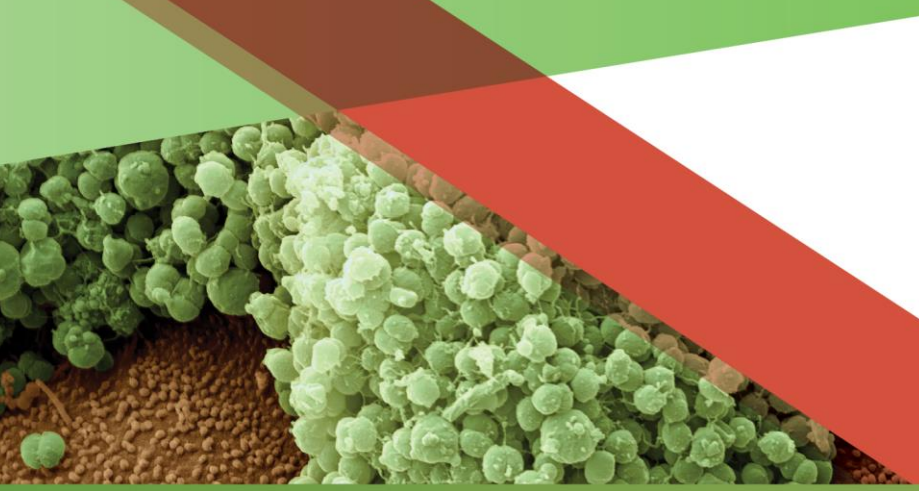

SURVEILLANCE REPORT

Gonorrhoea

Annual Epidemiological Report for 2018

Key facts

- A total of 100 673 confirmed cases of gonorrhoea were reported by 28 EU/EEA Member States for 2018.
- The overall crude notification rate was 26.4 cases per 100 000 population.
- Rates of reported gonorrhoea infection vary considerably across the EU/EEA, with higher rates reported in northern Europe.
- Men who have sex with men (MSM) accounted for almost half of the reported cases (48%) in 2018.
- The overall notification rate increased by 22% in 2018 compared to the previous year.

Methods

This report is based on data for 2018 retrieved from The European Surveillance System (TESSy) on 9 December 2019. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

For a detailed description of methods used to produce this report, refer to the *Methods* chapter [1].

An overview of the national surveillance systems is available online [2].

A subset of the data used for this report is available through ECDC's online *Surveillance atlas of infectious diseases* [3].

In 2018, the majority of countries (18) reported data using standard EU case definitions [4]. Five countries reported case numbers based on national case definitions, and a further five did not state which case definition they were using.

The majority of countries report gonorrhoea data from comprehensive surveillance systems (25 countries). Three have sentinel systems that only capture gonorrhoea diagnoses from a selection of healthcare services [2]. Reporting of gonorrhoea infection is compulsory in 24 countries. All three countries with sentinel surveillance systems (Belgium, France and the Netherlands) have voluntary reporting systems. All countries with comprehensive surveillance systems have compulsory notification except for the United Kingdom.

In the analysis below, data from sentinel systems were not used in the calculation of national or overall rates because sentinel surveillance system coverage was not always known and denominators were therefore not available. Cases were analysed by date of diagnosis. Due to incompatibilities in data presentation and age formats,

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Stockholm, May 2020

data from Belgium (2015–2018), Hungary (2008) and Poland (2008–2016) were excluded from all analyses that involved age groups.

Epidemiology

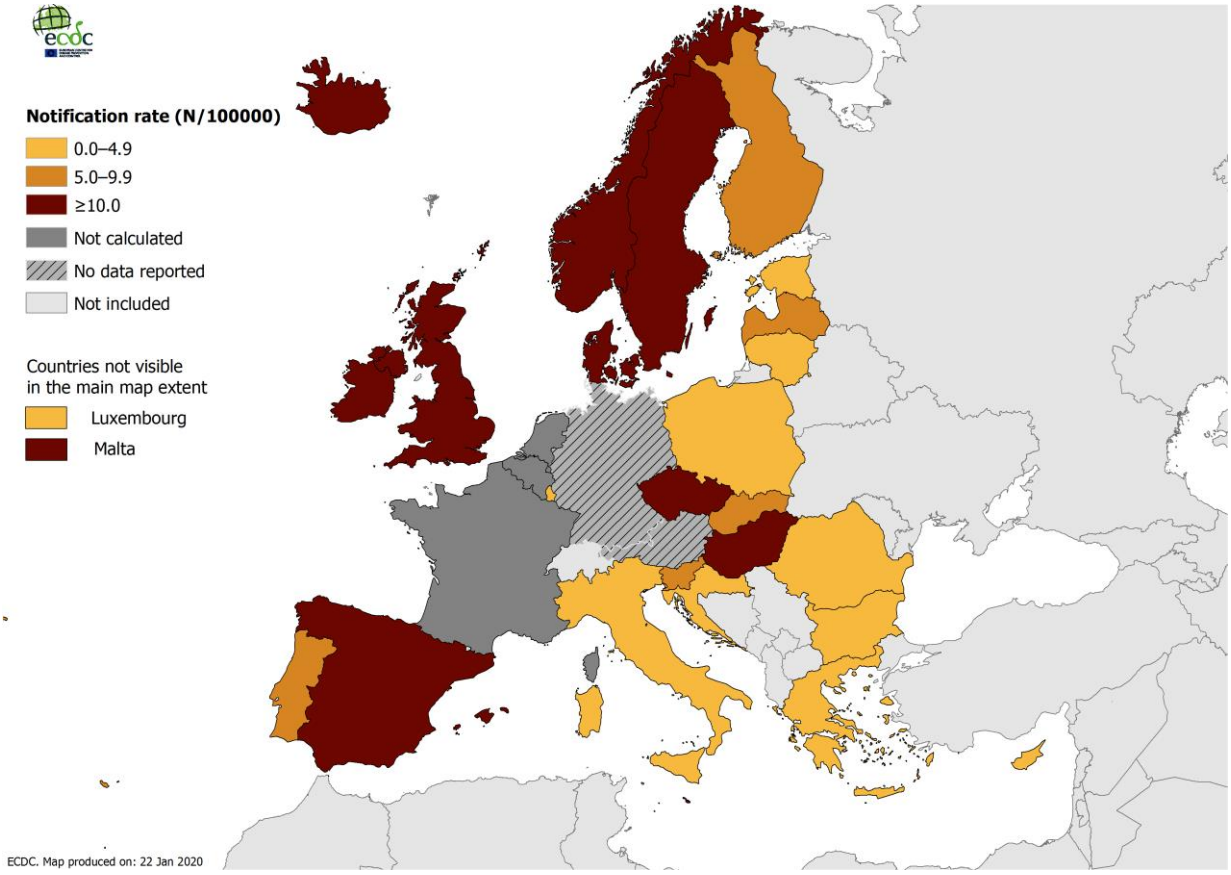
In 2018, 100 673 confirmed gonorrhoea cases were reported in 28 countries, an increase of 12% compared with 2017 (Table 1). The United Kingdom reported 61% of all cases reported in 2018. The crude notification rate in 2018 was 26.4 per 100 000 population for countries with comprehensive surveillance systems, an increase of 22% compared with 2017. The highest rates in 2018 (>30/100 000 population) were observed in the United Kingdom (93 per 100 000), Ireland (50), Denmark (38) and Norway (31). The lowest notification rates (<1 per 100 000) were observed in Bulgaria, Croatia, Cyprus, Poland and Romania. Figure 1 shows the distribution of gonorrhoea rates in countries reporting data collected by comprehensive surveillance systems.

Table 1. Distribution of confirmed gonorrhoea cases and rates per 100 000 population by country, EU/EEA, 2014–2018

Country	2014		2015		2016		2017		2018		
	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Confirmed cases	Rate	Reported cases
Austria	.	.	.	.	.	.	.	.	.	.	.
Belgium	1119	-	1368	-	1997	-	2271	-	2822	-	2822
Bulgaria	170	2.3	119	1.7	115	1.6	67	0.9	39	0.6	39
Croatia	22	0.5	18	0.4	12	0.3	30	0.7	38	0.9	47
Cyprus	4	0.5	1	0.1	1	0.1	2	0.2	3	0.3	3
Czechia	1394	13.3	1459	13.8	1444	13.7	1394	13.2	1413	13.3	1413
Denmark	1140	20.3	2787	49.2	2007	35.2	1915	33.3	2197	38.0	2197
Estonia	139	10.6	118	9.0	96	7.3	56	4.3	49	3.7	49
Finland	286	5.2	281	5.1	416	7.6	598	10.9	501	9.1	501
France	5211	-	6228	-	7849	-	9177	-	3990	-	3990
Germany	.	.	.	.	.	.	.	.	.	.	.
Greece	245	2.2	237	2.2	202	1.9	129	1.2	147	1.4	147
Hungary	1620	16.4	1246	12.6	1176	12.0	1030	10.5	1249	12.8	1249
Iceland	38	11.7	45	13.7	95	28.6	98	29.0	104	29.8	104
Ireland	1314	28.3	1281	27.4	1954	41.3	2250	47.0	2405	49.8	2405
Italy	635	1.0	649	1.1	760	1.3	850	1.4	905	1.5	907
Latvia	367	18.3	288	14.5	177	9.0	181	9.3	162	8.4	162
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.
Lithuania	165	5.6	194	6.6	119	4.1	70	2.5	72	2.6	72
Luxembourg	6	1.1	14	2.5	9	1.6	12	2.0	15	2.5	15
Malta	51	11.9	66	15.0	76	16.9	105	22.8	121	25.4	121
Netherlands	4632	-	5420	-	6129	-	6794	-	6424	-	6424
Norway	682	13.4	851	16.5	1096	21.0	1399	26.6	1659	31.3	1659
Poland	495	1.3	500	1.3	437	1.2	138	0.4	185	0.5	332
Portugal	188	1.8	277	2.7	338	3.3	473	4.6	719	7.0	719
Romania	178	0.9	90	0.5	114	0.6	77	0.4	46	0.2	46
Slovakia	426	7.9	341	6.3	278	5.1	385	7.1	283	5.2	283
Slovenia	61	3.0	73	3.5	81	3.9	113	5.5	157	7.6	157
Spain	4562	9.8	5006	10.8	6816	14.7	8200	17.6	10476	22.5	10476
Sweden	1346	14.0	1671	17.1	1783	18.1	2518	25.2	2717	26.8	2717
United Kingdom	40575	63.1	45342	69.9	40499	61.9	49156	74.7	61775	93.2	61775
EU/EEA	**67071**	**17.0**	**75970**	**19.1**	**76076**	**18.2**	**89488**	**21.6**	**100673**	**26.4**	**100831**

-: rate not calculated because country has sentinel surveillance system
.: no data reported.

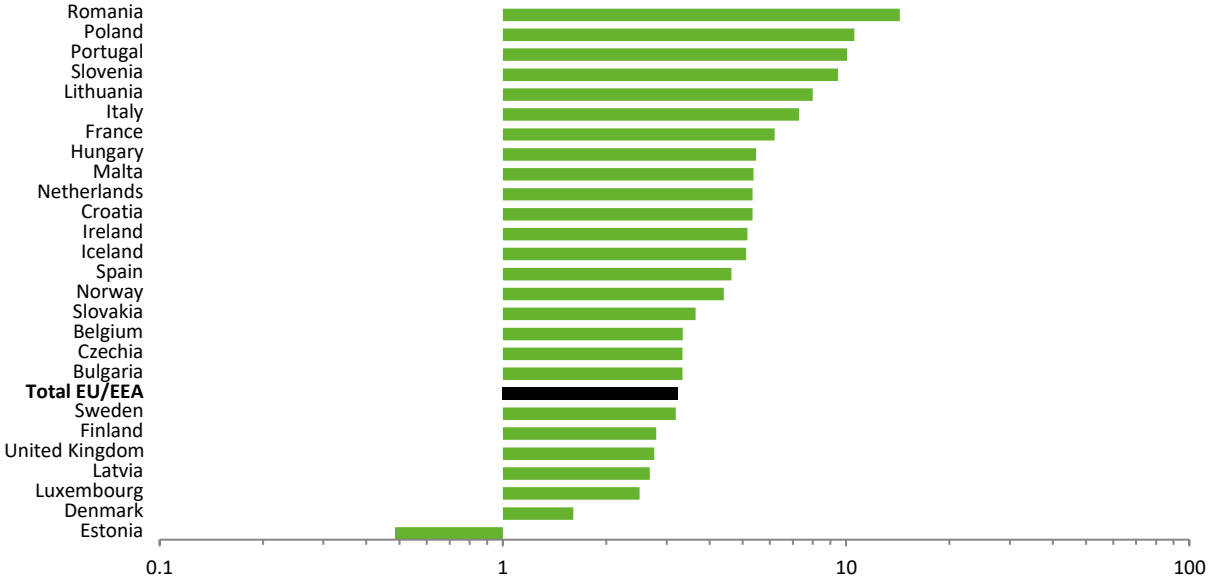
Figure 1. Distribution of confirmed gonorrhoea cases per 100 000 population by country, EU/EEA, 2018



Gender

The male-to-female ratio in 2018 was 3.2:1 (Figure 2). The notification rate was 41 per 100 000 population among men (76 741 cases) and 13 per 100 000 population among women (23 708 cases). Male-to-female ratios below 2 were reported by Denmark (1.6) and Estonia (0.5). The highest male-to-female ratios were reported by Romania (14), Poland (11) and Portugal (10). Cyprus and Greece did not report any cases among women.

Figure 2. Gonorrhoea, male-to-female ratio in 26 EU/EEA countries, 2018



Note: Cyprus and Greece reported cases only among men.

Age

Information on age was available for 26 countries in 2018 but missing for Belgium and Bulgaria (3% of all cases). The largest proportion of cases reported in 2018 was among the age groups 25–34 (37% of cases) and 15–24 years (34% of cases). In countries with comprehensive surveillance systems, age-specific rates of reported cases in 2018 were highest among the age group 20–24 years (112 per 100 000 population; Figure 3). Among the age group 15–19 years, rates were higher in females (66 per 100 000) than males (47 per 100 000). Among older age groups, rates were higher among males. The highest age- and gender-specific rates were among males aged 20–24 years (144 per 100 000).

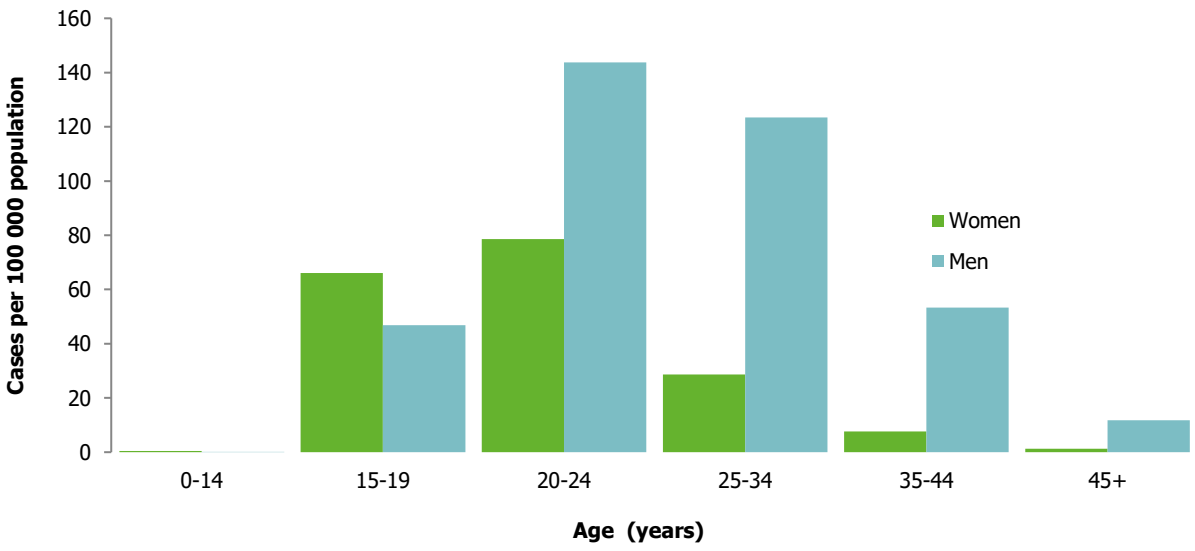
Transmission

In 2018, 17 countries (accounting for 85% of the reported gonorrhoea cases) reported data on the mode of transmission for 60% or more of their cases (Czechia, Denmark, Finland, France, Greece, Hungary, Iceland, Ireland, Lithuania, the Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Sweden and the United Kingdom). Among these countries, 48% of all cases were in men who have sex with men (MSM), 43% were reported among heterosexuals, and for 9% of cases the transmission group was reported as 'unknown' (Figure 4). Cases diagnosed in MSM accounted for 70% (n=40 866) of male cases diagnosed in the above group of 17 countries with known mode of transmission. The percentage of cases diagnosed in MSM ranged from below 10% (Lithuania, Romania and Slovakia) to 70% or over (France, Iceland and the Netherlands).

HIV status

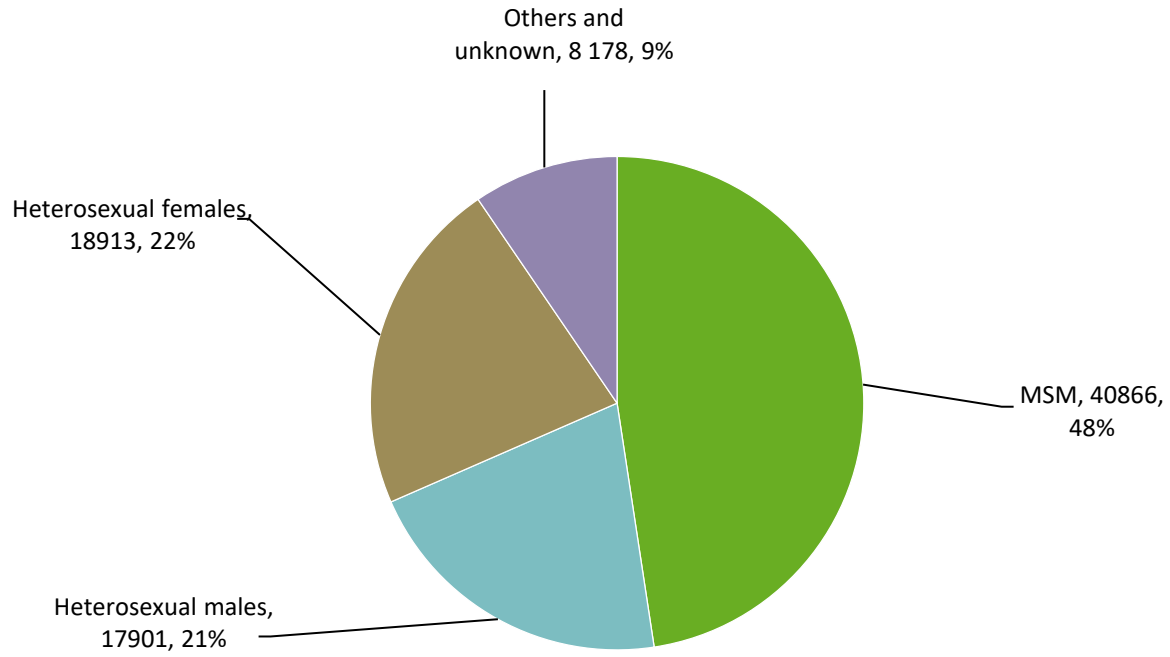
Data on the HIV status of cases reported in 2018 were provided by 17 countries (Czechia, Denmark, Estonia, France, Greece, Hungary, Iceland, Latvia, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and the United Kingdom) accounting for 90% of all reported gonorrhoea cases. Of these 91 035 cases, information on HIV status was available for 57 671 cases (63%). Among cases with known HIV status, 12% were HIV positive. Of the 41 005 cases among MSM, the HIV status was known for 31 783 cases (78%) and of these, 21% were HIV positive.

Figure 3. Distribution of confirmed gonorrhoea cases per 100 000 population by age and gender, EU/EEA, 2018



Source: Country reports from Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Figure 4. Percentage of gonorrhoea by transmission category and gender (n=85 858), EU/EEA, 2018



Source: Country reports from Czechia, Denmark, Finland, France, Greece, Hungary, Iceland, Ireland, Lithuania, the Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Sweden and the United Kingdom.

Trends 2009–2018

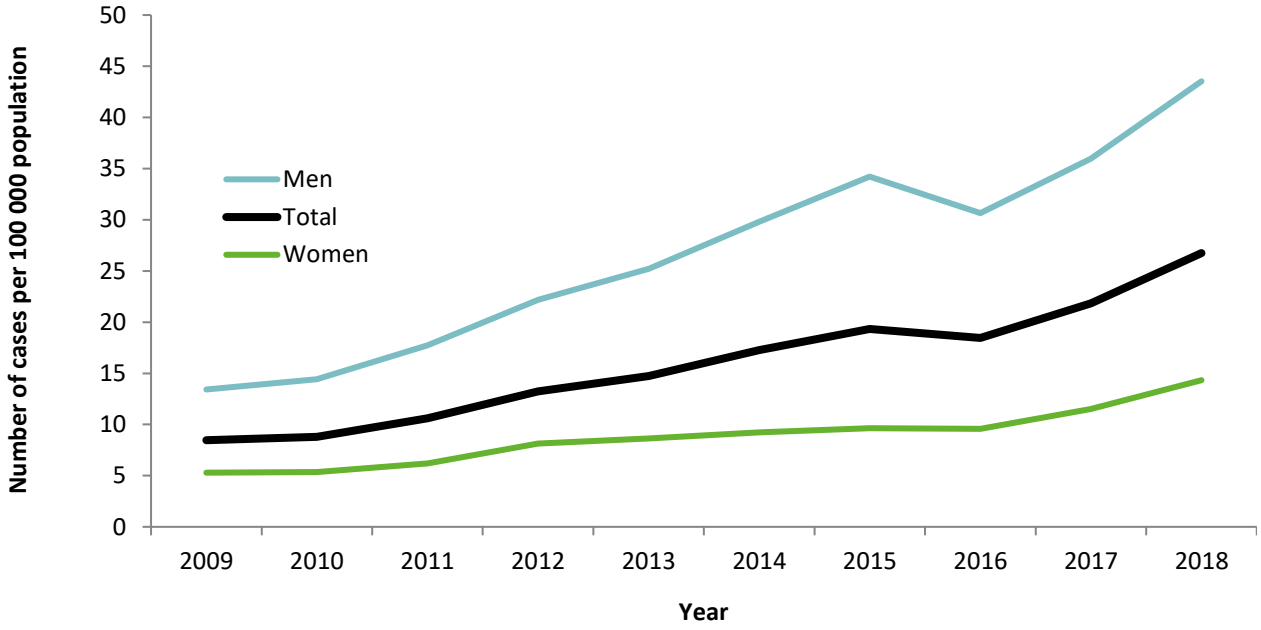
From 2009–2018, 629 145 cases of confirmed gonorrhoea were reported in 29 countries, with varying degrees of data completeness over this period. The number of reporting countries has remained stable over this time, with the exception of Austria, which has not reported data since 2014, and Croatia, which has reported data since 2013 (i.e. 2012 data), when it joined the EU.

The notification rate in the 24 countries with comprehensive surveillance systems that reported consistently from 2009–2018 increased substantially from 8.5 per 100 000 population in 2009 to 27 per 100 000 population in 2018 (Figure 5). During this period, the rate of reported gonorrhoea increased in 16 of 24 reporting countries with comprehensive surveillance systems. From 2009–2018, rates in men were consistently higher than in women. Rates more than doubled for both genders since 2009, but the increase was more pronounced among men (+224%) than among women (+171%). Age-specific rates increased in all age groups since 2009, with the largest increases among 25–34-year-olds (3-fold), 35–44-year-olds (2.8-fold) and persons aged 45 years and over (2.5-fold).

The number of reported cases from 2009–2018 increased in 19 of the 27 countries that reported throughout this period. The largest increases since 2009 in countries reporting more than 15 cases each year were reported from Portugal (6-fold), Norway (5-fold) and Ireland (4.5-fold). There was a median increase of 11% (range: -57% to 52%) from 2017 to 2018 among countries reporting at least 100 cases. Seventeen countries reported increases over the previous year, while only five reported decreases. Increases above 25% were reported by Portugal (52%), Slovenia (39%), Poland (34%), Spain (28%) and the United Kingdom (26%).

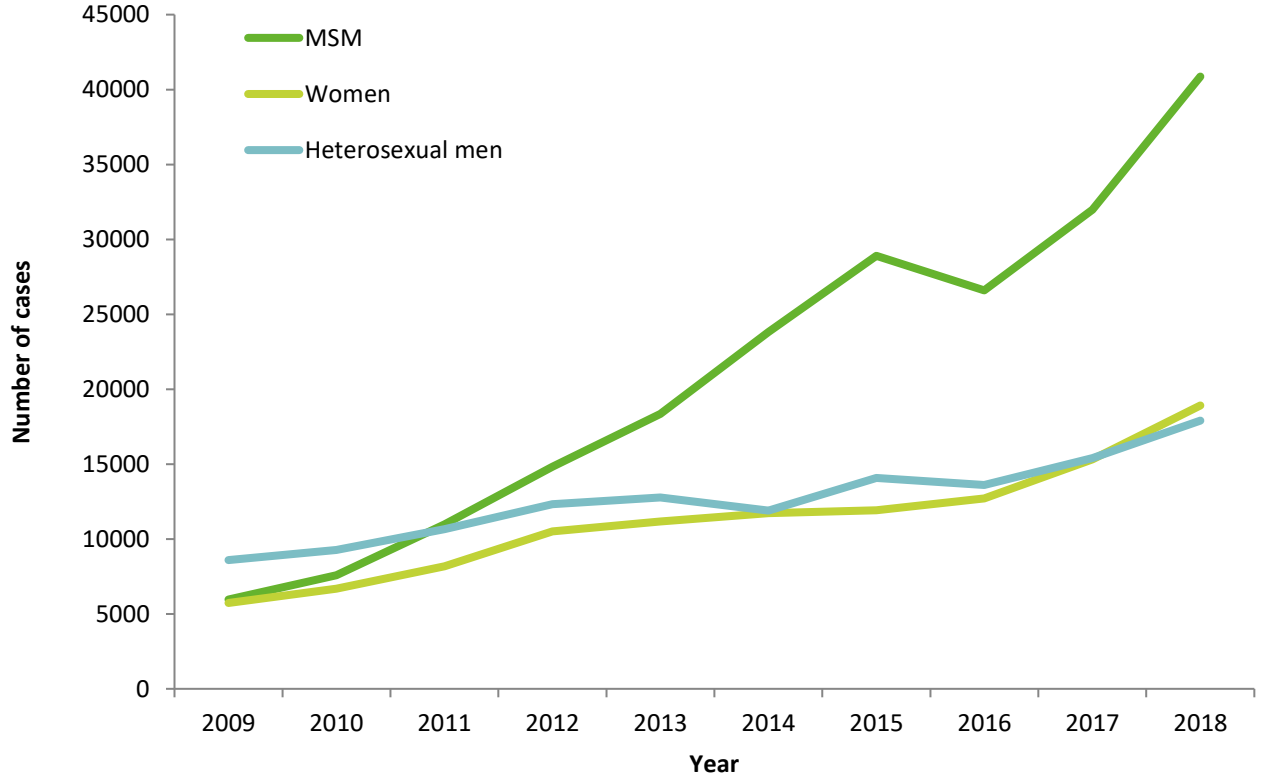
From 2009 to 2018, reported cases among countries consistently reporting mode of transmission showed an increasing trend among all risk groups, most markedly among MSM, where the number of cases increased by 586% during this period (Figure 6). The number of cases also increased among women (230%) and heterosexual men (108%). The number of reported cases increased in all risk groups from 2017 to 2018 (for all countries reporting data in 2017 and 2018: MSM by 19%; women by 20%; heterosexual men by 14%). Among countries reporting at least 100 cases, marked increases (>30%) in the numbers of cases from 2017 to 2018 were observed among MSM in Greece (49%), Hungary (61%), Iceland (118%), Latvia (160%), Portugal (78%) and Slovenia (83%), heterosexual men in Portugal (42%), and women in Norway (41%) and Poland (33%).

Figure 5. Notification rate of confirmed gonorrhoea cases per 100 000 population by gender and year, EU/EEA countries reporting consistently, 2009–2018



Source: Country reports from Bulgaria, Cyprus, Czechia, Denmark, Estonia, Finland, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom. Data for Cyprus, Greece, Luxembourg and Spain are not included in the gender-specific trends due to missing data for some years.

Figure 6. Number of confirmed gonorrhoea cases by gender, transmission category and year, EU/EEA countries reporting consistently, EU/EEA, 2009–2018



Source: Country reports from Czechia, Denmark, Greece, Latvia, Lithuania, the Netherlands, Norway, Romania, Slovenia, Sweden and the United Kingdom.

Discussion

For the first time since ECDC started coordinating European STI surveillance, more than 100 000 cases of gonorrhoea were reported in a single year. A total of 100 673 cases were reported in 2018, an increase of 12% over 2017. Gonorrhoea is the second most commonly notified sexually transmitted infection (STI) in the EU/EEA after chlamydia. Increasing numbers of gonorrhoea cases were reported by the majority of countries year on year with increases being largest among women and MSM. At country level, the largest increases among women were observed in Norway (41%) and Poland (33%).

The high and still increasing rate of reported gonorrhoea infections across the EU/EEA indicates continuing high levels of risk behaviour. This is especially of concern considering the increase in resistance to azithromycin seen in the latest data collected through the European Gonococcal Antimicrobial Surveillance Programme (Euro-GASP).These data indicate that the currently recommended dual treatment regimen for gonorrhoea (ceftriaxone and azithromycin) is threatened by high levels of resistance to azithromycin [5]. Three isolates with resistance to ceftriaxone were detected in 2018, the first resistant isolates detected by Euro-GASP since 2015. Euro-GASP data also show that resistance to cefixime and ciprofloxacin remained stable over the past years [6]. In addition, during 2018 a number of isolates resistant to ceftriaxone and with high-level resistance to azithromycin were reported in Australia, Canada, Denmark, Ireland and the United Kingdom [7-11]. ECDC published a rapid risk assessment in relation to the first reported cases in Australia and the United Kingdom, highlighting the threat to the currently recommended treatment and the need for a stronger response to extensively drug-resistant *N. gonorrhoeae* [12].

The increasing trend in the number of reported gonorrhoea cases in many countries continues to be mainly driven by increasing cases in MSM, but the number of cases among women has also been increasing continuously since 2009. In 2018, for the first time since reporting of gonorrhoea in the EU/EEA started, cases in women outnumbered those in heterosexual men among countries consistently reporting data on mode of transmission. Increases among women are of particular concern due to the risk of reproductive tract complications from gonorrhoea. The increase in reported cases in MSM may be related to increased risk behaviour involving condomless sex, possibly in some cases also linked to changing sexual behaviour with use of HIV pre-exposure prophylaxis [13-15], increased testing among MSM (particularly at extra-genital sites, a practice recommended by recent guidance) [16] and the more widespread use of nucleic acid amplification tests [17,18].

The distribution of reported gonorrhoea cases continues to vary considerably across the EU/EEA, with rates ranging from below 1 up to 93 cases per 100 000 population. The United Kingdom reported over half of the total number of EU/EEA cases in 2018. High rates (above 20 per 100 000 population) were reported by Denmark, Iceland, Ireland, Malta, Norway, Spain, Sweden and the United Kingdom. This geographical picture has been stable in recent years. The variation in rates may be linked to real differences in incidence of infection. However, there are important differences across Europe in terms of testing policies and methods, healthcare systems, access to services, the role of private healthcare providers, inclusion of data in reporting systems, and surveillance system structures.

The surveillance data presented in this report are likely to be an underestimate of the true situation. The majority of countries that report gonorrhoea cases indicate that most of their data on STIs are obtained from dedicated specialist services (STI clinics). It is therefore likely that in many countries a proportion of cases – for example, those diagnosed in primary healthcare – are not captured by surveillance systems. In addition, a few countries obtain data through sentinel surveillance, which again only captures a proportion of diagnoses within a given country and may target specific specialist services. Many cases also either remain undiagnosed or unreported for various reasons, such as differences in the availability of diagnostics, so that the reported figures do not represent the true extent of the epidemic. Some of the increases reported over time may also be related to improvements in the coverage of surveillance systems and use of more sensitive tests. Given the above limitations, comparisons between countries should be made with caution.

Public health implications

Rates of reported gonorrhoea infections continue to increase in the majority of EU/EEA countries. There is an urgent need to further strengthen prevention activities aimed at increased testing uptake and testing frequency and appropriate treatment for those most at risk. This could be achieved by targeting specific risk groups with evidence-based messages and methods. Social media and dating apps should be considered for prevention campaigns, in addition to traditional approaches.

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