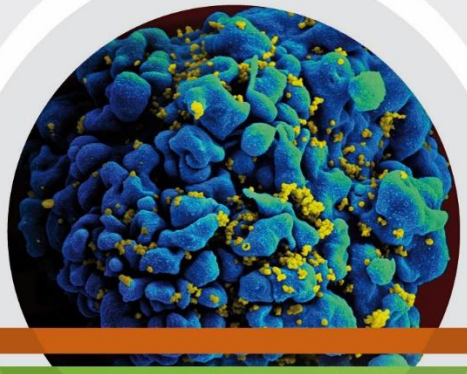

SURVEILLANCE REPORT

Annual Epidemiological Report for 2016

HIV and AIDS

Key facts

- HIV infection remains a major public health concern in EU/EEA countries, with approximately 30 000 new infections reported each year.
- In 2016, 29 444 people were diagnosed with HIV in the 31 countries of the EU/EEA, an adjusted rate of 5.9 cases per 100 000 population. Several countries were well above the average, including Latvia (18.5; 365 cases), Estonia (17.4; 229 cases) and Malta (14.5; 63 cases).
- The majority (76%) of people diagnosed with HIV in 2016 were men, and the highest proportion of all new diagnoses (40%) were attributed to sex between men. Heterosexual contact accounted for 32% of cases and injecting drug use for 4%.
- The rate of HIV diagnoses per 100 000 population has declined slightly between 2012 and 2016. The decline is largely attributed to a decreased proportion of new diagnoses due to heterosexual transmission in recent years and a decreased proportion due to sex between men in 2016.
- Late diagnosis remains common, with 48% of persons diagnosed in 2016 having a CD4 cell count of <350 cells/mm^3 at diagnosis.
- The overall number of AIDS cases has continued to steadily decline thanks to the increasing use of effective antiretroviral treatment.

Methods

This report is based on data for 2016 retrieved from The European Surveillance System (TESSy) on 19 September 2017. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases. EU Member States and EEA countries contribute to the system by uploading their infectious disease surveillance data at regular intervals [1].

An overview of the national surveillance systems for HIV and AIDS is available online [2].

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

This report is based on HIV surveillance data reported by the 31 Member States of the European Union/European Economic Area (EU/EEA) and on AIDS data reported by 29 EU/EEA countries (all except Belgium and Sweden) for 2016. All countries annually report case-based data to the TESSy HIV/AIDS database in accordance with a

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Stockholm, August 2018

standard case definition; the database is jointly coordinated by the European Centre for Disease Prevention and Control and the World Health Organization Regional Office for Europe.

Using the variable 'date of diagnosis', new HIV and AIDS diagnoses are presented in absolute numbers and rates as cases per 100 000 population. Population estimates are derived from Eurostat from 10 August 2017 [4]. The population data used for HIV and AIDS in Spain and for HIV in Italy were adjusted based on the extent of subnational coverage for the relevant years. For data presented by gender and age, rates were calculated using relevant male and female population denominators.

HIV notification data are adjusted for reporting delay in graphs showing trends where noted. Reporting delays refer to the time delay between HIV/AIDS diagnosis (or death) and the report of this event at the national level, identified by 'date of notification'. Due to delays in reporting, HIV trends analysed at the European level are often biased downwards for the most recent year (2016) and, to a lesser extent, for the previous two to three years. In this report, we apply a statistical approach, as described by Heisterkamp et al. [5] to adjust the surveillance data for reporting delays. Country-specific adjustments are presented in Annex 6 of the enhanced 2017 HIV/AIDS surveillance report [6].

Epidemiology

HIV diagnoses

In 2016, 29 444 people were newly diagnosed with HIV in the 31 countries of the EU/EEA, which equals a rate of 5.7 cases per 100 000 population (5.9 per 100 000 when adjusted for reporting delay) (Table 1). The highest rates were reported by Latvia (18.5, 365 cases), Estonia (17.4, 229 cases), and Malta (14.5, 63 cases). The lowest rates were reported by Slovakia (1.6, 87 cases) and Hungary (2.3, 228 cases) (Figure 1, Table 1).

The rate of new HIV diagnoses was higher among men (8.9 per 100 000 population), than women (2.6 per 100 000 population), resulting in a male-to-female ratio of 3.2:1.

The highest crude age-specific rate of HIV diagnoses was observed among 25–29-year-olds (13.9 per 100 000 population) with the rates for men peaking in this age group at 21.4 while rates for women were highest in the 30–39-year-old age group (6.8 cases per 100 000 population) (Figure 2).

Similar to recent years, the highest proportion of HIV diagnoses was reported to be in men who have sex with men (MSM) (40%); heterosexual contact was the second most common transmission mode (32%). Transmission due to injecting drug use accounted for 4% of HIV diagnoses. For 23% of new HIV diagnoses the transmission mode was not reported or was reported to be unknown (Figure 3). Forty-percent of those diagnosed in the EU/EEA in 2016 were migrants, defined as originating from outside the country in which they were diagnosed.

Figure 1. Distribution of HIV diagnoses per 100 000 population by country, EU/EEA, 2016

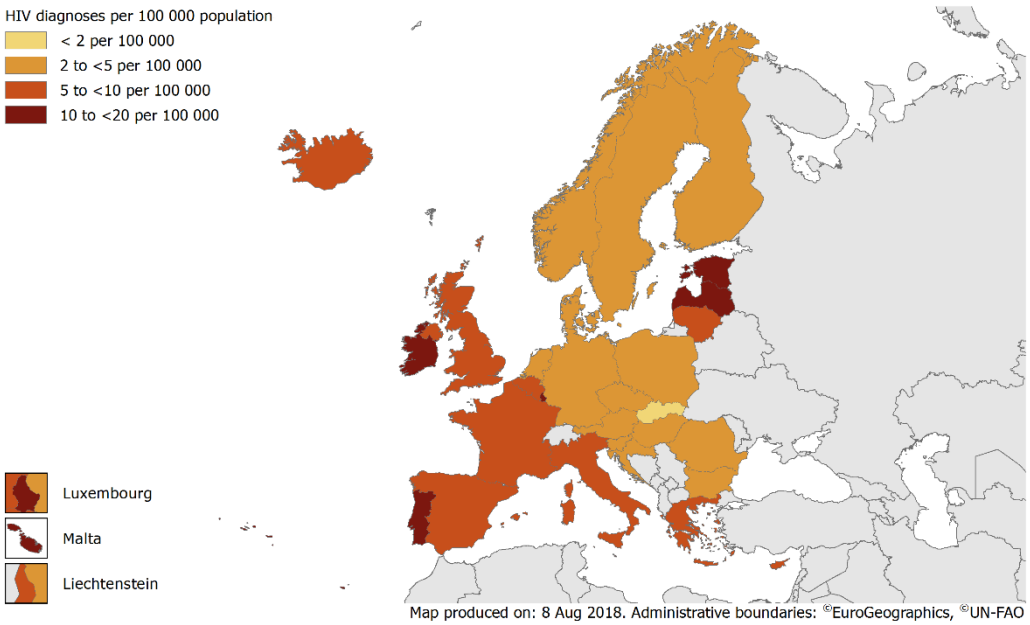


Table 1. HIV diagnoses, EU/EEA, 2012–2016

	2012		2013		2014		2015		2016	
Country	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Austria	353	4.2	289	3.4	268	3.2	276	3.2	255	2.9
Belgium	1222	11.0	1122	10.1	1052	9.4	1014	9.0	915	8.1
Bulgaria	157	2.1	200	2.7	246	3.4	227	3.2	202	2.8
Croatia	73	1.7	85	2.0	92	2.2	117	2.8	109	2.6
Cyprus	58	6.7	54	6.2	56	6.5	80	9.4	80	9.4
Czech Republic	212	2.0	235	2.2	232	2.2	266	2.5	286	2.7
Denmark	201	3.6	233	4.2	256	4.5	277	4.9	244	4.3
Estonia	315	23.8	325	24.6	291	22.1	270	20.5	229	17.4
Finland	156	2.9	157	2.9	181	3.3	174	3.2	180	3.3
France	5678	8.7	5573	8.5	5682	8.6	5277	7.9	5219	7.8
Germany	2952	3.7	3236	4.0	3501	4.3	3699	4.6	3419	4.2
Greece	1149	10.4	886	8.1	773	7.1	769	7.1	615	5.7
Hungary	219	2.2	240	2.4	271	2.7	271	2.7	228	2.3
Iceland	19	5.9	11	3.4	11	3.4	12	3.6	28	8.4
Ireland	349	7.6	343	7.5	363	7.9	497	10.7	497	10.5
Italy	4140	7.0	3815	6.4	3795	6.2	3549	5.8	3451	5.7
Latvia	339	16.6	340	16.8	347	17.3	393	19.8	365	18.5
Liechtenstein	0	0.0	0	0.0	1	2.7	0	0.0	2	5.3
Lithuania	160	5.3	177	6.0	141	4.8	157	5.4	214	7.4
Luxembourg	64	12.2	67	12.5	80	14.6	64	11.4	66	11.5
Malta	30	7.2	36	8.5	40	9.4	61	14.2	63	14.5
Netherlands	1097	6.6	1063	6.3	913	5.4	871	5.2	745	4.4
Norway	242	4.9	233	4.6	267	5.2	221	4.3	220	4.2
Poland	1114	2.9	1098	2.9	1138	3.0	1279	3.4	1269	3.3
Portugal	1645	15.6	1585	15.1	1228	11.8	1192	11.5	1030	10.0
Romania	897	4.5	942	4.7	841	4.2	797	4.0	625	3.2
Slovakia	50	0.9	83	1.5	86	1.6	86	1.6	87	1.6
Slovenia	46	2.2	45	2.2	50	2.4	50	2.4	58	2.8
Spain	3816	10.1	4218	9.0	4283	9.2	3889	8.4	3150	6.8
Sweden	441	4.7	457	4.8	473	4.9	447	4.6	429	4.4
United Kingdom	6204	9.8	5973	9.3	6200	9.6	6286	9.7	5164	7.9
Total EU/EEA	33398	6.7	33121	6.5	33158	6.5	32568	6.3	29444	5.7

Source: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

Figure 2. Distribution of HIV diagnoses per 100 000 population, by age and gender, EU/EEA, 2016

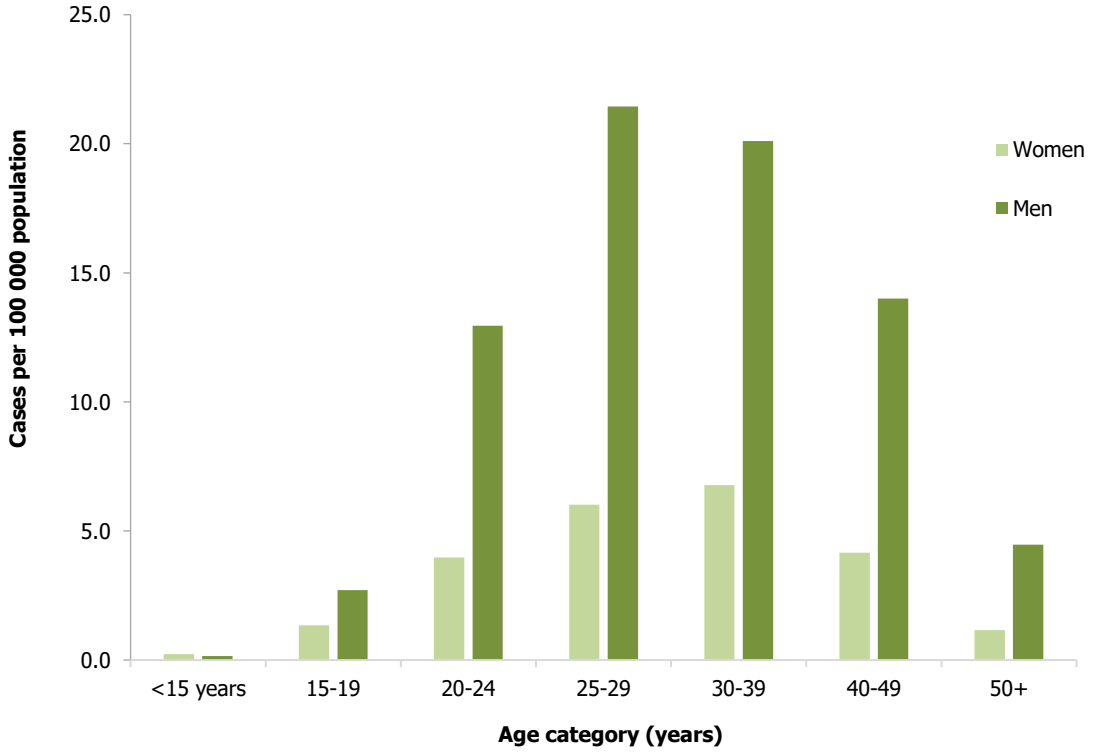
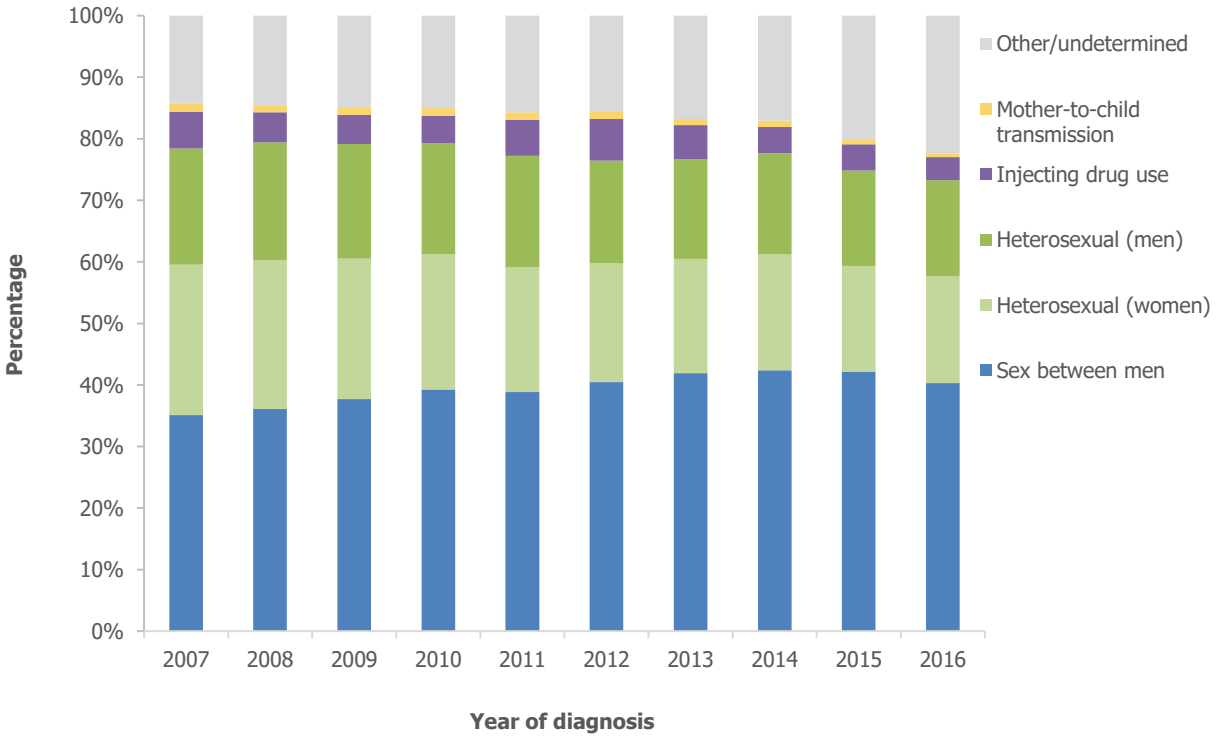


Figure 3. Number of case per 100 000 population, by age group, EU/EEA, 2016

Source: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

Figure 4. Distribution of HIV diagnoses by transmission mode and year of diagnosis, EU/EEA, 2007-2016



Source: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Portugal, Romania, Slovakia, Slovenia, Sweden, the United Kingdom.

Information on CD4 cell count at the time of HIV diagnosis was provided by 26 countries for 18 282 (67%) adults and adolescents diagnosed in those countries. Nearly half (48%) of all cases with a CD4 cell count available were considered to have been diagnosed late, with a count of less than 350 cells per mm^3, including 28% of cases considered to have advanced HIV infection (CD4 <200 cells/mm^3). The proportion of those diagnosed late, with a CD4 count lower than 350 cells per mm^3, was above 50% in eight countries: Lithuania (66%), Romania (64%), Greece (58%), Croatia (56%), Italy (56%), Estonia (54%), Finland (52%) and Germany (51%).

While the overall EU/EEA trend has declined slightly over the five-year period presented here, national trends are diverging. For the first time in recent years, several countries have reported a decline in new HIV diagnoses in 2016, even after adjusting for reporting delay. These include: Austria, Belgium, Denmark, Estonia, France, Italy, the Netherlands, Norway, and the United Kingdom. On the other hand, taking reporting delay into account, rates of HIV diagnoses have increased in Bulgaria, Croatia, Cyprus, the Czech Republic, Hungary, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia. Reporting delay affects some countries more than others, and therefore the decrease in the rates of new HIV diagnoses may be overestimated and the increase in rates may be underestimated.

The proportion of all HIV diagnoses attributed to sex between men increased from 35% of cases in 2007 to 42% of cases in 2014 and 2015, then decreased slightly to 40% in 2016. The proportion of all HIV diagnoses attributed to sex between men and women decreased from 43% of cases in 2007 to 33% in 2016. Cases due to injecting drug use decreased from 6% of all HIV diagnoses to 4% in 2016. Cases due to mother-to-child transmission, nosocomial transmission and transfusion-related transmission have decreased in absolute numbers over time and together comprised less than 1% of all diagnoses between 2007 and 2016. The number of cases with an unknown mode of transmission increased from 14% of cases in 2007 to 23% in 2016. This increase is affected by reporting delay and may decrease slightly in future reporting.

The proportion of new HIV diagnoses in migrants fluctuated between 37% and 44% between 2007 and 2016. When looking at all reported cases, the proportion of diagnoses in migrants attributed to heterosexual transmission decreased from 64% in 2007 to 55% in 2016, while the proportion of migrants attributed to sex between men increased from 24% in 2007 to 30% in 2016.

AIDS diagnoses

In 2016, 3 628 diagnoses of AIDS were reported by 29 EU/EEA countries, giving a rate of 0.8 cases per 100 000 population (Table 15). The highest rates were reported by Latvia (5.8; 114 cases), Estonia (3.1; 41 cases), and Portugal (2.5, 261 cases). Overall, 68% of these AIDS diagnoses were made within 90 days of the HIV diagnosis, indicating that the majority of AIDS cases in the EU/EEA are due to late diagnosis of HIV infection. This means the rate of reported AIDS cases has halved in the last decade, from a rate of 1.6 AIDS diagnoses per 100 000 population in 2007 down to 0.8 diagnoses per 100 000 population in 2016.

In the EU/EEA, the most common AIDS-indicative diseases diagnosed in 2016 were *Pneumocystis pneumonia* (20%), pulmonary and/or extra-pulmonary tuberculosis (15%), oesophageal candidiasis (11%), and wasting syndrome due to HIV (10%).

Outbreaks and other threats

There were no HIV-related threats or multi-country outbreaks of HIV during 2016.

Discussion

HIV surveillance data for 2016 show important changes in the epidemiology of HIV in EU/EEA countries over the past decade. In the EU/EEA as a whole, the rates of AIDS have decreased substantially over the past decade, reflecting greater access to treatment and better case management. For the first time in a decade, there appears to be a slight decline in the rate of new HIV diagnoses per 100 000 population in recent years. Despite the evidence of some progress in reducing the number of new HIV diagnoses in the EU/EEA overall, rates continue to increase in several countries, and in at least one-third of EU/EEA countries, they have increased markedly.

An important epidemiological trend observed over the past decade has been the substantial decrease in the number of HIV infections transmitted through heterosexual contact, particularly among women. However, heterosexual transmission still remains the second most common mode of HIV transmission reported in the EU/EEA and is the most common transmission mode in some countries. Part of this declining trend in heterosexual cases is probably influenced by the decline (since 2007) in the number of heterosexually acquired cases in migrants originating from countries with generalised HIV epidemics [7].

For the first time in 2016, there appears to be evidence of a true decrease in HIV diagnoses among men who have sex with men in select EU/EEA countries. This is significant because MSM account for the largest number of new HIV diagnoses in the EU/EEA, and this has been the only population in the EU/EEA in which HIV cases have increased steadily during most of the last decade. Reasons for the decrease may include successful programmes to offer more frequent and targeted HIV testing to promote earlier diagnosis, rapid linkage to care, and immediate initiation of antiretroviral treatment for those found to be HIV positive [8]. While still not implemented widely in Europe, the use of formal and informal pre-exposure prophylaxis may also have played a role in the decline of HIV diagnoses observed in at least some of these settings [9].

Despite the clear evidence of the benefits of early introduction of antiretroviral treatment for the health of the HIV-positive individual [10], many persons continue to be diagnosed with HIV at an advanced stage of illness, and about 15% of the estimated 810 000 persons living with HIV in the EU/EEA remain undiagnosed [11]. There is evidence that this differs substantially across the EU/EEA, with an average of three years between HIV infection and diagnosis [12]. This suggests problems with access to, and uptake of, HIV testing and counselling by those most at risk in many countries.

In recent years there has been a trend toward reduced data completeness on the HIV transmission route, with nearly one-quarter of cases reported in 2016 lacking information on probable route of HIV transmission. While this proportion may have been affected by the introduction of an earlier reporting deadline in 2016, the trend had also been evident in recent years. Information on probable route of transmission is crucial to better inform HIV prevention interventions and programme planning. Greater efforts to improve collaboration with clinicians and follow up with other data providers may improve the transmission data. Meanwhile, statistical adjustments for missing data will be explored [13].

Public health implications

The changing epidemiology of HIV infections observed in the EU/EEA over the last decade suggests that some progress has been achieved, particularly with regard to reducing infections attributed to heterosexual transmission and injecting drug use and more recently the decline of HIV resulting from sex between men in a few EU/EEA countries. However, these epidemiological trends also indicate that it is crucial to sustain, and in some places strengthen evidence-based HIV prevention interventions tailored to the local epidemiological context and targeting those most at risk, including more frequent testing for those at-risk of HIV infection, immediate offer of antiretroviral therapy for those found positive and the offer of pre-exposure prophylaxis for HIV-negative individuals at high risk of HIV acquisition. Programmes on the prevention and control of HIV infection adapted to key populations and maintained to scale remain important in EU/EEA countries. For most EU/EEA countries, this means a strong focus on MSM and migrants from countries with generalised HIV epidemics and others. Given the increasing evidence of post-migration HIV acquisition, it is important that migrant-sensitive services for prevention and HIV testing, combined with policies which promote and ensure linkage and access to care, are delivered in all EU/EEA countries. Finally, harm reduction programmes among people who inject drugs and their sexual partners are crucial and should be maintained and scaled up where service coverage is low, particularly when patterns of drug use change.

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