

# HIV infection and AIDS

## Annual Epidemiological Report for 2017

### Key facts

- In 2017, 25 353 people were diagnosed with HIV in 30 of the 31 countries of the EU/EEA, an adjusted rate of 6.2 cases per 100 000 population. Several countries were well above the average.
- The majority of people diagnosed with HIV in 2017 were men (75%) and the highest proportion of all new diagnoses (38%) were attributed to sex between men. Heterosexual contact accounted for 33% of cases and injecting drug use for 4%.
- The rate of HIV diagnoses per 100 000 population fell slightly from 2013–2017. 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 and 2017.
- Late diagnosis remains common, with 49% of persons diagnosed in 2017 having a CD4 cell count of  $<350$  cells/mm<sup>3</sup> 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 2017 retrieved from The European Surveillance System (TESSy) on 4 October 2018. 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 30 Member States of the European Union/European Economic Area (EU/EEA) (all except Germany) and AIDS data reported by 28 EU/EEA countries (all except Belgium, Germany and Sweden) for 2017. All countries annually report case-based data to the TESSy HIV/AIDS database in accordance with standard EU case definitions [4]. The database is jointly coordinated by ECDC and the WHO Regional Office for Europe.

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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 as of 10 August 2017 [5]. Population data used for HIV and AIDS in Spain and for HIV in Italy were adjusted based on the extent of subnational coverage for 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 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 (2017) and to a lesser extent for the previous two to three years. In this report, a statistical approach is applied as described by Heisterkamp et al. [5] and modified by Rosinska et al. [7] to adjust the surveillance data for reporting delays. Country-specific adjustments are presented in Annex 6 of the enhanced 2018 HIV/AIDS surveillance report [8].

## Epidemiology

### HIV diagnoses

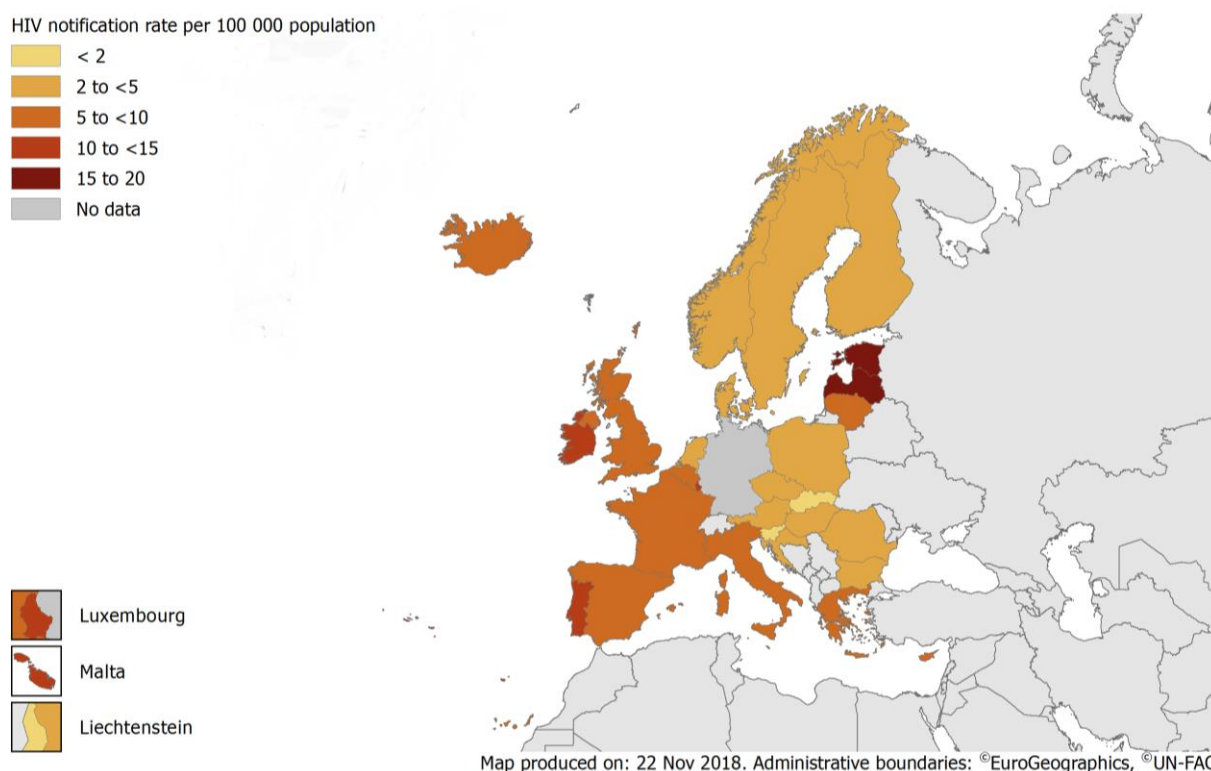
In 2017, 25 353 people were newly diagnosed with HIV in 30 of the 31 countries of the EU/EEA (all except Germany, which did not report 2017 data), equalling a rate of 5.8 cases per 100 000 population (6.2 when adjusted for reporting delay, Table 1). The countries with the highest rates of new HIV diagnoses in 2017 were Latvia (18.8) and Estonia (16.6) and the lowest rates were reported by Slovakia (1.3) and Slovenia (1.9; Figure 1, Table 1).

The rate of new HIV diagnoses was higher among men (9.0 per 100 000 population) than women (2.8 per 100 000 population), resulting in a male-to-female ratio of 3.1:1.

The highest crude age-specific rates were observed among 25–29-year-olds (14.4 per 100 000 population), largely because this group has the highest age-specific rate for men at 22.2 per 100 000 population, while rates for women were highest in the 30–39-year age group (6.9 per 100 000 population, Figure 2).

Similar to recent years, the highest proportion of HIV diagnoses was reported in men who have sex with men (MSM; 38%). Heterosexual contact was the second most common transmission mode (33%; Figure 3). Transmission due to injecting drug use accounted for 4% of HIV diagnoses. For 24% of new HIV diagnoses, the transmission mode was not reported or reported to be unknown. Forty-one percent of those diagnosed in the EU/EEA in 2017 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, 2017**



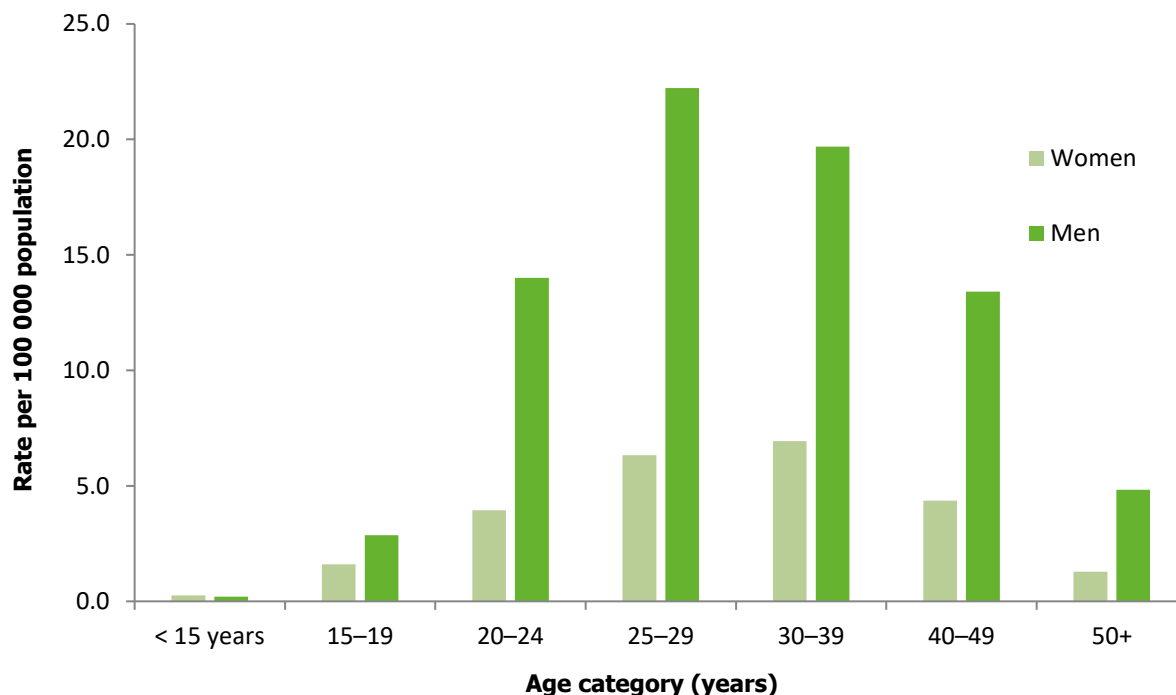
**Table 1. HIV diagnoses by country and year; EU/EEA, 2013–2017**

Country	2013		2014		2015		2016		2017	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Austria	294	3.5	279	3.3	300	3.5	269	3.1	270	3.1
Belgium	1 124	10.1	1 055	9.4	1 015	9.0	908	8.0	890	7.9
Bulgaria	200	2.7	247	3.4	227	3.2	202	2.8	241	3.4
Croatia	85	2.0	92	2.2	117	2.8	109	2.6	106	2.5
Cyprus	54	6.2	56	6.5	80	9.4	80	9.4	85	10.0
Czech Republic	235	2.2	232	2.2	266	2.5	286	2.7	254	2.4
Denmark	233	4.2	256	4.5	277	4.9	244	4.3	242	4.2
Estonia	325	24.6	291	22.1	270	20.5	229	17.4	219	16.6
Finland	157	2.9	181	3.3	174	3.2	180	3.3	158	2.9
France	5 564	8.5	5 683	8.6	5 284	7.9	5420	8.1	5 211	7.8
Germany	3 236	4.0	3 501	4.3	3 699	4.6	3419	4.2	.	.
Greece	896	8.1	776	7.1	777	7.2	644	6.0	628	5.8
Hungary	240	2.4	271	2.7	271	2.7	228	2.3	223	2.3
Iceland	11	3.4	11	3.4	12	3.6	28	8.4	24	7.2
Ireland	342	7.4	377	8.2	483	10.4	510	10.8	483	10.2
Italy	3 832	6.4	3 823	6.3	3 598	5.9	3 649	6.0	3443	5.7
Latvia	340	16.8	347	17.3	393	19.8	365	18.5	371	18.8
Liechtenstein	0	0.0	1	2.7	0	0.0	2	5.3	0	0.0
Lithuania	177	6.0	141	4.8	157	5.4	214	7.4	263	9.1
Luxembourg	69	12.8	83	15.1	67	11.9	71	12.3	59	10.2
Malta	36	8.5	40	9.4	61	14.2	63	14.5	45	10.4
Netherlands	1083	6.5	938	5.6	920	5.4	798	4.7	716	4.2
Norway	233	4.6	267	5.2	221	4.3	220	4.2	213	4.1
Poland	1 098	2.9	1 132	3.0	1 278	3.4	1 313	3.5	1 325	3.5
Portugal	1 660	15.8	1 331	12.8	1 343	12.9	1 313	12.7	1 068	10.3
Romania	961	4.8	855	4.3	821	4.1	705	3.6	661	3.3
Slovakia	83	1.5	86	1.6	86	1.6	88	1.6	70	1.3
Slovenia	46	2.2	51	2.5	50	2.4	57	2.8	39	1.9
Spain	4 331	9.3	4396	9.5	4 181	9.0	3963	8.5	3 249	7.0
Sweden	457	4.8	473	4.9	447	4.6	429	4.4	434	4.4
United Kingdom	5983	9.4	6185	9.6	6 043	9.3	5 280	8.1	4 363	6.7
<b>EU/EEA (unadjusted)</b>	<b>33 385</b>	<b>6.5</b>	<b>33457</b>	<b>6.5</b>	<b>32 918</b>	<b>6.4</b>	<b>31 286</b>	<b>6.1</b>	<b>25 353</b>	<b>5.8</b>
<b>EU/EEA (adjusted for reporting delay)</b>	<b>33 567</b>	<b>6.6</b>	<b>33739</b>	<b>6.6</b>	<b>33 307</b>	<b>6.5</b>	<b>31 934</b>	<b>6.2</b>	<b>27 055</b>	<b>6.2</b>

Source: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, the 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 and the United Kingdom.

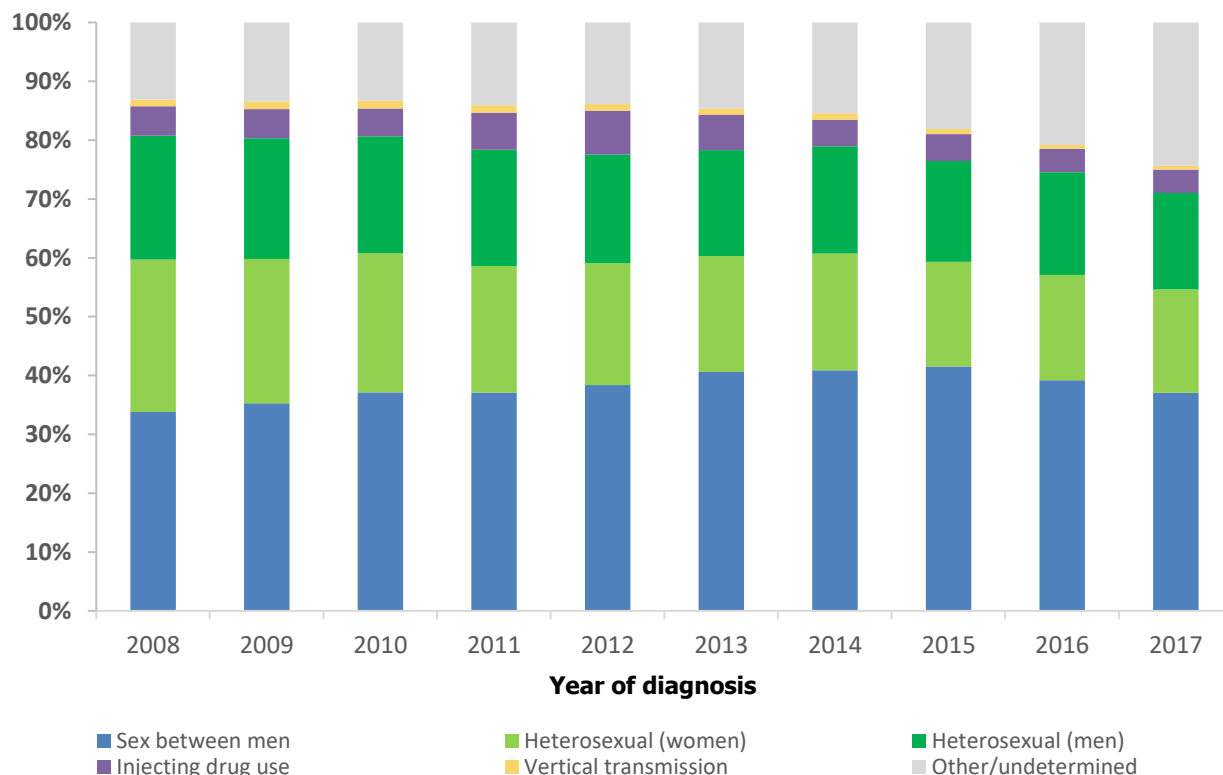
..: no data reported.

**Figure 2. Distribution of HIV diagnoses per 100 000 population, by age and gender, EU/EEA, 2017**



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

**Figure 3. Distribution of HIV diagnoses by transmission mode and year of diagnosis, EU/EEA, 2008-2017**



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

Information on CD4 cell count at the time of HIV diagnosis was provided by 25 countries for 16 858 adults and adolescents diagnosed in those countries (49%). As in previous years, nearly half of all cases with a known CD4 cell count (49%) were considered to have been diagnosed late, with a count of less than 350 cells per mm<sup>3</sup>, including 28% of cases considered to have advanced HIV infection (CD4 <200 cells/mm<sup>3</sup>). The proportion of those diagnosed late, with a CD4 count below 350 cells per mm<sup>3</sup>, was above 60% in Lithuania (66%) and Latvia (62%).

While the overall EU/EEA trend has declined in 2016 and 2017 compared to the earlier years, national trends are diverging. Countries reporting a decline in new HIV diagnoses, even after adjusting for reporting delay, include Austria, Belgium, Denmark, Estonia, the Netherlands, Norway, Spain and the United Kingdom. On the other hand, taking reporting delay into account, rates of HIV diagnoses have increased in Bulgaria, Cyprus, the Czech Republic, Hungary, Lithuania, Malta and Poland. Reporting delay affects certain countries more than others so the decrease in the rates of new HIV diagnoses may be overestimated, and the increase in rates underestimated.

The proportion of all HIV diagnoses attributed to MSM reported by consistently reporting countries increased from 34% of cases in 2008 to 41% in 2015, then decreased to 37% in 2017. The proportion of all HIV diagnoses attributed to heterosexual transmission decreased in both women and men from 2008–2017 (26% to 18% and 21% to 16% respectively). Cases due to injecting drug use increased from 5% in 2008 to 7% in 2012, declining again to 4% in 2017. Cases due to vertical, nosocomial and transfusion-related transmission have fallen in absolute numbers over time and together comprised less than 1% of all diagnoses throughout the period. The number of cases with an unknown mode of transmission increased from 13% of cases in 2008 to 24% in 2017. Reporting of transmission is particularly affected by reporting delay and missing data on this variable for a portion of the cases is typically reported in future reporting rounds.

The proportion of new HIV diagnoses in migrants decreased from 44% in 2008 to 37% in 2013, increasing slightly to 41% in 2017. Looking at all reported migrant cases, the proportion of diagnoses attributed to heterosexual transmission decreased from 65% in 2008 to 50% in 2017, while the proportion attributed to sex between men increased from 23% in 2008 to 35% in 2017.

## AIDS diagnoses

In 2017, 3 130 diagnoses of AIDS were reported in 28 EU/EEA countries, giving a crude rate of 0.7 cases per 100 000 population. The highest rate was reported by Latvia (6.0; 118 cases). Overall, 89% of 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. The rate of reported AIDS cases has halved over the last decade from a rate of 1.6 AIDS diagnoses per 100 000 population in 2008.

In the EU/EEA, the most common AIDS-indicative diseases diagnosed in 2017 were *Pneumocystis pneumonia* (21%), pulmonary and/or extra-pulmonary tuberculosis (14%), wasting syndrome due to HIV (11%) and oesophageal candidiasis (10%).

## Outbreaks and other threats

There were no HIV-related threats or multi-country outbreaks of HIV during 2017.

## Discussion

HIV surveillance data for 2017 contribute to demonstrating 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 and progress towards achieving UN Sustainable Development Goal 3 of ending the AIDS epidemic and reducing AIDS-related deaths. There appeared to be a decline in the rate of new HIV diagnoses per 100 000 population in 2016 and 2017. Despite the evidence of progress in reducing the number of new HIV diagnoses in the EU/EEA overall, rates continue to increase in several countries and late diagnosis of HIV remains common.

The decrease in HIV diagnoses among MSM in select EU/EEA countries appears to drive the overall decrease noted in the EU/EEA in 2016 and 2017. 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 [9]. While still not implemented widely in Europe, the use of formal and informal pre-exposure prophylaxis is expanding and may have played a role in the decline of HIV diagnoses observed in some of these settings [10,11].

An epidemiological trend observed over the past decade has been the substantial decrease in the number of HIV infections transmitted through heterosexual contact in both men and women. However, heterosexual transmission remains the second most common mode of HIV transmission reported in the EU/EEA and is the most common

transmission mode in certain countries. Part of this declining trend in heterosexual cases is influenced by the decline (since 2008) in the number of heterosexually acquired cases in migrants originating from countries with generalised HIV epidemics [12].

Despite clear evidence showing the benefits from early introduction of antiretroviral treatment for the health of HIV-positive individuals and reduction of HIV transmission [13], many people continue to be diagnosed with HIV at an advanced stage of illness. There is evidence that this differs substantially across the EU/EEA, with an average of three years between HIV infection and diagnosis [14]. EU/EEA countries report that between 6–32% of persons living with HIV remain undiagnosed [15]. This suggests problems with access to frequent enough HIV testing by those most at risk in many countries.

In recent years, there has been a trend toward reduced data completeness on the probable HIV transmission route, with nearly one-quarter of cases reported in 2017 lacking this information, which 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 transmission data. Meanwhile, statistical adjustments for missing data have been explored and a tool to adjust HIV surveillance data for missing data has recently been launched [7,16].

## Public health implications

The changing epidemiology of HIV infections observed in the EU/EEA over the last decade suggests that certain progress has been registered, particularly in reducing infections attributed to heterosexual transmission and, more recently, cases attributed to MSM. Nearly half of new diagnoses still occur late in the course of HIV infection, indicating that current testing efforts are insufficient. New European guidance on setting-based approaches for HIV and viral hepatitis testing, including best practices for effective implementation, can help countries seeking to implement more effective testing programmes [17]. Once tested and found positive, rapid linkage to care and the offer of antiretroviral treatment can improve individual health and reduce further transmission.

Epidemiological trends also indicate that it is crucial to sustain, and in certain places strengthen, evidence-based HIV prevention interventions tailored to the local epidemiological context and targeting those most at risk. This includes the offer of pre-exposure prophylaxis as part of a comprehensive package of prevention services for HIV-negative individuals at high risk of HIV acquisition. Programmes for the prevention and control of HIV infection adapted to key populations and maintained to scale remain important. For most EU/EEA countries, this means a strong focus on MSM and migrants. Given the increasing evidence of post-migration HIV acquisition, it is important that migrant-sensitive services for prevention and HIV testing, combined with policies that 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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