

Trends in HIV and hepatitis C virus infections among injecting drug users in Europe, 2005 to 2010

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Data on newly diagnosed HIV infections and HIV prevalence in 2005 to 2010 suggest falling infection rates in injecting drug users (IDUs) in the European Union (EU). However, recent increases in HIV and hepatitis C virus (HCV) infection rates in IDUs suggest increasing injecting risks in some countries. The coverage of effective prevention measures has increased, but is still low in several countries. Overall the data suggest a continued risk of new outbreaks of HIV infection among IDUs.

Importance of HIV and hepatitis C virus infections in injecting drug users

HIV and hepatitis C virus (HCV) infections are among the most costly consequences of illicit drug use, having a high impact on individuals and on healthcare systems. Injecting drug users (IDUs) have been among the first and largest transmission groups for new HIV infections in many European countries and are still a key transmission group for HCV infections [1,2]. Although in the new millennium rates of newly diagnosed HIV infections that are IDU-related have declined greatly in the European Union (EU) as a whole [3], some countries still report high rates and outbreaks of HIV infection continue to occur [4]. High levels of prevalent infections of HIV and HCV in IDUs, as well as continued high levels of HCV spread, constitute an ongoing threat through blood-borne, sexual and healthcare-associated transmission. In some countries neighbouring those of the EU, HIV infection in IDUs is still rampant and shows few signs of being controlled [3,5,6]. In this report, we present the most recent data available on HIV and HCV transmission among IDUs in the EU. Countries reporting to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) are all EU Member States plus Croatia, Turkey and Norway; countries reporting to the European Centre for Disease Prevention and Control (ECDC) are the EU Member States, plus Iceland, Liechtenstein and Norway – EU/European Economic Area (EEA).

Surveillance and prevalence monitoring of HIV and HCV infections

Case reports on newly diagnosed HIV infections are collected from healthcare services where IDUs and other patients present for diagnostic testing. The data are described by year and as rates (i.e. number of newly diagnosed infections per 100,000 population) [5]. Notification data for HCV infection are not considered here due to data quality problems (1).

Prevalence data for both HIV and HCV infections come mostly from diagnostic testing in healthcare services, as well as from specific prevalence studies. They are provided both at national and/or subnational level by different subsets of countries [7]. They are described by year and as the percentage of people in the sample who are positive, together with sample size, other methodological details and source information [3,7]. The prevalence of HIV or HCV infections in subgroups of IDUs – young IDUs (aged under 25 years) and new IDUs (less than two years since first injection) – are shown separately, as indicators of incidence. Trends in prevalence data are assessed annually using the chi-square test and are used to assess trends over a six-year period (2005–2010): increases or decreases are reported if statistically significant (two-sided test, alpha level of 0.05) [3,7]. Data on the prevalence of HCV infection are interpreted not only to assess trends in this infection, but also as a biological indicator of injection-related HIV infection risk ('injecting risk') in the IDU population [8]. In this report, we focus on regional or national increases, not decreases or stable trends, with a view to detecting regions or countries at potential risk of an outbreak of HIV infection in IDUs [4].

Trends in HIV infection among IDUs

Data on reported newly diagnosed HIV infections related to injecting drug use for 2010 suggest that HIV infection rates are still generally falling in the EU following a peak in 2001–2002, which coincided with

outbreaks in Estonia, Latvia and Lithuania [3,5,9]. The rates seen in 2010 are shown in Figure 1.

Of the five countries reporting the highest rates of newly diagnosed HIV infections among IDUs between 2005 and 2010 (Estonia, Iceland, Latvia, Lithuania and Portugal), Portugal continued a downward trend, but the rates in Estonia, Iceland and Lithuania increased from 2008 levels and in Latvia from that of 2009 (Figure 2). Bulgaria increased from 0.16 (12 new diagnoses) in 2005 to 0.97 (74) in 2009 and 0.74 (56) in 2010. In Sweden, the rate peaked at 0.67 per 100 000 population (61 new diagnoses) in 2007.*

These data suggest that there is a continuing potential for outbreaks of HIV infection among IDUs in some countries.

Trend data from HIV prevalence monitoring in samples of IDUs are available at national or subnational level from 26 European countries in 2005 to 2010. In 18 of the countries, HIV prevalence estimates remained unchanged. In seven (Germany, Spain, Italy, Latvia, Poland, Portugal and Norway), HIV prevalence declined in at least one data source or region. Only one country (Bulgaria) reported increasing HIV prevalence, in the capital city, Sofia, consistent with the increase in newly diagnosed infections. In Italy, although the national trend in HIV prevalence was in decline, an

increase was reported in one region (Veneto, data until 2009). The increases in HIV transmission in Greece and Romania reported in 2011 [4,10-13] were not observed in HIV prevalence or case reporting data before 2011.

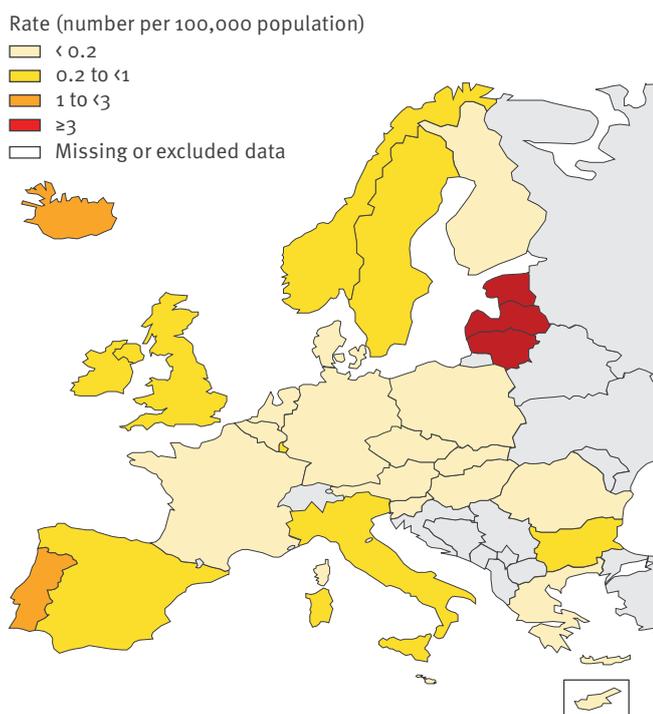
Data from samples of young IDUs (aged under 25 years) indicate ongoing HIV transmission in six countries (Estonia, France, Latvia, Lithuania, Poland and Spain), with prevalence levels above 5% in 2005–2010 (data not shown), and in one country (Bulgaria), where prevalence in young IDUs increased in 2005–2010.

Trends in HCV infection among IDUs

HCV-specific antibody levels among national samples of IDUs in 2009–2010 varied from 14% to 73% (among 12 countries that report national prevalence data). In seven of the 12 countries with national data, the prevalence was over 40%. During 2005 to 2010, a declining prevalence of HCV infection at either national or subnational level in IDUs was reported from six countries and an increase was seen in five (Austria, Bulgaria, Cyprus, Greece and Romania); Italy reported a decline at national level during 2005 to 2009 (more recent data not available), with increases in two of the 21 regions (Table).

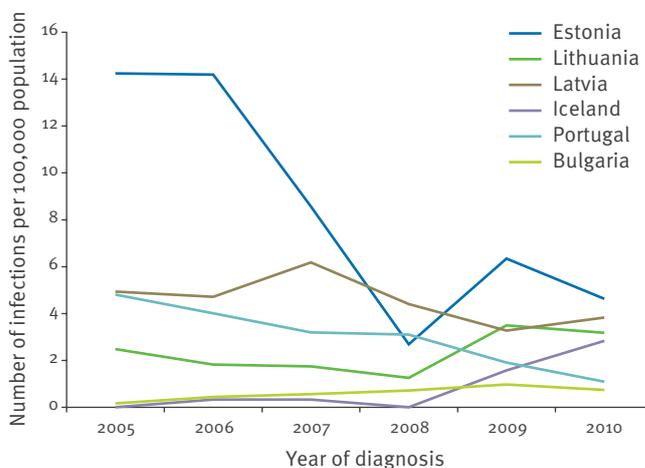
Studies on young IDUs (aged under 25 years) suggest a decline in prevalence at subnational level in Slovakia, which may indicate falling transmission rates (data not shown). However, increases were reported from Austria, Bulgaria, Cyprus and Greece. Increasing HCV prevalence among new IDUs was reported in Greece (nationally and in three regions), whereas declines were reported from Sweden (data for Stockholm only).

FIGURE 1
Newly diagnosed HIV infections attributed to injecting drug use, EU/EEA, 2010



EEA: European Economic Area; EU: European Union.
Source: [5].

FIGURE 2
Five countries with highest rates and one with increasing rate (Bulgaria) of newly diagnosed HIV infections in injecting drug users, EU/EEA, 2005–2010*



EEA: European Economic Area; EU: European Union.
Source: European Centre for Disease Prevention and Control (ECDC).

Coverage of prevention measures

Opioid substitution treatment and needle and syringe programmes are among the most effective measures for preventing infectious diseases among IDUs [14] and are available across the EU. After a massive scale-up of such measures since the mid-1990s, particularly in the western part of EU, opioid substitution treatment currently is estimated to reach about one in two problem opioid users in the EU [3]. However, this overall rate masks important differences between countries, with estimated coverage ranging from 2% to 68% (Figure 3). A regional imbalance with low coverage of opioid substitution treatment in countries in the central and south-eastern part of the EU is apparent.

Similarly, syringe coverage – expressed as the number of sterile syringes distributed from specialist needle and syringe programmes per estimated IDU per year – shows wide variation across Europe (Figure 4). In 2009, very low coverage (less than 100 syringes per estimated IDU) was documented in a majority of the 13 countries for which national estimates of IDU

population size are available (Figure 4); however, estimates for two countries (Luxembourg and Norway) suggest that rates of 200 or more syringes per estimated IDU may be reachable.

Discussion

Overall, a marked decrease in the number of reported newly diagnosed HIV infections due to injecting drug use has been observed in most of the EU/EEA countries; however, high or increasing numbers (in Bulgaria, Estonia, Iceland, Latvia, Lithuania and Portugal) were still reported until 2010, reflecting continued transmission in the region. Recent outbreaks of HIV infection in 2011 in IDUs in Greece and Romania confirm a risk of new increases in countries so far less affected by the HIV epidemic in IDUs [4,10,11].

Very high numbers and rates of newly diagnosed HIV infections continue to be reported from eastern European countries neighbouring those of the EU (e.g. Armenia, Belarus, Georgia and Ukraine) [5,6]. The prevalence of HCV infection remains high overall

TABLE

Countries with data showing an increase in the prevalence of HIV or hepatitis C virus infections in injecting drug users, at national or subnational level, EU, 2005–2010

Country	Coverage	HIV prevalence (%)	HCV prevalence (%)	Additional information
Bulgaria	Sofia	from 0.4 to 2.2	from 53.6 to 62.3	–
	Young IDU ^a	from 0.6 to 3.1	from 52.2 to 65.7	–
Greece	National	–	from 61.7 to 68.8	19 testing sites ^b
	New IDU ^c	–	from 28.4 to 55.5	–
	National	–	from 43.3 to 48.7	18 testing sites ^d
	New IDU ^c	–	from 19.5 to 28.8	–
	Attica New IDUs ^c	–	from 31.4 to 59.4	10 sites ^b
	New IDUs ^c	–	from 25.9 to 45.8	8 sites ^d
	Central Macedonia New IDUs ^c	–	from 0 to 29.4	–
	Thessaly Young IDUs ^a	–	from 20 to 70	–
New IDUs ^c	–	from 0 to 25	2005–2009 ^e	
Italy	Abruzzo	–	from 65.7 to 74.2	2005–2009 ^e
	Valle D'Aosta	–	from 18.1 to 72.4	2005–2009 ^e
	Veneto	from 9.6 to 11.4	–	2005–2009 ^e
Cyprus	National	–	from 29.6 to 51.3	2006–2010
	Young IDUs ^a	–	from 12.8 to 56.3	2006–2010
Austria	Graz	–	from 49 to 73	–
	Young IDUs ^a	–	from 46.8 to 66.7	–
	Vienna	–	from 48.9 to 67.2	–
Romania	Bucharest	–	from 45.8 to 65.6	2005–2007 ^e

EU: European Union; IDU: injecting drug user.

All countries/regions/cities included where data are available and show an increase.

Multiple rows for the same region represent different studies/samples (young/new IDUs are subsamples).

Chi-square test was used for all trends, $p < 0.05$. For more detail of the data up to 2009, see [7] (2010 data are not yet published).

^a Aged under 25 years.

^b Drug treatment centres (maintenance, drug free/detox), low-threshold services, public health laboratories, other hospitals or clinics.

^c Less than two years since first injection.

^d Drug treatment centres, low-threshold services, prisons, other.

^e More recent data are not available.

and suggests a substantial need for treatment, while high and increasing prevalence among young and new IDUs in some countries (Austria, Bulgaria, Cyprus and Greece) points to high incidence and continuing risks of infection among IDUs. Where increasing prevalence of HCV infection coincides with low coverage of effective prevention measures, there may be a potential for increased HIV transmission – as shown in Greece and Romania, where increasing prevalence of HCV infection overall and in new IDUs, appear to have preceded the HIV outbreaks by several years [12]. This suggests that prevalence of HCV infections in new IDUs may be a timely indicator of injecting risk among IDUs [8,18].

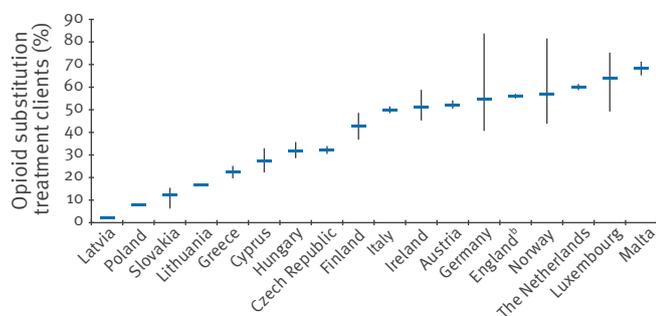
Serious limitations exist regarding the quality and completeness of the data. These include under-ascertainment of injecting drug use as risk factor in case-reporting data, as well as under-reporting and reporting delay, which can show spurious declines in the most recent years. In most EU countries, however, under-reporting is thought to be low, although evidence for this is generally not available and in countries where data are reported by year of diagnosis, reporting delay is not an issue (but under-reporting can still be). Prevalence data are mostly from diagnostic testing and are less sensitive to bias from changes in testing patterns (as they are adjusted for the total number of tests in the denominator) and are not subject to bias from under-reporting or reporting delays. However, they are subject to other biases, such as non-representative sampling or exclusion of known-positives in diagnostic testing samples, they are not available from several countries on a repeated basis (for assessing trends) and are often less timely than case reports, although well-designed and timely prevalence monitoring exists in some countries. In some instances,

caution is warranted, given the limited geographical coverage and/or sample size of the studies. However, when prevalence data confirm the trends observed in case-reporting, they contribute substantially to the robustness of the overall evidence. A recent EMCDDA/ECDC rapid risk assessment provided an overview of the most recent data available and mapped increases in HIV indicators (HIV case reports, prevalence, including in young or new IDUs) and HIV risk indicators (HCV prevalence, including in young or new IDUs) among IDUs in the EU [4,9].

The observed reduction in HIV infections among IDUs in the EU overall in the new millennium is mainly due to large decreases in some of the most affected large countries (in the western part of the EU), which may reflect the combined effects of marked increases in coverage of prevention measures, reductions in risk behaviour among IDUs, declines in the prevalence of injecting drug use (IDU population size) and saturation effects, where incidence naturally declines after explosive spread has reached most high-risk individuals.

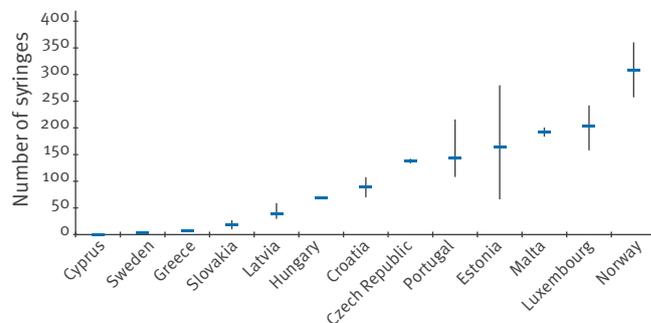
In contrast to HIV, HCV infection incidence among IDUs appears to remain generally high, probably due to much higher infectivity of HCV. While recent evidence suggests that sustained provision of combined prevention measures at high coverage levels can reduce the incidence of HCV infection [14,19-21], such coverage seems not to exist to date in most EU Member States where data are available. Outbreaks of HIV infection in some countries with very low coverage of prevention measures (Romania and Greece) have recently drawn attention to the continuing potential for new epidemics among IDUs in the EU [9-11].

FIGURE 3
Opioid substitution clients as a proportion of the estimated number of problem opioid users, 18 EU/EEA countries^a, 2009–2010



EEA: European Economic Area; EU: European Union.
The horizontal line indicates a point estimate, and the vertical bar indicates an uncertainty interval. For methods, definitions and detailed references see [15].
^a Countries where data are available.
^b Data for the United Kingdom are not available.
Source: [16].

FIGURE 4
Number of syringes distributed through specialised programmes per injecting drug user^a, 12 EU/EEA countries and Croatia^b, 2009



EEA: European Economic Area; EU: European Union.
The horizontal line indicates a point estimate, and the vertical bar indicates an uncertainty interval.
^a Numbers of injecting drug users are estimated. For methods, definitions and detailed references, see [15].
^b Countries where data are available.
Source: [17].

In conclusion, available data from HIV case-reporting and HIV and HCV prevalence studies in IDUs suggest that, although generally the rate of new HIV infections is still in decline, a risk of new outbreaks of HIV infection among IDUs still exists, pointing to the need for implementing effective prevention interventions on an adequate scale.

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* Authors' correction:

At the request of the authors, the following changes were made on 1 December 2011: the paragraph beginning 'Of the six countries reporting the highest rates of newly diagnosed HIV infections ...', was replaced with 'Of the five countries reporting the highest rates of newly diagnosed HIV infections among IDUs between 2005 and 2010 (Estonia, Iceland, Latvia, Lithuania and Portugal), Portugal continued a downward trend, but the rates in Estonia, Iceland and Lithuania increased from 2008 levels and in Latvia from that of 2009 (Figure 2). Bulgaria increased from 0.16 (12 new diagnoses) in 2005 to 0.97 (74) in 2009 and 0.74 (56) in 2010. In Sweden, the rate peaked at 0.67 per 100 000 population (61 new diagnoses) in 2007.'

In addition, the title of Figure 2 was updated to read, 'Five countries with highest rates and one with increasing rate (Bulgaria) of newly diagnosed HIV infections in injecting drug users, EU/EEA, 2005–2010'. The title of the image was updated on 2 December 2011.

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