European Monitoring Centre
for Drugs and Drug Addiction

TECHNICAL REPORT

Monitoring the elimination of viral hepatitis as a public health threat among people who inject drugs in Europe

The elimination barometer

September, 2019

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Executive summary

In 2016, the World Health Assembly endorsed the first global health sector strategy on viral hepatitis. The aim of the strategy is to eliminate viral hepatitis as a major public health threat by 2030. In Europe, people who inject drugs (PWID) are at high risk of hepatitis C virus (HCV) and hepatitis B virus (HBV) transmission and constitute a key group for the elimination strategy. Chronic viral hepatitis can result in serious liver diseases such as cirrhosis and cancer and is associated with a high burden of disease. As a complement to the existing monitoring platform, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) is working with its expert network on drug-related infectious diseases (the DRID network) on a PWID-specific list of epidemiological indicators — the elimination barometer — in order to help EU Member States to identify data gaps and assess progress towards the elimination of HCV and HBV in this group.

The elimination barometer includes five building blocks (context and needs, inputs, prevention, testing and linkage to care, and impact) and 17 indicators covering the EU, Norway and Turkey until the last quarter of 2018. The sources of the data include the EMCDDA data collection tools that collate data from the EMCDDA national focal points (Fonte for quantitative data and the Reitox workbooks for qualitative information), information shared by the national DRID experts and published reports. The 2020 targets were taken from the World Health Organization's regional action plan for viral hepatitis in the European region.

In the 15 national studies conducted between 2015 and 2018, the estimated prevalence of injecting drug use at national level ranged from less than 1 per 1 000 to more than 5 per 1 000. Sharing of injecting equipment is frequently reported by drug users. In 8 out of the 14 countries with national data on HCV antibody prevalence for 2016-17, more than half of people who inject drugs have been infected with HCV. Among the four countries collecting data on the prevalence of chronic infections among PWID, the prevalence ranged from 23.1 % in Germany (local study) to 55.6 % in Austria. In the five countries with national data on HBV prevalence in 2016-17, between 1.4 % and 9.4 % of injecting drug users were estimated to be currently infected. By the end of 2018, 18 countries had a national hepatitis policy in place. In 2017, 4 and 11 countries were on target, respectively, for sterile needle/syringe distribution and opioid substitution treatment coverage. In 2018, hepatitis B vaccination was routinely offered to prisoners in 13 countries. While at least some harm reduction services offered HCV testing to drug users in 22 EU Member States, in only four did more than 50 % of drug treatment entrants report having been tested for HCV in the last 12 months in 2017. In 2018, clinical guidelines restricted access to HCV treatment for people who inject drugs in eight EU Member States. Data on the prevalence of HCV among young and new injectors suggest that transmission remained at high levels in 2017.

While the available data show that the burden of HCV and HBV among PWID is high, there are still information gaps in many countries, including a lack of core data on denominators (the size of the PWID population) and routine prevalence estimates for chronic HCV infections among PWID. The coverage of measures known to prevent HCV and HBV infections among this group is suboptimal in many Member States. There is currently no systematic collection of data on the HCV and HBV cascade of care for PWID in Europe. The coverage of testing in the last year among PWID reflects missed opportunities to diagnose people in drug treatment services and prisons, while financial and clinical restrictions still constitute barriers to direct-acting antiviral treatment. Scaling up of equitable and tailored prevention measures, testing and treatment for PWID is needed to have an impact and to reach the elimination targets.

Introduction

An estimated 9 million Europeans live with chronic hepatitis B virus (HBV) or hepatitis C virus (HCV), including many with an undiagnosed infection. Chronic viral hepatitis can result in serious liver diseases such as cirrhosis and cancer. Following the global health strategy on viral hepatitis (WHO, 2016a), the World Health Organization Regional Office for Europe (WHO Europe) produced an action plan for the health sector response to viral hepatitis in the WHO European Region (WHO, 2017a). The goal is to achieve a reduction in the incidence of chronic HBV and HCV infections of 30 % by 2020 and 90 % by 2030, and a reduction in mortality from chronic HBV and HCV infections of 10 % by 2020 and 65 % by 2030.

Five key interventions constitute the so-called source code of the elimination strategy. Each key intervention comes with a target for the year 2020: HBV vaccine coverage (95 % for three doses in infants and 90 % for prevention of mother-to-child transmission), blood donations screened with quality assurance (100 %), medical injections with safety-engineered devices (50 %), sterile syringes and needles distributed per person who injects drugs per year (200), and diagnosis and treatment of HBV and HCV (50 % and 75 %, respectively). In addition to those key interventions, the WHO evaluation and monitoring framework (WHO, 2016b) includes indicators on the context (describing the population in need and the prevalence of infection), the policy environment (inputs) and the impact (in terms of incidence and mortality). Based on this framework, the European Centre for Disease Prevention and Control (ECDC) put in place an EU hepatitis B and C monitoring platform.

People who inject drugs are a key group for the elimination strategy. As a complement to the general monitoring platform, the EMCDDA is working with its expert network on drug-related infectious diseases (the DRID network) on a list of epidemiological indicators specifically for people who inject drugs (PWID) — the elimination barometer — in order to identify data gaps and assess progress towards the elimination of HCV and HBV in this group.

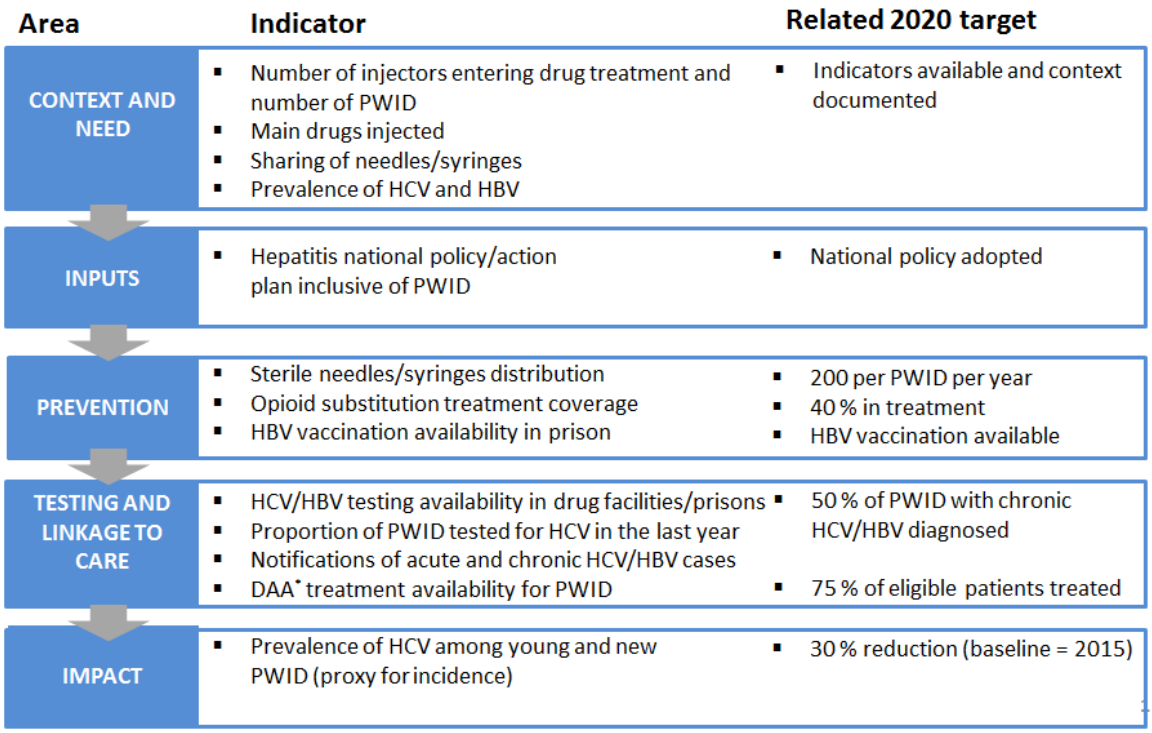
We document here each of the five building blocks of the elimination barometer by looking at the European overview for each of the indicators available by the last quarter of 2018. Corresponding country-specific data are presented in the annex tables. For each building block, we also provide case studies to illustrate the national contexts and experiences that were presented by national experts during the DRID network meeting in September 2018.

Methods

Figure 1 provides the list of key indicators of the elimination barometer. Tables 1-5 detail the case definitions, methods and data sources used to obtain these indicators. The case studies providing national contextual information were presented and reviewed by the national DRID experts.

FIGURE 1

List of indicators and related targets included in the elimination barometer for viral hepatitis among people who inject drugs (PWID) in Europe



* DAA = direct-acting antiviral

Source: EMCDDA based on (WHO, 2016b).

TABLE 1

Context and need, viral hepatitis elimination barometer for PWID

Area	Indicator	Definition	Methods	Data sources	Related 2020 target
1. Context and need	Number of injectors among people entering drug treatment	People aged between 15 and 64 years entering drug treatment services who reported injecting their primary drug	European countries systematically collect data on people entering drug treatment through the treatment demand indicator (TDI)	EMCDDA TDI	Recent data available (2015 or later)
	Number of PWID and prevalence of injecting drug use	People aged between 15 and 64 years who have injected any psychoactive substance(s) not according to medical prescription in the last 12 months (current injector). The prevalence of injecting drug use in a given country is the number of PWID estimated for a given year divided by the population aged 15 to 64 years provided by Eurostat (x 1 000)	Indirect statistical methods: treatment multipliers (TMs), capture-recapture (CRC) methods and single-source truncated Poisson (TP) methods	EMCDDA problem drug use (PDU) indicator	Recent data available (2015 or later)
	Main drugs injected	Most frequently reported primary substance(s) injected by PWID entering treatment	European countries systematically collect data on people entering drug treatment through the TDI, including self-reported primary substance	EMCDDA TDI	Recent data available (2015 or later)
	Prevalence of needle/syringe sharing	Proportion of injectors who have injected in the last month who reported sharing (receiving or passing on) used needles/syringes	Surveys conducted among PWID. In some cases, seroprevalence studies are combined with the collection of behavioural data European countries systematically collect data on people entering drug treatment through the TDI, including self-reported sharing of injecting material	EMCDDA DRID indicator EMCDDA TDI	Recent data available (2015 or later)
	Prevalence of hepatitis C antibodies among PWID	Proportion of current injectors (drug users who have injected in the last 12 months, unless otherwise stated ([1])) who tested positive for antibodies to HCV	Seroprevalence studies ([2]) designed to obtain information on the prevalence of HCV biomarkers among PWID Routine diagnostic tests, where the positivity rate (the proportion of people testing positive among all people tested in a given period) is obtained from routine screening and diagnostic tests done by health services	EMCDDA DRID indicator	Recent data available (2015 or later)
	Prevalence of chronic and/or current hepatitis C infection among PWID	Proportion of current injectors (drug users who have injected in the last 12 months, unless otherwise stated ([1])) who tested positive for HCV ribonucleic acid (RNA) or hepatitis C core antigen (HCVcAg) in association with positive serology for HCV antibody. For the prevalence of current infections, only positive RNA or HCVcAg tests are required	Seroprevalence studies and routine diagnostic tests	EMCDDA DRID indicator	Recent data available (2015 or later)
	Prevalence of hepatitis B infection among PWID	Proportion of current injectors (drug users who have injected in the last month, unless otherwise stated ([1])) who tested positive for hepatitis B surface antigen (HBsAg)	Seroprevalence studies and routine diagnostic tests	EMCDDA DRID indicator	Recent data available (2015 or later)

([1]) Some studies include drug users who have injected illicit drugs in the course of their life (ever injectors). Ever injectors include current injectors and those who do not inject any more. Some studies restrict their definition of current injectors to users who have injected in the last 6 months or in the last month.

([2]) A seroprevalence study is based on a protocol with well-defined target population, inclusion criteria, recruitment setting, sampling method and sample size (http://www.emcdda.europa.eu/attachements.cfm/att_220260_EN_DRID_module_study_methods_final.pdf). Settings where study participants are recruited are usually low-threshold services (e.g. needle exchange programmes), drug treatment centres or prisons. Sampling methods can be systematic or based on respondent-driven sampling methodologies.

TABLE 2
Inputs (national policies), viral hepatitis elimination barometer for PWID

Area	Indicator	Definition	Methods	Data sources	Related 2020 target
2. Inputs — policy	Adoption of viral hepatitis national policy inclusive of PWID	Inclusive hepatitis policies are defined as national strategies, programmes or action plans (including those integrated into broader health strategies or plans) in which people who inject drugs are considered an important target group and/or specifically mentioned	Between February and October 2017, a targeted search for policy documents was undertaken in the reports submitted by national focal points to the EMCDDA, published and grey literature, and relevant national websites. Additional information was gathered through the EMCDDA DRID network. Where no national HCV strategies, programmes and action plans were identified, current clinical guidelines were considered. An assessment of if and how national policies or clinical guidelines address access for people who inject drugs to HCV care and treatment was made, and analytical summaries as well as lists of national policy-relevant documents were compiled. These were submitted to EMCDDA focal points in early 2018 for validation and, if necessary, updated up to the last quarter of 2018	Nielsen, 2018	Policy adopted

TABLE 3
Prevention, viral hepatitis elimination barometer for PWID

Area	Indicator	Definition	Methods	Data sources	Related 2020 target
3. Prevention	Sterile needle/syringe distribution	Number of sterile needles/syringes distributed in a year per person who injects drugs. For the needle/syringe coverage indicator, a person who injects drugs is defined as a person aged between 15 and 64 years who has injected any psychoactive substance(s) not according to medical prescription in the last 12 months (2017 or most recent year)	Numerator: Member States report information on the total number of syringes provided annually at different types of needle and syringe programme sites Denominator: the latest estimated number of PWID, as described in Table 1	EMCDDA harm reduction indicator EMCDDA PDU indicator	200 per person who injects drugs (WHO, 2017a)
	Opioid substitution treatment coverage	Proportion (expressed as a percentage) of people in need of opioid-related treatment who are receiving opioid substitution treatment in a given year (2017 or most recent year)	Divide the number of patients receiving opioid substitution treatment (OST) in a given year by the estimated number of high-risk opioid users (HROU) in that year or the most recent data available (with a maximum of 4 years difference between the two data points). Add 'stable' OST patients if this group is not already included in HROU. This indicator is not restricted to PWID but provides a proxy for access to OST among opioid users, irrespective of the mode of administration	EMCDDA availability and access to treatment indicator EMCDDA PDU indicator	40 % (WHO, 2017a)
	HBV vaccination available in prisons	Existence of a vaccination programme that provided access to HBV vaccination to people in prisons in 2016-17	The information on HBV vaccination programmes in prison was obtained from the EMCDDA workbooks and/or ad hoc information requests made to the DRID network and from WHO Europe factsheets on health in prison (WHO, 2019)	EMCDDA harms and harm reduction workbook; EMCDDA prison workbook; WHO, 2019	HBV vaccination available to people in prison

TABLE 4

Testing and access to treatment, viral hepatitis elimination barometer for PWID

Area	Indicator	Definition	Methods	Data sources	Related 2020 target
4. Testing and access to treatment	HCV diagnostic test availability in harm reduction services	Hepatitis C tests offered by any harm reduction service in the country in 2018.	Online survey was developed and conducted by partners in the EU Joint Action on HIV and Co-infection Prevention and Harm Reduction (HA-REACT), with substantial input from the Correlation Network (Pericàs et al., 2019)	Pericàs et al., 2019	Testing available in harm reduction services
	HCV and HBV diagnostic test availability in prison	Existence of national programmes that routinely offer HBV and HCV diagnostic tests free of charge to PWID in prisons in 2018	Information collected through the EMCDDA workbooks and/or ad hoc information requests made to the DRID network	EMCDDA harms and harm reduction workbook; EMCDDA prison workbook	Testing routinely offered to people in prison
	Proportion of PWID who were tested for HCV in the last year	Proportion of PWID (drug users who have injected in the last 12 months, unless otherwise stated ([1])), who reported an HCV test in the last 12 months	Surveys conducted among PWID. In some cases, seroprevalence studies are combined with the collection of behavioural data. Some studies exclude PWID who are known to be chronically infected with HCV. In this case, the denominator is PWID with unknown HCV infection status European countries systematically collect data on people entering drug treatment through the TDI, including on HCV tests done in the last 12 months	EMCDDA DRID indicator EMCDDA TDI	50 % of all people with chronic HCV or HBV to be diagnosed and aware of their condition (WHO, 2017a)
	Number of newly notified acute and chronic HCV and HBV cases attributed to injecting drug use	ECDC case definitions (ECDC, 2018a, 2018b)	ECDC notification system for 2017 (ECDC, 2018a, 2018b)	The ECDC European Surveillance System (TESSy)	Recent data available (2017)
	Access to direct-acting antiviral (DAA) treatment for PWID with HCV infection	Absence of clinical and reimbursement restrictions for DAA treatment for PWID in 2018	For countries with no inclusive hepatitis national policy, national experts were contacted to assess the presence of restrictive clinical guidelines for DAA initiation for PWID. They were assessed in early 2018 for validation and, if necessary, updated From Marshall et al. (2018): 'Restrictions meant that individuals with drug or alcohol use dependencies needed to fulfil further criteria before being eligible for DAA reimbursement.'	Nielsen, 2018. Marshall et al., 2018	No restrictions on treatment access related to drug use to allow for 75 % treatment coverage for PWID diagnosed with chronic HCV infection ([2])

([1]) Some studies include drug users who have injected illicit drugs in the course of their life (ever injectors). Ever injectors include current injectors and those who do not inject any more. Some studies restrict their definition of current injectors to users who have injected in the last 6 months or in the last month.

([2]) The quantifiable 2020 WHO target is 75 % treatment coverage of people who are eligible for treatment and diagnosed with HBV and HCV infections (WHO, 2017a).

TABLE 5

Impact, viral hepatitis elimination barometer for PWID

Area	Indicator	Definition	Methods	Data sources	2020 target
5. Impact	Prevalence of hepatitis C antibodies among young and new injectors (proxy for incidence) compared with 2015 baseline	Proportion of current injectors (drug users who have injected in the last 12 months, unless otherwise stated ([1])) aged less than 25 years who tested positive for antibodies to HCV Proportion of current injectors who have injected for less than 2 years who tested positive for antibodies to HCV	Seroprevalence studies ([2]) designed to obtain information on the prevalence of HCV biomarkers among PWID Routine diagnostic tests, where the positivity rate (the proportion of people testing positive among all people tested in a given period) is obtained from routine screening and diagnostic tests done by health services Baseline year: 2015	EMCDDA DRID indicator	30 % reduction in new cases compared with 2015 (WHO, 2017a)

([1]) Some studies include drug users who have injected illicit drugs in the course of their life (ever injectors). Ever injectors include current injectors and those who do not inject any more. Some studies restrict their definition of current injectors to users who have injected in the last 6 months or in the last month.

([2]) A seroprevalence study is based on a protocol with well-defined target population, inclusion criteria, recruitment setting, sampling method and sample size (http://www.emcdda.europa.eu/attachements.cfm/att_220260_EN_DRID_module_study_methods_final.pdf). Settings where study participants are recruited are usually low-threshold services (e.g. needle exchange programmes), drug treatment centres or prisons. The sampling method can be systematic or based on respondent-driven sampling methodologies.

Results

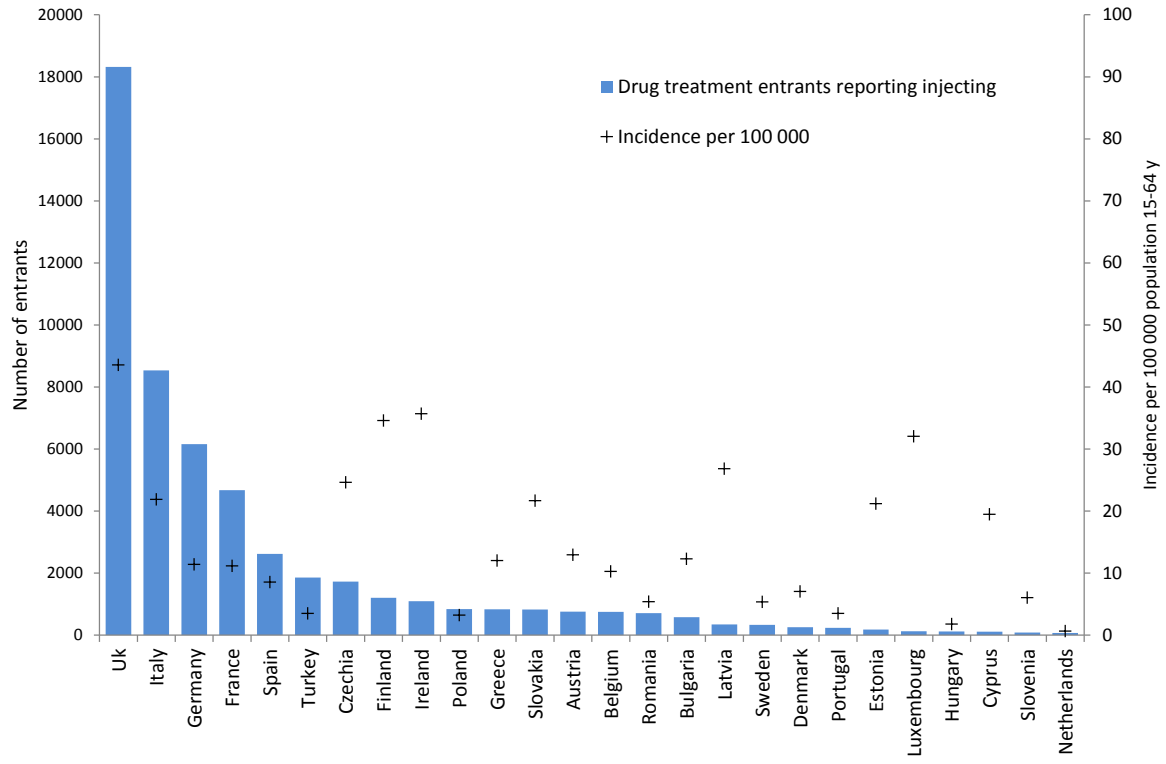
1. Context and need

Number of injectors among people entering drug treatment

Based on data collected from drug treatment centres on patients entering drug treatment across the EU, Norway and Turkey in 2017, there were at least 53 334 patients who reported injecting any drug in the last year. People who injected their primary drug represented 13 % of all treatment entrants (ranging from 1 % in the Netherlands to 75 % in Lithuania). The absolute number of current injectors entering treatment varied across countries (Figure 2), with the United Kingdom, Italy and Germany together contributing to 61 % of the total number of PWID entering drug treatment (see Annex 1). The incidence of PWID entering drug treatment per 100 000 population aged 15-64 years was highest in the United Kingdom, Ireland, Finland and Luxembourg (Figure 2). This indicator reflects the inflow of PWID accessing drug treatment, which is influenced by drug treatment availability and accessibility, coverage of the surveillance system and pattern of drug use among treatment entrants. It is likely to represent a small proportion of the overall prevalence of injecting drug use, which is usually estimated through indirect statistical methods.

FIGURE 2

Number and incidence of patients entering drug treatment who reported injecting in the last 12 months per 100 000 population aged 15-64 years, by country, 2017



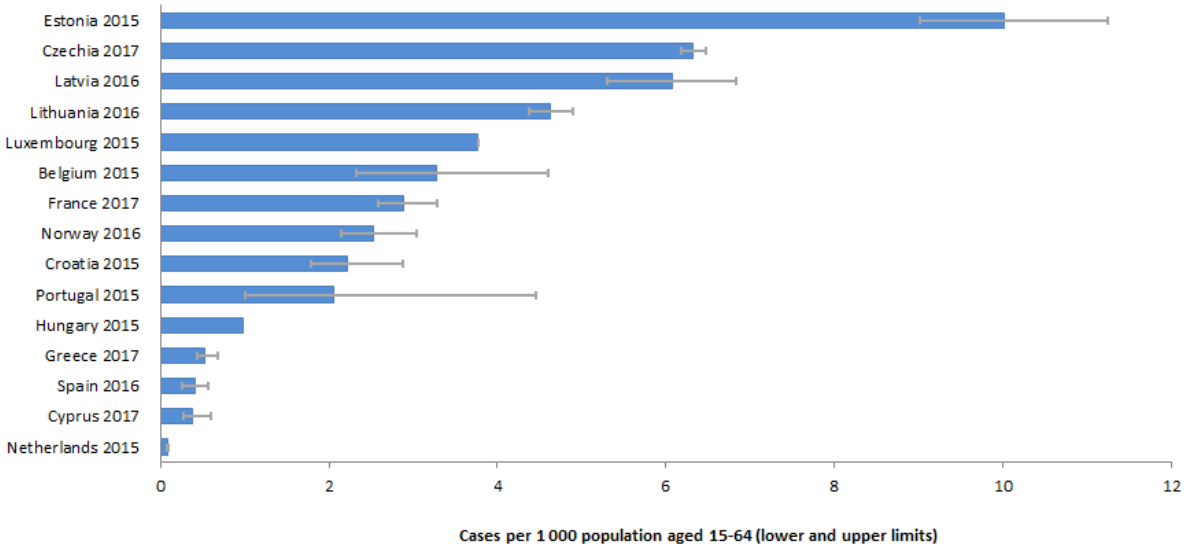
Note: Data for Spain and Estonia are for 2016; data for the Netherlands are for 2015.
Source: EMCDDA

Prevalence of injecting drug use

The prevalence of injecting drug use, defined as the proportion of the population aged 15-64 years that has injected illicit drugs in the last 12 months, is measured through indirect statistical methods such as capture-recapture studies (Raag et al., 2019) and treatment multiplier studies (Larney et al.,

2017) and comes with a high degree of uncertainty. In the 15 national studies conducted from 2015 onwards, the estimated prevalence of injecting drug use ranged from less than 1 per 1 000 in Cyprus, the Netherlands and Spain to more than 5 per 1 000 in Czechia, Estonia and Latvia (Figure 3). Absolute numbers and prevalence by country are shown in Annex 1.

FIGURE 3
Estimated prevalence of injecting drug use in EU Member States and Norway, 2015-17



Source: EMCDDA.

Main drugs injected

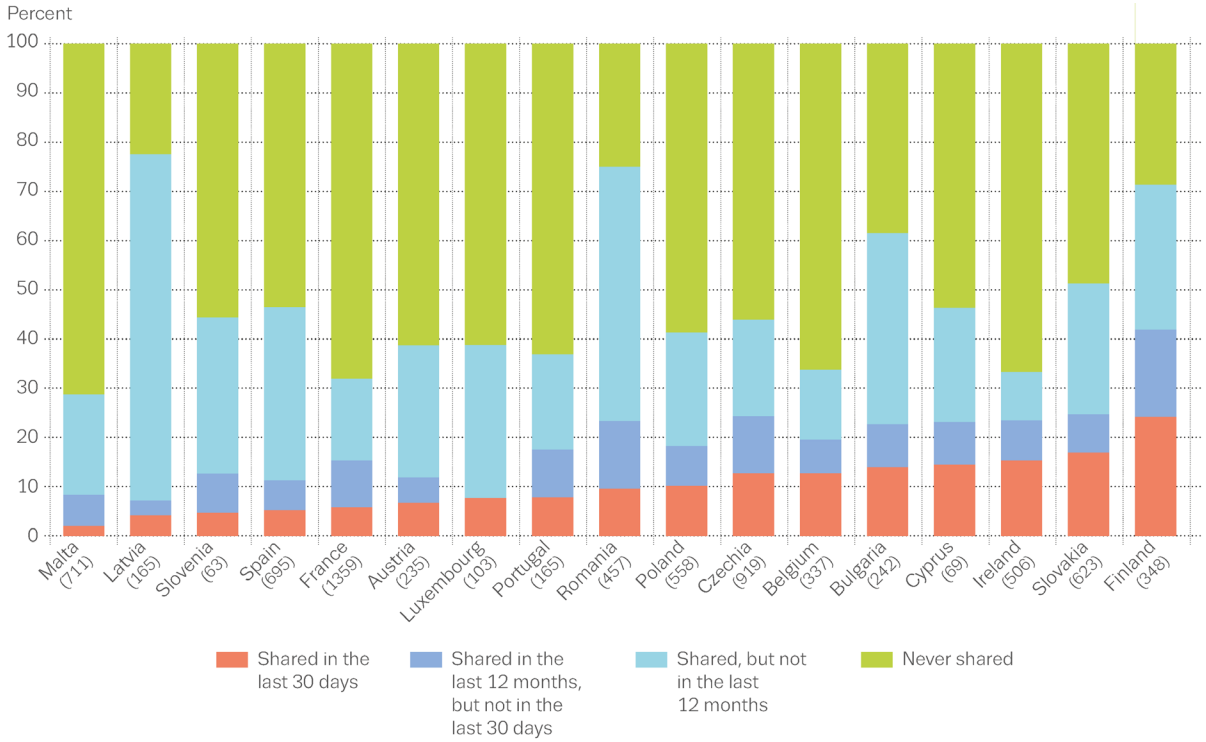
Heroin and other opioids remain overall the most commonly injected drugs among drug treatment entrants (Annex 2), with the exception of Czechia (methamphetamine) and Norway (amphetamine). Reports from low-threshold services suggest that stimulants are also commonly injected in France (cocaine), Hungary (synthetic cathinones), Latvia (amphetamine) and Luxembourg (cocaine). In 2017, the European Syringe Collection and Analysis Project Enterprise (ESCAPE) obtained information on injected substances by analysing in laboratories the residual content of used syringes from collection sites in six cities (Amsterdam, Budapest, Glasgow, Helsinki, Lausanne and Paris) (EMCDDA, 2019). A high proportion of syringes from all six cities were found to contain stimulants, which may indicate a high prevalence of stimulant use among people who inject drugs. This has potentially important implications, since stimulant injecting has been associated with higher-risk injecting practices and HIV outbreaks (Arendt et al., 2019; Giese et al., 2015; McAuley et al., 2019).

Prevalence of needle/syringe sharing

The main risk factor for blood-borne infections is the sharing of needles, syringes and other drug equipment. In recent national or local biological and behavioural surveillance studies, the proportion of people who inject drugs reporting sharing used needles/syringes in the last 4 weeks was 47 % in Bulgaria (National Centre for Addictions, 2017), 40 % in Romania (National Antidrug Agency, 2016) and 39 % in Hungary (Dudás et al., 2015) (Annex 2). Under the treatment demand indicator (TDI) protocol, those entering specialised drug treatment who report drug injecting are asked about their sharing of used needles/syringes in the last 4 weeks. The data available for 17 countries in 2017 suggest that, in eight countries, more than 10 % of all treatment entrants who report injecting drugs have recently shared a needle or syringe (Figure 4). It is important to note that people reporting drug injection on treatment entry may not be representative of all people who inject drugs, and those not in contact with services may have even higher levels of drug use and injecting.

FIGURE 4

Self-reported sharing of needles or syringes among people entering drug treatment who report injecting drugs, 2017



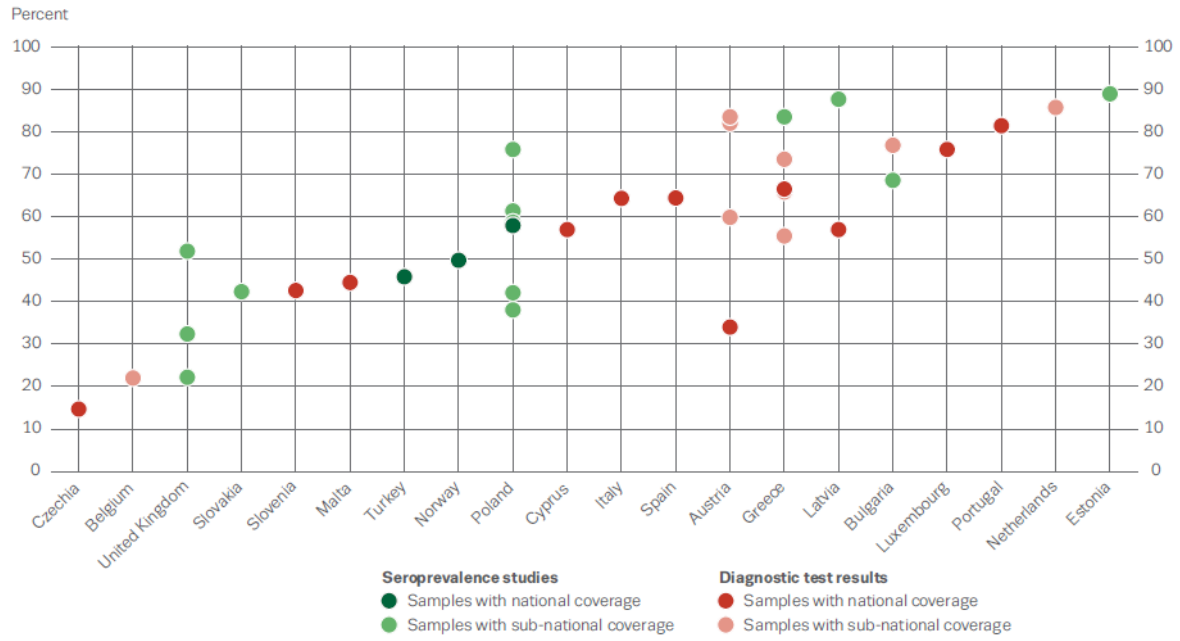
Note: Sample size per country is shown in parentheses. Data for Spain are for 2016.
Source: EMCDDA.

Prevalence of HCV infection among PWID

The prevalence of antibodies to HCV (anti-HCV) among people who inject drugs — indicating chronic or past infection (past infection either naturally cleared or treated) — is estimated from seroprevalence studies or from the results of routine diagnostic testing in drug treatment centres or by low-threshold services (Annex 3). In 2016-17, anti-HCV prevalence among people who inject drugs varied from 15 % to 82 %. In 8 out of the 14 countries with national data, more than half of people who inject drugs have been infected with HCV (Figure 5).

FIGURE 5

HCV antibody prevalence (%) among people who inject drugs: results from seroprevalence studies and diagnostic tests with national and sub-national coverage, 2016-17



Source: EMCDDA.

Some countries also report the prevalence of chronic and/or current infections among PWID, using HCV ribonucleic acid (RNA) tests to confirm the presence of the virus (Annex 3). Among the four countries reporting data on the prevalence of chronic infections (anti-HCV positive and HCV RNA positive) among PWID with a sample size greater than 100, the prevalence ranged from 23.1 % in Leipzig (Germany, 2011-14) to 55.6 % in Vienna (Austria, 2017) (Table 6 and Annex 3). Among the four countries collecting data on the prevalence of all current infections among PWID with a sample size greater than 100 (HCV RNA positive, irrespective of anti-HCV status, therefore including acute as well as chronic infections), the prevalence ranged from 26.7 % in England and Wales (United Kingdom, 2017) to 65.1 % in Vienna (Austria, 2017) (Table 6).

TABLE 6

Prevalence of chronic HCV infection among PWID, EU Member States, 2014-2017

Country	Region/city	Year	Study type	Setting	Case definition of injectors	Sample size	% HCV antibody positive among all	% HCV RNA positive and HCV antibody positive among all (chronic infections)	% HCV RNA positive among all (current infection)
Austria	Graz (Marienambulanz)	2017	DT	LTS	Current (not specified)	68	82.4	35.3	35.3
	Vienna	2017	DT	DTC, NSP, LTS	Ever	315	83.5	55.6	65.1
	Vorarlberg/Lukasfeld	2017	DT	DTC	Ever	50	60.0	36.0	
Greece	National	2017	DT	DTC, LTS, PRI	Ever	101			50.5
	Attica	2017	DT	DTC, LTS, PRI	Ever	100			51.0
Luxembourg	National	2017	DT	DTC, NSP, PRI, STI	Ever	66	75.8	53.0	
United Kingdom	UAM England and Wales	2017	SP	DTC, NSP, LTS	Ever	2584	52.2	25.7	26.7
	UAM Northern Ireland	2017	SP	DTC, NSP, LTS	Ever	71	22.5	8.5	8.6
Germany	Berlin	2011-14	SP	RDS	Last 12 months	337	53.7	37.1	38.3
	Essen	2011-14	SP	RDS	Last 12 months	197	71.1	45.2	46.7
	Leipzig	2011-14	SP	RDS	Last 12 months	130	36.9	23.1	28.5
	Frankfurt	2011-14	SP	RDS	Last 12 months	285	64.6	50.2	51.9
	Cologne	2011-14	SP	RDS	Last 12 months	322	66.5	47.5	52.2
	Hanover	2011-14	SP	RDS	Last 12 months	252	73.0	54.0	56.0
	Munich	2011-14	SP	RDS	Last 12 months	235	62.6	36.2	37.0
	Hamburg	2011-14	SP	RDS	Last 12 months	319	67.7	44.8	46.7

Note: SP:seroprevalence study, DT, diagnostic test; DTC, drug treatment centre; LTS, low-threshold services; NSP, needle and syringe programme; PRI, prison; RDS, respondent-driven sampling; STI, Sexually Transmitted Infections Clinics; UAM, unlinked anonymous monitoring.

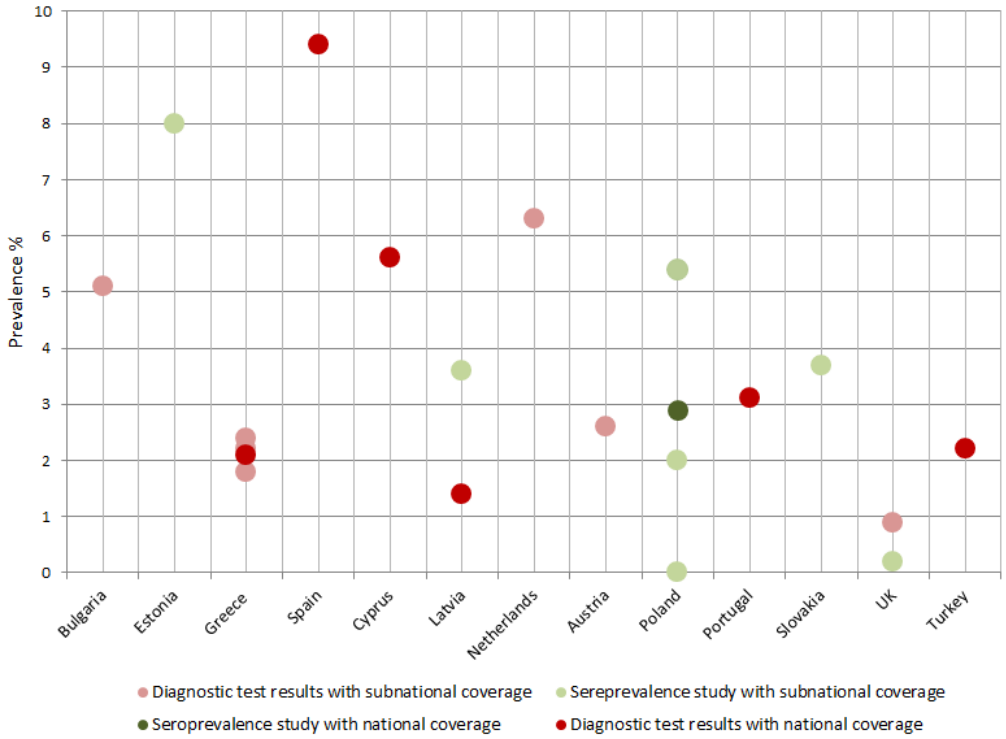
Sources: EMCDDA; Wenz et al., 2016.

Prevalence of HBV infection among PWID

Among drug users, HBV infection is less common than HCV infection, but is still higher than in the general population, despite the availability of an effective vaccine, which is included in the recommended vaccination schedules in most EU Member States (ECDC, 2018c). For this virus, the presence of the HBV surface antigen (HBsAg) indicates a current infection, which may be recent or chronic. In the seven countries with national data for 2016-17, the prevalence of current HBV infections among PWID ranged from 1.4 % (in Latvia) to 9.4 % (in Spain) (Figure 6 and Annex 3).

FIGURE 6

HBV surface antigen prevalence (%) among people who inject drugs: results from seroprevalence studies and diagnostic tests with national and subnational coverage, 2016-17



Source: EMCDDA

Case studies on estimating the prevalence of HCV and HBV among PWID

Seroprevalence studies versus routine diagnostic tests in Latvia

Latvia estimated the prevalence of HCV antibodies and HBsAg among PWID through two sources: the Drug Users Cohort Study (RDUCS) (Ķīvīte et al., 2017) and needle and syringe programmes (NSPs) offering routine testing to clients. The RDUCS was started in Riga in 2006, and in 2017 it covered five cities and included 550 current injectors. Seroprevalence results since 2012 indicate that between 83.3 % and 85.0 % of participants have been exposed to HCV (85.2 % in 2017) and that between 2.4 % and 3.8 % are currently infected with HBV (3.6 % in 2017). Over the same period, the annual positivity rate of HCV antibody tests offered to clients of NSPs (data from 12-20 NSP services screening 427-1 031 clients) ranged from 52 % to 74 % (57 % in 2017). The annual positivity rate for HBsAg tests (562-1 055 clients screened) ranged from 1 % to 3 % (1 % in 2017).

Initial recruitment into the cohort study was based on respondent-driven sampling at street level in 2006. In 2017, the proportion of participants who reported using drug treatment services within the last year was 5.1 %. The cohort study therefore reflects the prevalence of infection among people who are at higher risk: they have injected for several years with a low level of access to drug services. Estimates from rapid tests done in low-threshold services (e.g. through NSPs), on the other hand, may be biased towards a population of users with more access to health services and exclude users who already know their positive status, which could lead to underestimation of the true prevalence of infection. Estimates derived from annual diagnostic tests (as opposed to observational studies) have the advantage of being systematically collected every year and are based on larger sample sizes.

Introducing HCV RNA testing in routine surveys among PWID in the United Kingdom

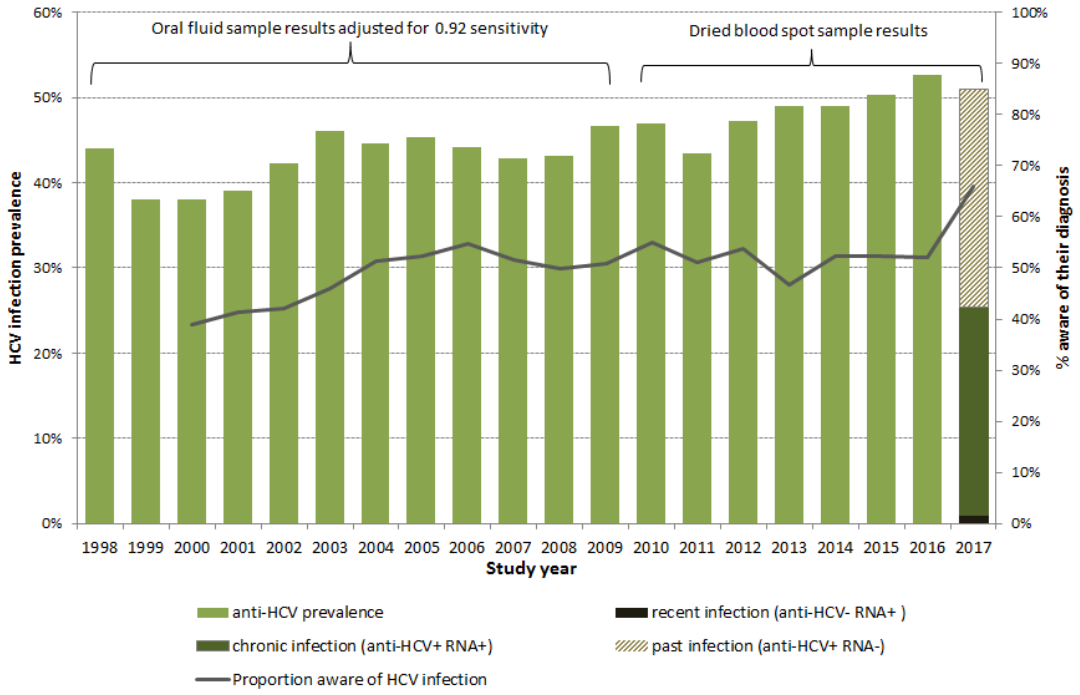
After an acute infection, 25-30 % of those infected naturally clear the virus. Patients who have successfully been treated also clear the virus. Those who naturally clear the virus and those who are successfully cured will, however, still test positive for HCV antibodies. Individuals who remain chronically infected are at risk of cirrhosis and cancer, and they can transmit the virus to others when sharing any injecting material that has been in contact with their blood. As more patients gain access to direct-acting antiviral (DAA) treatment, monitoring should aim to measure the prevalence of chronic infections. This requires tests for HCV RNA or HCV core antigen, in association with antibody tests.

In the United Kingdom, Public Heath England collects information on a sample of 2 500-3 500 former and current injectors every year using the unlinked anonymous monitoring (UAM) survey methodology (Public Health England, 2018). The survey combines a questionnaire with the collection of dried blood spots for the detection of HIV, HBV and HCV antibodies and, since 2016, HCV RNA. Combining HCV RNA tests with antibody tests allows the survey to distinguish recent infections (antibody negative and RNA positive) from chronic infections (antibody positive and RNA positive) and past (resolved) infections (antibody positive and RNA negative). Among the 2 655 former and current injectors included in the 2017 survey, 51 % tested positive for HCV antibodies. Among these, 49 % tested positive for HCV RNA and could be classified as having a chronic infection (25 % of the total). Of the total, 26 % had a past infection and less than 1 % had a recent infection. The rest (48 %) were negative on both tests (Figure 7).

In addition to providing useful data on the prevalence of chronic and recent infections, the UAM survey provides information on the proportion of PWID who are aware of their HCV status.

FIGURE 7

HCV antibody prevalence over time and introduction (2017) of HCV RNA test in the UAM survey among PWID in England, Wales and Northern Ireland, 1998-2017



Source: UAM survey of PWID, Public Health England, 2018.

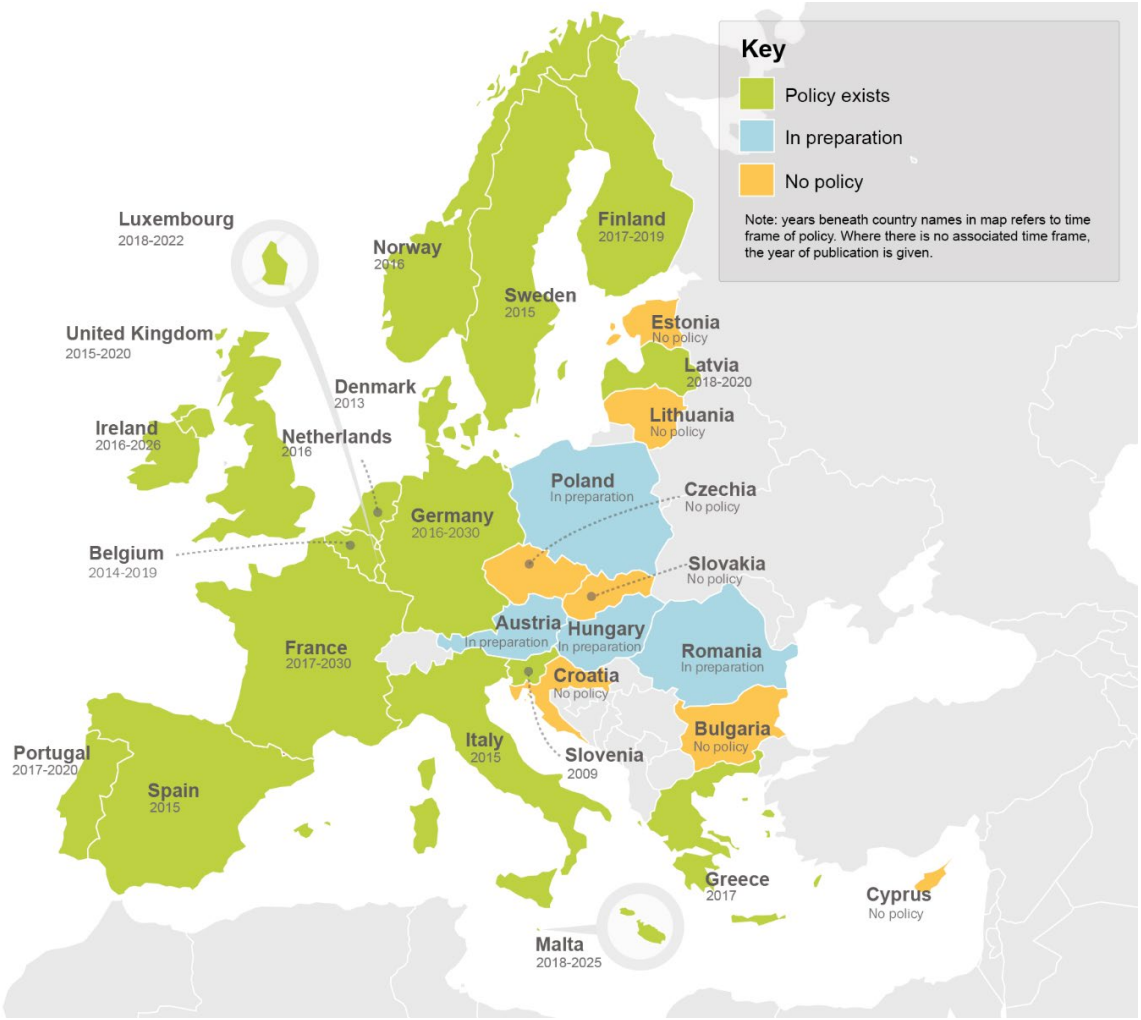
2. Inputs

Hepatitis national policy

The 'inputs' building block of the elimination barometer provides information on the existence of an official national viral hepatitis policy or action plan where PWID are considered an important target group or specifically mentioned, which constitutes an important step towards the implementation of a sustainable elimination strategy. By the last quarter of 2018, 18 EU Member States and Norway had national HCV policies in place and such policies were in preparation in Austria, Czechia, Hungary, Poland and Romania (Figure 8 and Annex 4). In 13 countries, HCV policies had been adopted or renewed since 2015 (Nielsen, 2018).

FIGURE 8

Countries with a viral hepatitis policy inclusive of PWID, EU Member States and Norway, 2018



Source: EMCDDA

Case study on national hepatitis policy

Adopting a new national strategy for the elimination of HCV in Malta

Malta has endorsed the Sao Paulo declaration on viral hepatitis, committing to take a broad and coordinated approach to support the implementation of the core interventions outlined in the WHO global health strategy.

In March 2018, a national strategy for the elimination of HCV was adopted by the Ministry of Health after a 30-day public consultation period. The vision is to achieve a situation where transmission of HCV is halted in Malta — and everyone living with HCV has access to safe, affordable and effective prevention, testing, care and treatment services — by 2025.

The preventive section of the strategy will focus on all modes of transmission, including injecting drug use. This will entail revising the current needle and syringes programme and improving prevention and harm reduction measures for users of stimulants (cocaine and new psychoactive substances) and PWID who are not in contact with treatment services. The screening and diagnosis section of the strategy will target key populations, with opioid substitution treatment (OST) patients being one of the

priority groups. Currently, HCV treatment is offered to patients who have an advanced stage of fibrosis (a Metavir score of F4) and who are in contact with the hospital system. The plan is to extend access to DAA treatment to patients who have less advanced fibrosis. Being a current injector is not a barrier to treatment access, but there have been cases of treatment being restricted when adherence was expected to be low. The drug treatment centres at the Foundation for Social Welfare Services will contribute to the elimination of HCV by training staff in the diagnosis of HCV among drug users, by facilitating referral of patients for treatment initiation, by reducing the time lag between first appointments and initiation of DAA treatment and by following up diagnosed drug users who have difficulties in going to appointments to increase their access to care.

3. Prevention

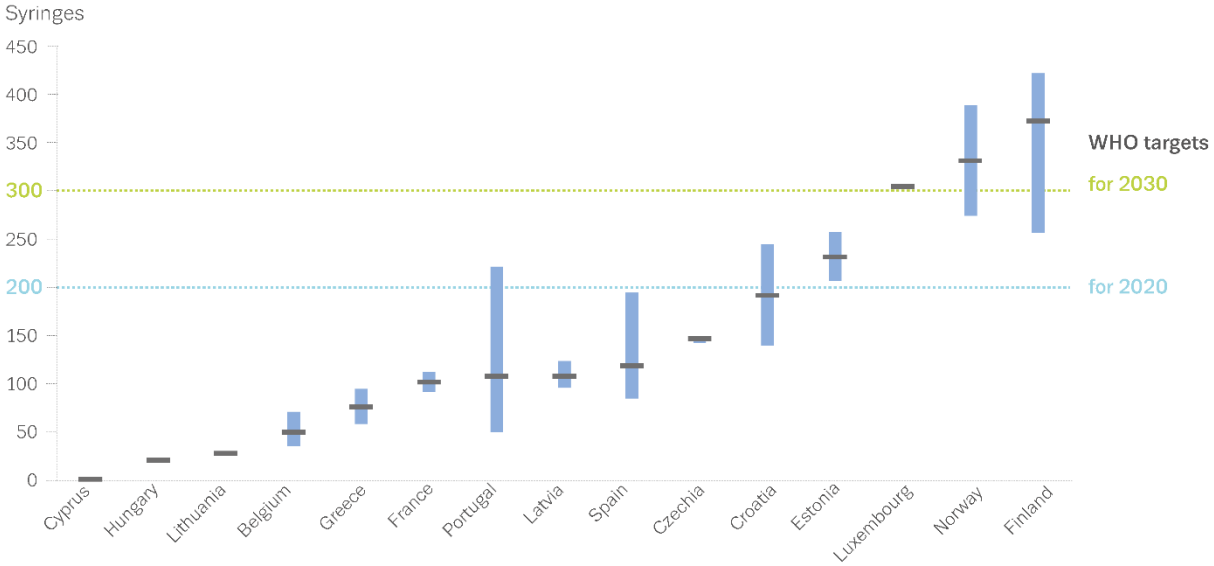
Prevention is the next key building block of the barometer. There is an effective vaccine against HBV, and the combination of high levels of needle exchange coverage and opioid substitution treatment is a cost-effective intervention to reduce the risk of blood-borne infections among PWID (Platt et al., 2017). Prevention and harm reduction measures are therefore key interventions for progressing towards the elimination of viral hepatitis among PWID, since they prevent new infections but also provide an opportunity to reach out to high-risk populations for testing to link them to care.

Needle and syringe programme coverage

National-level data on the coverage of needle and syringe programmes are available for 16 countries, with only four of these (Estonia, Finland, Luxembourg and Norway) providing a level of coverage that is above the 2020 target of 200 syringes per injecting drug user (Figure 9 and Annex 4).

FIGURE 9

Coverage of specialised syringe programmes: estimated number of syringes provided per person who injects drugs in 2017, EU Member States and Norway



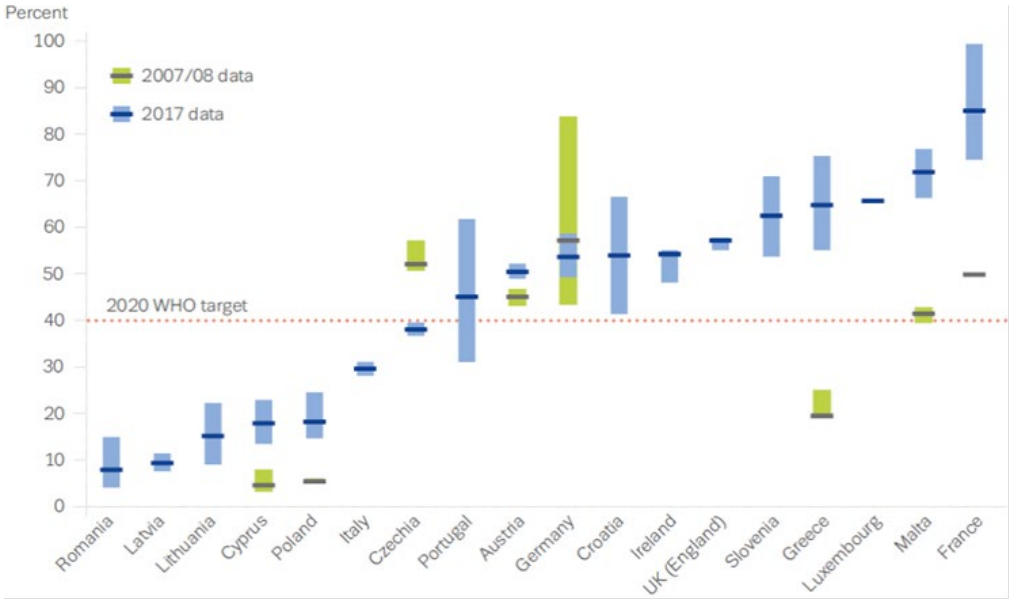
Source: EMCDDA

Opioid substitution treatment coverage

The coverage of opioid substitution treatment is estimated to be at or above the 2020 WHO target of 40 % in 11 of the 18 EU countries for which estimates of the population of high-risk opioid users are available (Figure 10 and Annex 4). In the EU as a whole, about half of high-risk opioid users receive substitution treatment. In those countries for which data for 2007 or 2008 are available for comparison, there was generally an increase in coverage between 2007 or 2008 and 2017. Levels of provision, however, remained low in seven countries providing coverage.

FIGURE 10

Coverage of opioid substitution treatment in 2017 or most recent year and in 2007 or 2008 (showing percentage of estimated high-risk opioid users receiving treatment and the uncertainty interval)



Source: EMCDDA

Hepatitis B vaccination availability in prison

Because of the high prevalence of HBV infection and drug use among people in prisons, and based on available evidence regarding the implementation of HBV vaccination in prison settings, it is advisable to offer HBV vaccination to people in prison. It is recommended that HBV vaccination be offered at entrance to all individuals with no vaccination history or an unknown vaccination history and/or negative serology, to avoid further transmission within the prison setting (ECDC and EMCDDA, 2018a).

In 2017, hepatitis B vaccination was available to people in prison in 23 countries in the EU and Norway (Annex 4). There was no HBV vaccination programme for people in prison in Bulgaria, Czechia, Latvia, Lithuania or Romania. When available, the ways in which vaccination was offered varied by country. For example, it was offered to all eligible prisoners in Ireland, Spain, France, Italy, Malta, Portugal, Finland, Sweden and the United Kingdom. In Belgium, Denmark, Croatia, Slovenia and Slovakia it was available to prisoners on request (on an opt-in basis). In Poland, it was available only if requested by a physician (WHO, 2019).

Data on HBV vaccination coverage among PWID are scarce. A study undertaken in Poland in 2017 among a sample of 179 PWID showed that 26.8 % reported being vaccinated against HBV (36.7 % reported being unvaccinated, while the others did not recall their status) (information provided by Polish focal point). Data from PWID entering drug-related treatment in Greece in 2017 showed that 29.3 % of clients had been vaccinated against HBV. Coverage was higher among women, those who had been injecting for more than 2 years and those with no history of incarceration (information provided by Greek focal point).

Case study on prevention measures

Harm reduction coverage in Czechia

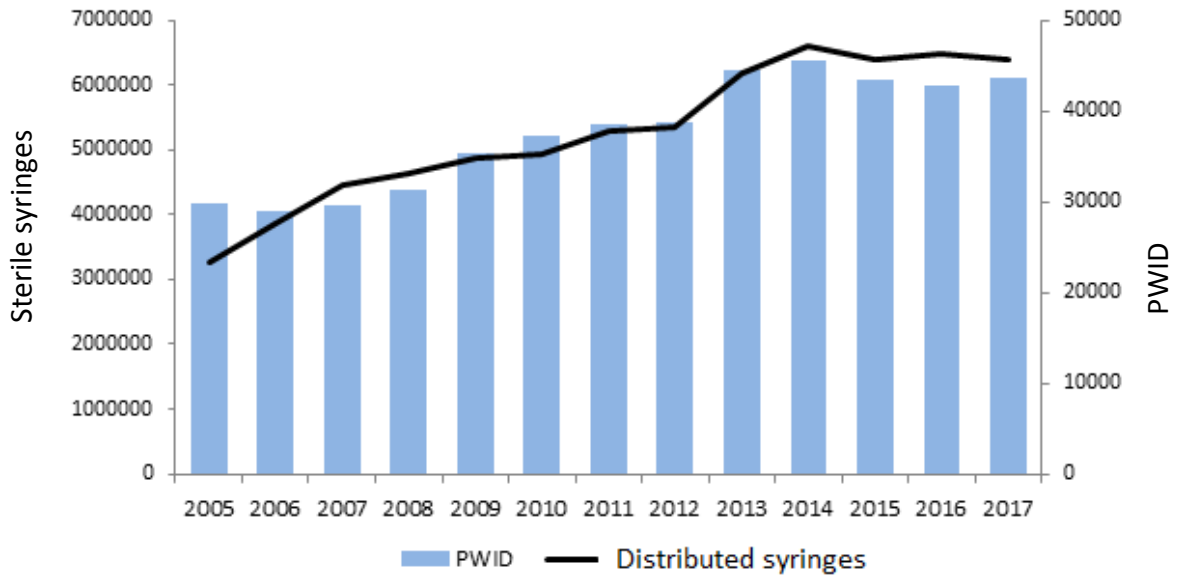
In December 2018, a national policy for the elimination of viral hepatitis in Czechia was still in preparation, but prevention and harm reduction measures targeting PWID were already in place. In 2017, the majority of the estimated 43 700 PWID in the country were injecting methamphetamine. The latest HCV prevalence estimate among injectors — based on the results of HCV antibody rapid tests offered to 1 720 injectors at 63 low-threshold services in 2017 — was 15.9 %, which is lower than the EU average. However, this is likely to be an underestimation of the true prevalence since injectors who already know their positive status and have not received treatment are less likely to be retested. Nine of the 1 113 PWID tested (0.8 %) in 2017 for HBV were reactive to HBsAg. A multicentre seroprevalence study is being conducted in 2018 to complement the data from routine diagnostic tests.

HBV vaccination, with a mandatory three doses, was included in 2001 in the national vaccine schedule, for children at 3, 5 and 11-13 months of age. Susceptible adults from specific at-risk groups (nurses, outreach workers) with no history of vaccination can be vaccinated as well. Although vaccination is offered free of cost to patients at some hepatology and infectious disease centres, there is no systematic strategy for vaccinating PWID. HBV vaccination is not currently offered in prisons.

In 2017, the 108 NSP services in Czechia distributed 6 401 662 needles and syringes (Figure 11). The network of low-threshold agencies involved in the distribution of safe injecting material includes 54 drop-in centres and the same number of outreach programmes. There are no NSPs in prisons. In addition to distributing needles and syringes, these agencies provide materials to promote alternatives to injecting (gelatine capsules, foil, snorting tubes), condoms and information on the prevention of blood-borne infections through leaflets and face-to-face counselling. Together, they reach an estimated 70-80 % of high-risk drug users in the country. The estimated number of sterile needles and syringes per person who injects drugs in 2017 was 147, which remains below the target of 200 set by WHO Europe for 2020.

FIGURE 11

Estimated numbers of PWID and numbers of sterile needles and syringes distributed in Czechia, 2005-2017



Source: Czech focal point.

The opioid substitution medications prescribed in Czechia are methadone (30 %) and buprenorphine (70 %) (mono-preparation or with naloxone). Buprenorphine can be prescribed by any medical doctor in a strict prescription regime. In Czechia in 2017, most of the 13 100 high-risk opioid users were misusing buprenorphine through injection. In the same year, there were an estimated 5 000 patients on OST. This indicates that 38 % of high-risk opioid users were on OST, just below the 2020 WHO target for opioid-dependent PWID (40 %).

4. Testing and linkage to care

To eliminate viral hepatitis as a public health threat, the WHO target aims for 50 % of people who are chronically infected with viral hepatitis to be diagnosed and 75 % of eligible patients to be receiving treatment by 2020. Yet many infections still go undiagnosed and untreated in people who inject drugs.

Diagnostic test availability in harm reduction services and prisons

Published public health guidance on integrated HIV, HBV and HCV testing stresses the importance of adopting an integrated approach to the three viruses, which have common modes of transmission and risk groups, to maximise synergies and reduce costs (ECDC, 2018c). WHO guidelines on HBV and HCV testing provide recommendations on the type of diagnostic tests to be used, including summary algorithms for diagnosis, treatment and monitoring of chronic HBV and HCV infections (WHO, 2017b). The '5Cs' principle defined by WHO applies to all models of testing and in all settings: consent, confidentiality, counselling, correct test results and connection (linkage to prevention, treatment and care services).

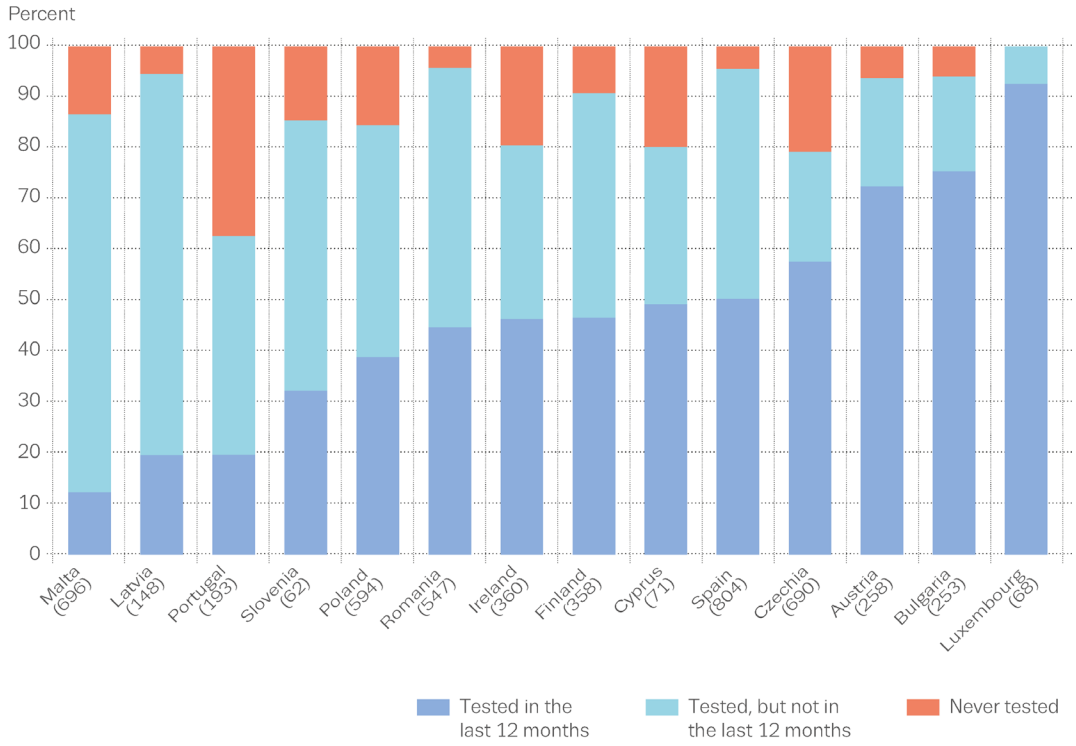
Harm reduction services and prisons are appropriate settings to reach and offer infectious disease screening to a large number of drug users. In a survey conducted in 2017 among harm reduction service providers by the EU Joint Action on HIV and Co-infection Prevention and Harm Reduction (HA-REACT), in collaboration with the Correlation Network, services providers from 22 EU Member States reported that at least some harm reduction services offered HCV testing to drug users (Pericàs et al., 2019) (Annex 5). Although some infectious disease testing was reported to be offered in the prison system in 26 European countries in 2018, HCV and HBV tests were reported to be routinely offered to people in prison in only 19 countries (Annex 5).

Proportion of PWID tested for HCV in the last year

The availability of HCV and HBV testing in drug services and in prisons is crucial, but it may not always translate into actual testing. In some of the injecting drug use prevalence studies described earlier, investigators also looked at HCV tests done in the previous 12 months. In recent European studies, the proportion of people who inject drugs who reported having been tested in the last 12 months (excluding those who knew their positive status) ranged from 7 % in Romania (National Antidrug Agency, 2016) to 66 % in France (Cadet-Taïrou et al., 2018). As part of the EMCDDA TDI protocol, treatment entrants who report injecting drugs are asked about previous HCV tests. In 9 countries out of 14 with data for 2017, less than half of those who entered drug treatment had been tested over the last 12 months (Figure 12 and Annex 5). The percentage exceeded 50 % only in Spain, Czechia, Austria, Bulgaria and Luxembourg.

FIGURE 12

Self-reported history of HCV testing among people entering drug treatment reporting injecting drugs, by country, 2017



Note: Sample size per country is shown in parentheses. Data are for 2017, except for Spain (2016).
Source: EMCDDA.

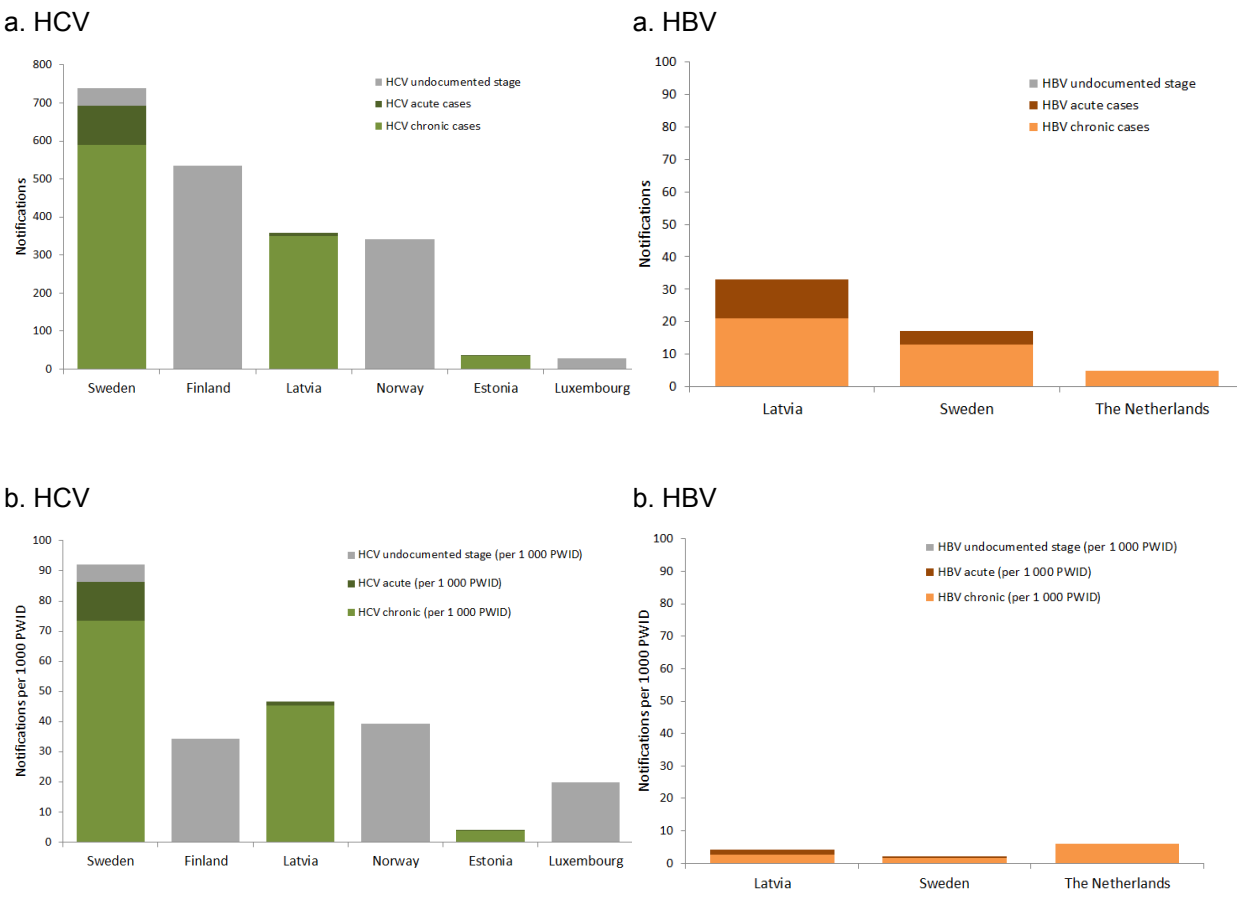
Newly notified HCV and HBV cases attributed to injecting drug use

EU Member States report newly diagnosed cases of hepatitis C or B infection using the EU 2012 case definitions. The EU case definitions are based on laboratory criteria and differentiate acute from chronic cases (ECDC, 2019a, 2019b). When the information is available, the most likely route of transmission is also reported. A case attributed to injecting drug use might be diagnosed in a person who does not inject anymore, so the information refers to ever injectors (people who have injected drugs at some point in their life) rather than current injectors. The completeness of surveillance data and the availability of information on transmission route varies by country (ECDC, 2019c). Overall, in 2017, information on the most likely route of transmission was available for 27 % of newly notified hepatitis C cases and for 18 % of newly notified hepatitis B cases in the EU and Norway.

While the reporting of acute cases may help to detect outbreaks and provide information on incidence, in countries with relatively high completeness of transmission route data the absolute number of newly notified chronic cases attributed to injecting drug use (Annex 6) and the incidence of new notifications of chronic cases attributed to injecting drug use per 1 000 PWID can also provide information on testing activity targeting this group (although these figures do not tell us anything about the total number of PWID tested in a given year). For instance, in 2017, Sweden had a completeness rate of 59 % and 26 % for the information on the transmission route of all newly notified HCV and HBV cases, respectively. It notified 589 chronic HCV cases linked to injecting drug use, corresponding to a notification rate of 73 cases per 1 000 PWID. In the same year, Sweden notified 13 chronic HBV cases linked to injecting drug use, corresponding to a notification rate of 1.6 per 1 000 PWID (Figure 13).

FIGURE 13

Notifications of acute and chronic HCV and HBV cases with injecting drug use as the likely transmission mode, by country, 2017: (a) absolute number, (b) per 1 000 PWID



Note: Data are shown for countries reporting chronic or undocumented stage infections with an overall data completeness of > 25 % for the mode of transmission and with recent PWID population estimates available.
Sources: ECDC and EMCDDA.

In 2017, a total of 3 600 newly notified hepatitis C cases attributed to injecting drug use were reported by 20 EU Member States and Norway. Of these, 1 305 were classified as chronic cases, 178 were classified as acute cases and for 2 117 no information was available on the disease stage. In cases for which information on the transmission mode was available, injecting drug use was reported as the likely cause for 40 % (178 out of 445) of all acute HCV cases and 55 % (1 305 out of 2 363) of all chronic HCV cases (ECDC, 2019b).

In the same year, 168 newly notified hepatitis B cases attributed to injecting drug use were reported by 16 EU Member States and Norway. Of these, 60 were classified as chronic cases, 68 were classified as acute cases and for 40 no information was available on the infection stage. For HBV infection, an estimated 11 % (68 out of 599) of all acute cases and 3 % (60 out of 1 823) of all chronic cases for which information on the transmission mode was reported in 2017 in the EU and Norway were linked to injecting drug use (ECDC, 2019a).

Access to antiviral treatment for PWID

The available HBC and HCV treatments are as effective in people who inject drugs as in other groups, especially when psychological and adherence support are offered (UNODC, 2017). For chronic HBV infection, although treatment often requires lifelong administration, the development of nucleoside/nucleotide'analogues with low rates of resistance has provided improved treatment

options for patients (Bhattacharya and Thio, 2010). For chronic HCV, DAAs are an effective treatment option for people who are chronically infected with the virus, including current injecting drug users (Grebely et al., 2018). The goals of DAA therapy are to cure HCV infection in order to prevent complications and mortality, improve quality of life, remove stigma and prevent onward transmission of HCV. WHO recommends offering treatment to all individuals diagnosed with HCV infection who are 12 years of age or older (with the exception of pregnant women), irrespective of disease stage (WHO, 2018). The WHO guidelines also stress that treating people who inject drugs alongside the provision of harm reduction interventions (to reduce the risk of reinfection) is cost-effective, despite the fact that DAAs remain expensive in many high-income and upper-middle-income countries. Testing and linkage to treatment for infected PWID are therefore core components of the elimination strategy: in addition to the direct beneficial impact on the treated individual, treatment has the potential to reduce transmission in the community (treatment as prevention). The indirect benefits of treatment are increased when the risk of reinfection is reduced (in low-prevalence settings or in settings with a high coverage of harm reduction measures such as NSPs and OST).

In spring 2018, in 8 of the 11 EU Member States without an HCV policy, clinical guidelines still restricted access to HCV treatment for people who inject drugs (Nielsen, 2018), and five EU Member States restricted DAA reimbursement for patients with drug or alcohol dependencies (Marshall et al., 2018) (Annex 6).

Case studies on testing and linkage to care

HCV testing among PWID in drug treatment in Belgium

The Belgian public health institute, Sciensano, estimated the number and percentage of PWID in treatment for substance use disorders between 2011 and 2014 who had been screened at least once for HCV between 2008 and 2015 (Van Baelen et al., 2019). They obtained this information by linking patient records from the TDI to the health insurance databases to identify the number of patients who had undergone any type of HCV test (antibody, RNA and/or genotyping). They included a total of 30 905 patients: 74 % were male, aged 30-39 years; 3.6 % (1 125) were classified as current injectors (having injected at least once in the last 30 days); 7.2 % (2 227) were classified as past injectors (defined as having injected ever but not in the last 30 days); and 70.5 % (21 796) reported that they had never injected.

Among the 1 125 current injectors who entered treatment during 2011-2014, 973 (86.5 %) had had at least one HCV test performed. The percentage among past injectors was 84.7 %. The screening of PWID who are not in drug treatment is unknown. Sciensano is currently doing a study in Brussels using respondent-driven sampling and capture-recapture methods to estimate the number of PWID and the prevalence of HCV among them.

Case finding within micro-elimination of HCV in the Netherlands

In 2017, there were an estimated 23 000 people aged 18 years or older chronically infected with HCV in the Netherlands (Koopsen et al., 2018). Of these, 15 % (3 434) were ever injectors. In 2014, 450 deaths were related to viral hepatitis. Modelling work showed that a scenario where diagnosis, eligibility and HCV DAA treatment uptake were gradually increased (to reach 890 diagnosed patients annually by 2016 and a treatment uptake of 1 700 annually by 2018) would be the most realistic strategy for achieving a 65 % reduction in liver-related deaths in the Netherlands by 2030 (Willemse et al., 2015).

In 2016, two key documents translated this scenario into policy: the Health Council's advice on hepatitis screening (Health Council of the Netherlands, 2016) and the national hepatitis plan (David et al., 2016). The national plan details five crucial steps towards elimination. The second step stresses the importance of identifying chronic carriers in a timely manner through active screening. A nationwide HCV awareness campaign, implemented in the Netherlands between September 2009 and September 2010 and targeting PWID in addiction care, had already shown that a nationwide

campaign for awareness and case finding of PWID with HCV was an effective and cost-effective intervention (Helsper et al., 2017).

The Health Council recommended HCV screening for drug users who had ever injected and other risk groups. It also recommended that all addiction care centres in the Netherlands should provide individual HCV consultations and testing. One challenge for the case-finding strategy will be the retrieval of previously diagnosed HCV-infected individuals who are lost to follow-up. In a micro-elimination initiative in the Utrecht province, 269 patients were traced through laboratory registers and invited back into care. After renewed assessment, 42 chronically infected patients were re-identified and linked to care; 76 % had a history of injecting drug use (Kracht et al., 2018).

Extending rapid diagnostic tests to low-threshold services and linking to care in France
To achieve its declared goal of hepatitis C elimination by 2025, France is implementing three core interventions: (1) strengthening prevention through innovative outreach actions to reach priority groups and groups with low access to health services, (2) reinforcing local access to screening with rapid diagnostic tests in a combined approach to HIV, HCV and HBV, and (3) strengthening access to hepatitis C treatment by allowing a wider range of professionals to prescribe treatment.

In 2018, there were an estimated 110 000 individuals infected with HCV in France. Among these, an estimated 69 000 were unaware of their infection and 50 000 were drug users. In order to diagnose more PWID and to link them to care, since 2016 rapid diagnostic tests for HCV/HBV/HIV have been carried out by trained non-medical personnel in drug treatment centres and low-threshold facilities. A practical guide to the improvement of hepatitis C prevention and care in specialised drug treatment centres and low-threshold facilities was published in 2018 (Hoareau and Reynaud-Maurupt, 2018). The guide details the various complementary screening tools available (rapid diagnostic tests, dried blood spot tests, fibroscans), stressing the importance of testing for the three viruses (HCV/HBV/HIV) and of offering vaccination in the case of a negative HBV test. It emphasises the importance, when offering testing to a drug user, of informing her or him of the care pathways and treatment options, and of providing counselling in case of a positive result. Other key recommendations in the guide include mobilising the multidisciplinary team in the drug treatment centre; providing testing, counselling, treatment and follow-up in one location; and taking into account the specificities of particular groups (migrants, prison inmates, men who have sex with men).

This approach was implemented in the Île-de-France region between October 2016 and December 2017; 461 patients were diagnosed with a chronic infection, 86 % had a first hepatology consultation and 67 % started DAA treatment.

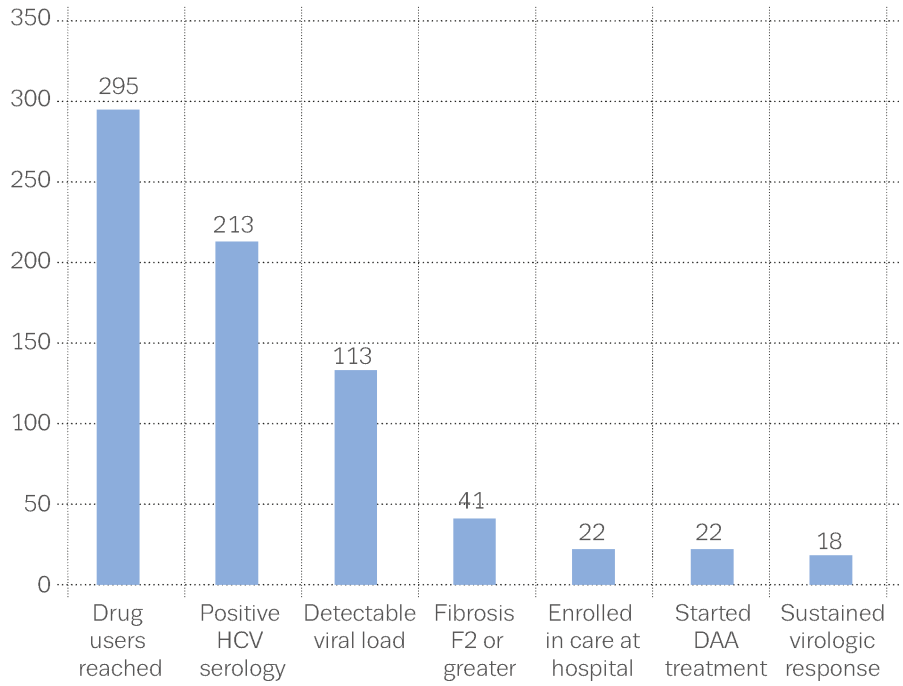
Cascade of care for HCV infection in Luxembourg
In Luxembourg, the Institute of Health and the Centre for Infectious Diseases undertook a study of 295 drug users recruited at the drug consumption room and at three harm reduction agencies between November 2015 and December 2017. The aims of the study were to describe the risk-taking practices of drug users; to test participants for infectious agents (HCV, HBV, HIV, syphilis), viral load and liver markers; to carry out fibroscanning; and to link them to care, in order to document the cascade of care for HCV infection and identify barriers to receiving care.

Of the 295 participants, 71 % were male and 26 % did not have a social security number. The mean age was 38.7 years. Eighty-two per cent were current injectors, half of them reporting injecting at least once a day. Cocaine use, often associated with heroin use, was reported by 59 % of participants. Anti-HCV was detected in 72 % of participants. Among these, 62 % had a detectable HCV viral load. Among users with a detectable HCV viral load, 31 % had fibrosis at stage F2 or greater. Half of these patients (54 %) returned to the hospital and received DAA treatment, and 82 % had a sustained viral response 12 weeks after the end of treatment.

Based on this cascade of care (Figure 14), a series of barriers was identified. First, although there is no health insurance restriction on current injectors' access to DAA treatment, clinicians still prioritise the treatment of those with fibrosis at a more advanced stage. Second, it usually took 2-3 weeks for patients to get the results of the RNA test, which measures viral load. Only half of patients with a diagnosis of advanced fibrosis went to their hospital appointment for treatment initiation. One of the recommendations following this study was to provide the result of the viral load test and the information on eligibility for treatment on the same day, and to offer support with hospital appointments. Moreover, DAA treatment is now provided directly at the drug consumption room and at other harm reduction centres by a nurse who is responsible for treatment initiation and follow-up of patients. DAA treatment for people who inject drugs is also available in prisons and in a homeless shelter, and it can be prescribed by medical doctors prescribing opioid substitution treatment.

FIGURE 14

Cascade of care for HCV infection in an outreach programme for injecting drug users in Luxembourg, 2015-17



Source: Devaux, 2018.

5. Impact

The elimination of viral hepatitis as a public health threat has been defined as a 90 % reduction in the number of new chronic hepatitis B and C infections and a 65 % reduction in the number of deaths by 2030, with milestones for 2020 set as 30 % and 10 % reductions, respectively (WHO, 2016a). The indicators proposed by WHO to monitor the impact include the incidence of HCV and HBV infections and the number of deaths from hepatocellular carcinoma, cirrhosis and chronic liver diseases that are attributable to HCV and HBV infections (WHO, 2016b).

Although robust surveillance data and observational studies measuring the impact of interventions targeting people who inject drugs are currently scarce, mathematical modelling can provide some insights into how far we are from reaching the WHO targets for viral hepatitis elimination and what remains to be done. A recent study looked at baseline levels of HCV seroprevalence, opioid substitution treatment, and needle and syringe programme coverage, and estimated DAA HCV

treatment rates among people who inject drugs in 11 European sites (countries and cities) in 2016 (Fraser et al., 2018). Using a dynamic HCV transmission model among people who inject drugs, it assessed the impact by 2026 of various strategies in terms of prevalence and incidence.

These projections illustrated some important messages. First, they suggested that opioid substitution treatment and needle and syringe programmes alone would not be enough to reach the elimination targets: a combination of opioid substitution treatment, needle and syringe programmes and HCV treatment would be required. Second, while not sufficient in itself, scaling up opioid substitution treatment and needle and syringe programmes for people who inject drugs would increase the impact of HCV treatment as a prevention strategy and would reduce the number of cases of HCV treatment needed to achieve the targets. Third, most of the sites will still require a substantial increase in treatment rates in order to reduce incidence to 2 per 100 person-years. The team has also undertaken other modelling that shows the importance of treating reinfections and of continuing treatment even once elimination targets have been achieved (Fraser et al., 2018).

Prevalence of hepatitis C antibodies among young and new injectors

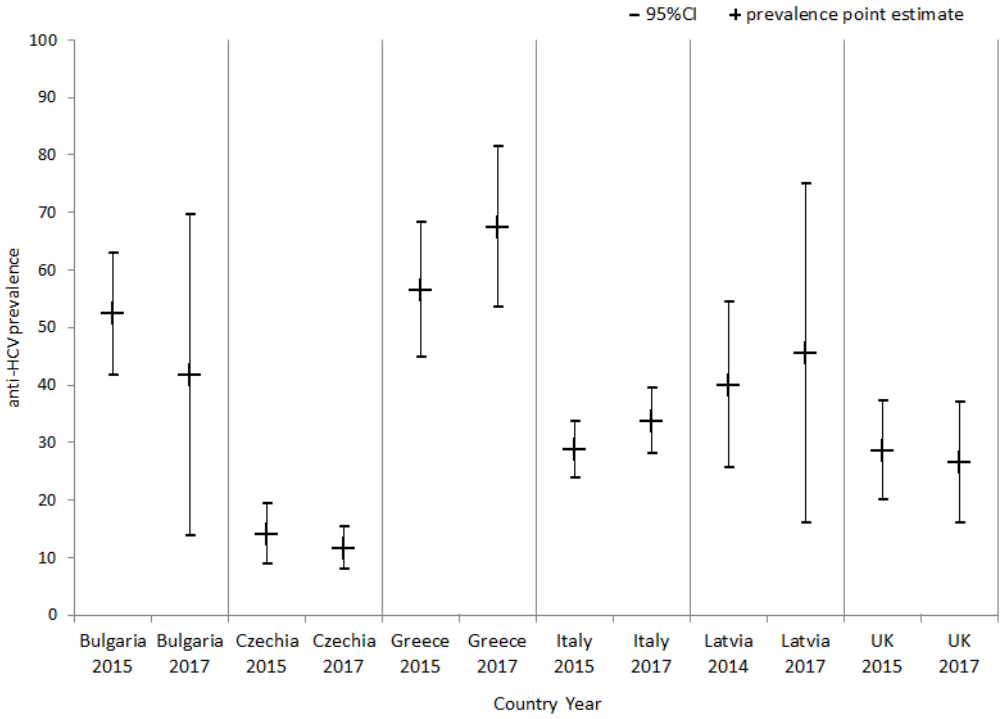
The prevalence of anti-HCV among PWID aged less than 25 years ('young injectors') who have been injecting for less than 2 years ('new injectors') can be used as a crude proxy for incidence (Annex 7). Prevalence among this group reflects relatively new transmission (incidence) and it is expected to decrease over time as prevention and treatment coverage increases. The point estimate of prevalence of HCV antibodies among young injectors found in national or multi-city studies in 2015 ranged from 14 % in Czechia to 56.5 % in Greece. In 2017, it was 11.5 % in Czechia and 67.4 % in Greece (Figure 15a). The prevalence among new injectors found in national or multi-city studies in 2015 ranged from 8.5 % in Czechia to 34.8 % in Latvia. In 2017, it ranged from 11.5 % in Czechia to 29.5 % in Turkey (Figure 15b).

Although some of the estimates are based on a small sample size, they suggest that in 2017 there was ongoing transmission of HCV among PWID at levels not significantly different from those in 2015, with some countries even reporting higher point estimates in 2017 (Figure 15).

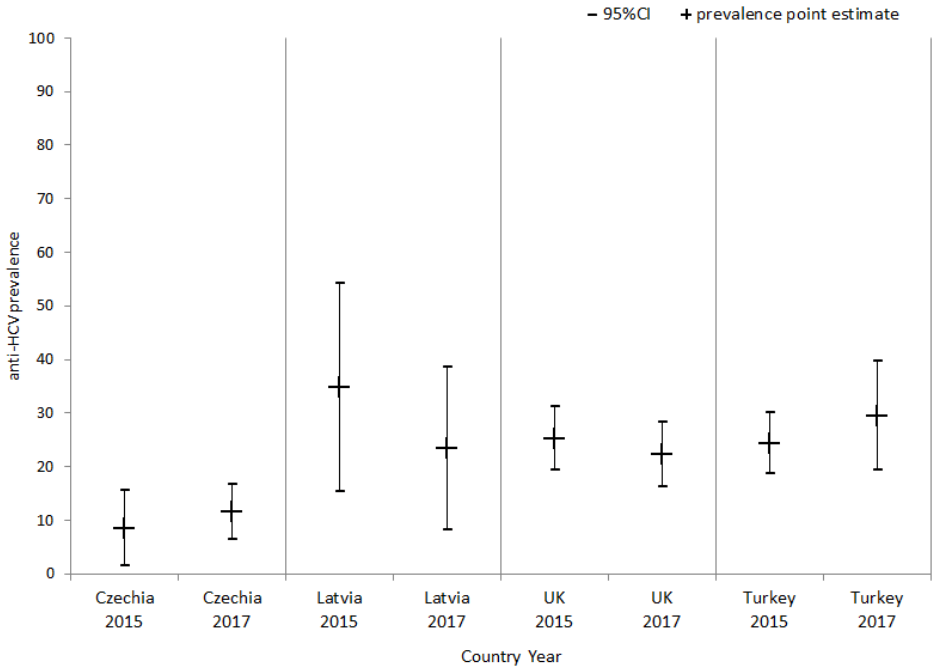
FIGURE 15

HCV antibody prevalence (%) among PWID (a) aged less than 25 years and (b) injecting for less than 2 years: results from diagnostic tests and seroprevalence studies with national or multi-city coverage, baseline (2014-15) and 2017

a. PWID aged less than 25 years



b. PWID who have been injecting for less than 2 years



Note: CI, confidence interval.
Source: EMCDDA.

Discussion

We presented the European overview of the five building blocks of the viral hepatitis elimination barometer for PWID. The corresponding data tables are presented in the annexes to this document. Using routinely collected quantitative data and complementing them with qualitative information, the elimination barometer is a framework that should help Member States to identify data gaps and assess how far they are from the elimination targets for HCV and HBV among PWID.

Limitations

The data come from a variety of sources (e.g. surveillance data, programme data, observational studies, surveys among experts), which all have their strengths and limitations. Although surveillance and programme data (e.g. the results of diagnostic tests routinely done in services or the number of clean needles and syringes distributed) can provide useful information on a phenomenon or an intervention over time, they are prone to selection bias and low completeness. Although observational studies (e.g. cross-sectional sero-behavioural studies using respondent-driven sampling) are designed to recruit representative samples of drug users, they are resource-intensive and can be based on small sample sizes, leading to low statistical power.

Countries may use different methods to estimate the same indicator (e.g. HCV and HBV seroprevalence are estimated from diagnostic test results (programme data) and from seroprevalence studies (observational studies)), which can make inter-country comparability difficult. In order to mitigate the challenges arising from this diversity, we documented the common case definitions in the methods section and detailed some of the country-specific methodological characteristics in the annex tables. Whenever possible, we also illustrated each building block of the barometer with some case studies providing contextual information at country level.

Some indicators have intrinsic limitations. For instance, while information on the prevalence of HCV antibodies is useful for assessing the proportion of PWID who have been exposed to the infection at some point in their life, it does not reflect the prevalence of chronic infections, since those who clear the infection (through natural clearance or through treatment) will still test positive for antibodies. As the number of patients successfully treated will increase, antibody prevalence will have more limited utility. Furthermore, the availability of an intervention (e.g. HBV vaccination routinely offered in prisons or reimbursement for treatment with no restrictions related to drug use) will not necessarily translate into a high coverage of the intervention among the target population. Other factors (stigma, medical habits) may play an important role.

Conclusions

Taking into account the above-mentioned limitations, the following conclusions can be drawn from the barometer. Regarding the availability of data documenting the context and needs, recent PWID estimates are available for only half of the countries, and only five countries report recent data on the prevalence of chronic and/or current HCV infections among PWID. The available data nevertheless show that PWID are disproportionally affected by HCV and HBV infections, as a result of sharing injecting equipment, making this group a key population for the elimination strategy. Injection of stimulants, driven by the increasing availability of stimulant drugs on the European drug market, increases the risk of blood-borne disease transmission among PWID, as documented in recent HIV outbreaks.

As far as national policies are concerned, the 2030 Sustainable Development Goals have had an impact on the adoption of national hepatitis policies in Europe. This can be seen in the acceleration of policy development witnessed in recent years. It can also be seen in the content of policies adopted since 2015, which reflect countries' commitments to the Sustainable Development Goal on health, often embracing the viral hepatitis elimination goal. All new policies consider people who inject drugs an important risk group. Nevertheless, in the last quarter of 2018, 11 EU Member States had yet to adopt an explicit viral hepatitis policy that was inclusive of PWID.

The cost-effectiveness of prevention and harm reduction measures to reduce the transmission of infectious diseases among PWID, including viral hepatitis, is well documented. Prevention and harm reduction programmes are also key entry points for testing drug users for hepatitis, linking them to care and reducing the risk of reinfection after successful treatment. However, looking at the prevention building block of the barometer, the coverage of measures known to prevent HCV and HBV infections is suboptimal in many Member States. For example, only four countries have reached the 2020 WHO core target for clean needles/syringes distributed per person who injects drugs, while 12 countries were below target and 14 countries did not provide the numerator and/or the denominator to compute this indicator.

Testing for viral hepatitis is the first component of the cascade of care. Despite the fact that testing is offered in harm reduction services and in the prison system of a majority of countries, the low coverage of testing in the last year among PWID in the community reflects missed opportunities to diagnose people in these settings. There is currently no systematic collection of data on the HCV and HBV cascade of care for PWID in most countries. However, one case study showed that even in a country where there is no clinical or financial restriction on DAA access for PWID who are chronically infected with HCV, logistical and cultural barriers may prevent access to safe and effective treatment.

When available, the proxy indicator included in the barometer to assess the impact of prevention and treatment on the incidence of HCV does not show any significant reduction in incidence during the period 2015-17. This should be interpreted cautiously. First, the indicator (anti-HCV prevalence among young and new injectors) may imperfectly reflect new transmission among PWID (because it is based on antibody biomarkers, has a small sample size and is prone to selection bias). Second, it may be too early to see the impact of a strategy that was put in place after 2016 in some countries. The data may nevertheless indicate that the current level of prevention, harm reduction and treatment among PWID is too low to achieve a significant reduction in the incidence of chronic HCV infections by 2020, as is also suggested by modelling work.

Recommendations

If monitoring data are to support the elimination of HCV and HBV as a public health threat, it will be essential to meet the basic data needs and document the extent of the problem, starting with the size of the target population (i.e. PWID) and the prevalence of chronic infections among PWID. For the former, crude indirect methods using information from surveys among PWID to get a treatment multiplier (Larney et al., 2017) or using capture-recapture studies (Raag et al., 2019), would constitute a first step for countries (or regions within countries) with no recent estimates. For the latter, introducing and reporting RNA test results in addition to antibody tests for HCV, as implemented in the routine monitoring system in the United Kingdom (Public Health England, 2018), would provide valuable information. If routine monitoring is not an option, well-designed (but resource-intensive) ad hoc seroprevalence studies, such as the DRUCK study conducted in eight German cities (Wenz et al., 2016)., can provide a range of action-orientated information on HCV and HBV infection among PWID and related risk factors

Having a national, well-funded hepatitis policy that is inclusive of PWID is not a sufficient condition for achieving the elimination targets, but is a necessary one. In order to help Member States to draft inclusive national hepatitis policies, policy documents relating to national plans already adopted in Europe are accessible from the EMCDDA's online document library (EMCDDA, 2018)

In order to support the implementation of evidence-based infectious disease prevention measures (including measures to prevent viral hepatitis), a number of public health guidance documents are available on the EMCDDA website. They include guidance on the prevention and control of infectious diseases among PWID (ECDC and EMCDDA, 2011), a European guide to health and social responses to drug problems (EMCDDA, 2017) and public health guidance on prevention and control of blood-borne viruses in prison settings (ECDC and EMCDDA, 2018b).

WHO guidance and ECDC and EMCDDA systematic reviews on HCV and HBV testing are available online (WHO, 2017b; ECDC, 2018d; ECDC and EMCDDA, 2018c). To support stakeholders in identifying barriers to testing in drug facilities and to provide solutions, the EMCDDA launched its 'testing initiative' in 2018. It is based on three modules. Module 1 helps those tasked with planning and developing programmes to tackle HCV and associated health problems in an area to identify strengths and weaknesses in their current activities and barriers to and facilitators of improvements. It is based on a multidisciplinary workshop and supported by a range of materials: (i) information on epidemiological indicators and responses currently available; (ii) a checklist of questions to support the identification of barriers to and facilitators of testing; and (iii) links to materials to support action, such as guidelines and best practice. Module 2 supports response selection by pulling together information on best practice with a focus on important lessons concerning the implementation of programmes, modelled on the Xchange registry for prevention programmes. Module 3 provides practical implementation support: first, a knowledge-questionnaire aimed at staff in services, and second, material for people who inject drugs.

The EMCDDA will update the elimination barometer annually with new data from the DRID network. The next DRID network meeting will provide the opportunity to work on improving the existing indicators, to explore the availability of additional ones (e.g. on cascade of care and the impact).

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Annexes

ANNEX 1

Current PWID population size, context and need, viral hepatitis elimination barometer for PWID

(green = recent data available, grey = no data or no recent data)

Category	Context and need — epidemic pattern						
Subcategory	Current PWID population size						
Indicator	PWID study year	Geographical coverage (national, subnational)	Specify if subnational	Estimated PWID population size (absolute number)	Estimated PWID prevalence per 1 000 population aged 15-64 years	Drug treatment data year	Number of current injectors among all treatment entrants
Austria	No data	No data	No data	No data	No data	2017	756
Belgium	2015 ([1])	National ([1])	n.a.	23 828 ([1])	3.28 ([1])	2017	752
Bulgaria	2004	Subnational	Sofia	9 686	10	2017	576
Croatia	2016	National	n.a.	6 344	2.21	No data	No data
Cyprus	2018	National	n.a.	221	0.37	2017	113
Czechia	2018	National	n.a.	43 700	6.32	2017	1 723
Denmark	2006	National	n.a.	12 754	3.56	2017	258
Estonia	2018	National	n.a.	8 606	10	2016	181
Finland	2014	National	n.a.	15 611	4.6	2017	1 200
France	2018	National	n.a.	117 000	2.89	2017	4 676
Germany	No data	No data	No data	No data	No data	2016	6 157
Greece	2018	National	n.a.	3 655	0.53	2017	832
Hungary	2016	National	n.a.	6 707	0.98	2017	118
Ireland	No data	No data	No data	No data	No data	2017	1 093
Italy	No data	No data	No data	No data	No data	2017	8 533
Latvia	2018	National	n.a.	7 715	6.1	2017	344
Lithuania	2017	National	n.a.	8 868	4.63	No data	No data
Luxembourg	2017	National	n.a.	1 467	3.77	2017	128
Malta	No data	No data	No data	No data	No data	No data	No data
Norway	2018	National	n.a.	8 682	2.52	No data	No data
Poland	2005	Subnational	Warsaw	1 480-1 940	1.2-1.6	2017	840
Portugal	2017	National	n.a.	13 162	2.06	2017	235
Romania	2017	Subnational	Bucharest	9 030	5.13	2017	712
Slovakia	2006	National	n.a.	18 841	4.86	2017	825
Slovenia	2001	National	n.a.	7 320	5.2	2017	83
Spain	2018	National	n.a.	12 684	0.41	2016	2 621
Sweden	2015	National	n.a.	8 021	1.8	2017	331
Netherlands	2017	National	n.a.	840	0.08	2015	70
Turkey	No data	No data	No data	No data	No data	2017	1 858
United Kingdom	2011	National	n.a.	122 894	3	2017	18 319

([1]) Ever injectors.

ANNEX 2

Risk factors, context and need, viral hepatitis elimination barometer for PWID (green = recent data available, grey = no data or no recent data)

Category	Context and need — epidemic pattern								
Subcategory	Risk factors								
	Drug	Sharing (studies)					Sharing (drug treatment entrants)		
Indicator	Most commonly reported primary injected drug among drug treatment entrants 2017	Study year	Geographical coverage (national, subnational)	Specify if subnational	Number of injectors asked about sharing	% of injectors reporting sharing needles/syringes last month	Drug treatment data year	Number of current injectors entering treatment providing information on sharing	% of current injectors entering treatment who reported sharing used needles/syringes in the last month
Austria	Heroin	No data	No data	No data	No data	No data	2017	235	6.8
Belgium	Heroin	2017	Sub-nat	Flanders	241	26.5	2017	337	12.8
Bulgaria	Heroin	2016	Sub-nat	5 cities	421	47	2017	242	14
Croatia	Heroin	2007	Sub-nat	4 cities	364	6.4-17	No data	No data	No data
Cyprus	Heroin	2015	National	n.a.	88	20	2017	69	14.5
Czechia	Methamphetam.	2016	National	n.a.	962	10	2017	919	12.7
Denmark	Heroin	No data	No data	No data	No data	No data	2014	463	24.2
Estonia	Fentanyl	2017	Sub-nat	Tallin	112	10.7	No data	No data	No data
Finland	Buprenorphine	2009	Sub-nat	9 cities	639	29	2017	348	23.9
France	Heroin	2015	National	n.a.	1367	14.5	2017	1359	5.9
Germany	Heroin	2014	Sub-nat	Hambourg	273	10.6	No data	No data	No data
Greece	Heroin	2013	National	Attica	850	15-67	No data	No data	No data
Hungary	Heroin	2015	National	n.a.	378	39	No data	No data	No data
Ireland	Heroin	No data	No data	No data	No data	No data	2017	506	15.4
Italy	Heroin	2000	National	n.a.	916	9	No data	No data	No data
Latvia	Heroin	2017	Sub-nat	10 cities	536	2.1	2017	165	4.2
Lithuania	Heroin	2014	Sub-nat	3 cities	200	14	No data	No data	No data
Luxembourg	Heroin	2017	National	n.a.	42	31	2017	103	7.8
Malta	Heroin	No data	No data	No data	No data	No data	2017	711	2.1
Norway	Amphetamine	2012	Sub-nat	Oslo	91	13	No data	No data	No data
Poland	Heroin	2017	National	n.a.	119	17.7	2017	558	10.2
Portugal	Heroin	No data	No data	No data	No data	No data	2017	165	7.9
Romania	Heroin	2015	Sub-nat	Bucharest	516	40	2017	457	9.6
Slovakia	Heroin	No data	No data	No data	No data	No data	2017	623	17
Slovenia	Heroin	No data	No data	No data	No data	No data	2017	63	4.8
Spain	Heroin	No data	No data	No data	No data	No data	2016	695	5.3
Sweden	No data	2013	Sub-nat	7 cities	173	62	No data	No data	No data
The Netherlands	Heroin	2010	Sub-nat	Rotterdam	49	27	No data	No data	No data
Turkey	Heroin	2010	National	n.a.	877	43	2017	1 858	54
United Kingdom	Heroin	2017	Subnational	E, W & NI	1 281	18	2017	1 424	19.8

Sub-nat= sub-national, E, W & NI= England, Wales and Northern Ireland

ANNEX 3

Prevalence of HCV and HBV, context and need, viral hepatitis elimination barometer for PWID

(green = recent data available, grey = no data or no recent data)

Category	Context and need — epidemic pattern										
Subcategory	Prevalence of HBV and HCV										
Indicator	Study type	Study setting	Target group (current, ever, unknown)	Definition/recall period for current injectors	HCV study year	Number tested for HCV antibodies	HCV antibody prevalence (%)	Prevalence of chronic infections (%)	HBV study year	Number tested for HBsAg	HBsAg prevalence (%)
Austria	DT	DTC/LTS/NSP	Ever	n.a.	2017	433	60.0-83.5	35.3-55.6	2017	272	2.6
Belgium	DT	DTC/NSP	Ever	n.a.	2015-16	71	22.0-33.3	No data	2015	18	5.6
Bulgaria	DT	DTC	Current	LM	2017	319	76.8	No data	2017	98	5.1
Croatia	SP	NSP	Current	LM	2014	817	38.3	No data	2008	192	0
Cyprus	DT	DTC/PRI	Ever	n.a.	2017	76	56.6	No data	2017	72	5.6
Czechia	DT	NSP	Current	LY	2017	2 044	14.7	No data	n.a.	n.a.	No data
Denmark	No data	No data	No data		No data		No data	No data	n.a.	n.a.	No data
Estonia	SP	LTS	Current	LM	2017	112	89.3	No data	2013	326	4
Finland	SP	NSP	Current	LM	2014	589	74	No data	n.a.	n.a.	No data
France	SP	NSP/LTS/DTC	Ever	n.a.	2011	901	63.8	No data	2011	908	0.81
Germany	SP	LTS/RDS	Current	LY	2011-14	2 077	36.9-73.0	23.1-54.0	2011-14	2 077	0.3-2.3
Greece	DT	DTC/LTS/PRI	Ever	n.a.	2017	847	66.5	No data	2017	871	2.1
Hungary	SP	DTC/NSP/LTS	Ever	n.a.	2015	559	49.7	No data	2015	596	2.2
Ireland	SP	PRI	Ever	n.a.	2010	200	41.5	No data	2010	200	0.5
Italy	DT	DTC	Ever	n.a.	2017	7 805	64.3	No data	n.a.	n.a.	No data
Latvia	SP	STR	Current		2017	386	85.2	No data	2017	386	3.6
Lithuania	SP	NSP	Current	LM	2014	200	77	No data	2014	200	10.5
Luxembourg	DT	DTC/NSP/STI/PRI	Ever	n.a.	2017	66	75.8	53.0	2005	255	3.9
Malta	DT	DTC/PHL/STI	Current	LM	2017	119	44.5	No data	n.a.	n.a.	No data
Norway	SP	DTC	Current		2017	6 104	49.7	No data	2015	227	0.9
Poland	SP	NSP/LTS/HTC	Ever	n.a.	2017	171	57.9	No data	2017	172	2.9
Portugal	DT	DTC	Ever	n.a.	2017	367	81.5	No data	2017	355	3.1
Romania	SP	STR	Ever	n.a.	2015	522	75.7	No data	2015	522	10.5
Slovakia	SP	DTC	Ever	n.a.	2017	52	42.3	No data	2017	54	3.7
Slovenia	DT	DTC	Ever	n.a.	2017	61	42.6	No data	2002	564	3.4
Spain	DT	DTC/PRI	Ever	n.a.	2016	4 265	64.4	No data	2016	1 993	9.4
Sweden	DT	PRI	Ever	n.a.	2013	62	96.8	No data	n.a.	n.a.	No data
Netherlands	DT	DTC	Ever	n.a.	2017	14	85.7	No data	2017	16	6.3
Turkey	SP	DTC	Ever	n.a.	2017	2 366	45.8	No data	2017	2 366	2.2
United Kingdom	SP	DTC/NSP/LTS	Ever	n.a.	2017	3 119	22.5-52.2	25.7	2017	3 096	0.2-0.9

SP: seroprevalence study, DT: diagnostic test; DTC: drug treatment centre; LTS: low-threshold services; NSP: needle and syringe programme; PRI: prison; STI: Sexually Transmitted Infections Clinics, PHL: Public Health Laboratories; HTC: HIV Testing Centres; STR: Street; OTH: Other, RDS: Respondent-driven sampling; LM: last month; LY: last year

ANNEX 4

Inputs and prevention, viral hepatitis elimination barometer for PWID (green = target reached or intervention implemented, red = target not reached or intervention not fully implemented, grey = no data)

Category	Inputs	Prevention						
Subcategory	Policy	NSP coverage			OST coverage			HBV vaccine
Indicator	Adopted national hepatitis policy inclusive of PWID (as of 2018 Q4)	Year for needles/syringes reporting	Number of sterile syringes distributed in a year	NSP coverage (%) (sterile syringes per person who injects drugs per year)	Year for OST clients reporting	Number of OST clients	OST coverage (%) (OST clients/high-risk opioid users)	HBV vaccination available to people in prison
Austria	in preparation	2017	6 293 593	No data	2017	18 632	50	Available
Belgium	Yes	2017	1 203 077	50	2017	16 546	No data	Available
Bulgaria	No	2017	52 927	No data	2017	3 247	No data	Not available
Croatia	No	2017	244 299	192	2017	4 792	54	Available
Cyprus	No	2017	245	1	2017	209	18	No data
Czechia	in preparation	2017	6 409 862	147	2017	5 000	38	Not available
Denmark	Yes	No data	No data	No data	2015	7 050	No data	Available
Estonia	No	2017	1 997 158	232	2017	1 186	No data	Available
Finland	Yes	2017	5 824 467	373	2015	3 329	No data	Available
France	Yes	2015	11 907 416	102	2017	178 665	85	Available
Germany	Yes	No data	No data	No data	2017	78 800	54	Available
Greece	Yes	2017	278 415	76	2017	9 388	65	Available
Hungary	No	2017	137 580	21	2015	669	No data	Available
Ireland	Yes	2017	519 578	No data	2017	10 316	54	Available
Italy	Yes	2017	515 445	No data	2017	69 642	30	Available
Latvia	Yes	2017	833 817	108	2017	669	9	Not available
Lithuania	No	2017	251 370	28	2017	1 136	15	Not available
Luxembourg	Yes	2017	447 681	305	2017	1 142	66	Available
Malta	Yes	2017	315 541	No data	2017	1 025	72	Available
Norway	Yes	2017	2 884 230	332	2017	7 622	No data	Available
Poland	in preparation	2017	59 958	No data	2017	2 685	18	Available
Portugal	Yes	2017	1 421 666	108	2017	16 888	45	Available
Romania	in preparation	2017	1 095 287	No data	2017	1 530	8	Not available
Slovakia	No	2017	395 877	No data	2017	620	No data	Available
Slovenia	Yes	2017	578 926	No data	2016	3 042	62	Available
Spain	Yes	2016	1 503 111	119	2016	58 749	No data	Available
Sweden	Yes	2017	517 381	No data	2017	4 468	No data	Available
Netherlands	Yes	No data	No data	No data	2014	5 241	No data	Available
Turkey	No data	n.a.	n.a.	n.a.	2011	12 500	No data	No data
United Kingdom	Yes	2017	7 341 774	No data	2017	149 420	57	Available

ANNEX 5

Testing, viral hepatitis elimination barometer for PWID (green = target reached or intervention implemented, red = target not reached or intervention not fully implemented, grey = no data)

Category	Testing									
Subcategory	Testing availability		HCV testing coverage							
			Studies					TDI		
Indicator	HCV tests are offered by any harm reduction service	HCV and HBV testing routinely offered in prison	Study year	Target group (current, ever, unknown)	Number of injectors asked about testing	Known chronic infections excluded (Y/N)	% of injectors reporting HCV test in the last year	TDI year	Number of current injectors providing information on testing	% of current injectors who reported an HCV test in the last year
Austria	Yes	Available	n.a.	n.a.	n.a.	n.a.	No data	2017	258	72.5
Belgium	Yes	Available	n.a.	n.a.	n.a.	n.a.	No data	n.a.	n.a.	No data
Bulgaria	Yes	Not routine	2016	Current	421	Yes	45	2017	253	75.5
Croatia	No	Available	n.a.	n.a.	n.a.	n.a.	No data	n.a.	n.a.	No data
Cyprus	No	Available	2015	Ever	52	Yes	33	2017	71	49.3
Czechia	Yes	Not routine	2016	Current	962	No	66.9	2017	690	57.7
Denmark	Yes	No data	n.a.	n.a.	n.a.	n.a.	No data	2017	81	35.8
Estonia	Yes	Available	2017	Current	24	No	45.8	n.a.	n.a.	No data
Finland	Yes	Available	2009	Current	689	No	47.2	2017	358	46.6
France	Yes	Available	2015	Ever	1 127	Yes	65.8	n.a.	n.a.	No data
Germany	Yes	Available	2014	Current	101	Yes	46.5	n.a.	n.a.	No data
Greece	Yes	Not routine	2013	Ever	829	No	47-65	n.a.	n.a.	No data
Hungary	Yes	Not routine	2015	Ever	420	Yes	37.6	n.a.	n.a.	No data
Ireland	Yes	Available	n.a.	n.a.	n.a.	n.a.	No data	2017	360	46.4
Italy	Yes	Available	n.a.	n.a.	n.a.	n.a.	No data	n.a.	n.a.	No data
Latvia	Yes	Not routine	2017	Current	394	No	93.4	2017	148	17.6
Lithuania	No	Available	2006	Unknown	320	No	100	n.a.	n.a.	No data
Luxembourg	Yes	Available	2007	Ever	164	No	84	2017	68	92.6
Malta	Yes	No data	n.a.	n.a.	n.a.	n.a.	No data	2017	696	12.4
Norway	No data	Available	2012	Current	89	No	36	n.a.	n.a.	No data
Poland	No	Not routine	2017	Ever	38	Yes	15.8	2017	594	38.9
Portugal	Yes	Available	n.a.	n.a.	n.a.	n.a.	No data	2017	193	19.7
Romania	Yes	Not routine	2015	Ever	516	Yes	7.4	2017	547	44.8
Slovakia	No	Not routine	2017	Ever	51	Yes	58.8	n.a.	n.a.	No data
Slovenia	No data	Available	n.a.	n.a.	n.a.	n.a.	No data	2017	62	32.3
Spain	Yes	Available	n.a.	n.a.	n.a.	n.a.	No data	2016	804	50.4
Sweden	Yes	Available	2013	Ever	173	No	13	n.a.	n.a.	No data
Netherlands	Yes	Available	2010	Ever	50	No	6	n.a.	n.a.	No data
Turkey	No data	No data	2008	Current	168	No	1	2017	1 858	38.2
United Kingdom	Yes	Available	2017	Ever	597	No	95.8	n.a.	n.a.	No data

ANNEX 6

Testing and treatment, viral hepatitis elimination barometer for PWID (green = target reached or intervention implemented, red = target not reached or intervention not fully implemented, grey = no data)

Category	Testing										HCV treatment	
Subcategory	New notifications of HCV and HBV cases linked to injecting drug use										DAA accessibility for PWID	
	Acute HCV		Chronic HCV		Unknown stage HCV	Acute HBV		Chronic HBV		Unknown stage HBV		
Indicator	Data completeness on transmission mode (%)	2017 notifications	Data completeness on transmission mode (%)	2017 notifications	2017 notifications	Data completeness on transmission mode (%)	2017 notifications	Data completeness on transmission mode (%)	2017 notifications	2017 notifications	Restrictive clinical guidelines for DAA treatment for PWID	DAA reimbursement restriction for PWID
Austria	19	5	6	22	5	9	0	2	1	0	No	No
Belgium	No data	No data	No data	No data	0	No data	No data	No data	No data	0	No	No
Bulgaria	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	Restrictions	Restrictions
Croatia	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	Restrictions	Restrictions
Cyprus	No data	No data	10	2	0	50	0	6	0	0	Restrictions	Restrictions
Czechia	0	0	0	0	No data	0	0	0	0	0	No	No
Denmark	100	2	87	81	0	100	0	55	6	0	No	No
Estonia	67	1	41	34	No data	33	0	20	0	No data	Restrictions	No
Finland	No data	No data	No data	No data	536	0	0	14	2	No data	No	No
France	No data	No data	No data	No data	No data	46	2	No data	No data	No data	No	No
Germany	No data	No data	No data	No data	877	9	16	No data	No data	21	No	No
Greece	0	0	0	0	No data	0	0	No data	No data	No data	No	No
Hungary	27	3	No data	No data	No data	12	2	No data	No data	No data	No	No
Ireland	100	12	96	62	134	60	1	15	3	0	No	No
Italy	77	22	No data	No data	No data	68	15	No data	No data	No data	No	No
Latvia	71	9	29	350	No data	70	12	12	21	No data	No	No
Lithuania	28	6	No data	No data	No data	43	1	No data	No data	No data	No	No
Luxembourg	No data	No data	No data	0	29	No data	No data	0	0	0	No	No
Malta	100	0	100	2	1	50	0	24	0	0	No	No
Norway	No data	No data	No data	No data	341	95	4	8	6	No data	No	No
Poland	100	0	93	87	136	73	1	86	2	19	Restrictions	Restrictions
Portugal	58	0	69	0	0	37	0	39	0	0	No	No
Romania	52	2	0	0	No data	45	2	0	0	No data	Restrictions	Restrictions
Slovakia	94	7	76	73	No data	61	7	47	1	No data	Restrictions	Restrictions
Slovenia	17	1	2	0	No data	13	0	3	0	0	No	No
Spain	20	2	2	3	12	10	1	No data	No data	No data	No	No
Sweden	81	104	68	589	46	58	4	24	13	0	No	No
Netherlands	78	2	No data	No data	No data	72	0	58	5	0	No	No
Turkey	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
United Kingdom	0	0	0	0	0	0	0	0	0	0	No	No

ANNEX 7

Impact, viral hepatitis elimination barometer for PWID (grey = no data)

Category	Impact									
Subcategory	Incidence proxy: anti-HCV prevalence among young and new injectors									
	Baseline prevalence (2015 or prior)					Prevalence after 2015				
Indicator	Baseline study year	Number < 25 years of age tested for HCV antibodies	HCV antibody prevalence (%) < 25 years of age	Number of new injectors tested for HCV antibodies	HCV antibody prevalence (%) in new injectors (< 2 years)	Study year	Number < 25 years of age tested for HCV antibodies	HCV antibody prevalence (%) < 25 years of age	Number of new injectors tested for HCV antibodies	HCV antibody prevalence (%) in new injectors (< 2 years)
Austria	2015	31	53.3-62.5	24	41.7	2017	12	83	No data	No data
Belgium	2014	10	10	15	60	No data	No data	No data	No data	No data
Bulgaria	2015	86	52	29	55	2017	12	42	No data	No data
Croatia	2007	109	9.7-48.0	34	59	No data	No data	No data	No data	No data
Cyprus	2011	12	50	*n* < 10	*n* < 10	*2017*	*n* < 10	*n* < 10	*n* < 10	*n* < 10
Czechia	2015	171	14	59	8.5	2017	294	12	148	11
Denmark	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Estonia	2014	24	33	13	23	No data	No data	No data	No data	No data
Finland	2014	82	46	15	6.7	No data	No data	No data	No data	No data
France	2011	58	10	32	7.5	No data	No data	No data	No data	No data
Germany	2011-14	120	5.7-50.0	39	0.0-36.0	No data	No data	No data	No data	No data
Greece	2015	134	50-79	71	29.4-50	2017	43	67	51	43
Hungary	2015	71	37	29	31	No data	No data	No data	No data	No data
Ireland	2010	44	9.1	28	3.6	No data	No data	No data	No data	No data
Italy	2015	334	28.7	No data	No data	2017	267	33.7	No data	No data
Latvia	2014-15	45	40	23	34.8	2017	11	45.5	30	23.3
Lithuania	2014	24	67	No data	No data	No data	No data	No data	No data	No data
Luxembourg	2005	111	22-78	No data	No data	No data	No data	No data	No data	No data
Malta	2015	13	23	No data	No data	*2017*	*n* < 10	*n* < 10		No data
Norway	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Poland	No data	No data	No data	No data	No data	2017	31	19.3	32	25
Portugal	2012	10	60	*n* < 10	*n* < 10	*2017*	*n* < 10	*n* < 10	*n* < 10	*n* < 10
Romania	2015	83	67	20	45	No data	No data	No data	No data	No data
Slovakia	2015	11	54.6	*n* < 10	*n* < 10	2017	12	42	24	21
Slovenia	2011-12	11	9.1	13	15.4	2017	*n* < 10	*n* < 10	*n* < 10	*n* < 10
Spain	2015	39	20.5	48	29.2	2016	62	18	61	28
Sweden	2009-10	18	28	16	25	No data	No data	No data	No data	No data
Netherlands	*2015*	*n* < 10	*n* < 10	*n* < 10	*n* < 10	*2017*	*n* < 10	*n* < 10	*n* < 10	*n* < 10
Turkey	2015	1173	30.1	222	24.3	2017	824	37	78	29
United Kingdom	2015	241	13-50	335	25.2-31.2	2017	91	22-27	243	12.7-22.2