

SURVEILLANCE REPORT

Hepatitis C

Annual Epidemiological Report for 2023

Key facts

- In 2023, 28 622 cases of hepatitis C were reported in 29 EU/EEA countries, corresponding to a crude rate of 7.4 cases per 100 000 population.
- Of the cases reported, 4.9% were acute, 34.1% chronic, and 53.8% were unknown. Seven percent could not be classified due to an incompatible data format.
- Hepatitis C was more commonly reported among men than women, with a male-to-female ratio of 1.7:1. The most affected age group among males and females was 35–44 years (6.1 cases per 100 000 population).
- The most common transmission mode was injecting drug use, which accounted for 54.4% of acute cases and 68.2% of chronic cases with complete information on transmission route.
- The interpretation of hepatitis C notification data across countries remains problematic, with differences in surveillance systems, various testing/screening policies, and difficulties in differentiating acute, chronic and reinfection cases. Improvements in data quality and a revision of the current case definition are needed to better describe the progress towards elimination goals.

Introduction

Hepatitis C is a liver infection caused by the hepatitis C virus (HCV) [1]. The virus enters the body through infected blood or other bodily fluids. The transmission can occur via the use of contaminated needles or medical equipment, contaminated blood transfusions, unsafe sex with an infected person, and vertically from a mother to her child during the pregnancy or the delivery [1].

Hepatitis C is a major public health threat worldwide, with an estimated 50 million people living with HCV infection in 2024, an incidence of 1 million new cases per year, and 244 000 attributable deaths in 2022 [2]. The disease burden is also high in the European Union and European Economic Area (EU/EEA), with an estimated 1.8 million people living with HCV (0.5%) [3].

Methods

This report is based on 2023 data retrieved from The European Surveillance System (TESSy) on 5 February 2025.

For a detailed description of the methods used to produce this report, refer to the Methods chapter of the 'Introduction to the ECDC Annual Epidemiological Report' [4].

An overview of national surveillance systems is available on the ECDC website [5].

A subset of the data used for this report is available through ECDC's online 'Surveillance atlas of infectious diseases' [6].

EU/EEA countries reported data on newly diagnosed cases of hepatitis C to ECDC according to the EU 2018 case definition of acute and chronic hepatitis C or other definitions (Table 1) [7].

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Table 1. Case definition for acute and chronic hepatitis C

Stage	Definition
Acute	Recent HCV seroconversion (prior negative test for hepatitis C in last 12 months) or Detection of hepatitis C virus nucleic acid (HCV RNA) or hepatitis C virus core antigen (HCV-core) in serum/plasma and no detection of hepatitis C virus antibody (negative result)
Chronic	Detection of hepatitis C virus nucleic acid (HCV RNA) or hepatitis C core antigen (HCV-core) in serum/plasma in two samples taken at least 12 months apart*
Unknown	Any newly diagnosed case which cannot be classified in accordance with the above description of acute or chronic infection

*: in the event that the case was not notified the first time.

Surveillance systems across EU/EEA countries are heterogeneous. Twenty-one countries submitted national data for 2023 based on the 2012 or 2018 EU case definitions, four countries used the 2008 EU case definition, and four countries used national case definitions.

All reported cases were included in the analysis regardless of which case definition was used. Data collected represent confirmed cases. Hungary only submitted data on acute cases of hepatitis C. Two countries (Belgium and Bulgaria) only submitted aggregate data and did not differentiate between stages of infection. No data have been reported by the United Kingdom (UK) since 2019 due to its withdrawal from the EU on 1 February 2020.

Annual notification rates were calculated per 100 000 population for countries with comprehensive surveillance systems using Eurostat population data [8].

Epidemiology

For 2023, 29 EU/EEA countries reported 28 622 cases of HCV infection, corresponding to a crude rate of 7.4 cases per 100 000 population. No data were reported from France. Of all cases, 1 405 (4.9%) were reported as acute, 9 748 (34.1%) as chronic, 15 394 (53.8%) as 'unknown' (Table 2), and 2 075 cases (7.2%) could not be classified because of an incompatible data format.

In countries reporting consistently, the overall rate decreased from 7.7 per 100 000 in 2014 progressively to 6.6 in 2019. In 2020 and 2021, a substantial decline was observed, with the rate between 4.6 and 4.7 per 100 000, followed by an increase to 8.0 per 100 000 in 2023 (Figure 1).

Country-specific rates ranged from 0.1 cases per 100 000 population in Italy to 71.3 cases per 100 000 population in Lithuania (Table 2, Figure 2).

Twenty countries were able to provide data on acute cases (Table 2). The rate of reported acute cases was 0.4 per 100 000 population, ranging from 0 in Croatia, Greece, Italy, Poland, Portugal, Romania and Slovenia to 1.7 per 100 000 in Sweden.

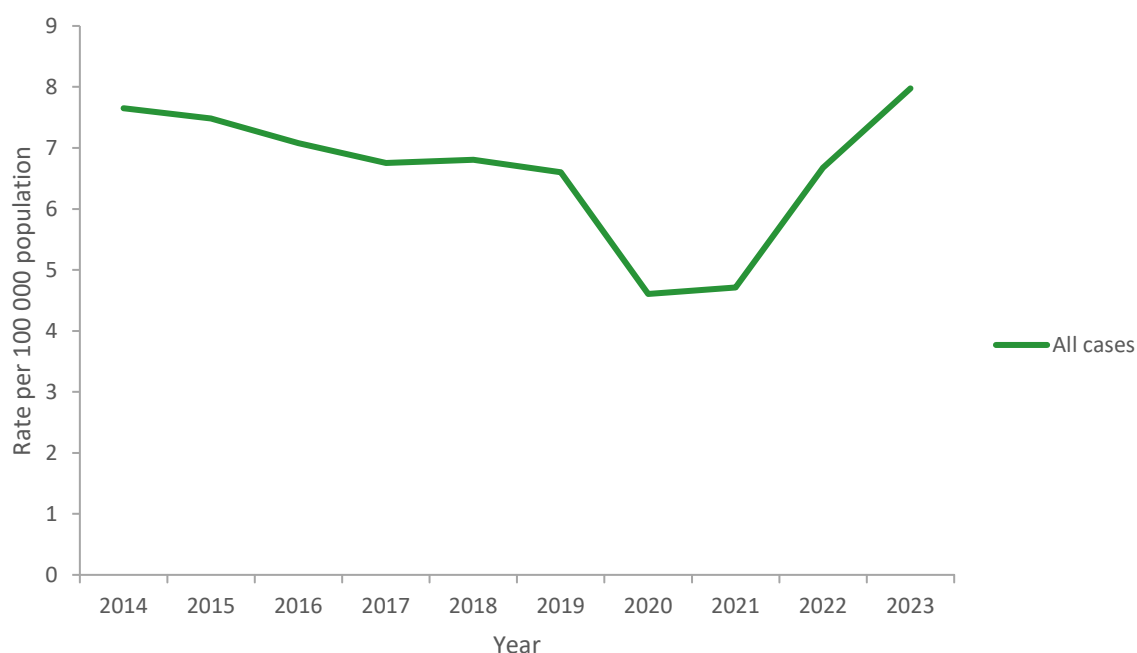
Twenty countries submitted data on chronic infections. The notification rate of chronic cases was 3.1 cases per 100 000 population, ranging from 0 in Italy, Poland, Portugal, and Romania to 70.8 in Lithuania. The rate of cases classified as unknown ranged from 0 cases per 100 000 population in Cyprus, Greece, and Italy to 54.6 in Luxembourg. Overall notification rates were mostly higher in northern and eastern European countries (Figure 2).

Table 2. Number of reported hepatitis C cases and rates per 100 000 population by country and year, 2019-2023[†]

Country	2019		2020		2021		2022		2023							
	All ^I		All ^I		All ^I		All ^I		All		Acute		Chronic		Unknown	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Austria	1 120	12.6	843	9.5	858	9.6	912	10.2	918	10.1	71	0.8	301	3.3	546	6.0
Belgium	1 209	NRC	701	NRC	468	NRC	695	NRC	854	NRC	NDR	NRC	NDR	NRC	NDR	NRC
Bulgaria	88	1.3	44	0.7	25	0.4	51	0.8	80	1.2	NDR	NRC	NDR	NRC	NDR	NRC
Croatia	209	5.3	95	2.4	112	2.9	42	1.1	55	1.4	0	0.0	5	0.1	50	1.3
Cyprus	27	3.1	9	1.0	7	0.8	13	1.4	16	1.7	NDR	NRC	16	1.7	0	0.0
Czechia	1 138	10.7	771	7.2	764	7.3	977	9.3	1 141	10.5	NDR	NRC	NDR	NRC	NDR	NRC
Denmark	122	2.1	161	2.8	149	2.6	205	3.5	202	3.4	6	0.1	196	3.3	NDR	NRC
Estonia	141	10.6	135	10.2	134	10.1	119	8.9	121	8.9	8	0.6	113	8.3	NDR	NRC
Finland	1 180	21.4	1 143	20.7	1 063	19.2	1 148	20.7	1 125	20.2	NDR	NRC	NDR	NRC	1 125	20.2
France	NDR	NRC	NDR	NRC	NDR	NRC	NDR	NRC	NDR	NRC	NDR	NRC	NDR	NRC	NDR	NRC
Germany	5 964	7.2	4 538	5.5	4 771	5.7	8 023	9.6	10 448	12.4	859	1.0	3 988	4.7	5 601	6.6
Greece	119	1.1	54	0.5	43	0.4	104	1.0	244	2.3	2	0.0	242	2.3	0	0.0
Hungary	NDR	NRC	NDR	NRC	NDR	NRC	NDR	NRC	18	0.2	18	0.2	NDR	NRC	NDR	NRC
Iceland	111	31.1	88	24.2	66	17.9	122	32.4	107	27.6	NDR	NRC	NDR	NRC	107	27.6
Ireland	468	9.5	327	6.6	419	8.4	477	9.4	536	10.2	9	0.2	89	1.7	438	8.3
Italy	188	0.3	48	0.1	22	0.0	49	0.1	33	0.1	2	0.0	6	0.0	25	0.0
Latvia	1 404	73.1	1 059	55.5	948	50.1	881	47.0	797	42.3	24	1.3	773	41.1	NDR	NRC
Liechtenstein	NDR	NRC	NDR	NRC	4	10.2	2	5.1	2	5.0	NDR	NRC	1	2.5	1	2.5
Lithuania	NDR	NRC	73	2.6	59	2.1	847	30.2	2 038	71.3	15	0.5	2 023	70.8	NDR	NRC
Luxembourg	29	4.7	526	84.0	368	58.0	411	63.7	361	54.6	NDR	NRC	NDR	NRC	361	54.6
Malta	31	6.3	26	5.1	32	6.2	61	11.7	136	25.1	6	1.1	87	16.1	43	7.9
Netherlands	738	4.3	428	2.5	474	2.7	450	2.6	431	2.4	35	0.2	NDR	NRC	396	2.2
Norway	661	12.4	469	8.7	382	7.1	475	8.8	632	11.5	NDR	NRC	NDR	NRC	632	11.5
Poland	3 343	8.8	955	2.5	1 244	3.4	2 527	6.9	3 267	8.9	12	0.0	0	0.0	3 255	8.9
Portugal	220	2.1	147	1.4	166	1.6	202	2.0	197	1.9	2	0.0	2	0.0	193	1.8
Romania	22	0.1	NDR	NRC	NDR	NRC	1 234	6.5	931	4.9	9	0.0	0	0.0	922	4.8
Slovakia	247	4.5	204	3.7	183	3.4	325	6.0	578	10.6	29	0.5	549	10.1	NDR	NRC
Slovenia	70	3.4	96	4.6	95	4.5	113	5.4	135	6.4	1	0.0	74	3.5	60	2.8
Spain	1 396	3.0	699	1.5	1 266	2.7	2 142	4.5	2 226	4.6	120	0.2	602	1.3	1 504	3.1
Sweden	1 397	13.7	1 023	9.9	1 131	10.9	1 138	10.9	993	9.4	177	1.7	681	6.5	135	1.3
Total EU/EEA (30 countries)	21 642	5.7	14 662	4.1	15 253	4.3	23 745	6.4	28 622	7.4	1 405	0.4	9 748	3.1	15 394	4.7
United Kingdom ^{II}	17 738	26.6	NDR	NRC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EU/EEA (31 countries)	39 380	8.9	14 662	4.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

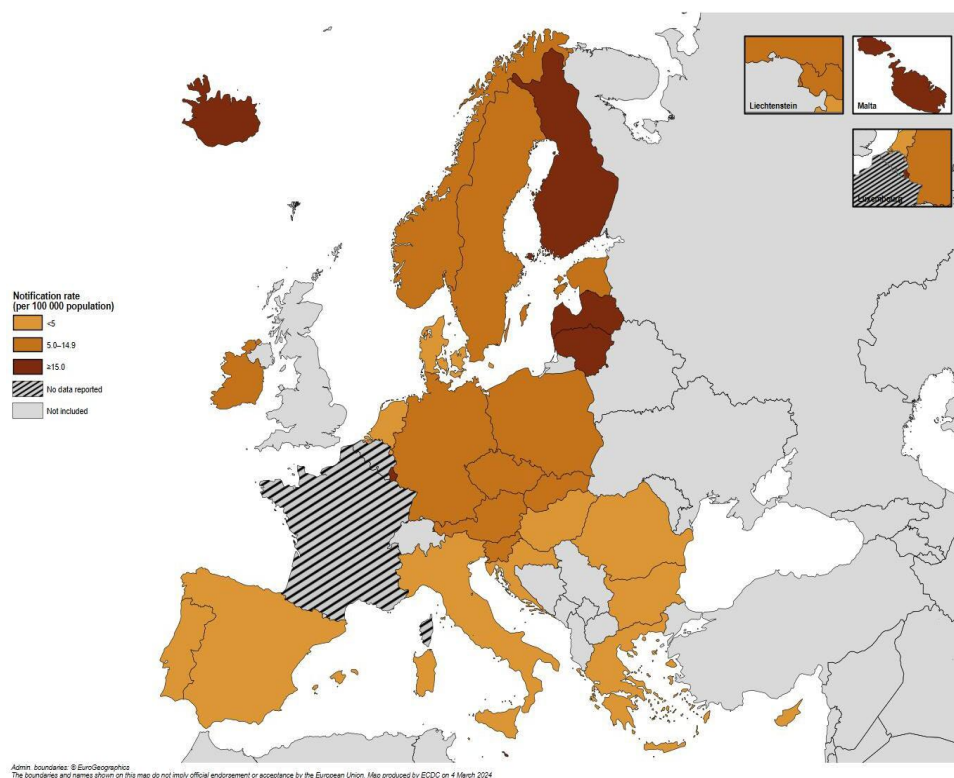
Sources: country reports; NDR: no data reported; NRC: no rate calculated; †: data presented by date of diagnosis; I: includes cases reported by countries as acute, chronic or unknown using differentiation criteria. Countries reporting aggregate data only (Bulgaria and Belgium) were not able to classify cases into acute, chronic, or unknown; 'All cases' not displayed for countries that only report acute cases. II: No data from 2020 onwards were reported by the United Kingdom, due to its withdrawal from the EU on 31 January 2020.

Figure 1. Notification rates of hepatitis C per 100 000 population by year, EU/EEA countries reporting consistently, 2014–2023



Sources: country reports from Austria, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, Germany, Greece, Iceland, Ireland, Italy, Latvia, Luxembourg, Malta, Norway, Poland, Portugal, Slovakia, Slovenia, and Sweden.

Figure 2. Notification rate of hepatitis C cases per 100 000 population by country*, EU/EEA, 2023



*: Countries with comprehensive surveillance systems.

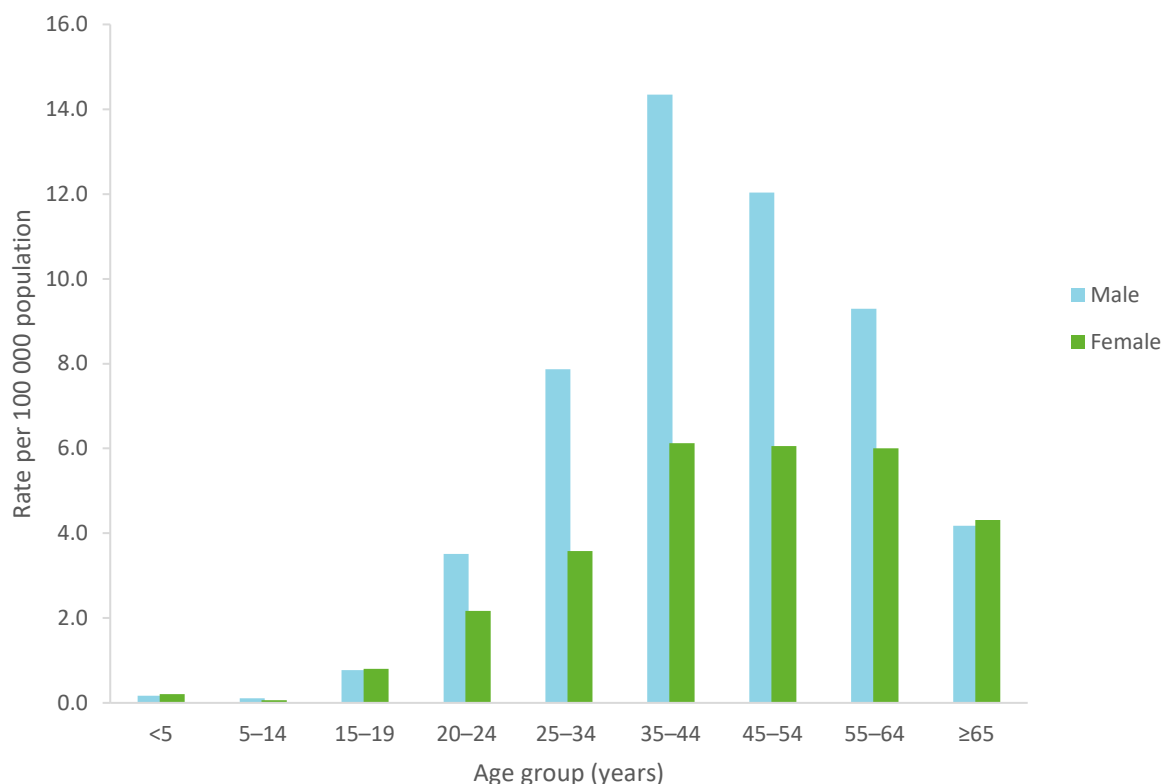
Sources: country reports from Austria, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, Germany, Greece, Iceland, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

Age and gender

In 2023, 17 801 cases were reported in males (9.8 cases per 100 000 population) and 10 770 in females (5.8 cases per 100 000 population), excluding countries that only reported acute cases. The male-to-female ratio was 1.7. Rates were higher among males than females for all age categories between 20 and 64 years (Figure 3).

The most affected age groups were males aged between 35 and 44 years old (14.3 cases per 100 000 population) and females aged 35 to 64 years (6.1 cases per 100 000 population). People under 25 years represent 3.9 percent of all reported cases.

Figure 3. Notification rate of newly diagnosed hepatitis C cases per 100 000 population by age and sex, EU/EEA, 2023

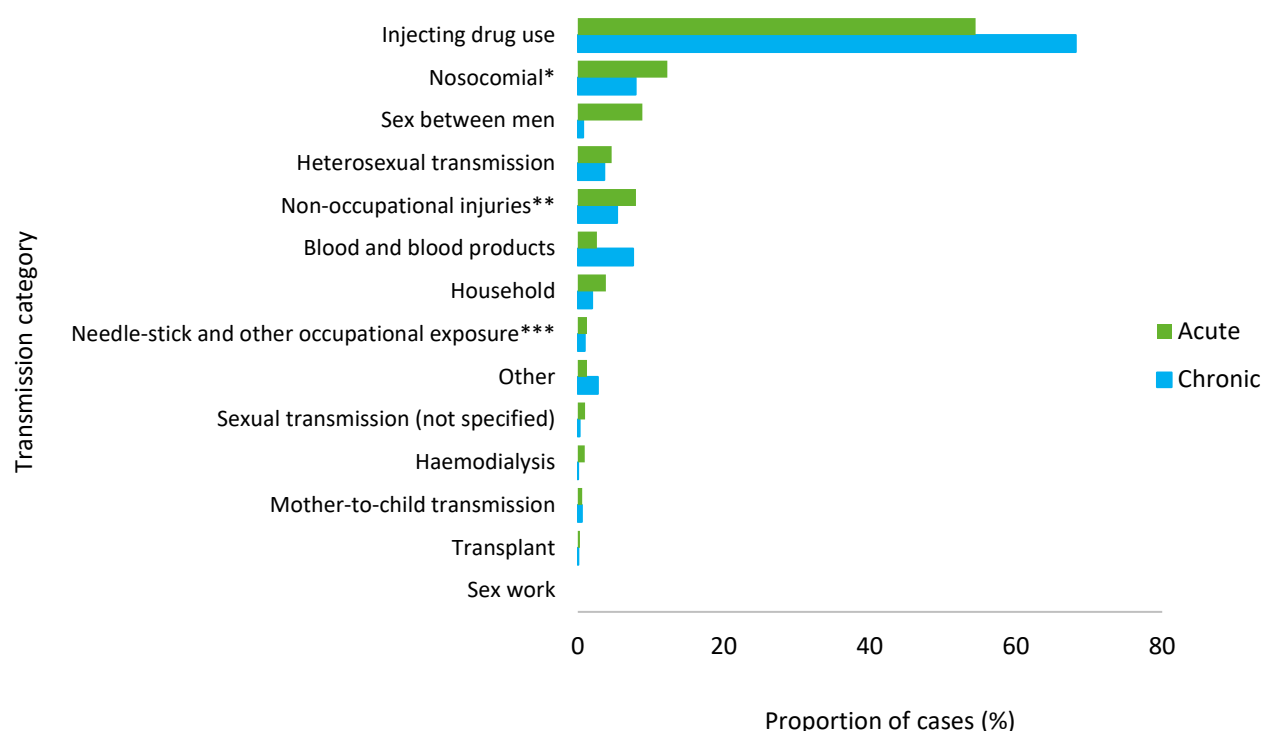


Sources: Country reports from Austria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, Germany, Greece, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

Route of transmission

Data regarding the most likely route of transmission of hepatitis C were complete for only 33.8% of all cases in 2023, 44.7% of acute, 34.7% of chronic cases, and 33.2% in cases with unknown disease status.

The most reported route of transmission across all disease categories was injecting drug use, accounting for 46.7% of cases with known transmission route. The percentage of transmission attributable to injecting drug use was 54.4% among acute cases, 68.2% among chronic cases, and 29.7% among unknown cases (Figure 4). The second most reported route of transmission among acute cases was nosocomial infection (12.2%) followed by sex between men (8.8%) and non-occupational injuries (8.0%). Nosocomial transmission was reported in 40.0% of unknown cases.

Figure 4. Transmission category of hepatitis C cases¹ by acute and chronic disease status, EU/EEA, 2023

1: Cases with known transmission status; *: 'Nosocomial transmission' includes hospitals, nursing homes, psychiatric institutions, and dental clinics. This category refers mainly to patients exposed through healthcare settings, distinct from 'needle-stick and other occupational exposure', which refers to staff; **: 'Non-occupational injuries' include needle-sticks that occur outside a healthcare setting, bites, tattoos and piercings; ***: 'Needle-stick and other occupational exposure' refers to occupational injuries.

Sources: Acute reports from Austria, Croatia, Cyprus, Denmark, Estonia, Germany, Greece, Hungary, Ireland, Italy, Latvia, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain, and Sweden; Chronic reports from Austria, Croatia, Denmark, Estonia, Germany, Ireland, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

Importation status

In 2023, 29 countries provided data for 11 396 cases (39.8%) on whether a case was considered imported from outside the reporting country or acquired in the country itself. Of those cases, 2 564 (22.5%) were reported as imported.

Discussion

The surveillance data show that the number of newly diagnosed hepatitis C notifications remains substantial across the EU/EEA. In 2023, information on the stage of infection is missing for the majority of notifications, probably due to limited information on previous hepatitis C test results, highlighting the difficulties encountered by countries in applying the current EU case definition [7].

From 2014 to 2019, the notification rate decreased progressively, and between 2020 and 2021 this rate dropped substantially compared to previous years, reflecting the disruption in testing services observed during the COVID-19 pandemic [9-13]. Since 2021, the increasing number of notifications might be partly explained by the recovery of health systems after the pandemic, the development of various testing initiatives (general population screening, testing of different population groups), changes in surveillance, and an increase in migrant populations in some countries [13-20]. In some countries, these increases seem mainly driven by the effort undertaken to reduce the number of undiagnosed cases through testing/screening interventions increasing the notification of chronic infections that were likely not recently infected [14, 20].

The burden of hepatitis C in the EU/EEA remains high, with an estimated 1.8 million people (0.5%) infected with HCV [3]. While the incidence of new infections declined in many European countries due to implementation of prevention strategies, including harm reduction programmes, infection prevention and control (IPC) interventions in healthcare setting and treatments using direct-acting antiviral (DAA) drugs for diagnosed cases, modelling studies suggest that the attributable mortality will remain substantial [3, 21-25].

The geographical variations across EU/EEA countries reflect differences in testing policies, reporting practices and underlying epidemiological differences [22, 14, 15, 18]. Several northern and western European countries with extensive testing programmes and countries conducting testing initiatives such as Lithuania reported the highest notification rates, whereas some of the lowest rates were in eastern and south-eastern countries, where underlying prevalence is highest [3, 15]. This discrepancy highlights the need for additional information, such as testing practices, number of people tested, positivity rates, reinfections and up-to-date prevalence estimates to better interpret hepatitis C surveillance data [22, 26].

Despite existing prevention programmes, injecting drug use remains the main route of transmission among reported chronic cases. Estimates of hepatitis C prevalence in the EU/EEA highlight the high prevalences of hepatitis C among people who inject drugs (PWID) in most countries [3, 27]. Harm reduction programmes and, more recently, treatment with DAA drugs may have contributed to reducing transmission in this population. However, evidence of ongoing transmission emphasises the need for more comprehensive and integrated harm reduction interventions tailored for the most vulnerable populations [21, 27].

Nosocomial transmission and transmission among men who have sex with men (MSM) are other frequent routes of transmission. Reports of hepatitis C infections among MSM, and especially HIV-positive people, in several European countries resulted in scaling up specific prevention and control responses [28, 29]. Although nosocomial transmission remains uncommon in most European countries, the high proportion of nosocomial transmission among cases reported without information on the duration of the hepatitis C infection is problematic [30]. This might be due to insufficient connection between health events management systems and hepatitis C surveillance systems in some countries. Effort to integrate these data sources will help to better describe the epidemiological situations.

Public health implications

The first 'Global Health Sector Strategy on Viral Hepatitis' aimed at eliminating viral hepatitis as a public health threat [31] by reducing the incidence of chronic infections by 90% and the associated mortality by 65% by 2030. Achieving these targets will require a significant scaling up of key interventions, including preventing transmission among PWID [32], and increasing testing with linkage to care and treatment [33].

To achieve the elimination goals as defined in the Global Strategy, robust epidemiological information is essential to plan and monitor effective prevention and control programmes. Surveillance data alone do not provide a clear epidemiological picture and should be analysed carefully alongside information on local screening policies and practices, testing and positivity rates, and prevalence data. ECDC is working closely with EU/EEA countries to develop complementary data systems, such as the collection of monitoring data, ongoing prevalence estimates, and sentinel surveillance.

Further improvements to the quality of hepatitis C surveillance data are crucial to increase data utility. A reflection on the standards for surveillance including a pragmatic revision of the surveillance objectives and the epidemiological outputs is needed. The current EU case definition should be reviewed by ECDC together with the European Hepatitis Network taking into consideration the missing information on hepatitis C stage of infection in

most notifications and the issue of reinfections. Complementary and alternative sources of data should be better integrated to prevent a fragmented description of the situation. The possibility to automatically retrieve hepatitis C data through electronic health records should be further explored to reduce the underestimation of the diagnosed cases. Beyond the improvement of the data collection and processing approaches, gathering testing data alongside the notified cases is pivotal, as interpreting the trends in notifications requires a good understanding of the positivity rates by population and area.

Despite the limitations of routine surveillance for hepatitis C, the data clearly indicate that a high proportion of reported cases are attributed to injecting drug use, highlighting the importance of harm reduction measures. Evidence-based interventions are crucial to address the risks attributable to injecting drug use, and best practices implemented in some countries should be widely promoted and shared across the EU/EEA [32, 34]. Ongoing nosocomial transmission and transmission among MSM in the region emphasise the need to implement targeted and comprehensive public health programmes tailored to the local epidemiology.

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