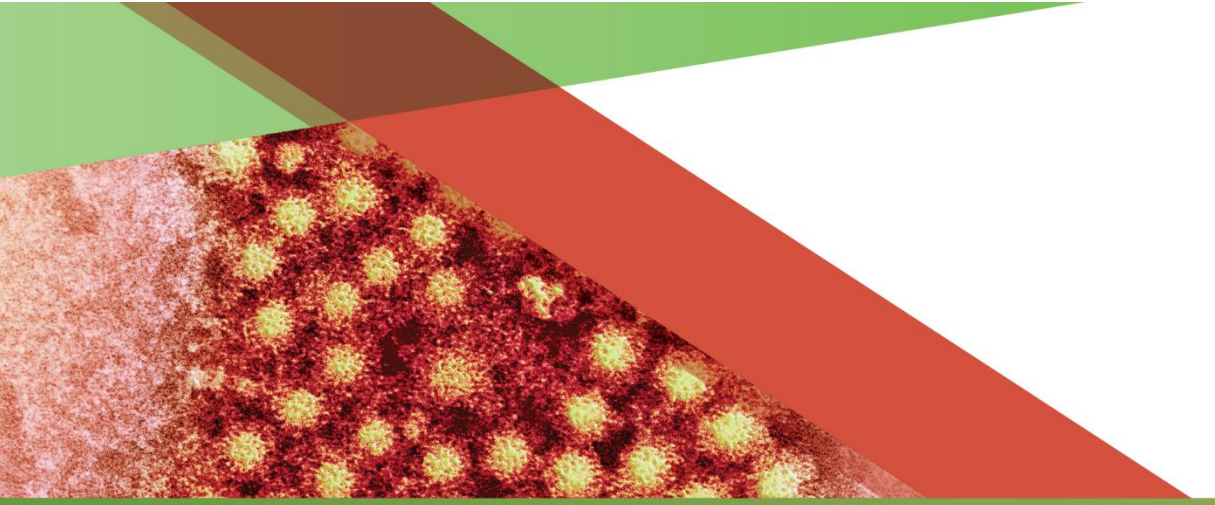


SURVEILLANCE REPORT

Hepatitis C

Annual Epidemiological Report for 2019

Key facts

- In 2019, 37 733 cases of hepatitis C were reported in 29 EU/EEA Member States. Excluding countries that only reported acute cases leaves 37 660 cases, which corresponds to a crude rate of 8.9 cases per 100 000 population.
- Of the cases reported, 6% were classified as acute, 22% as chronic and 69% as 'unknown'.
- Hepatitis C was more commonly reported among men than women, with a male-to-female ratio of 2.1:1. The most affected age group among both males and females was between 25–34 years.
- Mode of transmission was reported for just 21% of cases. The most commonly reported mode was injecting drug use, which accounted for 45% of cases with complete information on transmission status.
- The interpretation of hepatitis C notification data across countries remains problematic, with ongoing differences in surveillance systems and difficulties in defining reported cases as acute or chronic. With hepatitis C, a largely asymptomatic disease until the late stages, surveillance based on notification data is challenging, with data reflecting testing practices rather than true occurrence of disease.

Methods

This report is based on 2019 data retrieved from The European Surveillance System (TESSy) on 12 April 2021. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

For a detailed description of methods used to produce this report, refer to the *Methods* chapter [1].

An overview of national surveillance systems is available on the ECDC website [2].

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

This report includes data on newly-diagnosed cases of hepatitis C virus (HCV) infection reported to ECDC by EU/EEA countries. Countries were requested to apply the EU 2018 case definition when reporting data to TESSY, but other case definitions were also accepted.

Acute and chronic hepatitis C infections were differentiated by countries using defined criteria (Table 1).

Suggested citation: European Centre for Disease Prevention and Control. Hepatitis C. In: ECDC. Annual epidemiological report for 2019. Stockholm: ECDC; 2021.

Stockholm, June 2021

Table 1. Criteria for differentiating 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 countries submitted national data for 2019 based on the 2012 or 2018 EU case definitions, five countries used the 2008 EU case definition and four countries used national case definitions. The 2012 and 2018 case definitions are essentially identical, except that the 2018 definition explicitly states that countries should differentiate between acute and chronic cases according to ECDC requirements [4,5]. The EU 2008 case definition is similar but includes detection of hepatitis C core antigen as an additional diagnostic criterion. All case definitions capture all acute and chronic laboratory-diagnosed cases of hepatitis C. All reported cases were included in the analysis regardless of which case definition was used. Data collected represent confirmed cases. Three countries, Hungary, Lithuania and the Netherlands, only submitted data on acute cases of hepatitis C. Two countries (Belgium and Bulgaria) submitted aggregate data only and did not differentiate stages of infection.

Hepatitis C data are presented by the 'date of diagnosis' or, if not available, 'date used for statistics'.

Italy reported using two data sources. One had national coverage but included only a limited number of variables and was used for the calculation of national rates and analysis by age and gender. The other was a voluntary reporting system of acute cases and covered 82.4% of the population in 2019. The sentinel population is considered representative of the wider population and data were therefore scaled up to 100%. This data source contained information on a range of variables and was used for certain epidemiological analyses, including the route of transmission and importation status. The data source for Belgium was a sentinel system with unidentified population coverage. National rates were therefore not calculated for Belgium.

Epidemiology

For 2019, 29 EU/EEA Member States reported 37 733 cases of HCV infection. The number of cases was lowered to 37 660 if the three countries that only reported acute cases (Hungary, Lithuania and the Netherlands) were excluded. 37 660 cases represent a rate of 8.9 per 100 000 population. No data were reported from France or Liechtenstein. Of all cases reported, 2 190 (6%) were reported as acute, 8 375 (22%) as chronic, 25 871 (69%) as 'unknown' (Table 2) and 1 297 cases (3%) could not be classified due to an incompatible data format. From 2010–2019, the overall number of cases diagnosed and reported across the 23 EU/EEA Member States that reported data consistently over this time, excluding those who only reported acute cases, showed year-to-year fluctuations with no clear long term trend (Figure 1).

Country-specific rates ranged from 0.1 cases per 100 000 population in Romania to 55 cases per 100 000 population in Latvia (Table 2, Figure 2). The United Kingdom accounted for 48% of all reported cases.

Table 2. Distribution of hepatitis C cases and rates per 100 000 population by country and year, EU/EEA, 2015–2019

Country	2015		2016		2017		2018		2019							
	All		All		All		All		All		Acute[I]		Chronic[I]		Unknown[I]	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Austria	1 217	14.2	1 161	13.3	920	10.5	830	9.4	745	8.4	24	0.3	286	3.2	435	4.9
Belgium	1 356	-	1 603	-	1 519	-	1 350	-	1 209	-	.	-	.	-	.	-
Bulgaria	85	1.2	81	1.1	84	1.2	83	1.2	88	1.3	.	-	.	-	.	-
Croatia	155	3.7	186	4.4	213	5.1	212	5.2	205	5.0	3	0.1	85	2.1	117	2.9
Cyprus	2	0.2	1	0.1	21	2.5	40	4.6	27	3.1	0	0.0	27	3.1	0	0.0
Czech Republic	972	9.2	1 069	10.1	932	8.8	1 050	9.9	1 138	10.7	103	1.0	1 035	9.7		
Denmark	321	5.7	240	4.2	192	3.3	183	3.2	122	2.1	11	0.2	111	1.9		
Estonia	257	19.5	178	13.5	121	9.2	149	11.3	122	9.2	8	0.6	114	8.6		
Finland	1 164	21.3	1 147	20.9	1 115	20.3	1 170	21.2	1 189	21.5	.	-	.	-	1 189	21.5
Germany	4 961	6.1	4 426	5.4	4 839	5.9	5 884	7.1	5 885	7.1	579	0.7	2 240	2.7	3 066	3.7
Greece	14	0.1	80	0.7	152	1.4	125	1.2	119	1.1	2	0.0	22	0.2	95	0.9
Hungary[II]	.	-	.	-	.	-	.	-	.	-	7	0.1	.	-	.	-
Iceland	44	13.4	91	27.4	95	28.1	69	19.8	111	31.1	0	0.0	0	0.0	111	31.1
Ireland	675	14.4	644	13.6	614	12.8	588	12.2	467	9.5	12	0.2	94	1.9	361	7.4
Italy	207	0.3	194	0.3	182	0.3	156	0.3	188	0.3	.	-	.	-	188	0.3
Latvia	1 985	99.9	1 832	93.0	1 675	85.9	1 436	74.2	1 061	55.3	48	2.5	1 013	52.8	.	-
Lithuania[II]	.	-	.	-	.	-	.	-	.	-	21	0.8	.	-	.	-
Luxembourg	58	10.3	58	10.1	95	16.1	69	11.5	34	5.5	.	-	0	0.0	34	5.5
Malta	10	2.3	13	2.9	18	3.9	18	3.8	31	6.3	0	0.0	0	0.0	31	6.3
Netherlands[II]	.	-	.	-	.	-	.	-	.	-	45	0.3	.	-	.	-
Norway	1 186	23.0	771	14.8	656	12.5	639	12.1	532	10.0	.	-	.	-	532	10.0
Poland	4 285	11.3	4 261	11.2	4 010	10.6	3 442	9.1	3 343	8.8	16	0.0	501	1.3	2 826	7.4
Portugal	261	2.5	344	3.3	271	2.6	188	1.8	195	1.9	7	0.1	56	0.5	132	1.3
Romania	60	0.3	73	0.4	70	0.4	87	0.4	22	0.1	18	0.1	4	0.0	.	-
Slovakia	334	6.2	268	4.9	156	2.9	225	4.1	240	4.4	27	0.5	213	3.9	.	-
Slovenia	65	3.2	115	5.6	117	5.7	112	5.4	70	3.4	4	0.2	66	3.2	.	-
Spain	756	1.6	790	1.7	892	1.9	1 496	3.2	1 382	2.9	82	0.2	741	1.6	559	1.2
Sweden	1 902	19.5	1 831	18.6	1 664	16.6	1 610	15.9	1 397	13.7	157	1.5	916	9.0	324	3.2
United Kingdom	13 552	20.9	12 991	19.9	12 147	18.4	18 145	27.4	17 738	26.6	1 016	1.5	851	1.3	15 871	23.8
Total EU/EEA	**35 884**	**8.5**	**34 448**	**8.0**	**32 770**	**7.6**	**39 356**	**9.3**	**37 660**	**8.9**	**2 190**	**0.6**	**8 375**	**2.5**	**25 871**	**7.2**

.: data not reported

-: rate not calculated

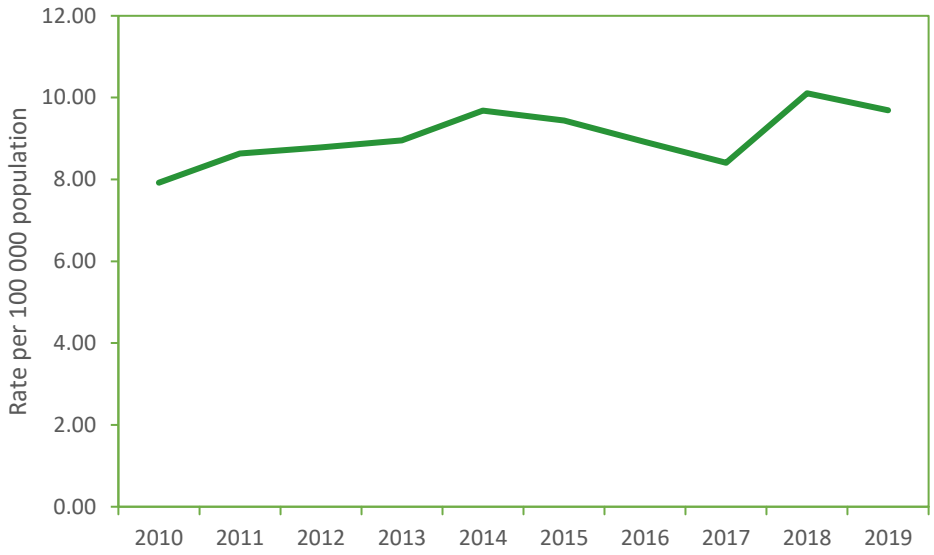
[†]: data presented by date of diagnosis

[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.

[II]: 'All cases' not displayed for countries that only report acute cases.

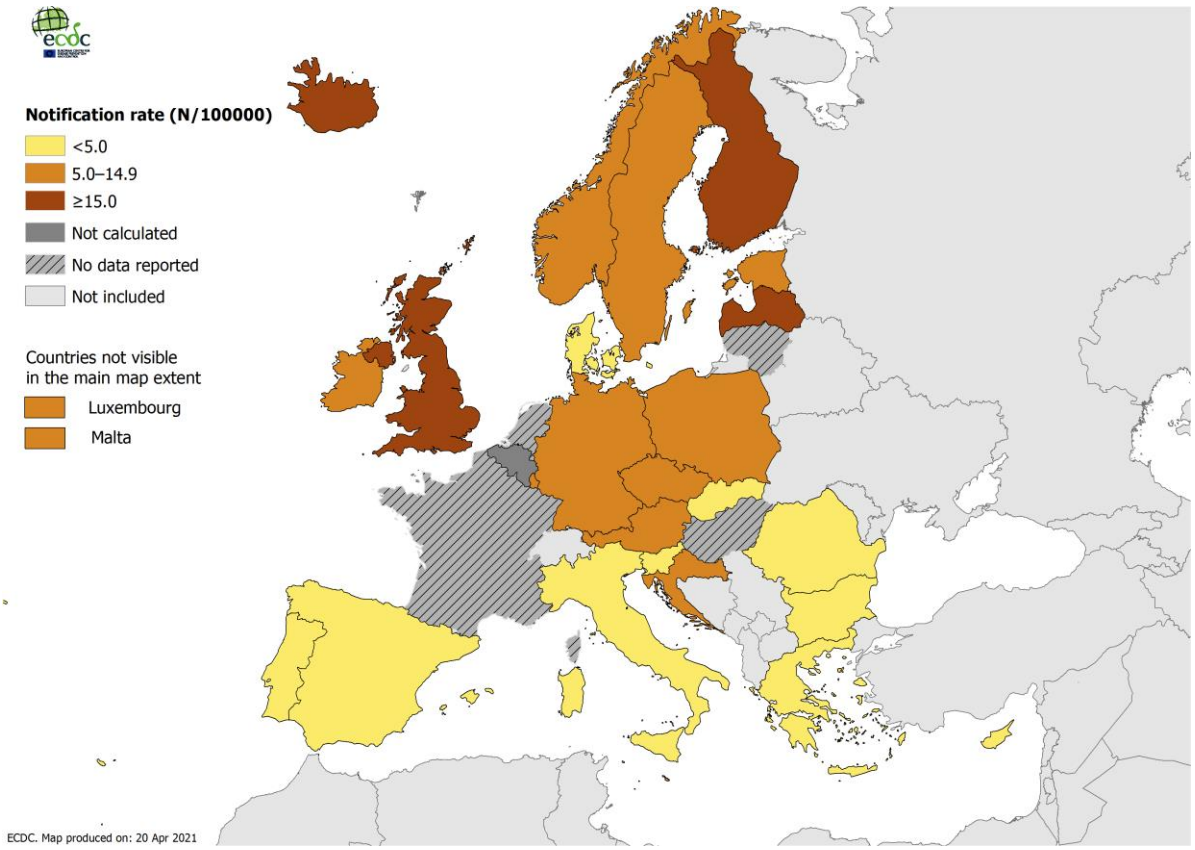
Twenty-three countries were able to provide data on acute cases (Table 2). The rate of reported acute cases was 0.6 per 100 000 population, ranging from =<0.1 in Croatia, Cyprus, Greece, Hungary, Iceland, Malta, Poland, Portugal and Romania to 2.5 per 100 000 in Latvia. Twenty-one countries submitted data on chronic infections. The notification rate of chronic cases was 2.5 per 100 000 population, ranging from <0.1 in Iceland, Luxembourg, Malta and Romania to 52.8 in Latvia. The rate of cases classified as unknown ranged from <0.1 cases per 100 000 population in Cyprus to 31.1 in Iceland. Overall notification rates were mostly higher in northern and western European countries than in southern European countries (Figure 2).

Figure 1. Notification rates of hepatitis C per 100 000 population by year in EU/EEA countries, 2010-2019, among countries reporting consistently and excluding countries that only reported acute cases



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

Figure 2. Distribution of newly diagnosed hepatitis C cases per 100 000 population by country*, EU/EEA, 2019



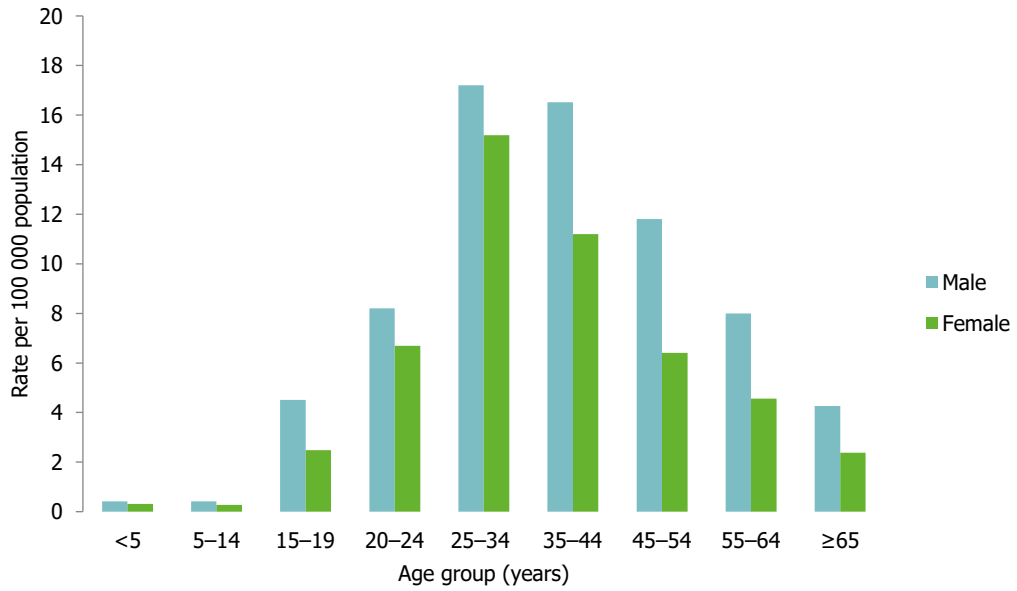
**: Countries not reporting any data or reporting data only on acute cases are excluded from this map.*

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

Age and gender

In 2019, 24 936 cases were reported in males (12.01 cases per 100 000 population) and 12 158 in females (5.6 cases per 100 000 population), excluding countries that only reported acute cases. This corresponds to a male-to-female ratio of 2.1:1. Rates were higher among males than females for all age categories (Figure 3). The age distributions among males and females were similar. The most affected age group was from 25 to 34 among both males (17 cases per 100 000 population) and females (15 cases per 100 000 population). Eight percent of acute cases and 5% of chronic cases were reported in people under 25 years. The proportion of all cases under 25 years declined from 11% in 2010 to 6% in 2019.

Figure 3. Notification rate of newly diagnosed hepatitis C cases per 100 000 population by age and gender, EU/EEA, 2019

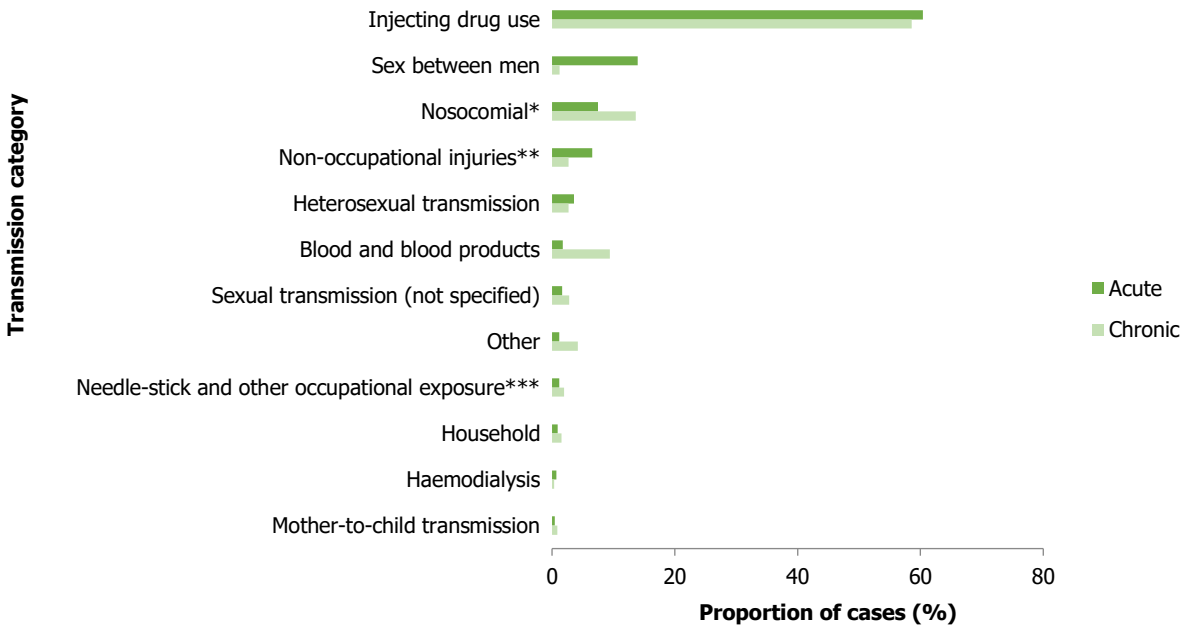


Source: Country reports from Austria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Germany, Iceland, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden and the United Kingdom.

Route of transmission

Data regarding the most likely route of transmission of hepatitis C were complete for only 21% of cases in 2019. The most commonly reported route of transmission across all disease categories was injecting drug use, which accounted for 45% of cases with complete information. The percentage of transmission attributable to injecting drug use among cases with a known transmission route was similar among acute cases (60%) and among those classified as chronic (59%; Figure 4). The second most common route of transmission among acute cases was sex between men, accounting for 14% of acute cases.

Figure 4. Transmission category of hepatitis C cases by acute and chronic disease status, EU/EEA, 2019[1]



[1]: cases with known transmission status.
**: 'Nosocomial transmission' includes hospital, nursing home, psychiatric institutions and dental. 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.*
Source: Acute reports from Austria, Croatia, Denmark, Estonia, Germany, Ireland, Italy, Latvia, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain and Sweden and the United Kingdom.
Chronic reports from Austria, Croatia, Denmark, Estonia, Germany, Ireland, Latvia, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Importation status

In 2019, 21 countries provided data for 10 741 cases (29%) on whether a case was considered 'imported' from outside the reporting country or acquired in the country itself. Of those cases, 1 105 (10%) were reported as imported.

Discussion

The number of newly diagnosed hepatitis C cases reported from countries across Europe remains at a high level, with considerable variation between country-specific rates. According to a recent systematic review, an estimated 3.9 million individuals are chronically infected with HCV in EU/EEA countries, with national estimates of anti-HCV prevalence in the general population ranging from 0.1%–5.9% [6]. The burden of disease presents a serious public health challenge for national health systems. While the incidence of new infections has declined in many European countries due to implementation of prevention strategies targeting transmission through injecting drug use and healthcare, and possibly also the impact of rolling out treatment programmes to cure the infection, modelling suggests that morbidity and mortality will continue to increase [7,9].

The number of countries reporting hepatitis C surveillance data has increased in recent years, but data analysis and interpretation remain challenging on account of the incompleteness of data and heterogeneity in national surveillance systems and practices. While the number of countries using the 2012 or 2018 EU case definitions have increased, nine countries still do not use these updated definitions, which hampers the ability to compare data across countries. Data completeness for several variables remains low. Countries have difficulties defining cases as acute or chronic and the majority of cases reported are classified 'unknown'. It is likely that most 'unknown' cases are chronic infections as acute hepatitis C is difficult to diagnose and most cases are identified through screening.

The variation in notification rates between countries is likely related to differences in local testing practices as hepatitis C is mostly asymptomatic. Indeed, many northern and western European countries, such as the United Kingdom which has extensive testing programmes targeting populations at risk, report the highest notification rates in the EU/EEA but they are also known, from serosurveys, to have low prevalence estimates [6,9]. In the UK, which accounts for 49 percent of reported cases, one laboratory has recently undertaken HCV dried blood spot testing alongside hepatitis C routine laboratory testing. Many of these samples have come from people who inject drugs which has led to an increase in the overall number of positive HCV reports[1].

Countries in eastern and south-eastern Europe have the lowest reported rates of cases but some of the highest prevalence estimates. This discrepancy highlights the challenge of interpreting hepatitis C surveillance data and the importance of considering other sources of information, such as local testing practices and seroprevalence estimates.

Reported data indicate that hepatitis C is an infection which predominantly affects men aged 25–44 years. This profile is consistent with the demographic profile of injecting drug use, the main route of transmission reported for chronic cases. Data are consistent with the findings of the recent systematic review of hepatitis C seroprevalence, which found that prevalence among people who inject drugs (PWID) in most EU/EEA countries is high (>50%) [6]. Harm reduction programmes and, more recently, treatment with new direct-acting antiviral drugs may have contributed significantly to reducing transmission in many countries. However, the burden of infection remains high among PWID and evidence of ongoing transmission emphasises the ongoing need for comprehensive harm reduction measures targeted at this at-risk population [10,11].

Among acute cases, the other main reported routes of transmission included nosocomial transmission and transmission among men who have sex with men. Reports of hepatitis C infections among HIV-positive men who have sex with men in several European countries since 2000 have resulted in many countries scaling up targeted prevention and control responses [12]. Nosocomial transmission remains uncommon in most European countries, but is still a key route of transmission among newly diagnosed cases in a few countries, highlighting the importance of comprehensive infection prevention and control systems within healthcare.

The World Health Assembly adopted the first 'Global Health Sector Strategy on Viral Hepatitis' aimed at eliminating viral hepatitis as a public health threat [13]. The concept of elimination for hepatitis C is based on reducing the incidence of chronic infections by 90% and the associated mortality by 65% by 2030 compared to 2015 levels. Achieving these targets will require a significant scaling-up of key interventions, including those aimed at preventing transmission among PWID and increased testing with linkage to care and treatment.

Public health implications

Hepatitis C is a public health priority across Europe with a high burden of infection and high levels of associated morbidity and mortality. To achieve the goal of elimination as defined in the Global Strategy (above), it is essential that countries have access to robust epidemiological information 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 practices and available seroprevalence data. Further improvements to the quality of hepatitis C surveillance data are important to increase data utility and ECDC is working closely with Member States to improve local surveillance systems. ECDC is also developing alternative epidemiological data sources, including the generation of prevalence estimates using standardised methodologies. Despite the limitations of routine surveillance for hepatitis C, data clearly indicate that a high proportion of reported cases are attributed to injecting drug use, highlighting the importance of harm reduction measures. Ongoing nosocomial transmission and transmission among men who have sex with men in the region underscore the need to implement targeted and comprehensive public health programmes tailored to the local epidemiology.

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