

## Annual Epidemiological Report

### Hepatitis C

Reporting on data retrieved from TESSy\* on 19 November 2015

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#### Key facts

- In 2014, 35 321 cases of hepatitis C were reported from 28 EU/EEA Member States, a crude rate of 8.8 cases per 100 000 population.
- Of the cases reported, 1.3% were classified as acute, 13.3% as chronic, 74.7% as 'unknown' and 10.7% were not classified.
- Hepatitis C is more commonly reported among men than women, with a male-to-female ratio of 1.8 to 1. Just over half (51.3%) of all hepatitis C cases reported in 2014 were aged between 25 and 44 years, and 8.0% of cases were under 25 years of age.
- Only 15.8% of the cases included data on the mode of transmission and of these the most commonly reported was injecting drug use, which accounted for 78.1% of those cases with complete information on transmission status.
- Between 2006 and 2014, the overall number of cases diagnosed and reported across all EU/EEA Member States increased by 28.7%, with most of this increase observed since 2010.
- The interpretation of hepatitis C data across countries is hampered by differences in surveillance systems, testing practices and programmes, and difficulties in defining the cases as acute or chronic. The surveillance of hepatitis C, a disease which is largely asymptomatic until a late stage, is challenging, with reported notifications reflecting testing practices rather than true occurrence of disease.

#### Methods

[Click here for a detailed description of the methods used to produce this annual report](#)

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 follow the EU 2012 case definition for reporting at the European level\*, but other case definitions were also accepted.

\* 2012/506/EC: Commission Implementing Decision of 8 August 2012 amending Decision 2002/253/EC laying down case definitions for reporting communicable diseases to the Community network under Decision No 2119/98/EC of the European Parliament and of the Council.

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

**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 definition of acute or chronic infection

\* In the event that the case was not notified the first time.

Surveillance systems across the EU/EEA countries are heterogeneous (Annex). Fourteen countries submitted national data in 2014 based on the current EU case definition (two countries less than in 2013). Seven countries used the previous 2008 EU case definition, and seven countries (Belgium, Denmark, Germany, Italy, Luxembourg, Portugal and Romania) used national case definitions. The EU 2012 case definition is fairly similar to the EU 2008 case definition, but includes detection of hepatitis C core antigen as an additional diagnostic criterion. Both 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. The data collected represent confirmed cases; however, a few countries submitted 'probable' cases using alternative case definitions.

Several countries made changes to their surveillance systems during the last few years and, for a few countries, historical data were not included as they would not have been comparable with the subsequent enhanced data. Hepatitis C data are presented by date of diagnosis, or, if not available, by 'date used for statistics'. When comparing data defined according to the two different dates across the database, there were only minor differences between them, and only in a few countries.

Italy reports data using two data sources. One of these sources has national coverage, but includes only a limited number of variables and was used for the calculation of national rates and analysis by age and gender. The other data source is a sentinel system covering an estimated 76% of the population and includes epidemiological data on a range of variables. The sentinel population is considered representative of the wider population, and the data provided were scaled up from 76% to 100%. This source was used for epidemiological analyses including the route of transmission and importation status.

The data source for Belgium is a sentinel system with unknown population coverage. National rates were therefore not calculated for Belgium.

#### Epidemiology: overall trends

In 2014, 28 EU/EEA Member States reported 35 321 cases (crude rate of 8.8 per 100 000 population) of HCV infection (no data from France, Liechtenstein and Spain), an increase of 15.4% over the previous year. Between 2006 and 2014, the number of cases has increased by 28.7% from 27 442 cases in 2006, with the rate across all countries fluctuating between 7.3 and 9.4 per 100 000 population but showing a steady increase since 2010 (Figure 1). Of 35 321 cases, 458 (1.3%) were reported as acute, 4 698 (13.3%) as chronic, 26 380 cases (74.7%) were reported as 'unknown', and 3 785 cases (10.7%) could not be classified due to an incompatible data format.

Country-specific rates ranged from 0.1 cases per 100 000 in Italy to 74.5 cases per 100 000 in Latvia. The United Kingdom accounted for 39.7% of all reported cases.

**Table 2. Number and rate of reported hepatitis C cases per 100 000 population, EU/EEA, 2010–2014†**

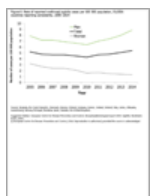
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Country	2010		2011		2012		2013		2014							
	All		All		All		All		All		Acute*		Chronic*		Unknown*	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Austria	880	10.5	1122	13.4	1075	12.8	993	11.7	1954	23	93	1.1	913	10.7	948	11.1
Belgium									1151						1151	
Bulgaria	58	0.8	60	0.8	92	1.3	95	1.3	90	1.2						
Croatia					171	4	202	4.7	144	3.4						
Cyprus	26	3.2	57	6.8	48	5.6	36	4.2	30	3.5					30	3.5
Czech Republic	709	6.8	812	7.7	796	7.6	929	8.8	808	7.7					808	7.7
Denmark	318	5.7	295	5.3	263	4.7	265	4.7	181	3.2	6	0.1	173	3.1	2	0
Estonia	276	20.7	210	15.8	245	18.5	273	20.7	315	23.9	20	1.5	295	22.4		
Finland	1138	21.3	1135	21.1	1165	21.6	1172	21.6	1224	22.5					1224	22.5
France																
Germany	5281	6.5	5075	6.2	4978	6.1	5168	6.3	5737	7.1					5737	7.1
Greece	11	0.1	18	0.2	43	0.4	22	0.2	18	0.2	2	<0.1	16	0.1		
Hungary	11	0.1	43	0.4	38	0.4	46	0.5	43	0.4	43	0.4				
Iceland	59	18.6	72	22.6	51	16	72	22.4	38	11.7					38	11.7
Ireland	1240	27.3	1254	27.4	1026	22.4	778	16.9	694	15.1	21	0.5	68	1.5	605	13.1
Italy	236	0.4	234	0.4	221	0.4	205	0.3	45	0.1					45	0.1
Latvia	1156	54.5	1324	63.8	1352	66.1	1327	65.6	1491	74.5	57	2.8	1434	71.6		
Lithuania	41	1.3	43	1.4	40	1.3	59	2	34	1.2	34	1.2				
Luxembourg	73	14.5	74	14.5	53	10.1	68	12.7	68	12.4			68	12.4		
Malta	14	3.4	18	4.3	24	5.7	14	3.3	14	3.3	1	0.2	13	3.1		
Netherlands	31	0.2	68	0.4	57	0.3	65	0.4	52	0.3	52	0.3				
Norway	1783	36.7	1675	34	1513	30.3	1318	26.1	1213	23.7					1213	23.7
Poland	2179	5.7	2241	5.9	2265	6	2641	6.9	3551	9.3						
Portugal	39	0.4	45	0.4	42	0.4	21	0.2	63	0.6	7	0.1			56	0.5
Romania	76	0.4	80	0.4	126	0.6	127	0.6	104	0.5	84	0.4	20	0.1		
Slovakia	237	4.4	304	5.6	230	4.3	314	5.8	381	7	35	0.6	346	6.4		
Slovenia	87	4.3	95	4.6	102	5	89	4.3	64	3.1	3	0.1	61	3		
Spain																
Sweden	1939	20.8	2153	22.9	1990	21	2005	21	1786	18.5					1786	18.5
United Kingdom	9951	15.9	12138	19.3	13474	21.2	13757	21.5	14028	21.8			1291	2	12737	19.8
Total EU/EEA	27849	7.3	30645	8	31480	8.1	32061	8.3	35321	8.8	458	0.5	4698	3.7	26380	9.5

† Data presented by date of diagnosis.

\* Includes the cases reported by countries as acute, chronic or unknown using the differentiation criteria.

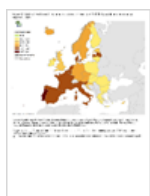
**Figure 1. Rate of reported hepatitis C cases per 100 000 population, EU/EEA, 2006–2014**



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

In 2014, 14 countries were able to provide data on acute cases (Table 2). The rate of reported acute cases ranged from <0.1 cases per 100 000 in Greece to 2.8 in Latvia. Twelve countries submitted data on chronic infections, ranging from 0.1 cases per 100 000 in Greece and Romania to 71.6 in Latvia. Figure 2 shows the overall notification rate of hepatitis C cases in EU/EEA countries in 2014. Countries were included if their surveillance system was known by ECDC to capture data on both acute and chronic cases, even if most cases were classified as 'unknown'. Notification rates were higher in central and north European countries than in south-eastern European countries.

**Figure 2. Rate of reported hepatitis C cases per 100 000 population, EU/EEA, 2014**

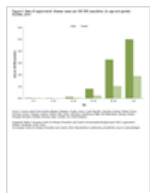


Source: Country reports from Austria, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Iceland, Ireland, Italy, Latvia, Luxembourg, Malta, Norway, Poland, Romania, Slovakia, Slovenia, Sweden, and the United Kingdom.

## Epidemiology: age and gender

In 2014, 21 926 cases were reported in males (11.6 per 100 000) and 12 063 cases were in females (6.1 per 100 000). This represents a male-to-female rate of 1.8 to 1. Approximately half (51.3%) of all cases were in the 25–44-year age group. The age distributions were similar among males and females (Figure 3), and the most affected age group was those between 25 and 34 years of age (24.2 cases per 100 000 in males, 12.0 cases per 100 000 in females). There was a difference in the age distributions of acute and chronic cases, with 21.5% of acute cases and 6.5% of chronic cases under 25 years of age.

**Figure 3. Rate of reported hepatitis C cases per 100 000 population, by age and gender, EU/EEA, 2014**



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

## Epidemiology: route of transmission

Data regarding the most likely route of transmission of hepatitis C were complete for only 5 591 (15.8%) cases in 2014. Of these cases with complete information, the most commonly reported route of transmission across all disease categories was injecting drug use, which accounted for 78.1%. The percentage of injecting drug use among cases with a known transmission route was lower among acute cases (33.9%) than among those classified as chronic (72.6%) (Figure 4) or 'unknown' (83.4%). Among those categorised as acute cases, other key routes of transmission included nosocomial transmission (27.6%), transmission among men who have sex with men (11.2%) and heterosexual transmission (8.5%). All the cases attributed to nosocomial transmission were reported by four countries (Italy, Latvia, Romania and Slovakia). Between 2013 and 2014, there was a 40.1% decline in the number of acute cases attributed to transmission among men who have sex with men; however, the number of acute cases with complete information on transmission was very low.

**Figure 4. Transmission category of hepatitis C cases by acute and chronic disease status, EU/EEA, 2014**



Source: Country reports from Austria, Denmark, Estonia, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Romania, Slovakia, Slovenia, and the United Kingdom.

## Epidemiology: importation status

In 2014, 17 countries provided data for 11 941 cases (33.8%) on whether a case was considered to have been 'imported' from outside the reporting country or acquired in the country itself. Of those cases only 1 310 (11.0%) were reported as being imported.

## Discussion

The number of newly diagnosed hepatitis C cases reported from countries across Europe remains at a high level and there is considerable variation in the number and rates of cases between the countries. This is consistent with evidence from sero-prevalence surveys indicating a substantial burden across Europe with 5.4 million persons estimated to be chronically infected with hepatitis C in the EU/EEA and 0.4% to 5.6% of the population having HCV antibodies [1, 2]. Recent WHO estimates suggest that there are 84 000 deaths each year from HCV-related liver cancer and cirrhosis in the WHO European Region [3]. Deaths from viral hepatitis now exceed those from tuberculosis and HIV.

Although the number of reporting countries has increased in recent years, data analysis and interpretation remain challenging on account of the incompleteness of data and heterogeneity in national surveillance practices. The number of countries using the EU case definition has fallen, which reduces the comparability of data across countries. Countries still have difficulty defining cases as acute or chronic and the majority of cases reported are classified 'unknown'. It is likely that most of these 'unknown' cases are chronic infections as acute hepatitis C is difficult to diagnose. The variation in reported cases between countries is likely to be related to differences in local testing practices because hepatitis C is mostly asymptomatic, so most newly diagnosed cases are probably identified through local screening initiatives. Indeed, many northern European countries, which have extensive testing programmes targeting populations at risk, report the highest notification rates in the EU/EEA, but are also known from serosurveys to have low-prevalence estimates [1, 4]. By comparison, the countries in the east and south-east of Europe have the lowest reported rates of cases, but the highest prevalence estimates. This discrepancy highlights the challenge of interpreting hepatitis C surveillance data and the importance of considering the data alongside other sources of information such as local testing practices and seroprevalence estimates.

The data indicate that hepatitis C is an infection which predominantly affects young men. This is consistent with the demographic profile of injecting drug use, the main route of transmission across all disease categories and most countries, and emphasises the ongoing need for comprehensive harm reduction measures targeted at this population at risk. Among acute cases, other reported routes of transmission included nosocomial transmission, transmission among men who have sex with men, and heterosexual transmission. Reports of a rise in hepatitis C infections among HIV-positive men who have sex with men in several European countries dating back to 2000 resulted in many countries scaling up targeted prevention and control responses [5]. The recent decline in the number of reported cases attributed to transmission among men who have sex with men may reflect the impact of this response, although the incompleteness of the reported data hamper any firm conclusions that may be drawn. Nosocomial transmission remains an uncommon route of transmission 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 control systems within healthcare.

## Public health conclusions

Hepatitis C is an important public health issue across Europe, with a high burden of infection and associated morbidity and mortality. With rapidly evolving developments in the therapeutic field, it is essential that countries have access to robust epidemiological information to plan effective prevention and control programmes. The surveillance data do not provide a clear epidemiological picture and should be carefully examined 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 currently reviewing which alternative epidemiological methods may be required to support Member States in their efforts to tackle the public health challenges posed by this infection. Despite the limitations of routine surveillance for hepatitis C, the data clearly indicate that a high proportion of the reported cases are attributed to injecting drug use, highlighting the importance of targeted harm reduction measures. Ongoing nosocomial transmission and transmission among men who have sex with men in the region indicate that Member States should have targeted and comprehensive public health programmes tailored to the local epidemiology.

## References

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3. WHO Regional Office for Europe. Hepatitis C in the WHO European Region – fact sheet. Copenhagen: WHO Europe; 2015. Available from: [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0010/283357/fact-sheet-en-hep-c.pdf](http://www.euro.who.int/__data/assets/pdf_file/0010/283357/fact-sheet-en-hep-c.pdf)

4. Duffell EF, van de Laar MJ. Survey of surveillance systems and select prevention activities for hepatitis B and C, European Union/European Economic Area, 2009. *Euro Surveill.* 2015;20(13): 21080.

5. Yaphe S, Bozinoff N, Kyle R, Shivkumar S, Pai N P, Klein M. Incidence of acute hepatitis C virus infection among men who have sex with men with and without HIV infection: a systematic review. *Sex Transm Infect* 2012;88:7 558-564

### Additional information

[ECDC Surveillance Atlas of Infectious Diseases](#)

European Centre for Disease Prevention and Control. Hepatitis C surveillance in Europe – 2013. Stockholm: ECDC; 2015.

Duffell EF, van de Laar MJ, Amato-Gauci AJ. Enhanced surveillance of hepatitis C in the EU, 2006–2012. *J Viral Hepat.* 2015 Jul;22(7):590-5.

### Annex

#### Table. Hepatitis C, surveillance systems overview, 2014

[Download Excel version](#)

A small thumbnail image of an Excel spreadsheet. The spreadsheet has a grid with multiple columns and rows. The top row is highlighted in green. The text is too small to read, but it appears to be a table with several columns and many rows of data.

\* The European Surveillance System (TESSy) is a system for the collection, analysis and dissemination of data on communicable diseases. EU Member States and EEA countries contribute to the system by uploading their infectious disease surveillance data at regular intervals.