

SURVEILLANCE REPORT

Hepatitis C surveillance in Europe

2013

Hepatitis C virus infection

Key facts

- In 2013, 31 513 cases of hepatitis C were reported in 26 EU/ EEA Member States, a crude rate of 9.6 per 100 000 population.
- Of cases reported in 2013, 569 (1.8%) were reported as 'acute', 4 776 (15.2%) as 'chronic', 23 230 (73.7%) as 'unknown' and 2 938 cases (9.3 %) were not classified due to incompatible data formats.
- The male-to-female ratio was 1.9 to 1. The most affected age group were those between 25 and 34 years of age (29.3 cases per 100 000 in males, 15.1 cases per 100 000 in females).
- The most common route of transmission reported across all disease categories was injecting drug use, which accounted for 80.7% of all cases with complete information. Nosocomial transmission is an uncommon route of transmission in most countries, but remains a commonly reported transmission route in a small number of countries.
- The interpretation of hepatitis C data across countries is hampered by differences in surveillance systems and difficulties in defining the cases as acute or chronic. In addition, surveillance of hepatitis C, which is largely asymptomatic until a late stage, is challenging, with reported notifications reflecting testing practices rather than true occurrence of disease.

Methods

This summary includes data on newly diagnosed cases of hepatitis C reported to ECDC by EU/EEA countries for 2013. Countries were requested to follow the 2012 EU hepatitis C case definition for reporting at the European level¹ (see text box next page), but data were still accepted if other case definitions were used.

¹ 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

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2012 EU case definition for hepatitis C

Clinical criteria: not relevant for surveillance purposes

Laboratory criteria: At least one of the following three:

- Detection of hepatitis C virus nucleic acid (HCV RNA)
- Detection of hepatitis C virus specific antigen (HCV core)
- Hepatitis C virus specific antibody (anti-HCV) response confirmed by a confirmatory (e.g. immunoblot) antibody test in persons older than 18 months without evidence of resolved infection

Epidemiological criteria: Not relevant for surveillance purposes

Case classification:

Possible case – N/A

Probable case – N/A

Confirmed case – Any person meeting the laboratory criteria

Note: The following combination of laboratory tests shall not be included or reported:

Resolved infection: Detection of hepatitis C virus antibody and no detection of hepatitis C virus nucleic acid (HCV RNA negative result) or hepatitis C virus core antigen (HCV-core negative result) in serum/plasma.

Acute and chronic hepatitis C infections were distinguished using the following 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) <i>or</i> Detection of hepatitis C virus nucleic acid (HCV RNA) or hepatitis C virus core antigen (HCV-core) in serum/plasma <i>and</i> 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.*

Data are collected annually in a case-based format, but if case-based data are not available, aggregate format is accepted. Surveillance systems across the EU/EEA countries are heterogeneous (Annex).

Fourteen countries were able to provide national data for 2013 in accordance with the current EU case definition (EU 2012), seven countries used the previous EU case definition (EU 2008), and five countries provided data as specified by their national case definitions. The EU 2012 case definition is similar to the one from 2008 but adds a diagnostic criterion (detection of hepatitis C virus core antigen). Both case definitions capture all laboratory-diagnosed cases of hepatitis C, irrespective of stage. In a small number of countries, the case definitions changed between 2006 and 2012, as countries adapted to the new case definition.

Seventeen countries were able to classify cases as 'acute' or 'chronic'. A few countries use non-EU case definitions, and submitted cases classified as 'unknown' or 'probable'. France and Liechtenstein do not provide any hepatitis C data. All reported cases were included in the analysis, regardless of which case definition was used to classify the cases.

Before analysis, data were validated with appointed data providers in Member States. For countries with comprehensive surveillance systems covering the entire population, annual notification rates were calculated per 100 000 population, based on the denominator data published by Eurostat².

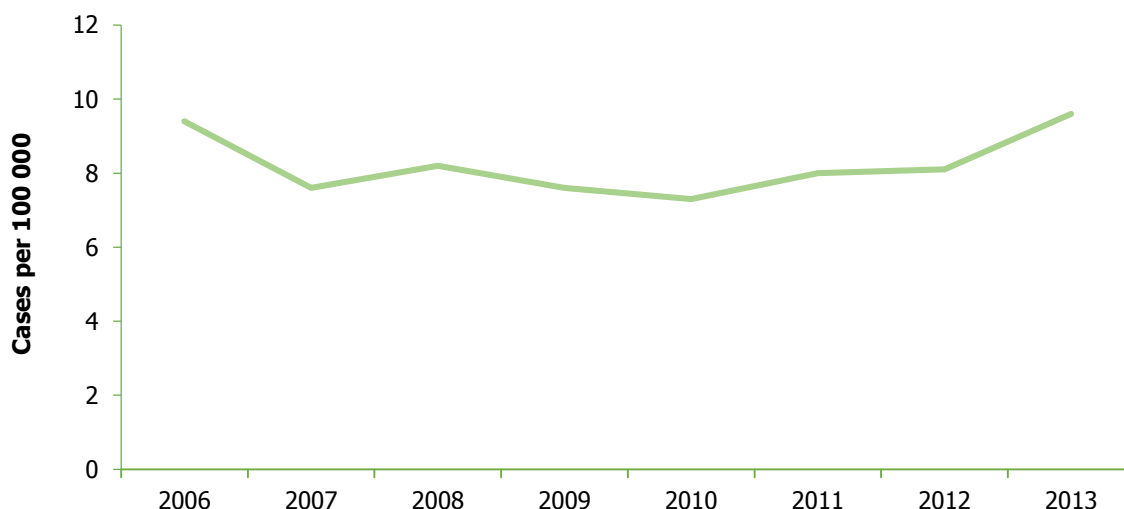
Epidemiology

In 2013, 31 513 cases of hepatitis C virus (HCV) infection were reported in 26 EU and EEA Member States (no national data from Belgium, France, Italy, Liechtenstein and Spain) with a crude rate of 9.6 per 100 000 population (Annex 1). Of these cases, 569 (1.8%) were reported as 'acute', 4 776 (15.2%) as 'chronic', 23 230 (73.7%) as 'unknown', and 2 938 cases (9.3%) were not classified by disease status due to an incompatible data format.

² Eurostat database. Available from: <http://epp.eurostat.ec.europa.eu>

In 2013, the number of cases reported ranged from 14 in Malta (3.3 cases per 100 000) to 13 757 (21.5 cases per 100 000) in the United Kingdom. Between 2006 and 2013, the overall number of reported cases increased by 18.9%, but the overall rate per 100 000 population fluctuated very little over these eight years (Figure 1).

Figure 1. Rate of reported hepatitis C cases per 100 000 population in EU/EEA countries, by year, 2006–2013

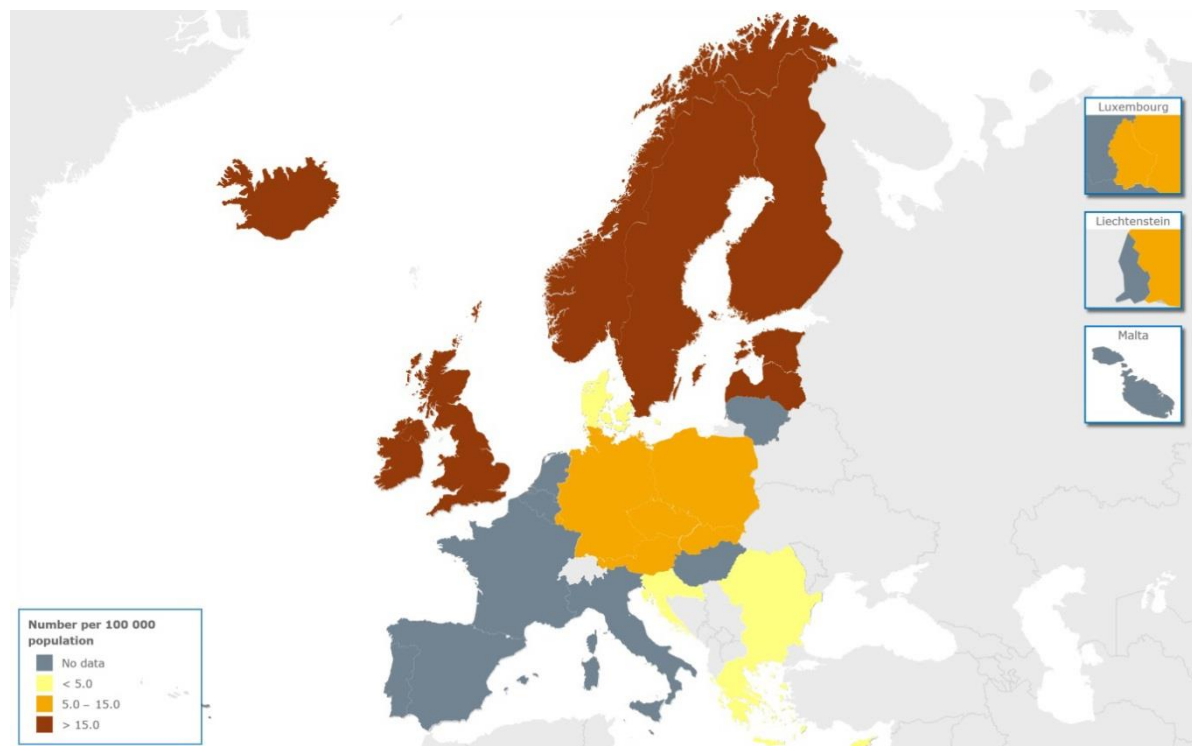


Note: All cases are included: cases (acute, chronic, unknown)

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.

Figure 2 shows the notification rate of hepatitis C cases in EU/EEA countries. Countries were included if their surveillance system was known to capture data on both acute and chronic cases, even if most of the cases were classified as 'unknown'. Despite the limitations of this approach, it helps to visualise the higher rates of reporting of cases in central and north European countries and the lower rates in south-east European countries.

Figure 2. Rate of reported hepatitis C cases per 100 000 population in 22 EU/EEA countries, 2013



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

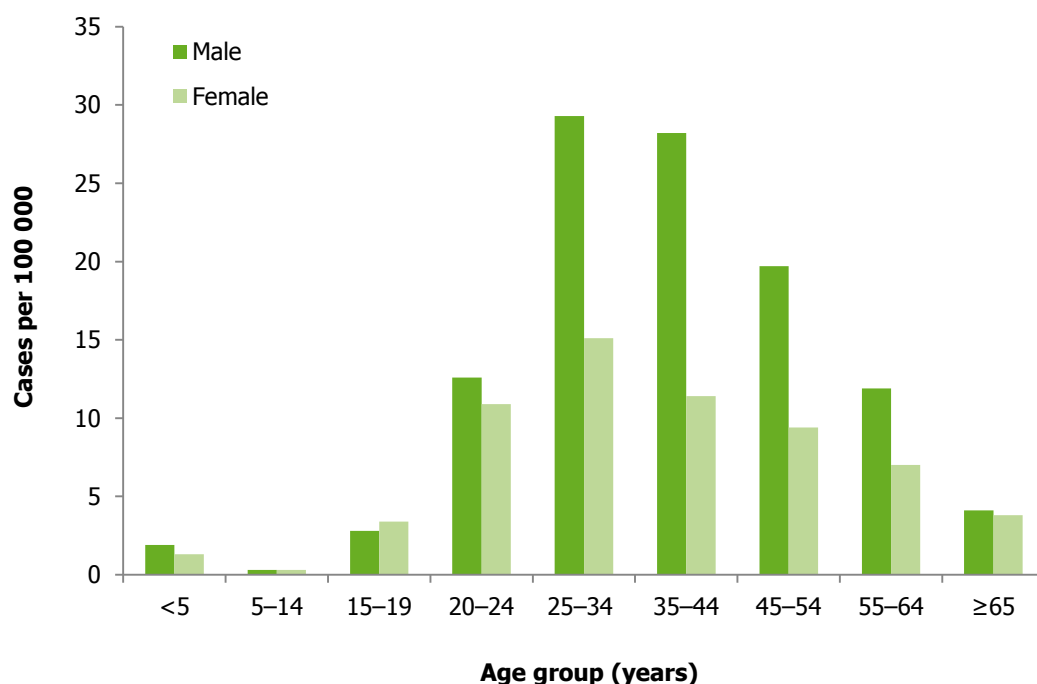
Hepatitis C is more commonly reported among men than women, with a rate ratio of 1.9 to 1. Just over half (53.5%) of all hepatitis C cases reported in 2013 were aged between 25 and 44 years, and 8.6% of cases were under 25 years of

age (Figure 3). The notification rate for both males and females was highest in the 25 to 34 age group (29.3 cases per 100 000 in males and 15.1 in females).

Data regarding the most likely mode of transmission of hepatitis C were complete for 8 226 (25.3%) cases in 2013. Overall, the most commonly reported route of transmission was injecting drug use, accounting for 80.7% of all cases with a known transmission route in 2013. The percentage of injecting drug use among cases with a known transmission route was lower among acute cases (39.3%) than among those classified as chronic (77.6%) or 'unknown' (85.5%). Among acute cases, main routes of transmission included nosocomial transmission (23.5%) and transmission among men who have sex with men (14.0%). Among cases attributed to nosocomial transmission, 82.1% were reported by just four countries (Italy, Latvia, Romania and Slovakia).

In 2013, 19 countries provided data for a total of 12 470 cases (38.4%) on whether a case was considered to have been 'imported' from outside the reporting country or acquired in the country itself. Of those cases, 1 097 (8.8%) were eventually reported as being imported.

Figure 3. Rate of all reported hepatitis C cases per 100 000 by age group and gender, EU/EEA countries, 2013



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

Discussion

The reported data indicate a large number of hepatitis C cases reported from countries across Europe. Variation in case numbers between countries is substantial. The majority of reported cases are classified either as 'chronic' or 'unknown'. As acute hepatitis C is difficult to diagnose, both clinically and serologically, it is likely that most of these 'unknown' cases are indeed chronic infections, an assumption supported by the fact that countries which are able to classify cases as 'acute' or 'chronic' report considerably more chronic than acute cases. Data analysis and interpretation is hampered by the incompleteness of data (e.g. insufficient information on disease status) and the heterogeneity of national surveillance systems and reporting practices (e.g. some countries report only data on acute cases).

As hepatitis C is a largely asymptomatic disease, most cases are identified through screening initiatives which target at-risk populations. This explains why routine surveillance data are heavily influenced by local testing practices. Countries with extensive testing programmes targeting at-risk groups for hepatitis C – for example the UK and several other northern European countries – therefore report the highest notification rates, while the lowest rates are reported from countries in the south of Europe. Interestingly, this is exactly the opposite of what is reported in prevalence surveys [1,2], where the lowest rates are reported from northern Europe. The data also show that hepatitis C is an infection which predominantly affects young adult males, which is consistent with the demographic profile of the identified key risk groups.

Injecting drug use was reported as the main route of transmission across all disease categories and across most countries. This emphasises the ongoing need for comprehensive harm reduction measures targeted at people who inject drugs.

Although data are incomplete, it appears that transmission routes differ substantially between countries: while the majority of European countries report that nosocomial transmission is an uncommon route of transmission, a small number of countries report it as 'common', which highlights the need for robust infection control practices in healthcare facilities.

Conclusions

Hepatitis C surveillance data do not provide a clear epidemiological picture and need to be carefully examined in the light of local screening practices, population denominator testing data, and available information on seroprevalence. ECDC is reviewing which methods are best for providing robust epidemiological data on hepatitis C in order to support Member States in their efforts to tackle the public health challenges posed by this infection. Despite the limitations of the data, the data clearly indicate a significant burden of infection, with many cases attributed to injecting drug use. This emphasises the importance of strong public health programmes and targeted harm reduction measures.

References

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2. Hahne S, Veldhuijzen IK, Wiessing L, Lim T-A, Salminen M, Van de Laar M. Infection with hepatitis B and C virus in Europe: a systematic review of prevalence and cost-effectiveness of screening. *BMC Infectious Diseases* 2013; 13: 181.

Annex

Table A-1. Numbers and rates of reported hepatitis C cases in EU and EEA countries, 2010–2013[†]

Country	2013*								2012*		2011*		2010*	
	Total		Acute		Chronic		Unknown		Total		Total		Total	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Austria	969	11.5	19	0.2	561	6.6	389	4.6	1054	12.5	1091	13	861	10.3
Belgium														
Bulgaria	95	1.3							92	1.3	60	0.8	58	0.8
Croatia	202	4.8							171	4.1				
Cyprus	36	4.2					36	4.2	48	5.6	57	6.8	26	3.2
Czech Republic	873	8.3	134	1.3	739	7			794	7.6	812	7.7	709	6.8
Denmark	231	4.1	11	0.2	218	3.9	2	<0.1	261	4.7	293	5.3	318	5.7
Estonia	257	19.5	28	2.1	229	17.3			245	18.5	210	15.8	276	20.7
Finland	1172	21.6					1172	21.6	1165	21.6	1135	21.1	1138	21.3
France														
Germany	5085	6.2					5085	6.2	4948	6.1	5076	6.2	5279	6.5
Greece	22	0.2	4	<0.1	18	0.2			43	0.4	18	0.2	11	0.1
Hungary	46	0.5	46	0.5					38	0.4	43	0.4	11	0.1
Ireland	775	16.9	17	0.4	61	1.3	697	15.2	1025	22.4	1254	27.4	1240	27.3
Italy									120	0.2	234	0.4	236	0.4
Latvia	1269	62.7	53	2.6	1216	60.1			1544	75.5	1353	65.2	1156	54.5
Lithuania	59	2	59	2					40	1.3	43	1.4	41	1.3
Luxembourg	68	12.7			68	12.7			53	10.1	74	14.5	73	14.5
Malta	14	3.3			4	0.9	10	2.4	24	5.7	18	4.3	14	3.4
Netherlands	65	0.4	65	0.4					57	0.3	68	0.4	31	0.2
Poland	2641	6.9							2265	5.9	2241	5.8	2179	5.7
Portugal	21	0.2	4	<0.1			17	0.2	42	0.4	45	0.4	39	0.4
Romania	127	0.6	106	0.5	21	0.1			6	<0.1	80	0.4	76	0.4
Slovakia	297	5.5	14	0.3	283	5.2			229	4.2	304	5.6	237	4.4
Slovenia	89	4.3	9	0.4	80	3.9			102	5	95	4.6	87	4.3
Spain														
Sweden	1953	20.4					1953	20.4	1984	20.9	2149	22.8	1935	20.7
United Kingdom	13757	21.5			1278	2	12479	19.5	13474	21.2	12138	19.4	9951	16
EU total	30123	9.3	569	0.5	4776	3.5	21840	11.4	29824	7.8	28891	7.7	25982	6.9
Iceland	72	22.4					72	22.4	51	16	72	22.6	59	18.6
Liechtenstein														
Norway	1318	26.1					1318	26.1	1513	30.3	1675	34	1783	36.7
EU/EEA total	31513	9.6	569	0.5	4776	3.5	23230	11.8	31388	8.1	30638	8	27824	7.3

Source: Country reports and Eurostat data for all population data

[†] Due to the significant differences in surveillance systems between countries and over time, comparisons between individual Member States and over time should be made with caution.

* Data defined by year according to date included in 'date of diagnosis' variable. Note that case numbers might differ from those reported in national bulletins due to use of different date variable.

Table A-2. Hepatitis C surveillance data source, type of surveillance data and surveillance period, EU/EEA

Country	Data source	Type *	Enhanced data	Period of data reported	Case definition(s) used	Data provided in 2013
Austria	AT-Epidemiegesetz	C	Yes (all years)	2006–2013	EU 2008	Acute and chronic, differentiated
Belgium	BE-FLA_FRA	A	No	2006–2009	National	No data
Bulgaria	BG-national_surveillance	A	No	2007–2011	EU 2002	Acute and chronic, undifferentiated
	BG-national_surveillance	A	No	2011–2013	EU 2008	Acute and chronic, undifferentiated
Croatia	HR-CNIPH	A	No	2012–2013	EU 2012	Acute and chronic, undifferentiated
Cyprus	CY-NOTIFIED_DISEASES	C	No	2007–2013	EU 2008	Acute and chronic, undifferentiated
Czech Republic	CZ-EPIDAT	C	Yes	2007–2013	EU 2008	Acute and chronic, differentiated
Denmark	DK-MIS	C	Yes	2006–2013	National	Acute and chronic, differentiated
Estonia	EE-NAKIS	C	Yes	2013	EU 2012	Acute and chronic, differentiated
	EE-HCV/CHLAMYDIA**	C	Yes	2007–2013	EU 2012	Acute and chronic, differentiated
	EE-HEP_CHRONIC	A	No	2006–2009	EU 2012	-
	EE-HCV/CHLAMYDIA	A	No	2006	EU 2012	-
Finland	FI-NIDR	C	Yes	2006–2013	EU 2012	Acute and chronic, undifferentiated
France	-	-	No	-	-	No data
Germany	DE-SURVNET@RKI-7.1/6	C	Yes	2006–2013	National	Acute and chronic, undifferentiated
Greece	GR-NOTIFIABLE_DISEASES	C	Yes	2006–2013	EU 2008	Acute and chronic, differentiated
Hungary	HU-EFRIR	C	Yes	2006–2013	EU 2012	Acute only
Iceland	IS-subject_to_registration	C	Yes (2010–2012)	2007–2013	EU 2012	Acute and chronic, undifferentiated
Ireland	IE-CIDR	C	Yes	2006–2013	EU 2012	Acute and chronic, differentiated
Italy	IT-SEIEVA***	C	Yes	2006–2013	EU 2012	Acute only
	IT-NRS	C	No	2007–2012	National	No data
Latvia	LV-BSN	C	Yes	2006–2013	EU 2012	Acute and chronic, differentiated
Liechtenstein	-	-	No	-	-	No data
Lithuania	LT-communicable_diseases	A	No	2006–2009	EU 2012	-
	LT-communicable_diseases	C	Yes	2010–2013	EU 2012	Acute only
Luxembourg	LU-SYSTEM1	C	No	2007–2013	National	Acute and chronic, differentiated
Malta	MT-DISEASE_SURVEILLANCE	C	Yes (2009–2012)	2007–2013	EU 2008 (2007–2008)	Acute and chronic, differentiated
					EU 2012 (2009–2013)	Acute and chronic, differentiated
Netherlands	NL-OSIRIS	C	Yes (2010–2012)	2007–2013	EU 2008	Acute only
Norway	NO-MSIS_A	C	Yes	2006–2013	EU 2012	Acute and chronic, undifferentiated
Poland	PL-NATIONAL_SURVEILLANCE	A	No	2006–2013	EU 2008	Acute and chronic, undifferentiated

Country	Data source	Type *	Enhanced data	Period of data reported	Case definition(s) used	Data provided in 2013
Portugal	PT-HEPATITISC	C	Yes (2010–2012)	2007–2013	National	Acute only
Romania	RO-RNSSy	C	Yes	2006–2013	National	Acute and chronic, differentiated
Slovakia	SK-EPIS	C	Yes	2006–2013	EU 2012	Acute and chronic, differentiated
Slovenia	SI-SURVIVAL	C	Yes	2006–2013	National (2006–2007)	Acute and chronic, differentiated
					EU 2012 (2008–2013)	
Spain	ES-MICROBIOLOGICAL	C	No	2007–2008	EU 2008	No data
Sweden	SE-SMINET	C	Yes	2006–2013	EU 2012	Acute and chronic, undifferentiated
United Kingdom	UK-HEPATITISC	C	Yes	2006–2013	EU 2012	Acute and chronic, differentiated

* Legend: type: aggregated (A); case-based (C)

** Acute data only: 2007–2009. Acute and chronic data: 2010–2013

*** IT-SEIEVA data source used for epidemiological variables only.

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