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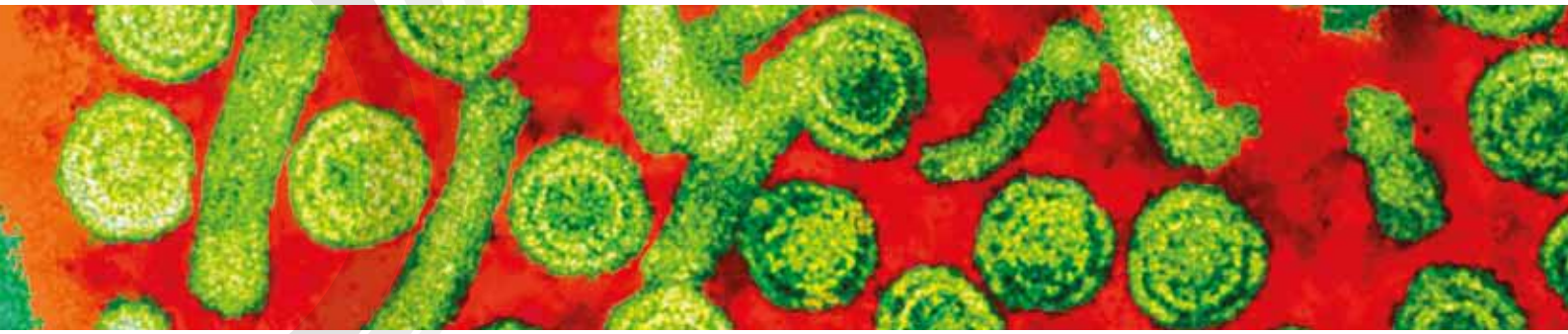
SURVEILLANCE REPORT



Hepatitis B and C surveillance in Europe

2012

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This report of the European Centre for Disease Prevention and Control (ECDC) was produced by Erika Duffell and Andrew J Amato-Gauci.

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Erratum:
The following changes were made to Figure 1 on 23 September 2014.
- Cyprus, Italy and Luxembourg were added to the list of countries in the notes of Figure 1 to reflect their inclusion on the map.
- The top value of the legend was corrected to 1.5–4.4.

The following changes was made on 2 October 2014: The omission of Croatia was corrected in Table A3.
On 30 October 2014, Table A6 was corrected. The rows were not properly aligned to the correct countries in the previous version.

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Abbreviations

EEA	European Economic Area
EU	European Union
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
MSM	Men who have sex with men
TESSy	The European Surveillance System

Summary

Summary

This is the second report from the European Centre for Disease Prevention and Control (ECDC) on the enhanced surveillance of hepatitis B and C viral infections. It aims to describe basic epidemiological features and trends of both diseases across countries in the European Union and European Economic Area (EU/EEA) for 2012. The data collected, using the updated EU 2012 case definition for hepatitis B and C[1], include both acute and chronic infections. The previous EU case definitions for hepatitis B defined only acute cases, and as a consequence some countries still only collect acute viral hepatitis case data on a national level.

In 2012, 17 329 cases of hepatitis B were reported in 29 EU/EEA Member States, resulting in an overall crude rate of 3.5 per 100 000 population. Of these cases, 2 798 (16.1%) were reported as acute, 12 306 (71.0%) as chronic and 1 865 (10.8%) as unknown, and 360 cases (2.1%) could not be classified as data were provided in an incompatible format. The rates of reported acute infections were considerably lower than those for chronic infections and varied between countries. The overall rates of reported acute cases continue to decline, which has been observed in several European countries and attributed to the widespread implementation of vaccination programmes. For chronic cases, there has been an on-going increase in the overall numbers and rates of reported cases over time, which probably reflects increased testing. Rates of reported chronic cases showed great variation between countries and these differences are likely to be related to differential levels of screening and diagnostic testing, as well as differences in migration patterns. Hepatitis B was more commonly reported among men than women, with an overall rate of 4.2 cases per 100 000 for men and 2.8 for women. The most affected age group were those between 25 and 34 years old, accounting for 33.3% of cases.

The reported modes of transmission differed between acute and chronic hepatitis B cases. For acute infection, heterosexual transmission and nosocomial transmission were the most commonly reported routes of transmission. For chronic infections, mother-to-child transmission continues to be the most common reported transmission route and this is probably related to a high proportion of imported cases. Although the data provided for variables relating to migration are incomplete, data from countries with relatively good reporting indicate that many of the chronic cases are classified as imported and infection was acquired through mother-to-child transmission.

Hepatitis C is reported to cause a greater disease burden in terms of numbers of reported cases than hepatitis B. In 2012, 30 607 cases of hepatitis C were reported in 27 EU/EEA Member States, representing an overall notification rate of 7.8 cases per 100 000 population. Of these cases, 509 (1.7%) were reported as acute, 3 905 (12.8%) as chronic and 23 712 (77.5%) as unknown, and 2 481 cases (8.1%) could not be classified due to the format of the data provided. Although five countries were only able to report acute cases, the majority of all reported cases were classified as chronic or unknown. In countries able to report acute and chronic cases, most of these unknown cases are likely to be chronic cases, as acute cases are difficult to diagnose clinically or serologically. There is variation between countries in the rates of reported infections, especially for chronic cases and this variation is most likely to be related to differences in local testing practices.

Hepatitis C is also more commonly reported among men than women, with an overall rate ratio of 2:1. Just over half (54.0%) of all hepatitis C cases reported were aged between 25 and 44 years, and 9.5% of cases were aged under 25 years. The notification rate was highest for both males and females in the 25 to 34 age group, at 22.3 per 100 000 in males and 13.3 per 100 00 in females.

Injecting drug use was the most commonly reported route of transmission accounting for 76.7% of all hepatitis C cases with complete information. There has been a continued rise in the proportion of acute cases among men who have sex with men (MSM), from 0.8% in 2006 to 14.6% in 2012.

Data provided on the outcome of these infections were incomplete but available information from the published literature suggests that the disease-related burden of cirrhosis and hepatocellular carcinoma is considerable, and associated with high levels of mortality across the EU. Further work to collate available information on hepatitis-associated morbidity and mortality at the European level would help augment the notification data.

Data completeness varied considerably across variables and countries, and a small proportion of countries were not able to provide data as defined by the new EU 2012 case definitions. Heterogeneity in surveillance systems and reporting practices in EU/EEA Member States remain a problem, and findings in both hepatitis B and C must be interpreted with caution.

The enhanced surveillance of hepatitis B and C has highlighted a significant burden of disease across Europe and differences in their distribution across countries. Enhanced surveillance of hepatitis B and C in Europe is important to provide information to help monitor the distribution of these diseases and evaluate the public health response to control the transmission of infections. To achieve this goal, further work is necessary to improve the quality of the surveillance data and to understand further the differences between countries, and the discrepancy between surveillance and sero-prevalence surveys.

1 Decision No 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.

1. Introduction

1. Introduction

Enhanced surveillance of hepatitis B and C across Europe is coordinated by ECDC and was started in 2011 with the collection of data dating back to 2006. The Centre strives to attain a high quality of standardised surveillance data from the 31 countries of the European Union (EU) and the European Economic Area (EEA). Surveillance at the EU level is facilitated by the European Surveillance System (TESSy), a web-based platform designed to provide Member States with a single entry point for data submission and retrieval for the communicable diseases under EU surveillance. Member States are legally obliged to submit data, if available and relevant, as stipulated by Decision 1082/2013/EU of the European Parliament and of the Council.

The collection of data through TESSy helps tackle the heterogeneity in surveillance systems across Member States by making surveillance data as comparable as possible. This standardisation is especially important for the surveillance of hepatitis B and C as a previous survey undertaken by ECDC highlighted differences between countries in terms of what data are collected and how this is undertaken [1]. A previous review of the published literature also found variation across countries in case definitions as well as difficulties in distinguishing between acute and chronic infections for both hepatitis B virus (HBV) and hepatitis C virus (HCV) [2].

Enhanced surveillance of hepatitis B and C aims to improve the epidemiological understanding of these infections. National reporting to the EU level is based on EU case definitions revised in 2012 (see Annex 1). For hepatitis B, this case definition relies on laboratory criteria only, and now includes both acute and chronic cases. For hepatitis C, the case definition is also based on laboratory criteria including the new serological test for hepatitis C antigen (HCV core) and excludes resolved cases. The revised case definitions were developed to provide greater flexibility and sensitivity in capturing cases. Differentiation between acute and chronic infections is important in gaining a fuller understanding of the epidemiology and has been implemented through the 'StageHEP' variable (see Annex 2).

This ECDC surveillance report on hepatitis B and C focuses on 2012 data and aims to describe basic epidemiological features and trends of these two diseases. The data are presented in two disease-specific chapters.

2. Data collection, validation and presentation

2. Data collection, validation and presentation

In the EU/EEA countries, nominated national operational contact points for hepatitis B and C surveillance collect the relevant data at national level and upload them to TESSy. A set of automated validation rules verifies the data during upload to TESSy to improve data quality. Two types of data can be submitted for both hepatitis B and C: case-based and aggregated data. ECDC encourages the receipt of case-based reports for each disease, but aggregated data will also be accepted until all Member States are in a position to comply with the EU standard of case-based reporting.

The hepatitis B and C datasets consist of common variables applicable to all diseases and enhanced variables specific to hepatitis B and C. The two enhanced datasets differ slightly from each other, with 32 variables recommended for the reporting of hepatitis B and 30 variables for hepatitis C (Annex 3).

2.1. Implementation of EU case definitions

Countries are formally requested to follow the new EU case definitions for hepatitis B and C for reporting to the European level[2]. These case definitions are provided in Annex 1.

It is recognised, however, that the case definitions for hepatitis B and C as currently applied in a number of countries when reporting to the European level differ from these EU case definitions. Data reported under different case definitions will still be accepted in the system until countries are in a position to conform to the new EU case definitions. It is requested that all case definitions used by countries are specified in the data source properties when uploading data into TESSy.

2.2. Data collection

The data collection organised in 2013 was the third time enhanced hepatitis B and C surveillance data were reported by Member States to ECDC. The deadline for uploading 2012 data was 15 September 2013. The data presented in this report were retrieved from the database on 5 November 2013.

To specify the national surveillance system from which the reported data originate, the compulsory variable 'data source' is included. The source of data is described in each disease-specific chapter and provides an overview of the heterogeneity in reporting systems across countries.

2.3. Quality and completeness of reporting

Liechtenstein did not provide any data on hepatitis B and C and has been omitted from all tables presenting data by country. France was unable to provide any data on hepatitis C and has been omitted from all the tables presenting hepatitis C data.

Case classification (confirmed/other)

A few countries have submitted cases with 'unknown' or probable case classification. The revised EU case definitions do not include the classification of cases as probable. In the enhanced data collection, only confirmed cases or cases classified as unknown were accepted. However, some countries uploaded data using previous case definitions which included probable cases. All cases were included in the analyses.

Case-based and aggregate reports

Countries have been requested to provide data in case-based format, where possible, although aggregate data were also accepted, if case-based data were not available. Data completeness is affected by the choice of data format, as only limited information is provided in the aggregate format (gender, age). The proportion of cases in case-based format differs between the two diseases and over time (Table 1). In 2006, five countries uploaded data for hepatitis B using the aggregate format, but in 2012, all but two countries uploaded case-based data. For hepatitis C, five countries used the aggregate format in 2006, but only three used this format in 2012. As a new EU country, Croatia provided data for the first time in 2012 and they were in aggregate format.

2 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 (notified under document C(2012) 5538) Text with EEA relevance).

Table 1: Number of cases reported for hepatitis B and C and the percentage of case-based data in 2006–2012, 2006 and 2012

	2006–2012		2006			2012		
	Total number of cases	Case-based (% total)	Total number of cases	Case-based (% total)	Number of countries reporting	Total number of cases	Case-based (% total)	Number of countries reporting
Hepatitis B	110 018	96.3%	12 642	85.4%	20	17 329	98.2%	29
Hepatitis C	206 333	90.5%	27 354	85.2%	19	30 607	91.9 %	27

Completeness of data

The completeness of reporting is an important attribute for both the quality and the interpretation of the data. In Annex 4, the completeness of data reporting is presented for the total database, for 2006–2012 and for 2006 and 2012 separately. This table shows the completeness by variable with the number of countries reporting and the minimum and maximum values for country-specific completeness.

For both diseases, there was a general increase in the number of countries reporting across most variables from 2006 to 2012. In 2012, the overall completeness of reporting for both diseases was highest for the 'age' and 'gender' variables at over 98%. In 2012, the completeness of the 'StageHEP' variable, which defines the disease status, was 90.5% for hepatitis B and 16.1% for hepatitis C. Although the completeness of this variable has improved, this was greater for hepatitis B than for hepatitis C. For hepatitis C, the minimum reporting completeness for a country increased from 0.3% in 2006 to 8.6% in 2012.

'HIV status', 'complications', 'sex worker' and 'genotype' had the lowest overall completeness across the period for both infections. In 2012 the variables with the lowest completeness were 'genotype' for hepatitis B at 0.3% and 'sex worker' for hepatitis C at 1.4%. In 2012, only three countries provided genotype information for hepatitis B, and only six countries did so for hepatitis C.

2.4. Data analysis

An analysis of the 'Data source' variable and completeness of data provides an overview by country of the origin and availability of data. This information is needed to help interpret the actual data reported. Several countries made changes to their surveillance systems during the reporting period which should be taken into account. In some cases, historical data were not included as they would not have been comparable with the subsequent enhanced data.

Hepatitis B and C data are presented by 'Date of Diagnosis' and, if not available, by 'Date used for Statistics'. When comparing the different dates across the database, there were only minor differences between them in a few countries.

Annual rates are calculated per 100 000 population for countries that have comprehensive surveillance systems. Country population denominators used to calculate rates are based on data from the Eurostat database (http://epp.eurostat.ec.europa.eu).

For hepatitis B infections in the UK, population data from the Office for National Statistics (ONS) were used in order to exclude the country of Scotland which was unable to provide any hepatitis B data. Mid-2008 adjusted ONS population estimates were used across all years for the calculation of rates.

For aggregate reporting, the age groups requested were: ‹ 15, 15–19, 20–24, 25–34, 35–44, 45–54, 55–64 and ≥65 years. If data on age were unavailable or provided in an incompatible format, the specific country was excluded from age-specific analyses.

Italy reported 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 for breakdown of the data by age and gender. The other data source in Italy is a sentinel system covering an estimated 76% of the population and includes epidemiological data on a range of variables. The sampled population in this sentinel data source is considered representative of the wider population, and after scaling the data up from 76% to 100%, this source was used for epidemiological analyses including the route of transmission, vaccination status and outcome of infection.

3. Hepatitis B

Table 2: Hepatitis B: data source, type of surveillance data and the surveillance period

Country	Data source	Type[a]	Enhanced data	Period	Case definition(s) used
Austria	AT-Epidemiegesetz	C	Yes	2006–2012	EU 2008
Belgium	BE-FLA_FRA	A	No	2006–2009	National
Bulgaria	BG-NATIONAL_SURVEILLANCE BG-MOH	A A	No No	2007–2012 2006	EU 2002 EU 2002
Croatia	HR-CNIPH	A	No	2012	EU 2012
Cyprus	CY-NOTIFIED_DISEASES	C	No	2007–2012	EU 2008
Czech Republic	CZ-EPIDAT	C	Yes	2007–2012	EU 2012
Denmark	DK-MIS	C	Yes	2006–2012	National
Estonia	EE-HBV/GIARDIASIS[b] EE-HEP_CHRONIC EE-HBV/GIARDIASIS	C A A	Yes No No	2007–2012 2006–2009 2006	EU 2012 EU 2012 EU 2012
Finland	FI-NIDR	C	Yes	2006–2012	EU 2012
France	FR-MANDATORY_INFECTIOUS_DISEASES	C	Yes	2006–2012	EU 2012
Germany	DE-SURVNET@RKI-7.1/6	C	Yes (all years)	2006–2011	National
Greece	GR-NOTIFIABLE_DISEASES	C	Yes	2006–2012	EU 2008
Hungary	HU-EFRIR	C	Yes	2006–2012	EU 2012
Iceland	IS-SUBJECT_TO_REGISTRATION	C	Yes (2010–2012)	2007–2012	EU 2012
Ireland	IE-CIDR	C	Yes	2006–2012	EU 2012
Italy	IT-SEIEVA[c] T-NRS	C C	Yes No	2006–2012 2007–2012	EU 2012 National
Latvia	LV-BSN	C	Yes	2006–2012	EU 2012
Lithuania	LT-COMMUNICABLE_DISEASES LT-COMMUNICABLE_DISEASES	A C	No Yes	2006–2009 2010–2012	EU 2012 EU 2012
Luxembourg	LU-SYSTEM1	C	No	2007–2012	National
Malta	MT-DISEASE_SURVEILLANCE	C	Yes	2007–2012	EU 2012
Netherlands	NL-OSIRIS	C	Yes	2007–2012	EU 2012
Norway	NO-MSIS_A	C	Yes	2006–2012	EU 2012
Poland	PL-NATIONAL_SURVEILLANCE PL-NATIONAL_SURVEILLANCE	C A	Yes No	2010–2012 2006–2009	EU 2008 EU 2008
Portugal	PT-HEPATITISB	C	Yes (2010–2012)	2007–2012	National (2007–2009) EU 2012 (2010–2012)
Romania	RO-RNSSy	C	Yes	2006–2012	EU 2012
Slovakia	SK-EPIS	C	Yes	2006–2012	EU 2012
Slovenia	SI-SURVIVAL	C	Yes	2006–2012	National (2006–2007) EU 2012 (2008–2012)
Spain	ES-STATUTORY_DISEASES	C	No	2007–2012	EU 2008
Sweden	SE-SMINET	C	Yes	2006–2012	EU 2012
United Kingdom	UK-HEPATITISB	C	Yes	2006–2012	EU 2012

[a] Legend: type: aggregated (A); case-based (C).
[b] Acute data only 2007–2009; acute and chronic data 2010-2012.
[c] IT-SEIEVA data source used for epidemiological variables only.

3. Hepatitis B

3.1. Key results

- In 2012, 17 329 cases of hepatitis B were reported in 29 EU/EEA Member States (no data from Belgium or Liechtenstein) resulting in an overall crude rate of 3.5 per 100 000 population. Of these cases, 2 798 (16.1%) were reported as acute, 12 306 (71.0%) as chronic and 1 865 (10.8%) as unknown.
- The rates of reported chronic infections were considerably higher than those for acute infections and showed large variations between countries.
- Hepatitis B was more often reported in men than women (male-to-female ratio: 1.5), with a rate of 4.2 cases per 100 000 for men and 2.8 for women. The most affected age group were those between 25 and 34 years old, accounting for 33.3% of cases with rates of 9.2 cases per 100 000 in males and 8.1 in females. Of these cases 15.8% were aged under 25 years.
- In 2012, data on transmission were complete for only 17.2% of all cases. Heterosexual transmission (31.2%), nosocomial transmission (20.6%), transmission among MSM (11.1%) and injecting drug use (8.7%) were most commonly reported for acute infections. Mother-to-child transmission was the most common route (67.0%) for chronic cases.
- Trends over time are difficult to interpret due to changes in reporting practices in several countries between 2006 and 2012. However, for acute cases, the data indicate a continued downward trend in rates over time which probably reflects the impact of the widespread implementation of national vaccination programmes. For chronic cases, there has been an increase in the number and rates of cases over time which is likely to be due to increased access and uptake of testing by risk groups.

3.2. Source of data

The data for 2012 include confirmed cases from 29 EU/EEA Member States. All countries providing data had national coverage with the exception of the United Kingdom which was unable to submit data for Scotland. Table 1 specifies the source of the data, the type of data (aggregate or case-based), the availability of enhanced data, the case definitions used and the surveillance period. This table shows the heterogeneity in surveillance systems between countries and within countries over time.

Most countries submitted case-based data. Of the six countries that submitted aggregate data over the course of the reporting period, three were able to submit case-based data for 2012 whereas Belgium was unable to submit any data for 2012. Over the reporting period, 27 countries were able to provide enhanced data, although several were only able to do so for the latter part of the reporting period.

Nineteen countries were able to provide national data in 2012 applying the current EU case definition (EU 2012[3]), four of these countries (France, Hungary, Lithuania and Portugal) submitted data on acute cases only. So did six countries using previous EU case definitions (EU 2008[4] and EU 2002[5]) and three countries (Germany, Italy and Luxembourg) using a national case definition. Denmark, that also applied a national case definition, reported acute and chronic cases. For a few countries, the case definitions changed between 2006 and 2012 as countries adapted to using the new case definition.

3.3. Epidemiological data 2012

In 2012, 17 329 cases of hepatitis B were reported in 29 countries (no data from Belgium and Liechtenstein), resulting in an overall crude rate of 3.5 per 100 000 population. There was very little difference between the crude and age-standardised rates across countries and the overall age-standardised rate was 3.6 per 100 000 population.

Of all cases reported in 2012, 2 798 cases (16.1%) were reported as acute, 12 306 (71.0%) as chronic and 1 865 (10.8%) as unknown. Three hundred sixty cases (2.1%) could not be classified as acute, chronic or unknown using the StageHEP criteria as data were provided in an incompatible format.

In 2012, 22 countries were able to provide data on acute infections, defined using the StageHEP criteria. The number of cases ranged from three in Iceland to 561 in Germany (Table A1). The rate of reported acute cases in 2012 ranged from 0.1 per 100 000 in Portugal to 3.7 in Latvia (Table A3). The notification rate for acute cases of hepatitis B was lower than the rates for chronic cases.

The following map shows the rates of acute hepatitis B across EU/EEA countries in 2012. Countries were included if they were able to present data by disease status or used a case definition that included only acute cases (e.g. EU 2002/2008). Countries were not included if they uploaded data using a national case definition and were unable to define the cases as acute or chronic.

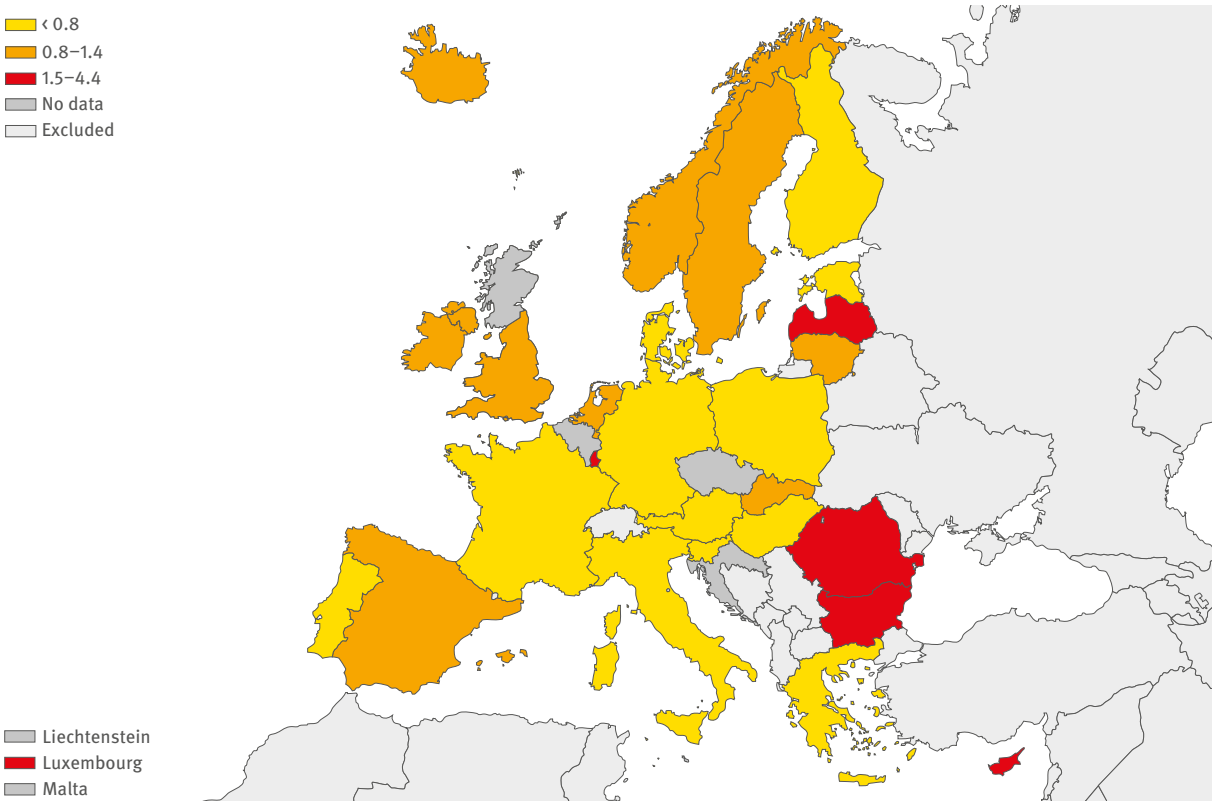
Thirteen countries were able to provide data on chronic infections in 2012. The numbers and rates were generally higher and showed considerably greater variation than

3 2012/206/EC: Commission 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

4 2008/426/EC: Commission Decision of 28 April 2008 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.

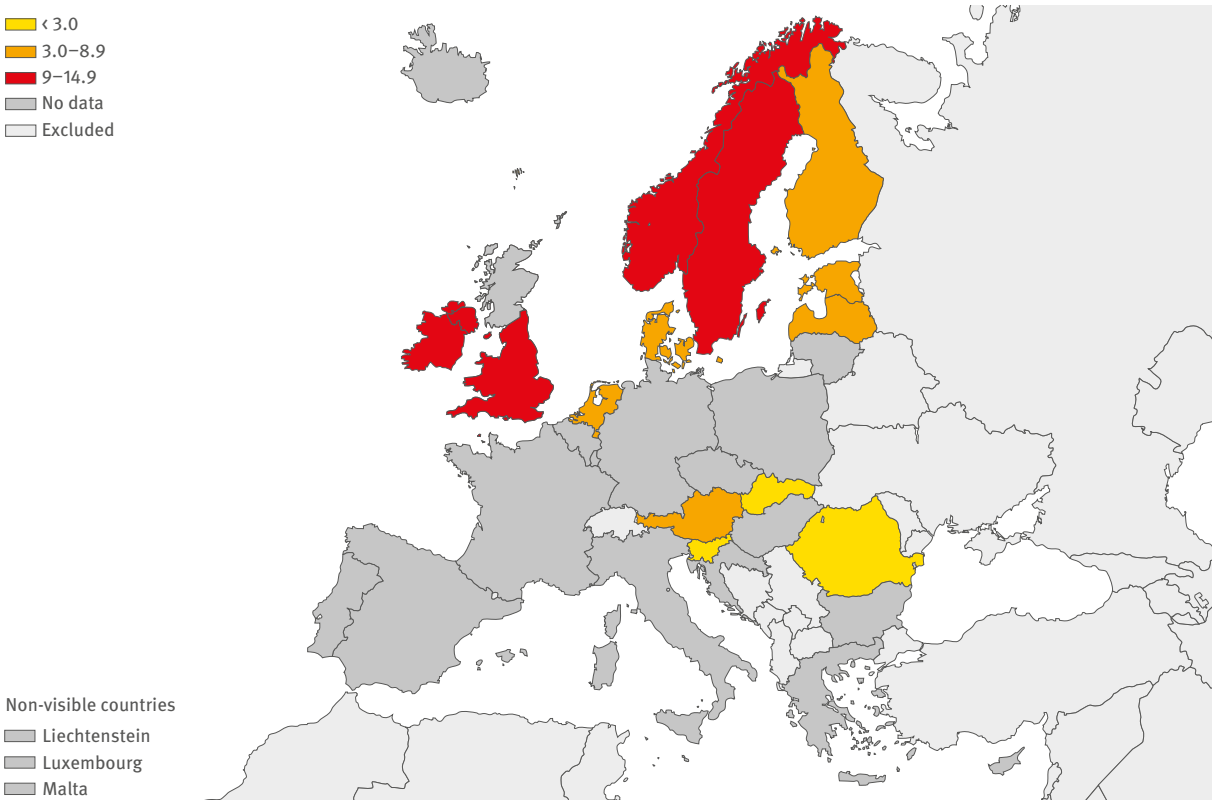
5 2002/253/EC: Commission Decision of 19 March 2002 laying down case definitions for reporting communicable diseases to the Community network under Decision No 2119/98/EC of the European Parliament and of the Council

Figure 1: Number of reported acute hepatitis B cases per 100 000 population in EU/EEA countries, 2012



Source, country reports: Austria, Bulgaria, Cyprus, Denmark, Estonia, Finland, France*, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom (excluding Scotland).
*Under-reporting was estimated in France to be 85% for acute hepatitis B cases in 2010.

Figure 2: Number of reported chronic hepatitis B cases per 100 000 population in EU/EEA countries, 2012



Source, country reports: Austria, Denmark, Estonia, Finland, Ireland, Latvia, Netherlands, Norway, Romania, Slovakia, Slovenia, Sweden, United Kingdom (excluding Scotland).

those for acute cases. The number of reported chronic cases ranged from 26 in Slovenia to 7 368 in the UK (Table A1). Rates of newly diagnosed chronic infections ranged from 0.1 case per 100 000 in Romania to 14.9 per 100 000 population in Sweden. (Figure 2 and Table A2).

In 2012, data on gender were provided for 98.1% cases and of these cases 9 983 cases were in males (4.2 per 100 000) and 7 017 cases in females (2.8 per 100 000) with a male-to-female ratio of 1.5. There was variation in this ratio across countries but in most countries, the male-to-female ratio was higher among acute cases than in chronic cases and ranged from 0.5 to 5.2 for acute cases and from 0.6 to 2.3 for chronic cases (figure 3).

In 2012, data on age were complete for 100% reported hepatitis B cases, 33.3% of cases reported were in the 25 to 34 age group. The highest rates in both males and females were in this age group at 9.2 per 100 000 in males and 8.1 in females (Figure 4). Across all age groups, except the 20 to 24 age group, rates were higher among males than females. Of all cases reported in 2012, 15.8% were aged under 25 years.

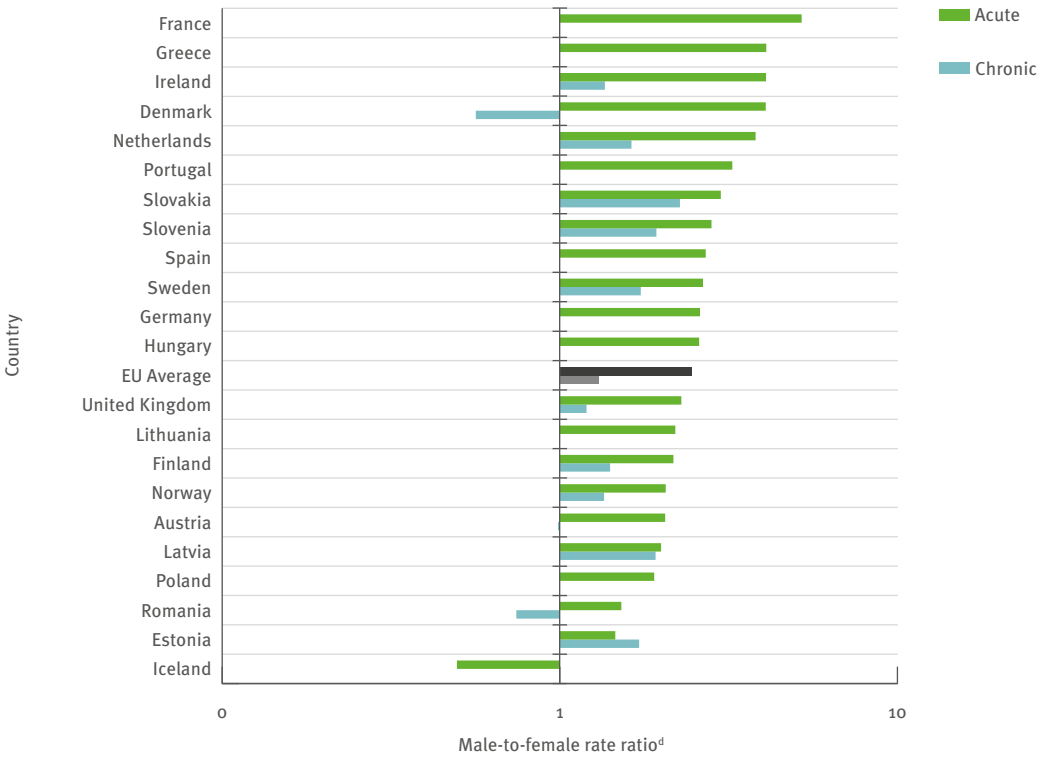
In 2012, for both acute and chronic cases, the rates were highest in the 25 to 34 age group, at 1.2 and 29.7 cases per 100 000 respectively. The age distributions of reported cases of acute and chronic infections were similar, with 14.8% of acute cases and 16.9% of chronic aged under 25 years (Figure 5).

Although the number of countries reporting information on transmission category increased between 2006 and 2012, data on transmission were only available for 17.2% of cases in 2012 (Tables A5 and A7). Countries seemed to differ in the reported routes of transmission, but due to data incompleteness, these differences could not be analysed.

Amongst acute cases, heterosexual transmission was reported as the most common route of transmission (31.2%), followed by nosocomial transmission (20.6%), transmission among MSM (11.1%), non-occupational injuries (9.3%) and injecting drug use (8.7%) (Figure 6). In chronic cases, mother-to-child transmission remained the most common route (67.0%), followed by 'other' routes (9.0%) and heterosexual transmission (6.8%).

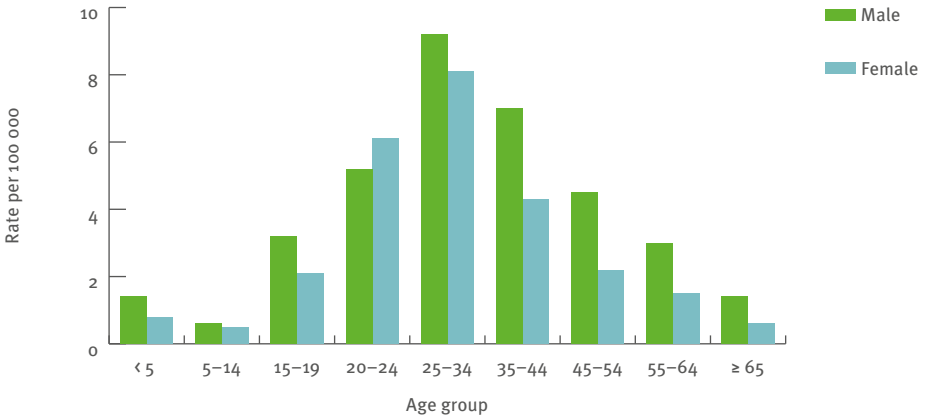
There were differences in reported transmission category by gender in all disease categories. Among acute cases, heterosexual transmission was more commonly reported in females (35.4%) than among males (29.5%). Household transmission was also more commonly reported among female acute cases (10.7%) than male cases (2.7%). Injecting drug use was more commonly reported among male acute cases (10.3%) than female acute cases (5.4%) For chronic cases, mother-to-child transmission was more commonly reported in females (73.4%) than among males (62.1%).

Figure 3: Male-to-female ratio in acute and chronic hepatitis B cases[a], by country[b], EU/EEA, 2012[c] (n=16 999)



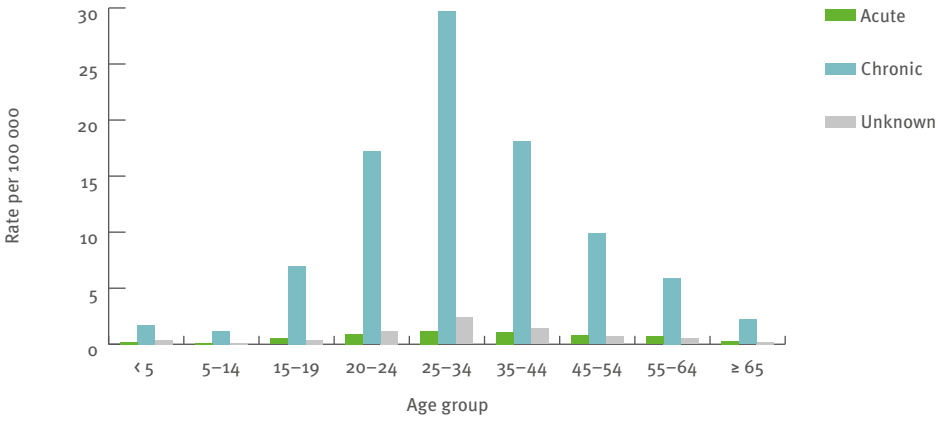
[a] Countries were included if they were able to present data by acute disease status or they used a case definition that included only acute cases (e.g. EU 2002/2008).
[b] Under-reporting was estimated in France to be 85% for acute hepatitis B cases in 2010.
[c] Data for United Kingdom excludes Scotland.
[d] Logarithmic scale

Figure 4: Number of reported hepatitis B cases (acute, chronic and unknown) per 100 000 population by age group and gender, EU/EEA, 2012 (n=17 009)



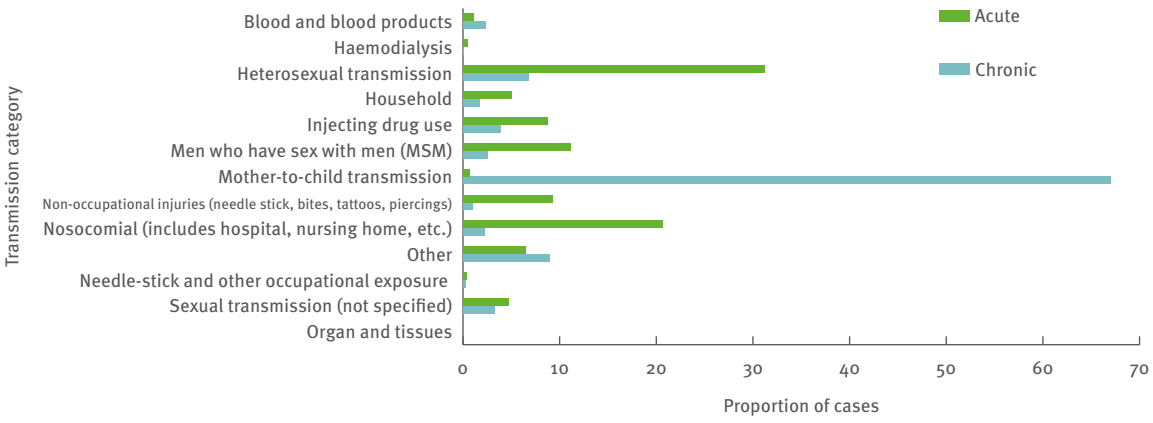
Source, country reports: Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom (excluding Scotland).

Figure 5: Number of reported hepatitis B cases per 100 000, by age and disease status, EU and EEA countries, 2012 (n=15 320)



Source: Country reports: Austria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom (excluding Scotland).

Figure 6: Transmission category of hepatitis B cases by acute and chronic disease status, EU/EEA, 2012 (n=2 953)



Source, country reports: Austria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Sweden, United Kingdom (excluding Scotland).

There was also variation in the reported transmission category by age. Among acute cases aged under 30, injecting drug use was more commonly reported (21.2%) than among cases aged 30 years or over where it accounted for only 5.4% of the cases. Transmission among MSM and nosocomial transmission were more common among acute cases aged 30 years and over (12.9% and 23.6%, respectively) than among those aged under 30 years (6.6% and 10.4%, respectively). In chronic cases, mother-to-child transmission dominated across the age groups but was slightly more common among those aged under 30 years (70.1%) than among those aged 30 or over (65.2%).

Information on the type of clinical service or testing facility where patients were tested for hepatitis was poorly reported with information available for only 2988 cases (17.2%) from 12 countries. Of these cases, the most common reported place of testing was the family practice (general practice) clinic (26.9%) followed by the infectious disease clinic (25.1%). There was some variation in the reported testing facility by disease status with a greater proportion of chronic cases reported to be tested at antenatal clinics (9.4%) and via general practice (35.6%) than acute cases (1.5% and 5.9%, respectively). A higher proportion of acute cases were reported to have been tested at infectious disease clinics (31.8%) than chronic cases (20.0%).

Information on healthcare worker status was completed for only 2733 cases (15.8%) from 17 countries. Of these cases, 37 (1.4%) were reported to be healthcare workers (17 acute, 19 chronic and 1 unknown).

Information on hepatitis B vaccination status was provided by 21 countries for 3939 cases (22.7%). Of these cases, the majority (96.9%) were reported as not being vaccinated with only 82 cases (2.1%) being reported as fully vaccinated and 39 (1.0%) as partly vaccinated.

Nineteen countries provided information on importation status of 6045 cases (34.9%) (Table A9), 3585 (59.3%) of which were reported as being imported. There was considerable variation in the proportion of imported cases between acute and chronic infections. 9.8% of acute cases with available information were classified as imported compared with 84.1% of chronic cases. Among acute cases, the proportion of imported cases ranged from 0% (Estonia, Hungary, Lithuania and Slovakia) to 66.7% in Portugal. Among chronic cases, this proportion ranged from 0% in Estonia to 95.7% in Norway. Some of this variation between countries is likely to be related to differences in data completeness and fluctuations caused by low numbers.

The reported transmission route varied according to whether the case was classified as imported. In particular, of 1548 cases classified as imported with complete information on transmission, 1122 (72.5%) were recorded as mother-to-child transmission. Of these, 1113 cases (99.2%) were reported as chronic. Among the 938 cases classified as not being imported, most cases were reported to have been infected through either heterosexual transmission 261 (27.8%), nosocomial transmission 154 (16.4%) or injecting drug use 138 (14.7%).

Data on the probable country of infection was provided by 21 countries for a total of 3743 cases (21.6%). For these cases, 145 different countries were reported. For 3387 cases (90.5%), the probable country of infection reported was different from the country reporting the case.

Country of birth and country of nationality were compared with the reporting country as a crude analysis to help understand where people may have been infected. However, both country of birth and country of nationality were poorly completed by many countries. In 2012, the proportion of cases where the reporting country was different from the country of birth or nationality (2768 cases (16.3%)) was greater than the proportion of cases where the reporting country was the same (1447 cases (8.5%)) (Table A11). In 5.2% of acute cases, the reporting country was different from the country of birth or nationality, and for 34.0% of cases, it was the same. In 20.9% of chronic cases with complete information, the reporting country was different from the reported country of birth or country of nationality, and for 2.9% of cases, it was the same.

Data on the outcome of hepatitis B infection was reported for 4811 cases (27.8%) from 23 countries in 2012 (Table A13). Of these cases, 43 (0.9%) were reported to have died.

3.4. Trends 2006–2012

Between 2006 and 2012, 110018 cases of hepatitis B were reported in 30 countries, with varying degrees of completeness over time. The annual number of reported cases increased from 12642 in 2006 to 17329 in 2012. Over the period, the number of reported acute cases declined from 3642 in 2006 to 2798 in 2012. In contrast, the number of chronic cases has shown an increase from 4802 in 2006 to 12306 in 2012. The overall rate over the period has remained fairly stable fluctuating around 3.5 cases per 100000. Rates of reported acute case have declined from 1.3 per 100000 in 2006 to 0.8 in 2012, whilst the rates of reported chronic cases have increased over the period from 4.3 per 100000 to 8.6. The numbers and rates of reported unknown infections have remained fairly stable over time.

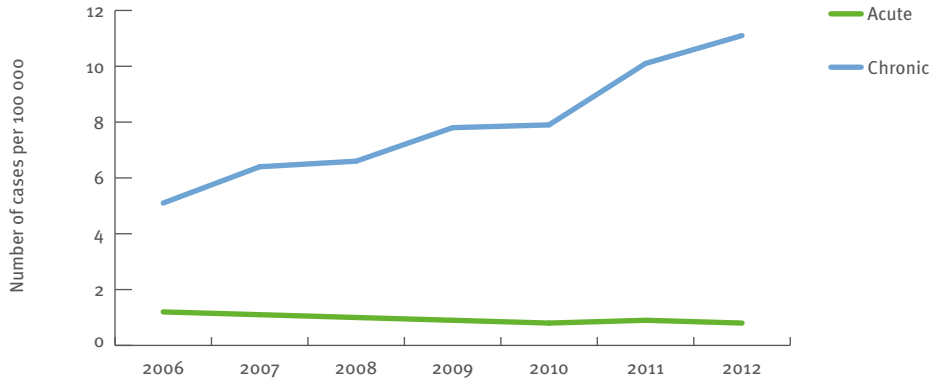
A comparison of data across countries over time is best undertaken through considering countries with stable reporting over the reporting period. Nine countries provided continuous data consistently on both acute and chronic cases, indicating a decline in the rates of acute infections over time, and a steady rise in the rates of newly identified chronic infections (Figure 7). The chronic-to-acute rate ratio across these nine countries over this period increased from 4.3 in 2006 to 13.9 in 2012.

The logarithmic scale allows for a comparison of trends over time regardless of the starting point. It reveals that the rise in the rate of chronic infections and the concomitant fall in the rate of acute infections were of very similar magnitude.

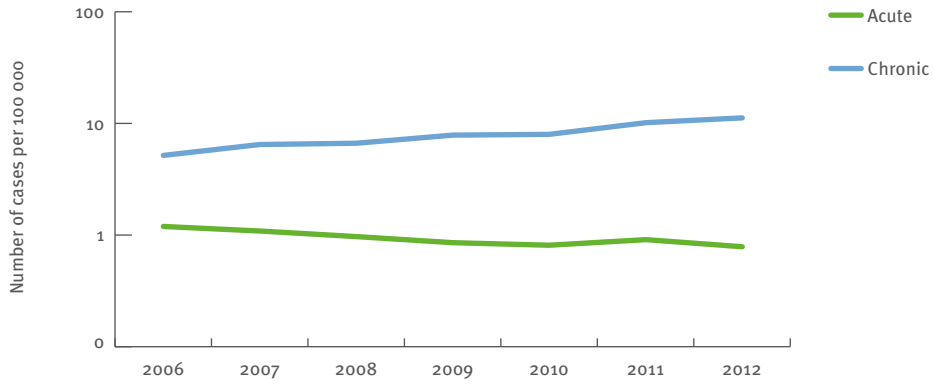
Among the nine countries that provided consistent data on both acute and chronic infections, trends in rates of acute cases of hepatitis B differed. Five countries reported a small decline which was most marked in Estonia and Norway. The four countries with the lowest rates of acute

Figure 7: Number of acute and chronic hepatitis B cases per 100 000 population in nine selected EU/EEA countries, by year, 2006–2012 (arithmetic and logarithmic scales)

Arithmetic scale



Logarithmic scale



Source: Data from countries with consistent reporting of both acute and chronic infections between 2006 and 2012 (Denmark, Estonia, Finland, Ireland, Norway, Slovakia, Slovenia, Sweden and the United Kingdom (excluding Scotland)).

Table 3: Number of reported hepatitis B cases per 100 000 population by stage of infection, gender and year, EU/EEA, 2006–2012

Year	All cases		Acute cases		Chronic cases		Unknown	
	Male	Female	Male	Female	Male	Female	Male	Female
2006	4.0	2.9	1.7	0.9	5.3	4.7	1.3	1.2
2007	4.1	2.5	1.5	0.8	7.0	5.7	2.2	1.6
2008	4.1	2.6	1.4	0.7	7.1	5.7	2.2	1.6
2009	4.2	2.7	1.2	0.6	9.1	6.7	2.6	1.7
2010	4.3	2.7	1.3	0.6	10.7	8.0	2.1	1.3
2010	4.3	2.7	1.3	0.6	10.7	8.0	2.1	1.3
2011	4.1	2.7	1.3	0.6	13.7	10.6	1.9	1.1

Source, country reports: Austria, Bulgaria Cyprus, Czech Republic, Denmark, Estonia, Finland, France*, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom (excluding Scotland).
* Under-reporting was estimated to be 85% for acute hepatitis B cases in France in 2010.

infections in 2006 (Denmark, Finland, Slovenia and the United Kingdom) show no obvious trend across this period with rates fluctuating between 0.3 to 1.2 cases per 100 000 population.

The rates of chronic cases of hepatitis B in these nine countries across the period also showed a mixed picture. There is an increasing trend in some countries (Estonia, Norway, Slovakia, Slovenia, Sweden and UK) and a declining trend in others (Denmark, Finland and Ireland).

Throughout the period, the number of male cases was greater than the number of female cases regardless of disease stage, but this difference was greater among acute cases than chronic cases. The numbers of cases per 100 000 population were also higher in males than females and highest among chronic cases (Table 3). Whilst notification rates of acute cases showed a downward trend over time in both males and females, rates among chronic cases increased in both genders.

There were no major changes in the distribution of cases by age over time, aside from a decline in the percentage of cases aged under 25 years from 22.3% in 2006, to 15.8% in 2012.

Between 2006 and 2012, there were some changes in the reported route of transmission across disease categories (Table A7). The percentage of acute cases reported as being due to nosocomial transmission rose from 12.8% in 2006 to 20.6% in 2012. The percentage of cases reported as being due to injecting drug use fell from 17.7% in 2006, to 8.7% in 2012 among acute cases, and from 13.1% to 3.9% among chronic cases. The proportion of chronic cases reported as being due to mother-to-child transmission increased from 41.2% in 2006 to 67.0% in 2012.

3.5. Discussion

The 2012 data collection highlights high numbers of reported cases of hepatitis B across Europe and considerable variation in the distribution of reported cases of acute and chronic hepatitis B between countries. Overall, among those countries able to report both acute and chronic cases, considerably more chronic cases than acute cases are reported. There continues to be a downward trend in the notification rate for acute cases which is consistent with reports from several European countries in the published literature and is generally attributed to the successful implementation of national vaccination programmes [3]. The number and rate of chronic cases has risen over time, although trends over time are difficult to interpret due to the many changes in reporting practice across the period. This increase in chronic cases is most likely to be related to increasing levels of testing in several countries as a result of better screening and testing programmes among key populations.

The number and rate of acute infections show great variation between countries. Some of this variation may be explained by differences in the surveillance case definitions used, and under-reporting which is a problem in many countries, with France estimating this to be as high as 85% in 2010 [4].

Acute and chronic hepatitis B are difficult to distinguish from each other using anti-HBc IgM, and it has been estimated that acute exacerbations or 'flare ups' of chronic hepatitis where the IgM may be raised, constitute between 15% and 50% of cases diagnosed as acute infections depending on the underlying endemicity in the country [5, 6]. Indeed, although anti-HBc IgM is commonly used for the diagnosis of acute hepatitis B infection, it may also be present in individuals with chronic infection. Some of the variation may also be explained by the underlying epidemiology of hepatitis B. Rates of acute hepatitis B infections reported through surveillance provide a proxy for the incidence of new infections, but due to under-reporting and the issue that many acute infections are asymptomatic, it is likely that these rates under-estimate the true incidence. The rates of reported acute hepatitis B infections correlate fairly closely with what may be expected based on the results from prevalence surveys, with the highest rates among the eastern European countries [7].

The rates of reported chronic hepatitis B cases were highest in the north western European countries and lowest in the south eastern European countries. This trend is the inverse of what may be expected based on the results of prevalence surveys reported in the published literature [7]. This is very likely to be a reflection of the differences in organised testing and screening practices between countries, as the number of reported cases are strongly influenced by the amount of testing. Another contributory factor behind the high rates in several countries is the inward migration of chronic cases from countries with a high prevalence of hepatitis B [8]. Indeed, fairly complete data on the imported status for chronic cases in the Netherlands, Norway and Sweden indicate that a high proportion of chronic cases have been imported.

Across all cases, hepatitis B is more common among males than females and among the younger age groups. There were gender differences between acute and chronic cases with relatively more male cases among acute cases than chronic cases. This variation may be partly explained by the antenatal screening programmes in many countries which identify more cases of chronic infection among women. In addition, sexual modes of transmission and injecting drug use were more common among males and acute cases. There has been a further decline in the proportion of cases aged under 25, which is most likely to be related to the on-going impact of vaccination programmes.

Heterosexual transmission, nosocomial transmission, non-occupational injury, transmission among MSM and injecting drug use were the most commonly reported transmission routes for acute cases. There has been a rise in the proportion of acute cases reported as being due to nosocomial transmission and a fall in cases attributed to injecting drug use. Whilst these changes may be related to changes in data completeness over time, they warrant careful future review. Although nosocomial transmission is a commonly reported route of transmission in some countries, for most of the countries who reported data, it accounted for only a small proportion of cases. Mother-to-child transmission was the most common transmission

route for chronic cases, and the data suggest that most of these infections were acquired in a country different from the reporting country.

The interpretation of the data remains impaired by their incompleteness and variations in reporting between countries. Although data completeness has improved over time, it remains problematic and restricts data analysis for several of the epidemiological variables included in the dataset. Although many countries were able to provide data using the EU 2012 case definition, there is still variation in the case definitions used. The revised EU case definition differs considerably from the previous EU case definitions which only capture data on acute cases. In addition, some of the countries able to define their data using the new case definitions were still only reporting acute cases, as only acute hepatitis is notifiable by national law. These differences provide challenges to the interpretation of the data, especially when considering the trends in the number of cases over time, the differences between countries, and impact upon the conclusions that can be drawn for many of the epidemiological variables.

4. Hepatitis C

Table 4: Hepatitis C: data source, type of surveillance data and the surveillance period

Country	Data source	Type[a]	Enhanced data	Period	Case definition(s) used	Type of data provided
Austria	AT-Epidemiegesetz	C	Yes (all years)	2006–2012	EU 2008	Acute and chronic – differentiated
Belgium	BE-FLA_FRA	A	No	2006–2009	National	No data
Bulgaria	BG-national_surveillance BG-MOH	A A	No No	2007–2011 2006	EU 2008 EU 2008	Acute and chronic – Undifferentiated -
Croatia	HR-CNIPH	A	No	2012	EU 2012	Acute and chronic – Undifferentiated
Cyprus	CY-NOTIFIED_DISEASES	C	No	2007–2012	EU 2008	Acute and chronic – undifferentiated
Czech Republic	CZ-EPIDAT	C	Yes	2007–2012	EU 2008	Acute and chronic – undifferentiated
Denmark	DK-MIS	C	Yes	2006–2012	National	Acute and chronic – differentiated
Estonia	EE-HCV/CHLAMYDIA[b] EE-HEP_CHRONIC EE-HCV/CHLAMYDIA	C A A	Yes No No	2007–2012 2006–2009 2006	EU 2012 EU 2012 EU 2012	Acute and chronic – differentiated - -
Finland	FI-NIDR	C	Yes	2006–2012	EU 2012	Acute and chronic – undifferentiated
France	-	-	No	-	-	No data
Germany	DE-SURVNET@RKI-7.1/6	C	Yes (all years)	2006–2011	EU 2012	Acute and chronic – Undifferentiated
Greece	GR-NOTIFIABLE_DISEASES	C	Yes	2006–2012	EU 2008	Acute and chronic – differentiated
Hungary	HU-EFRIR	C	Yes	2006–2012	EU 2012	Acute only
Iceland	IS-subject_to_registration	C	Yes (2010 – 2012)	2007–2012	EU 2012	Acute and chronic – undifferentiated
Ireland	IE-CIDR	C	Yes	2006–2012	EU 2012	Acute and chronic – differentiated
Italy	IT-SEIEVA[c] IT-NRS	C C	Yes No	2006–2012 2007–2012	EU 2012 National	- Acute and chronic – undifferentiated
Latvia	LV-BSN	C	Yes	2006–2012	EU 2012	Acute and chronic – undifferentiated
Lithuania	LT-communicable_diseases LT-communicable_diseases	A C	No Yes	2006–2009 2006–2012	EU 2012 EU 2012	- Acute only
Luxembourg	LU-SYSTEM1	C	No	2007–2012	National	Acute and chronic – undifferentiated
Malta	MT-DISEASE_SURVEILLANCE	C	Yes (2009–2012)	2007–2012	EU 2008 (2007–2008) EU 2012 (2009–2012)	Acute and chronic – undifferentiated
Netherlands	NL-OSIRIS	C	Yes (2010–2012)	2007–2012	EU 2008	Acute only
Norway	NO-MSIS_A	C	Yes	2006–2012	EU 2012	Acute and chronic – undifferentiated
Poland	PL-NATIONAL_SURVEILLANCE	A	No	2006–2012	EU 2008	Acute and chronic – undifferentiated
Portugal	PT-HEPATITISC	C	Yes (2010–2012)	2007–2012	National	Acute only
Romania	RO-RNSSy	C	Yes	2006–2012	EU 2012	Acute and chronic – undifferentiated
Slovakia	SK-EPIS	C	Yes	2006–2012	EU 2012	Acute and chronic – differentiated
Slovenia	SI-SURVIVAL	C	Yes	2006–2012	National (2006–2007) EU 2012 (2008–2012)	Acute and chronic – differentiated
Spain	ES-STATUTORY_DISEASES	C	No	2007–2008	EU 2008	No data
Sweden	SE-SMINET	C	Yes	2006–2012	EU 2012	Acute and chronic – undifferentiated
United Kingdom	UK-HEPATITISC	C	Yes	2006–2012	EU 2012	Acute and chronic – differentiated

[a] Legend: type: aggregated (A); case-based (C).
[b] Acute data only 2007–2009; acute and chronic data 2010–2011.
[c] IT-SEIEVA data source used for epidemiological variables only.

4. Hepatitis C

4.1. Key results

- In 2012, 30 607 cases of hepatitis C were reported in 27 EU/EEA Member States, representing an overall notification rate of 7.8 cases per 100 000 population.
- Only 13 countries were able to classify cases as acute or chronic, with complete data available for only 16.1% of cases overall. Of cases reported in 2012, 509 (1.7%) were reported as acute, 3 905 (12.8%) as chronic and 23 712 (77.5%) as 'unknown'.
- The male-to-female ratio in 2012 was 2. Just over a half (54.0%) of all the hepatitis C cases reported were aged between 25 and 44 and 9.5% of cases were aged under 25 years. The notification rate was highest for both males and females in the 25 to 34 age group at 22.3 per 100 000 in males and 13.3 in females.
- In 2012, data on transmission were complete for only 25.2% of all cases. The most common route of transmission reported across all disease categories was injecting drug use, accounting for 76.5% of all cases with complete information.
- There has been a continued rise in the proportion of acute cases among MSM from 0.8% in 2006 to 14.6% in 2012.
- Trends over time are difficult to interpret due to changes in reporting practices over the period.

4.2. Source of data

Between 2006 and 2012, hepatitis C data were available from all countries except Liechtenstein and France. Not all 29 countries were able to provide data for every year. The reporting improved over the period with 27 countries reporting data in 2012 compared with 19 in 2006. All cases reported from countries for 2012 were classified as confirmed except for 115 cases of unknown classification reported from Latvia. Data prior to 2012 included cases classified as 'probable' which may reflect some difficulties in providing data according to the new case definitions.

Of the 29 countries reporting data, all had national coverage. Table 4 specifies the source of the data, the type of data (aggregate or case-based), the availability of enhanced data, the case definitions used and the surveillance period. This table highlights the significant heterogeneity in surveillance systems between countries and within countries over time.

For 2012, 24 countries submitted case-based data. Six countries submitted aggregate data at some point over the five year reporting period, but three of these countries were able to submit case-based data for 2012. Twenty-four countries were able to provide enhanced data, although for eight of these countries, enhanced data were only available for the latter part of the reporting period.

Sixteen countries were able to provide data for 2012 using the revised case definition (EU 2012). Two of these countries (Hungary and Lithuania) just submitted data on acute cases as only acute hepatitis C is notifiable on a national basis. Seven countries provided data according to the previous EU case definition (EU 2008) for hepatitis C which is similar to the EU 2012 case definition, as it also captures data on both acute and chronic infections. Denmark, Italy, Luxembourg and Portugal provided data defined according to national case definitions with Portugal providing data on acute cases only.

Two countries changed their case definitions between 2007 and 2012 (Malta and Slovenia).

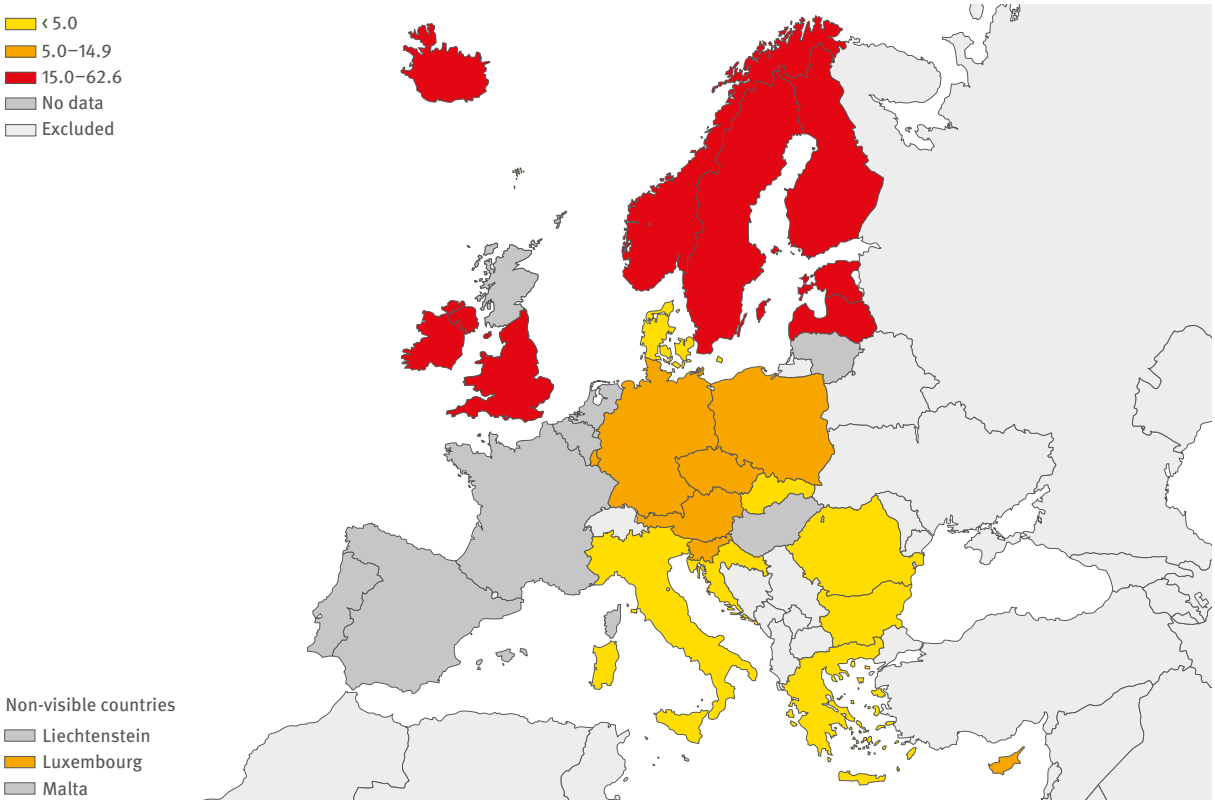
4.3. Epidemiological data 2012

In 2012, 30 607 cases of hepatitis C were reported in 27 countries (no data from Belgium, France, Liechtenstein and Spain). The overall notification rate was 7.8 cases per 100 000 population. The number of cases reported by countries ranged from 24 cases (5.7 cases per 100 000) in Malta to 13 474 (21.8 cases per 100 000) in the United Kingdom.

In 2012, 509 cases (1.7%) were reported as acute, 3 905 (12.8%) as chronic, 23 712 (77.5%) as unknown, and 2 481 cases (8.1%) could not be classified due to the format of the data provided. Twelve countries provided differentiated data on acute cases of hepatitis C in 2012. The number of acute cases ranged from nine in Slovenia (0.4 cases per 100 000) to 139 in Austria (1.6 cases per 100 000). Ten countries reported chronic cases in 2012. The numbers showed great variation across countries from 40 cases in Greece (0.3 cases per 100 000) to 1 230 cases in Latvia (60.2 cases per 100 000). Fifteen countries provided data on unknown cases with the number of unknown ranging from two cases in Denmark (<0.1 cases per 100 000) to 12 127 cases in the United Kingdom (19.6 cases per 100 000).

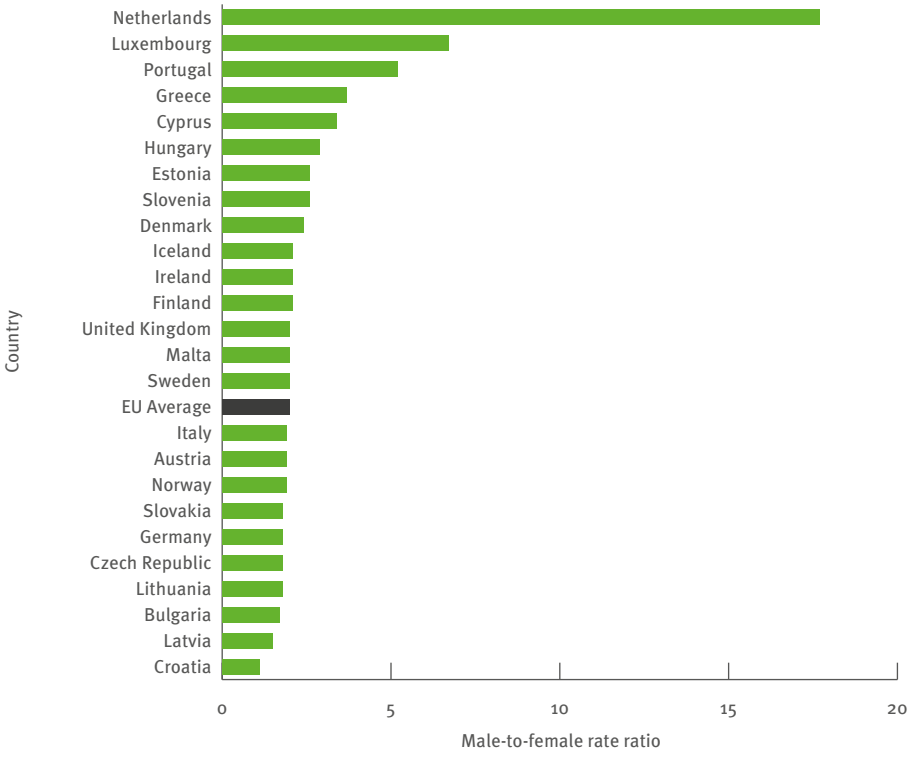
The incompleteness of the data as defined by disease status limits the possibilities and appropriateness of presenting the data and the identification of geographical trends among acute and chronic cases. The following map shows the overall notification rates of hepatitis C cases across EU/EEA countries. Countries were included if their surveillance system was known to capture data on both acute and chronic cases, even if a sizeable proportion of cases were classified as 'unknown'. As acute hepatitis C is usually asymptomatic or mild and difficult to diagnose clinically or serologically, most reported cases in countries, where all types of viral hepatitis are notifiable, are more likely to be chronic. Whilst there are limitations to this approach, it provides more complete data for comparison

Figure 8: Number of reported hepatitis C cases per 100 000 population in selected EU/EEA countries, 2012



Source: country reports – Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Iceland, Ireland, Italy, Latvia, Luxembourg, Norway, Poland, Romania, Slovakia, Slovenia, Spain, United Kingdom.

Figure 9: Male-to-female ratio in acute and chronic hepatitis B cases[a], by country[b], EU/EEA, 2012[c] (n=16 999)



across countries. Figure 8 shows high overall rates of hepatitis C notifications in the north European countries and lower rates in southern and east European countries.

In 2012, 19 396 of all reported cases for whom gender was reported (n=30 170) were male (10.8 cases per 100 000) and 10 774 cases were female (5.5 cases per 100 000). This represents a male-to-female ratio of 2. It varied considerably between countries in 2012 ranging from 0.6 in Romania to 17.7 in the Netherlands (Figure 9).

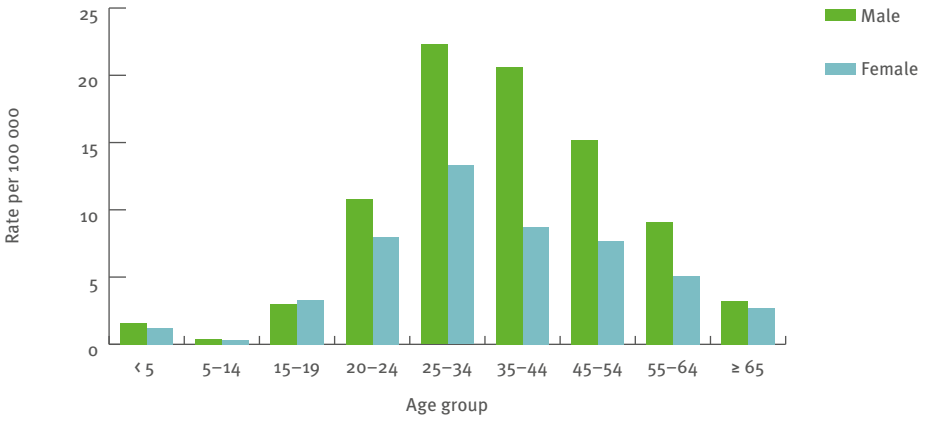
The number of males was greater than the number of females for acute, chronic and unknown cases for all countries. Notification rates were higher in males than females across all disease types (Table A15). Just over a half (54.0% of cases) of all the hepatitis C cases reported were aged between 25 and 44, and 9.5% of cases were aged under 25 years. The notification rate was highest for both males and females in the 25 to 34 age group at 22.3 per 100 000 in males and 13.3 in females (Figure 10).

The age distribution by disease status shows that reported cases of acute infection are slightly younger than reported cases of chronic infection, with 17.2% of acute cases aged under 25 years compared to 7.8% of chronic cases.

The completeness of data provided regarding transmission of hepatitis C was low with information complete for only 25.2% of cases in 2012 (Annex 4). There are differences between countries in the reported routes of transmission (Table A6), but it is difficult to identify any trends as reporting in most countries was incomplete.

Overall, the most commonly reported route of transmission in 2012 was injecting drug use accounting for 76.5% of all cases where transmission route was known (Table 4). The next most commonly reported transmission routes were transmission through blood and blood products (4.3%), sexual transmission (not specified) (4.3%) and nosocomial transmission (4.0%). Of cases reported as being transmitted through blood and blood products, 99.3% were classified as chronic or unknown.

Figure 10: Number of reported hepatitis C cases (acute, chronic and unknown) per 100 000 by age group and gender, EU and EEA, 2012 (n=28 126)



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

Table 5: Transmission route of hepatitis C cases by disease status in EU/EEA countries[a], 2012

Transmission category	Acute (%)	Chronic (%)	Unknown (%)	Total (%)
Injecting drug use	29.9	58.6	86.0	76.5
Nosocomial (includes hospital, nursing home, etc.)	26.5	9.5	0.5	4.0
Men who have sex with men	14.6	0.1	2.0	2.2
Heterosexual transmission	10.3	3.3	1.7	2.5
Sexual transmission (not specified)	5.6	4.9	3.0	4.3
Non-occupational injuries (needle stick, bites, tattoos, piercings)	5.3	8.2	0.8	2.0
Other	4.0	4.2	0.9	1.8
Household	1.5	0.8	0.1	0.3
Haemodialysis	0.8	0.5	0.8	0.7
Blood and blood products	0.6	7.4	3.5	4.3
Mother-to-child transmission	0.5	1.4	0.7	0.9
Needle-stick and other occupational exposure	0.3	1.2	0.1	0.4
Organ and tissues	0.0	0.0	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source, country reports: Austria, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Romania, Slovakia, Sweden and United Kingdom.
[a] Included only cases where transmission category was specified.

The percentage of injecting drug use was lower among acute cases (29.9%) than among those classified as chronic (58.6%) or unknown (86.0%). Among acute cases, the other main routes of transmission included nosocomial transmission (26.5%) and men who have sex with men (14.6%). However, the number of acute cases with complete information on transmission was low so these figures may be less robust.

The type of clinical service or testing facility where patients were tested for hepatitis was poorly reported with information available for 6 003 cases from eleven countries (Austria, Estonia, Hungary, Ireland, Latvia, Luxembourg, Malta, Portugal, Romania, Sweden, United Kingdom). For these cases, the most common reported place of testing was infectious disease clinics (25.5%) followed by other (28.2%) and general practice clinics (20.8%).

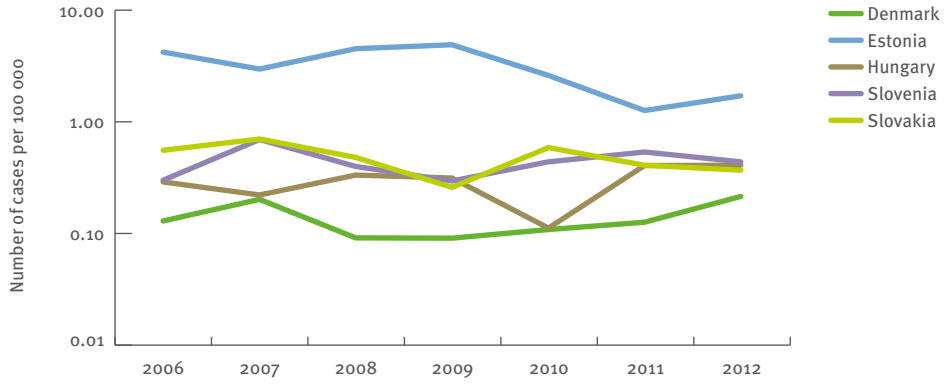
Sixteen countries reported data for the imported variable for 11 587 cases (Table A10). Of the 1 013 cases in 2012 reported by countries as being imported, 35 (3.5%) were acute cases, 160 (15.8%) were chronic cases and 818 (80.8%) had unknown disease status.

Country of birth and country of nationality were compared to the reporting country as a crude indication of whether cases may have been infected outside the reporting country. However, both country of birth and country of nationality were poorly completed across most countries. In 2012, the percentage of cases in which the reporting country differed from the country of birth or nationality (806 cases (2.9%)) was less than the percentage of cases in which the reporting country was the same (3 749 cases (13.3%)) (Table A12).

Outcome of hepatitis C infection was reported for 10 935 cases from 14 countries in 2012 (Table A14). Of these cases, 134 (1.2%) were reported to have died.

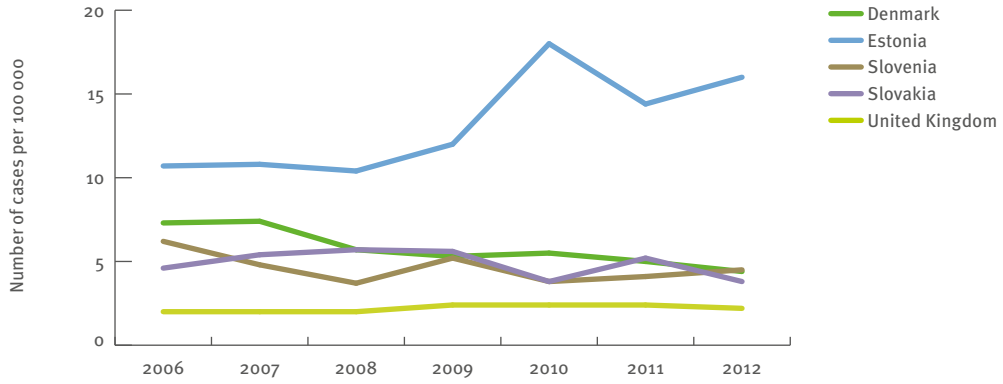
Five countries reported chronic cases consistently across the six year period (Figure 12). These five countries show relatively stable trends apart from Estonia and Denmark. Estonia had increasing rates of chronic case notifications from 10.7 cases per 100 000 population in 2006 to 16.0 in

Figure 11: Number of acute hepatitis C cases per 100 000 population in five selected EU/EEA countries, by year, 2006–2012



Source: Country reports from countries with consistent reporting of acute hepatitis C infections between 2006 and 2012 (Denmark, Estonia, Hungary, Slovakia, Slovenia).

Figure 12: Number of chronic hepatitis C cases per 100 000 population in five selected EU/EEA countries, by year, 2006–2012



Source: Country reports from countries with consistent reporting of chronic hepatitis C infections between 2006 and 2012 (Denmark, Estonia, Slovakia, Slovenia, United Kingdom).

2012, and Denmark had falling rates of notifications over the period from 7.3 to 4.4 cases per 100 000.

4.4. Trends 2006–2012

Between 2006 and 2012, 206 333 cases of hepatitis C were reported in 29 countries with varying degrees of completeness over time. The number of reported cases increased from 27 354 cases in 2006 to 30 607 cases in 2012, whereas the notification rate fell from 9.3 cases per 100 000 in 2006 to 6.8 in 2007 and has remained fairly stable at just over 7 cases per 100 000 since.

Only five countries provided consistent data on acute cases over the six year reporting period (Figure 11). Estonia shows a striking declining trend over this period from 4.2 cases per 100 000 in 2006 to 1.7 cases per 100 000 in 2012. The other four countries show low level stable trends over the period.

Five countries reported chronic cases consistently across the six year period (Figure 12). These five countries show relatively stable trends apart from Estonia and Denmark. Estonia had increasing rates of chronic case notifications from 10.7 cases per 100 000 population in 2006 to 16.0 in 2012, and Denmark had falling rates of notifications over the period from 7.3 to 4.4 cases per 100 000.

Eight countries reported unknown cases (not defined as acute or chronic) consistently across the seven year period. Of these countries most had fairly stable rates apart from Ireland and Austria. In Ireland there was a steady fall in rates of unknown cases from 35.9 cases per 100 000 in 2007 to 20.3 in 2012. In Austria there was a fall between 2009 and 2010 from 3.3 cases per 100 000 to 0.1.

The male-to-female ratio remained stable over the reporting period.

The notification rates by age category showed little change over time, but there was a small decline in the proportion of cases aged under 25 years from 12.4% in 2006 to 9.7% in 2012.

Between 2006 and 2012, the distribution of reported transmission categories changed (Table A8). There was a fall in the proportion of cases assigned as injecting drug use among both acute and chronic cases from 40.4% and 81.5% in 2006 to 29.9% and 58.6% in 2012. Among acute cases the proportion of cases among MSM rose from 0.8% in 2006 to 14.6% in 2012. The proportion of acute and chronic cases reported as due to unspecified sexual transmission increased over the period from 1.9% of acute cases and 0.1% of chronic cases to 5.3% and 8.2% of cases respectively.

4.5. Discussion

The 2012 surveillance data for hepatitis C indicate high numbers of hepatitis C cases reported from countries across Europe with considerable variation between countries. Countries continue to have problems in using the StageHEP criteria to classify cases as acute or chronic and the majority of reported cases are classified as unknown. Acute hepatitis C is not easy to diagnose clinically or serologically, so it is likely that most of these 'unknown' cases are chronic cases. Countries able to define cases as acute or chronic continue to report considerably more chronic cases than acute cases. The distribution of acute, chronic and unknown cases varies between countries. Apart from the ability to distinguish acute and chronic cases, the variation is likely to be mainly related to considerable differences between countries in the amount of diagnostic testing.

All countries report more cases in males than in females and most cases occur in those aged between 25 and 44 years. Hepatitis C predominantly affects young adult males and this reflects the demographic profile of the key risk groups. The male-to-female distribution varies between countries and this is most likely to be related to the small numbers of cases in some countries. Acute cases tend to be younger than chronic cases, most likely due to the age differences between risk groups. Individuals infected with hepatitis C through MSM transmission, which is more commonly reported among acute cases, tend to be younger than those infected through injecting drug use.

The main route of transmission continues to be injecting drug use. Whilst this route of transmission dominates across all disease categories, it has shown a decline over time in both acute and chronic cases and is less frequently reported among acute cases than chronic cases. In contrast with this decline, there has been a steadily increasing proportion of cases among MSM. There have been reports of an increase in acute hepatitis C infections among HIV-infected MSM in several European countries [9] and routine screening of HIV-positive MSM is undertaken in these countries. Although this screening may have artificially elevated the number of acute cases reported as occurring among MSM, the higher incidence of acute HCV among HIV-positive MSM compared with HIV-negative MSM has also been attributed to differences in sexual and drug taking behaviour among HIV-positive versus HIV-negative MSM. The immunodeficiency induced by HIV infection may also increase both infectiousness and susceptibility to HCV in individuals affected with HIV [10,11]. Nosocomial transmission is a commonly reported route of transmission for several countries, however, for the majority of countries it accounts for only a small proportion of cases.

The interpretation of the data continues to be hampered by data incompleteness and differences in reporting between countries. Whilst most countries provided data according to either the EU 2008 or the EU 2012 case definitions which include acute and chronic cases, several countries could only provide data on acute cases as only acute viral hepatitis is notifiable on a national level.

5. General discussion and conclusions

Table 6: Summary of key statistics of hepatitis B and C in EU/EEA countries, 2012

Indicators 2012	Hepatitis B	Hepatitis C
Number of countries reporting data in 2011:		
Overall	29	27
Using EU 2012 case definition	19	16
Completeness of 'stageHEP' variable	90.5%	16.1%
Rates per 100 000 population:		
Acute	0.8	0.6
Chronic	8.6	3.2
Unknown	0.7	8.3
Total	3.5	7.8
Male-to-female rate ratio	1.5	2
% cases among 25 to 34 year olds	33.3%	27.9%
% cases aged under 25	15.8%	9.5%
Most common transmission category:		
Acute	Heterosexual transmission 31.2%	Injecting drug use 29.9%
Chronic	Mother-to-child 67.09%	Injecting drug use 58.6%
All cases	Mother-to-child 41.1%	Injecting drug use 76.5%

Source, country reports: Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Sweden and United Kingdom.
*Analyses undertaken by disease status category for all cases where transmission category is not classified as unknown.

5. General discussion and conclusions

Although the surveillance data for both infections have continued to improve in terms of completeness since 2006 for many variables, the high proportion of incomplete data remains a major challenge and impacts upon the interpretation of results. Surveillance systems for both infections across countries are still quite diverse and the heterogeneity in reporting makes the interpretation of the distribution and trends of hepatitis B and C very challenging. These differences underline the importance of having a good understanding of national surveillance systems.

The overall comparison between hepatitis B and C with respect to numbers, rates, number of countries reporting, male-to-female ratio, age distribution and reported transmission route are shown in the table below.

In 2012, the majority of reporting countries provided enhanced case-based data for both hepatitis B and C. Around two thirds of the countries who reported 2012 data used the EU 2012 case definitions for both diseases. The classification of cases by disease status, however, remains problematic for many countries for hepatitis C, with a large proportion of the reported cases classified as 'unknown'. This problem is a reflection of the problems in defining hepatitis C as acute or chronic, and the definition of acute hepatitis C cases in particular is widely discussed in the published medical literature [12,13,14,15].

Although most countries provided data defined according to the EU 2012 case definitions, some countries still used different case definitions and many countries were unable to provide data on chronic infections. This heterogeneity in the data reported remains a key challenge to the interpretation of data across countries.

The numbers and notification rates of hepatitis C cases are roughly twice the numbers and rates of hepatitis B cases. In most countries, the overall figures for both infections are most strongly influenced by the large numbers of chronic and 'unknown' cases.

For hepatitis B, the number of reported acute cases has continued to decline and there has been a concomitant yearly increase in newly reported chronic infections. The decline in acute infections is likely to be related to the impact of widespread vaccination programmes [16]. Indeed, many countries in central Europe as well as several other regions have noted a decline in the prevalence of HBsAg which has been attributed to the effectiveness of these vaccination programmes .

As chronic hepatitis B is largely asymptomatic until a late stage, the rise in chronic cases may be due to increased diagnostic testing of key risk groups. Differences in migration patterns between countries may also account for some of the variation, and the impact of migration upon the epidemiology of hepatitis B warrants further research.

Whilst the decrease of acute cases is reassuring, the large and increasing numbers of diagnosed chronic hepatitis B cases in many countries leaves no room for complacency in national prevention and control programmes.

For hepatitis C, the number of reported cases across all disease categories since 2006 remains at a high level. The number of cases has increased over time but rates have remained relatively stable as the number of countries reporting has also increased. As both acute and chronic infections are mostly asymptomatic, the reported numbers of cases are likely to be strongly related to screening programmes and diagnostic testing in countries. There is variation in the reported figures between countries and further epidemiological work is required to understand these differences, taking into consideration the population tested denominator as well as differences in local surveillance systems.

Chronic infection with hepatitis B or C may progress to cirrhosis or liver cancer. Data on the precise burden of disease caused by these infections is lacking in most countries [17], The data provided by countries on the outcome of these infections was incomplete but available information from the published literature suggests that the disease-related burden of cirrhosis and hepatocellular carcinoma is considerable and associated with high levels of mortality across Europe [18, 19, 20]. The large numbers of newly diagnosed infections therefore present a major public health issue for European countries on account of the associated healthcare costs for the prevention and treatment of these complications. Chronic and acute infections also have wider societal implications in terms of the prevention of onwards transmission of infection. Further work to collate available information on hepatitis associated morbidity and mortality at the European level would help augment the notification data and provide countries with more complete information to assist in the planning of prevention and control programmes.

Data provided on many of the enhanced epidemiological variables for both infections remain poorly reported. Although data completeness improved over the reporting period, further work with countries is required to improve the utility of these data.

Several 'migration' variables are included in the dataset and whilst no single variable provides a full picture of where the infection was acquired, the data provide interesting results which aid the understanding of the epidemiology. The results suggest that imported cases may play a key role for hepatitis B, and for chronic cases in particular.

Data provided on the most likely transmission routes were incomplete for both hepatitis B and C. Among cases with complete information, the reported transmission routes for hepatitis B differ from those reported for hepatitis C,

and for hepatitis B, transmission routes vary by disease status. Indeed, for chronic hepatitis B cases, mother-to-child transmission was more commonly reported as compared to acute cases, and the data suggest that a large proportion of these cases are imported. The current transmission of hepatitis B within countries is reflected in the transmission routes of the reported acute cases, and the data indicate that across Europe this includes heterosexual transmission, male-to-male transmission, injecting drug use, and nosocomial transmission. For hepatitis C, the most common route of transmission across all stages of disease was injecting drug use. There has been a continued rise in acute hepatitis C cases where the reported transmission route was among MSM. Outbreaks of acute hepatitis C among HIV-positive MSM have been reported from countries in Europe and this has led to targeted screening. This rise highlights that there is no room for complacency for countries in their prevention programmes targeted at key risk groups.

In conclusion, the enhanced surveillance data for hepatitis B and C across Europe highlight a significant burden for both diseases. The data suggest that acute hepatitis B infections are declining in most countries. The challenges in classifying hepatitis C cases by disease status limit any conclusions that can be drawn regarding acute cases. For both hepatitis B and C, the number of chronic cases reported from countries able to provide this information indicates a very high burden of disease. This burden of chronic infections is considerably greater for hepatitis C than for hepatitis B.

A clear interpretation of the data across countries in Europe is impaired by the differences in surveillance systems between countries. The use of different case definitions and the problem of defining hepatitis C cases by disease status are the main difficulties leading to differences between countries. Even when such differences are accounted for, countries still vary substantially in their reported cases and these differences are greater for chronic cases than acute cases. As chronic infections are largely asymptomatic until the very late stages of disease, it is likely that much of the variation is due to different testing practices between countries. Under-reporting is also likely to be a factor and further research is necessary to explore the variation between countries.

Enhanced surveillance of hepatitis B and C across Europe provides information that is helpful for monitoring the distribution of disease and for evaluating the public health response to prevent and control the transmission of infections. In order to achieve this aim, ECDC must work together with countries across Europe to strive for high-quality, standardised surveillance data.

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Annexes

Annex 1. Case definitions for hepatitis B and C[a]

Hepatitis B (*hepatitis B virus*)

Clinical criteria
Not relevant for surveillance purposes

Laboratory criteria
Positive results of at least one or more of the following tests or combination of tests:

- IgM hepatitis B core antibody (anti-HBc IgM)
- Hepatitis B surface antigen (HBsAg)
- Hepatitis B e antigen (HBeAg)
- Hepatitis B nucleic acid (HBV-DNA)

Epidemiological criteria
Not relevant for surveillance purposes

Case classification
A. Possible case
NA
B. Probable case
NA
C. Confirmed case
Any person meeting the laboratory criteria

Comments/notes
NOTE: The following combination of laboratory tests shall not be included or reported:

- Resolved hepatitis – Hepatitis B total core antibody (anti-HBc) positive and hepatitis B surface antibody (anti-HBs) positive
- Immunity following vaccination – Hepatitis B total core antibody (anti-HBc) negative and hepatitis B surface antibody (anti-HBs) positive
- Anti-HBc IgG positivity only

NOTE: Elevated levels of IgM in some chronic cases may result in misclassification which could overestimate the number of acute cases

Hepatitis C (*hepatitis C virus*)

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 (HCVcore)
- 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
A. Possible case
NA
B. Probable case
NA
C. Confirmed case
Any person meeting the laboratory criteria

Comments/notes
NOTE: The following combination of lab 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.

[a] Source: 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.

Annex 2. Implementation of case definitions with the StageHEP variable

Disease and code	Description
Hepatitis B	
Acute	Detection of IgM antigen specific antibody (anti-HBc IgM) *or* Detection of hepatitis surface antigen (HBsAg) and previous negative HBV markers less than 6 months ago *or* Detection of hepatitis B nucleic acid (HBV-DNA) and previous negative HBV markers less than six months ago Any of the above with or without symptoms and signs (e.g. jaundice, elevated serum aminotransferase levels, fatigue, abdominal pain, loss of appetite, intermittent nausea, vomiting, fever)
Chronic	Detection of HBsAg or HBeAg or HBV-DNA *and* No detection of anti-HBc IgM (negative result) *or* Detection of HBsAg or HBeAg or HBV-DNA on two occasions that are six months apart[a]
Unknown	Any newly diagnosed case which cannot be classified according the above description of acute or chronic infection
Hepatitis C	
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 according the above description of acute or chronic infection

[a] In the event that the case was not notified the first time

Annex 3. Enhanced set of variables for hepatitis B and C surveillance

Type and variable Name	Mandatory	Hepatitis B	Hepatitis C
Core set			
RecordId	Yes	√	√
RecordType	Yes	√	√
RecordTypeVersion	No	√	√
Subject	Yes	√	√
DataSource	Yes	√	√
ReportingCountry	Yes	√	√
DateUsedForStatistics	Yes	√	√
Status	No	√	√
DateOfNotification	No	√	√
DateOfDiagnosis	Yes	√	√
PlaceOfResidence	No	√	√
PlaceOfNotification	No	√	√
Age (years)	Yes	√	√
Gender	Yes	√	√
DateOfOnset	No	√	√
Outcome	No	√	√
Classification	Yes	√	√
Disease-specific			
StageHEP	Yes	√	√
ResultHBeAg	No	√	NA
TestingLocation	No	√	√
CountryOfBirth	No	√	√
CountryOfNationality	No	√	√
Imported	No	√	√
ProbableCountryOfInfection	No	√	√
Transmission	Yes	√	√
SexWorker	No	√	√
HealthCareWorker	No	√	√
HIVStatus	No	√	√
HBVStatus	No	NA	√
HCVStatus	No	√	NA
VaccStatus	No	√	NA
Complications	No	√	√
Genotype	No	√	√

NA: not applicable

Annex 4. Completeness of reporting

	Overall			2006			2012		
	Proportion complete – all years (%)	Proportion complete – 2006 – 2011 (%)	Proportion complete – 2012 (%)	Number of countries	Maximum level of completeness at the country level (%)	Minimum level of completeness at the country level (%)	Number of countries	Maximum level of completeness at the country level (%)	Minimum level of completeness at the country level (%) (%)
Hepatitis B									
Age	99.5	99.4	100.0	16	100.0	30.2	27	100.0	77.8
Complications	4.1	3.9	5.2	2	87.8	30.2	7	100.0	10.7
Country of birth	16.6	15.7	21.3	6	73.3	2.0	12	100.0	0.7
Country of nationality	7.1	6.8	8.7	4	100.0	2.6	11	100.0	0.7
Gender	97.2	97.0	98.1	16	100.0	30.2	27	100.0	92.4
Genotype	0.1	0.0	0.3	1	0.9	0.9	3	10.7	0.5
HBeAg Status	12.3	12.4	11.6	3	73.3	29.0	13	100.0	0.7
HCV status	5.7	5.8	5.4	4	84.6	0.2	12	100.0	1.2
Healthcare worker	15.2	15.0	15.8	11	100.0	0.1	17	100.0	0.1
HIV status	4.7	4.5	6.0	2	100.0	2.3	9	100.0	2.0
Imported	38.7	39.4	34.9	12	100.0	1.1	19	100.0	0.1
Outcome	29.7	30.4	27.8	12	100.0	1.8	22	100.0	0.2
Probable country of infection	23.1	23.3	21.6	11	100.0	0.7	17	100.0	0.1
Sex worker	6.0	5.1	10.6	3	100.0	12.1	8	100.0	19.6
'StageHEP'	79.9	77.8	90.5	14	100.0	67.2	23	100.0	15.0
Testing location	17.7	17.7	17.2	5	89.5	1.8	12	100.0	1.3
Transmission	17.8	17.9	17.2	13	73.6	3.7	20	94.0	0.2
Vaccination status	22.5	22.5	22.7	10	92.6	5.1	21	100.0	3.7
Hepatitis C									
Age	99.8	99.0	99.8	15	100.0	10.5	24	100.0	96.1
Complications	5.9	5.9	6.4	2	100.0	0.5	5	100.0	2.1
Country of birth	15.3	14.6	14.5	5	93.0	4.2	9	100.0	19.5
Country of nationality	6.1	5.9	7.2	4	100.0	3.7	10	100.0	2.4
Gender	98.6	97.8	98.4	15	100.0	10.5	24	100.0	97.2
Genotype	2.3	2.4	1.9	2	7.5	0.9	6	25.6	0.1
HBV status	4.8	4.2	5.5	4	83.0	0.8	9	100.0	0.9
Healthcare worker	8.2	7.5	8.6	8	100.0	0.2	14	100.0	0.1
HIV status	5.6	5.0	6.2	2	100.0	3.7	8	100.0	2.1
Imported	44.8	45.4	37.9	11	100.0	1.0	16	100.0	1.6
Outcome	39.2	40.5	35.7	12	100.0	0.8	21	100.0	0.1
Probable country of infection	11.5	13.3	3.5	9	100.0	2.0	14	90.7	0.2
Sex worker	1.3	1.3	1.4	2	100.0	99.6	7	100.0	4.8
'StageHEP'	11.0	9.8	16.1	9	100.0	0.3	14	100.0	8.6
Testing Location	20.9	20.0	19.6	5	85.5	10.4	11	100.0	6.3
Transmission	29.6	30.1	25.2	12	86.8	3.9	19	89.3	4.9

Annex 5. Tables

Table A1: Numbers of reported hepatitis B cases in EU and EEA countries[a], 2006–2012[b]

Country	2006				2007				2008				2009				2010				2011				2012			
	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown
Austria	59			59	86			86	43	42		1	45	44		1	136	135		1	574	82	403	89	428	62	297	69
Belgium[c]	401				138				122				129															
Bulgaria[c]	773				753				624				504				387				344				322			
Croatia																									38			
Cyprus					13				7				7				7				10			10	13			13
Czech Republic					304	304			304	304			247	247			244	219		25	191	191			154			154
Denmark	272	20	252		287	25	261	1	204	25	178	1	180	23	155	1	170	28	142		264	17	243	4	298	25	269	4
Estonia	59	45	14		78	46	32		76	53	23		60	27	33		58	24	34		44	15	29		51	9	42	
Finland	288	38	250		231	21	210		318	47	271		360	33	327		286	36	250		248	24	224		251	34	217	
France[d]	147	147			141	141			130	130			94	94			86	86			101	101			101	101		
Germany	1179	1068		111	1003	901		102	820	734		86	743	652		91	762	657		105	806	698		108	672	561		111
Greece	87	86		1	82	79		3	80	80			52	50		2	35	34		1	38	38			50	50		
Hungary	81	81			80	80			88	88			67	67			60	60			65	65			54	54		
Iceland					47				61				23				29	2		27	25	2		23	20	3		17
Ireland	785	92	638	55	840	53	686	101	897	80	722	95	796	80	675	41	649	50	560	39	523	45	455	23	564	35	511	18
Italy					1162				788				778			778	648			648	603			603	243			243
Latvia	600			600	581			581	558			558	434		1	433	321	10	4	307	315	61	61	193	301	75	68	158
Lithuania	107				84				90				58				71	71			60	60			23	23		
Luxembourg					14				21				19				18				16			16	11			11
Malta					3		1		4				23	4	19		20	4	16		35	3	32		18			18
Netherlands					273				246	9	15		599	54	379	11	1794	196	1574	24	1735	158	1539	38	1524	172	1326	26
Norway	693	149	544		628	120	508		782	103	679		890	57	833		764	27	737		763	56	707		706	46	660	
Poland	508				364				262				199				128	128			104	104			78	78		
Portugal					64				53				67				16			16	26	1		25	28	8		20
Romania	1252	1133		119	928	854		74	710	710			586	586			486	486			412	410	2		371	342	29	
Slovakia	153	124	29		152	100	52		186	114	72		230	137	93		209	111	98		171	93	78		155	73	82	
Slovenia	56	25	31		40	16	24		54	17	37		43	14	29		42	7	35		71	25	46		41	15	26	
Spain					645				758				710				662				522			522	525	525		
Sweden	1116	167	794	155	1407	199	1072	136	1481	176	1169	136	1481	112	1292	77	1574	123	1378	73	1365	91	1210	64	1528	80	1411	37
United Kingdom[e]	4026	457	2250	1319	5544	440	3192	1912	5639	293	3065	2281	6241	321	3932	1988	6036	361	4264	1411	7876	497	6589	790	8761	427	7368	966
Total[f]	**12642**	**3632**	**4802**	**2419**	**15972**	**3379**	**6038**	**2996**	**15406**	**3005**	**6231**	**3158**	**15665**	**2602**	**7768**	**3423**	**15698**	**2855**	**9092**	**2677**	**17307**	**2837**	**11618**	**2508**	**17329**	**2798**	**12306**	**1865**

Source: Country reports

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

[b] Data defined by year according to date included in 'date of diagnosis' variable.

[c] Data submitted using previous record type version with no classification of data by disease status possible.

[d] Under-reporting of cases occurs in many countries and was estimated to be as high as 85% in France in 2010.

[e] Excludes data from Scotland.

[f] Data from several countries submitted using a mixture of record type versions, some of which did not permit classification of data by disease status. For this reason the overall totals for some countries and across Europe do not add up.

Table A2: Numbers of reported hepatitis C cases in EU and EEA countries[a], 2006–2012[b]

Country	2006				2007				2008				2009				2010				2011				2012			
	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown
Austria	227			227	300			300	271			271	277			277	243	234		9	789	171	490	128	680	139	434	107
Belgium[c]	739				434				43				34															
Bulgaria[c]	121				98				89				93				58				60				92			
Croatia																									124			
Cyprus[c]					9				2				33				26				57			57	46			46
Czech Republic[d]					980			980	974			974	836			836	712			712	885			885	718			718
Denmark[d]	403	7	396		416	11	402		320	5	313	1	295	5	290		318	6	306	6	291	7	280	4	260	12	247	1
Estonia	201	57	144		185	40	145		200	61	139		227	66	161		276	35	241		210	17	193		238	23	215	
Finland	1168			1168	1163			1163	1144			1144	1047			1047	1138			1138	1135			1135	1166			1166
Germany	7451			7451	6867			6867	6225			6225	5420			5420	5279			5279	5076			5076	4880			4880
Greece	29			29	20			20	18			18	10			10	11			11	18	11	6	1	43	12	31	
Hungary	29	29			22	22			33	33			31	31			11	11			40	40			40	40		
Iceland					81				93				103				59			59	72			72	51			51
Ireland	1197		7	1190	1547			1547	1502		1	1501	1244		4	1240	1240	5	63	1172	1254	11	95	1148	1018	13	75	930
Italy					308				266			266	215			215	208			208	214			214	120			120
Latvia	1496		4	1492	1725		5	1720	1490			1490	1319		2	1317	1145		4	1141	1321	1	103	1217	1278	48	1230	
Lithuania	62				46				43				47				41	41			43	43			40	40		
Luxembourg[c]					58				58				55				73				74			74	46			46
Malta					1				1				26			26	14			14	18			18	24			24
Netherlands[d]					63				48				50	20			31	31			68	68			57	57		
Norway	255			255	338			338	3334			3334	2292			2292	1783			1783	1675			1675	1513			1513
Poland[d]	2949				2753				2353				1939				2179				2241				2265			
Portugal					57				46				85				39			39	45	2		43	42			42
Romania	133	35		98	166	55		111	103		2	101	66			66	77	1		76	80			80	129	96	30	3
Slovakia	278	30	248		331	38	293		332	26	306		318	14	304		237	32	205		303	22	281		223	20	203	
Slovenia	130	6	124		110	14	96		82	8	74		111	6	105		87	9	78		95	11	84		102	9	93	
Spain[c]					214				129																			
Sweden	1824			1824	2047			2047	2474			2474	2173			2173	1933			1933	2143			2143	1938			1938
United Kingdom	8662		1214	7448	9494		1202	8292	10298		1234	9064	10708		1500	9208	9951		1501	8450	12138		1462	10676	13474		1347	12127
Total[d]	**27354**	**164**	**2137**	**21182**	**29833**	**180**	**2143**	**23385**	**31971**	**133**	**2069**	**26863**	**29054**	**142**	**2366**	**24127**	**27169**	**405**	**2398**	**22030**	**30345**	**404**	**2994**	**24646**	**30607**	**509**	**3905**	**23712**

Source: Country reports

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

[b] Data defined by year according to date included in 'date of diagnosis' variable.

[c] Data submitted using previous record type version with no classification of data by disease status possible.

[d] Data from several countries submitted using a mixture of record type versions, some of which did not permit classification of data by disease status. For this reason the overall totals for some countries and across Europe do not add up.

Table A3: Number of reported hepatitis B cases per 100 000 in EU and EEA countries[a], 2006–2012[b]

Country	2006				2007				2008				2009				2010				2011				2012				
	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	Overall age standardised rate
Austria	0.7			0.7	1			1	0.5	0.5			0.5	0.5			1.6	1.6			6.8	1	4.8	1.1	5.1	0.7	3.5	0.8	5.3
Belgium	3.8				1.3				1.1				1.2																
Bulgaria	1				9.8				8.2				6.6				5.1				4.7				4.4				
Croatia																									0.9				
Cyprus					1.7				0.9				0.9				0.9				1.2			1.2	1.5			1.5	1.8
Czech Republic					3	3			2.9	2.9			2.4	2.4			2.3	2.1		0.2	1.8	1.8			1.5			1.5	1.7
Denmark	5	0.4	4.6		5.3	0.5	4.8		3.7	0.5	3.3		3.3	0.4	2.8		3.1	0.5	2.6		4.7	0.3	4.4	0.1	5.3	0.4	4.8	0.1	5.8
Estonia	4.4	3.3	1		5.8	3.4	2.4		5.7	4	1.7		4.5	2	2.5		4.3	1.8	2.5		3.3	1.1	2.2		3.8	0.7	3.1		4
Finland	5.5	0.7	4.8		4.4	0.4	4		6	0.9	5.1		6.8	0.6	6.1		5.3	0.7	4.7		4.6	0.4	4.2		4.6	0.6	4		5
France[c]	0.2	0.2			0.2	0.2			0.2	0.2			0.1	0.1			0.1	0.1			0.2	0.2			0.2	0.2			0.2
Germany	1.4	1.3		0.1	1.2	1.1		0.1	1	0.9		0.1	0.9	0.8		0.1	0.9	0.8		0.1	1	0.9		0.1	0.8	0.7		0.1	0.8
Greece	0.8	0.8			0.7	0.7			0.7	0.7			0.5	0.4			0.3	0.3			0.3	0.3			0.4	0.4			0.5
Hungary	0.8	0.8			0.8	0.8			0.9	0.9			0.7	0.7			0.6	0.6			0.7	0.7			0.6	0.6			0.6
Iceland					15.3				19.3				7.2				9.1	0.6		8.5	7.9	0.6		7.2	6.3	0.9		5.3	7.4
Ireland	18.7	2.2	15.2	1.3	19.5	1.2	15.9	2.3	20.4	1.8	16.4	2.2	17.9	1.8	15.2	0.9	14.5	1.1	12.5	0.9	11.4	1	1	0.5	12.3	0.8	11.2	0.4	12.7
Italy					2				1.3				1.3			1.3	1.1			1.1	1			1	0.4			0.4	0.4
Latvia	26.2			26.2	25.5			25.5	24.6			24.6	19.2			19.2	14.3	0.4	0.2	13.7	15.2	2.9	2.9	9.3	14.7	3.7	3.3	7.7	17
Lithuania	3.1				2.5				2.7				1.7				2.1	2.1			2	2			0.8	0.8			0.9
Luxembourg					2.9				4.3				3.9				3.6				3.1			3.1	2.1			2.1	3.1
Malta					0.7		0.2		1				5.3	1	4.4		4.8	1	3.9		8.4	0.7	7.7		4.3			4.3	6.2
Netherlands					1.7				1.5	0.1	0.1		3.6	0.3	2.3	0.1	10.8	1.2	9.5	0.1	10.4	0.9	9.2	0.2	9.1	1	7.9	0.2	9.4
Norway	14.9	3.2	11.7		13.4	2.6	10.9		16.5	2.2	14.3		18.5	1.2	17.4		15.7	0.6	15.2		15.5	1.1	14.4		14.2	0.9	13.2		14.6
Poland	1.3				1				0.7				0.5				0.3	0.3			0.3	0.3			0.2	0.2			0.2
Portugal					0.6				0.5				0.6				0.2			0.2	0.3			0.2	0.3	0.1		0.2	0.3
Romania	5.8	5.2		0.6	4.3	4		0.3	3.3	3.3			2.7	2.7			2.3	2.3			1.9	1.9			1.7	1.6	0.1		1.7
Slovakia	2.8	2.3	0.5		2.8	1.9	1		3.4	2.1	1.3		4.3	2.5	1.7		3.9	2	1.8		3.2	1.7	1.4		2.9	1.4	1.5		2.8
Slovenia	2.8	1.2	1.5		2	0.8	1.2		2.7	0.8	1.8		2.1	0.7	1.4		2.1	0.3	1.7		3.5	1.2	2.2		2	0.7	1.3		2.2
Spain					1.5				1.7				1.5				1.4				1.1			1.1	1.1	1.1			1.1
Sweden	12.3	1.8	8.8	1.7	15.4	2.2	11.8	1.5	16.1	1.9	12.7	1.5	16	1.2	14	0.8	16.9	1.3	14.8	0.8	14.5	1	12.9	0.7	16.1	0.8	14.9	0.4	17.1
United Kingdom[d]	7.2	0.8	4	2.3	9.9	0.8	5.7	3.4	1	0.5	5.5	4.1	11.1	0.6	7	3.5	10.7	0.6	7.6	2.5	14	0.9	11.7	1.4	15.6	0.8	13.1	1.7	14.4
Total	**3.6**	**1.3**	**4.3**	**1.2**	**3.2**	**1.2**	**6.4**	**1.5**	**3.1**	**0.9**	**5.6**	**1.9**	**3.1**	**0.8**	**6.8**	**1.3**	**3.2**	**0.8**	**8**	**1**	**3.5**	**0.8**	**8.2**	**0.8**	**3.5**	**0.8**	**8.6**	**0.7**	**3.6**

Source: Country reports and Eurostat data for all populations except UK (For the UK population Office for National Statistics mid-2008 population figures used across all years excluding the population for Scotland).

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

[b] Data defined by year according to date included in 'date of diagnosis' variable.

[c] Under-reporting of cases occurs in many countries and was estimated to be as high as 85% in France in 2010.

[d] Excludes data from Scotland.

Table A4: Number of reported hepatitis C cases per 100 000 in EU and EEA countries[a], 2006–2012[b]

Country	2006				2007				2008				2009				2010				2011				2012				
	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	All	Acute	Chronic	Unknown	Overall age standardised rate
Austria	2.8			2.8	3.6			3.6	3.3			3.3	3.3			3.3	2.9	2.8		0.1	9.4	2	5.8	1.5	8.1	1.6	5.1	1.3	7.9
Belgium	7				4.1				0.4				0.3																
Bulgaria	1.6				1.3				1.2				1.2				0.8				0.8				1.3				
Croatia																									2.9				
Cyprus					1.2				0.3				4.1				3.2				6.8			6.8	5.3			5.3	7.4
Czech Republic					9.5			9.5	9.4			9.4	8			8	6.8			6.8	8.4			8.4	6.8			6.8	7.2
Denmark	7.4	0.1	7.3		7.6	0.2	7.4		5.8	0.1	5.7		5.4	0.1	5.3		5.7	0.1	5.5	0.1	5.2	0.1	5	0.1	4.7	0.2	4.4		5.7
Estonia	14.9	4.2	10.7		13.8	3	10.8		14.9	4.5	10.4		16.9	4.9	12		20.6	2.6	18		15.7	1.3	14.4		17.8	1.7	16		20.2
Finland	22.2			22.2	22			22	21.6			21.6	19.7			19.7	21.3			21.3	21.1			21.1	21.6			21.6	23.6
Germany	9.1			9.1	8.4			8.4	7.6			7.6	6.6			6.6	6.5			6.5	6.2			6.2	6			6	6
Greece	0.3			0.3	0.2			0.2	0.2			0.2	0.1			0.1	0.1			0.1	0.2	0.1	0.1		0.4	0.1	0.3		0.4
Hungary	0.3	0.3			0.2	0.2			0.3	0.3			0.3	0.3			0.1	0.1			0.4	0.4			0.4	0.4			0.5
Iceland					26.3				29.5				32.3				18.6			18.6	22.6			22.6	16			16	19.2
Ireland	28.4		0.2	28.3	35.9			35.9	34.1			34.1	28		0.1	27.9	27.8	0.1	1.4	26.2	27.4	0.2	2.1	25.1	22.2	0.3	1.6	20.3	22
Italy					0.5				0.4			0.4	0.4			0.4	0.3			0.3	0.4			0.4	0.2			0.2	0.2
Latvia	65.2		0.2	65	75.6		0.2	75.4	65.6			65.6	58.3		0.1	58.2	50.9		0.2	50.8	63.7		5	58.7	62.6	2.4	60.2		62.8
Lithuania	1.8				1.4				1.3				1.4				1.2	1.2			1.4	1.4			1.3	1.3			1.5
Luxembourg					12.2				12				11.1				14.5				14.5			14.5	8.8			8.8	12.7
Malta					0.2				0.2				6.3			6.3	3.4			3.4	4.3			4.3	5.7			5.7	8.9
Netherlands					0.4				0.3				0.3	0.1			0.2	0.2			0.4	0.4			0.3	0.3			0.4
Norway	5.5			5.5	7.2			7.2	70.4			70.4	47.8			47.8	36.7			36.7	34			34	30.3			30.3	31.3
Poland	7.7				7.2				6.2				5.1				5.7				5.8				5.9				
Portugal					0.5				0.4				0.8				0.4			0.4	0.4			0.4	0.4			0.4	0.5
Romania	0.6	0.2		0.5	0.8	0.3		0.5	0.5			0.5	0.3			0.3	0.4			0.4	0.4			0.4	0.6	0.4	0.1		0.6
Slovakia	5.2	0.6	4.6		6.1	0.7	5.4		6.1	0.5	5.7		5.9	0.3	5.6		4.4	0.6	3.8		5.6	0.4	5.2		4.1	0.4	3.8		4.2
Slovenia	6.5	0.3	6.2		5.5	0.7	4.8		4.1	0.4	3.7		5.5	0.3	5.2		4.3	0.4	3.8		4.6	0.5	4.1		5	0.4	4.5		5.8
Spain					0.5				0.3																				
Sweden	20.2			20.2	22.5			22.5	26.9			26.9	23.5			23.5	20.7			20.7	22.8			22.8	20.4			20.4	21.4
United Kingdom	14.4		2	12.4	15.7		2	13.7	16.9		2	14.9	17.4		2.4	14.9	16.2		2.4	13.7	19.6		2.4	17.2	21.8		2.2	19.6	22.1
Total	**9.3**	**0.4**	**2.7**	**10.2**	**6.8**	**0.4**	**2.8**	**10.7**	**7.3**	**0.4**	**2.1**	**9.4**	**7.4**	**0.3**	**2.9**	**8.6**	**7.1**	**0.5**	**1.9**	**7.4**	**7.9**	**0.5**	**2.7**	**8.2**	**7.8**	**0.6**	**3.2**	**8.3**	**8.4**

Source: Country reports and Eurostat data for all populations.

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

[b] Data defined by year according to date included in 'date of diagnosis' variable.

Table A5: Proportion[a] (%) of cases of hepatitis B by disease status and transmission category in EU and EEA countries[b] in 2012

Countries	Disease status	Blood and blood products	Haemo-dialysis	Heterosexual transmission	Household	Injecting drug use	MSM	Mother-to-child transmission	Needlestick & other occupational exposure	Nosocomial	Other	Sexual transmission (not specified)	Organ and tissues	Unknown
Austria	Acute	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98.4
	Chronic	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.3	0.0	98.3
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Cyprus	Acute													
	Chronic													
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Czech Republic	Acute													
	Chronic													
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Denmark	Acute	0.0	0.0	36.0	0.0	20.0	12.0	4.0	4.0	0.0	8.0	0.0	0.0	16.0
	Chronic	0.0	0.0	7.1	0.7	1.9	0.4	83.6	0.0	1.9	0.4	0.0	0.0	4.1
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	75.0
Estonia	Acute	0.0	0.0	11.1	0.0	11.1	0.0	0.0	0.0	11.1	0.0	11.1	0.0	55.6
	Chronic	0.0	0.0	9.5	0.0	16.7	0.0	2.4	0.0	0.0	0.0	0.0	0.0	71.4
	Unknown													
Finland	Acute	0.0	0.0	0.0	0.0	2.9	5.9	2.9	0.0	0.0	0.0	0.0	20.6	0.0	67.6
	Chronic	1.8	0.0	0.0	0.0	1.4	0.0	4.1	0.0	0.0	0.0	0.0	3.2	0.0	89.4
	Unknown													
France[c]	Acute	0.0	0.0	8.9	0.0	0.0	13.9	0.0	1.0	4.0	17.8	1.0	2.0	0.0	51.5
	Chronic													
	Unknown													
Germany	Acute	0.0	0.7	3.0	2.3	1.6	2.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	90.0
	Chronic													
	Unknown	0.0	0.0	1.8	4.5	1.8	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.0
Greece	Acute	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Chronic													
	Unknown													
Hungary	Acute	0.0	0.0	1.9	5.6	13.0	7.4	0.0	0.0	1.9	0.0	0.0	3.7	0.0	66.7
	Chronic													
	Unknown													
Iceland	Acute	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Chronic													
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Ireland	Acute	0.0	0.0	37.1	0.0	0.0	20.0	0.0	2.9	0.0	5.7	0.0	17.1	0.0	17.1
	Chronic	0.4	0.0	1.4	0.4	1.0	2.9	2.3	1.4	1.6	30.3	0.2	4.3	0.0	53.8
	Unknown	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0	11.1	0.0	5.6	0.0	77.8
Italy	Acute	0.3	0.0	14.8	5.8	0.8	5.6	0.0	15.6	18.1	9.2	0.0	1.7	0.0	28.1
	Chronic													
	Unknown													
Latvia	Acute	2.7	0.0	0.0	2.7	33.3	5.3	1.3	2.7	13.3	0.0	1.3	22.7	0.0	14.7
	Chronic	0.0	1.5	0.0	16.2	4.4	0.0	4.4	2.9	0.0	0.0	0.0	4.4	0.0	66.2
	Unknown	2.5	0.0	0.0	2.5	1.3	0.0	0.0	3.2	0.0	0.0	0.0	7.0	0.0	83.5
Lithuania	Acute	0.0	0.0	34.8	0.0	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.5
	Chronic													
	Unknown													
Luxembourg	Acute													
	Chronic													
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Malta	Acute													
	Chronic													
	Unknown	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	88.9
Netherlands	Acute	0.0	0.0	37.8	0.0	0.0	23.8	0.0	0.0	0.0	0.0	0.6	0.6	0.0	37.1
	Chronic	0.0	0.0	2.9	0.0	0.6	1.8	61.0	0.0	0.0	0.0	0.0	0.0	0.0	33.9
	Unknown	0.0	0.0	23.1	0.0	3.9	15.4	7.7	0.0	0.0	0.0	0.0	0.0	0.0	50.0
Norway	Acute	0.0	0.0	63.0	0.0	15.2	8.7	0.0	0.0	0.0	0.0	0.0	8.7	0.0	4.3
	Chronic	1.5	0.0	0.3	0.0	2.6	0.0	4.8	0.8	0.0	0.0	0.0	4.4	0.0	85.6
	Unknown														

Countries	Disease status	Blood and blood products	Haemo-dialysis	Heterosexual transmission	Household	Injecting drug use	MSM	Mother-to-child transmission	on occupational	Nosocomial	Other	Needlestick & other occupational exposure	Sexual transmission (not specified)	Organ and tissues	Unknown
Poland	Acute	3.8	0.0	2.6	2.6	5.1	1.3	0.0	6.4	52.6	0.0	0.0	2.6	0.0	23.1
	Chronic														
	Unknown														
Portugal	Acute	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	25.0
	Chronic														
	Unknown	0.0	0.0	0.0	5.0	0.0	0.0	5.0	5.0	0.0	0.0	0.0	20.0	0.0	65.0
Romania	Acute	0.3	0.6	24.9	2.0	2.0	0.0	0.9	4.4	23.4	0.3	0.0	0.0	0.0	41.2
	Chronic	0.0	0.0	34.5	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.2
	Unknown														
Slovakia	Acute	6.8	0.0	5.5	0.0	19.2	0.0	1.4	4.1	8.2	9.6	0.0	0.0	0.0	45.2
	Chronic	2.4	0.0	0.0	0.0	3.7	0.0	2.4	4.9	12.2	9.8	0.0	0.0	0.0	64.6
	Unknown														
Slovenia	Acute	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Chronic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Unknown														
Spain	Acute	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Chronic														
	Unknown														
Sweden	Acute	0.0	0.0	40.0	1.3	15.0	7.5	0.0	2.5	3.8	0.0	0.0	0.0	0.0	30.0
	Chronic	1.7	0.0	3.1	0.9	1.3	0.3	8.9	0.1	1.2	0.0	0.3	0.0	0.0	82.2
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	13.5	0.0	0.0	0.0	0.0	0.0	0.0	86.5
United Kingdom[d]	Acute	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	99.1
	Chronic	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	99.9
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

Source: Country reports (Countries included if able to provide data on transmission)

[a] Calculated as % of total number of cases not recorded as unknown.

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

[c] Under-reporting was estimated to be 85% in France for acute hepatitis B cases in 2010.

[d] Data excludes Scotland

Table A6: Proportion[a] (%) of cases of hepatitis C by disease status and transmission category in EU and EEA countries[b] in 2012

Countries	Disease status	Blood and blood products	Haemo-dialysis	Heterosexual transmission	Household	Injecting drug use	MSM	Mother-to-child transmission	On occupational	Nosocomial	Other	Needlestick & other occupational exposure	Sexual transmission (not specified)	Organ and tissues	Unknown
Austria	Acute	0	0	0	0	3.6	0	0	0.7	0.7	0	0	0.7	0	94.2
	Chronic	0.7	0	0	0	3.7	0	0	0	0	0.2	0	0	0	95.4
	Unknown	0	0	0	0	2.8	0	0	0	0	0.9	0	0.9	0	95.3
Cyprus	Acute														
	Chronic														
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Czech Republic	Acute														
	Chronic														
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Denmark	Acute	0	0	0	0	41.7	41.7	0	0	0	0	8.3	0	0	8.3
	Chronic	0	0	4.5	0	70	0.8	2.4	0	8.5	0.8	0.4	0	0	12.6
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Estonia	Acute	0	0	13	0	21.7	0	4.3	4.3	0	0	0	0	0	56.5
	Chronic	0.5	0	8.4	0	37.2	0	0.5	2.8	0	0	0	0	0	50.7
	Unknown														
Finland	Acute														
	Chronic														
	Unknown	0.6	0	0	0	54.9	0	0.7	0	0	0	0	6	0	37.8
Germany	Acute														
	Chronic														
	Unknown	0.8	0.8	0	0	24.2	1.7	0.1	0	0	0	0	0	0	72.4
Greece	Acute	0	0	0	0	0	0	0	0	0	0	0	0	0	100
	Chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	100
	Unknown														
Hungary	Acute	2.5	0	0	2.5	47.5	0	0	2.5	0	0	0	0	0	45
	Chronic														
	Unknown														
Iceland	Acute														
	Chronic														
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Ireland	Acute	0	0	0	0	30.8	0	0	7.7	0	15.4	0	23.1	0	23.1
	Chronic	6.7	0	0	0	42.7	0	2.7	5.3	0	20	1.3	14.7	0	6.7
	Unknown	2.2	0	0	0	48	0	1	0.4	0	3.1	0	3.1	0	42.3
Italy	Acute	1	0	0	1.9	31.1	2.9	0	7.8	27.2	8.7	0	1.9	0	17.5
	Chronic														
	Unknown														
Latvia	Acute	0	0	0	0	29.2	2.1	0	8.3	22.9	0	0	25	0	12.5
	Chronic	7.8	0.2	0	0.9	11.8	0	1.1	4.5	9.1	0	1.5	10.4	0	52.6
	Unknown														
Lithuania	Acute	0	0	37.5	0	17.5	0	0	0	0	0	0	0	0	45
	Chronic														
	Unknown														
Luxembourg	Acute														
	Chronic														
	Unknown	0	0	0	0	76.1	0	0	0	0	0	0	0	0	23.9
Malta	Acute														
	Chronic														
	Unknown	0	0	4.2	0	58.3	4.2	0	0	0	0	0	0	0	33.3
Netherlands	Acute	0	0	3.5	0	5.3	77.2	1.8	0	0	0	0	0	0	12.3
	Chronic														
	Unknown														
Norway	Acute														
	Chronic														
	Unknown	1.1	0	0.1	0	31.3	0	0.5	0.9	0	0	0	3	0	63.2
Portugal	Acute														
	Chronic														
	Unknown	0	0	0	0	33.3	0	0	0	0	0	2.4	7.1	0	57.1

Countries	Disease status	Blood and blood products	Haemo-dialysis	Heterosexual transmission	Household	Injecting drug use	MSM	Mother-to-child transmission	on occupational	Nosocomial	Other	Needlestick & other occupational exposure	Sexual transmission (not specified)	Organ and tissues	Unknown
Romania	Acute	0	2.1	18.8	1	1	0	0	0	50	0	0	0	0	27.1
	Chronic	3.3	3.3	66.7	3.3	3.3	0	0	0	0	0	0	0	0	20
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Slovakia	Acute	0	5	0	5	25	0	0	10	5	5	0	5	0	40
	Chronic	8.4	2	3.4	0.5	36	0	0	9.4	13.8	2.5	0	0	0	24.1
	Unknown														
Slovenia	Acute	0	0	0	0	0	0	0	0	0	0	0	0	0	100
	Chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	100
	Unknown														
Sweden	Acute														
	Chronic														
	Unknown	4.7	0	4.2	0.2	47.3	0.9	0.3	1	1.2	0	0.2	0.1	0	39.9
United Kingdom	Acute														
	Chronic	0.2	0	0	0	35.3	0	0	0	0	3.6	0	0	0	61
	Unknown	0	0	0	0	5	0	0	0	0	0.1	0	0	0	94.9

Source: Country reports (Countries included if able to provide data on transmission)

[a] Calculated as % of total number of cases not recorded as unknown.

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

Table A7: Proportion[a] (%) of cases of hepatitis B by transmission category in EU and EEA countries between 2006 and 2012

Transmission	2006			2007			2008			2009			2010			2011			2012		
	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown
Blood and blood products	0.5	4.0	1.2	0.3	4.3	1.2	0.1	4.5	3.0	0.5	4.5	3.6	0.2	2.4	5.2	0.6	2.4	1.9	1.1	2.3	5.7
Haemodialysis	0.7	0.0	1.8	0.4	0.0	4.3	0.2	0.0	0.7	0.4	0.1	0.0	0.3	0.1	0.0	0.8	0.0	0.0	0.5	0.1	0.0
Heterosexual transmission	30.1	9.9	4.1	26.3	8.1	3.9	27.4	7.0	5.0	26.2	9.9	1.8	27.4	6.7	5.2	23.2	6.2	18.5	31.2	6.8	12.9
Household	7.7	4.6	5.3	7.1	2.9	7.8	6.0	2.6	7.0	7.4	2.6	6.5	5.9	1.6	7.6	6.6	0.7	1.9	5.0	1.7	14.3
Injecting drug user	17.7	13.1	17.1	21.9	10.9	20.8	22.7	10.3	19.7	17.0	6.1	21.4	15.6	4.6	20.3	12.4	3.5	7.4	8.7	3.9	7.1
Men who have sex with men/ homosexual or bisexual male	8.3	2.1	2.4	7.9	2.0	0.4	8.6	1.6	1.0	12.3	2.5	3.0	12.2	2.5	3.5	10.0	2.3	11.1	11.1	2.5	8.6
Mother-to-child transmission	0.9	41.2	6.5	0.7	34.5	1.2	0.3	27.3	2.0	0.2	39.9	1.8	0.4	63.5	2.9	0.3	67.2	9.3	0.7	67.0	15.7
Non-occupation	8.9	0.9	2.4	10.0	0.3	3.9	9.8	1.1	4.3	10.8	0.8	2.4	7.2	0.6	8.1	7.8	1.1	3.7	9.3	1.0	8.6
Nosocomial (includes hospital, nursing home, psychiatric institutions)	12.8	3.0	29.4	13.5	4.4	20.8	11.4	4.4	19.7	11.1	4.7	16.1	16.9	1.8	16.3	22.9	2.9	1.9	20.6	2.2	0.0
Other	6.9	14.1	2.4	7.0	27.4	5.5	9.3	37.0	10.4	9.3	22.4	0.6	9.6	12.0	1.2	6.1	9.4	3.7	6.5	9.0	2.9
Needle-stick and other occupational exposure (includes healthcare workers and needle stick injuries)	0.6	3.3	1.8	0.4	3.5	2.7	0.2	1.1	4.0	0.3	0.4	0.6	0.4	0.3	0.6	0.3	0.3	5.6	0.4	0.3	1.4
Sexual transmission (not specified)	4.9	3.9	25.9	4.4	1.8	27.5	3.9	3.1	23.1	4.5	5.9	42.3	3.7	3.8	29.1	8.9	3.9	35.2	4.7	3.3	22.9
Organ and tissues	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Country reports (Data included from the following countries: Czech Republic, Denmark, Estonia, Finland, France**, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Sweden, United Kingdom (excluding Scotland)).

[a] Calculated as % of total number of cases not recorded as unknown.

Table A8: Proportion[a] (%) of cases of hepatitis C by transmission category in EU and EEA countries between 2006 and 2012

Transmission	2006			2007			2008			2009			2010			2011			2012		
	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown	Acute	Chronic	Unknown
Blood and blood products	0.0	1.7	2.3	1.1	1.5	3.4	0.0	1.9	5.8	0.0	1.4	3.2	1.3	1.4	2.7	0.4	3.2	3.9	0.6	7.4	3.5
Haemodialysis	0.0	0.0	1.3	0.0	0.0	0.9	0.0	0.0	0.6	0.8	0.0	0.6	0.0	0.0	0.9	1.0	0.0	0.8	0.8	0.5	0.8
Heterosexual transmission	7.9	1.2	1.6	5.2	1.0	1.3	3.8	0.8	1.2	6.3	1.2	1.5	2.4	1.2	1.1	6.8	2.4	1.5	10.3	3.3	1.7
Household	3.9	0.0	0.2	5.6	0.1	0.3	9.7	0.1	0.1	9.4	0.0	0.2	5.0	0.1	0.1	6.8	0.4	0.1	1.5	0.8	0.1
Injecting drug user	40.4	81.5	88.5	35.5	77.0	83.8	33.2	73.6	81.6	30.8	79.4	83.3	31.2	82.7	83.2	32.4	80.9	82.8	29.9	58.6	86.0
Men who have sex with men/ homosexual or bisexual male	0.8	0.5	0.7	1.1	0.3	0.7	2.2	0.1	1.0	8.1	0.2	0.9	14.0	0.1	1.2	22.7	0.0	1.4	14.6	0.1	2.0
Mother-to-child transmission	0.0	0.2	0.8	0.5	0.6	0.7	0.0	0.3	0.7	0.0	0.4	0.6	0.0	0.4	0.9	0.0	0.3	0.7	0.5	1.4	0.7
Non-occupation	9.1	1.1	0.4	7.8	0.5	0.7	10.3	0.6	1.1	7.5	0.4	1.2	7.2	0.9	1.5	6.4	2.6	1.2	5.6	4.9	0.8
Nosocomial (includes hospital, nursing home, psychiatric institutions)	25.2	2.9	1.1	33.6	3.4	2.7	26.3	2.4	2.8	25.9	1.1	2.7	23.7	1.6	3.3	19.1	5.5	1.8	26.5	9.5	0.5
Other	8.3	10.7	0.2	5.2	15.3	1.0	5.1	20.3	0.6	5.9	15.8	1.4	14.3	11.0	1.0	2.1	2.9	0.9	4.0	4.2	0.9
Needle-stick and other occupational exposure (includes healthcare workers and needle stick injuries)	2.5	0.1	0.3	0.9	0.1	0.6	1.2	0.1	0.3	0.0	0.0	0.3	1.1	0.4	0.4	0.0	0.4	0.3	0.3	1.2	0.1
Sexual transmission (not specified)	1.9	0.1	2.5	3.6	0.2	3.8	8.2	0.0	4.3	5.2	0.1	4.2	0.0	0.2	3.6	2.2	1.3	4.5	5.3	8.2	3.0
Organ and tissues	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Country reports (Data included from the following countries: Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Sweden, United Kingdom).

[a] Calculated as % of total number of cases not recorded as unknown.

Table A9: Number and proportion of cases of hepatitis B cases classified as 'imported' by disease status in EU and EEA countries in 2012

Country	Acute			Chronic			Unknown			Total		
	Number of imported cases	Total number of cases with valid information	% Imported	Number of imported cases	Total number of cases with valid information	% Imported	Number of imported cases	Total number of cases with valid information	% Imported	Number of imported cases	Total number of cases with valid information	% Imported
Austria	4	36	11.1	22	180	12.2	4	54	7.4	30	270	11.1
Cyprus												
Czech Republic												
Denmark	6	23	26.1	238	263	90.5	4	4	100	248	290	85.5
Estonia	0	9	0	0	42	0				0	51	0
Finland	13	21	61.9	112	119	94.1				125	140	89.3
France[a]	17	67	25.4							17	67	25.4
Germany	11	561	2				0	111	0	11	672	1.6
Greece												
Hungary	0	54	0							0	54	0
Iceland												
Ireland	9	28	32.1	139	154	90.3	4	4	100	152	186	81.7
Italy												
Latvia	4	75	5.3	1	68	1.5	1	158	0.6	6	301	2
Lithuania	0	6	0							0	6	0
Luxembourg												
Malta							4	18	22.2	4	18	22.2
Netherlands	26	164	15.9	1020	1166	87.5	5	17	29.4	1051	1347	78.1
Norway	16	46	34.8	626	654	95.7				642	700	91.7
Poland	2	61	3.3							2	61	3.3
Portugal	2	3	66.7				0	1	0	2	4	50
Romania	23	332	6.9	3	29	10.3				26	361	7.2
Slovakia	0	73	0	20	82	24.4				20	155	12.9
Slovenia												
Spain												
Sweden	26	77	33.8	1195	1257	95.1	20	20	100	1241	1354	91.7
United Kingdom[b]	1	1	100	7	7	100				8	8	100
Totalf	**160**	**1637**	**9.8**	**3383**	**4021**	**84.1**	**42**	**387**	**10.9**	**3585**	**6045**	**59.3**

[a] Under-reporting was estimated to be 85% in France for acute hepatitis B cases in 2010.
[b] Excluding Scotland.

Table A10: Number and proportion of cases of hepatitis C cases classified as 'imported' in EU and EEA countries in 2012

Country	Acute			Chronic			Unknown			Total		
	Number of imported cases	Total number of cases with valid information	% Imported	Number of imported cases	Total number of cases with valid information	% Imported	Number of imported cases	Total number of cases with valid information	% Imported	Number of imported cases	Total number of cases with valid information	% Imported
Austria	14	86	16.3	21	300	7	13	90	14.4	48	476	10.1
Cyprus												
Czech Republic												
Denmark	3	11	27.3	42	231	18.2	1	1	100	46	243	18.9
Estonia	1	23	4.3	0	215	0				1	238	0.4
Finland							73	687	10.6	73	687	10.6
Germany							32	4880	0.7	32	4880	0.7
Greece												
Hungary	1	40	2.5							1	40	2.5
Iceland												
Ireland	5	12	41.7	51	63	81	40	69	58	96	144	66.7
Italy												
Latvia	4	47	8.5	16	1226	1.3				20	1273	1.6
Lithuania	0	12	0							0	12	0
Luxembourg												
Malta							1	24	4.2	1	24	4.2
Netherlands	4	46	8.7							4	46	8.7
Norway							232	1459	15.9	232	1459	15.9
Poland												
Portugal												
Romania	3	95	3.2	2	27	7.4				5	122	4.1
Slovakia	0	20	0	10	203	4.9				10	223	4.5
Slovenia												
Spain												
Sweden							422	1503	28.1	422	1503	28.1
United Kingdom				18	151	11.9	4	66	6.1	22	217	10.1
Total	**35**	**392**	**8.9**	**160**	**2416**	**6.6**	**818**	**8779**	**9.3**	**1013**	**11587**	**8.7**

Table A11: Differences between reporting country and the country of birth or nationality of hepatitis B cases, in EU/EEA countries, 2012

Country	Acute		Chronic		Unknown	
	Proportion of cases where reporting country ≠ Country of birth/ nationality (%)	Proportion of cases where reporting country = Country of birth/ nationality (%)	Proportion of cases where reporting country ≠ Country of birth/ nationality (%)	Proportion of cases where reporting country = Country of birth/ nationality (%)	Proportion of cases where reporting country ≠ Country of birth/ nationality (%)	Proportion of cases where reporting country = Country of birth/ nationality (%)
Austria	0.0	0.0	0.0	0.0	0.0	0.0
Cyprus					84.6	15.4
Czech Republic					0.0	0.0
Germany	16.0	84.0	87.0	12.3	50.0	50.0
Denmark	0.0	100.0	0.0	100.0		
Estonia	50.0	47.1	75.1	9.2		
Finland	7.9	21.8				
France[a]	0.0	0.0			0.0	0.0
Greece	0.0	0.0				
Hungary	1.9	98.1				
Ireland	0.0	0.0			0.0	0.0
Iceland	31.4	54.3	39.5	3.3	33.3	0.0
Italy	20.6	78.0				
Lithuania	0.0	0.0	0.0	0.0	0.0	0.0
Latvia	0.0	100.0				
Luxembourg					100.0	0.0
Malta					38.9	27.8
Netherlands	17.7	86.1	86.9	13.1	38.9	61.1
Norway	0.0	91.3	0.0	3.6		
Poland	1.3	98.7				
Portugal	0.0	12.5			0.0	0.0
Romania	0.0	97.1	6.9	93.1		
Slovenia	0.0	0.0				
Slovakia	0.0	0.0	0.0	0.0		
Spain	0.0	0.0	0.0	0.0		
Sweden	23.8	43.8	58.9	2.1	24.3	2.7
United Kingdom[b]	0.0	1.4	0.7	0.0	0.0	0.0
Total	**5.2**	**34.0**	**20.9**	**2.9**	**3.3**	**1.3**

Source: Country reports. Cases were excluded from the analysis if information on country of birth or country of nationality were missing.
[a] Under-reporting was estimated to be 85% in France for acute hepatitis B cases in 2010.
[b] Data excludes Scotland

Table A12: Differences between reporting country and the country of birth or nationality of hepatitis C cases, in EU/EEA countries, 2012

Country	Acute		Chronic		Unknown	
	Proportion of cases where reporting country ≠ Country of birth/ nationality (%)	Proportion of cases where reporting country = Country of birth/ nationality (%)	Proportion of cases where reporting country ≠ Country of birth/ nationality (%)	Proportion of cases where reporting country = Country of birth/ nationality (%)	Proportion of cases where reporting country ≠ Country of birth/ nationality (%)	Proportion of cases where reporting country = Country of birth/ nationality (%)
Austria	0.0	0.0	0.0	0.0	0.0	0.0
Cyprus					78.3	19.6
Czech Republic					0.0	0.0
Germany	25.0	75.0	22.3	77.7	100.0	0.0
Denmark	0.0	100.0	0.0	100.0		
Estonia					13.8	84.1
Finland					0.0	0.0
Greece	0.0	0.0	0.0	0.0		
Hungary	0.0	100.0				
Ireland					0.0	0.0
Iceland	46.2	46.2	56.0	34.7	7.1	5.7
Italy	9.7	87.4				
Lithuania	0.0	100.0				
Latvia	0.0	0.0	0.0	0.0		
Luxembourg					73.9	23.9
Malta					16.7	75.0
Netherlands	21.1	66.7				
Norway					0.0	2.4
Poland						
Portugal	0.0	100.0	0.0	100.0	0.0	0.0
Romania	0.0	0.0	0.0	0.0		
Slovenia	0.0	0.0	0.0	0.0		
Slovakia					19.4	37.5
Spain			0.0	0.0	0.0	0.0
Sweden	5.1	56.0	2.5	11.9	2.9	12.5
United Kingdom			0.0	0.0	0.0	0.0
Total	**10.5**	**45.9**	**12.1**	**14.1**	**26.4**	**12.5**

Source: Country reports. Cases were excluded from the analysis if information on country of birth or country of nationality were missing.

Table A13: Number of deaths of hepatitis B cases in EU and EEA countries in 2011[a]

Country	Number of cases with valid data on outcome	Number of deaths
Austria	428	0
Cyprus	13	0
Czech Republic	154	1
Denmark	29	0
Estonia	51	0
Finland	251	0
France[b]	101	0
Germany	667	6
Greece	47	2
Hungary	54	2
Iceland	0	0
Ireland	21	0
Italy	468	7
Latvia	301	3
Lithuania	8	0
Luxembourg	0	0
Malta	18	0
Netherlands	1497	8
Norway	27	0
Poland	78	4
Portugal	28	0
Romania	371	6
Slovakia	155	1
Slovenia	41	0
Spain	0	0
Sweden	3	3
United Kingdom[c]	0	0
Total	**4811**	**43**

[a] Bulgaria and Poland excluded as data submitted in aggregate format which was not suitable for analysis
[b] Under-reporting was estimated to be 85% in France for acute hepatitis B cases in 2010.
[c] Data excludes Scotland

Table A14: Number of deaths of hepatitis C cases in EU and EEA countries in 2011[a]

Country	Number of cases with valid data on outcome	Number of deaths
Austria	0	0
Cyprus	0	0
Czech Republic	0	0
Denmark	4	2
Estonia	234	0
Finland	0	0
Germany	7299	7
Greece	31	0
Hungary	29	0
Iceland	0	0
Ireland	9	1
Italy	178	0
Latvia	1278	5
Lithuania	0	0
Luxembourg	0	0
Malta	24	0
Netherlands	57	0
Norway	3	0
Portugal	0	0
Romania	133	1
Slovakia	278	1
Slovenia	130	0
Sweden	0	0
United Kingdom	1248	117
Total	**10935**	**134**

[a] Bulgaria and Poland excluded as data submitted in aggregate format which was not suitable for analysis

Table A15: Number of reported hepatitis C cases per 100 000 population by disease status and gender in EU/EEA countries, 2006–2011

Year	All cases		Acute cases		Chronic cases		Unknown	
	Male	Female	Male	Female	Male	Female	Male	Female
2006	11.7	6.5	0.9	0.5	3.6	1.7	12.2	6.6
2007	10.1	5.6	0.8	0.7	3.8	1.8	10.8	5.7
2008	10.9	5.9	0.7	0.4	3.6	1.7	12.2	6.6
2009	9.9	5.2	0.8	0.4	4.0	1.8	10.9	5.6
2010	9.3	4.8	2.1	1.3	4.1	1.7	10.0	5.0
2011	10.4	5.4	2.2	1.2	4.9	2.3	11.2	5.7
2012	10.8	5.5	2.8	1.5	6.0	3.4	11.5	5.8

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

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