

# **TECHNICAL REPORT**

# Surveillance and prevention of hepatitis B and C in Europe

Stockholm, October 2010

#### **ECDC** TECHNICAL REPORT

# **Surveillance and prevention of hepatitis B and C in Europe**



The production of this technical report was coordinated by Marita van de Laar. The analysis of the survey covered by this report was commissioned by the European Centre for Disease Prevention and Control (contract ECD.1710) and conducted by Greet Hendrickx, Alex Vorsters, and Pierre Van Damme (University of Antwerp, Belgium).
Suggested citation: European Centre for Disease Prevention and Control. Surveillance and prevention of hepatitis E and C in Europe. Stockholm: ECDC; 2010.
Stockholm, October 2010
ISBN 978-92-9193-216-0
doi 10.2900/3321
© European Centre for Disease Prevention and Control, 2010
Reproduction is authorised, provided the source is acknowledged.

# **Contents**

Executive summary	1
1 Introduction	3
2 Scope and method	5
2.1 Survey method and limitations	5
2.2 Response	5
3 Surveillance systems for HBV and HCV	6
3.1 Description of surveillance systems	6
3.2 Objectives for hepatitis surveillance	9
3.3 Case definitions	9
3.4 Cases included in hepatitis B reporting	10
3.5 Cases included in hepatitis C reporting	
3.6 Data collection	13
Source of data	13
Collected data	
Format of data	
Duplicates and underreporting	
Frequency of analysis	
3.7 Summary	15
4 Description and representation of the LIDV and LICV	1.0
4 Prevention programmes for HBV and HCV	
4.2 Immunisation programmes for hepatitis B	
Universal HBV vaccination	
Risk group vaccination	
Vaccination coverage	
Summary	
Summary	
5 Epidemiology	
5.1 Hepatitis B	
5.2 Hepatitis C	23
6 Discussion and conclusion	26
Annex 1. Tables	27
Annex 2. Country overview on HBV and HCV surveillance and prevention	
Austria	
Belgium	
Bulgaria	
Cyprus	
Czech Republic	
Denmark	
Estonia	
Finland	
France	
Germany	

Greece	76
Hungary	79
Iceland	82
Ireland	85
Italy	88
Latvia	91
Liechtenstein	94
Lithuania	97
Luxembourg	100
Malta	103
Netherlands	106
Norway	109
Poland	112
Portugal	115
Romania	118
Slovakia	121
Slovenia	124
Spain	127
Sweden	130
United Kingdom	133

# **Abbreviations**

AER Annual Epidemiological Report on Communicable Diseases in Europe 2009.

Stockholm: ECDC; 2009

ANC Antenatal care
DU Drug user

HBV Infection with hepatitis B virus
HCC Hepatocellular carcinoma
HCV Infection with hepatitis C virus
ICER Incremental cost-effectiveness ratio

IDUs Injecting drug users LYG Life years gained

MSM Men who have sex with men n/a not available; not applicable QALY Quality-adjusted life year STD Sexually transmitted disease STI Sexually transmitted infection

# **Executive summary**

#### **Scope**

This survey was carried out to map existing national surveillance systems and prevention programmes for hepatitis B and C in the EU/EEA.

#### **Hepatitis B**

#### **Surveillance in Europe**

All countries indicated that they maintain a passive mandatory reporting system for hepatitis B. In 15 countries there was only one specific surveillance system, whereas four countries had multiple surveillance systems. The national objectives of surveillance are very similar in different countries but the case definitions were not always in line with the objectives; eight countries indicated that they implemented the EU-2008 case definition, and three were using the EU-2002 case definition. In total, 21 countries were using a case definition that closely resembled the EU definition. Based on the various case definitions, 28 countries report confirmed cases, and 27 include acute hepatitis B cases. Chronic cases are included in the reports of 17 countries; asymptomatic cases are often omitted. Twenty-six countries reported to collect case-based data at the national level, but the frequency of analysis varies between countries. A basic data set (age, gender, place of residence, date of onset of disease, date of reporting) is collected in 26 countries, but detailed data on epidemiological risk and impact of the disease are often missing.

#### **Epidemiology in Europe**

The number of newly reported cases per 100 000 population in 2007 as reported by 27 countries ranges from 0 to 15.0, with an average of 1.5 (Annual Epidemiological Report on Communicable Diseases in Europe 2009. Stockholm: ECDC; 2009). The number of reported HBV cases in the EU/EEA countries per 100 000 population has declined from 6.7 to 1.5 between 1995 and 2007. Tracking trends and making comparison between countries can be challenging, as surveillance systems differ considerably and recent changes may impact the presented data.

Prevalence of HBV in the general population varies widely between countries, with low to intermediate HBsAg carrier rates in Slovakia (1.6%), Italy (1%), Belgium and France (around 0.6 %), Finland, Hungary, the United Kingdom (all below 0.5%), and Bulgaria (3.8%). Screening for HBV in pregnant women is conducted in 24 countries, but not in Belgium, Bulgaria, Lithuania, Luxembourg and Romania. Prevalence in pregnant women varies between 1.15% in Greece and 0.14% in Finland. There are also screening programmes for injecting drug users (15 out of 29 countries), prisoners (11 countries), STI clinic attendees (nine countries), and persons with multiple sex partners (two countries). HBV prevalence in IDU reported by eight countries was higher than in the general population. The prevalence in IDU varies widely, ranging between 0.5% in Norway and 50% in Denmark. Prevalence among healthcare workers in Denmark and Germany was shown to be similar to the general population.

#### **Screening and vaccination**

Universal vaccination programmes for infants, children or adolescents were implemented in 22 countries. Seven countries (Denmark, Finland, Iceland, Norway, Sweden, the Netherlands, and the United Kingdom) have implemented selective vaccination programmes targeted at risk groups. Additional prevention programmes for different risk groups were usually targeted at those at increased risk for HBV due to occupational exposure. In addition, there is a wide variety of risk-group vaccination programmes. Only half of the countries with a routine vaccination programme indicated heterogeneous coverage rates, but the coverage rate in infants (one to two years) seems to be above 95% (except in Austria, Malta, and France).

#### **Hepatitis C**

#### **Surveillance in Europe**

All EU/EEA countries indicated that they have implemented a reporting system for hepatitis C (either national or targeted at one specific population). In 14 countries there was one specific surveillance system, but 15 countries indicated that they use multiple surveillance systems to monitor hepatitis C. The national objectives of surveillance are very similar in the different countries but it appears that case definitions were not always in line with the objectives. Eleven countries indicated that they have implemented the EU-2008 case definition, and four countries apply the EU-2002 case definition. Despite this, there is a wide variety in the implementation of case definitions in the Member States, especially in the case classification. All countries included confirmed acute cases in their

surveillance systems<sup>1</sup>, and 18 countries also included chronic cases. Some countries indicated that they collected a mixture of cases, and no serological markers were available to differentiate between acute and chronic hepatitis C. This hampers the interpretation of available data across countries. Twenty-six countries reported to collect case-based data at the national level, but the frequency of analysis varies between countries. In addition to clinical reporting, 19 countries collect data from laboratories as a part of their surveillance system; 10 countries do not include laboratory reporting. A basic data set (age, gender, place of residence, date of onset of disease, date of reporting) is collected in 26 countries, but information on detailed epidemiological risk and impact of the disease are often missing. Underreporting seems to be common, due to the asymptomatic character of the disease.

#### **Epidemiology in Europe**

The number of newly reported cases per 100 000 population in 2007, as reported by 27 Member States, range between 0 and 36, with an average incidence of 6.9 cases per 100 000 (AER, ECDC 2009). The number of reported HCV cases in the EU/EEA countries per 100 000 population has increased from 4.5 to 6.9 between 1995 and 2007. Plotting trends and comparing data between countries is difficult and needs to be done with caution, as surveillance systems differ considerably and recent changes may impact the presented data. For HCV, the interpretation is further hampered by the asymptomatic nature of infection so that reported numbers may reflect testing practices rather than true incidence and because no distinction can be made between acute and chronic disease.

Prevalence data on HCV for the general population are rather scarce; prevalence ranges from 2.6% in Italy in 2007 to 0.12% in Belgium in 2003. A relative high prevalence was reported by Bulgaria (1.2%) and Slovakia (1.56%). Eleven Member States reported prevalence data in IDU ranging from 25% to 75%. In 2006–07, Italy reported the lowest prevalence (10.8%–25.6%) and Norway the highest (70%). The HCV prevalence data are based on serological markers for hepatitis C, but this does not indicate which part of the population are carriers and thus infective.

#### **Prevention in Europe**

Half of the countries indicated that they have implemented screening programmes for risk groups: 16 countries have programmes for IDUs, 11 for prisoners. It remains unclear whether many countries have implemented programmes to monitor the infection rate in healthcare workers. There appears to be a need for more screening programmes for risk groups, hard-to-reach populations, and the general population, but before implementing any measure a thorough investigation should be carried out, based on a cost-effectiveness analysis and the availability of effective treatment.

#### **Conclusion**

This report collected and analysed data from 29 EU/EEA countries in regard to hepatitis B and C surveillance and prevention programmes. Although all countries have systems in place that collect data at the national level, these systems differ in the way they apply case definitions and make use of collected data.

As viral hepatitis is a frequent and often underreported disease, this report tries to summarise the latest available prevalence data at EU level. Harmonising the available surveillance data in order to improve comparability of data among countries will be a major challenge in the next few years.

2

<sup>&</sup>lt;sup>1</sup> Acute confirmed cases of hepatitis C in France were surveyed only in 2006 and 2007 and for a specific population, e.g. HIV-infected men who have sex with men.

# 1 Introduction

Hepatitis B (HBV) and C (HCV) are viral infections which can cause acute and chronic hepatitis and are the leading causes for hepatic cirrhosis and cancer, thus creating a significant burden to healthcare systems due to the high morbidity/mortality and costs of treatment. According to the World Health Organization (WHO), one third of the world's population has been infected with HBV, and more than 350 million suffer from chronic infection  $^{[i]}$ . Approximately 15–40% of infected patients will develop cirrhosis, liver failure or hepatocellular carcinoma. HBV accounts for an estimated 600 000 deaths each year, mainly due to the consequences of chronic hepatitis, such as cirrhosis and liver cancer  $^{[ii]}$ . The risk of developing a chronic form depends on age at infection: the younger the patient, the higher the risk of developing chronic hepatitis: chronic infection is seen in 90% of infants infected at birth, 30 to 50% of children infected between the age of one to four years, and 1 to 10% of those infected at older age or as adults.

HBV can effectively be prevented by vaccination  $^{[iii]}$ . A safe and effective HBV vaccine has been available since the 1980s and can prevent acute and chronic infection with an estimated effectivity of 95%  $^{[iv]}$ . In 1992, the WHO recommended to implement universal vaccination against hepatitis B for newborns in all countries with an HBV prevalence rate higher than 5% in 1995. All other countries were recommended to implement universal vaccination in 1997  $^{[v]}$ .

With regard to HCV, it has been estimated that 170 million persons have chronic infection and that three to four million new cases occur each year <sup>[vi]</sup>. Initial infection is frequently asymptomatic or mild (70%–90% of cases). Of those infected, 50–80% later develop chronic infection, and cirrhosis (up to 50%) and liver cancer (1%–5%) over a period of 20 to 30 years. Although other studies show a somewhat lower percentage of cirrhosis and liver cancer <sup>[vii]</sup>, HCV is a major public health problem. A person with HCV can infect others from one to several weeks before symptoms. In case of chronic infections, infectivity may persist indefinitely.

There is no vaccine against HCV infection  $[v^{iii}]$ . Research is in progress but the high mutability of the HCV genome complicates vaccine development. The greatest impact on HCV disease burden will likely be achieved by focusing efforts on reducing the risk of HCV transmission from nosocomial exposures (e.g. screening of blood, rigorous implementation of infection control, reducing unsafe injection practices) and high risk behaviours (e.g. injection drug use). Relevant measures to reduce transmission are early diagnosis, effective prevention and screening programmes, as well as appropriate treatment  $[i^{[x, x]}]$ . It is known that a large number of people carrying the HCV virus are not aware of being infected due to high proportion of asymptomatic infections  $[v^{[x, x]}]$ .

HBV is transmitted by either percutaneous or mucous membrane contact with infected blood or other body fluid. The virus is found in highest concentrations in blood and serous exudates. The primary routes of transmission are perinatal, early childhood exposure, sexual contact, and percutaneous exposure to blood or body fluids (i.e. injections, needle stick, blood transfusion). Most perinatal infections occur among infants of pregnant women with chronic HBV infection. The distribution patterns and risk groups differ widely across the EU. Sexual transmission has been estimated to account for 30% to 50% of new infections among adults in industrialised countries. The most common risk factors include multiple sex partners and history of a sexually transmitted infection. Finally, unsafe injections and other unsafe percutaneous procedures are a major source of blood-borne pathogen transmission (HBV, HCV, HIV) in many countries: the risk of HBV infection from needle stick exposure to HBsAgpositive blood is ~30%. Worldwide, unsafe injection practices account for ~8 to 16 million HBV infections each year [iv]. In the past, HBV was frequently transmitted via blood transfusion, but due to improved testing of blood donors the estimated residual risk of acquiring HBV infection via this route ranges from 0.49 to 10 per million transfusions in Europe [xxii, xiii, xii, xiii, xiii,

In the second half of the 20th century, HCV was transmitted widely through the use of parenteral injections, invasive medical and surgical procedures, and transfusion of blood products. An epidemic explosion in IDUs followed and for two decades has remained the main transmission route accounting for the majority of new HCV infections. The risk for perinatal infections ranges from 3% to 10% in different populations. Sexual transmission is thought to be relatively infrequent. However, in many cases, no recognisable transmission factor or route can be identified. In Europe, HCV is mainly associated with injecting drug use (blood-to-blood contact, sharing syringes and needles), nosocomial transmission, or other parenteral exposure such as needle stick injuries, body piercing or tattooing [xi, xvii, xviii]. In most countries, injecting drug use accounts for 30% to 60% of all reported HCV cases. Another common risk factor is having had a blood transfusion before 1991. In 10% to 54% of cases, the risk factor is undetermined or unknown [xix]. It has been observed that high-risk sexual behaviour among (predominantly HIV-positive) men who have sex with men (MSM) may predispose to HCV infection probably via permucosal route (and mucosal damage rather than by sexual contact) [xx, xxi, xxii]. The implementation of effective anti-HCV testing methods and virus inactivation procedures in the late 1980s and early 1990s, as well as recent introduction of HCV-RNA tests significantly improved blood transfusion safety [xiv]. The estimated residual risk for acquiring HCV via blood products ranges from 1 to 40 per 10 million transfusions [x, xiii, xiv, xvii]. Regardless of this improvement,

nosocomial transmission of HCV via other routes, such as contaminated substances or multiple dose vials as well as via haemodialysis, is still a concern and should be further investigated [xxiii].

In the European Union (EU), the European Economic Area (EEA) and neighbouring countries, the occurrence of HBV and HCV is known to differ across countries [xxiv]. Between 1995 and 2007, around 83 000 cases of HBV were reported at EU/EEA level, but the number of reporting countries varies (AER, ECDC 2009). During this period, a steady decrease was observed (see Table 1 below).

Table 1. Number of confirmed cases of hepatitis B reported at EU/EEA level, 2005–07

Reporting year	Number of HBV cases	Reporting countries
2005	6977	25
2006	7494	28
2007	6481	27

Source: Annual Epidemiological Report on Communicable Diseases in Europe 2009. Stockholm: ECDC; 2009.

In 2007, 6 481 confirmed cases of hepatitis B virus infections were reported by 27 EU/EEA Member States, giving an overall notification rate of 1.5 per 100 000 inhabitants (ECDC 2009). Between 1995 and 2007, almost 310 000 HCV cases were reported in EU/EEA countries, but it needs to be noted that the number of reporting countries varies from one year to another. During this period, a steady increase in the incidence of reported HCV cases was observed. In 2007, 27 591 cases of hepatitis C virus infections were reported by 27 EU/EEA Member States and 26 840 of these were confirmed, giving an overall notification rate of 6.9 per 100 000 inhabitants (ECDC 2009) [xxiv]. Over the last few years, HBV incidence has been decreasing while HCV incidence rates have been rising [xxv]. At the country level, the incidence of reported cases is variable, and abrupt changes in incidence can be seen. These trends probably reflect changes in surveillance systems or prevention activities rather than true changes in incidence.

The prevalence of HBV and HCV infection varies markedly in different populations. Both diseases are concentrated in certain subpopulations such as injecting drug users who have a prevalence rate ten times higher than the general population. The prevalence is also higher in men who have sex with men as compared with the heterosexual population. In 1999, WHO estimated the worldwide prevalence of HCV at 3%. Most affected areas are Africa (5%) and the Eastern Mediterranean region (4.6%), followed by the Western Pacific region (3.9%), and South-East Asia (2%). The Americas and Europe had the lowest prevalence estimates, 1.7% and 1%, respectively [xxvii]. According to national estimates, 8.8 million (1.3%) people are infected in 22 European countries [xxviii]. In Europe, the prevalence of HCV can be roughly divided in three patterns: in Northern Europe, the epidemic is mainly transmitted by IDU, with overall prevalence rates between 0.1 and 1%. In Central Europe, the HCV prevalence is intermediate, ranging from 0.2% to 1.2%. In Southern Europe, the overall prevalence ranges between 2.5% and 3.5% [xix].

It is obvious that good surveillance data are essential for public health action and planning, as well as policy making. In 2006, the harmonisation process of surveillance of viral hepatitis in the EU was identified by the European Parliament as one of the priorities for the European Centre for Disease Prevention and Control (ECDC). Currently, data is collected by several national surveillance systems but the comparison of these surveillance data is hampered by differences in surveillance systems, the population under surveillance, the data sources, and the unknown proportion of unreported infections. Also, there is no agreement on practice, need, and usefulness of reporting chronic and asymptomatic cases. All in all, there is a clear need to strengthen and harmonise the many surveillance systems in Europe.

ECDC has carried out a survey to map existent national surveillance systems and prevention programmes among EU/EEA countries as this would provide an ideal foundation for the development of a protocol for enhanced surveillance of hepatitis B and C in the European Union.

The major objectives of the survey were:

- to gather detailed information on national surveillance systems and screening programmes for HBV and HCV; and
- to collect information on the national prevention programmes targeting hepatitis B and C.

The main objective of this study is to provide an overview of existing surveillance systems by not only showing the diversity that exists between the countries but also by indicating the potential for ensuring harmonisation and consistency.

# 2 Scope and method

#### 2.1 Survey method and limitations

All 27 EU Member States and Iceland, Liechtenstein, and Norway were invited to participate in a web-based survey on surveillance and prevention of hepatitis B and C. The link to this survey was sent to the nominated contact points for hepatitis B and C of the Member States' competent bodies for surveillance. The survey included separate parts for hepatitis B and C. Each questionnaire was divided into four sections: a) general aspects, b) source of data collected, c) other questions related to surveillance, and d) prevention. The questionnaires are included in the annex to this report.

Questionnaires were sent in September 2008, and by October 2009 the collected data had been extracted and entered in a database. In December 2009, after analysis of the data in Microsoft Excel, the countries' correspondents were asked to update and validate the country-specific data (see Annex 2). All data are available at the country level and in an accumulated EU/EEA format. Data collected on vaccination programmes was validated and completed with data from the VENICE Project Work Package 1–3 report (www. venice.cineca.org) and EUVAC (www.EUVAC.net).

Also collected were prevalence data on hepatitis B and C in the general population, pregnant women, and IDUs. The following limitations of the study must be taken into account:

- Not all countries answered all guestions.
- Despite an explanatory wordlist issued by ECDC ('ECDC definitions of some attributes of the surveillance systems'), participants understood and interpreted definitions and terminology differently.
- Blank fields or missing data can only be interpreted as 'Respondent did not provide requested information in the questionnaire' (unless specified otherwise). This does not necessarily mean that the information is not available.
- Questionnaires that cover a wide range of topics, e.g. surveillance systems, burden of disease, and vaccination policies, often generate questions that cannot always be answered.
- Screening programmes were not defined in detail.

#### 2.2 Response

All countries completed both surveys, with the exception of the Czech Republic (only HCV questionnaire) and Liechtenstein (only HBV questionnaire). This resulted in a high response rate of 29/30 for each disease. This response rate allows us to analyse the collected survey data at the European level. As no overall validation was performed, any appraisal of the presented review or inter-country comparison should be performed with caution. The respondents and non-respondents by country and disease are shown in Annex 1, Table A1.

To facilitate the analysis and the comparison between countries, the data for each country is presented in a country overview (Annex 2). These profiles consist of two parts: 1) surveillance system, and 2) prevention, and are present in a consistent page layout which reflects the questionnaire's content and wording. A third part on burden of disease and epidemiology might be added later, once the surveillance data have been submitted and validated.

# 3 Surveillance systems for HBV and HCV

All countries have systems for the surveillance and prevention of hepatitis B and C in place, but there are major differences in methodology (Table 2). Hepatitis B and hepatitis C surveillance systems are part of the national surveillance in all participating countries (29/29). Almost all countries have a mandatory reporting system for HBV (93%; 27/29) and HCV (90%; 26/29). Hepatitis C reporting is voluntary in France, Italy, and the United Kingdom; hepatitis B reporting is voluntary in Italy and the United Kingdom.

#### 3.1 Description of surveillance systems

The vast majority of countries have a passive surveillance system: 90% (25/29) for HBV and 83% (24/29) for HCV.

There are doubts whether ECDC's definition of an active surveillance system<sup>2</sup> was taken into account when the respondent described their national 'active surveillance systems' in the questionnaire: in Austria, the Czech Republic and Liechtenstein, active surveillance is described as a system which stipulates that physicians or laboratories report all suspected or confirmed cases directly to the office of public health; in Slovakia, epidemiologists investigate all reported cases (suspected or laboratory-confirmed) and follow up with the patient and his direct contacts; and in the United Kingdom, the active surveillance systems for HBV and HCV are described as including information from multiple sources.

A more detailed analysis of the surveillance systems shows that almost half of the countries (52% or 15/29 for HBV, and 48% or 14/29 for HCV) have a country-specific surveillance system in place<sup>3</sup>. Several countries report more than one HBV/HCV surveillance system for their countries; three countries report that, although they have several parallel surveillance systems, there is one system that is considered the most comprehensive (HBV in France, Spain and the United Kingdom; HCV in Finland, Spain and the United Kingdom). Two countries report that several surveillance systems exist, but that none can be seen as dominant (HBV and HCV systems in Belgium; HCV systems in France). In five countries (Hungary, Italy, Latvia, Romania and Slovakia), the HBV and HCV reporting systems are part of a syndromic surveillance system, which makes it possible to differentiate the reported cases according to the aetiology. Seven countries report to collect data on HBV in STI clinics, four report HCV data in STI clinics, and seven countries collect data for both HBV and HCV through a laboratory network. Five countries perform sero-surveillance in the general population, while only four countries collect data from sentinel surveillance systems (Table 3).

Sero-surveillance in the general population was reported for six different countries: combined hepatitis B and C sero-surveillance was organised in Belgium (one region), France, Slovakia and the United Kingdom; in Germany, samples were only tested for hepatitis B, and in the Czech Republic only for hepatitis C (there was no additional information available for the United Kingdom). Sero-surveillance studies can contribute to assess the burden of disease, as they account for asymptomatic infections as well as chronic infections. Asymptomatic infections are often not included in the national surveillance systems.

Other country-specific surveillance or screening programmes focusing on risk groups are performed, on a more or less regular basis, in Denmark (pregnant women), Finland (IDUs and prisoners), Iceland (alcohol and drug addicts), and the United Kingdom (IDUs). Hungary, Iceland and Ireland also consider their national databases for blood and blood-borne products as a special surveillance programme for HBV and HCV. In France, the surveillance system for HBV and HCV is based on a combination of different screening programmes and sero-surveys. Although other HBV/HCV reporting systems are rather rare in the participating countries, they are an important source of data to measure the burden of disease in a given country.

-

<sup>&</sup>lt;sup>2</sup> A surveillance system based on a public health officials initiative to contact physicians, laboratory or hospital staff or other relevant sources to report data

<sup>&</sup>lt;sup>3</sup> 'Own surveillance system' is considered 'country-specific'.

Table 2. Summary of information on national surveillance systems for Hepatitis B and C

Information on the from 29 countries	he national surveillance system according to responses	Number of	
Type of surveil		HBV	HCV
Type of Surveil	Mandatory	27	26
	Voluntary	2	3
	Passive	25	2
	Active	4	
Type of surveil		7	
Type of survei	Own system	15	14
	Several surveillance systems, one of which is the most comprehensive	_	3
	Several surveillance systems, one is the most comprehensive	1	
	Syndromic surveillance of viral hepatitis	5	
	Other	5	5
Objectives	Oute	, ,	
Objectives	Monitor trends	29	29
	Detect outbreaks	26	25
	Monitor changes in disease distribution	28	27
	-	28	28
	Evaluate and plan control measures	28	28
	Improve knowledge of epidemiology  Other	5	28
Casa dafinition	1	5	
Case definition		3	
	EU 2002/253/EC		11
	EU 2008/426/EC	8	11
	Possibly EU (lack of information)	5	5
	Extended EU	5	2
	No case definition	3	
Case classifica	Other	5	3
Case classifica		-	
	Possible	1	1
	Probable	15	- 6
	Confirmed	28	28
	Acute	29	27
	Chronic	17	18
	Asymptomatic	9	12
<u> </u>	Suspected	1	1
Data collection		20	20
Source of data	Physicians	28	28
	Laboratory	19	19
	Hospital	19	19
A !! - !- !!!!	Other	4	20
Availability	Case-based	26	26
	Aggregated	8	9
Format	Electronic	23	25
To all officers done it as	Paper	13	14
Including duplica		4	9
Underreporting	No .	3	2
F	Exists	26	27
Frequency of dat			
	Daily	5	
	Weekly	8	•
	Biweekly	1	1

	the national surveillance system according to responses	Number of	countries
from 29 countr	ies, by disease	HBV	HCV
	Monthly	10	10
	Biannually	2	3
	Yearly	18	19
Screening prog	rammes		
	Pregnant women	24	3
	Military recruits	3	1
	Injecting drug users	15	16
	STI clinic patients	9	(
	Multiple sex partners	1	1
	Prisoners	11	10
	Haemodialysis patients	20	20
	Long-term healthcare facilities	2	C
	Healthcare workers	7	7
	Workers who are occupationally exposed to the virus	11	g
	Blood and organ donors	26	27
Link to other re	egisters		
	Liver transplant	5	5
	Liver cancer	6	$\epsilon$
	Mortality	8	8
	Hospital registers	8	8
Prevention			
Universal vacci	nation	22	n/a
	Infants	11	n/a
	Adolescents	8	n/a
	Both	12	n/a
Risk group vac	cination		
	Neonates born to HBsAg+ mothers	21	n/a
	Individuals at risk for HBV due to occupation	26	n/a
	Haemodialysis patients	22	n/a
	Chronic liver disease patients	12	n/a
	STI clinic patients	10	n/a
	Multiple sex partners	10	n/a
	Injecting drug users	17	n/a
	Household contacts of HBsAg+ patients	22	 n/a
	Contacts of infected persons	17	n/a
	Other risk groups	12	n/a

Note: Detailed information on all surveillance systems by country and disease is available in Table A2 (Annex 1).

Table 3. Sources for other HBV/HCV surveillance systems

	Number of countries	STI clinic	Laboratory network	Sentinel	Sero-surveys in general population	Others
HBV		9	7	4	5	5
HCV		6	7	4	5	5

#### 3.2 Objectives for hepatitis surveillance

The national objectives for hepatitis surveillance seem to be very similar in all countries. Almost all predefined surveillance objectives in the questionnaires were confirmed by the countries.

A few countries identified additional surveillance objectives (might be applicable to other countries as well), for instance the screening of pregnant women to prevent mother-to-child transmission. Romania added as an additional objective 'to monitor the impact of the universal vaccination programme', and Slovakia added 'to evaluate existing preventive measures'. Other surveillance objectives identified by Ireland ('to facilitate resource allocation and healthcare planning'; 'to guide public health action') and by Luxembourg ('monthly publication of statistics required by law') are included in the category of country-specific objectives.

Table 4. Number of countries which have identified objectives for national surveillance

		Monitoring trends	Detect Outbreaks	Monitoring changes in disease distribution	Evaluation and planning of control measures	Improve knowledge of epidemiology	Other
HBV	Yes	29	26	28	28	27	5
ПО	No	0	3 (DK, FR, RO)	1 (HU)	1 (LI)	2 (LI, RO)	24
HCV	Yes	29	26	27	28	29	2
пси	No	0	3 (DK, FR, RO)	2 (HU,ES)	1 (ES)	0	27

Note: The Czech Republic did not participate in the HBV survey; Liechtenstein did not take part in the HCV survey.

In some countries, surveillance-related activities (organisation of surveillance, case definitions, data collection, data format, and frequency of analysis) were not always in line with the official surveillance objectives. For instance, the objective 'outbreak detection' is very difficult to meet if data are only analysed once a year. Also, 'planning and evaluating control measures' will be flawed if chronic cases are not included in the surveillance of hepatitis and in the case definitions.

Based on the above results only limited efforts from the countries are needed to harmonise the national surveillance objectives with the ECDC long-term surveillance objectives of communicable diseases, 2008–2013 [xxviii]:

- Provision of relevant public health data, information and reports to decision-makers, professionals and healthcare workers, in an effort to ensure informed decision-making for actions
- Monitoring of trends in communicable diseases
- Detection and monitoring of multi-state infectious disease outbreaks
- Evaluation and monitoring of prevention and control programmes
- Identification of population groups at risk
- Contributions to the assessment of the burden of communicable diseases
- Generation of hypotheses on (new) sources, modes of transmission, and groups most at risk

#### 3.3 Case definitions

Although most countries run (national) surveillance systems for HBV and HCV, major differences exist between case definitions. It must be noted that the survey was performed in a period when the new EU case definitions replaced the previous cases definitions (2002/253/EC), effective 1 January 2009. During the validation round for country profiles from December 2009 to January 2010, a number of countries took the opportunity to update the information on case definitions.

An analysis of the case definitions used in the surveyed countries shows that 16/29 countries have implemented one of the European case definitions for hepatitis B; 20/29 have done so for hepatitis C. Some of them have extended the case definitions with extra laboratory criteria; in Romania, France and Ireland not only acute hepatitis B cases are reportable but chronic cases with HBsAg persistence in more than six months are included. Portugal included probable hepatitis C cases if epidemiologically linked to Laboratory-confirmed cases. The case definition for hepatitis C seems to be more harmonised than for hepatitis B; 12/29 countries have implemented the EU 2008 case definition. In Luxembourg, no case definitions are in place for both hepatitis B and C surveillance; in Lithuania, no case definition is in place for hepatitis B. Detailed information on national case definitions is provided for hepatitis B (Annex 1, Table A3a) and hepatitis C (Annex 1, Table A3b).

Two-thirds of the surveyed countries (21/29) use an EU-related case definition for hepatitis B (EU 2002, EU2008, possibly EU, EU extended). Over 75% (24 /29) of the countries are using an EU-related case definition for hepatitis C, including 11/29 which use the EU 2008 case definition.

<sup>&</sup>lt;sup>4</sup> 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

#### 3.4 Cases included in hepatitis B reporting

Case classifications (possible, probable, and confirmed) and stage of infection (chronic and acute) were also addressed in the survey. All other countries reported that confirmed cases were included in the surveillance (in Belgium, cases are collected based on IgM and/or HBe antigen); half of them also include probable cases. In addition to the surveillance based on EU-case definitions, Austria includes 'suspected' cases in their national surveillance (definition is part of the Austrian approach). All countries reported that they include acute hepatitis B cases in their surveillance systems. National systems were historically based on newly acquired infections in patients with clinical symptoms compatible with acute hepatitis. Laboratory reporting made it possible to also include asymptomatic individuals with newly acquired infections or newly diagnosed chronic infections. More than half of the countries (17/29) reported that they include chronic hepatitis B cases, and about one third (9/29) also include asymptomatic cases.

The majority of the countries that include acute, chronic or asymptomatic cases in the reporting system can also distinguish the different stages of infection (14/17). Only Belgium, Iceland and Luxembourg, who only distinguish between acute and chronic and/or asymptomatic case, cannot differentiate different stages among confirmed cases. Reporting is not always compliant with the national case definition, particularly in respect to case classification and stage of infection. This can be illustrated by comparing the results of those countries that report data based on EU case definitions (Table 5). Estonia has implemented the EU 2008 case definitions on 1 January 2009. Although Germany and Romania (Romania has started to implement the EU 2008 case definitions) both use the EU 2002 case definition, they do not include probable cases. Among the countries using the EU 2008 case definitions, Austria, Latvia, Lithuania and Slovenia also include chronic and/or asymptomatic cases, although these cases are not defined in the case definitions. Only Malta, Portugal and Spain (three out of 11 countries that use the EU case definitions) report the case classification or stage of infection according to EU case definitions.

#### 3.5 Cases included in hepatitis C reporting

All countries report confirmed hepatitis C cases through their national surveillance systems (in Belgium, cases are collected based on PCR+). Latvia, Malta, Portugal and Spain include probable cases; in addition to the surveillance based on EU-case definitions, Austria includes 'suspected' cases in their national surveillance. All countries include acute hepatitis C in the national surveillance system except Finland, Norway, Romania (all cases are included, but not the different stages of infection) and France (national surveillance was implemented in 2006 and 2007 only, targeting a specific population (HIV-infected MSM). Two-thirds (18/29) of the countries reported that they include chronic cases of hepatitis C. Although there are no serological markers currently available to accurately differentiate between acute and chronic infections, a number of countries indicated that they can differentiate these types of infection.

Hepatitis C reporting is not always compliant with the national case definition, particularly when the EU case definitions are used as the basis of national case definitions and for case classification and stage of infection: Austria, Latvia, Malta, Poland, Portugal and Spain report probable cases, although they are not mentioned in the EU case definitions. Austria also reports possible cases. Lithuania includes asymptomatic cases in its surveillance reporting, despite the fact that the EU 2002 case definition is based on clinical symptoms. Half of the countries use the EU case definitions (15/29), but in eight countries the reported case classification and stage of infection shows discrepancies with the used definition.

Table 5. Overview of case classification and the stage of infection used in HBV surveillance system compared with EU case definition

.5	28	29	17	9	
					5 28 29 17 9

Included

Not included

Information not available

 $<sup>^{\</sup>rm 5}$  Cases are collected based on IgM and/or HBe antigen.

 $<sup>^{\</sup>rm 6}$  EU 2008 case definition was implemented on 1 January 2009.

<sup>&</sup>lt;sup>7</sup> Since the early 2000s, several HBV surveillance systems have been implemented at the national level in France, but none is based on the EU 2008 acute HBV infection case definition. These systems included the overall and newly diagnosed HBsAg screening activity (anonymous screening, laboratory sentinel survey, blood donations) and the surveillance of newly referred chronic hepatitis B infected patients in reference centres. Prevalence studies on specific populations (e.g. MSM, drugs users) are implemented.

Table 6. Overview of the case classification and stage of infection used in HCV surveillance system, compared with the EU case definitions

	probable	confirmed		Acute	chronic	asymptomatic	differentiated
2002/253/EC							
2008/426/EC							
Austria							
Belgium <sup>8</sup>							
Bulgaria			Г				
Cyprus			Г				
Czech Republic			Г				
Denmark			Г				
Estonia <sup>9</sup>			Г				
Finland			Г				
France <sup>10</sup>			Г				
Germany			Г				
Greece							
Hungary			Г				
Iceland							
Ireland			Г				
Italy			Г				
Latvia			Г				
Liechtenstein							
Lithuania							
Luxembourg							
Malta							
Netherlands							
Norway							
Poland			Г				
Portugal							
Romania							
Slovakia							
Slovenia							
Spain							
Sweden							
United Kingdom							
Number of countries	5	29		27	18	10	9

Included
Not included
Information not available

It can be concluded that there is a significant heterogeneity between the national surveillance systems for hepatitis B and hepatitis C with respect to case definitions and case classification, the reporting of acute and chronic cases, and the inclusion of asymptomatic cases. However, a majority of countries already report confirmed case for hepatitis B and C, and all countries include acute cases. More than half of the countries (17/29 for hepatitis B, 18/29 for hepatitis C) include chronic cases although in some cases no differentiation can be made between acute and chronic cases.

<sup>&</sup>lt;sup>8</sup> Cases are collected based on PCR+.

<sup>&</sup>lt;sup>9</sup> Implemented EU 2008 case definition since 1 January 2009.

<sup>&</sup>lt;sup>10</sup> Surveillance on confirmed acute cases of hepatitis C at the national level was implemented only among HIV-infected MSM and only in 2006 and 2007.

#### 3.6 Data collection

#### Source of data

Surveillance data for HBV and HCV can originate from multiple and different data sources, like clinicians, laboratories, hospitals, municipal health services, and blood banks. In all countries, the clinicians are the most important source of data; in the Netherlands, the physicians report their cases to the municipal health services that report to the central level. Two-thirds of the countries (19/29) also collect data from laboratories and hospitals. In Finland, a parallel system exists for blood banks and antenatal screening (carried out by the same clinicians and laboratories): duplicates are later eliminated by means of a unique personal identifier at the national level. Germany included additional data from another source but provided no details. Detailed information for every country is available in Table A4.

#### **Collected data**

A 'basic' data set is collected in most countries, recording age, gender, place of residence, date of reporting, etc. Some countries add variables such as 'country of birth' (included by 16 countries) and 'probable country of infection' (19 countries) (Table 7). Additional epidemiological information is available for a considerable number of countries (sexual transmission, drug use, family details, and healthcare-related information). Although some countries included 'changes in disease distribution' and 'improved knowledge of epidemiology' on their list of objectives for surveillance, the data needed to meet these objectives (e.g. transmission routes, risk factors and the impact of the disease: hospitalisation data, length of hospitalisation, ICD) are not included in the set of variables. Detailed information is available in Table A5a for HBV and in Table A5b for HCV.

Ten countries can link their hepatitis surveillance data to other databases to import or compare data on liver transplantations, liver cancer, mortality, and hospital register information (Table 8). Most of these countries reported that links are technically possible but not established regularly.

#### Format of data

The majority of countries (90%) collect and provide the surveillance data as individual case based data at central level. Only three countries (Bulgaria, Poland and Romania<sup>11</sup>) have aggregated data on central level. The majority of countries (80%) have implemented electronic disease surveillance systems. Four countries (Bulgaria, Norway, Poland and Romania) collect hepatitis C data using a traditional paper-based system, three do the same for hepatitis B (Poland, France and Liechtenstein). More information on data formats used in national surveillance systems is available in Table A4.

#### **Duplicates and underreporting**

Five countries (Belgium, Ireland, Luxembourg, Spain, United Kingdom) have indicated that there is a possibility that duplicate datasets exist in the national surveillance of hepatitis B and C. An additional four countries also mention possible duplicates for hepatitis C (Czech Republic, France, Germany, and Norway). All these countries, with the exception of Belgium and France, include the patient ID in the collected surveillance data. In almost all countries (HBV 26/29, HCV 27/29) underreporting is a problem in the national surveillance system. The extent of underreporting remains unknown for the majority of countries (21 for HBV, 24 for HCV). Two countries report that there is probably no underreporting for hepatitis B and C (Iceland, Slovakia). The provided estimates for underreporting range from 5% to 6% (Hungary: HBV/HCV) up to 50% (Denmark: HBV/HCV) [Ixxix]. Ireland and the UK estimate a 25% underreporting for HBV, and France calculates underreporting at 23% for HBV. No further details on the estimates were provided; the differences in underreporting due to the methodology of the surveillance or the asymptomatic character of the disease were not addressed.

#### **Frequency of analysis**

More than 60% (HBV 18/29, HCV 19/29) of the countries analyse and report surveillance data at the central and national level annually; fewer than half of the countries produce monthly statistics. Portugal, Ireland and the United Kingdom provide a quarterly analysis of the data. Austria, Bulgaria, Cyprus, Denmark, Latvia, Slovenia and Slovakia have the ability to analyse surveillance data more frequently, even on a daily basis, if need be, for example in case of an outbreak. Depending on disease surveillance objectives, the frequency of analysis may have to be increased and harmonised across Europe. Detailed information is available in Table A4.

\_

<sup>&</sup>lt;sup>11</sup> Started to implement case-based data collection since 2009

Table 7. Set of variables in national surveillance systems for hepatitis B and C

		HBV	HCV
		(number of countries)	(number of countries)
Basic data	Patient ID	24	22
	Date of birth or age	29	29
	Gender	29	29
	Country of birth	16	16
	Place of residence	28	27
	Date of onset of the disease	26	23
	Date of diagnosis	21	21
	Date of reporting/notification	27	28
	Date used for statistics	19	18
	The country where infection most likely acquired	19	19
	Immunisation status	24	11
	Outcome	18	15
Clinical and case classification	Clinical symptoms	16	13
information	Laboratory results	23	24
	Epidemiological information	21	22
Transmission route/risk factors	Homosexual contact	16	14
	Heterosexual contact	16	13
	Injecting drug use	21	21
	Mother HBsAg/HCV positive	19	15
	Close family member HBsAg/HCV positive	20	17
	Sex partner HBsAg+	17	17
	Blood or blood product transfusion	21	21
	Invasive healthcare procedure/dental treatment	18	20
	Organ transplantation	16	17
	Haemodialysis	18	19
	Needle injury or other occupational exposure	18	19
	Tattooing/body piercing	18	19
	Other	8	8
Other factors	Hospitalisation	19	17
	Length of hospitalisation	8	8
	ICD code diagnosis	8	10
	Genotype information	1	3

Table 8. Links of surveillance database to at least one other register, by country

	Liver transplant	Cancer of the liver	Mortality	Hospital register
Bulgaria			✓	✓
Denmark	✓	✓	✓	✓
Finland	✓	✓	✓	✓
Iceland	✓	✓	✓	✓
Lithuania				✓
Malta		✓	✓	
Romania				✓
Slovakia	✓	✓	✓	✓
Sweden			✓	
United Kingdom	✓	✓	✓	✓

# 3.7 Summary

Below is a summary of the information provided on national surveillance systems for hepatitis B and C in the EU and EEA countries.

#### Major similarities:

- All countries have surveillance in place for both hepatitis B and C.
- A majority of surveyed countries operates a passive mandatory hepatitis surveillance system.
- National objectives for surveillance are very similar in all countries.
- Although there is a wide variety in case definitions, most Member States include confirmed and acute cases in their reporting system.
- Clinicians are the major source of data for the surveillance systems.
- 80% of the surveyed countries have case-based data available, at the national level and in an electronic database.
- A basic set of data (age, gender, place of residence, date of onset of disease, and date of reporting) is collected in most countries.
- Underreporting is common, but to an unknown extent. Duplicates are rather uncommon.

#### Major differences:

- The administration of disease surveillance for hepatitis B and C varies widely across countries, e.g. there is
  a wide range of case definitions and case classifications. It needs to be noted that the EU case definitions
  are not consistently implemented.
- Chronic and asymptomatic cases are often not included in the surveillance data.
- The frequency of data analysis and data reporting varies across countries.
- There is a wide variety in the set of variables collected, particularly in respect to epidemiological risk factors and the impact of the disease (length of hospitalisation, ICD code).
- A number of Member States have the possibility to link hepatitis surveillance to other registers of morbidity and mortality.

The surveillance of hepatitis B and hepatitis C is mostly mandatory in EU/EEA countries; more countries tend to use the EU 2008 case definition for hepatitis C than for hepatitis B.

# 4 Prevention programmes for HBV and HCV

### **4.1 Screening programmes**

In all countries except Luxembourg at least one screening programme is in place for HBV or HCV. Screenings for hepatitis B virus infections in pregnant women are conducted in more than 80% (24/29) of the countries, while in Bulgaria, Lithuania, Luxembourg, and Romania this programme is not implemented; in Belgium<sup>12</sup> the programme is not implemented at the national level.

Blood and organ donors and haemodialysis patients are also screened in most countries, except for Iceland (HBV in blood and organ donors), Liechtenstein (HBV, HCV), Luxemburg (HBV, HCV) and Finland (HBV in haemodialysis patients). In Austria, Denmark, Estonia, Netherlands, and Romania, haemodialysis patients are not screened for HBV and HCV. Half of the countries conduct hepatitis B screening programmes for specific groups at risk, e.g. injecting drug users (15/29), STI clinic patients (9/29), and prisoners (11/29). Two countries operate a programme for persons with multiple sex partners (2/29)<sup>13</sup>.

Table 9. Antenatal screening programmes for hepatitis B and C in Europe, 2009

	HBV	HCV
Austria		
Belgium <sup>12</sup>		
Bulgaria		
Cyprus		
Czech Republic		
Denmark		
Estonia		
Finland		
France		
Germany		
Greece		
Hungary		
Iceland		
Ireland		
Italy		
Latvia		
Liechtenstein		
Lithuania		
Luxembourg		
Malta		
Netherlands		
Norway		
Poland		
Portugal		
Romania		
Slovakia		
Slovenia		
Spain		
Sweden		
United Kingdom		
	Dua guanana a incentrum cut. I	
	Programme implemented	
	No programme	
	Not applicable	

 $<sup>^{12}</sup>$  Belgium: Screening for HBV among pregnant women is recommended; a vaccination programme for neonates born from HBsAg-positive mothers exists.

<sup>&</sup>lt;sup>13</sup> Ireland: Only if the person attended as a patient of an STI clinic.

Specific screening programmes target multiple risk groups. Screening of healthcare workers for hepatitis B is implemented in six countries (Belgium, France, Germany, Italy, Malta, and Romania). An additional eight countries (Hungary, Ireland, Latvia, Lithuania, Poland, Portugal, Spain, and the United Kingdom) indicated that they run a screening programme for 'workers who are occupationally exposed to the virus'.

Screening programmes which target injection drug users (IDUs) or prisoners usually include both hepatitis B and C infections, except in France where IDUs are only screened for hepatitis C. Cyprus, Germany, Malta, Romania, Slovakia, and Spain have an HCV screening programme in STI clinics; Germany operates an HCV screening programme for persons with multiple sex partners. Detailed information on all screening programmes is provided in Table A6a for hepatitis B and Table A6b for hepatitis C.

#### 4.2 Immunisation programmes for hepatitis B

Hepatitis B vaccination has shown to be effective in the reduction of new infections. The vaccine is 95% effective in preventing infection and its chronic consequences and has an outstanding record of safety and effectiveness [iv].

#### **Universal HBV vaccination**

In 1991, WHO advised all countries to add Hepatitis B inoculation to in all universal vaccination programmes. A number of countries have not complied with this recommendation, based on their national epidemiological situation. Seven countries (Denmark, Finland, Iceland, the Netherlands, Norway, Sweden, and the United Kingdom) have opted for a selective hepatitis B vaccination programme targeting risk groups. 22 out of 29 EU/EEA countries have implemented a universal vaccination programme for infants and adolescents or both, in addition to a selective immunisation programme (Table 9). In Slovenia, a universal vaccination programme exists for children before entering primary education.

Table 10. Universal vaccination programmes for HBV in 29 EU/EEA countries

		Unive	ersal vaccination pro	ogrammes	
	Universal	Infants	Adolescents	Other	Adolescents (catch up)
Austria					
Belgium					
Bulgaria					
Cyprus					
Czech Republic	No information av	ailable			
Denmark					
Estonia					
Finland					
France					
Germany					
Greece					
Hungary					
Iceland					
Ireland					
Italy					
Latvia					
Liechtenstein					
Lithuania					
Luxembourg					
Malta					
Netherlands					
Norway					
Poland					
Portugal					
Romania					
Slovakia					

		Unive	ersal vaccination pro	ogrammes	
	Universal	Infants	Adolescents	Other	Adolescents (catch up)
Slovenia					
Spain					
Sweden					
United Kingdom					
No v	ination programme (as accination programme universal vaccination pro	·			

Although the majority of countries have included hepatitis B in their universal vaccination programmes, the programmes are heterogeneous and show a wide variation in immunisation schedules (timing and number of doses) and vaccine formulation (monovalent, hexavalent) exists. Countries with a neonatal vaccination programme integrated in the universal vaccination programme have comparable schedules. In addition to the routine childhood vaccination programme for newborns or infants, catch-up programmes for older children and adolescents were also carried out in Austria, Belgium, Cyprus, France, Germany, Greece, Hungary, Italy, Latvia, Liechtenstein, Romania, and Slovenia.

#### **Risk group vaccination**

In addition to their universal vaccination programmes, most countries have implemented additional programmes for risk groups, usually for those at increased risk of acquiring HBV via occupational exposure (26/29). Vaccination programmes for neonates born to HBsAg-positive mothers (21/29), haemodialysis patients (22/29), and household contacts of HBsAg-positive patients (22/29) are implemented in at least 70% (23/29) of the countries. 23 countries (79%) also have vaccination programmes for HBV among IDUs.

Table 11. Risk group vaccination programmes for HBV in 29 EU/EEA countries

		Risk group	vaccination								
	universal	Neonates born to HBsAg + mothers	Individuals at risk for HBV due to occupation	Haemodialys is patients	Chronic liver disease patients	STI clinic patients	Persons with multiple sex partners	Injecting drug users	Household contacts of HBsAg+ patients	Contacts with infected persons	Other risk groups
Austria											
Belgium		✓	✓	✓		✓	✓	✓	✓		✓
Bulgaria			✓	✓	✓	✓	<b>√</b>	✓	✓		<b>✓</b>
Cyprus		✓	✓	✓	✓	<b>✓</b>	<b>✓</b>	✓	✓	✓	
Czech Republic		No informa	ntion available								
Denmark		✓	✓	✓	✓			✓	✓	✓	✓
Estonia			✓								
Finland		✓	✓					✓	✓		✓
France		✓	✓	✓			<b>✓</b>	✓	✓	✓	✓
Germany		✓	✓	✓	✓	✓	<b>✓</b>	✓	✓	✓	✓
Greece		✓	✓	✓	✓	✓		✓	✓	✓	
Hungary		✓	✓	✓					✓	✓	
Iceland		✓	✓	✓					✓	✓	
Ireland		✓	✓	✓	✓	✓	<b>✓</b>	✓	✓	✓	✓
Italy		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Latvia		✓	✓	✓							
Liechtenstein											
Lithuania			✓	✓							
Luxembourg			✓								
Malta		✓	✓	✓		<b>✓</b>		✓	✓	<b>✓</b>	
Netherlands		✓	✓	✓			<b>✓</b>	✓	✓		<b>✓</b>
Norway		✓	✓	✓	✓			✓	✓	✓	<b>✓</b>

		Risk group	vaccination								
	universal	Neonates born to HBsAg + mothers	Individuals at risk for HBV due to occupation	Haemodialys is patients	Chronic liver disease patients	STI clinic patients	Persons with multiple sex partners	Injecting drug users	Household contacts of HBsAg+ patients	Contacts with infected persons	Other risk groups
Poland <sup>14</sup>		✓	✓	✓	✓				✓	✓	✓
Portugal		✓	✓	✓	✓	<b>✓</b>		✓	<b>✓</b>	<b>✓</b>	
Romania			✓						<b>✓</b>		
Slovakia		✓	✓	✓	✓				✓	<b>✓</b>	✓
Slovenia		✓	✓	✓	✓			✓	<b>✓</b>	<b>✓</b>	
Spain		✓	<b>✓</b>	✓	✓	<b>√</b>	<b>√</b>	<b>√</b>	✓	<b>✓</b>	
Sweden		✓	<b>✓</b>	✓			<b>√</b>	<b>√</b>	✓	<b>✓</b>	
United Kingdom		✓	<b>✓</b>	✓	✓	✓	<b>✓</b>	<b>✓</b>	✓	✓	<b>✓</b>
No countries		22	27	23	14	11	11	18	23	18	12

Universal vaccination programme (as of 2009)

No universal vaccination programme

Countries without universal vaccination programmes (Denmark, Finland, Iceland, Netherlands, Norway, Sweden, and the United Kingdom) or countries which recently added hepatitis B vaccination to their routine vaccination programme (Ireland) for the most part have extensive vaccination programmes for risk groups. All countries have at least one hepatitis B prevention programme (Table 11). Exceptions are Austria and Liechtenstein, where vaccination is offered only in universal programmes.

Specific risk group vaccination programmes focus on thalassaemia (Belgium), blood and organ transplantation (Belgium), mentally disabled people or Down's syndrome (Belgium, France, Netherlands), HIV infection (Bulgaria, Poland), MSM (Denmark, Norway, Netherlands, United Kingdom), prisoners (France, Ireland, United Kingdom), social workers (Netherlands), newborns with at least one parent from an HBV-endemic country (Netherlands, Norway), migrants from countries with medium to high endemicity (Norway), sex workers (Norway), patients infected with other types of hepatitis (Slovakia). Most frequently mentioned are travellers to countries with a high prevalence of hepatitis B (Belgium, Bulgaria, France, Germany, Ireland, United Kingdom).

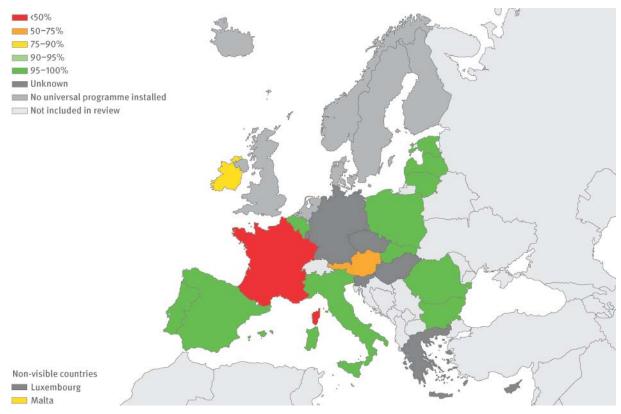
#### **Vaccination coverage**

More than half of the countries with a universal vaccination programme calculated and reported vaccine coverage. In general, the coverage for infant vaccination programmes is rather high (on average above 90%). Belgium, Bulgaria, Estonia, Italy, Latvia, Lithuania, Poland, Romania, Slovakia, and Spain report coverage rates in infants younger than two years that surpass 95%. Austria, Malta and Portugal report a coverage rate of 30%, 76% and 97%, respectively, in one-year-old infants. In Austria, the coverage rate in infants of two years is 83%, France reports 35% for the same age group.

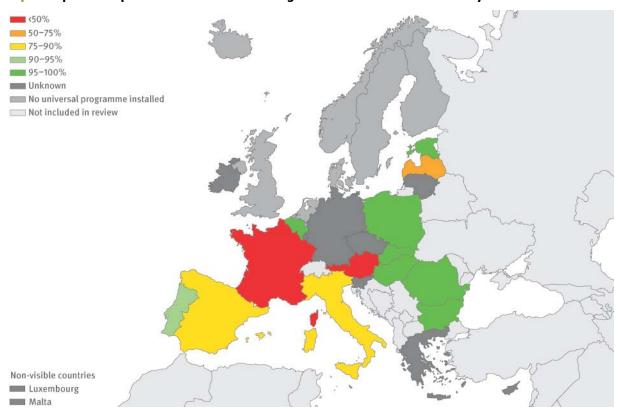
19

<sup>&</sup>lt;sup>14</sup> Vaccination recommended for STI clinic patients, persons with multiple sex partners, injecting drug users.

Map 1. Reported hepatitis B vaccination coverage rate in infants of one to two years



Map 2. Reported hepatitis B vaccination coverage rate in adolescents 10 to 15 years



The coverage rate in adolescents is generally lower than in infants, except for Estonia, Poland, Romania and Slovakia. Hungary, which includes the inoculation of 14-year-olds in the routine vaccination programme, reports a coverage rate between 95% and 98%. Despite the catch-up programmes in France, Italy, and Latvia, the coverage rates in the 14- to 15-year-olds are considerably lower at 42%, 80%, and 74%, respectively. In Austria, the coverage rates in adolescents vary between 24% for 11-year-olds and 43% for 14-year-olds. In Greece and Spain, the coverage rates are below 90%: 87% (15-year-olds, Greece) and 78% (14-year-olds, Spain).

#### **Summary**

Prevention programmes for hepatitis B and C in the surveyed EU/EEA countries can be summarised as follows:

- Most countries have at least one screening programme in place for HBV or HCV.
- Blood and organ donor screening programmes are implemented in most Member States, as this is required by EU legislation.
- Almost all countries recommend the screening of pregnant women, except for some countries which have included the vaccination of neonates in their routine vaccination programmes.
- 22 out of 29 Member States included hepatitis B in the routine childhood vaccination programme. Seven countries do not vaccinate children routinely and use selective immunisation programmes instead.
- Hepatitis B vaccination is recommended in almost all Member States for those individuals at increased occupational risk.
- Risk group vaccination programmes vary widely across countries.
- The reported coverage rates are heterogeneous, but for most countries with a routine vaccination programme the coverage rate in infants is above 95%.

# 5 Epidemiology

#### 5.1 Hepatitis B

The number of reported cases per 100 000 population varies widely across countries. In 2007, Denmark, Finland, France, Greece, Malta, Poland, Portugal, and Slovenia reported an incidence lower than 1 per 100 000 (Slovenia included chronic cases in the data). Cyprus, Germany, Ireland, Italy, Lithuania, the Netherlands, Slovakia, Spain, and Sweden reported a slightly higher incidence rate: 1 to 2.5 cases per 100 000. Relatively high incidence rates were reported by Latvia (7.2), Austria (7.8), and Bulgaria (9.8). The highest incidence rate was reported by Iceland (15/100 000), which can partly be explained by the fact that Iceland included chronic hepatitis B cases.

The difference in hepatitis B incidence rates across Europe could be partly due to differences in case definitions and classifications, and requires further investigations. Comparability can be improved through harmonisation of datasets, e.g. by distinguishing between acute and chronic hepatitis, or using a uniform case definition for laboratory-confirmed cases. A major challenge is the possibility to distinguish between acute and chronic cases, as the current data for most countries represent a mixture of acute and chronic cases.

18 16 14 12 10 8 6 4 2 teland Lithuania Netherlands treland Fance Hungar German Portugal 1/01/

Figure 1. Number of reported hepatitis B cases per 100 000 population in the 29 EU/EEA countries, 2007

Acute and chronic cases included for AT, BE, IS, LU, PL, SL

Source: ECDC Annual Epidemiological Report 2009

Prevalence data on HBsAg in the general population were limited, ranging from 3.8% in Bulgaria to 0.01% in Denmark: Slovakia (1.6%); Italy (1%); Belgium and France (around 0.6 %); Finland, Hungary and the United Kingdom (>0.5%) (Table 12). According to the predefined HBsAg prevalence ranges for HBV infection – high (>8%), intermediate (2-8%), and low (<2%) – all reporting countries can be classified as low-prevalence countries, with the exception of Bulgaria which ranks as intermediate.

The variation in HBsAg prevalence in pregnant women is less distinct and varies between 1.15% (Greece) and 0.15% (Finland), while the prevalence in IDUs is higher and ranges between 0.5% in Norway and 50% in Denmark (2007 data). In most countries, the trend in reported hepatitis B cases seems to be decreasing, except for Cyprus, Iceland, Luxembourg, and Sweden. Abrupt changes in the number of reported HBV cases may have several causes: a change in the surveillance system (Lithuania) or an outbreak among IDUs (Latvia 1999–2002). Further investigations of the trends in connection with changes in surveillance systems are needed. Most European countries seem to have a low incidence, below 5 cases per 100 000 population. The inclusion or exclusion of chronic cases in the reported surveillance data affects trends noticeably, as can be seen in Bulgaria, the Netherlands, Poland, and Sweden. The implementation of enhanced surveillance for hepatitis B will further improve the comparability of reported cases across EU/EEA countries.

Table 12. HBV prevalence (HBsAg) per 100 000 population, 29 EU/EEA countries: general population, pregnant women, and IDUs

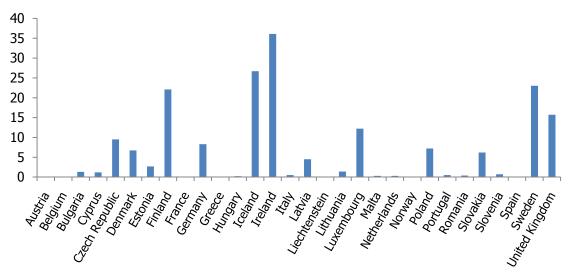
HBV	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
General pop	ulation									
Belgium					0.66%					
Bulgaria			3.80%							
Denmark									0.01%	0.01%
Finland							0.23%			
France						0.65%				
Hungary		0.30%								
Italy									1.00%	
Slovakia				1.60%						
Sweden	0.03%	0.04%	0.04%	0.05%	0.03%	0.03%	0.05%	0.04%	0.03%	0.02%
United Kingdom	0.37%									
Pregnant wor	nen									
Czech Republic			0.20%							
Denmark									0.26%	0.26%
Estonia								0.30%	0.20%	
Finland							0.10%	0.14%		
Greece						1.15%				
Italy									0.86%	
Netherlands								0.40%	0.34%	0.33%
United Kingdom									0.31%	0.35%
Injecting drug	g users									
Bulgaria								5.63%		
Cyprus								2.08%	7.80%	
Denmark									50.00%	50.00%
France						1.91%				
Greece					2.3%-5.8%					
Italy										13.70%
Norway				3.00%	4.00%	3.00%	0.80%	0.90%	0.50%	1.20%
Poland									5.00%	
Slovenia					10.40%					
Sweden										1%

# 5.2 Hepatitis C

There is a wide variety in reported data since hepatitis C is often asymptomatic and no clear diagnostic criteria are available to differentiate between acute and chronic cases. The diversity in reported data was higher than for hepatitis B. The HCV incidence rate in 2007 varies between 36.7 cases per 100 000 (Ireland) and 0.05 (Greece). Countries which reported only acute hepatitis C cases in 2007, had an incidence rate below 1.4 cases/100 000; with Estonia as the sole exception (2.7/100 000). Countries which included chronic cases displayed much higher incidence rates: Iceland (31), Ireland (36.7), and Sweden (20.6) report incidences above 20/100 000.

As is the case with hepatitis B, the presented data for hepatitis C are difficult to interpret because of differences in surveillance systems, case definitions, etc., and any interpretation or comparison should be conducted with caution. Trends in HCV incidence data suggest an increasing trend over time.

Figure 2. Number of reported hepatitis C cases per 100 000 population in the 29 EU/EEA countries, 2007



Acute and chronic cases included for AT, DE, IS, LI, MT, NO, SL, ES

Source: ECDC Annual Epidemiological Report 2009

HCV prevalence data are available for the general population (nine countries) and injection drug users (11 countries) (Table 13). The prevalence in the general population ranges from 2.6% in Italy (2007) to 0.12% in Belgium (2003). In 2001, the Czech Republic and the Netherlands reported prevalence below 0.5%, while Bulgaria reported a prevalence of 1.2% in the general population. There is a wide variety in the reported HCV prevalence in IDUs, ranging from 25% to 70%. Of the seven countries reporting HCV prevalence in IDUs between 2006 and 2008, Italy reported the lowest prevalence (10.8–25.6%), and Norway the highest (70%).

HCV prevalence among national samples of injecting drug users vary from around 10% to 95%, with half of the countries reporting levels in excess of 40%. Slovenia reported prevalence below 25% in national samples of injecting drug users. HCV prevalence levels can vary considerably within a given country, reflecting both regional differences and the characteristics of the sampled population. For example, in the United Kingdom local studies report levels between 29% and 60%, while in Italy different regional estimates range from around 36% to 92%.

For 2006–08, three of the ten countries providing data on injecting drug users report a HCV prevalence of more than 40% ( $^{xxx}$ ).

Table 13. HCV prevalence per 100 000 population, 29 EU/EEA countries: general population, pregnant women, and IDUs

HCV	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
General pop	ulation										
Belgium						0.12%					
Bulgaria				1.20%							
France							0.84%				
Hungary			0.70%								
Italy										2.60%	
Netherlands				0.40%							
Slovakia					1.52%						
Sweden		0.13%	0.13%	0.09%	0.09%	0.08%	0.06%	0.08%	0.05%	0.07%	0.04%
United Kingdom						0.50%					
Injecting drug users											
Belgium								50.00%			
Bulgaria										57.01%	

HCV	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cyprus									29.59%	34.31%	
Denmark										70.00%	70.00%
Finland								53.00%		57.00%	
France							59.80%				
Greece					43.3%- 61.7%						
Italy											10.8– 25.6%
Norway					79.00%	74.00%	68.00%	69.00%	70.00%	64.00%	68.40%
Slovenia					21.00%	22.50%					
Sweden											83%
United Kingdom	41.00%	35.00%	35.00%	36.00%	39.00%	42.00%	41.00%	42.00%	41.00%	39.00%	40.00%

#### 6 Discussion and conclusion

Viral hepatitis has a significant impact on national healthcare systems. Without monitoring hepatitis B and C it would be impossible to contribute to the various prevention and control programmes, or gain an understanding of the magnitude of the problem. This report presents a broad overview of national surveillance systems and prevention programmes for hepatitis B and C in EU/EEA Member States.

All countries have national surveillance systems for HBV and HCV in place, with very similar objectives but the attributes of the surveillance systems are very heterogeneous. Differences exist with respect to case definitions; the inclusion of possible, probable and confirmed cases; the inclusion of acute, chronic and asymptomatic cases; and on the question whether a distinction can be made between these types. Ideally, a case definition for hepatitis should include a clinical description, laboratory criteria, and a case classification – possible, probable and confirmed. This issues need to be addressed when developing an enhanced surveillance protocol.

Most countries collected a basic set of data (patient ID, date of birth, gender, place of residence, date of reporting, immunisation status), but detailed data on risk factors or the source of infection are missing. This type of information is crucial for informing and guiding prevention policies, and should be added soon.

Data on the impact of the disease (hospitalisation data, length of hospitalisation, and ICD) are crucial for burden of disease and healthcare studies and should be discussed as well. The interpretation of incidence and prevalence data for hepatitis B and C is hampered by the many differences between the current surveillance systems, which use different case definitions, survey different population segments, obtain data from different sources, and leave an unknown percentage of infections unreported. An inter-country comparison of these data is difficult and should be conducted with caution and preferably only on data on trends.

Enhanced surveillance of hepatitis B and C at the EU level should provide added value by collecting more reliable and comparable data across countries, in order to accurately compare trends in hepatitis B and C and monitor risk groups across countries. A major challenge is the case-based surveillance of hepatitis C. It is currently not possible to differentiate between acute and chronic cases, which will hamper the correct interpretation of future surveillance data

Hepatitis B vaccination programmes are conducted in all countries. 22 countries have included HBV vaccination in their routine vaccination programmes, and a further seven countries have implemented selective vaccination programmes targeted at risk groups. Vaccination coverage could be improved in some countries, ranging from 30% to 100% in infants. To evaluate vaccination strategies, studies on surveillance, sero-epidemiology and coverage need to be harmonised and thus become comparable. In general, prevention strategies at the European level would benefit from further harmonisation.

We conclude that harmonisation of EU surveillance represents an added value as it makes it possible to assess the disease burden, evaluate prevention and control strategies, and define epidemiological trends or transmission patterns. The results of this survey will be used to strengthen the enhanced surveillance of hepatitis B and C at the EU level.

# **Annex 1. Tables**

- Table A1. Overview of participating EU/EEA countries in the HBV and HCV surveillance and prevention survey
- Table A2. Summary of existing surveillance systems in the 29 EU/EEA countries
- Table A3a. Details on case definitions used by the 29 EU/EEA countries in their HBV surveillance systems
- Table A3b. Details on case definitions used by the 29 EU/EEA countries in their HCV surveillance systems
- Table A4b. Characteristics of HBV/HCV surveillance systems: data sources, data types and data formats of database, and frequency of analysis
- Table A5a. Information collected in HBV surveillance systems in the 29 EU/EEA countries
- Table A5b. Information collected in HCV surveillance systems in the 29 EU/EEA countries
- Table A6a. Hepatitis B screening programmes implemented in 29 EU/EEA countries
- Table A6b. Hepatitis C screening programmes implemented in 29 EU/EEA countries

		HBV	HCV
Austria	AT	✓	✓
Belgium	BE	✓	✓
Bulgaria	BG	✓	✓
Cyprus	CY	✓	✓
Czech Republic	CZ		✓
Denmark	DK	✓	✓
Estonia	EE	✓	✓
Finland	FI	✓	✓
France	FR	✓	✓
Germany	DE	✓	✓
Greece	GR	✓	✓
Hungary	HU	✓	✓
Iceland	IS	✓	✓
Ireland	IE	✓	✓
Italy	IT	✓	✓
Latvia	LV	✓	✓
Liechtenstein	LI	✓	
Lithuania	LT	✓	✓
Luxembourg	LU	✓	✓
Malta	MT	✓	✓
Netherlands	NL	✓	✓
Norway	NO	✓	✓
Poland	PL	✓	✓
Portugal	PT	✓	✓
Romania	RO	✓	✓
Slovakia	SK	✓	✓
Slovenia	SI	✓	✓
Spain	ES	✓	✓
Sweden	SE	✓	✓
United Kingdom	UK	✓	✓

Table A2. Summary of existing surveillance systems in the 29 EU/EEA countries

	HBV					HCV				
	In national surveillanc e system	Man- da- tory	Passive or other	Surveillance syst	em	In national surveillanc e system		Passive or other	Surveillance system	
Austria	Yes	Yes	Active: Every physician has to report suspected and confirmed cases and deaths. Laboratories are included in the mandatory reporting system.	Other	Laboratory- confirmed cases	Yes	Yes	Active: Every physician has to report suspected and confirmed cases and deaths. Laboratories are included in the mandatory reporting system.	Other	Laboratory- confirmed cases
Belgium	Yes	Yes	Passive	Several surveillance systems for HBV, of which no single system is the major one (please describe below)	Mandatory notification Sentinel laboratory	Yes	Yes	Passive	Several surveillance systems for HCV, of Which no single system is the major one (please describe below)	Mandatory notification Sentinel laboratory
Bulgaria	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Cyprus	Yes	Yes	Passive	Other	(*)	Yes	Yes	Passive	Other	(*)
Czech Republic	No results a	vailable				Yes	Yes	Active: Physicians report to PHC	Own system for HCV	
Denmark	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Estonia	Yes	Yes	Passive	Other	HBV is a notifiable disease. Information is provided by GPs, hospitals, and microbiological laboratories. Surveillance of HBV is a part of the national surveillance system.	Yes	Yes	Passive	Other	HCV is a notifiable disease. Information is provided by GPs, hospitals and microbiological laboratories. Surveillance of HCV is a part of the national surveillance system.
Finland	Yes	Yes	Passive	Own system for HBV	Part of the general surveillance system for infectious diseases; part of the screening programme for expecting mothers	Yes	Yes	Passive	Several surveillance systems for HCV, one of which is the major and most comprehen sive one.	

	HBV					HCV				
	In national surveillanc e system	Man- da- tory	Passive or other	Surveillance syst	tem	In national surveillanc e system		Passive or other	Surveillance system	
France	Yes	Yes	Passive	Several surveillance systems for HBV, one of which is the major and most comprehensive one	Mandatory reporting of acute hepatitis B Chronic cases: seroprevalence surveys, lab and reference sentinel systems, blood donor surveillance	Yes	Voluntary	Active: Depends on surveys	Several surveillance systems for HCV, of which no single system is the major one (please describe below)	Lab activity for HCV screening  HCV prevalence surveys (drug users, HIV+, MSM, general population)  HCV sero-conversion surveys: blood donors, occupationally acquired infections in HCW, accidental exposures in HC settings
										Newly referred HCV+ patients in hepatology centres
Germany	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Greece	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Hungary	Yes	Yes	Passive	HBV reporting is included in syndromic surveillance of viral hepatitis		Yes	Yes	Passive	HCV reporting is included in syndromic surveillance of viral hepatitis	
Iceland	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Ireland	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Italy	Yes	Volun- tary	Passive	HBV reporting is included in syndromic surveillance of viral hepatitis	(**)	Yes	Volun- tary	Passive	HCV reporting is included in syndromic surveillance of viral hepatitis	(**)
Latvia	Yes	Yes	Passive	HBV reporting is included in syndromic surveillance of viral hepatitis		Yes	Yes	Passive	HCV reporting is included in syndromic surveillance of viral hepatitis	
Liechten- stein	Yes	Yes	Active: The laboratories report every positive HBV-test to the Office for Public Health and the office makes further inquiries.	Own system for HBV		No results	available			
Lithuania	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Luxem- bourg	Yes	Yes	Passive	Other	HBV notified via mandatory notification system	Yes	Yes	Passive	Other	HBC notified via mandatory notification system

	HBV					HCV				
	In national surveillanc e system	Man- da- tory	Passive or other	Surveillance syst	em	In national surveillanc e system		Passive or other	Surveillance system	
Malta	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Nether- lands	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Norway	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Poland	Yes	Yes	Passive	Own system for HBV	System is integral part of the national communicable disease surveillance system	Yes	Yes	Passive	Own system for HCV	System is integral part of the national communicable disease surveillance system
Portugal	Yes	Yes	Passive	Other	Included in the national mandatory surveillance system for communicable diseases	Yes	Yes	Passive	Other	One mandatory surveillance system for several communicable diseases, including acute hepatitis C.  Hepatitis C reporting system is called PT-HCV
Romania	Yes	Yes	Passive	HBV reporting is included in syndromic surveillance of viral hepatitis		Yes	Yes	Passive	HCV reporting is included in syndromic surveillance of viral hepatitis	
Slovakia	Yes	Yes	Active: Slovak epidemiologists investigate each reported suspect case or each laboratory positive result directly with patient and her or his direct contacts	syndromic surveillance of viral hepatitis		Yes	Yes	Active: Any suspect case of viral hepatitis is investigated by epidemiologists	HCV reporting is included in syndromic surveillance of viral hepatitis	
Slovenia	Yes	Yes	Passive	Own system for HBV		Yes	Yes	Passive	Own system for HCV	
Spain	Yes	Yes	Passive	Several surveillance systems for HBV, one of which is the major and most comprehensive one		Yes	Yes	Passive	Several surveillance systems for HCV, one of which is the major and most comprehen sive one	HCV is included in the syndromic surveillance of viral hepatitis. In addition, data on HCV are collected through a voluntary reporting system based on reports sent by the microbiology laboratories in hospitals (see supplementary information at the end of the questionnaire)
Sweden	Yes	Yes	Passive	Own system for HBV	SmiNet	Yes	Yes	Passive	Own system for HCV	SmiNet

	HBV					HCV				
	In national surveillanc e system	Man- da- tory	Passive or other	Surveillance syst	em	In national surveillanc e system		Passive or other	Surveillance system	
United Kingdom	Yes	Voluntary	Active: Includes information from multiple sources (primarily the laboratory carrying out the testing) to detect changing patterns in hepatitis B. Blood specimens are tested to determine acute hepatitis B infection.	Several surveillance systems for HBV, one of which is the major and most comprehensive one.		Yes	Voluntary	Active: Includes information from multiple sources, including the microbiology laboratory, to detect changing patterns of hepatitis C infection. Blood specimens are tested to determine hepatitis C exposure.	Several surveillance systems for HCV, one of which is the major and most comprehen sive one.	

- (\*) Cyprus: 57 communicable diseases are mandatorily notified to the Director of Medical and Public Health Services (MPHS) by all practising medical doctors (See Quarantine Law and its amendments.) Reporting is done by completion of a specific form which is submitted to the District Medical Officer who forwards it to the Unit for Surveillance and Control of Communicable Diseases (MPHS Central Offices). For a number of diseases (i.e. plague, yellow fever, cholera, meningococcal meningitis) notification is within 24 hours and simultaneously to the District Medical Officer and the Director of Medical and Public Health Services. Data are entered in a database (EPI-INFO) and analysed.
- (\*\*) Italy: The national surveillance system for acute viral hepatitis infection (SEIEVA, Sistema Epidemiologico Integrato dell'Epatite Virale Acuta), coordinated by the National Centre for Epidemiology, Surveillance and Health Promotion of the Istituto Superiore di Sanità, has as the main goal to promote the monitoring and control of acute viral hepatitis infection at the local and national levels. Epidemiological data are combined with laboratory data to estimate the impact of various risk factors, allowing prevention programmes to be defined and evaluated. Specific goals of the surveillance are:
  - to determine the number of cases of acute viral hepatitis infection, by specific type of infection;
  - to calculate the incidence of acute viral hepatitis infection, by type of infection, date and place of disease onset, age, and gender;
  - to identify outbreaks in a timely manner;
  - to calculate the proportion of cases exposed to specific risk factors, by type of infection;
  - to study variations over time in the relative and attributable risks associated with specific types of exposure, by type
    of infection; and
  - to develop control strategies based on the identification of risk factors at the local level.

#### The general method of SEIEVA is:

- to interview infected persons using an individual questionnaire (SEIEVA form) which includes information on sociodemographic and risk factors; questionnaire is administered before results of serological tests are obtained;
- to provide information on the results of serological tests;
- to contact the transfusion centre and record information obtained on a specific form if the infected person reports that he/she had received a blood transfusion in the six months prior to disease onset;
- to conduct, when applicable (mainly when outbreaks are identified), case control and cohort studies.

Table A3a. Details on case definitions used by the 29 EU/EEA countries in their HBV surveillance systems

Country	Classification	Content		Hepatitis B case d	ennuon	Case classification	
Country	Classification	Content	Clinical description	Laboratory criteria for diagnosis	Possible	Probable	Confirmed
	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels.	B core antigen (anti-HBc) positive Detection of HBV nucleic	Possible: n/a	Probable: A case that is HBsAg+ and has a clinical picture compatible with acute hepatitis	Confirmed: A case that is laboratory confirmed
	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vorniting) AND at least one of the following three: fever, jaundice, elevated serum aminotransferase levels	Hepatitis B virus core IgM antigen-specific antibody response	Possible case: n/a	Probable case: Any person meeting the clinical criteria and having an epidemiological link	Confirmed case: Any person meeting the dinical and the laboratory criteria
Austria	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting) AND at least one of the following three: fever, jaundice, elevated serum	Hepatitis B virus core IgM antigen-specific antibody response	no definition available	Any person meeting the clinical criteria and having an epidemiological link	Any person meeting the clinical and the laboratory criteria
Belgium	No official case definition		aminotransferase levels	IgM+ and/or HBe antigen			
Bulgaria	Extended EU case definition	Acute hepatitis B	Cases with clinical symptoms compatible with hepatitis, e.g. gradual development of the symptoms and jaundice or elevated serum aminotransferase levels	Detection of IgM antibodies against Hepatitis B virus core antigen (anti-HBc IgM +) Demonstration of HBV nucleic acid in the serum	n/a	A case that is HBsAg+ and has a clinical picture compatible with an acute hepatitis	Confirmed lab test
		Chronic hepatitis B	A case with a clinical presentation compatible with chronic hepatitis and laboratory findings	Presence of hepatitis B virus surface antigen (HBsAg) over a period of more than 6 months.  Demonstration of HBV nucleic acid in the serum over a period of more than 6 months	n/a	A case clinically compatible with chronic hepatitis	A case clinically compatible with chronic hepatitis that is laboratory confirmed
Cyprus	Possibly an EU case definition	Acute hepatitis B			n/a	n/a	HBsAg+ and compatible clinical presentation
Denmark	Possibly an EU case definition	Acute hepatitis B	clinical symptoms	HBsAg+ or only specific lab test	n/a	n/a	According to clinical signs and laboratory confirmation
		Chronic hepatitis B		Confirmed laboratory signs for more than 6 months	n/a	n/a	Confirmed lab test
Estonia	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting)  AND at least one of the following three: fever, jaundice, elevated serum aminotransferase levels	Hepatitis B virus core IgM antigen-specific antibody response	Yes, but no definition available	Any person meeting the clinical criteria and having an epidemiological link	Any person meeting the clinical and the laboratory criteria
Finland	Other	Acute hepatitis B		Acute hepatitis B case. EITHER 1. laboratory-reported HBV core-antigen IgM antibody positive case; OR 2. physician-reported case with clinical symptoms compatible with acute hepatitis or fresh HBV infection AND (simultaneously) laboratory-verified HBV surface antigen positivity OR simultaneously laboratory-verified HBV DNA/RNA +	n/a	n/a	n/a

Country	Classification	Content	au	Hepatitis B case d  Laboratory criteria for		Case classification	
234.14	5.000.100001	Containt	Clinical description	diagnosis	Possible	Probable	Confirmed
		Chronic hepatitis B		All reported HBsAg+ cases not meeting the acute hepatitis case definition	n/a	n/a	n/a
France	Extended EU case definition	Acute hepatitis B	Acute symptomatic (Missing definition)	IgM + OR (if IgM unknown) anti-HBc+ and HbsAg+ in clinical context	n/a	n/a	
		Chronic hepatitis B		HBsAg carriage >6 months	n/a	n/a	n/a
Germany	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels.	Laboratory case definition: At least one of the following three criteria: detection of hepatitis B virus nucleic acid in serum (e.g. PCR), HBsAg+ (e.g. ELISA) confirmed by a different HBsAg test (e.g. HBsAGNT) OR HBsAg+ and anti-HBc+, IgM anti-HBc+ (e.g. ELISA). Confirmed: laboratory criteria and clinical criteria are fulfilled.	n/a	n/a	Confirmed lab test
Greece	Extended EU case definition	Acute hepatitis B	An acute illness with discrete onset of symptoms (e.g. jaundice) or elevated serum aminotransferase level	IgM anti-HBc+ or HBV DNA+	n/a	Meets clinical criteria and HBsAg+	Meets clinica criteria and i laboratory confirmed
		Asymptomatic hepatitis B		HbsAg+, asymptomatic infants <12 m/o: should be notified, other asymptomatic case, anti-HBc IgM+ or HbsAg+: should not be notified			
Hungary	Possibly an EU case definition	Acute hepatitis B		Lab confirmation: hepatitis B core antigen (IgM anti-HBc+) or HBV DNA in the blood	n/a	HBsAg-positive patient with clinical symptoms	Lab confirmed
Iceland	Other	Acute hepatitis B	n/a		n/a	n/a	All newly lab confirmed HBV cases are reportable, both acute and chronic cases, regardless of symptoms
		Chronic hepatitis B	n/a	Laboratory-confirmed cases with serological tests and medical history compatible with previous HBV infection	n/a	n/a	No data
Ireland	Extended EU case definition	Acute hepatitis B	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels.	IgM antibody to hepatitis B core antigen (IgM anti- HBc+) Detection of HBV nucleic acid in serum	n/a	Probable: A case that is HBsAg+ and has a clinical picture compatible with an acute hepatitis	Confirmed: A case that is laboratory confirmed
		Chronic hepatitis B		HBsAg+ and antibodies to hepatitis B, anti-HBc+ and IgM to Hbc, persistence of more than 6 months of either HBsAg or HBV nucleic acid in serum	n/a	n/a	Confirmed: A case that i laboratory confirmed
Italy	Possibly an EU case definition	Acute hepatitis B		IgM anti-HBc+ and HBsAg+.	n/a	n/a	Lab confirmed
Latvia	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting) AND at least one of the following three: fever, jaundice, elevated serum aminotransferase levels	Hepatitis B virus core IgM antigen-specific antibody response	n/a	Any person meeting the clinical criteria and having an epidemiological link	Any person meeting the clinical and the laboratory criteria
Liechtenstein Lithuania	No case definition  2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC  No case definition	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting) AND at least one of the following three: Fever, Jaundice, Elevated serum aminotransferase levels	Hepatitis B virus core IgM antigen-specific antibody response	n/a	Any person meeting the clinical criteria and having an epidemiological link	Any person meeting the clinical and the laboratory criteria

Country	Classification	Content		Hepatitis B case d	ennition	Case classification	
Country	Classification	Content	Clinical description	Laboratory criteria for diagnosis	Possible	Probable	Confirmed
Malta	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	IgM anti-HBc+ Detection of HBV nucleic acid in serum.	n/a	A case that is HBsAg+ and has a clinical picture compatible with an acute hepatitis	A case that is laboratory confirmed
Netherlands	Extended EU case definition	Acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting)  AND at least one of the following three: fever, jaundice, elevated serum aminotransferase levels	Heaptitis B virus core IgM or HBsAg+	n/a	n/a	Any person meeting the clinical and the laboratory criteria
		Chronic hepatitis B		HBsAg+	n/a	n/a	Confirmed lab test
Norway	Other	Acute hepatitis B	Person with clinical acute hepatitis (not specified)	Any person with clinical acute hepatitis and presence of HbsAg and presence of at least one of the following laboratory criteria: HbeAg, HBV-RNA, anti-Hbc (IgG or IgM) OR any person with confirmed anti-Hbc seroconversion during the last 12 months and the presence of at least one of the following laboratory criteria: HbsAg, HBV-RNA, anti-HbsAb (with no history of previous vaccination)	n/a	n/a	Confirmed lab test
		Chronic hepatitis B	n/a	Detection of HBsAg and HBcAb over more than 6 months and no clinical picture of acute hepatitis	n/a	n/a	Confirmed lab test
Poland	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	IgM antibody to hepatitis B core antigen (IgM anti- HBc+) Detection of HBV nucleic acid in serum	n/a	A case that is HBsAg+ and has a clinical picture compatible with an acute hepatitis	Confirmed lab test
Portugal	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vorniting) AND at least one of the following three: fever, jaundice, elevated serum aminotransferase levels	Hepatitis B virus core IgM antigen-specific antibody response	Yes, but no definition available	Person with disease compatible with the case definition for clinical HBV, epidemiologically related to a confirmed case 30 to 180 days before onset of symptoms	Any person meeting the clinical and the laboratory criteria
Romania	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	IgM antibody to hepatitis B core antigen (IgM anti- HBc+) Detection of HBV nucleic acid in serum	n/a	A case that is HBsAg+ and has a clinical picture compatible with an acute hepatitis	Confirmed lab test
Slovakia	Possibly an EU case definition	Acute hepatitis B	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	Laboratory confirmed (not specified)	n/a	Not specified	Any person meeting the clinical and the laboratory criteria
Slovenia	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting)  AND at least one of the following three: fever, jaundice, elevated serum aminotransferase levels	Hepatitis B virus core IgM antigen-specific antibody response	n/a	Any person meeting the clinical criteria and having an epidemiological link	Any person meeting the clinical and the laboratory criteria
Spain	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting communicable diseases to the Community network – acute hepatitis B	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting) AND at least one of the following three: fever, jaundice, elevated serum aminotransferase levels	Hepatitis B virus core IgM antigen-specific antibody response	n/a	Any person meeting the clinical criteria and having an epidemiological link	Any person meeting the clinical and the laboratory criteria

				Hepatitis B case d	lefinition		
Country	Classification	Content	Clinical description	Laboratory criteria for		Case classification	
			Cililical description	diagnosis	Possible	Probable	Confirmed
Sweden	Other	Acute hepatitis B	No data	HBsAg+ OR HBV-DNA+ AND anti-HBc IgM+ OR HBV-DNA+ with or without detectable HBsAg AND not detectable anti-HBc	n/a	Any case meeting the clinical criteria and having an epidemiological link	Any case meeting the clinical and the laboratory criteria
		Chronic hepatitis B	n/a	HBV chronic infection: HBsAg+ AND anti-HBcIgG+ AND not detectable or low levels of HBV anti- core IgM (anti-HBc IgM)	n/a	n/a	Confirmed lab test
United Kingdom	Other	Acute hepatitis B	Not specified	HBsAg+ and anti-HBc IgM+ AND abnormal liver function tests showing a pattern consistent with acute viral hepatitis.	n/a	n/a	Confirmed lab test
		Chronic hepatitis B		Chronic HBV case definition Hepatitis B surface antigen (HBsAg+) twice, at least 6 months apart  OR HBsAg+ and anti-HBc IgM2, negative and anti-HBc+.	n/a	n/a	Confirmed lab test

Table A3b. Details on case definitions used by the 29 EU/EEA countries in their HCV surveillance systems

Country	Classification	Content	Clinical description	Laboratory criteria for		Case classification	
,				diagnosis	Possible	Probable	Confirmed
	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting to the Community – hepatitis C	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	Detection of HCV- specific antibodies     Detection of HCV nucleic acid from clinical samples	Possible: n/a	Probable: n/a	Confirmed: A symptomatic case that is laboratory confirmed
	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	Not relevant for surveillance purposes	At least one of the following two: Detection of hepatitis C virus nucleic acid in serum OR hepatitis-C-virus-specific antibody response confirmed by a different antibody test	Possible case: n/a	Probable case: n/a	Confirmed case: Any person meeting the laboratory criteria
Austria	2008/426/EC	Casa definitions for	Not relevant for surveillance	At least one of the	Descible speed	Drobable anger	Confirmed
Austria	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	Not relevant for surveillance purposes	At least one of the following two: Detection of hepatitis C virus nucleic acid in serum OR hepatitis-C-virus-specific antibody response confirmed by a different antibody test	Possible case: n/a	Probable case: n/a	Confirmed case: Any person meeting the laboratory criteria
Belgium	No case definition			PCR +			PCR positive patient
Bulgaria	Extended EU case definition	Acute hepatitis C	Cases with clinical symptoms compatible with hepatitis, e.g. gradual development of the symptoms and jaundice or elevated serum aminotransferase levels	Demonstration of HCV- specific antibodies and HCV nucleic acid in clinical specimens	n/a	n/a	A clinical case that is laboratory confirmed
		Chronic hepatitis C	A case with a clinical presentation compatible with chronic hepatitis and laboratory findings	Demonstration of HCV- specific antibodies for a long period (years) and nucleic acid in clinical specimens for a long period (years)	n/a	n/a	A case clinically compatible with chronic hepatitis that is laboratory confirmed
Cyprus	Possibly an EU case definition	Hepatitis C (acute and chronic)	Compatible clinical picture (not specified)	Not specified	n/a	n/a	According to clinical signs and laboratory confirmation
Czech Republic	Other	Hepatitis C (acute and chronic)	Compatible clinical picture (not specified)	Anti-HCV Ab positive	n/a	n/a	According to clinical signs and laboratory confirmation
Denmark	Possibly an EU case definition	Acute hepatitis C	Clinical signs (not specified)	Specific lab test for microbiological agent	n/a	n/a	According to clinical signs and laboratory confirmation
		Chronic hepatitis C	n/a	Confirmed laboratory signs for over 6 months	n/a	n/a	Confirmed lab test
Estonia	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting to the Community – hepatitis C	Viral hepatitis: In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	Detection of HCV-specific antibodies Detection of HCV nucleic acid from clinical samples	n/a	n/a	Any person meeting the laboratory criteria
Finland	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	n/a	Anti HCV + OR HCV RNA +	n/a	n/a	Any person meeting the laboratory criteria
France	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	n/a	Anti HCV + OR HCV RNA + OR HCV seroconversion	n/a	n/a	Any person meeting the laboratory criteria
Germany	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	Not relevant for surveillance purposes	HCV RNA (e.g. PCR); anti-HCV + (e.g. ELISA), confirmed by a different antibody test (e.g. immunoblot).	n/a	n/a	Confirmed cases: newly laboratory- confirmed hepatitis C, regardless whether acute or chronic

Country	Classification	Content	Clinical description	Hepatitis C case of Laboratory criteria for		Case classification	1
Country	Sussification	Contait	Csur description	diagnosis	Possible	Probable	Confirmed
Greece	Extended EU	Hepatitis C (acute)	An acute illness with discrete onset of symptoms (e.g. jaundice) or elevated serum aminotransferase level	AND IgM anti-HAV — AND anti-HBC IgM — OR	n/a	n/a	According to clinical signs and laboratory confirmation
Hungary	Possibly an EU case definition	Acute hepatitis C	Clinical signs (not specified)	HCV RNA + Anti-HCV + OR HCV RNA +	n/a	n/a	According to clinical signs and laboratory confirmation
Iceland	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	Not relevant for surveillance purposes	HCV RNA + (in serum) OR Anti-HCV + (confirmed by a different antibody test	n/a	n/a	Any person meeting the laboratory criteria
Ireland	Extended EU	Hepatitis C (acute and chronic)	In symptomatic cases, clinical picture compatible with hepatitis, i.e. discrete onset of symptoms and/or jaundice or elevated serum aminotransferase levels. Asymptomatic cases are common.	Anti-HCV + OR HCV RNA +	n/a	n/a	Any person meeting the laboratory criteria
Italy	Possibly an EU case definition	Acute hepatitis C	Not relevant for surveillance purposes	Lab confirmation (not specified)	n/a	n/a	Any person meeting the laboratory criteria
Latvia	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	Not relevant for surveillance purposes	HCV RNA + (e.g. PCR); anti-HCV + (e.g. ELISA), confirmed by a different antibody test	n/a	n/a	Any person meeting the laboratory criteria
Lithuania	No information  2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	Not relevant for surveillance purposes	HCV RNA + (e.g. PCR); anti-HCV + (e.g. ELISA), confirmed by a different antibody test	n/a	n/a	Any person meeting the laboratory criteria
Luxembourg	No case definition				n/a	n/a	С
Malta	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting to the Community – hepatitis C	In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	Anti-HCV + OR HCV RNA +	n/a	n/a	Symptomatic case that is laboratory confirmed.
Netherlands	Other	Hepatitis C (Acute)	Having symptoms (like icterus or increased liver function disorder) or exposure to relevant risks if present in recent period, including medical treatment	Appearance of antibodies against HCV or increase in laboratory reactivity	n/a	n/a	Every new diagnosis of HCV must be notified, suspecting a recent infection (previous year)
Norway	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	Not relevant for surveillance purposes	HCV RNA + (e.g. PCR); anti-HCV + (e.g. ELISA), confirmed by a different antibody test	n/a	n/a	Any person meeting the laboratory criteria
Poland	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	HCV RNA + (e.g. PCR); anti-HCV + (e.g. ELISA), confirmed by a different antibody test	n/a	n/a	Any person meeting the laboratory criteria
Portugal	Extended EU	Hepatitis C (acute)	Acute disease with insidious initial symptoms (fever, malaise, anorexia, nausea, asthenia) and elevation of serum transaminases, with or without icterus	Lab confirmation (not specified)		Case with clinical symptoms and epidemiologica lly linked to confirmed cases during the incubation period	Symptomatic cases with laboratory confirmation
Romania	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting to the Community – hepatitis C	In symptomatic cases, clinical picture compatible with hepatitis, e.g. discrete onset of symptoms and jaundice or elevated serum aminotransferase levels	Anti-HCV + OR HCV RNA +	n/a	n/a	Symptomatic case that is laboratory confirmed.
Slovakia	Possibly an EU case definition	Hepatitis C (acute and chronic)	Not specified	Not specified	n/a	n/a	Symptomatic case that is laboratory confirmed
Slovenia	2008/426/EC: Commission Decision of 28 April 2008 amending Decision 2002/253/EC	Case definitions for reporting to the Community – hepatitis C	Not relevant for surveillance purposes	HCV RNA + (e.g. PCR); anti-HCV + (e.g. ELISA), confirmed by a different antibody test	n/a	n/a	Any person meeting the laboratory criteria

				Hepatitis C case of	definition		
Country	Classification	Content	Clinical description	Laboratory criteria for diagnosis	1	Case classification	n
					Possible	Probable	Confirmed
Spain	2002/253/EC: Commission Decision of 19 March 2002	Case definitions for reporting to the Community – hepatitis C	An acute illness with a discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g. anorexia, abdominal discomfort, nausea, vomiting and jaundice) and increase in transaminase (ALT, AST)	Anti-HCV + OR HCV RNA +	n/a	Not specified	Symptomatic case that is laboratory confirmed
Sweden	Other	Case definitions for reporting to the Community – hepatitis C (Acute)	Not relevant for surveillance purposes	HCV acute infection: seroconversion to anti- HCV within 6 months between samples	n/a	n/a	Any person with recent seroconversion
		Case definitions for reporting to the Community – hepatitis C (Chronic)	Not relevant for surveillance purposes	HCV RNA + anti-HCV +	n/a	n/a	Any person meeting the laboratory criteria
United Kingdom	Other	Hepatitis C (acute)	Not relevant for surveillance purposes	Recent seroconversion OR HCV RNA +or antigen + and anti-HCV - or equivocal in immune-competent individual OR anti-HCV + and anti-HAV IgM – AND anti-HBc IgM – AND abnormal liver function tests with a pattern consistent with acute viral hepatitis in someone with recent exposure to HCV, e.g. needle-stick injury, dialysis, recent injecting drug use.	n/a	n/a	Any person meeting the laboratory criteria
		Hepatitis C (chronic)	Not relevant for surveillance purposes	Anti-HCV+ or HCV RNA + AND not meeting case definition for acute HCV	n/a	n/a	Any person meeting the laboratory criteria

Table A4. Characteristics of HBV/HCV surveillance systems: data sources, type and format of database, and frequency of analysis

		Source of	data				Forn	nat	Туре		Fre	eque	ncy				
Country	Disease	Physicians	Laboratory	Hospital	Other	Comments	Electronic	Paper	Case based	Aggregated	Daily	Weekly	Biweekly	Monthly	Biannually	Yearly	Other
Austria	HBV	✓	<b>√</b>				<b>✓</b>		<b>✓</b>					~		<b>✓</b>	If necessary a daily analysis is possible.
	HCV	✓	✓				✓		✓					✓		~	If necessary, a daily analysis is possible.
Belgium	HBV	<b>√</b>	<b>√</b>				<b>✓</b>	<b>✓</b>	<b>✓</b>		✓					<b>✓</b>	
	HCV	✓	✓				✓	<b>✓</b>	✓		<b>✓</b>					<b>✓</b>	
Bulgaria	HBV	<b>√</b>	✓	~				<b>✓</b>		<b>✓</b>				✓		~	Immediately in case of outbreak
	HCV	<b>✓</b>	<b>✓</b>	~				<b>/</b>		<b>✓</b>				<b>✓</b>		~	Immediately in case of outbreak
Cyprus	HBV	✓					<b>✓</b>		<b>✓</b>					<b>✓</b>			Opportunistic
	HCV	<b>✓</b>					✓		<b>✓</b>					<b>✓</b>			Opportunistic
Czech Republic	HBV	No Information provided							<b>✓</b>								
	HCV	✓					✓		<b>✓</b>							<b>✓</b>	
Denmark	HBV	✓		<b>✓</b>			<b>✓</b>	<b>✓</b>	<b>✓</b>	✓						<b>✓</b>	Ad hoc
	HCV	✓		✓			✓	<b>✓</b>	✓	✓						<b>✓</b>	Ad hoc
Estonia	HBV	<b>✓</b>	✓	✓			✓		<b>✓</b>			✓		<b>✓</b>		<b>✓</b>	
	HCV	✓	✓	✓			✓		<b>✓</b>			✓		<b>✓</b>		<b>✓</b>	
Finland	HBV	✓	✓		✓	*	✓		✓		<b>✓</b>					<b>✓</b>	**
	HCV	✓	<b>√</b>		<b>✓</b>	Blood bank screening	<b>✓</b>		<b>✓</b>		<b>✓</b>					<b>✓</b>	Idem
France	HBV	✓	<b>√</b>			Source of data and format are related to the comprehensive system on acute HBV infection		<b>✓</b>	<b>✓</b>							<b>✓</b>	
	HCV	✓	✓	✓	✓	National health insurance database	✓	<b>/</b>	<b>✓</b>	✓						<b>✓</b>	3 to 10 years, depending on surveys
Germany	HBV	✓	✓	✓	✓	Physicians and laboratory	✓		✓			✓					
	HCV	✓	✓	✓	✓	Physicians and laboratory	✓		✓			✓					
Greece	HBV	✓	✓	✓			✓		✓			✓					
	HCV	✓	✓	<b>✓</b>			✓		<b>✓</b>			<b>✓</b>					
Hungary	HBV	<b>√</b>	<b>√</b>	<b>✓</b>			<b>✓</b>	<b>√</b>	<b>✓</b>			✓				<b>√</b>	
	HCV	<b>√</b>	<b>✓</b>	<b>√</b>			<b>√</b>	<b>✓</b>	<b>✓</b>			✓				✓	
Iceland	HBV	<b>√</b>	<b>√</b>	<b>√</b>	-		<b>V</b>		<b>√</b>						<b>√</b>	-	
	HCV	✓ ✓	✓ ✓	✓ ✓	-		✓ ✓		✓ ✓			<b>✓</b>			<b>✓</b>	<b>✓</b>	
Ireland	HBV	<b>∨</b> ✓	<b>∨</b>	<b>∨</b>	-		<b>▼</b>		V /			<b>∨</b>				V /	Quarterly
Italy	HCV HBV	<b>√</b>	· ·	<b>V</b> ✓			\ \ \	<b>V</b>	\ \ \ \			_				\ \ \	Quarterly
Italy	HCV	<b>→</b>		· /			· /	· /	· /							· /	
Latvia	HBV	✓		✓	<b>✓</b>		✓ <b>/</b>	✓	<b>✓</b>	✓				Y		<b>✓</b>	As often as necessary
	HCV	✓		~	~	Laboratories – detection of hepatitis C virus nucleic acid in serum	<b>✓</b>	<b>✓</b>	<b>✓</b>	✓				✓		~	As often as necessary
Liechten- stein	HBV	✓ N	<b>✓</b>	<b>✓</b>				<b>✓</b>	<b>✓</b>			<b>✓</b>				<b>✓</b>	
	HCV	No information provided	<b>✓</b>	<b>✓</b>													
Lithuania	HBV	<b>√</b>	<b>✓</b>	<b>√</b>			<b>✓</b>	<b>V</b>	<b>√</b>	<b>√</b>						Y	
	HCV	✓	<b>√</b>	<b>✓</b>			<b>✓</b>	<b>√</b>	<b>√</b>	✓						Y	
Luxem- bourg	HBV	✓ ✓		1			<b>√</b>		<b>√</b>					✓ ✓			
N4-4	HCV	✓ ✓	<b>✓</b>	✓ ✓	-		✓ ✓	✓ <b>✓</b>	✓ ✓		$\vdash$			<b>V</b>		<b>-</b>	
Malta	HBV	✓ ✓	✓ ✓	✓ ✓	-		✓ ✓	✓ ✓	✓ ✓		$\vdash$			-		✓ ✓	
Nether-				-				<b>*</b>	-		$\vdash$					-	
lands	HBV	<b>√</b>	✓				<b>✓</b>		✓			<b>√</b>				<b>✓</b>	

		Source o	f data				Forn	nat	Туре		Fre	eque	ncy				
Country	Disease	Physicians	Laboratory	Hospital	Other	Comments	Electronic	Paper	Case based	Aggregated	Daily	Weekly	Biweekly	Monthly	Biannually	Yearly	Other
	HCV	✓	✓				<b>✓</b>		✓			✓				<b>✓</b>	
Norway	HBV	✓	✓	✓				<b>✓</b>	✓		<b>✓</b>						
	HCV	<b>✓</b>	<b>✓</b>	✓				<b>✓</b>	✓		✓						
Poland	HBV	<b>✓</b>	<b>✓</b>					<b>✓</b>		<b>✓</b>			✓			<b>✓</b>	
	HCV	✓						<b>√</b>		✓			✓			<b>✓</b>	
Portugal	HBV	✓					<b>✓</b>		<b>✓</b>		<b>✓</b>	<b>✓</b>		<b>√</b>		<b>✓</b>	
	HCV	✓					<b>✓</b>	<b>√</b>	✓					<b>✓</b>	✓	<b>✓</b>	Quarterly
Romania	HBV	✓		✓		Case-based reporting since 2009		<b>✓</b>		✓				✓			
	HCV	✓		<b>✓</b>		Case-based reporting since 2009		<b>✓</b>		✓				✓			
Slovakia	HBV	<b>✓</b>	<b>✓</b>	~			/		<b>✓</b>	<b>✓</b>				✓	<b>✓</b>	~	Determined by professional needs, regardless of time
	HCV	✓	<b>✓</b>	<b>✓</b>			<b>✓</b>		✓	<b>✓</b>				<b>✓</b>	<b>✓</b>	<b>✓</b>	Determined by needs
Slovenia	HBV	~	~	~			<b>/</b>		~	<b>✓</b>				✓			More frequently in case of clusters or outbreaks
	HCV	~	~	~			~		~	<b>✓</b>				~			More frequently in case of clusters or outbreaks
Spain	HBV	✓					<b>✓</b>		<b>√</b>							✓	
	HCV	<b>✓</b>	<b>✓</b>				<b>✓</b>		<b>✓</b>							<b>√</b>	
Sweden	HBV	✓	<b>✓</b>				<b>✓</b>		✓		✓						
	HCV	<b>✓</b>	<b>✓</b>				<b>✓</b>		<b>✓</b>		✓						
United Kingdom	HBV	<b>✓</b>	<b>✓</b>	~			<b>✓</b>		✓								Quarterly
	HCV	✓	<b>✓</b>	✓			<b>✓</b>		✓								Quarterly

<sup>\*</sup> There are separate parallel systems for blood bank and maternity screening, although these are covered by the physician and laboratory reporting, too. National personal identifier use allows for elimination of duplicate reports

<sup>\*\*</sup> Annually produced comprehensive reports. Large healthcare facilities have access to regional data with identifiers, the National Public Health Institute (register maintenance) has access to all data with full identifiers.

Table A5a. Information collected in HBV surveillance systems in the 29 EU/EEA countries

		AT	BE	ВG	CY	DK	EE	FI	FR	DE	GR	ни	IS	IE	IT	LV	LI	LT	LU	мт	NL	NO	PL	PT	RO	SK	SI	ES	SE	UK
	Patient ID	Х			Х	Х	Х	Х		Х	х	х	Х	х		х	Х	х	х	Х	Х	Х	Х	Х		Х	Х	Х	Х	Х
	Date of birth or age	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
	Gender	Х	Х	х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	Х
	Country of birth	Х		х	Х	Х		Х					Х	х	Х		х		х	Х	Х	Х		Х			Х		Х	
	Place of residence	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	
data	Date of onset of the disease	Х		х	Х	Х	Х		Х	Х	Х	Х	Х	Х	Х	х	Х	х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	
Basic data	Date of diagnosis	Х		Х		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	х		Х	Х	Х				Х			Х	Х
	Date of reporting/notification	Х	Х	х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	х		х	х	Х	Х	Х	Х	Х	Х	Х	Х		Х	Х
	Date used for statistics	Х	Х	х	Х	Х	Х	Х		Х	Х		Х			х			Х	Х	Х	Х	Х			Х		х	Х	х
	Country where infection most likely acquired	Х			Х	Х	Х	Х	Х		Х	Х	Х	х		х	Х	х	Х	Х	Х	Х				Х			Х	
	Immunisation status	Х		х	Х	Х	Х		Х	Х	Х	Х	Х	х	Х	х	Х	х	Х	Х	Х	Х	Х	Х	Х	Х	Х			
	Outcome	Х		х	Х		Х		Х		Х	Х		х		х	Х	х		Х		Х	Х	Х	Х	Х	Х	х		
tion ion	Clinical symptoms	Х		х		Х			Х	Х	Х	Х	Х		Х	х	Х			Х		Х	Х	Х		Х				
Classification information	Laboratory results	Х	Х	х		Х	Х	Х	Х	Х	Х	Х	Х	х	Х	х		х		Х	Х	Х	Х	Х	Х	Х			Х	х
Class	Epidemiological information	Х		х	Х	Х	Х			Х	Х	Х	Х	х	Х	х	Х	х		Х	Х	Х	Х	Х	Х	Х				х
	Homosexual contact			х		Х	Х		Х	Х			Х	х	Х	х	Х	х		Х	Х					Х			Х	Х
	Heterosexual contact			х		Х	Х		Х	Х			Х	х	Х	х	Х	х		Х	Х					Х			Х	Х
	Injecting drug use			х		Х	Χ	Х	Х	Х		Х	Х	Х	Х	Х	х	х		Х	Х	Х	Х		Х	Х			Х	Х
ors	Mother HBsAg+			х		Х	Х	Х	Х	Х	Х	Х	Х	х	Х	х		х		Х		Х			Х	Х			Х	х
Transmission route risk factors	Close family member HBsAg+			х		Х	Х		Х	Х	Х	Х	Х	х	Х	х	Х	х		Х		Х	Х		Х	Х				Х
e risk	Sex partner HBsAg+			Х		Х	Χ		Х	Х	Х	Х	Х	Х	Х	Х		х		Х		Х			Х	Х				Х
rout	Blood or blood product transfusion			х		Х	Х	Х	Х	Х	Х	Х	Х	х	Х	х	Х	х		Х		Х	Х		Х	Х			Х	х
ssion	Invasive healthcare procedure/dental treatment			х		Х	Х		Х	Х	Х	Х	Х	х	Х	х		х		Х		Х			Х	Х			Х	х
ısmis	Organ transplantation			х		Х	Χ		Х	Х		Х	Х		Х	х		х		Х		Χ			Х	Х				Х
Tag	Haemodialysis			х		Х	Х		Х	Х	Х	Х	Х	х	Х	х	Х	х		Х		Х			Х	Х				Х
	Needle injury or other occupational exposure			х		Х	Х		Х	Х	Х	Х	Х	х	Х	х		х		Х	Х	Х				Х			Х	х
	Tattooing/body piercing			х		Х	Χ		Х	Х	Х	Х	Х	х	Х	х		х		Х		Χ			Х	Х			Х	Х
	Other					Х		Х		Х	х		Х	х		х		х			Х									
	Hospitalisation	Х		х	Х		Х		Х	Х		Х		х	Х	х	Х	х		Х	Х	Х	Х	Х	Х	Х				Х
Je.	Length of hospitalisation									Х	х	Х				х				Х			Х		Х	Х				
Other	ICD code diagnosis				х		Х	х					Х			х		х					х	х		Х				
	Genotype information													х																

Table A5b. Information collected in HCV surveillance systems in the 29 EU/EEA countries

		AT	BE	BG	CY	CZ	DK	EE	FI	FR	DE	GR	HU	IS	ΙE	IT	LV	LT	LU	мт	NL	NO	PL	РТ	RO	SK	SI	ES	SE	UK
	Patient ID	х			х	Х	х	х	х		х	х	х	х	х		х	х	х	Х	х	х	х			х	х		х	х
	Date of birth or age	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х
	Gender	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х
	Country of birth	Х		Х	х		Х		Х	Х				Х	Х	Х			Х	Х	Х	Х		Х					Х	
a	Place of residence	Х	Х	Х	х	Х	Х	х	Х	х	Х	х	Х	Х	Х	Х	Х	х	Х	Х	х	х	Х	Х	х	х	Х	Х	Х	
	Date of onset of the disease	Х		Х	Х		Х	Х	Х	Х	Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	Х	Х	Х		Х	Х		Х	
Basic data	Date of diagnosis	Х		Х			Х	х	Х	Х	Х	х	Х	Х	Х	Х	Х	х		Х	Х	Х				Х		Х	Х	х
_ <u>m</u>	Date of reporting/notification	Х	Х	Х	х	Х	Х	х	х	х	Х	х	Х	Х	х	Х	Х	х	Х	Х	х	х	х	Х	х	х	Х		Х	х
	Date used for statistics	Х	Х	Х	х		Х	х	Х		Х	х		Х			Х		Х	Х		Х	Х			Х			Х	х
	Country where infection most likely acquired	Х			х	Х	Х	х	х			х	Х	Х	Х		Х	х	Х	Х	Х	Х				х			Х	х
	Immunisation status	Х			х			х		х		х				Х	Х		Х	Х			х	Х						
	Outcome	Х		Х	х			х				х	Х				Х	х		Х		х		Х	х	х		Х		
tion	Clinical symptoms	Х		Х			Х				Х	х	Х	Х		Х	Х			Х		х	х			х				х
Classification information	Laboratory results	Х	Х	Х		Х	Х	х	х	х	Х	х	Х	Х	х	Х	Х	х		Х	х	х	х	Х	х	х			Х	х
Class	Epidemiological information	Х		Х		Х	Х	х		х	Х	х	Х	Х	х	Х	Х	х		Х	х	х	х	Х	х	х				х
	Homosexual contact			Х			Х	х		Х	Х			Х		Х	Х	Х		Х	Х					Х			Х	х
	Heterosexual contact			Х			Х	х			Х			Х		Х	Х	Х		Х	х					х			Х	х
	Injecting drug use			Х		Х	Х	х	Х	х	Х		Х	Х	Х	X	Х	х		Х	Х	Х	Х		х	х			Х	х
ors	Mother HCV +			Х			Х	х			Х	х		Х	Х	Х	Х	Х		Х		Х				Х			Х	х
c fact	Close family member HCV +			Х			Х	х			Х	х	Х	Х		X	Х	Х		Х		Х	Х		х	х				х
sion route risk factors	Sex partner HCV positive			х			Х	х			Х	х	Х	х	х	X	Х	х		Х		х			х	х			Х	х
rout	Blood or blood product transfusion			Х		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	X	Х	Х		Х		Х	Х		Х	Х			Х	х
ssion	Invasive healthcare procedure/dental treatment			Х		Х	Х	Х		Х	Х	Х	Х	Х	Х	X	Х	Х		Х		Х	Х		Х	Х			Х	х
Transmis	Organ transplantation			х		х	х	х			х		х	х	х	X	х	х		Х		х			х	х				х
ם	Haemodialysis			Х		Х	Х	х		Х	Х	х	Х	х	х	X	Х	х		Х		х			Х	Х				х
	Needle injury or other occupational exposure			Х		Х	Х	х		Х	Х	х	Х	Х	х	Х	Х	х		Х	Х	Х				Х			Х	х
	Tattooing/body piercing			Х		Х	Х	х		х	Х	х	Х	х	х	X	Х	х		Х		х			х	х			Х	х
	Other						х				х	х		х	Х			х			х					х				
	Hospitalisation	Х		Х	х	Х		х			Х		Х			X	Х	х		Х	х	х	х	Х	х	х				х
Other	Length of hospitalisation										Х	х	Х				Х			Х			х		х	х				
₹	ICD code diagnosis				х	Х		х	х					Х			Х	Х					х	Х		х				
	Genotype information									х					Х			Х												

Table A6a. Screening programmes for hepatitis B in 29 EU/EEA countries

	АТ	BE	BG	CY	DK	EE	FI	FR	DE	GR	HU	IS	ΙE	IT	LV	LI	LT	LU	МТ	NL	NO	PL	PT	RO	SK	SI	ES	SE	UK
Pregnant women	Х			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х			Х	Χ	Х	Χ	Х		Х	Χ	Х	Χ	Х
Military recruits																			Х				Х		Х				
Injecting drug users			Х	Х	Χ				Х	Х	Х	Х	Х						Х		Х		Х	Х	Χ	Х		Х	
STI clinic patients				Х				Х	Х	Х			Х						Х				Х	Х	Х				
Multiple sex partners									Х																				
Prisoners				Х		Х		Х	Х				Х						Х		Х		Х		Х	Х		Χ	
Haemodialysis patients		Х	Х	Х				Х	Х	Х	Х	Х	Х	Х	Х				Х		Х	Χ	Х		Х	Х	Х	Χ	Х
Long-term healthcare facilities				х									Х																
Healthcare workers		Х						Х	Х				Х	Х					Χ					Х					
Workers who are occupationally exposed to the virus								Х	Х		Х			Х	x		x		х			Х	Х				Х		х
Blood and organ donors	Х	Х	Х	Х	Х	Х	Х	Х	Χ	Х	Х		Х	Х	Х		Х		Х	Χ	Х	Χ	Х	Х	Χ	Χ	Х	Χ	Х

#### Comments:

- Austria: Several scientific projects on HBV-screening, but no national prevention programmes;
- France: Anonymous testing centres for HBV and HCV;
- Germany: For example, HIV-positives which attended an STI clinic;
- Ireland: screening of healthcare workers for hepatitis B applies only to healthcare workers involved in exposure-prone procedures; screening for persons with multiple sex partners would only take place if the person attended an STI clinic; Latvia: 'Expanding Network for Comprehensive and Coordinated Action on HIV/AIDS Prevention Among IDUs and Bridging
- Population', ENCAP No. 2005305 'Prevalence of HIV and other infections; risk behaviour among injecting drug users and bridging populations in Latvia, Lithuania, Estonia'. Anti-HBc prevalence among IDUs in Latvia: 55.8% (2007); Netherlands: behavioural high risk groups for HBV are screened when receiving the first vaccination;
- Slovenia. Screening of prisoners. Most screenings are conducted for risk groups. Slovenia does not have a mandatory military service, the Slovenian armed forces are professional soldiers who are vaccinated against many communicable diseases. They are vaccinated against HBV according to risk assessments connected to their working places and the standards of peacekeeping missions;
- Sweden. No complete mandatory screening, except for blood and organ donors. Other groups are offered tests, but extent differs in different counties.

Table A6b. Screening programmes for hepatitis C in 29 EU/EEA countries

	AT	BE	BG	CY	CZ	DK	EE	FI	FR	DE	GR	HU	IS	ΙE	П	LV	LT	LU	MT	N L	N O	PL	PT	RO	SK	SI	ES	SE	UK
Pregnant women																			Χ		Х						Χ		
Military recruits																									Χ				
Injecting drug users			Х	Х		Х			Х	Х	Х	Χ	Х	Χ					Χ		Х		Х	Х	Χ	Х		Х	
STI clinic patients				Х						Χ									Χ					Х	Χ		Х		
Multiple sex partners										Χ																			
Prisoners				Х					Χ	Χ				Х					Χ		Х	Х	Χ		Χ	Χ		Х	
Haemodialysis patients		Х	Х	Х	Χ			Χ	Χ	Χ	Х		Χ	Χ	Χ	Χ			Χ		Χ	Χ	Χ		Χ		Х	Χ	Χ
Long-term healthcare facilities																													
Healthcare workers		Х							Χ	Χ				Х	Χ				Χ								Х		Х
Persons occupationally exposed to the virus									Х	Х		Х			Х	Х	Х		Х			Х							Х
Blood and organ donors	Х	Х	Х	Х	Χ	Х	Χ	Χ	Χ	Х	Χ	Χ	Χ	Χ	Х	Х	Х		Χ	Χ	Х	Х	Χ	Χ	Χ		Χ	Х	Х

#### Comments:

- France: Anonymous testing centres for HBV and HCV
- Ireland: Since July 2008, all new healthcare workers who are involved in exposure-prone procedures are offered screening
- Latvia: 'Expanding Network for Comprehensive and Coordinated Action on HIV/AIDS Prevention among IDUs and Bridging Population', ENCAP No. 2005305. 'Prevalence of HIV and other infections; risk behaviour among injecting drug users and bridging population in Latvia, Lithuania, Estonia'. Anti-HCV positive prevalence among IDUs in Latvia (2007): 74.2%.
- Slovenia: Prisoners are screened if they are injecting drug users or otherwise suspected of being infected.
- Sweden: No complete mandatory screening, except for blood and organ donors. Other groups are offered tests, but extent differs in different counties.

# Annex 2. Country overview on HBV and HCV surveillance and prevention

The following tables provide a comprehensive overview of HBV and HCV surveillance and prevention in EU/EEA countries.

# **Austria**

	нву	HCV
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Every physician has to report suspected and confirmed cases and deaths. Laboratories are included in the Mandatory reporting system.	Every physician has to report suspected and confirmed cases and deaths. Laboratories are included in the Mandatory reporting system.
Surveillance system	Other, see below:	Other, see below:
Comments	Laboratory-confirmed cases	Laboratory-confirmed cases

#### **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV	
Clinical	EU case definition 2008		EU case definition 2008	
Chronic	EU case definition 2008		EU case definition 2008	
Other				
Cases included in surveillance	Possible		Possible	
	Probable		Probable	
	Confirmed	with classification	Confirmed	with classification
	Unknown classification		Unknown classification	
Type of cases	Acute	Since 1 January 2009 it is possible to distinguish between	Acute	Since 1 January 2009 it is possible to distinguish
	Chronic	acute and chronic.	Chronic	between acute and
	Asymptomatic		Asymptomatic	chronic.
	Suspected		Suspected	
	Other:	Austria has an electronic reporting system with many relevant variables which can be analysed ad hoc if necessary.	Other:	Austria has an electronic reporting system with many relevant variables which can be analysed ad hoc if necessary.
Including duplicates	No		No	
Underreporting	Underreporting is possible, but of underreporting.	no estimates exist for magnitude	Underreporting is possible magnitude of underreport	, but no estimates exist for ing.
Rate underreporting				·

Collected data  Ba  Cla  Tr.  mi	hysicians Other: asic data  lassification rans- nission routs sk factors	Pa Da Ge Cc Pla Da Da Da Cc Im	ate of diagnoste of report ate used for ountry where nmunisation utcome	th ence of the diseas osis ting/notificatio statistics e infection wa		Physicians Other: Basic data	Patt Datt Ger Cou Place Datt	ent ID e of birth ider intry of bire of reside of onset	rth lence t of the	Hospital
Collected data  Ba  Cla  Tr.  mi	asic data  lassification  rans- hission rout	Da Ge Cc Pla Da Da Da Cc Im Ou	ate of birth of ender nuntry of bir ace of reside ate of onset ate of diagno ate of report ate used for nuntry where amunisation atcome	th ence of the diseas osis ting/notificatio statistics e infection wa			Ger Cou Place Date	e of birth ider ntry of bi e of resid e of onset e of diagr	rth lence t of the	disease
Ck	lassificatior rans- nission rout	Da Ge Cc Pla Da Da Da Cc Im Ou	ate of birth of ender nuntry of bir ace of reside ate of onset ate of diagno ate of report ate used for nuntry where amunisation atcome	th ence of the diseas osis ting/notificatio statistics e infection wa		Basic data	Ger Cou Place Date	e of birth ider ntry of bi e of resid e of onset e of diagr	rth lence t of the	disease
Tr. mi	rans- nission rout	Ge Cc Pli Da Da Da Cc Im Ou	ender buntry of bir ace of reside ate of onset ate of diagno ate of report ate used for buntry where amunisation atcome	th ence of the diseas osis ting/notificatio statistics e infection wa			Ger Cou Place Date Date	ntry of bi e of reside of onset of diagr	rth lence t of the	disease
Tr. mi	rans- nission rout	Co Pla Da Da Da Da Co Im Ou	ountry of bir ace of reside ate of onset ate of diagno ate of report ate used for nuntry where nunisation atcome	ence of the diseas osis ting/notificatio statistics e infection wa			Place Date	ntry of bi e of resid e of onset e of diagn	lence t of the nosis	disease
Tr. mi	rans- nission rout	Pla Da Da Da Da Da Co Im	ace of reside ate of onset ate of diagnoste of report ate used for buntry where munisation atcome	ence of the diseas osis ting/notificatio statistics e infection wa			Place Date	e of reside of onset	lence t of the nosis	disease
Tr. mi	rans- nission rout	Da Da Da Da Da Co Im Ou	ate of onset ate of diagnoste of report ate used for ountry where nmunisation utcome	of the diseas osis ting/notification statistics e infection wa			Dat Dat	e of onset e of diagn	t of the nosis	disease
Tr. mi	rans- nission rout	Da Da Da Cc Im Ou	ate of diagnoste of report ate used for ountry where nmunisation utcome	osis ting/notification statistics e infection wa			Dat	e of diagn	nosis	disease
Tr. mi	rans- nission rout	Da Da Cc Im Ou Cli	ate of report ate used for buntry where amunisation utcome	ting/notification statistics e infection wa	on					
Tr. mi	rans- nission rout	Da Cc Im Ou Cli	ate used for buntry where nmunisation utcome	statistics e infection wa	on		Dat	o of vonce		
Tr. mi	rans- nission rout	Ccc Im Ou Cli	ountry where nmunisation utcome	e infection wa				e or repor	ting/not	tification
Tr. mi	rans- nission rout	Im Ou Cli	nmunisation utcome				Dat	e used for	r statisti	cs
Tr. mi	rans- nission rout	Ou Cli	ıtcome	and the same of th	as acquired		Cou	ntry wher	re infect	tion was acquired
Tr. mi	rans- nission rout	Cli		status			Imr	nunisation	n status	
Tr. mi	rans- nission rout							come		
mi	nission rout	La	nical sympt	oms		Classificatio	n Clin	ical symp	toms	
mi	nission rout		boratory res	sults			Lab	oratory re	esults	
mi	nission rout	Ep	idemiologic	al information	า		Epid	demiologic	cal infor	mation
			mosexual c	contact		Trans- mission rou		nosexual	contact	
	on raciols	He	eterosexual			risk factors	Het	erosexual		t
		_	jecting drug			-		cting drug		
		-	other HBsAg	-		-		her HCV I		
				nember HBsA	.g+	-				r HCV- positive
			x partner H			-	-	partner F		
		Blo	ood or blood	d-product trar	nsfusion		Blo	od or bloo	d-produ	uct transfusion
			vasive healt eatment	hcare proced	ure/dental			asive heal Itment	thcare p	procedure/dental
		Or	gan transpl	antation			Org	an transp	lantatio	n
		Ha	emodialysis	5		]	Hae	modialysi	S	
		Ne	edle injury	or other occu	ipational exposure			dle injury osure	or othe	er occupational
			ttooing/bod	ly piercing		-	-	ooing/bo	dy pierc	ing
Ot	ther		spitalisation	า		Other		pitalisatio	n	
			ngth of hos			1 20.0	Length of hospitalisation		tion	
			D code diag	-		-	ICD code diagnosis		•	
		_	enotype info			1		otype info		n
		<u> </u>								
Data linked to Liv	iver transpl	ant	Liv	ver cancer		Liver transp	lant		Liver c	ancer
Ho	lospital regi	ster	Me	ortality		Hospital reg	jister		Mortal	ity
Ot	C L	t is currently no lifferent register Inless there are Pross-linking data Report.	s, e.g. throu scientific re	ugh social sec asons. There	curity number, are plans for		Note: It is currently not allowed to link personal data across different registers there are scientific reasons. See note in		erent registers, unles	
Format Ele	lectronic	Pa	per			Electronic	Pag	er		
Гуре Са	ase-based	Ag	gregated		Other:	Case-based	Agg	regated		Other:
			144 11		D: 11			14/ //		Diame III
	aily		Weekly		Biweekly	Daily		Weekly		Biweekly
	Ionthly Other:		Biannuall If necess	•	Yearly alysis is possible	Monthly Other:		Biannua If neces		Yearly aily analysis is
Ot	ulei.		II Hecess	ary, udily dfla	nysis is possible	ouler:		possible		ily allalysis is
	TI clinic urveillance		Laborato	ry network	Supplementary sentinel surveillance	STI clinic surveillance		Laborato network		Supplementary sentinel surveillance
-	egular sero	-surveys in gene	eral populat	ion	Other	Regular ser	o-survey	s in gener	ral	Other

		HBV	HCV
Screening	Pregnant women		
programme	Military recruits		
	Injecting drug users		
	STI clinic patients		
	Multiple sex partners		
	Prisoners		
	Haemodialysis patients		
	Long-term healthcare facilities		
	Healthcare workers		
	Workers who are occupationally exposed to the virus		
	Blood and organ donors		
	Other groups**		
Vaccination	нву		
programme (only HBV)	Universal vaccination	Infants	
` , ,		Adolescents	
		Both	
		Other	
	Risk groups vaccination	Neonates born to HBsAg + mothers	5
		Individuals at risk for HBV due to or	ccupation
		Haemodialysis patients	
		Chronic liver disease patients	
		STI clinic patients	
		Multiple sex partners	
		Injecting drug users	
		Household contacts of HBsAg+ pati	ients
		Contacts of infected persons	
		Other risk groups**	
	Other:		
Catch-up programme	Infants up to 6 years: three doses Adolescents from 7 to 18 years: three doses		
Vaccination coverage	Infants 0 to 2 years		
-	Adolescents 10 to 14 years		
	Adults		
	Other groups		
	Not known		
	Coverage:		
		; 1 year: 83%; 2 years: 80%	
	Immunisation coverage (adolescents): under 11 years		1%; 13 years: 33%; 14 years: 43%
	Not known Coverage: Immunisation coverage (infants): under 1 year: 30%,		1%; 13 years: 33%;

# **Belgium**

	HBV	HCV
Surveillance systen	1	
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Several surveillance systems for HBV, none of which can be characterised as the major one, please describe below	Several surveillance systems for HCV, none of which can be characterised as the major one, please describe below
Surveillance system	Other, see below:	Other, see below:
Comments	Mandatory notification; sentinel laboratory	Mandatory notification; sentinel laboratory

#### **Objectives**

	нву	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV	
Clinical	IgM+ and/or HBe antigen		PCR+	
Chronic	No case definition		No case definition	
Other				
Cases included in surveillance	Possible		Possible	
	Probable	with classification	Probable	with classification
	Confirmed	-	Confirmed	-
	Unknown classification		Unknown classification	
Type of cases	Acute		Acute	
	Chronic	with classification	Chronic	with classification
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	Yes		yes	
Underreporting	Underreporting is possible, but of underreporting.	no estimates exist for magnitude	Underreporting is possible magnitude of underreport	e, but no estimates exist for ting.
Rate underreporting				

	HBV				HC						
Source of data	Physicians	Labora	tory	Hospital		sicians	Labor	ratory		Hospital	
	Other:				Oth	er:					
Collected data	Basic data	Patient	ID		Bas	ic data	Patier	nt ID			
		Date of	f birth or age				Date	of birth o	r age		
		Gender					Gend	er			
		Countr	y of birth				Coun	try of birt	h		
		Place o	f residence				Place	of reside	nce		
		Date of	onset of the disea	ase			Date	of onset	of the di	sease	
		Date of	diagnosis				Date	of diagno	sis		
		Date of	reporting/notificat	tion			Date	of reporti	ing/notif	ication	
			sed for statistics					used for			
			where infection w	vas acquired						n was acquired	
			isation status	·				unisation			
		Outcon					Outco				
	Classification		symptoms		Cla	ssifi-		al sympto	ms		
			tory results		cat			ratory res			
			iological information	nn				miologica		ation	
	Trans-		exual contact		Tra	nsmission		sexual co			
	mission route risk factors	Hetero	sexual contact		rou	te risk ors	Heterosexual contact				
			ng drug use		-		Injecting drug use Mother HCV positive				
			HBsAg+								
			amily member HBs	Ag+						ICV- positive	
		Sex pa	rtner HBsAg+				Sex p	artner HO	CV positi	ve	
		Blood o	or blood-product tr	ansfusion			Blood	or blood	-product	t transfusion	
			e healthcare proce	edure/dental			Invasive healthcare procedure/dental treatment				
		treatme									
			transplantation		_		Organ transplantation				
		Haemo	•		_			Haemodialysis			
		Needle	injury or other occ	cupational exposure			Need		or other	occupational	
		Tattooi	ng/body piercing				_ ·	oing/bod	y piercin	g	
		Other					Other				
	Other	Hospita	alisation		Oth	er	Hospi	italisation			
			of hospitalisation		_		_	th of hosp		on	
			de diagnosis		_		ICD c	ode diag	nosis		
		Genoty	pe information				Geno	type infor	mation		
	1								1		
ata linked to	Liver transplant		Liver cancer			er transplan			Liver c		
	Hospital register		Mortality		ПО	pital regist	er		Mortali	ty	
	Other:		Data linking could I never actually carri	be done in theory, b ed out	ut	Other:		Data linl actually		sible, but was ne out	
	Electronic		Paper			Electroni	С	Paper			
ormat	Electronic		Aggregated	Other:		Case-bas	sed	Aggrega	ited	Other:	
	Case-based		nggi cgatca								
		, , , , , , , , , , , , , , , , , , ,	чудгедасса	'							
уре			Weekly	Biweekly		Daily		Weekly		Biweekly	
уре	Case-based	١		Biweekly Yearly		Daily Monthly		Weekly Biannua	lly	Biweekly Yearly	
уре	Case-based Daily	\	Weekly Biannually			-		Biannua If neces	sary, da		
requency	Case-based  Daily  Monthly  Other:	\ 	Neekly Biannually If necessary, daily	Yearly analysis is possible	2007	Monthly Other:		Biannua If neces possible	sary, da	Yearly ily analysis is	
Format Type Frequency Other surveillance systems	Case-based  Daily  Monthly	\ 	Weekly Biannually	Yearly analysis is possible	ary	Monthly		Biannua If neces	sary, da	Yearly ily analysis is	
requency Other urveillance	Case-based  Daily  Monthly Other:  STI clinic		Neekly Biannually If necessary, daily Laboratory network	Yearly analysis is possible  Supplement sentinel	ary	Monthly Other: STI clinic surveillar	nce sero-su	Biannua If neces possible Laborate	sary, da	Yearly ily analysis is Supplementary sentinel	

FIEVEILION		HBV	HCV			
Screening	Pregnant women	TIBV	TICY			
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	·					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination	HBV					
programme (only HBV)	Universal vaccination	Infants				
(Olly HDV)		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ pati	ients			
		Contacts of infected persons				
		Other risk groups**				
	Other:		a, organ transplant, patients who will receive led people, travellers to HBV endemic area			
Catch-up	Infants up to 6 years: three doses	<u> </u>				
programme	Adolescents from 7 to 18 years: three doses					
Vaccination coverage	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage:					
	98%					

# Bulgaria

	HBV	HCV
	ПВУ	псу
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Own system for HBV	Own system for HCV
Comments		

#### **Objectives**

	нву	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV	
Clinical	Clinical description:  Cases with clinical symptom e.g. gradual development o jaundice or elevated serum Laboratory criteria for diagnosis  Detection of IgM antibodies core antigen (anti-HBc IgM Demonstration of HBV nucle Case classification:  Possible: n/a  Probable: A case that is HBs compatible with acute hepa  Confirmed: A case that is la	of the symptoms and aminotransferase levels s: against Hepatitis B virus positive) eic acid in the serum	e.g. gradual development jaundice or elevated seru Laboratory criteria for diagno Demonstration of HCV subspecimens Case classification: Possible: n/a Probable: n/a	m aminotransferase levels sis: ecific antibodies
Chronic	Clinical description: A case with a clinical presentation compatible with chronic hepatitis and laboratory findings Hepatitis B, chronic Laboratory criteria for diagnosis: Presence of hepatitis B virus surface antigen (HBsAg) over a period longer than six months Demonstration of HBV nucleic acid in the serum over a period longer than six months Case classification: Possible: N/A Probable: A case clinically compatible with chronic hepatitis Confirmed: A case clinically compatible with chronic hepatitis that is laboratory confirmed		period (years)  Demonstration of nucleic over a long period (years Case classification:  Possible: N/A  Probable: N/A	oratory findings sis: secific antibodies over a long acid in clinical specimens )
Cases included in surveillance	Possible		Possible	
	Probable Confirmed	with classification	Probable Confirmed	with classification
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	No		No	
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible, but magnitude of underreporting.	ut no estimates exist for
Rate underreporting				

	HBV			HCV			
Source of data	Physicians	Laboratory	Hospital	Physicians	Laboratory	Hospital	
	Other:			Other:			
Collected data	Basic data	Patient ID		Basic data	Patient ID		
		Date of birth or age			Date of birth or	age	
		Gender			Gender		
		Country of birth			Country of birth	1	
		Place of residence			Place of resider	nce	
		Date of onset of the	disease		Date of onset of	f the disease	
		Date of diagnosis			Date of diagnos	sis	
		Date of reporting/not	ification		Date of reporting	ng/notification	
		Date used for statistic	CS .		Date used for s	tatistics	
		Country where infect	ion was acquired		Country where	infection was acquired	
		Immunisation status			Immunisation s	tatus	
		Outcome			Outcome		
	Classification information	Clinical symptoms		Classification information	Clinical sympton	ms	
	IIIIOIIIIauoii	Laboratory results		IIIIOIIIIauoii	Laboratory resu	ılts	
		Epidemiological inform	mation		Epidemiological	information	
	Transmission route risk factors	Homosexual contact		Transmission route risk factors	Homosexual co	ntact	
	1.200.0	Heterosexual contact			Heterosexual co		
		Injecting drug use			Injecting drug		
		Mother HBsAg+	LIDaAa I		Mother HCV positive		
		Close family member Sex partner HBsAq+	пьзау+		Close family member HCV- positive		
		Blood or blood-produ	ct transfusion		Sex partner HCV positive  Blood or blood-product transfusion		
					· ·		
		treatment	gan transplantation		Invasive healthcare procedure/dental treatment		
		Organ transplantation			Organ transplantation		
		Haemodialysis			Haemodialysis		
		Needle injury or othe			Needle injury o exposure	r other occupational	
		Tattooing/body pierci	ing		Tattooing/body piercing Other Hospitalisation Length of hospitalisation ICD code diagnosis		
		Other					
	Other	Hospitalisation		Other			
		Length of hospitalisat	tion				
		ICD code diagnosis					
	To farmentian in a sufficient	Genotype information		T	Genotype infor		
	Information is available of Laboratory results: anti-HBc IgM; anti-HBc I			reported at centr	al level.	ional level and is not RNA in some cases	
Data linked to	Liver transplant	Liver cancer	Mortality	Liver transplant	Liver canc		
	Hospital register			Hospital register			
	Other:			Other:			
Format	Electronic	Paper		Electronic	Paper		
Туре	Case-based	Aggregated	Other:	Case-based	Aggregated	Other:	
Frequency	Daily	Weekly	Biweekly	Daily	Weekly	Biweekly	
	Monthly	Biannually	Yearly	Monthly	Biannually	Yearly	
	Other:	•	case of outbreak	Other:		case of outbreak	
Other	STI clinic surveillance	Laboratory	Supplementary	STI clinic	Laboratory	Supplementary	
surveillance systems	Regular sero-surveys in g	network general population	Sentinel surveillance Other	surveillance Regular sero-sur	network veys in general	Sentinel surveillance Other	
				population			

		HBV	HCV		
Screening	Pregnant women				
programme	Military recruits				
	Injecting drug users				
	STI clinic patients				
	Multiple sex partners				
	Prisoners				
	Haemodialysis patients				
	Long-term healthcare facilities				
	Healthcare workers				
	Workers who are occupationally exposed to the virus				
	Blood and organ donors				
	Other groups**				
Vaccination	нву				
programme (only HBV)	Universal vaccination	Infants			
. , ,		Adolescents			
		Both			
		Other			
	Risk groups vaccination	Neonates born to HBsAg mothers			
		Individuals at risk for HBV due to occupation			
		Haemodialysis patients			
		Chronic liver disease patients			
		STI clinic patients			
		Multiple sex partners			
		Injecting drug users			
		Household contacts of HBsAg+ pati	ients		
		Contacts of infected persons			
		Other risk groups**			
	Other:	HIV infected, persons travelling to o	countries with high HBV incidence		
Catch-up programme	-				
Vaccination coverage	Infants 0 to 2 years				
Coverage	Adolescents 10 to 14 years				
	Adults				
	Other groups				
	Not known				
	Coverage:				
	Universal newborn immunisation: 2001: 93,33; 2002: 88.28; 2003: 95.85; 2004: 93.8; 2004: 93.8; 2005: 93.8; 2006: 9	2005: 96.0; 2006: 95.9; 2007: 95.4;	2008: 95.7; 2009: 95.6		

## **Cyprus**

	HBV	нсу				
Surveillance system						
Included in the national surveillance system						
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory				
Type of surveillance	Passive	Passive				
Surveillance system	Other, see below:	Other, see below:				
Comments	57 communicable diseases are notifiable to the Director of Medical and Public Health Services (MPHS) by all practising medical doctors (Quarantine Law and its amendments). Reporting is done by completion of a specific form which is submitted to the District Medical Officer who forwards it to the Unit for Surveillance and Control of Communicable Diseases (MPHS Central Offices). Data are entered in a database (EPI-INFO) and analysed.	See comment to the left.				

#### **Objectives**

	HBV	HCV		
Monitoring trends				
Detect outbreaks				
Monitoring changes in disease distribution				
Evaluation and planning of control measures				
Improve knowledge of epidemiology				
Other	no	no		

Definition	HBV		HCV	
Clinical	Probable: n/a		Probable and possible: n/a	
	Possible: HBsAg+ and compatil	ole clinical presentation	Confirmed: Clinically compati	ble case that is laboratory-
	Confirmed: Laboratory confirmation picture	ation and compatible clinical	commed	
Chronic	No case definition		No case definition	
Other				
Cases included in surveillance	Possible		Possible	
	Probable	-	Probable	
	Confirmed	with classification	Confirmed	with classification
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic	With Classification	Chronic	With Classification
	Asymptomatic	-	Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	No		No	
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible, b magnitude of underreporting	
Rate underreporting				

	HBV		1	HCV		1	
Source of data	Physicians	Laboratory	Hospital	Physicians	Laboratory	Hospital	
	Other:			Other:			
Collected data	Basic data Patient ID			Basic data	Patient ID		
		Date of birth or age			Date of birth or	age	
		Gender			Gender		
		Country of birtl	1		Country of birth		
		Place of resider	nce		Place of residen	ce	
		Date of onset of	of the disease		Date of onset of	f the disease	
		Date of diagno	sis	_	Date of diagnos	is	
		Date of reporting	ng/notification		Date of reporting	g/notification	
		Date used for s	tatistics		Date used for st	tatistics	
		Country where	infection was acquired		Country where	infection was acquired	
		Immunisation s	status		Immunisation s	tatus	
		Outcome			Outcome		
	Classification	Clinical sympto	ms	Classification	Clinical symptor	ns	
	information	Laboratory resi	ults	information	Laboratory resu	lts	
		Epidemiologica	l information		Epidemiological	information	
	Transmission	Homosexual co	ntact	Transmission route risk factors	Homosexual coi	ntact	
	route risk factors	Heterosexual c	ontact	Toute fisk factors	Heterosexual co	ontact	
		Injecting drug	use		Injecting drug u	ise	
		Mother HBsAg-	<del>-</del>		Mother HCV pos	sitive	
		Close family member HBsAg+			Close family member HCV- positive		
		Sex partner HBsAg+			Sex partner HC	Sex partner HCV positive	
		Blood or blood-product transfusion			Blood or blood-	Blood or blood-product transfusion	
		Invasive healthcare procedure/dental treatment			Invasive healthoutreatment	care procedure/dental	
		Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing			Organ transplar	Organ transplantation	
					Haemodialysis		
					Needle injury or exposure	other occupational	
					Tattooing/body piercing		
		Other			Other		
	Other	Hospitalisation Length of hospitalisation		Other	Hospitalisation		
					Length of hospi	talisation	
		ICD code diagr	nosis		ICD code diagnosis		
	Genotype information		mation		Genotype information		
			l-ended question: Risk -10 coding is used		ered by an opened- lisposition 2. ICD-1	-ended question: Risk .0 coding is used	
Data linked to	Liver transplant	Liver cand	er Mortality	Liver transplant	Liver cance	er Mortality	
	Hospital register	İ		Hospital register	-		
	Other:			Other:			
Format	Electronic	Paper		Electronic	Paper		
Туре	Case-based	Aggregated	Other:	Case-based	Aggregated	Other:	
					<del></del>		
Frequency	Daily	Weekly	Biweekly	Daily	Weekly	Biweekly	
	Monthly	Biannually	Yearly	Monthly	Biannually	Yearly	
	Other:	Opportunistic		Other:	Opportunistic		
Other surveillance systems	STI clinic surveillance	Laboratory network	Supplementary sentinel surveillance	STI clinic surveillance	Laboratory network	Supplementary sentinel surveilland	
	Regular sero-surve	eys in general	Other	Regular sero-sur	rveys in general	Other	
	Population			Population		1	

		НВУ	HCV
Screening	Pregnant women	TIBY	iic v
programme	Military recruits		
	Injecting drug users		
	STI clinic patients		
	Multiple sex partners		
	Prisoners		
	Haemodialysis patients		
	Long-term healthcare facilities		
	Healthcare workers		
	Workers who are occupationally exposed to the virus		
	Blood and organ donors		
	Other groups**		
Vaccination	HBV		
programme (only HBV)	Universal vaccination	Infants	
		Adolescents	
		Both	
		Other	
	Risk groups vaccination	Neonates born to HBsAg mothers	
		Individuals at risk for HBV due to or	ccupation
		Haemodialysis patients	
		Chronic liver disease patients	
		STI clinic patients	
		Multiple sex partners	
		Injecting drug users	
		Household contacts of HBsAg+ patie	ents
		Contacts of infected persons	
		Other risk groups**	
	Other:		
Catch-up programme	-		
Vaccination coverage	Infants 0 to 2 years		
Coverage	Adolescents 10 to 14 years		
	Adults		
	Other groups		
	Not known		
	Coverage:		
	17–24 years of age: 12% 2006: HBV1, 98.6%; HBV2, 97.8%; HBV3, 93.2%		

## **Czech Republic**

	HBV HCV	
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)		Mandatory
Type of surveillance		Physicians report to primary health care
Surveillance system		Own system for HCV
Comments		

## Objectives

	HCV
Monitoring trends	
Detect outbreaks	
Monitoring changes in disease distribution	
Evaluation and planning of control measures	
Improve knowledge of epidemiology	
Other	no

Definition		HCV		
Clinical		According to the clinical sig based on anti-HCV Ab	According to the clinical signs and laboratory confirmation based on anti-HCV Ab	
Chronic			No case definition	
Other				
Cases included in surveillance (highlighted in green)		Possible	with classification	
		Probable		
		Confirmed		
		Unknown classification		
Type of cases		Acute	ith alassification	
		Chronic	with classification	
		Asymptomatic		
		Suspected		
		Other:		
Including duplicates		Yes		
Underreporting		Underreporting is possible, magnitude of underreporting	but no estimates exist for ng.	
Rate underreporting				

				HCV		
Source of data				Physicians	Laboratory	Hospital
				Other:		
Collected data				Basic data	Patient ID	
					Date of birth or	age
					Gender	
					Country of birth	1
					Place of resider	nce
					Date of onset o	f the disease
					Date of diagnos	sis
	i				Date of reportir	ng/notification
					Date used for s	tatistics
					Country where	infection was acquired
					Immunisation s	tatus
					Outcome	
				Classification	Clinical symptor	ms
				information	Laboratory resu	ılts
					Epidemiological	information
				Transmission route risk factors	Homosexual co	ntact
				Toute fish ractors	Heterosexual co	ontact
					Injecting drug	ıse
					Mother HCV pos	sitive
					Close family me	ember HCV- positive
	i				Sex partner HC	V positive
	ľ				Blood or blood-	product transfusion
					Invasive healthetreatment	care procedure/dental
					Organ transplar	ntation
					Haemodialysis	
					Needle injury or exposure	r other occupational
					Tattooing/body	piercing
					Other	
				Other	Hospitalisation	
					Length of hospi	
					ICD code diagn	
					Genotype inforr	mation
		1	1		1	1
Data linked to				Liver transplant	Liver cance	er Mortality
				Hospital register		
				Other:		
ormat				Electronic	Paper	
Гуре				Case-based	Aggregated	Other:
requency				Daily	Weekly	Biweekly
				Monthly	Biannually	Yearly
				Other:		case of outbreak
Other surveillance				STI clinic surveillance	Laboratory network	Supplementary sentinel surveilland
systems				Regular sero-sun		Other
				population		

		HCV
Screening	Pregnant women	
programme	Military recruits	
	Injecting drug users	
	STI clinic patients	
	Multiple sex partners	
	Prisoners	
	Haemodialysis patients	
	Long-term healthcare facilities	
	Healthcare workers	
	Workers who are occupationally exposed to the virus	
	Blood and organ donors	
	Other groups**	
Vaccination programme	No information received	
(only HBV)		

## **Denmark**

	HBV	HCV			
Surveillance system					
Included in the national surveillance system					
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory			
Type of surveillance	Passive	Passive			
Surveillance system	Own system for HBV	Own system for HCV			
Comments					

## Objectives

	нву	HCV
Monitoring trends		
Detect outbreaks	no	no
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV	
Clinical	Clinical symptoms AND (HBsAgtest for microbiological agent)	+ OR any other specific lab	Clinical symptoms AND specific lab test for microbiological agent	
Chronic	Confirmed laboratory markers that has existed for more than six months		Confirmed laboratory markers that has existed for more than six months	
Other				
Cases included in surveillance	Possible		Possible	
	Probable	with classification	Probable	with classification
	Confirmed		Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	With Classification
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other: Acute hepatitis data collected since 1970s; chronic hepatitis data since 2000s		Other: Acute hepatitis data collected since 1970s; chronic hepatitis data since 2000s	
Including duplicates	No		No	
Underreporting	Underreporting is possible; please give the rate for underreporting (number of reported cases/estimated number of real cases) below.		Underreporting is possible; ple underreporting (number of rep number of real cases) below.	
Rate underreporting	50%		50%	

Physicians Other:  Basic data  Classification information  Transmission route risk factors	Gender Country of Place of of Date of of Date of of Date of of Date use Country of Immunis Outcome Clinical so Laborato Epidemic Homosex Heterose Injecting Mother H Close fan	of birth residence onset of the di diagnosis eporting/notif d for statistics where infectio ation status ry results elogical inform sual contact xual contact drug use	ication n was acquired ation	Physicians Other:  Basic data  Classification information  Transmission route risk factors	Date of diagnormal Date of report Date used for Country where Immunisation Outcome Clinical symptot Laboratory reserving Homosexual of Heterosexual of Injecting drug Mother HCV p	th ence of the disease osis ting/notification statistics e infection was ac status oms sults al information contact contact	
Basic data  Classification information  Transmission route	Date of beginning to the country of	of birth residence onset of the di liagnosis eporting/notif d for statistics where infectio ation status ymptoms ry results elogical inform rual contact xual contact drug use lBsAg+	ication n was acquired ation	Basic data  Classification information  Transmission	Date of birth of Gender Country of birth of Gender Country of birth Place of reside Date of onset Date of diagnor Date of report Date used for Country where Immunisation Outcome Clinical symptor Laboratory res Epidemiological Homosexual of Heterosexual of Injecting drug Mother HCV p	th ence of the disease osis ting/notification statistics e infection was ac status oms sults al information contact contact	
Classification information	Date of beginning to the country of	of birth residence onset of the di liagnosis eporting/notif d for statistics where infectio ation status ymptoms ry results elogical inform rual contact xual contact drug use lBsAg+	ication n was acquired ation	Classification information  Transmission	Date of birth of Gender Country of birth of Gender Country of birth Place of reside Date of onset Date of diagnor Date of report Date used for Country where Immunisation Outcome Clinical symptor Laboratory res Epidemiological Homosexual of Heterosexual of Injecting drug Mother HCV p	th ence of the disease osis ting/notification statistics e infection was ac status oms sults al information contact contact	
information  Transmission route	Gender Country of Place of of Date of of Date of of Date of of Date use Country of Immunis Outcome Clinical so Laborato Epidemic Homosex Heterose Injecting Mother H Close fan	of birth residence onset of the di liagnosis eporting/notif d for statistics where infectio ation status ry results logical inform tual contact xual contact drug use lBsAg+	ication n was acquired ation	information  Transmission	Gender Country of birl Place of reside Date of onset Date of diagno Date of report Date used for Country where Immunisation Outcome Clinical sympto Laboratory res Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	th ence of the disease osis ting/notification statistics e infection was ac status oms sults al information contact contact	
information  Transmission route	Country of Place of a Date use Country of Immunis Outcome Clinical stransformation Laborato Epidemic Homosex Heterose Injecting Mother Holose fan	residence inset of the di liagnosis eporting/notif d for statistics where infectio ation status ry results elogical inform sual contact xual contact drug use lBsAg+	ication n was acquired ation	information  Transmission	Country of bird Place of reside Date of onset Date of diagno Date of report Date used for Country where Immunisation Outcome Clinical sympto Laboratory res Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	ence of the disease osis ting/notification statistics e infection was ac status oms sults al information contact contact g use	
information  Transmission route	Place of of Date of control Date of control Date of control Date of control Date use Country of Immunis Outcome Clinical St. Laborato Epidemic Homosey Heterose Injecting Mother Hoclose fan	residence inset of the di liagnosis eporting/notif d for statistics where infectio ation status ry results elogical inform sual contact xual contact drug use lBsAg+	ication n was acquired ation	information  Transmission	Place of reside Date of onset Date of diagno Date of report Date used for Country where Immunisation Outcome Clinical sympto Laboratory res Epidemiologica Homosexual of Heterosexual Injecting drug Mother HCV p	ence of the disease osis ting/notification statistics e infection was ac status oms sults al information contact contact g use	
information  Transmission route	Date of control of con	onset of the di liagnosis eporting/notif d for statistics where infectio ation status gymptoms ry results elogical inform aual contact xual contact drug use IBSAg+	ication n was acquired ation	information  Transmission	Date of onset Date of diagno Date of report Date used for Country where Immunisation Outcome Clinical sympto Laboratory res Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	of the disease osis ting/notification statistics e infection was ac status  oms sults al information contact contact g use	
information  Transmission route	Date of control Date of control Date use Country of Immunis Outcome Clinical St. Laborato Epidemic Homosex Heterose Injecting Mother Hoclose fan	liagnosis eporting/notif d for statistics where infectio ation status ymptoms ry results slogical inform rual contact xual contact drug use IBsAg+	ication n was acquired ation	information  Transmission	Date of diagnormal Date of report Date used for Country where Immunisation Outcome Clinical symptot Laboratory reserving Homosexual of Heterosexual of Injecting drug Mother HCV p	osis ting/notification statistics e infection was ac status  oms sults al information contact contact g use	
information  Transmission route	Date of r Date use Country v Immunis Outcome Clinical st Laborato Epidemic Homosex Heterose Injecting Mother H	eporting/notif d for statistics where infectio ation status  ymptoms ry results slogical inform rual contact xual contact drug use IBSAg+	n was acquired ation	information  Transmission	Date of report Date used for Country where Immunisation Outcome Clinical sympte Laboratory res Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	ting/notification statistics e infection was ac status  oms sults al information contact contact g use	
information  Transmission route	Date use Country of Immunis Outcome Clinical st Laborato Epidemic Homosex Heterose Injecting Mother H	d for statistics where infectio ation status  ymptoms ry results logical inform rual contact xual contact drug use IBSAg+	n was acquired ation	information  Transmission	Date used for Country where Immunisation Outcome Clinical symptot Laboratory res Epidemiological Homosexual of Heterosexual of Injecting drug Mother HCV p	statistics e infection was ac status  oms sults al information contact g use	
information  Transmission route	Country of Immuniss Outcome Clinical st Laborato Epidemic Homosex Heterose Injecting Mother Holose fan	where infection ation status ymptoms ry results elogical inform tual contact xual contact drug use elbsAg+	n was acquired ation	information  Transmission	Country where Immunisation Outcome Clinical sympte Laboratory res Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	e infection was ac status  oms  sults al information contact contact g use	
information  Transmission route	Immunis Outcome Clinical s' Laborato Epidemic Homosex Heterose Injecting Mother H Close fan	ymptoms ry results logical inform tual contact xual contact drug use IBSAg+	ation	information  Transmission	Immunisation Outcome Clinical symptot Laboratory res Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	oms sults al information contact contact g use	
information  Transmission route	Outcome Clinical st Laborato Epidemic Homosex Heterose Injecting Mother H	ymptoms ry results logical inform rual contact xual contact drug use lBsAg+		information  Transmission	Outcome Clinical symptot Laboratory res Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	oms sults al information contact contact g use	
information  Transmission route	Clinical st Laborato Epidemic Homosex Heterose Injecting Mother H	ymptoms ry results ological inform xual contact xual contact drug use IBsAg+		information  Transmission	Clinical symptot Laboratory res Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	sults al information contact contact g use	
information  Transmission route	Laborato Epidemic Homosex Heterose Injecting Mother H	ry results  logical inform  rual contact  xual contact  drug use  IBsAg+		information  Transmission	Laboratory res Epidemiologica Homosexual of Heterosexual Injecting drug Mother HCV p	sults al information contact contact g use	
Transmission route	Epidemic Homosex Heterose Injecting Mother H	cual contact xual contact xual contact drug use IBSAg+		Transmission	Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	al information contact contact g use	
	Epidemic Homosex Heterose Injecting Mother H	cual contact xual contact xual contact drug use IBSAg+			Epidemiologica Homosexual of Heterosexual of Injecting drug Mother HCV p	al information contact contact g use	
	Heterose Injecting Mother H	xual contact xual contact drug use IBsAg+			Heterosexual of Injecting drug Mother HCV p	contact j use	
risk factors	Injecting Mother H Close fan	drug use IBsAg+	IBsAg+	route risk factors	Injecting drug Mother HCV p	j use	
	Injecting Mother H Close fan	drug use IBsAg+	IBsAg+		Injecting drug Mother HCV p	j use	
	Mother H	IBsAg+	HBsAg+		Mother HCV p	<u> </u>	
	Close fan		lBsAg+			OSILIVC	
		my member i	ibs/rg i		Close family m	Close family member HCV- positive	
				-		Sex partner HCV positive	
	Blood or blood-product transfusion  Invasive healthcare procedure/dental					d-product transfu	
						:hcare procedure/	
					antation		
						Haemodialysis	
	Needle injury or other occupational exposure			Needle injury	Needle injury or other occupational exposure		
	Tattooing/body piercing			Tattooing/body piercing			
	Other						
Other		sation		Other			
	•		on .	-   0	· ·	Length of hospitalisation	
					ICD code diagnosis		
L.				1		Genotype information	
Epidemiological link	71						
Liver transplant		Liver cancer	Mortality	Liver transplant	Liver can	ncer Mortality	
Hospital register				Hospital register			
Other:	Difficult a	and not carried	d out on a regular	Other:	Difficult and regular basis	not carried out or	
Electronic	Paper			Electronic	Paper		
Case-based		ed	Other:	Case-based	Aggregated	Other:	
Daily	Weekly		Biweekly	Daily	Weekly	Biweekly	
Monthly	Biannuall	у	Yearly	Monthly	Biannually	Yearly	
Other:	Ad hoc			Other:	Ad hoc		
STI clinic surveillance	Laborato	ry network	Supplementary sentinel surveillance	STI clinic surveillance	Laboratory network	Supplement sentinel surv	
Regular sero-surveys in	n general <sub>l</sub>	population	Other	Regular sero-sur population	veys in general	Other	
1 ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( (	Liver transplant Hospital register Other: Electronic Case-based Daily Monthly Other: STI clinic surveillance Regular sero-surveys in	Blood or  Invasive treatmen Organ tra Haemodi Needle ir  Tattooing Other Other Hospitalis Length o ICD code Genotype Epidemiological link Liver transplant Hospital register Other: Difficult a basis Electronic Paper Case-based Aggregat Daily Weekly Monthly Biannuall Other: Ad hoc STI clinic surveillance Laborato Regular sero-surveys in general	Invasive healthcare protreatment Organ transplantation Haemodialysis Needle injury or other Tattooing/body piercin Other Hospitalisation Length of hospitalisatio ICD code diagnosis Genotype information  Epidemiological link Liver transplant Hospital register Other: Difficult and not carried basis Electronic Paper Case-based Aggregated Daily Weekly Monthly Other: Ad hoc	Blood or blood-product transfusion  Invasive healthcare procedure/dental treatment  Organ transplantation Haemodialysis Needle injury or other occupational exposure  Tattooing/body piercing Other  Other  Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information  Epidemiological link  Liver transplant Hospital register  Other:  Difficult and not carried out on a regular basis  Electronic Paper Case-based Aggregated Other:  Daily Weekly Monthly Biannually Vearly Other: Ad hoc  STI clinic surveillance Regular sero-surveys in general population  Organ transfusion Invasive healthcare procedure/dental treatment Organ transfusion Invasive healthcare procedure/dental treatment Organ transfusion Haemodialysis Needle injury or other occupational exposure  Mortality  M	Blood or blood-product transfusion  Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure  Tattooing/body piercing Other Other Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information  Epidemiological link  Liver transplant Hospital register Other: Difficult and not carried out on a regular basis  Electronic Case-based Aggregated Other: Case-based Daily Weekly Biweekly Daily Monthly Other: Ad hoc STI clinic surveillance Regular sero-surveys in general population Other  Invasive healthcare procedure/dental treatment  Other Other  Other  Liver transplant Hospital register Other:  Electronic Case-based Other:  Supplementary sentinel surveillance Regular sero-surveyliance Regular sero-surveyliance	Blood or blood-product transfusion  Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other Other Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information  Epidemiological link Liver transplant Liver cancer Mortality Hospital register Other: Difficult and not carried out on a regular basis Electronic Paper Case-based Aggregated Other: Daily Weekly Monthly Biannually Vearly Other: Ad hoc STI clinic surveillance Regular sero-surveys in general population  Blood or blood Invasive healt treatment Organ transpl Haemodialysis Needle injury exposure Tattooing/box Other Other Other Hospitalisation Length of hos ICD code diag Genotype information  Electronic Paper Case-based Aggregated Other: Case-based Aggregated Daily Monthly Biannually Other: Ad hoc STI clinic surveillance Regular sero-surveys in general population Other	

		HBV	HCV		
Screening	Pregnant women				
programme	Military recruits				
	Injecting drug users				
	STI clinic patients				
	Multiple sex partners				
	Prisoners				
	Haemodialysis patients				
	Long-term healthcare facilities				
	Healthcare workers				
	Workers who are occupationally exposed to the virus				
	Blood and organ donors				
	Other groups**				
Vaccination	HBV				
programme (only HBV)	Universal vaccination	Infants			
		Adolescents			
		Both			
		Other			
	Risk groups vaccination	Neonates born to HBsAg mothers			
		Individuals at risk for HBV due to or	ccupation		
		Haemodialysis patients			
		Chronic liver disease patients			
		STI clinic patients			
		Multiple sex partners			
		Injecting drug users			
		Household contacts of HBsAg+ pati	ents		
		Contacts of infected persons			
		Other risk groups**			
	Other:	MSM in Copenhagen municipality			
Catch-up programme	-				
Vaccination	Infants 0 to 2 years				
coverage	Adolescents 10 to 14 years				
	Adults				
	Other groups				
	Not known				
	Coverage:				

## **Estonia**

	HBV	HCV			
Surveillance system					
Included in the national surveillance system					
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory			
Type of surveillance	Passive	Passive			
Surveillance system	Other, see below:	Other, see below:			
Comments	HBV is notifiable disease. Information is provided by GPs, hospitals and microbiological labs. Surveillance of HBV is part of the national surveillance system.	HCV is notifiable disease. Information is provided by GPs, hospitals and microbiological labs. Surveillance of HCV is part of the national surveillance system.			

#### **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Case definition		I	1100		
Definition	HBV		HCV		
Clinical	EU 2008 case definition. Confirmed case: Any person wh laboratory criteria. Laboratory criteria: Hepatitis B specific antibody response or HR NA in serum.	virus core IgM antigen-	EU 2008 case definition (as of 1 January 2009)		
Chronic	Confirmed case: a case that me for diagnosis and does not meel acute hepatitis B. Laboratory or hepatitis B core antigen (anti-HI result on one of the following te antigen (HBsAg), hepatitis B e-z virus (HBV) DNA or HBsAg+ or positive two times at least six m	t the case definition for iteria: IgM antibodies to Bc) negative and a positive ests: hepatitis B surface antigen (HBeAg), hepatitis B HBV DNA positive or HBeAg	No case definition		
Other					
Cases included in surveillance	Possible	with classification	Possible	with classification	
	Probable		Probable		
	Confirmed		Confirmed		
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic		Chronic		
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:		Other:		
Including duplicates	No		No	'	
Underreporting	Underreporting is possible, but i magnitude of underreporting.	no estimates exist for	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	
Rate underreporting					

HBV				HCV			
Physicians	Laboratory		Hospital	Physicians	Laboratory	Hospital	
Other:				Other:			
Basic data	Patient ID			Basic data	Patient ID		
	Date of birth or age				Date of birth o	r age	
	Gender				Gender		
					Country of birth		
Place Date		•				Place of residence	
		et of the	e disease		Date of onset	Date of onset of the disease	
		Date of diagnosis			Date of diagnosis		
	Date of rep	Date of reporting/notification			Date of reporting/notification		
		Date used for statistics Country where infection was acquired			Date used for	Date used for statistics	
					Country where	Country where infection was acquired	
	Immunisation status				Immunisation	status	
	Outcome				Outcome		
Classification	Clinical symptoms			Classification information	Clinical sympto	oms	
information	Laboratory results				Laboratory res	Laboratory results	
	Epidemiological information				Epidemiologica	al information	
Transmission	Homosexual contact			Transmission route risk factors		Homosexual contact	
Todae Hisk ractors	Heterosexual contact				Heterosexual contact		
	Injecting drug use				Injecting drug use		
	Mother HBsAg+				Mother HCV positive		
		Close family member HBsAg+			Close family member HCV- positive		
	Sex partner HBsAg+				Sex partner HCV positive		
	<u> </u>				Blood or blood-product transfusion		
	Invasive healthcare procedure/dental treatment				Invasive healthcare procedure/dental treatment		
		Organ transplantation			Organ transplantation		
		Haemodialysis			Haemodialysis		
	Needle inju exposure	Needle injury or other occupational exposure			Needle injury or other occupational exposure		
		Tattooing/body piercing			Tattooing/body piercing		
	Other				Other		
Other	Hospitalisation Length of hospitalisation ICD code diagnosis			Other	Hospitalisation	Hospitalisation	
						Length of hospitalisation	
					ICD code diagnosis		
	Genotype information				Genotype information		
Liver transplant	Liver o	ancer	Mortality	Liver transplant	Liver cano	cer Mortality	
Other:				Other:			
Electronic	Paper			Electronic	Paper		
Case-based	Aggregated	C	otner:	Case-based	Aggregated	Other:	
Daily	Weekly	E	Biweekly	Daily	Weekly	Biweekly	
Monthly	Biannually	Y	'early	Monthly	Biannually	Yearly	
Other:				Other:			
STI clinic	Laboratory			STI clinic	Laboratory	Supplementary	
Regular sero-surveys in general population			entinel surveillance Other	Regular sero-surveys in general		sentinel surveillance Other	
	0,0 900.0	1 1			population 0		
	Physicians Other:  Basic data  Classification information  Transmission route risk factors  Other  Liver transplant Hospital register Other:  Electronic Case-based  Daily Monthly Other: STI clinic surveillance	Physicians Other:  Basic data  Patient ID Date of birt Gender Country of Place of res Date of ons Date of dia Date of rep Date used of Country wh Immunisatio Outcome Classification information  Classification route risk factors  Transmission route risk factors  Heterosexu Injecting dr Mother HBs Close family Sex partner Blood or blo Invasive he treatment Organ trans Haemodialy Needle inju exposure Tattooing/b Other  Other  Civer transplant Hospitalisat Length of h ICD code d Genotype ir  Liver transplant Hospital register Other:  Electronic Case-based  Paper Case-based Aggregated  Daily Weekly Monthly Other:  STI clinic	Physicians Other:  Basic data  Patient ID Date of birth or age Gender Country of birth Place of residence Date of onset of the Date of diagnosis Date of reporting/nc Date used for statis Country where infect Immunisation status Outcome  Classification information  Classification information  Transmission route risk factors  Heterosexual contact Heterosexual contact Injecting drug use Mother HBsAg+ Close family member Sex partner HBsAg- Blood or blood-prod Invasive healthcare treatment Organ transplantatic Haemodialysis Needle injury or oth exposure Tattooing/body pier Other  Other  Other  Hospitalisation Length of hospitalis ICD code diagnosis Genotype information  Liver transplant Hospital register Other:  Electronic Paper Case-based Aggregated  Daily Weekly Biannually Other:  STI clinic SUMPANIAN SIMPLIANT STI clinic SUMPANIANT SU	Physicians Other:  Basic data Patient ID Date of birth or age Gender Country of birth Place of residence Date of onset of the disease Date of diagnosis Date of reporting/notification Date used for statistics Country where infection was acquired Immunisation status Outcome  Classification information  Clinical symptoms Laboratory results Epidemiological information  Transmission route risk factors  Heterosexual contact Injecting drug use Mother HBsAg+ Close family member HBsAg+ Sex partner HBsAg+ Blood or blood-product transfusion Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other  Other  Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information  Liver transplant Hospital register  Other:  Electronic Paper Case-based Aggregated Other:  STI clinic Surveillance STI clinic Surveillance Supplementary sentinel surveillance	Physicians Other:  Basic data  Patient ID Date of birth or age Gender Country of birth Place of residence Date of diagnosis Date of reporting/notification Date used for statistics Country where infection was acquired Immunisation status Outcome  Classification information Transmission Troute risk factors  Heterosexual contact Injecting drug use Mother HBsAg+ Close family member HBsAg+ Sex partner HBsAg+ Blood or blood-product transfusion Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other  Other  Other  Other  Liver transplant Liver cancer Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information  Liver transplant Hospital register Other:  Electronic Case-based Aggregated Other:  Case-based Daily Weekly Binevekly Supplementary sentinel surveillance STI clinic STI clinic STI clinic Surveillance STI clinic Surveillance STI clinic Surveillance STI clinic Surveillance	Physicians   Laboratory   Hospital   Other:	

		HBV	HCV				
Screening	Pregnant women						
programme	Military recruits						
	Injecting drug users						
	STI clinic patients						
	Multiple sex partners						
	Prisoners						
	Haemodialysis patients						
	Long-term healthcare facilities						
	Healthcare workers						
	Workers who are occupationally exposed to the virus						
	Blood and organ donors						
	Other groups**						
Vaccination programme	HBV						
(only HBV)	Universal vaccination	Infants					
	-	Adolescents					
		Both					
		Other					
	Risk groups vaccination	Neonates born to HBsAg+ mothers					
		Individuals at risk for HBV due to occupation					
		Haemodialysis patients					
		Chronic liver disease patients					
		STI clinic patients					
		Multiple sex partners					
		Injecting drug users					
		Household contacts of HBsAg+ patients					
		Contacts of infected persons					
		Other risk groups**					
	Other:						
Catch-up programme	-						
Vaccination coverage	Infants 0 to 2 years						
<u>J</u> -	Adolescents 10 to 14 years						
	Adults						
	Other groups						
	Not known						
	Coverage (2007, estimated): Infants, 2 years of age: 95.8%; Adolescents, 14 years of age: 95.1%						

# **Finland**

	нву	нсу
Surveillance syster	n	
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Own system for HBV	Several surveillance systems for HCV, one of which is the major and most comprehensive one.
Comments	Part of the general surveillance system for Infectious diseases; one of the infections screened from expecting mothers.	The main system is the National Infectious Disease Register, which is the mandatory system for notifiable diseases.  The secondary system is a sampling-based anonymous prevalence estimation system for injecting drug users which serves as a sentinel surveillance system. This is performed every one to two years.

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	To prevent mother-to-child transmission through pregnant women screening	no

Definition	HBV		HCV	
Clinical	No case definition		No case definition	
Chronic	All reported HBV surface antige the acute hepatitis B infection of		No case definition	
Other	Acute hepatitis B case.  1. Laboratory reported HBV colpositive case; OR  2. Physician reported case with compatible with acute hepatitis AND (simultaneous laboratory v positivity OR simultaneous laboratory NA/RNA positivity)	clinical symptoms or fresh HBV infection verified HBV surface antigen	HCV case: Anti-HCV antibody positivit OR HCV RNA positivity	у
Cases included in surveillance	Possible	with classification	Possible	with classification
	Probable		Probable	
	Confirmed		Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	Only included HCV case: Anti-HCV + OR HCV RNA +
Including duplicates	No		No	
Underreporting	Underreporting is possible, but no estimates exist for magnitude of underreporting.		Underreporting is possible, magnitude of underreporti	, but no estimates exist for ng.
Rate underreporting				

	HBV			HCV			
Source of data	Physicians	Laboratory	Hospital	Physicians	Laboratory	Hospital	
	Other:	and maternity scr physician and lab	system for blood bank eening covered by the oratory reporting. identifier allows for blicate reports.	Other:	Blood bank scre	eening	
Collected data	Basic data	Patient ID		Basic data	Patient ID		
		Date of birth or a	ge		Date of birth or	· age	
		Gender			Gender		
		Country of birth			Country of birth	1	
		Place of residence	2		Place of resider	nce	
		Date of onset of t	he disease		Date of onset of	of the disease	
		Date of diagnosis			Date of diagnos	sis	
		Date of reporting,	/notification		Date of reporting	ng/notification	
		Date used for sta	tistics		Date used for s	tatistics	
		Country where in	fection was acquired		Country where	infection was acquired	
		Immunisation sta	tus		Immunisation s	tatus	
		Outcome			Outcome		
	Classification	Clinical symptoms		Classification information	Clinical sympto		
	inomiduon	Laboratory results		inormatori	Laboratory resu		
		Epidemiological ir	nformation		Epidemiologica	I information	
	Transmission route risk factors	Homosexual cont		Transmission route risk factors	Homosexual contact		
		Heterosexual con			Heterosexual co		
		Injecting drug use	e		Injecting drug use		
		Mother HBsAg+	la a u LIDa A a u		Mother HCV positive		
		Close family mem			Close family member HCV- positive		
		Sex partner HBsAg+ Blood or blood-product transfusion			Sex partner HCV positive  Blood or blood-product transfusion		
		Invasive healthca treatment	re procedure/dental		Invasive healthcare procedure/dental treatment		
		Organ transplanta	ation		Organ transplantation		
		Haemodialysis			Haemodialysis		
		Needle injury or other occupational exposure			Needle injury or other occupational exposure		
		Tattooing/body p	iercing		Tattooing/body piercing		
		Other			Other		
	Other	Hospitalisation		Other	Hospitalisation		
		Length of hospita			Length of hospitalisation		
		ICD code diagnos			ICD code diagn		
	Nie Consellante au II-	Genotype informa	ation	Nietienelle de este	Genotype infor		
done), HBV su DNA/RNA stati		/ anti-core IgM ant	ibody status (+/-/not -/-/not done), HBV ology as part of	Nationality is collected as basic data Classification:anti-HCV antibody status (+/-/not done), HCV DNA/RNA status (+/-/not done), histology as part clinical diagnosis(positive/empty) Transmission risk factors: sexual contact (to be split in		atus (+/-/not done), e), histology as part of	
	Transmission risk	factors: sexual contact (to be split in rosexual in 2009); Perinatal transmission;				); Perinatal transmission	
Data liuleed te		Liven	Moutelite	Liver transactors	15	or Mortelity	
Data linked to	Liver transplant Hospital register	Liver cancer	Mortality	Liver transplant Hospital register	Liver cand	er Mortality	
	Other:						
Format		Danor		Other:	Paper		
	Electronic Case-based	Paper	Other:	Electronic Case-based	Paper	Other:	
Туре	Case-Daseu	Aggregated	Outer.	Cross-sectional co	Aggregated		
Frequency	Daily	Weekly	Biweekly	Daily	Weekly	Biweekly	
	Monthly	Biannually	Yearly	Monthly	Biannually	Yearly	

	Other:	Annually comprehensive reports include a review of the situation; all data is online (without identifiers). Large healthcare facilities have access to regional data with identifiers; the National Public Health Institute (register maintenance) has access to all data with full identifiers.		a review of the situation; all data is include a review of the online (without identifiers). Large is online (without identifiers) healthcare facilities have access to healthcare facilities have regional data with identifiers; the National Public Health Institute (register National Public Health I maintenance) has access to all data (register maintenance)		of the situation; data t identifiers). Large ies have access to th identifiers; the lealth Institute nance) has access to
Other surveillance systems	STI clinic surveillance	Laboratory network	Supplementary sentinel surveillance	STI clinic surveillance	Laboratory network	Supplementary sentinel surveillance
	Regular sero-surv population	Regular sero-surveys in general population		Regular sero-surveys in general Other population		Other
	needle-exchange	Very active test-offering (but participation voluntary) at needle-exchange sites, prisons and addiction treatment centres. The two former are actively monitored.			nonymous prevaler users which serves n (every one to two	

Prevention	<u>-</u>		1			
		HBV	HCV			
Screening programme	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination programme	нву					
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg + mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ pat	ients			
		Contacts of infected persons				
		Other risk groups**				
	Other:	2. Household contacts of injecting of	a country with high HBV prevalence			
Catch-up programme	Injecting drug users, continuous activity at needle exc	change and low-threshold health sen	vice sites.			
Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Coverage Not known					

## **France**

	нву	HCV
Surveillance system	n	
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Voluntary
Type of surveillance	Passive	Depends on surveys
Surveillance system	Several surveillance systems for HBV, one of which is the major and most comprehensive one.	Several surveillance systems for HCV, one of which is the major and most comprehensive one.
Comments	Mandatory reporting of acute hepatitis B (main system)  Chronic cases: seroprevalence surveys, lab and reference sentinel systems, blood donor surveillance	Lab activity for HCV screening; HCV prevalence surveys (drug users, HIV+, MSM, general population); HCV seroconversion surveys: blood donors, occupationally acquired infections in HCW, accidental exposures in HC settings; Newly referred HCV+ patients in hepatology centres

#### **Objectives**

	нву	HCV
Monitoring trends		
Detect outbreaks	no	no
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Case delilition				
Definition	HBV		HCV	
Clinical	Acute symptomatic hepatitis B positive IgM antibodies, or (if Ights and HbsAg in clinical contests)	gM unknown) positive anti-	No case definition	
Chronic	HBsAg carriage > 6 months		No case definition	
Other			Confirmed cases: anti-HCV positivity, HCV anti-HCV seroconversion	RNA positivity;
Cases included in surveillance	Possible	with classification	Possible	with classification
	Probable	· · · · · · · · · · · · · · · · · · ·	Probable	was substituted in
	Confirmed		Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	Classification: depends on survey
Including duplicates	No		Yes	
Triciounity duplicates	INU		163	
Underreporting	Underreporting is possible; see below for rate of underreporting (number of reported cases/estimated number of actual cases)		Underreporting is possible magnitude of underreport	e, but no estimates exist for ting.
Rate underreporting	23.4%			

	HBV				HCV				
Source of data	Physicians	Labo	oratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Patie	ent ID		Basic data	Pat	Patient ID		
		Date of birth or age				Dat	te of birth or	age	
		Gen	der			Ger	nder		
		Cou	ntry of birth			Cou	untry of birth		
		Plac	e of residence	е		Pla	ce of residen	ce	
		Date	e of onset of t	the disease		Dat	te of onset of	the disease	
		Date	e of diagnosis			Dat	te of diagnosi	S	
		Date	e of reporting	/notification		Dat	te of reporting	g/notification	
		Date	used for sta	tistics	]	Dat	te used for st	atistics	
		Cou	ntry where in	fection was acquired		Cou	untry where i	nfection was acquired	
		Imn	nunisation sta	itus		Imi	munisation st	atus	
		Outo	come			Out	tcome		
	Classification	Clini	cal symptoms	S	Classification	Clir	nical sympton	ns	
	information	Labo	oratory results	S	information	Lab	oratory resul	ts	
		Epid	emiological ir	nformation		Epi	demiological	information	
	Transmission route risk factors	Hon	nosexual cont	act	Transmission route risk factors		mosexual cor	tact	
	Toute risk ractors	Hete	erosexual con	tact	Toute fisk factors		terosexual co	ntact	
		Inje	cting drug us	e		Inje	Injecting drug use		
		Mot	her HBsAg+			Mo	Mother HCV positive		
		Clos	e family mem	nber HBsAg+		Close family member HCV- positive			
		Sex partner HBsAg+				Sex partner HCV positive			
		Blood or blood-product transfusion			Blo	Blood or blood-product transfusion			
		Invasive healthcare procedure/dental treatment				Invasive healthcare procedure/dental treatment			
		Organ transplantation			Org	gan transplan	tation		
		Haemodialysis  Needle injury or other occupational exposure  Tattooing/body piercing  Other			Hae	Haemodialysis			
						Needle injury or other occupational exposure			
				iercing		Tattooing/body piercing			
					Oth	Other			
	Other	Hos	pitalisation		Other Hospitalisation Length of hospitalisation				
		Leng	gth of hospita	lisation			alisation		
		ICD	code diagnos	sis		ICE	ICD code diagnosis		
			otype informa			Genotype information			
	Jaundice only; lab antibodies (IgM a	: qual	litative results al) Ouantitati	s (HbsAg, anti-HBc ve results: ALAT	Data collection d infections: Socio-	epend	ls on surveys omic data. lev	HIV and HBV co- el of education, etc.	
Data linked to	Liver transplant		Liver cancer		Liver transplant		Liver cance		
	Hospital register				Hospital register				
	Other:				Other:				
Format	Electronic	Pape	or .		Electronic	Pa	per		
Туре	Case-based		regated	Other:	Case-based		gregated	Other:	
Frequency	Daily	Wee	•	Biweekly	Daily	_	eekly 	Biweekly	
	Monthly	Bian	nually	Yearly	Monthly		annually	Yearly	
Nul	Other:			Complex	Other:			ending on surveys	
Other surveillance	STI clinic surveillance	Labo	oratory vork	Supplementary sentinel surveillance	STI clinic surveillance		boratory twork	Supplementary sentinel surveillance	
.,	Regular sero-surv			Other	Regular sero-sur			Other	
	For chronic cases only: Network of hepatology reference centres; laboratory network; 10-year intervals between surveys			Sero surveys (dreevery 6 to 10 year donors, occupation	ars; Ho onally ures ir	CV seroconve acquired infe n HC settings	Newly referred HCV-		

Prevention	I					
		HBV	HCV			
Screening programme	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**		Acute confirmed cases of hepatitis C in France: implemented in 2006 and 2007 only, targeted a specific population (HIV-infected men who have sex with men)			
Vaccination programme	НВУ		_			
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg+ mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patients				
		Contacts of infected persons				
		Other risk groups**				
	Other:	Prisoners; residents in psychiatric in	stitution; travellers to high-endemic countries			
Catch-up programme						
Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage: 0-2-year-olds: 35% 10-year-olds: 39% 15-year-olds: 42% Adults: 32%					

# **Germany**

	HBV	нсу
Surveillance system	n	
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Own system for HBV	Own system for HCV
Comments		

#### Objectives

	нву	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Case definition	I		T	
Definition	HBV		HCV	
Clinical	At least one of the following thr elevated serum aminotransferas known chronic infection is exclu	se levels, abdominal pain. A	At least one of the following t elevated serum aminotransfe	hree criteria: jaundice, rase levels, abdominal pain.
Chronic			Same as above.	
Other	Laboratory case definition: At le three criteria: detection of hepa serum (e.g. PCR); HBsAg positi by a different HBsAg test (e.g. I HBsAg positive and anti-HBc po positive (e.g. ELISA). Confirmed: laboratory criteria a fulfilled.	utitis B virus nucleid acid in ve (e.g. ELISA), confirmed HBsAG-NT); OR sitive, anti-HBC-IgM	Laboratory case definition: At two criteria: detection of hepserum (e.g. PCR); hepatitis C response (e.g. ELISA), confintest (e.g. immunoblot).  Confirmed cases: newly labor regardless whether acute or or confirmed cases.	atitis C virus nucleic acid in virus-specific antibody med by a different antibody atory confirmed hepatitis C,
Cases included in surveillance	Possible		Possible	
	Probable	with classification	Probable	with classification
	Confirmed		Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic	-	Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	No		Yes	
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible, but magnitude of underreporting.	
Rate underreporting				

	HBV	HBV					HCV			
Source of data	Physicians	Labor	ratory	Hospital	Physicians	Lab	oratory	Hospital		
	Other:	Physi	icians and lab	oratory	Other:	Phy	sicians and la	boratory		
Collected data	Basic data	Patie	nt ID		Basic data	Pati	Patient ID			
		Date of birth or age				Dat	e of birth or a	ge		
		Gend	ler			Ger	nder			
		Coun	try of birth			Cou	intry of birth			
		Place	of residence			Plac	ce of residence	9		
		Date	of onset of th	ne disease		Dat	e of onset of t	the disease		
		Date	of diagnosis			Dat	e of diagnosis			
		Date	of reporting/	notification		Dat	e of reporting	/notification		
		Date	used for stat	istics		Dat	e used for sta	tistics		
		Coun	try where inf	ection was acquired		Cou	intry where in	fection was acquired		
		Immi	unisation stat	us		Imr	nunisation sta	tus		
		Outco	ome			Out	come			
	Classification	Clinic	al symptoms		Classification	Clin	ical symptoms	5		
	information	Labo	ratory results		information	Lab	oratory results	S		
		Epide	emiological in	formation		Epid	demiological ir	nformation		
	Transmission	Homo	osexual conta	ıct	Transmission	Hor	Homosexual contact			
	route risk factors	Llaba			route risk factors		History and contact			
		Heterosexual contact					Heterosexual contact			
		Injecting drug use  Mother HBsAg+				_	Injecting drug use			
				ner HRc∆a±			Mother HCV positive  Close family member HCV- positive			
		Close family member HBsAg+					, ,			
		Sex partner HBsAg+					Sex partner HCV positive			
		Blood or blood-product transfusion					Blood or blood-product transfusion			
		Invasive healthcare procedure/dental treatment					asive healthca atment	re procedure/dental		
		Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other				Org	Organ transplantation			
							Haemodialysis			
							edle injury or o osure	other occupational		
						Tat	tooing/body p	iercing		
						Oth	Other			
	Other	Hosp	italisation		Other	Hos	pitalisation			
		Leng	th of hospital	isation		Len	Length of hospitalisation			
		ICD o	code diagnosi		ICD	ICD code diagnosis				
		Genotype information				Ger	notype informa	ation		
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality		
<del></del>	Hospital register				Hospital register		2 2230	/		
	Other:				Other:					
Format	Electronic		Paper		Electronic		Paper			
Туре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:		
Frequency	Daily	Week	dy	Biweekly	Daily	We	eekly	Biweekly		
· ·	Monthly	Biann	•	Yearly	Monthly		annually	Yearly		
	Other:		•	,	Other:		<i>1</i>			
Other surveillance systems	STI clinic surveillance	Labor	ratory ork	Supplementary sentinel surveillance	STI clinic surveillance		boratory twork	Supplementary sentinel surveillance		
-,-:	Regular sero-survi		-	Other	Regular sero-sur			Other		
	population	Joyc general			population					
				next one planned for						

		HBV	HCV			
Screening	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**	HIV positives	HIV positives			
Vaccination programme	HBV					
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg + mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patients				
		Contacts of infected persons				
		Other risk groups**				
	Other:	Travellers who travel to endemic ar	eas; post-exposure prophylaxis			
Catch-up programme	Individual catch-up vaccinations are administered dur	ing recommended doctors' visits du	ring childhood and adolescence.			
 Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage: Children at school entry: 87% in 2006; 90.	5% in 2008				

## **Greece**

	нву	нсу
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Own system for HBV	Own system for HCV
Comments		

**Objectives** 

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Case definition					
Definition	HBV		HCV		
Clinical	Clinical criteria: an acute illness symptoms (e.g. jaundice); OR elevated serum aminotransfera Laboratory criteria: IgM anti-HE positive. Confirmed: meets clinical criteria Probable: meets clinical criteria	se levels. Ic positive or HBV DNA a and laboratory confirmed	Clinical criteria: An acute illness with discrete onset of symptoms (e.g. jaundice) OR elevated serum aminotransferase levels; Laboratory criteria: anti-HCV positive and IgM anti-HAV negative AND anti-HB core IgM negative OR HCV RNA positive Confirmed: meets clinical criteria AND laboratory confirmed: not applicable		
Chronic	No case definition		No case definition		
Other	HbsAg+, asymptomatic infants asymptomatic cases, antiHBc Ig		Newly diagnosed HCV, asympto HCV, first diagnosis).	omatic (confirmed by anti-	
Cases included in surveillance	Possible		Possible		
	Probable	with classification	Probable		
	Confirmed		Confirmed		
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic		Chronic		
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:	HbsAg+, asymptomatic infants < 12 months: should be notified. Other asymptomatic cases (antiHBc IgM+ / HbsAg+) should not be notified.	Other:	Newly diagnosed HCV, asymptomatic (confirmed by anti-HCV, first diagnosis)	
Including duplicates	No		No		
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	
Rate underreporting					

	HBV					HCV					
Source of data	Physicians	Labo	oratory	Hospital		Physicians	Lab	oratory	Hospital		
	Other:					Other:					
Collected data	Basic data	_	ent ID			Basic data		Patient ID			
			e of birth or a	age				e of birth or	age 		
		Gen					Gen				
		Country of birth						ntry of birth			
		Place of residence  Date of onset of the disease						e of residen			
								e of onset of			
			e of diagnosis					e of diagnosi			
			e of reporting						g/notification		
			e used for sta					e used for st			
				nfection was a	cquirea				nfection was acquired		
			nunisation sta come	atus				nunisation st come	atus		
	Classification		ical symptom	·c		Classification		ical sympton	20		
	information					information					
			oratory result					oratory resul			
	+		lemiological i					lemiological			
	Transmission route risk factors	Hon	nosexual cont	tact		Transmission route risk factors		Homosexual contact			
	Toute fisk factors	Hete	erosexual cor	ntact		Todae Hisk ractors		Heterosexual contact			
		Inje	cting drug us	se			Inje	cting drug u	se		
		Mot	her HBsAg+				Mot	Mother HCV positive			
		Close family member HBsAg+				Clos	Close family member HCV- positive				
		Sex partner HBsAg+				Sex	Sex partner HCV positive				
		Blood or blood-product transfusion				Blood or blood-product transfusion					
		Invasive healthcare procedure/dental treatment				Invasive healthcare procedure/dental treatment					
		Organ transplantation					an transplan	tation			
		Haemodialysis					Haemodialysis				
		Needle injury or other occupational exposure Tattooing/body piercing Other					Needle injury or other occupational exposure				
						Tattooing/body piercing					
						Oth	Other				
	Other	Hos	pitalisation			Other	Hos	Hospitalisation			
		Length of hospitalisation				Len	Length of hospitalisation				
		ICD code diagnosis				ICD	ICD code diagnosis				
		Genotype information				Gen	Genotype information				
		Clinical symptoms: jaundice and acute fulminant hepatitis					Clinical symptoms: jaundice and acute fulminant hepat				
	are reported.  Laboratory results  High risk group	: HbsAg, anti-HBc IgM, ALT, AST, other.			RNA,AST, ALT, o	Laboratory results: anti-HCV (EIA), anti-HCV (RIB RNA,AST, ALT, other.  Transmission risk factors: part of population at ris					
Nata liules d'As	3 - 3 - 1		Liver ec	. Na.,.t. 12			· ructul				
oata linked to	Liver transplant Hospital register		Liver cancer	r Mortality		Liver transplant Hospital register		Liver cance	er Mortality		
	Other:					Other:					
ormat	Electronic		Paper			Electronic		Paper			
Гуре	Case-based		Aggre-	Other:		Case-based		Aggre-	Other:		
			gated					gated			
requency	Daily	Wee	kly	Biweekly		Daily	We	ekly	Biweekly		
<u>-</u>	Monthly		nually	Yearly		Monthly		nnually	Yearly		
	Other:		•	· '		Other:		· · ·	,		
Other surveillance	STI clinic	Labo	oratory	Supplemen	tary	STI clinic	Lat	oratory	Supplementary		
systems	surveillance	netv	vork	sentinel sur		surveillance	net	work	sentinel surveilland		
•		ular sero-surveys in general ulation Other			Regular sero-sur population	veys in	general	Other			

		HBV	HCV			
Screening	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination programme	HBV	'				
(only HBV)	Universal vaccination	Infants				
	_	Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg + mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patients				
		Contacts of infected persons				
		Other risk groups**				
	Other:					
Catch-up programme	Childhood and adolescent population					
Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage (3 doses of vaccination): Children 6 years: 9	95.3% in 2006; Adolescents 14 years	: 84.7% in 2006			

# **Hungary**

	HBV	HCV
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	HBV reporting is included in syndromic surveillance of viral hepatitis.	HCV reporting is included in syndromic surveillance of viral hepatitis.
Comments		

## **Objectives**

	нву	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution	no	no
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV		
Clinical	Possible (for acute viral hepatit Probable: HBsAg-positive patiel Confirmed: laboratory confirma antibody positivity or HBV DNA	nt with clinical symptoms tion (hepB core IgM	Possible: n/a Probable: n/a Confirmed: laboratory confirmation (HCV-specific antibody or HCV-RNA detection) plus clinical signs		
Chronic	No case definition		No case definition		
Other					
Cases included in surveillance	Possible		Possible		
	Probable	with classification	Probable		
	Confirmed		Confirmed	with classification	
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic		Chronic		
	Asymptomatic	-	Asymptomatic		
	Suspected		Suspected		
	Other:	Classification not needed; only acute cases included	Other:	Classification not needed; only acute cases included	
Including duplicates	No		No		
Underreporting	Underreporting is possible; plea underreporting (number of repo number of real cases) below.		Underreporting is possible; please give the rate for underreporting (number of reported cases/estimated number of real cases) below.		
Rate underreporting	5% to 6%		5% to 6%		

	HBV				HCV			
Source of data	Physicians	Labo	ratory	Hospital	Physicians	Lab	oratory	Hospital
	Other:				Other:			
Collected data	Basic data	Patie	ent ID		Basic data	Pati	ient ID	
		Date	of birth or ag		Dat	e of birth or a	ge	
		Geno	der			Ger	nder	
		Cour	ntry of birth			Cou	ıntry of birth	
		Place	e of residence	:		Plac	ce of residence	9
		Date	of onset of the	he disease		Dat	e of onset of t	the disease
		Date	of diagnosis			Dat	e of diagnosis	
		Date	of reporting/	notification		Dat	e of reporting/	/notification
		Date	used for stat	istics		Dat	e used for stat	tistics
		Cour	ntry where inf	ection was acquired		Cou	untry where inf	fection was acquir
		Imm	unisation stat	TIIS		Imr	nunisation stat	tus
		Outo					come	
	Classification		cal symptoms		Classification		ical symptoms	 ;
	information		ratory results		information		oratory results	
			emiological in				demiological in	
	Transmission		osexual conta		Transmission		nosexual conta	
	route risk factors				route risk factors			
		Heterosexual contact				Heterosexual contact Injecting drug use		
		Injecting drug use  Mother HBsAg+				Mother HCV positive		
		Close family member HBsAg+				Close family member HCV- positive		
								<u> </u>
		Sex partner HBsAg+					partner HCV p	·
		Blood or blood-product transfusion				BIO	oa or biooa-pr	oduct transfusion
		Invasive healthcare procedure/dental treatment					asive healthca atment	re procedure/dent
		Organ transplantation				Org	an transplanta	ation
		Haemodialysis  Needle injury or other occupational exposure  Tattooing/body piercing				Hae	Haemodialysis	
							edle injury or o osure	other occupational
						Tat	tooing/body pi	iercing
		Other				Oth	er	
	Other	Hospitalisation			Other	Hos	spitalisation	
		Length of hospitalisation				Length of hospitalisation		
		ICD code diagnosis				ICD code diagnosis		
		Geno	otype informa	tion		Genotype information		
	Is infection sexual	lly acq	uired?	Is infection sexua	lly acquired?			
Data linked to	Liver transplant Hospital register		Liver cancer	Mortality	Liver transplant Hospital register		Liver cancer	Mortality
	Other:				Other:			
Format	Electronic		Paper		Electronic		Paper	
Туре	Case-based		-	Other:	Case-based		Aggregated	Other:
			22 3					1
Frequency	Daily	Week	kly	Biweekly	Daily	We	eekly	Biweekly
	Monthly	Bianr	nually	Yearly	Monthly	Bia	annually	Yearly
	Other:				Other:			
Other surveillance systems	STI clinic surveillance	Labo	ratory ork	Supplementary sentinel surveillance	STI clinic surveillance		boratory twork	Supplementary sentinel surveilla
oyocano	Pegular coro-curv	Regular sero-surveys in general			Regular sero-surv			
	population	c,c	J		population			

		HBV	HCV				
Screening	Pregnant women						
programme	Military recruits						
	Injecting drug users						
	STI clinic patients						
	Multiple sex partners						
	Prisoners						
	Haemodialysis patients						
	Long-term healthcare facilities						
	Healthcare workers						
	Workers who are occupationally exposed to the virus						
	Blood and organ donors						
	Other groups**						
Vaccination programme	HBV						
(only HBV)	Universal vaccination	Infants					
		Adolescents					
		Both					
		Other					
	Risk groups vaccination	Neonates born to HBsAg + mothers					
		Individuals at risk for HBV due to occupation					
		Haemodialysis patients					
		Chronic liver disease patients					
		STI clinic patients					
		Multiple sex partners					
		Injecting drug users					
		Household contacts of HBsAg+ patients					
		Contacts of infected persons					
		Other risk groups**					
	Other:	Programme for school children					
Catch-up programme	For 13-year-olds (in 2009)						
Vaccination	Infants 0 to 2 years						
coverage	Adolescents 10 to 14 years						
	Adults						
	Other groups						
	Not known						
	Coverage: 95% to 98% in 2008%						

## **Iceland**

	нву	HCV					
Surveillance system	Surveillance system						
Included in the national surveillance system							
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory					
Type of surveillance	Passive	Passive					
Surveillance system	Own system for HBV	Own system for HCV					
Comments							

## Objectives

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Case definition					
Definition	HBV		HCV		
Clinical	All newly lab confirmed HBV casacute and chronic cases, regard		EU case definitions 2008.		
Chronic	Laboratory-confirmed cases wit medical history compatible with		EU case definitions 2008.		
Other	Asymptomatic laboratory-confir	med cases are reportable.			
Cases included in surveillance	Possible		Possible		
	Probable	-	Probable		
	Confirmed	with classification	Confirmed	with classification	
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic		Chronic		
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:		Other:		
Including duplicates	No		No	!	
Underreporting	Underreporting not possible.		Underreporting not possible	e.	
Rate underreporting					

	HBV				HCV					
Source of data	Physicians	Lab	oratory	Hospital	Physicians	Lab	oratory	Hospital		
	Other:				Other:					
Collected data	Basic data	Patient ID			Basic data		Patient ID			
		Date	e of birth or a	ge		Date	e of birth or a	ge		
		Gen	der			Gen	der			
			ntry of birth				ntry of birth			
			e of residence				e of residence			
			e of onset of t	he disease			e of onset of t	he disease		
			e of diagnosis	/			e of diagnosis	/		
			e of reporting,				e of reporting,			
			e used for stat				e used for stat			
			nunisation sta	fection was acquired			nunisation sta	fection was acquired		
			come	tus		_	come	tus		
	Classification		ical symptoms	,	Classification		ical symptoms	i		
	information		oratory results		information		oratory results			
			lemiological in				lemiological ir			
	Transmission		nosexual cont		Transmission		nosexual cont			
	route risk factors	Hete	erosexual conf	tact	route risk factors	Het	erosexual con	tact		
		Inje	cting drug use	2		Inje	cting drug use	2		
		Mot	her HBsAg+			Mot	her HCV posit	ive		
		Clos	se family mem	ber HBsAg+		Clos	Close family member HCV- positive			
		Sex	partner HBsA	g+		Sex partner HCV positive				
		Blood or blood-product transfusion				Blood or blood-product transfusion				
			asive healthca tment		Invasive healthcare procedure/dental treatment					
		Organ transplantation				Org	Organ transplantation			
		Haemodialysis				Haemodialysis				
		Needle injury or other occupational exposure  Tattooing/body piercing  Other				Needle injury or other occupational exposure				
						Tattooing/body piercing				
						Other				
	Other		pitalisation	Other	_	pitalisation	Parada			
			gth of hospita			Length of hospitalisation  ICD code diagnosis				
			code diagnos otype informa				otype informa			
	Classification: lab		,,	antibodies, HBeAg, Classification: lal			o result: HCV antibodies (ELISA), HCV			
	HBe antibodies	HBe antibodies					PCR	, ,		
		factors: information on transmission llected, even if it is not in the standard				factors: information on transmission llected, even if it is not in the standard				
Data linked to	Liver transplant		Liveres	Moutolity		Liver cancer		Mortality		
Data linked to	Hospital register		Liver cancer	Mortality	Liver transplant Hospital register		Liver Cancer	Mortality		
	Other:				Other:					
Format	Electronic		Paper		Electronic		Paper			
Туре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:		
Frequency	Daily	Wee	ekly	Biweekly	Daily	We	ekly	Biweekly		
	Monthly	Bian	nually	Yearly	Monthly	Bia	nnually	Yearly		
	Other:				Other:					
Other surveillance systems	STI clinic surveillance	Laboratory network		Supplementary sentinel surveillance	STI clinic surveillance		ooratory work	Supplementary sentinel surveillance		
	Regular sero-surve population	eys in	general	Other	Regular sero-surv population	Regular sero-surveys in general population Other				
	The National Trea screens alcohol ar The National Bloo	nd dru	ıg addicts.		The National Treascreens alcohol a The National Bloo	nd dru	ıg addicts.			

Prevention	<u> </u>	HBV	HCV				
Screening	Pregnant women	IID¥	ПСУ				
programme	Pregnant women Military recruits						
	Injecting drug users						
	STI clinic patients						
	Multiple sex partners						
	Prisoners						
	Haemodialysis patients						
	Long-term healthcare facilities						
	Healthcare workers						
	Workers who are occupationally exposed to the virus						
	Blood and organ donors						
	Other groups**						
Vaccination programme	HBV						
(only HBV)	Universal vaccination	Infants					
		Adolescents					
		Both					
		Other					
	Risk groups vaccination	Neonates born to HBsAg+ mothers					
		Individuals at risk for HBV due to occupation					
		Haemodialysis patients					
		Chronic liver disease patients					
		STI clinic patients					
		Multiple sex partners					
		Injecting drug users					
		Household contacts of HBsAg+ patients					
		Contacts of infected persons					
		Other risk groups**					
	Other:						
Catch-up programme							
Vaccination	Infants 0 to 2 years						
coverage	Adolescents 10 to 14 years						
	Adults						
	Other groups						
	Not known						
	Coverage:						

# **Ireland**

	нву	нсу						
Surveillance system	Surveillance system							
Included in the national surveillance system								
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory						
Type of surveillance	Passive	Passive						
Surveillance system	Own system for HBV	Own system for HCV						
Comments								

**Objectives** 

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	To facilitate resource allocation and health care planning. To guide public health action.	To facilitate resource allocation and health care planning. To guide public health action.

Case definition					
Definition	HBV		HCV		
Clinical	Hepatitis B (acute and chronic): In symptomatic cases, clinical phepatitis, i.e. discrete onset of sor elevated serum aminotransfe Asymptomatic cases are comme case definition document has beneatitis B (acute) (EU): Laboratory criteria for diagnosis One of the following:  • IgM antibody to hepatitis B corpositive  • Detection of hepatitis B virus (Case classification. Possible: A symptomatic case thas a clinical picture compatible Confirmed: A case that is laborations.	Clinical description.  In symptomatic cases, clinical picture compatible with hepatitis, i.e. discrete onset of symptoms and/or jaundice or elevated serum aminotransferase levels.  Asymptomatic cases are common (all laboratory-confirmed cases included; the EU definition is restricted to symptomatic cases)  Laboratory criteria for diagnosis.  One of the following:  Detection of hepatitis C virus (HCV) specific antibodies  Detection of HCV nucleic acid from clinical samples Case classification.  Possible: n/a  Probable: n/a  Confirmed: A case that is laboratory confirmed.			
Chronic	Hepatitis B (chronic): Laboratory criteria for diagnosis One of the following:  • Hepatitis B surface antigen ( antibody to hepatitis B core and IgM antibody to hepatit  • Persistence for more than 6 HBV nucleic acid in serum Case classification. Possible: n/a Probable: n/a Confirmed: A case that is labora Note: Notification distinguishes	(HBsAg) positive and antigen (anti-HBc) positive is B core antigen negative months of either HBsAg or atory confirmed.			
Other					
Cases included in surveillance	Possible	with classification	Possible		
	Probable		Probable	with classification	
	Confirmed		Confirmed		
	Unknown classification		Unknown classification		
Type of cases	Acute		Acute		
	Chronic	with classification	Chronic	with classification	
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:		Other:		
Including duplicates	No		Yes		

	нву	HCV
Underreporting	Underreporting is possible; please give the rate for underreporting (number of reported cases/estimated number of real cases) below.	Underreporting is possible, but no estimates exist for magnitude of underreporting.
Rate underreporting	Estimated 25%	

	HBV				HCV				
Source of data	Physicians	Labo	ratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:			'	Other:			'	
Collected data	Basic data	Patie	nt ID		Basic data	Pati	ient ID		
			of birth or ac	 je			e of birth or a	 je	
		Geno		<u> </u>		Ger		, · · · · · · · · · · · · · · · · · · ·	
			ntry of birth				intry of birth		
			e of residence				ce of residence	<u> </u>	
			of onset of the				e of onset of t		
			of diagnosis				e of diagnosis		
			of reporting/	notification			e of reporting/	notification	
			used for stat				e used for stat		
				ection was acquired				ection was acquired	
			unisation stat	<u>_</u>			nunisation stat		
		Outo					come		
	Classification		cal symptoms		Classification	-	ical symptoms		
	information		ratory results		information		oratory results		
			emiological in				demiological in		
	Transmission		osexual conta		Transmission		nosexual conta		
	route risk factors	ПОП	OSEXUAI CONC	ICL	route risk factors		110SEXUAI COTIL	1CL	
		Hete	rosexual cont	act		Het	erosexual cont	act	
		Injec	cting drug use	:		Inje	ecting drug use	<u>:</u>	
			er HBsAg+				Mother HCV positive		
		Close family member HBsAg+				Close family member HCV- positive			
		Sex partner HBsAg+				Sex partner HCV positive			
		Blood or blood-product transfusion				Bloo	Blood or blood-product transfusion		
		Troy rou	sive healthcar		Trove	Invasive healthcare procedure/dental			
			ment			treatment			
		Organ transplantation			Others	Org	an transplanta	tion	
		Haemodialysis  Needle injury or other occupational exposure  Tattooing/body piercing  Other				Нає	Haemodialysis		
						Needle injury or other occupational			
						_	exposure		
							Tattooing/body piercing		
	Other						Other		
	Other	Hospitalisation			Other		Hospitalisation		
		Length of hospitalisation					Length of hospitalisation  ICD code diagnosis		
		ICD code diagnosis  Genotype information							
	Lab regulter HRcA			Anti-HBc, anti-HBc	Lab details: HCV		Genotype information EIA, immunoblot, PCR, genotype.		
	IgM, PCR/NA, gen			And-ribe, and-ribe	Epi information: i				
	Epi information: If	f linked	d to an outbre	eak.		exual exposure, most likely risk.			
	Other: Sex worker	r, intel	lectual disabil	ity setting.	P				
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality	
	Hospital register			,	Hospital register			,	
	Othory				Other:				
	Other:						_		
Format	Electronic		Paper	Othory	Electronic		Paper	Othory	
Type	Case-based		Aggregated	Other:	Case-based	144	Aggregated	Other:	
Frequency	Daily Monthly	Week	nually	Biweekly Yearly	Daily Monthly	_	eekly	Biweekly Yearly	
	Other:	Quar	,	rearry	Other:		annually arterly	really	
Other surveillance	STI clinic		ratory	Supplementary	STI clinic		boratory	Supplementary	
systems	surveillance	netw		sentinel surveillance	surveillance		twork	sentinel surveillance	
	Regular sero-surve population	eys in	general	Other	Regular sero-surveys in general Other population			Other	
					National database	e for t	hose infected t	through blood and	
					blood products (h				

		HBV	HCV			
Screening	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination programme	HBV					
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg + mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patients				
		Contacts of infected persons				
		Other risk groups**				
	Other:	Short-term foster carers Immigrants from areas with a high	ons of blood or blood products ability			
Catch-up						
Programme Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
-	Adults					
	Other groups					
	Not known					
	Coverage: Infants: 89% in 2009					

# **Italy**

	нву	HCV		
Surveillance system				
Included in the national surveillance system				
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory		
Type of surveillance	Passive	Passive		
Surveillance system	National	National		
Comments	The national surveillance system for acute viral hepatitis infection (SEIEVA, Sistema Epidemiologico Integrato dell'Epatite Virale Acuta), coordinated by the National Centre for Epidemiology, Surveillance and Health Promotion of the Istituto Superiore di Sanità, promotes the monitoring and control of acute viral hepatitis infection at both the local and national level. Epidemiological data are combined with laboratory data to estimate the impact of various risk factors, allowing prevention programmes to be defined and evaluated.  Specific surveillance goals are:  a) to determine the number of cases of acute viral hepatitis infection, by specific type of infection; b) to calculate the incidence of acute viral hepatitis infection, date and place of disease onset, age, and gender; c) to identify outbreaks in a timely manner; d) to calculate the proportion of cases exposed to specific risk factors, by type of infection; e) to study variations over time in the relative and attributable risks associated with specific types of exposure, by type of infection; f) to develop control strategies based on the identification of risk factors at the local level. (Continue on the right)	The general methods of SEIEVA are: a) to interview infected persons using an individual questionnaire (SEIEVA form), which includes sociodemographic and risk factor information; questionnaire is administered before results of serological tests are obtained; b) to provide information on the results of serological tests; c) to contact the transfusion centre and record information obtained on a specific form if the infected person reports that he/she had received a blood transfusion in the six months prior to disease onset; d) to conduct, when applicable (mainly when outbreaks are identified), case control and cohort studies. Participation is voluntary. The percentage of ASLs participating to the surveillance progressively increased from 5% in 1986 (about 3 million people) and in 2006 represented 59% of total population (about 33.7 million people). Hepatitis C is currently reported as 'non-A non-B hepatitis', but the Italian surveillance system for infectious diseases is evolving and requires notification of specific hepatitis C.		

**Objectives** 

	нву	T	HCV
Monitoring trends			
Detect outbreaks			
Monitoring changes in disease distribution			
Evaluation and planning of control measures			
Improve knowledge of epidemiology			
Other	no		no

Definition	HBV		HCV		
Clinical	The diagnostic criteria used to i B is laboratory confirmation.	dentify acute viral hepatitis	Diagnostic criteria used to identify acute viral hepatitis C i laboratory confirmation.		
Chronic	No case definition		No case definition		
Other					
Cases included in surveillance	Possible		Possible		
	Probable		Probable		
	Confirmed	with classification	Confirmed	with classification	
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic		Chronic		
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:		Other:		
Including duplicates	No		No	·	
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible, bu magnitude of underreporting.	t no estimates exist for	
Rate underreporting					

	HBV				HCV				
Source of data	Physicians	Labo	oratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Patie	ent ID		Basic data	Pat	Patient ID		
		Date of birth or age				Dat	e of birth or a	ge	
		Gender				Ger	nder		
		Cou	ntry of birth			Cou	untry of birth		
		Place	e of residence	2		Plac	ce of residence	2	
		Date	of onset of t	he disease		Dat	e of onset of t	he disease	
		Date	of diagnosis			Dat	e of diagnosis		
		Date	of reporting,	/notification		Dat	e of reporting/	notification	
		Date	used for sta	tistics		Dat	e used for stat	tistics	
		Cou	ntry where in	fection was acquired		Cou	untry where inf	ection was acquired	
		Imm	nunisation sta	tus		Imr	munisation stat	tus	
		Outo	come			Out	tcome		
	Classification	Clini	cal symptoms	;	Classification	Clin	ical symptoms	;	
	information	Labo	oratory results	 S	information	Lab	oratory results	;	
		Epid	emiological ir	formation		Epic	demiological in	formation	
	Transmission	Hom	nosexual cont	act	Transmission		mosexual conta	act	
	route risk factors	Hete	erosexual con	tact	route risk factors		Heterosexual contact		
		Inje	cting drug use	 e		Inje	Injecting drug use		
		Mother HBsAg+				Mother HCV positive			
		Close family member HBsAg+				Close family member HCV- positive			
		Sex partner HBsAq+				Sex partner HCV positive			
		Blood or blood-product transfusion					· · · · · · · · ·	oduct transfusion	
		Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other					asive healthca	re procedure/dental	
							Organ transplantation		
						Haemodialysis			
						Needle injury or other occupational exposure			
						Tattooing/body piercing			
						Oth	Other		
	Other	Hosp	Hospitalisation		Other	Hospitalisation			
		Length of hospitalisation				Length of hospitalisation			
		ICD code diagnosis				ICD	ICD code diagnosis		
		Gen	otype informa	ation		Genotype information			
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality	
Data mineu W	Hospital register		Liver carree	Piortailty	Hospital register		LIVEI CAIRCEI	Piortailty	
					, ,				
	Other:				Other:				
Format	Electronic		Paper		Electronic		Paper		
Туре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:	
Eroguonav	Daily	10/00	khi	Piwooldy	Daily	14/	a alkly	Piwooldy	
Frequency	Daily Monthly	Wee		Biweekly	Daily		eekly	Biweekly	
		bian	nually	Yearly	Monthly	BIS	annually	Yearly	
Othor cumre!!!	Other:	1 = 4 -	roton,	Cumplementer	Other:	1.5	hovetor.	Cupplom	
Other surveillance systems	STI clinic surveillance		ratory ork	Supplementary sentinel surveillance	STI clinic surveillance		boratory twork	Supplementary sentinel surveilland	
	Regular sero-surv	surveillance network  Regular sero-surveys in general population		Other	Regular sero-surveys in general population  Other				

rievendon		HBV	HCV				
Screening	Pregnant women						
programme	Military recruits						
	Injecting drug users						
	STI clinic patients						
	Multiple sex partners						
	Prisoners						
	Haemodialysis patients						
	Long-term healthcare facilities						
	Healthcare workers						
	Workers who are occupationally exposed to the virus						
	Blood and organ donors						
	Other groups**						
Vaccination programme	HBV						
(only HBV)	Universal vaccination	Infants					
		Adolescents (12 years)					
		Both					
		Other					
	Risk groups vaccination	Neonates born to HBsAg + mothers					
		Individuals at risk for HBV due to occupation					
		Haemodialysis patients					
		Chronic liver disease patients					
		STI clinic patients					
		Multiple sex partners					
		Injecting drug users					
		Household contacts of HBsAg+ patients					
		Contacts of infected persons					
		Other risk groups**					
	Other:	Not specified					
Catch-up programme							
Vaccination	Infants 0 to 2 years						
coverage	Adolescents 10 to 14 years						
	Adults Adults						
	Other groups						
	Not known						
	Coverage: Infants: 96% in 2008						
	Comment: 12 year olds are included in universal vacc	ination programme since 1991					
		· ·					

# Latvia

	HBV	HCV
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	HBV reporting is included in syndromic surveillance of viral hepatitis.	HBV reporting is included in syndromic surveillance of viral hepatitis.
Comments		

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV		
Clinical	EU 2008 Case definition		EU 2008 Case definition		
Chronic	No case definition		No case definition		
Other					
Cases included in surveillance (highlighted in green)	Possible		Possible		
	Probable		Probable		
	Confirmed	with classification	Confirmed	with classification	
	Unknown classification		Unknown classification		
Type of cases	Acute		Acute	with classification	
	Chronic	with classification	Chronic		
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:		Other:		
Including duplicates	No		No		
Underreporting	Underreporting is possible, but no estimates exist for magnitude of underreporting.		Underreporting is possible magnitude of underreport	e, but no estimates exist for ing.	
Rate underreporting					

	HBV				HCV				
Source of data	Physicians	Labor	atory	Hospital	Physicians		oratory	Hospital	
	Other:				Other:		oratories: dete s nucleic acid	ection of hepatitis C in serum	
Collected data	Basic data	Patient ID			Basic data	Patie	Patient ID		
		Date of	of birth or ag	je		Date of birth or age			
		Gende	er			Gen	der		
		Count	try of birth			Cour	ntry of birth		
		Place	of residence			Place	e of residence	2	
		Date of	of onset of th	ne disease		Date	of onset of t	he disease	
		Date of	of diagnosis			Date	of diagnosis		
		Date of	of reporting/	notification		Date	of reporting/	notification	
		Date i	used for stat	istics		Date	used for stat	tistics	
		Count	try where inf	ection was acquired		Cour	ntry where inf	ection was acquired	
		Immu	unisation stat	us		Imm	nunisation stat	tus	
		Outco					come		
	Classification		al symptoms		Classification		cal symptoms	<u> </u>	
	information		atory results		information		oratory results		
			miological in				emiological in		
	Transmission		sexual conta		Transmission				
	route risk factors		osexual cont		route risk factors	Homosexual contact  Heterosexual contact			
			ting drug use						
						Injecting drug use  Mother HCV positive			
		Mother HBsAg+ Close family member HBsAg+			Close family member HCV- positive				
		Sex partner HBsAq+			Sex partner HCV positive				
		Blood or blood-product transfusion			Blood or blood-product transfusion				
			Invasive healthcare procedure/dental treatment			Invasive healthcare procedure/dental treatment			
		Organ transplantation				Organ transplantation			
		Haemodialysis  Needle injury or other occupational exposure  Tattooing/body piercing		Haemodialysis					
				Needle injury or other occupational exposure					
				Tattooing/body piercing					
		Other			Other				
	Other	-	italisation		Other	_	oitalisation		
		_	th of hospital	alisation		Length of hospitalisation  ICD code diagnosis			
			ode diagnosi						
		Genotype information				Genotype information			
		Clinical symptoms: yellow skin or eyes.				Clinical symptoms: yellow skin or eyes.  Laboratory results: hepatitis C virus nucleic acid in se			
		Laboratory results: HBV core IgM antibody, HbsAg.					atitis C virus n	iucieic acid in serun	
	Transmisison risk soldier, blood don chronic illness, pe	or, pris	oner, laundre	HCV IgM antibody.  Transmission risk factors: cosmetologist, police soldier, blood donor, prisoner, laundress, person			ess, person with		
	ICD-10 code: B16	le: B16, B18.0, B18.1, Z22.5			chronic illness, pe ICD-10 code: B17			ness.	
Oata linked to	Liver transplant	L	Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality	
	Hospital register Other:				Hospital register Other:				
ormat	Electronic	F	Paper		Electronic		Paper		
уре	Case-based			Other:	Case-based		Aggregated	Other:	
requency	Daily	Weekl	lv	Biweekly	Daily	We	ekly	Biweekly	
годистсу	Monthly	Bianni		Yearly	Monthly		nnually	Yearly	
	Other:		if needed	Tearry	Other:		en if needed	rearry	
Other surveillance	STI clinic	Labora		Supplementary	STI clinic		oratory	Supplementary	
systems	surveillance Regular sero-surve	netwo	ork <sup>*</sup>	sentinel surveillance Other	surveillance Regular sero-surv	net	work	sentinel surveilland	
	population	, s		-	population	,			

Preventior	<u> </u>					
	-	HBV	HCV			
Screening programme	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
			sive and Coordinated Action on HIV/AIDS ng Population', ENCAP No. 2005305; Latvia in 2007: 55.8%			
Vaccination programme	HBV					
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patients				
		Contacts of infected persons				
		Other risk groups**				
	Other:	2007).	nce 1998); adolescents (14-year-olds) (since orkers who get in contact with blood (since			
Catch-up programme	Adolescents (14 years) in Riga in 2005-06					
Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage (2007): Infants (1-2 years of age): 97% Adolescents (15 years of age): 73.5%					

# Liechtenstein

	нву	HCV
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	
Type of surveillance	The laboratories report every positive HBV-test to the Office for Public Health, and the Office makes further inquiries.	
Surveillance system	Own system for HBV	
Comments		

## **Objectives**

	HBV	
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures	no	
Improve knowledge of epidemiology	no	
Other	no	

Case definition			
Definition	HBV		
Clinical	No case definition		
Chronic	No case definition		
Other			
Cases included in surveillance (highlighted in green)	Possible	with classification	
	Probable	-	
	Confirmed		
	Unknown classification		
Type of cases	Acute	with classification	
	Chronic		
	Asymptomatic	-	
	Suspected		
	Other:	Classification not needed, only acute cases included	
Including duplicates	No		
Underreporting	Underreporting not possible.		
Rate underreporting			

	HBV			
Source of data	Physicians	Labo	oratory	Hospital
	Other:			
Collected data	Basic data	Patie	ent ID	
		Date	e of birth or a	ige
		Gender		
		Cou	ntry of birth	
		Plac	e of residence	e
		Date	e of onset of	the disease
		Date	e of diagnosis	;
		Date	e of reporting	/notification
		Date	e used for sta	itistics
		Cou	ntry where in	fection was acquired
		Imn	nunisation sta	ntus
		Outo	come	
	Classification	Clini	cal symptom	S
	information	Labo	oratory result	S
		Epid	lemiological ii	nformation
	Transmission	Hom	nosexual cont	act
	route risk factors	Hote	erosexual con	ntact
			cting drug us	
			her HBsAg+	
				nher HRsAa+
		Close family member HBsAg+		
		Sex partner HBsAg+		
		Blood or blood-product transfusion		
		Invasive healthcare procedure/dental treatment		
		Organ transplantation		
		Haemodialysis		
			dle injury or o	other occupational
		_	ooing/body p	piercing
		Othe		
	Other	Hos	pitalisation	
			gth of hospita	alisation
			code diagnos	
		Gen	otype informa	ation
	Jaundice only			
		sults	(HbsAg, anti-	HBc antibodies (IgM
	and total)) Quantitative result	-c• ΔΙ	ΔΤ	
		J. AL		
Data linked to	Liver transplant		Liver cancer	Mortality
	Hospital register			
	Other:			
Format	Electronic		Paper	
Туре	Case-based		Aggre-	Other:
			gated	
Frequency	Daily	Wee		Biweekly
	Monthly	Bian	nually	Yearly
	Other:			
Other surveillance systems	STI clinic surveillance	Labo	oratory vork	Supplementary sentinel surveillance
Systems	Regular sero-surv			Other
	population	.y5 111	general	Otrici

Prevention	<u> </u>	HBV	HCV			
Screening	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination programme	HBV					
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patients				
		Contacts of infected persons				
		Other risk groups**				
	Other:					
Catch-up programme						
Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage:					

# Lithuania

	нву	нсу				
Surveillance system						
Included in the national surveillance system						
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory				
Type of surveillance	Passive	Passive				
Surveillance system	Own system for HBV	Own system for HCV				
Comments						

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV		
Clinical	EU 2008 case definition		EU 2008 case definition		
Chronic	No case definition		No case definition		
Other					
Cases included in surveillance	Possible		Possible		
	Probable	with classification	Probable	with classification	
	Confirmed		Confirmed		
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic		Chronic		
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:	Comment: acute clinical, asymptomatic acute, and chronic cases are classified. Surveillance of chronic cases is not implemented.	Other:	Comment: acute clinical, asymptomatic acute, and chronic cases are classified. Surveillance of chronic cases is not implemented.	
Including duplicates	No		No		
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible magnitude of underreporti		
Rate underreporting					

	HBV				HCV				
Source of data	Physicians	Labo	ratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Patie	nt ID		Basic data	Patient ID			
		Date of birth or age Gender				Date	e of birth or ag	je	
						Gen	der		
		Coun	try of birth			Cou	ntry of birth		
		Place	of residence			Plac	e of residence		
		Date	of onset of the	ne disease		Date	e of onset of th	ne disease	
		Date	of diagnosis			Date	e of diagnosis		
		Date	of reporting/	notification		Date	e of reporting/	notification	
		Date	used for stat	istics		Date	e used for stat	istics	
		Coun	itry where info	ection was acquired		Cou	ntry where info	ection was acquired	
		Imm	unisation stat	us		Imn	nunisation stat	us	
		Outco	ome			Out	come		
	Classification information	Clinic	cal symptoms		Classification information	Clin	cal symptoms		
	IIIIOIIIIauoii	Labo	ratory results		Illiormauon	Lab	oratory results		
		Epide	emiological in	formation		Epic	lemiological in	formation	
	Transmission	Home	osexual conta	nct	Transmission		nosexual conta	ıct	
	route risk factors	Hete	rosexual cont	act	route risk factors		erosexual cont	act	
			ting drug use				cting drug use		
	Mother HBs Close family				_	her HCV positi			
		e family meml	ber HBsAg+	i e	Close family member HCV- positive				
		Sex p	Sex partner HBsAg+			Sex partner HCV positive			
		Blood	d or blood-pro	i	Blood or blood-product transfusion				
		Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure				Invasive healthcare procedure/dental treatment			
						Organ transplantation			
						Haemodialysis			
						Needle injury or other occupational exposure			
			ooing/body pie	ercing		Tattooing/body piercing Other			
		Othe	r						
	Other	Hosp	italisation		Other	Hos	pitalisation		
		Leng	th of hospital	isation		Len	gth of hospital	isation	
		ICD o	code diagnosi	S		ICD	code diagnosi	s	
		Genotype inform			ation		Genotype information		
	Classification: HBs	Classification: HBsAg+, anti-HBc IgM+, HBV DNR, negative				ti-HCV	+, HCV RNR, r	negative	
	immigrant, asocia contact	ransmission risk factors: commercial sex worker, prisoner, nmigrant, asocial person, haemophilia patient, bisexual ontact			immigrant, asocia contact				
	Other: ISD-10				Other: ISD-10				
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality	
	Hospital register				Hospital register				
	Other:				Other:				
ormat	Electronic		Paper		Electronic		Paper		
Гуре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:	
requency	Daily	Week	dv	Biweekly	Daily	We	ekly	Biweekly	
	Monthly	Biann		Yearly	Monthly	_	nnually	Yearly	
	Other:	Diani	iduliy	- Carry	Other:	Dia	inidumy	Curry	
Other surveillance	STI clinic	Lahor	ratory	Supplementary	STI clinic	l at	oratory	Supplementary	
systems	surveillance	netwo	ork	sentinel surveillance	surveillance Regular sero-surv	net	work	sentinel surveillance	
		Regular sero-surveys in general Other oppulation		T RECIDIAL SELO-SULV	/⊢vs in	ueneral			

rievendoi		НВУ	HCV			
Screening	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination programme	HBV					
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patients				
		Contacts of infected persons				
		Other risk groups**				
	Other:					
Catch-up programme						
Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage:					
	0-11-month-olds: 99.1%; 1-year-olds: 96.4%; 13-ye	ar-olds: 97.2%				

# Luxembourg

	HBV	HCV
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	HBV notified via mandatory notification system	HCV notified via mandatory notification system
Comments		

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	Monthly publication of statistics is required by law.	Monthly publication of statistics is required by law.

case definition			11	
Definition	HBV		HCV	
Clinical	No case definition		No case definition	
Chronic	No case definition		No case definition	
Other				
Cases included in surveillance	Possible		Possible	
	Probable	with classification	Probable	with classification
	Confirmed		Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	Yes	·	Yes	
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible magnitude of underreport	e, but no estimates exist for ing.
Rate underreporting				

	HBV				HCV				
Source of data	Physicians	Lab	oratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Patient ID			Basic data	Pat	ient ID		
		Date of birth or age				Dat	Date of birth or age		
		Gender				Ger	Gender		
		Cou	ntry of birth			Cou	Country of birth		
		Plac	e of residence	e		Plac	Place of residence		
		Date	e of onset of t	the disease		Dat	Date of onset of the disease		
		Date	e of diagnosis			Dat	Date of diagnosis		
		Date	e of reporting,	/notification		Dat	Date of reporting/notification		
		Date	e used for sta	tistics		Dat	Date used for statistics		
		Cou	ntry where in	fection was acquired		Cou	Country where infection was acquired		
		Immunisation status				Imr	Immunisation status		
		Outcome				Out	Outcome		
	Classification information	Clinical symptoms			Classification information	Clin	Clinical symptoms		
		Laboratory results				Lab	Laboratory results		
		Epidemiological information				Epid	Epidemiological information		
	Transmission route risk factors	Homosexual contact			Transmission route risk factors		Homosexual contact		
		Heterosexual contact					Heterosexual contact		
		Injecting drug use				Inje	Injecting drug use		
		Mother HBsAg+				Mot	Mother HCV positive		
		Close family member HBsAg+				Clo	Close family member HCV- positive		
		Sex partner HBsAg+				Sex	Sex partner HCV positive		
		Blood or blood-product transfusion				Blo	Blood or blood-product transfusion		
		Invasive healthcare procedure/dental treatment					Invasive healthcare procedure/dental treatment		
		Organ transplantation				Org	Organ transplantation		
		Haemodialysis				Hae	Haemodialysis		
		Needle injury or other occupational exposure				Needle injury or other occupational exposure			
		Tattooing/body piercing				Tattooing/body piercing			
		Other				Other			
	Other	Hospitalisation			Other	Hos	Hospitalisation		
		Length of hospitalisation				Len	Length of hospitalisation		
		ICD code diagnosis				ICD	ICD code diagnosis		
		Gen	otype informa	ation		Ger	Genotype information		
Data linked to	Liver transplant	Liver transplant		Mortality	Liver transplant		Liver cancer	Mortality	
	Hospital register			,	Hospital register			,	
	Other:	Other:			Other:				
Format	Electronic	Paper			Electronic		Paper		
Гуре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:	
requency	Daily	Daily Weekly		Biweekly Daily		Weekly Biweekly			
· ,	-	Monthly Bian		Yearly	Monthly		annually	Yearly	
	Other:	,			Other:			<b>/</b>	
Other surveillance systems	STI clinic	Laboratory		Supplementary	STI clinic	La	boratory	Supplementary	
	surveillance	netv		sentinel surveillance			twork	sentinel surveillanc	
	Regular sero-surveys in general population			Other	Regular sero-surveys in general Other population				

Preventior	·	HBV	HCV					
C	December 1	нви	HCV					
Screening programme	Pregnant women							
	Military recruits							
	Injecting drug users							
	STI clinic patients							
	Multiple sex partners							
	Prisoners							
	Haemodialysis patients							
	Long-term healthcare facilities							
	Healthcare workers							
	Workers who are occupationally exposed to the virus							
	Blood and organ donors							
	Other groups**							
Vaccination programme	HBV							
(only HBV)	Universal vaccination	Infants						
		Adolescents						
		Both						
		Other						
	Risk groups vaccination	Neonates born to HBsAg mothers						
		Individuals at risk for HBV due to occupation						
		Haemodialysis patients	•					
		Chronic liver disease patients						
		STI clinic patients						
		Multiple sex partners						
		Injecting drug users						
		Household contacts of HBsAg+ patients						
		Contacts of infected persons						
		Other risk groups**						
		Other risk groups						
	Other:							
Catch-up programme								
Vaccination coverage	Infants 0 to 2 years							
	Adolescents 10 to 14 years							
	Adults							
	Other groups							
	Not known							
	Coverage:							

# **Malta**

	нву	нсу			
Surveillance system					
Included in the national surveillance system					
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory			
Type of surveillance	Passive	Passive			
Surveillance system	Own system for HBV	Own system for HCV			
Comments					

**Objectives** 

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV	
Clinical	Hepatitis B (acute); clinical des In symptomatic cases, clinical phepatitis, e.g. discrete onset of elevated serum aminotransfera Laboratory criteria for diagnosi IgM antibody to hepatitis B corpositive; detection of HBV nucl Case classification: Possible: n/a Probable: HBsAg positive case compatible with acute hepatitis Confirmed: Case, laboratory co	oicture compatible with symptoms and jaundice or se. s: e antigen (anti-HBc) eic acid in serum	hepatitis, e.g. discrete one elevated aminotransferase Laboratory criteria for diadone of the following: Detection of hepatitis C videtection of HCV nucleic a Case Classification: Possible: n/a Probable: n/a	gnosis: rus (HCV)-specific antibodies;
Chronic	No case definition		No case definition	
Other				
Cases included in surveillance	Possible		Possible	
	Probable	with classification	Probable	with classification
	Confirmed		Confirmed	with classification
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	No	1	No	
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible magnitude of underreport	, but no estimates exist for ing.
Rate underreporting				

	HBV	1			HCV	1		
Source of data	Physicians	Lab	oratory	Hospital	Physicians	Lab	oratory	Hospital
	Other:				Other:			
Collected data	Basic data	Patient ID			Basic data		ent ID	
		Date	e of birth or a	ge		Date	e of birth or a	ge
		Gen	ider				ider	
		Cou	ntry of birth			Cou	ntry of birth	
		Plac	e of residence	•		Plac	e of residence	2
		Date	e of onset of t	the disease		Date	e of onset of t	he disease
		Date	e of diagnosis			Date	e of diagnosis	
		Date	e of reporting,	/notification		Date	e of reporting/	notification
		Date	e used for sta	tistics		Date	e used for stat	tistics
		Cou	ntry where in	fection was acquired		Cou	ntry where inf	ection was acquired
		Imn	nunisation sta	tus		Imn	nunisation sta	tus
		Out	come			Out	come	
	Classification	Clini	ical symptoms	;	Classification	Clin	ical symptoms	;
	information	Lab	oratory results	5	information	Lab	oratory results	;
		Epic	demiological ir	formation		Epic	demiological in	formation
		Transmission route risk factors	Hon	nosexual conta	act			
	Todde Hisk ractors	Heterosexual contact		Toute risk ructors	Heterosexual contact			
		Injecting drug use			Injecting drug use			
		Mother HBsAg+			Mother HCV positive			
		Close family member HBsAg+			Clos	se family mem	ber HCV- positive	
		Sex partner HBsAg+			Sex	partner HCV	positive	
		Blood or blood-product transfusion  Invasive healthcare procedure/dental treatment  Organ transplantation  Haemodialysis  Needle injury or other occupational exposure  Tattooing/body piercing			Bloc	od or blood-pro	oduct transfusion	
						asive healthca tment	re procedure/dental	
					Org	an transplanta	ntion	
					Haemodialysis			
						dle injury or o	ther occupational	
						cooing/body pi	ercina	
		Other			Oth			
	Other	Hospitalisation Length of hospitalisation		Other	Hospitalisation			
					Length of hospitalisation			
		ICD	code diagnos	iis		ICD code diagnosis		
		Genotype information				Genotype information		
Data linked to	Liver transplant Hospital register		Liver cancer	Mortality	Liver transplant Hospital register		Liver cancer	Mortality
	Other:				Other:			
Format	Electronic		Danor		Electronic		Danor	
	Case-based		Paper Aggregated	Other			Paper	Other:
Гуре	Case-Daseu		Ayyreyated	oulei.	Case-based		Aggregated	oulei.
requency	Daily	Wee	ekly	Biweekly	Daily	We	ekly	Biweekly
· ,	Monthly	_	nually	Yearly	Monthly	_	nnually	Yearly
	Other:		<u> </u>	,	Other:			
Other surveillance systems	STI clinic	Labo	oratory	Supplementary	STI clinic	Lal	ooratory	Supplementary
	surveillance	netv	vork	sentinel surveillance	surveillance	net	twork	sentinel surveilland
	Regular sero-surveys in general Other population		otner	Regular sero-surv population	eys in	general	Other	

Fievention		1	1	
		HBV	HCV	
Screening programme	Pregnant women			
programme	Military recruits			
	Injecting drug users			
	STI clinic patients			
	Multiple sex partners			
	Prisoners			
	Haemodialysis patients			
	Long-term healthcare facilities			
	Healthcare workers			
	Workers who are occupationally exposed to the virus			
	Blood and organ donors			
	Other groups**			
Vaccination programme	HBV			
(only HBV)	Universal vaccination	Infants		
		Adolescents		
		Both		
		Other		
	Risk groups vaccination	Neonates born to HBsAg mothers		
		Individuals at risk for HBV due to occupation		
		Haemodialysis patients		
		Chronic liver disease patients		
		STI clinic patients		
		Multiple sex partners		
		Injecting drug users		
		Household contacts of HBsAg+ patie	ents	
		Contacts of infected persons		
		Other risk groups**		
	Other:			
Catch-up programme	Catch-up campaign started in 2003, concurrently with will be completed in 2008-09	n introduction of universal hepatitis B	vaccination for children aged 15 months. This	
Vaccination	Infants 0 to 2 years			
coverage	Adolescents 10 to 14 years			
	Adults			
	Other groups			
	Not known			
	Coverage: Infants aged 15 months in 2007: First dose: 74.68%; report vaccinations, so we do not know how many we In 2007, we continued with catch up for 7-8 year-olds We do not vaccinate 10-14-year-olds as they are already	ere vaccinated privately. s in schools: First dose: 90.2%; Sec		

# **Netherlands**

	нву	нсу
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Own system for HBV	Own system for HCV
Comments		

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	нву		HCV	
Clinical	Any person with a discrete onse fatigue, abdominal pain, loss of nausea and vomiting) AND at least one of the following two jaundice; elevated serum amino AND hepatitis B virus core IgM or HE	appetite, intermittent  o: otransferase levels	when suspecting a recent a recent infections can or • appearance of antibod laboratory reactivity; • symptoms (e.g. icterus disorder);	ies against HCV, or increase in s or increased liver function isks if present in recent period,
Chronic	HBsAg positive		No case definition	
Other				
Cases included in surveillance	Possible		Possible	
	Probable	-	Probable	
	Confirmed	with classification	Confirmed	with classification
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	No		No	
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible magnitude of underreport	e, but no estimates exist for ting.
Rate underreporting				

Physicians Other:  Basic data  Classification information  Transmission route risk factors	Murr Patid Gen Cou Place Date Date Cou Imn Out Clini Labo Epic Hon	ntry of birth te of residence e of onset of t e of diagnosis e of reporting/ e used for stat	de disease  Inotification cistics fection was acquired tus  formation	Physicians Other: Basic data  Classification information	Murr Patition Date Gen Cou Place Date Date Cou Imm Out Clini Laborator Laborator Cou L	intry of birth i.e of residence e of onset of t e of diagnosis e of reporting/ e used for stat intry where inf nunisation stat come ical symptoms oratory results	ge he disease /notification tistics fection was acquired tus
Basic data  Classification information  Transmission	Patii Date Gen Cou Place Date Date Cou Imn Out Clini Labe Hon	ent ID e of birth or ag ider ntry of birth e of residence e of onset of t e of diagnosis e of reporting, e used for stat ntry where inf nunisation stat come ical symptoms oratory results demiological in	de disease  Inotification cistics fection was acquired tus  formation	Basic data  Classification	Patition Date Gen Date Date Could Imm Out Clinic Laborators	ent ID e of birth or againery of birth the of residence e of onset of the e of diagnosis e of reporting/ e used for state intry where informatication state come ical symptoms oratory results	ge he disease /notification tistics fection was acquired tus
Classification information  Transmission	Date Cou Imn Out Clini Labb Epic Hon Hete	e of birth or ago ider ntry of birth the of residence e of onset of the e of diagnosis e of reporting/ e used for state ntry where information state come ical symptoms oratory results demiological in	he disease  Inotification cistics fection was acquired tus formation	Classification	Date Date Date Cou Imn Out Clini Labe	e of birth or ago ider intry of birth the of residence to of onset of the the of diagnosis the of diagnosis the of reporting/ the used for state the of diagnosis the diagnosis the of diagnosis the diagnosis the of diagnosis the diagnosis the diagnosis the diagnosis the diagnosi	he disease  /notification tistics fection was acquired tus
information  Transmission	Gen Cou Place Date Date Cou Imn Out Clini Labo Hon	ntry of birth the of residence the of onset of the the of diagnosis the of reporting, the used for stal thry where information stal come tical symptoms to oratory results the miological in	he disease  Inotification cistics fection was acquired tus formation		Gen Cou Place Date Date Cou Imn Out	intry of birth ite of residence e of onset of t e of diagnosis e of reporting/ e used for stat intry where inf nunisation stat come ical symptoms oratory results	he disease  /notification tistics fection was acquired tus
information  Transmission	Cou Place Date Date Cou Imn Out Clini Labb Epic Hon	ntry of birth the of residence e of onset of the e of diagnosis e of reporting, e used for state ntry where information state come ical symptoms oratory results demiological in	notification iistics rection was acquired tus formation		Cou Place Date Date Cou Imn Out Clini	intry of birth i.e of residence e of onset of t e of diagnosis e of reporting/ e used for stat intry where inf nunisation stat come ical symptoms oratory results	he disease  /notification tistics fection was acquired tus
information  Transmission	Place Date Date Date Cou Imn Out Clinin Labo Epic Hon	e of residence e of onset of t e of diagnosis e of reporting, e used for stat ntry where inf nunisation stat come ical symptoms oratory results demiological in	notification iistics rection was acquired tus formation		Place Date Date Date Cou Imn Out Clini Labe	ce of residence e of onset of t e of diagnosis e of reporting/ e used for stat entry where inf nunisation stat come ical symptoms oratory results	he disease  /notification tistics fection was acquired tus
information  Transmission	Date Date Date Cou Imn Out Clini Labo Epic Hon	e of onset of t e of diagnosis e of reporting, e used for stat ntry where inf nunisation stat come ical symptoms oratory results demiological in	notification iistics rection was acquired tus formation		Date Date Date Cou Imn Out Clini Labe	e of onset of t e of diagnosis e of reporting/ e used for stat intry where inf nunisation stat come ical symptoms oratory results	he disease  /notification tistics fection was acquired tus
information  Transmission	Date Date Cou Imn Out Clini Labo Epic Hon	e of diagnosis e of reporting/ e used for stat ntry where inf nunisation stat come ical symptoms oratory results demiological in	Inotification cistics rection was acquired tus cistics		Date Date Cou Imn Out Clini Labe	e of diagnosis e of reporting/ e used for stat intry where inf nunisation stat come ical symptoms oratory results	/notification tistics fection was acquired tus
information  Transmission	Date Cou Imn Oute Clini Labe Epic Hon	e of reporting/ e used for stat ntry where inf nunisation stat come ical symptoms oratory results demiological in	istics fection was acquired tus formation		Date Cou Imn Out Clini Labe	e of reporting/ e used for stat untry where inf nunisation stat come ical symptoms oratory results	tistics fection was acquired tus
information  Transmission	Date Cou Imn Oute Clini Labe Epic Hon	e used for stat ntry where inf nunisation stat come ical symptoms oratory results demiological in	istics fection was acquired tus formation		Cou Imn Out Clini Labo	e used for stat intry where inf nunisation stat come ical symptoms oratory results	tistics fection was acquired tus
information  Transmission	Cou Imn Oute Clini Labo Epic Hon Hete	ntry where inf nunisation stal come ical symptoms oratory results demiological in	fection was acquired tus s formation		Imn Out Clini Labo	ntry where inf nunisation stat come ical symptoms oratory results	fection was acquired tus
information  Transmission	Imn Out Clini Labo Epic Hon Hete	nunisation stal come ical symptoms oratory results demiological in	tus : : : : : : :		Imn Out Clin Lab	nunisation stat come ical symptoms oratory results	tus
information  Transmission	Outo Clini Labo Epic Hon Hete	come ical symptoms oratory results demiological in	s formation		Out Clin	come ical symptoms oratory results	5
information  Transmission	Clini Labo Epic Hon	ical symptoms oratory results demiological in	s formation		Clin	ical symptoms oratory results	
information  Transmission	Epic Hon Hete	oratory results demiological in	s formation		Lab	oratory results	
Transmission	Hon Hete	lemiological in	formation	Information		•	3
	Hon				Epic		
	Hete	nosexual conta	act			demiological in	formation
Toute lisk factors				Transmission route risk factors	Hon	nosexual conta	act
	Inje	Heterosexual contact		Toute risk ractors	Heterosexual contact		
	Injecting drug use			Injecting drug use			
	Mother HBsAg+			Mother HCV positive			
	Close family member HBsAg+			Clos	se family mem	ber HCV- positive	
	Sex partner HBsAg+			Sex	partner HCV p	positive	
	Blood or blood-product transfusion			Bloc	od or blood-pro	oduct transfusion	
	Invasive healthcare procedure/dental treatment					re procedure/dental	
	Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other Hospitalisation Length of hospitalisation			-		ation	
				Haemodialysis			
						other occupational	
						ercing	
				Other			
Other			Other	Hospitalisation			
				Length of hospitalisation			
					ICD code diagnosis		
	Gen	otype informa	ition		Genotype information		
Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality
Hospital register				Hospital register			
Other:				Other:			
Electronic		Paper		Electronic		Paper	
Case-based		Aggregated	Other:	Case-based		Aggregated	Other:
Daily	\\/oo	akly	Riwookh	Daily	10/0	a kly	Biweekly
-		•	,			•	
	DIdN	iiiuaiiy	really	· ·	BIG	ııııualiy	Yearly
	Labr	oratony	Sunnlementany		اد ا	norator.	Supplementary
surveillance			sentinel surveillance	surveillance	net	twork	sentinel surveillance
Regular sero-surve population	eys in	general	Other	Regular sero-surv population	eys in	general	Other
	Liver transplant Hospital register Other: Electronic Case-based Daily Monthly Other: STI clinic surveillance Regular sero-surve	Sex Bloc Inva trea Org Hae Nee exp Tatt Oth Other Hos Len ICD Gen  Liver transplant Hospital register Other: Electronic Case-based  Daily Monthly Bian Other: STI clinic surveillance Regular sero-surveys in	Sex partner HBsA Blood or blood-pred Invasive healthcate treatment Organ transplantate Haemodialysis Needle injury or of exposure Tattooing/body pit Other Other Hospitalisation Length of hospital ICD code diagnosty Genotype informate Liver transplant Hospital register Other: Electronic Case-based Aggregated Daily Weekly Monthly Other: STI clinic Surveillance Regular sero-surveys in general	Sex partner HBsAg+ Blood or blood-product transfusion  Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other  Other  Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information  Liver transplant Hospital register  Other:  Electronic Case-based Aggregated Other:  Daily Weekly Monthly Biannually Other:  STI clinic surveillance Regular sero-surveys in general Other  Invasive healthcare procedure/dental treasfusion  Needle injury or other occupational exposure Tattooing/body piercing Other occupational exposure Tattooing/body piercing Other  Other  Biagnosis Genotype information  Other:  STI clinic surveillance Regular sero-surveys in general Other	Sex partner HBsAg+ Blood or blood-product transfusion  Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other  Other Hospitalisation ICD code diagnosis Genotype information  Liver transplant Hospital register Other: Electronic Case-based Aggregated Other:  Electronic Case-based Daily Monthly Biannually Other:  STI clinic surveillance Regular sero-surveys in general Other procedure/dental transfusion  Under procedure/dental treatment Other occupational exposure  Other Other  Liver transplant Hospital register Other: Electronic Case-based  Daily Monthly Other: STI clinic surveillance Regular sero-surveys in general Other	Sex partner HBsAg + Blood or blood-product transfusion  Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other  Other  Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information  Liver transplant Hospital register Other:  Case-based  Aggregated Other:  Daily Weekly Binnually Monthly Biannually Vearly Other:  Sex Bloo Invasive healthcare procedure/dental Invatives Nee exp Other Other Other Hospitalisation Length of hospitalisation ICD Other Hospitalisation Liver transplant Hospital register Other:  Electronic Case-based  Aggregated Other:  Sill clinic Surveillance Regular sero-surveys in general Other Regular sero-surveys in general	Sex partner HBsAg+ Blood or blood-product transfusion Invasive healthcare procedure/dental treatment Organ transplantation Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other Other Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information  Liver transplant Hospital register Other:  Electronic Paper Case-based Aggregated Daily Weekly Monthly Biannually Other:  STI clinic Supplementary surveillance Regular sero-surveys in general  Sex partner HCV Blood or blood-pr Blood or blood-pr Invasive healthca treatment Organ transfusion  Invasive healthca treatment Organ transplant Invasive healthca treatment Organ transplant Organ transplant Invasive healthca treatment Organ transplant Organ transplant Haemodialysis Needle injury or of exposure Tattooing/body pier of ex

		HBV	HCV
Screening	Pregnant women		-
programme	Military recruits		
	Injecting drug users		
	STI clinic patients		
	Multiple sex partners		
	Prisoners		
	Haemodialysis patients		
	Long-term healthcare facilities		
	Healthcare workers		
	Workers who are occupationally exposed to the virus		
	Blood and organ donors		
	Other groups**		
Vaccination programme	нву		
(only HBV)	Universal vaccination	Infants	
(,,	_	Adolescents	
	-	Both	
		Other	
		Neonates born to HBsAg mothers	
		Individuals at risk for HBV due to o	ccupation
		Haemodialysis patients	
		Chronic liver disease patients	
		STI clinic patients	
		Multiple sex partners	
		Injecting drug users	
		Household contacts of HBsAg+ pat	ients
		Contacts of infected persons	
		Other risk groups**	
	Other:	Persons with Down's syndrome All newborns with at least one pare Drug users, commercial sex worker	nt originating from an HBV-endemic country s, men who have sex with men
Catch-up programme			
 Vaccination	Infants 0 to 2 years		
coverage	Adolescents 10 to 14 years		
	Adults		
	Other groups		
	Not known		
	Coverage Infants born to one or two parents from an	endemic country: 96% in 2008 (three	ee HBV vaccinations or more)

# **Norway**

	нву	нсу			
Surveillance system					
Included in the national surveillance system					
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory			
Type of surveillance	Passive	Passive			
Surveillance system	Own system for HBV	Own system for HCV			
Comments					

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV		
Clinical	No case definition		No case definition		
Chronic	Detection of HBsAg and anti-HE and with no clinical picture of a		No case definition		
Other	Any person with clinical acute h HbsAg and one of the following HBV-RNA, anti-Hbc (IgG or IgM confirmed anti-Hbc seroconvers and one of the following labora RNA, anti-HbsAb (with no histo	Jaboratory criteria: HbeAg, 1); or any person with sion in the last 12 months itory criteria: HbsAg, HBV-		or both acute and chronic HCV: one of the following laboratory NA.	
Cases included in surveillance	Possible		Possible	with classification	
	Probable		Probable		
	Confirmed	with classification	Confirmed		
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic		Chronic		
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:		Other:		
Including duplicates	No		Yes		
Underreporting	Underreporting is possible, but no estimates exist for magnitude of underreporting.		Underreporting is possible magnitude of underreport	e, but no estimates exist for ting.	
Rate underreporting					

	HBV				HCV				
Source of data	Physicians	Lab	oratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Pati	ent ID		Basic data	Pati	Patient ID		
		Date	e of birth or a	ge		Dat	e of birth or a	ge	
		Gen	der			Ger	nder		
		Cou	ntry of birth			Cou	intry of birth		
		Plac	e of residence	2		Plac	ce of residence	:	
		Date	e of onset of t	he disease		Dat	e of onset of t	he disease	
		Date	e of diagnosis			Dat	e of diagnosis		
		Date	e of reporting,	notification		Dat	e of reporting/	notification	
		Date	e used for stat	tistics		Dat	e used for stat	istics	
		Cou	ntry where inf	fection was acquired		Cou	intry where inf	ection was acquired	
		Imn	nunisation sta	tus		Imr	nunisation stat	tus	
		Out	come			Out	come		
	Classification	Clini	ical symptoms	;	Classification	Clin	ical symptoms		
	information	Lab	oratory results	5	information	Lab	oratory results		
		Epic	demiological in	formation		Epic	demiological in	formation	
	Transmission route risk factors	Hon	nosexual cont	act	Transmission route risk factors	Hor	Homosexual contact		
	Toute fisk factors	Hete	erosexual con	tact	Toute risk ructors	Het	erosexual cont	act	
		Inje	cting drug use	2		Injecting drug use			
		Mother HBsAg+				Mother HCV positive			
		Close family member HBsAg+				Close family member HCV- positive			
		Sex partner HBsAg+				Sex partner HCV positive			
		Blood or blood-product transfusion				Bloc	od or blood-pro	oduct transfusion	
		Invasive healthcare procedure/dental treatment					asive healthcar	re procedure/dental	
		Organ transplantation				Organ transplantation			
		Haemodialysis				Haemodialysis			
		Needle injury or other occupational exposure		Nee		edle injury or o	ther occupational		
				ercina			exposure Tattooing/body piercing		
		Tattooing/body piercing Other			Other				
	Other		pitalisation		Other		Hospitalisation		
	Other		gth of hospita	lisation	Carci		gth of hospital	lisation	
		_	code diagnos				code diagnos		
		_	otype informa				notype informa		
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality	
Data IIIIkeu to	Hospital register		Liver carreer	Plortailty	Hospital register		Liver caricer	Piortality	
	Other:				Other:				
Format	Electronic		Paper		Electronic		Paper		
Туре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:	
Fraguency	Daily	Wee	akly	Riwookhy	Daily	14/-	eekly	Riwookhy	
Frequency				Biweekly		_		Biweekly	
	Monthly	Dian	inually	Yearly	Monthly	BIS	nnually	Yearly	
Other curveillance	Other: STI clinic	l ab	orator.	Cupplementan	Other:	1	horatory	Supplementar:	
Other surveillance systems	surveillance		oratory vork	Supplementary sentinel surveillance	STI clinic surveillance		boratory twork	Supplementary sentinel surveilland	
-		surveillance network  Regular sero-surveys in general population		Other	Regular sero-surv			Other	

Pieveillion		LIDV	Hev			
Caroonina	Prognant women	HBV	HCV			
Screening programme	Pregnant women Military recruits					
	·					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination programme	HBV					
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg + mothers	5			
		Individuals at risk for HBV due to od	ccupation			
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patients				
		Contacts of infected persons				
		Other risk groups**				
	Other:	Risk group vaccination: Men who ha Risk group vaccination: Neonates be medium or high prevalence, and all high prevalence. Risk group vaccination: commercial	orn to immigrants from countries with immigrants from countries with medium or			
Catch-up programme						
Vaccination coverage	Infants 0 to 2 years					
	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage:					

# **Poland**

	нву	нсу
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Own system for HBV	Own system for HCV
Comments		

**Objectives** 

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Case definition					
Definition	HBV		HCV		
Clinical	EU 2008 case definition		EU 2008 case definition		
Chronic	No case definition	Newly detected hepatitis C cases: probable antibodies detected by screening type not excluded by immunoblot. Confirmed antibodies confirmed by immunoblot other) or detection of viral genetic material in cl samples.			
Other				llected data are simultaned 2002 and 2008 case definitions.	
Cases included in surveillance	Possible		Possible		
	Probable	with classification	Probable	with classification	
	Confirmed		Confirmed		
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic		Chronic		
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:		Other:	Classification common symptomatic cases (including elevated I function tests) can la differentiated from asymptomatic cases	
Including duplicates	Unlikely, but possible duplicate level.	removal at the regional	Unlikely, but possible dup level.	licate removal at the region	
I la damana atina	Hadamaaahina in maailda da t	no nationales aviat for	Underwensking is	huk na patimatan a int for	
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	magnitude of underreport	, but no estimates exist for ing.	
Rate underreporting					

	HBV			HCV				
Source of data	Physicians	Laboratory	Hospital	Physicians	Laboratory	Hospital		
	Other:			Other:				
ollected data	Basic data	Patient ID		Basic data	Patient ID			
		Date of birth or a	age		Date of birth or	age		
		Gender			Gender			
		Country of birth			Country of birth	1		
		Place of residence	ce		Place of residen	nce		
		Date of onset of	the disease		Date of onset o	f the disease		
		Date of diagnosis			Date of diagnos	sis		
		Date of reporting	g/notification		Date of reporting	ng/notification		
		Date used for sta			Date used for st			
		Country where in	nfection was acquired		Country where	infection was acquired		
		Immunisation st	atus		Immunisation s	tatus		
		Outcome			Outcome			
	Classification	Clinical symptom	ns	Classification	Clinical symptor	ms		
	information	Laboratory resul	ts	information	Laboratory resu	ılts		
		Epidemiological i	information		Epidemiological	information		
	Transmission	Homosexual con	tact	Transmission	Homosexual co	ntact		
	route risk factors	Heterosexual co	ntact	route risk factors	Heterosexual co	ontact		
		Injecting drug us			Injecting drug u			
		Mother HBsAg+			Mother HCV pos			
		Close family mer	mber HBsAg+		-	Close family member HCV- positive		
		Sex partner HBs.	Ag+		Sex partner HCV positive			
		Blood or blood-p	roduct transfusion		Blood or blood-product transfusion			
		Invasive healthcorrectment	are procedure/dental		Invasive healthcare procedure/denta treatment			
		Organ transplant	tation		Organ transplantation			
		Haemodialysis			Haemodialysis			
		Needle injury or exposure	other occupational		Needle injury or other occupational exposure			
		Tattooing/body	oiercing		Tattooing/body piercing			
		Other			Other			
	Other	Hospitalisation		Other	Hospitalisation			
		Length of hospit	alisation		Length of hospitalisation			
		ICD code diagno	sis		ICD code diagnosis			
		Genotype information			Genotype information			
ata linked to	Liver transplant	Liver cance	r Mortality	Liver transplant	Liver cance	er Mortality		
	Hospital register			Hospital register		,		
	Other:			Other:				
ormat	Electronic	Paper		Electronic	Paper			
уре	Case-based	Aggregated	Other:	Case-based	Aggregate	d Other:		
	D-'I		PiIII.	D-11.	MLL	Division all li		
requency	Daily	Weekly	Biweekly	Daily	Weekly	Biweekly		
	Monthly	Biannually	Yearly	Monthly Other:	Biannually	Yearly ta are provided bi-		
	Oulei.	Other:  Aggregated data are provided bi-week for hepatitis B (number of cases, acute and chronic) and yearly, with some demographic break-up. Individual leve data, paper based, for acute hepatitis lare forwarded quarterly.			weekly for hep according to 20 definitions) and demographic b data, paper ba	patitis C (numbers 2002 and 2008 EU cas d yearly, with some preak-up. Individual le sed, for hepatitis C 2002 EU case definitio		
ther surveillance	STI clinic surveillance	Laboratory network	Supplementary sentinel surveillance	STI clinic surveillance	Laboratory network	Supplementary sentinel surveillan		
•	Regular sero-surv		Other	Regular sero-surv		Other		
	population			μομαιαιίοι ι				

Prevention							
		HBV					
Screening	Pregnant women						
programme	Military recruits						
	Injecting drug users						
	STI clinic patients						
	Multiple sex partners						
	Prisoners		Only if tattooed or injecting drug user				
	Haemodialysis patients						
	Long-term healthcare facilities						
	Healthcare workers						
	Workers who are occupationally exposed to the virus						
	Blood and organ donors						
	Other groups**						
Vaccination programme	HBV						
(only HBV)	Universal vaccination	Infants					
		Adolescents					
		Both					
		Other					
	Risk groups vaccination	Neonates born to HBsAg + mo	others				
		Individuals at risk for HBV due to occupation					
		Haemodialysis patients					
		Chronic liver disease patients					
		STI clinic patients					
		Multiple sex partners					
		Injecting drug users					
		Household contacts of HBsAg-	+ patients				
		Contacts of infected persons					
		Other risk groups**					
	Other:	HIV-infected persons; residents of long-term stationary facilities, childcare centres; persons scheduled for surgery for cardiopulmonary bypass					
Catch-up programme							
Vaccination	Infants 0 to 2 years						
coverage	Adolescents 10 to 14 years						
	Adults						
	Other groups						
	Not known						
	Coverage (two or three doses):	1999: 100					
	Year of birth: coverage in percent 2008: 90.2	1998: 100 1997: 100					
	2007: 99.8	1996: 99.1					
	2006: 99.9 2005: 99.9	1995: 92.4 1994: 98.7					
	2005: 99.9 2004: 100	1994: 98.7					
	2003: 100	1992: 99.3					
	2002: 100	1991: 99.5					
	2001: 100	1990: 99.5					

# **Portugal**

	нву	HCV
Surveillance system		
Included in the national surveillance system	yes	yes
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Included in the national mandatory surveillance system for communicable diseases.	Included in the national mandatory surveillance system for communicable diseases.
Comments		

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV		
Clinical	Acute disease, with insidious or malaise, anorexia, nausea, vom serum transaminase levels, with	iting) and elevation of	Acute disease with insidious clinical symptoms (fever, malaise, anorexia, nausea, astenia) and elevation of serum transaminase levels, with or without icterus.		
Chronic	No case definition		No case definition		
Other	Probable case: person with dise case definition for clinical HBV, a laboratory-confirmed case (co to 180 days before onset of syn Confirmed case: case compatib clinical HBV and confirmed by la	epidemiologically related to chabitant/sexual partner) 30 nptoms. le with case definition for	Probable case: case compa and epidemiologically linked laboratory confirmation (du Confirmed case: case comp description and laboratory of	ring the incubation period).  patible with the clinical	
Cases included in surveillance	Possible	with classification	Possible		
	Probable		Probable	with classification	
	Confirmed		Confirmed		
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic	with classification	Chronic	With classification	
	Asymptomatic		Asymptomatic		
	Suspected		Suspected		
	Other:	Classification not necessary; only acute cases included.	Other:	Classification not necessary; only acute cases included.	
Including duplicates	No		No		
Underreporting	Underreporting is possible, but magnitude of underreporting.	no estimates exist for	Underreporting is possible, magnitude of underreporting		
Rate underreporting					

	HBV				HCV				
Source of data	Physicians	Labora	atory	Hospital	Physicians	Laboratory		Hospital	
	Other:				Other:				
Collected data	Basic data	Patien	t ID		Basic data	Patient ID			
		Date o	of birth or ag	e		Date of birth	or ag	e	
		Gende	er			Gender			
		Count	ry of birth			Country of b	irth		
			of residence			Place of resid			
		Date o	of onset of th	e disease		Date of onse	t of th	ne disease	
		Date o	of diagnosis			Date of diag	nosis		
		Date o	of reporting/r	notification		Date of repo	rting/i	notification	
		Date u	used for stati	stics		Date used for	r stati	stics	
		Count	ry where infe	ection was acquired		Country whe	re infe	ection was acquired	
		Immu	nisation stati	JS		Immunisatio	n stat	us	
		Outco	me			Outcome			
	Classification	Clinica	l symptoms		Classification	Clinical symp	otoms		
	information	Labora	atory results		information	Laboratory r	esults		
		Epider	miological inf	ormation		Epidemiological information			
	Transmission	Homo	sexual conta	ct	Transmission	Homosexual	conta	ct	
	route risk factors	Hetero	osexual conta	act	route risk factors	Heterosexua	l cont	act	
		Injecti	ing drug use			Injecting dru	ıg use		
		Mothe	r HBsAg+			Mother HCV	positi	<i>r</i> e	
		Close family member HBsAg+				Close family member HCV- positive			
		Sex partner HBsAg+ Blood or blood-product transfusion				Sex partner HCV positive			
						Blood or blood-product transfusion			
		Invasive healthcare procedure/dental treatment		Invasive healthcare procedure/dental treatment					
		Organ	transplantat	tion		Organ transplantation			
		Haem	odialysis			Haemodialysis			
		Needle		her occupational		Needle injury or other occupational exposure			
			oing/body pie	ercina		Tattooing/body piercing			
		Other	ning/body pic	reing		Other	ay pic	or cirrig	
	Other		alisation		Other	Hospitalisation			
	04.16.	<u> </u>	n of hospitali	sation		Length of hospitalisation			
			ode diagnosis			_	ICD code diagnosis		
		Genot	ype informat	ion		Genotype inf	_		
	The form is used f system, so data al results, and epide free-text response	bout clir miologia	nical symptor cal information	ms, laboratory on may be given as	Laboratory results variables with epi				
Data linked to	Liver transplant	L	iver cancer	Mortality	Liver transplant	Liver ca	ncer	Mortality	
	Hospital register				Hospital register				
	Other:				Other:				
Format	Electronic	P	aper		Electronic	Paper			
Гуре	Case-based	Δ	Aggregated	Other:	Case-based	Aggreg	ated	Other:	
Frequency	Daily	Weekl	v	Biweekly	Daily	Weekly		Biweekly	
3:	Monthly	Biannu		Yearly	Monthly	Biannually		Yearly	
	Other:		,		Other:	Quarterly			
Other surveillance systems	STI clinic surveillance Regular sero-surve	Labora netwo eys in g	rk	Supplementary sentinel surveillance Other	STI clinic surveillance Regular sero-surv	Laboratory network eys in general		Supplementary sentinel surveillance Other	
	population				population				

Fievention			1		
		HBV	HCV		
Screening programme	Pregnant women				
programme	Military recruits				
	Injecting drug users				
	STI clinic patients				
	Multiple sex partners				
	Prisoners				
	Haemodialysis patients				
	Long-term healthcare facilities				
	Healthcare workers				
	Workers who are occupationally exposed to the virus				
	Blood and organ donors				
	Other groups**				
Vaccination programme	HBV				
(only HBV)	Universal vaccination	Infants			
		Adolescents			
		Both			
		Other			
	Risk groups vaccination	Neonates born to HBsAg mothers			
		Individuals at risk for HBV due to occupation			
		Haemodialysis patients			
		Chronic liver disease patients			
		STI clinic patients			
		Multiple sex partners			
		Injecting drug users			
		Household contacts of HBsAg+ patie	ents		
		Contacts of infected persons			
		Other risk groups**			
	Other:				
Catch-up programme					
Vaccination	Infants 0 to 2 years				
coverage	Adolescents 10 to 14 years				
	Adults				
	Other groups				
	Not known				
	Coverage: 97% fully vaccinated children at 12 months of age;				
	92% vaccination coverage at 14 years of age.				

## **Romania**

	HBV	HCV
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	HBV reporting is included in syndromic surveillance of viral hepatitis.	HCV reporting is included in syndromic surveillance of viral hepatitis.
Comments		

## **Objectives**

	нву	HCV
Monitoring trends		
Detect outbreaks	no	no
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	To monitor the impact of the universal vaccination programme.	no

Definition	HBV		HCV	
Clinical	Clinical criteria: acute disease jaundice or increased aminot Lab criteria for confirmed cas antigens to the core antigen ( the nucleic acid in serum.	ransferase levels. es: presence of specific	Acute disease with discret AND hepatitis C virus-specific a OR detection of hepatitis C vir	ntibody response
Chronic	No case definition		No case definition	
Other				
Cases included in surveillance	Possible	with classification	Possible	with classification
	Probable		Probable	
	Confirmed		Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:	Classification not necessary; only acute cases included.	Other:	Based on anti-HCV antibodies; we cannot differentiate.
Including duplicates	No		Yes	
Underreporting	Underreporting is possible, but magnitude of underreporting.		Underreporting is possible magnitude of underreport	, but no estimates exist for ing.
Rate underreporting				

	HBV				HCV			
Source of data	Physicians	Labo	oratory	Hospital	Physicians	Labo	oratory	Hospital
	Other:				Other:			
Collected data	Basic data	Patie	ent ID		Basic data	Patient ID		
		Date of birth or age				Date	e of birth or ag	je
		Gend	der			Gen	der	
		Cour	ntry of birth			Cou	ntry of birth	
		Place	e of residence	:		Plac	e of residence	
		Date	of onset of t	he disease		Date	e of onset of t	ne disease
		Date	of diagnosis			Date	e of diagnosis	
		Date	of reporting/	'notification		Date	e of reporting/	notification
		Date	used for stat	istics		Date	e used for stat	istics
		Cour	ntry where inf	ection was acquired		Cou	ntry where inf	ection was acquired
		Imm	unisation stat	tus		Imn	nunisation stat	us
		Outo	come			Out	come	
	Classification	Clinic	cal symptoms		Classification	Clini	cal symptoms	
	information	Labo	ratory results	;	information	Labo	oratory results	
		Epide	emiological in	formation		Epid	Iemiological in	formation
	Transmission	Hom	osexual conta	act	Transmission	Hon	nosexual conta	nct
	route risk factors	Heterosexual contact			route risk factors	Heterosexual contact		
		Injecting drug use				Injecting drug use		
		Mother HBsAg+				Mother HCV positive		
		Close family member HBsAg+				Close family member HCV- positive		
		Sex partner HBsAg+				Sex partner HCV positive		
		Blood or blood-product transfusion				Blood or blood-product transfusion		
		Invasive healthcare procedure/dental treatment				Invasive healthcare procedure/dental treatment		
		Organ transplantation  Haemodialysis  Needle injury or other occupational exposure  Tattooing/body piercing				Organ transplantation		
						Haemodialysis		
						Needle injury or other occupational exposure Tattooing/body piercing		
		Othe	er			Other		
	Other	Hosp	oitalisation		Other	Hospitalisation		
		Leng	th of hospital	isation		Length of hospitalisation		
		ICD code diagnosis			ICD code diagnosis Genotype information			
	Ger		Genotype information					
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality
	Hospital register				Hospital register			
	Other:				Other:			
Format	Electronic		Paper		Electronic		Paper	
Туре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:
			55 5: 11	<u> </u>				<u> </u>
Frequency	Daily	Weel	klv	Biweekly	Daily	We	ekly	Biweekly
1,	Monthly		nually	Yearly	Monthly		nnually	Yearly
	Other:		/	1	Other:	2.0	,	
Other surveillance systems	STI clinic surveillance	Labo	ratory	Supplementary sentinel surveillance	STI clinic surveillance		oratory work	Supplementary sentinel surveillance
ayatems	Regular sero-surv			Other	Regular sero-surv			Other
	population	-, - m	5010101	5.10	population	-,5 111	5010101	03101

		HBV	HCV			
Screening	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination programme	HBV	'	'			
(only HBV)	Universal vaccination	Infants				
	-	Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg + mothers				
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ pat	ients			
		Contacts of infected persons				
		Other risk groups**				
	Other:					
Catch-up programme						
Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage: Infants: 98%; Adolescents: 97%					

# Slovakia

	HBV	HCV
	пви	I ICV
Surveillance system	l .	
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Epidemiologists investigate each reported suspect case or each laboratory-positive result directly with patients and their contacts.	Any suspect case of viral hepatitis is investigated by epidemiologists.
Surveillance system	Own system for HBV	Own system for HCV
Comments		

## **Objectives**

	HBV		HCV
Monitoring trends			
Detect outbreaks			
Monitoring changes in disease distribution			
Evaluation and planning of control measures			
Improve knowledge of epidemiology			
Other	To evaluate existing preventive measures.	Γ	no

Definition	HBV		HCV	
Clinical	Any person with a discrete ons fatigue, abdominal pain, loss of nausea and vomiting) AND at least one of the following: fe serum aminotransferase levels,	f appetite, intermittent ever; jaundice; elevated	Symptomatic case which	is laboratory confirmed.
Chronic				
Other				
Cases included in surveillance	Possible		Possible	with classification
	Probable	with classification	Probable	
	Confirmed		Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic	With Classification	Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	No		No	
Underreporting	Underreporting not possible.		Underreporting not possi	ble.
Rate underreporting				

	HBV				HCV					
Source of data	Physicians	Labo	ratory	Hospital	Physicians	Lab	oratory	Hospital		
	Other:				Other:					
Collected data	Basic data	Patie	nt ID		Basic data	Pati	Patient ID			
		Date	of birth or ag	ge		Dat	e of birth or ag	je		
		Geno	der			Ger	nder			
		Cour	ntry of birth			Cou	intry of birth			
		Place	e of residence	!		Plac	ce of residence			
		Date	of onset of the	he disease		Dat	e of onset of the	he disease		
		Date	of diagnosis			Dat	e of diagnosis			
		Date	of reporting/	notification		Dat	e of reporting/	notification		
		Date	used for stat	istics		Dat	e used for stat	istics		
		Cour	ntry where inf	ection was acquired		Cou	intry where inf	ection was acquire		
		Imm	unisation stat	tus		Imr	nunisation stat	rus		
		Outo					come			
	Classification		cal symptoms		Classification		ical symptoms			
	information		ratory results		information		oratory results			
			emiological in				demiological in			
	Transmission		osexual conta		Transmission	_	nosexual conta			
	route risk factors				route risk factors	;				
			rosexual cont			Heterosexual contact				
		Injecting drug use  Mother HBsAg+  Close family member HBsAg+					Injecting drug use			
						Mother HCV positive  Close family member HCV- positive				
		Close family member HBsAg+				· · · · · · · · · · · · · · · · · · ·				
		Sex partner HBsAg+				Sex partner HCV positive				
		Blood or blood-product transfusion  Invasive healthcare procedure/dental treatment  Organ transplantation  Haemodialysis  Needle injury or other occupational exposure  Tattooing/body piercing  Other				Bloc	od or blood-pro	oduct transfusion		
							Invasive healthcare procedure/denta treatment			
						Organ transplantation				
						Haemodialysis				
						Nee	Needle injury or other occupational exposure			
						Tattooing/body piercing Other				
	Other	her Hospitalisation				Hospitalisation				
		Leng	th of hospital	isation		Length of hospitalisation ICD code diagnosis				
		ICD (	code diagnosi	is						
		tion		Ger	otype informa	tion				
ICD- 10 codes for B16: acute HBV B18.1: chronic HI Z22.5: carrier of			, chronic, and	ICD-10 B17.1: acute HV B18.2: chronic H	_					
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality		
	Hospital register				Hospital register					
	Other:				Other:					
ormat	Electronic		Paper		Electronic		Paper			
уре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:		
<i>7</i> ₽~	Cusc Basca		, iggregated	Calci.	cuse baseu		riggregated	ouici.		
requency	Daily	Weel	dy	Biweekly	Daily	We	ekly	Biweekly		
	Monthly		nually	Yearly	Monthly		innually	Yearly		
	Other:		rmined by ne		Other:		termined by n	· · · · · · · · · · · · · · · · · · ·		
Other surveillance	STI clinic surveillance	Labo	ratory	Supplementary sentinel surveillance	STI clinic surveillance	Lal	ooratory twork	Supplementary sentinel surveillar		
systems		network sentinel surveillance veys in general Other			Regular sero-surveys in general population Other					

		HBV	HCV				
Screening	Pregnant women						
programme	Military recruits						
	Injecting drug users						
	STI clinic patients						
	Multiple sex partners						
	Prisoners						
	Haemodialysis patients						
	Long-term healthcare facilities						
	Healthcare workers						
	Workers who are occupationally exposed to the virus						
	Blood and organ donors						
	Other groups**						
Vaccination programme	HBV						
(only HBV)	Universal vaccination	Infants					
		Adolescents					
		Both					
		Other					
	Risk groups vaccination	Neonates born to HBsAg + mothers					
		Individuals at risk for HBV due to occupation					
		Haemodialysis patients					
		Chronic liver disease patients					
		STI clinic patients					
		Multiple sex partners					
		Injecting drug users					
		Household contacts of HBsAg+ patie	ents				
		Contacts of infected persons					
		Other risk groups**					
	Other:	Risk group vaccination: patients wit hepatitis C)	h other type of viral hepatitis (hepatitis A,				
Catch-up programme							
Vaccination	Infants 0 to 2 years						
coverage	Adolescents 10 to 14 years						
	Adults						
	Other groups						
	Not known						
	Coverage: 0-2 years: 98.5% 10-14 years: 98% Health professionals: 88%						

# **Slovenia**

	нву	нсу
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Own system for HBV	Own system for HCV
Comments		

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Case definition				
Definition	HBV		HCV	
Clinical	EU 2008 case definition Current definition: A case that is picture compatible with acute h any person with a discrete onse abdominal pain, loss of appetite vomiting)	epatitis; et of symptoms (fatigue,	EU 2008 case definition Clinical picture compatible with	n hepatitis;.
Chronic	No case definition		EU 2008 case definition	
Other				
Cases included in surveillance	Possible	Marila ala asifi anti-	Possible	With classification
	Probable	With classification	Probable	
	Confirmed		Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	With classification	Acute	
	Chronic		Chronic	With classification
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:	Almost all reported cases are laboratory confirmed. Cases on notification forms are classified as acute and chronic ones; asymptomatic cases can be classified according to data from questionnaires. Notification system will change in the future.	Other:	Acute and chronic forms can be differentiated from notification forms, other data are gathered from questionnaires.
Including duplicates	No		No	
Underreporting	Underreporting is possible, but no estimates exist for magnitude of underreporting.		Underreporting is possible, but magnitude of underreporting.	t no estimates exist for
Rate underreporting				

	HBV				HCV				
Source of data	Physicians	Labo	oratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Patie	ent ID		Basic data	Pati	ent ID		
		Date	e of birth or ago	e		Dat	e of birth or a	ge	
		Gender				Ger	nder		
		Cou	ntry of birth			Cou	intry of birth		
		Plac	e of residence			Plac	e of residence	2	
		Date	e of onset of th	e disease		Dat	e of onset of t	he disease	
		Date	e of diagnosis			Dat	e of diagnosis		
		Date	e of reporting/r	notification		Dat	e of reporting/	notification	
		Date	e used for statis	stics		Dat	e used for stat	tistics	
				ection was acquired			•	fection was acquired	
			nunisation statu	JS			nunisation stat	tus	
	GI 'G ':		come		G :C ::		come		
	Classification information		cal symptoms		Classification information		ical symptoms		
			oratory results				oratory results		
			lemiological inf				demiological in		
	Transmission route risk factors	Hon	nosexual conta	ct	Transmission route risk factor		nosexual conta	act	
	Toute risk ractors	Hete	erosexual conta	act	Toute risk ractor		erosexual cont	tact	
		Inje	cting drug use			Inje	ecting drug use	9	
		Mot	her HBsAg+			Mot	her HCV positi	ive	
		Clos	e family memb	er HBsAg+		Close family member HCV- positive			
		Sex	partner HBsAg	+	1	Sex	Sex partner HCV positive		
		Bloc	d or blood-pro	duct transfusion		Bloc	od or blood-pro	oduct transfusion	
						·			
		Invasive healthcare procedure/dental treatment				trea	Invasive healthcare procedure/dental treatment		
		Organ transplantation				_	an transplanta	ation	
		Haemodialysis  Needle injury or other occupational exposure		Haemodialysis					
			her occupational			edle injury or o osure	ther occupational		
		Tattooing/body piercing Other					Tattooing/body piercing Other		
	Other		pitalisation		Other	Other			
	Other		gth of hospitalis	sation	Outer		Hospitalisation  Length of hospitalisation		
			code diagnosis				ICD code diagnosis		
		_	otype informat				Genotype information		
	Above information		,,	otification form; other	Above information is available from notification form;				
	information (incluquestionnaires are			ts) are available if	information (inc questionnaires	luding l are filled	aboratory resudin.	ults) are available if	
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality	
	Hospital register				Hospital registe	r			
	Other:		Individual cas	king is not possible. es can be found in s through personal	Other:				
Format	Electronic		Paper		Electronic		Paper		
Туре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:	
Frequency	Daily	Wee	-	Biweekly	Daily		eekly	Biweekly	
	Monthly		•	Yearly	Monthly		innually	Yearly	
	Other:		ase of clusters yse data more	or outbreaks we	Other:		case of outbre alysed more fr		
Other surveillance	STI clinic	Labo	oratory	Supplementary sentinel surveillance	STI clinic	Lal	ooratory twork	Supplementary sentinel surveillance	
systems		urveillance network			surveillance  Regular sero-surve				
•	Regular sero-surv	evs in	general	Other	Regular sero-su	I VEVS II	i denerai	Other	

	HBV	HCV			
int women	TIDY	nev			
r recruits					
ng drug users					
nic patients					
e sex partners					
ers					
odialysis patients					
erm healthcare facilities					
care workers					
rs who are occupationally exposed to the virus					
and organ donors					
groups**					
		ings are conducted for risk groups. The ted ofr HBV according to risk assessments andards of peacekeeping missions.			
sal vaccination	Infants				
	Adolescents				
	Both				
	Other				
oups vaccination	Neonates born to HBsAg + mothers	;			
	Individuals at risk for HBV due to or	ccupation			
	Haemodialysis patients				
	Chronic liver disease patients				
	STI clinic patients				
	Multiple sex partners				
	Injecting drug users				
		and a			
	Household contacts of HBsAg+ pati	ens			
	Contacts of infected persons  Other risk groups				
	- 1				
aking askels up up a second for the second s	Universal vaccination programme fo	or children before they enter primary school.			
ation catch-up was offered for young people					
s 0 to 2 years					
cents 10 to 14 years					
groups					
	17 07 20/ 1 2227				
ge: Among compulsory vaccinated children ag	ed / years: 97.3% in 2007				
own	g compulsory vaccinated children ag	g compulsory vaccinated children aged 7 years: 97.3% in 2007			

# **Spain**

	HBV	HCV		
Surveillance system				
Included in the national surveillance system				
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory		
Type of surveillance	Passive	Passive		
Surveillance system	Several surveillance systems for HBV, one of which is the major and most comprehensive one.	Several surveillance systems for HCV, one of which is the major and most comprehensive one.		
Comments		HCV is included in the syndromic surveillance of viral hepatitis. In addition, data on HCV are collected through a voluntary reporting system based on reports sent by the microbiology laboratories in hospitals		

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		no
Evaluation and planning of control measures		no
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV		
Clinical	Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting) AND at least one of the following three: fever; jaundice; elevated serum aminotransferase levels.		An acute illness with a discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g. anorexia, abdominal discomfort, nausea, vomiting and jaundice) and increase in transaminase (ALT, AST).		
Chronic	No case definitions		No case definitions		
Other					
Cases included in surveillance	Possible		Possible		
	Probable	with classification	Probable		
	Confirmed		Confirmed	with classification	
	Unknown classification		Unknown classification		
Type of cases	Acute	with classification	Acute	with classification	
	Chronic	]	Chronic		
	Asymptomatic	-	Asymptomatic		
	Suspected		Suspected		
	Other:		Other:		
Including duplicates	Yes	·	Yes		
Underreporting	Underreporting is possible, but no estimates exist for magnitude of underreporting.		Underreporting is possible magnitude of underrepor	e, but no estimates exist for ting.	
Rate underreporting					

	HBV				HCV				
Source of data	Physicians	Labo	oratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Patie	ent ID		Basic data	Pati	ent ID		
		Date of birth or age Gender				Date	e of birth or ag	je	
						Gen	ıder		
			ntry of birth				ntry of birth		
			e of residence	<u> </u>			e of residence		
			e of onset of t				e of onset of t		
			e of diagnosis			Date	e of diagnosis		
		Date	e of reporting/	notification			e of reporting/	notification	
			e used for stat				e used for stat		
				ection was acquired				ection was acquired	
		_	nunisation stat	· · · · · · · · · · · · · · · · · · ·			nunisation stat	· · · · · · · · · · · · · · · · · · ·	
			come				come		
	Classification		ical symptoms		Classification		ical symptoms		
	information	_	oratory results		information	-	oratory results		
		_	lemiological in			_			
	T	ļ.,					Epidemiological information		
	Transmission route risk factors	Hon	nosexual conta	act	Transmission route risk factors	Homosexual contact			
		Heterosexual contact				Heterosexual contact			
		Injecting drug use				Injecting drug use			
		Mot	her HBsAg+			Mother HCV positive			
		Close family member HBsAg+			-	Close family member HCV- positive			
		Sex partner HBsAg+				Sex	partner HCV p	oositive	
		Blood or blood-product transfusion				Bloc	od or blood-pro	oduct transfusion	
		Invasive healthcare procedure/dental treatment					asive healthcar tment	re procedure/dental	
		Organ transplantation				Org	an transplanta	tion	
		Hae	modialysis			Haemodialysis			
		Needle injury or other occupational exposure					edle injury or o	ther occupational	
		Tattooing/body piercing Other Hospitalisation				-	ooing/body pi	ercina	
						Oth		<u>J</u>	
	Other				Other	Hos	pitalisation		
		Len	gth of hospital	lisation		Len	Length of hospitalisation		
		_	ICD code diagnosis			ICD code diagnosis			
		Genotype information				Genotype information			
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality	
	Hospital register		2.70. 00.100.	i i i o reality	Hospital register		2.70. 00.100.	. To cancy	
	Other:				Other:				
Format	Electronic		Paper		Electronic		Paper		
Туре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:	
Frequency	Daily	Wee	ekly	Biweekly	Daily	We	eekly	Biweekly	
<u> </u>	Monthly		nually	Yearly	Monthly		nnually	Yearly	
	Other:		•		Other:		•		
Other surveillance	STI clinic	Labo	oratory	Supplementary	STI clinic	Lat	ooratory	Supplementary	
systems	surveillance	netv	vork	sentinel surveillance	surveillance	net	twork	sentinel surveillance	
.,			Other	Regular sero-surv	eys in	general	Other		

		HBV	HCV			
Screening	Pregnant women					
programme	Military recruits					
	Injecting drug users					
	STI clinic patients					
	Multiple sex partners					
	Prisoners					
	Haemodialysis patients					
	Long-term healthcare facilities					
	Healthcare workers					
	Workers who are occupationally exposed to the virus					
	Blood and organ donors					
	Other groups**					
Vaccination programme	HBV					
(only HBV)	Universal vaccination	Infants				
		Adolescents				
		Both				
		Other				
	Risk groups vaccination	Neonates born to HBsAg + mothers	:			
		Individuals at risk for HBV due to occupation				
		Haemodialysis patients				
		Chronic liver disease patients				
		STI clinic patients				
		Multiple sex partners				
		Injecting drug users				
		Household contacts of HBsAg+ patie	ents			
		Contacts of infected persons				
		Other risk groups**				
	Other:					
Catch-up programme						
Vaccination	Infants 0 to 2 years					
coverage	Adolescents 10 to 14 years					
	Adults					
	Other groups					
	Not known					
	Coverage: Infants: 98% (2004) Adolescents: 78% (20	004)				

# **Sweden**

	нву	нсу
Surveillance system		
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Mandatory	Mandatory
Type of surveillance	Passive	Passive
Surveillance system	Own system for HBV	Own system for HCV
Comments	SmiNet	SmiNet

## **Objectives**

	HBV	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV	
Clinical	No case definition		No case definition	
Chronic	HBV chronic infection: HBsAg p AND anti-HBc IgG positive AND not detectable or low levels of a		HCV RNA positive and HCV	antibody positive
Other	HBV acute infection: HBsAg + OR HBV-DNA + AND anti-HBcIgM + OR HBV-DNA + HBsAg AND not detectable anti-	with or without detectable -HBc.	HCV acute infection: seroconversion to anti-H months between the samples.	
Cases included in surveillance	Possible		Possible	with classification
	Probable		Probable	
	Confirmed	with classification	Confirmed	
	Unknown classification		Unknown classification	
Type of cases	Acute	with classification	Acute	with classification
	Chronic		Chronic	
	Asymptomatic		Asymptomatic	
	Suspected		Suspected	
	Other:		Other:	
Including duplicates	No		No	
Underreporting	Underreporting is possible, but no estimates exist for magnitude of underreporting.		Underreporting is possible, magnitude of underreporti	but no estimates exist for ng.
Rate underreporting				

	HBV			_	HCV				
Source of data	Physicians	Labo	oratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Patient ID Date of birth or age Gender Country of birth			Basic data	Pat	ient ID		
						Dat	e of birth or	age	
						Ger	nder		
						Cou	Country of birth		
		Plac	e of residence	e		Pla	Place of residence		
		Date of onset of the disease				Dat	Date of onset of the disease		
		Date	e of diagnosis			Dat	Date of diagnosis		
		Date	e of reporting	/notification		Dat	Date of reporting/notification		
		Date	e used for sta	tistics		Dat	e used for st	atistics	
			•	fection was acquired				infection was acquired	
			nunisation sta	tus	-		munisation st	tatus	
			come				come		
	Classification information		cal symptoms		Classification information	Clir	ical symptor	ns	
	Illioiniduoii		oratory results		morniadon		oratory resu		
		Epid	lemiological ir	nformation		Epi	demiological	information	
	Transmission route risk factors	Hom	nosexual cont	act	Transmission route risk factors		Homosexual contact		
	Toute fisk factors	Hete	erosexual con	tact	Toute risk ractors		Heterosexual contact		
		Inje	cting drug us	e		Inje	Injecting drug use		
		Mot	her HBsAg+			Mo	Mother HCV positive		
		Close family member HBsAg+				Clo	Close family member HCV- positive		
		Sex partner HBsAg+			-	Sex	Sex partner HCV positive		
		Blood or blood-product transfusion			Other	Blo	Blood or blood-product transfusion		
		Invasive healthcare procedure/dental treatment					Invasive healthcare procedure/dental treatment		
		Organ transplantation				Org	Organ transplantation		
		Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other Hospitalisation Length of hospitalisation ICD code diagnosis Genotype information				Hae	Haemodialysis		
							Needle injury or other occupational exposure		
						-	Tattooing/body piercing Other Hospitalisation		
						Oth			
	Other								
							Length of hospitalisation		
							ICD code diagnosis		
						Ger	Genotype information		
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cance	er Mortality	
	Hospital register				Hospital register				
Other:		It is not possible to link HBV cases to other registers except to mortality in the ordinary surveillance system. Linking can be done in special studies.			Other:	Except for mortality, HCV of cannot be linked to other in from the ordinary surveilla system. Linking can be do special studies		linked to other registe rdinary surveillance nking can be done in	
ormat	Electronic		Paper		Electronic		Paper		
Гуре	Case-based		Aggre- gated	Other:	Case-based		Aggre- gated	Other:	
iraquancy	Daily	Wee		Riwookhy	Daily	10/	eekly	Biweekly	
requency				Biweekly	Daily Monthly		annually	Yearly	
	Monthly Other:	Biannually		Yearly	Other:	Bla	armudlly	теану	
Othor cum oillenes		Laba	rator.	Cupplomonton		1.0	horator.	Cupplomonton	
Other surveillance Systems	STI clinic surveillance	Laboratory network		Supplementary sentinel surveillance	STI clinic surveillance	ne	boratory twork	Supplementary sentinel surveilland	
	Regular sero-surveys in general population			Other	Regular sero-sur population	veys ir	n general	Other	

Prevention	<u> </u>		lum.						
	 	HBV	HCV						
Screening programme	Pregnant women								
programme	Military recruits								
	Injecting drug users								
	STI clinic patients								
	Multiple sex partners								
	Prisoners								
	Haemodialysis patients								
	Long-term healthcare facilities								
	Healthcare workers								
	Workers who are occupationally exposed to the virus								
	Blood and organ donors								
	Other groups**								
Vaccination programme	HBV								
(only HBV)	Universal vaccination	Infants							
		Adolescents							
		Both							
		Other							
	Risk groups vaccination	Neonates born to HBsAg + mothers							
		Individuals at risk for HBV due to occupation							
		Haemodialysis patients							
		Chronic liver disease patients							
		STI clinic patients							
		Multiple sex partners							
		Injecting drug users							
		Household contacts of HBsAg+ patients							
		Contacts of infected persons							
		Other risk groups: individuals at risk for HBV due to occupation							
	Other:								
Catch-up									
programme									
Vaccination coverage	Infants 0 to 2 years								
	Adolescents 10 to 14 years								
	Adults								
	Other groups								
	Not known								
	Coverage:								

# **United Kingdom**

	нву	HCV
Surveillance system	n	
Included in the national surveillance system		
Legal basis (mandatory/ voluntary)	Voluntary	Voluntary
Type of surveillance	It includes information from multiple sources, primarily the laboratory carrying out the testing to detect changing patterns in hepatitis B. Blood specimens are tested to determine acute hepatitis B infection.	It includes information from multiple sources, including the microbiology laboratory to detect changing patterns of hepatitis C infection. Blood specimens are tested to determine hepatitis C exposure.
Surveillance system	Several surveillance systems for HBV, one of which is the major and most comprehensive one.	Several surveillance systems for HCV, one of which is the major and most comprehensive one.
Comments		

## **Objectives**

	нву	HCV
Monitoring trends		
Detect outbreaks		
Monitoring changes in disease distribution		
Evaluation and planning of control measures		
Improve knowledge of epidemiology		
Other	no	no

Definition	HBV		HCV			
Clinical	HBsAg + and anti-HBc IgM + a tests with a pattern consistent v		Case definition for surveillance: Recent seroconversion OR hepatitis C RNA or antigen + and anti-HCV - or equivocal in otherwise immunocompetent individual OR anti-HCV +, anti-HAV IgM -, and anti-HBc IgM - and abnormal liver function tests with a pattern consistent with acute viral hepatitis in someone with recent exposure to HCV e.g. needlestick injury, dialysis, recent injecting drug use.			
Chronic	Chronic HBV case definition: HBsAg + twice at least 6 month OR HBsAg + and anti-HBc IgM2,- a	•	Case definition for surveillance: Anti-HCV positive OR HCV RNA+ and not meeting case definition for acute HCV.			
Other						
Cases included in surveillance	Possible		Possible			
	Probable	with classification	Probable	with classification		
	Confirmed		Confirmed			
	Unknown classification		Unknown classification			
Type of cases	Acute		Acute			
	Chronic	with classification	Chronic	with classification		
	Asymptomatic	With classification	Asymptomatic			
	Suspected		Suspected			
	Other:		Other:			
Including duplicates	Yes		Yes			
Underreporting	Underreporting is possible; plea underreporting (number of repo number of real cases) below.		Underreporting is possible; please give the rate for underreporting (number of reported cases/estimated number of real cases) below.			
Rate underreporting	The proportion of underreportin Ramsay M, et al. Control of hep 1998;16(Suppl):S52–5.		Data suggest that routine laboratory reporting may underestimate the numbers of diagnosed hepatitis C infections by up to 60% (HPA Annual Report 2007).			

	HBV				HCV				
Source of data	Physicians	Lab	oratory	Hospital	Physicians	Lab	oratory	Hospital	
	Other:				Other:				
Collected data	Basic data	Patient ID			Basic data	Pati	ent ID		
		Date of birth or age				Date	e of birth or a	ge	
		Gender				Gen	nder		
		Cou	ntry of birth			Country of birth			
		Plac	e of residence	!		Place of residence			
		Date of onset of the disease				Date of onset of the disease			
		Date	e of diagnosis			Date	e of diagnosis		
		Date of reporting/notification				Date	e of reporting	/notification	
		Date	e used for stat	istics		Date	e used for sta	tistics	
		Cou	ntry where inf	ection was acquired		Cou	intry where in	fection was acquired	
		Imn	nunisation stat	tus		Imn	nunisation sta	tus	
		Out	come			Out	come		
	Classification	Clin	ical symptoms		Classification	Clin	ical symptoms	5	
	information	Laboratory results			information	Lab	oratory results	S	
		Epic	lemiological in	formation		Epic	demiological ir	nformation	
	Transmission route risk factors	Hon	nosexual conta	act	Transmission route risk factors	Hon	nosexual cont	act	
	Toute fisk factors	Het	erosexual cont	act	Toute risk ractors	Heterosexual contact			
		Inje	cting drug use	1		Inje	Injecting drug use		
		Mot	her HBsAg+			Mother HCV positive			
		Clos	e family mem	ber HBsAg+		Close family member HCV- positive			
		Sex partner HBsAg+				Sex partner HCV positive			
		Blood or blood-product transfusion				Blood or blood-product transfusion			
		Invasive healthcare procedure/dental treatment				Invasive healthcare procedure/dental treatment			
		Organ transplantation				Organ transplantation			
		Haemodialysis Needle injury or other occupational exposure Tattooing/body piercing Other				Haemodialysis			
						Needle injury or other occupational exposure			
						Tattooing/body piercing			
						Other			
	Other	Hospitalisation		Other	Hospitalisation				
	0.010.	Length of hospitalisation ICD code diagnosis			Length of hospitalisation				
						ICD code diagnosis			
		Genotype information				_	notype informa		
Sala Palada			1.	No. and the				Mandali	
Data linked to	Liver transplant		Liver cancer	Mortality	Liver transplant		Liver cancer	Mortality	
	Hospital register				Hospital register				
	Other:				Other:				
Format	Electronic		Paper		Electronic		Paper		
Туре	Case-based		Aggregated	Other:	Case-based		Aggregated	Other:	
Frequency	Daily	Wee	ekly	Biweekly	Daily	We	eekly	Biweekly	
	Monthly	Bian	nually	Yearly	Monthly	Bia	nnually	Yearly	
	Other:	Qua	rterly		Other:	Qu	arterly		
Other surveillance systems	STI clinic	STI clinic Laboratory surveillance network  Regular sero-surveys in general		Supplementary sentinel surveillance	STI clinic surveillance	Lat	ooratory twork	Supplementary sentinel surveillance	
o, seems	Regular sero-surv			Other	Regular sero-surv population			Other	
	Annual surveys of	Annual surveys of the prevalence of specimens from injecting drug users		anti-HBc in oral fluid	A sentinel laborate testing. The annu	al sur	vey of anti-Ĥ(	tem monitors HCV CV testing in injecting tested for anti-HCV)	

		нву	HCV					
Screening	Pregnant women							
programme	Military recruits							
	Injecting drug users							
	STI clinic patients							
	Multiple sex partners							
	Prisoners							
	Haemodialysis patients							
	Long-term healthcare facilities							
	Healthcare workers							
	Workers who are occupationally exposed to the virus							
	Blood and organ donors							
	Other groups**							
Vaccination programme	HBV							
(only HBV)	Universal vaccination	Infants						
		Adolescents						
		Both						
		Other						
	Risk groups vaccination	Neonates born to HBsAg mothers						
		Individuals at risk for HBV due to o	ccupation					
		Haemodialysis patients						
		Chronic liver disease patients						
		STI clinic patients						
		Multiple sex partners						
		Injecting drug users						
		Household contacts of HBsAg+ pati	ients					
		Contacts of infected persons						
		Other risk groups**						
	Other:	Staff of residential and other accommodation for those with learning difficulties; people travelling to and going to reside in high prevalence areas						
Catch-up programme								
Vaccination	Infants 0 to 2 years							
coverage	Adolescents 10 to 14 years							
	Adults							
	Other groups							
	Not known							
	Coverage: Homosexual men who attend genitourinary medicine clinics (HepB3 study; 44% in 2005 and 38% in 2006).							
	For prisons: 37.5% in 2007; 47.5% in 2008							

## REFERENCES

- <sup>i</sup> Shepard CW, Simard EP, Finelli L, Fiore AE, Bell BP. Hepatitis B virus infection: epidemiology and vaccination. Epidemiol Rev, 2006. 28: 112-25.
- <sup>ii</sup> Lavanchy D. Hepatitis B virus epidemiology, disease burden, treatment, and current and emerging prevention and control measures. J Viral Hepat, 2004. 11(2): 97-107.
- WHO. Hepatitis B: fact sheet No. 204, 2008 Aug [cited 8 August 2010]. Available from: http://www.who.int/mediacentre/factsheets/fs204/en/print.html.
- <sup>iv</sup> Van Damme P, Van Herck K, Michielsen P, Franken S, Shouval D. Chronic hepatitis and other liver disease. In: Detels R, Beaglehole R, Lansang A, Gulliford M, editors. Oxford Textbook of Public Health, 5th edition. Oxford University Press; 2009. p. 1249-63.
- <sup>v</sup> Zuckerman J, van Hattum J, Cafferkey M, Gjørup I, Hoel T, Rummukainen ML, et al. Should hepatitis B vaccination be introduced into childhood immunisation programmes in northern Europe? Lancet Infect Dis, 2007. 7(6): 410-19.
- vi Cenci, M., et al., Prevalence of hepatitis C virus (HCV) genotypes and increase of type 4 in central Italy: an update and report of a new method of HCV genotyping. Anticancer Res, 2007. 27(2): 1219-22.
- vii Wiese M, Berr F, Lafrenz M, et al. Low frequency of cirrhosis in a hepatitis C (genotype 1b) single-source outbreak in Germany: A 20-year multicenter study. Hepatol 2000; 32: 91-6.
- viii Baldo, V., et al., Hepatitis C virus, hepatitis B virus and human immunodeficiency virus infection in pregnant women in North-East Italy: a seroepidemiological study. Eur J Epidemiol, 2000. 16(1): 87-91.
- ix Desenclos, J.C., The challenge of hepatitis C surveillance in Europe. Euro Surveill, 2003. 8(5): p. 99-100.
- <sup>x</sup> Alvarez do Barrio, M., et al., Residual risk of transfusion-transmitted viral infections in Spain, 1997-2002, and impact of nucleic acid testing. Euro Surveill, 2005. 10(2): p. 20-2.
- xi Russmann, S., et al., Prevalence and associated factors of viral hepatitis and transferrin elevations in 5036 patients admitted to the emergency room of a Swiss university hospital: cross-sectional study. BMC Gastroenterol, 2007. 7: p. 5.
- xii Laperche S, Maniez M, Barlet V, El Ghouzzi MH, Le Vacon F, Levayer T, Lunel F, Morel P, Mouillot L, Piquet Y, Pillonel J; Transfusion-Transmissible Agents Working Group, French National Society of Blood Transfusion. A revised method for estimating hepatitis B virus transfusion residual risk based on antibody to hepatitis B core antigen incident cases. Transfusion 2008 Nov;48(11):2308-14.
- xiii Niederhauser, C., et al., Incidence of viral markers and evaluation of the estimated risk in the Swiss blood donor population from 1996 to 2003. Euro Surveill, 2005. 10(2): p. 14-6.
- xiv Offergeld, R., et al., Human immunodeficiency virus, hepatitis C and hepatitis B infections among blood donors in Germany 2000-2002: risk of virus transmission and the impact of nucleic acid amplification testing. Euro Surveill, 2005. 10(2): p. 8-11.
- <sup>xv</sup> Pillonel, J. and S. Laperche, Trends in risk of transfusion-transmitted viral infections (HIV, HCV, HBV) in France between 1992 and 2003 and impact of nucleic acid testing (NAT). Euro Surveill, 2005. 10(2): p. 5-8.
- <sup>xvi</sup> Soldan, K., K. Davison, and B. Dow, Estimates of the frequency of HBV, HCV, and HIV infectious donations entering the blood supply in the United Kingdom, 1996 to 2003. Euro Surveill, 2005. 10(2): p. 17-9.
- xvii Gogos, C.A., et al., Prevalence of hepatitis B and C virus infection in the general population and selected groups in South-Western Greece. Eur J Epidemiol, 2003. 18(6): p. 551-7.
- x<sup>viii</sup> Chaves, S., M.A. Widdowson, A. Bosman, Surveillance of HCV infection in the Netherlands. Euro Surveill, 2003. 8(5): p. 108-13
- xix Esteban, J.I., S. Sauleda, and J. Quer, The changing epidemiology of hepatitis C virus infection in Europe. J Hepatol, 2008. 48(1): p. 148-62.
- <sup>xx</sup> Danta, M., et al., Recent epidemic of acute hepatitis C virus in HIV-positive men who have sex with men linked to high-risk sexual behaviours. Aids, 2007. 21(8): p. 983-91.
- xxi Gambotti, L., et al., Acute hepatitis C infection in HIV positive men who have sex with men in Paris, France, 2001-2004. Euro Surveill, 2005. 10(5): p. 115-7.

- van de Laar, T.J., et al., Increase in HCV incidence among men who have sex with men in Amsterdam most likely caused by sexual transmission. J Infect Dis, 2007. 196(2): p. 230-8
- Vonberg, R.P. and P. Gastmeier, Hospital-acquired infections related to contaminated substances. J Hosp Infect, 2007. 65(1): p. 15-23.
- xxiv ECDC, Annual Epidemiological Report on Communicable Diseases in Europe, 2009. Stockholm 2009, European Centre for Disease Prevention and Control.
- xxv Rantala M, Van de Laar MJW. Surveillance and epidemiology of hepatitis B and C in Europe a review Eurosurveillance, May 2008.
- xxvi Epidemiology of hepatitis C virus (HCV) infection. Sy T, Jamal MM. Int J Med Sci. 2006;3(2):41-6.
- xxvii Uwe Siebert et al. HCV-related burden of disease in Europe: a systematic assessment of incidence, prevalence, morbidity and mortality. BMC Public Health. 2009 Jan 22;9:34.
- xxviii http://ecdc.europa.eu/en/aboutus/Key%20Documents/08-13\_KD\_Surveillance\_of\_CD.pdf
- xxix "Reporting chronic hepatitis B and C in Denmark". Hansen N, Cowan S et. Al . Ugeskr Laeger,28;170(18):1567-70. [in Danish]
- xxx EMCDDA Annual Report 2009, p. 81-82