



## Hepatitis A

Reporting on 2014 data retrieved from TESSy\* on 22 November 2015

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### Key facts

- In 2014, 13 724 cases of hepatitis A (13 678 of which were confirmed) were reported in EU/EEA countries.
- The EU/EEA notification rate was 3.0 cases per 100 000 population ranging from 0.0 in Iceland (which also reported zero cases in 2013) to 33.3 in Romania (where 6 646 confirmed cases were reported).
- In 2014, the number of reported cases and the notification rate were at the highest level since 2010.
- Most cases were reported in children between 5 and 14 years of age.
- In all age groups, the notification rate was slightly higher among males.
- The vast majority of cases in 2014 were reported from countries not affected by the large and prolonged outbreak affecting Italy and several EU/EEA countries in 2013 and 2014.

### Methods

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

In 2014, all 30 EU/EEA countries reported hepatitis A data, with the sole exception of Liechtenstein. Twenty-four countries used EU case definitions (nine countries used the EU-2012 case definition, 14 countries used the EU-2008 case definition, and one country used the EU-2002 case definition). The remaining six reporting countries used non-specified or other case definitions. Reporting of hepatitis A was compulsory in 24 countries. Twenty-nine countries had a comprehensive surveillance system and one (Belgium) undertook sentinel surveillance. In 29 countries surveillance was based either on laboratory or physician reporting, or a combination of both. Romania reported only hospitalised cases. Twenty-nine countries reported case-based information, and one country (Bulgaria) reported aggregated information (Annex).

In addition to TESSy reporting, information from event-based surveillance for hepatitis A clusters or outbreaks with a potential EU dimension was collected through the Epidemic Intelligence Information System for Food- and Waterborne Diseases (EPIS-FWD).

## Epidemiology

In 2014, 30 EU/EEA countries reported 13 724 cases of hepatitis A, of which the majority (n=13 678, 99.7%) were confirmed cases (Table 1). Romania and Hungary together reported 59.9% of EU/EEA cases in 2014. The EU/EEA notification rate in 2014 was 3.0 cases per 100 000 population, ranging from 0 in Iceland, where no cases were reported in 2014, to 33.3 in Romania. The number of reported cases in 2014 represented a 9% increase compared with the previous year; 2014 also had the highest number of reported cases since 2010. Between 2010 and 2014 the average number of reported cases was 13 180, ranging from 12 550 to 13 724. The notification rate in Romania in 2014 (33.3 cases per 100 000 population) was the third highest notification rate reported in the EU/EEA between 2010 and 2014; the two highest notification rates in this period were reported by Bulgaria: in 2011 Bulgaria reported 75.8 cases per 100 000 population; in 2012, the country reported 66.8 cases.

Table 1. Reported confirmed hepatitis A cases: number and rate per 100 000 population, EU/EEA, 2010–2014

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Country	2010		2011		2012		2013		2014					
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	National data	Report type	Reported cases	Confirmed cases	Rate	ASR
Austria	54	0.6	5	0.1	43	0.5	78	0.9	Y	C	47	47	0.6	0.6
Belgium	137	-	167	-	147	-	134	-	N	C	125	125	-	-
Bulgaria	2350	31.7	5587	75.8	4896	66.8	1819	25.0	Y	A	601	601	8.3	9.3
Croatia	.	.	.	.	0	0.0	0	0.0	Y	A	7	7	0.2	0.2
Cyprus	2	0.2	0	0.0	2	0.2	2	0.2	Y	C	8	8	0.9	0.9
Czech Republic	862	8.2	264	2.5	284	2.7	348	3.3	Y	C	673	673	6.4	6.5
Denmark	47	0.8	13	0.2	53	0.9	103	1.8	Y	C	29	29	0.5	0.5
Estonia	6	0.5	153	11.5	63	4.8	6	0.5	Y	C	12	12	0.9	0.9
Finland	14	0.3	14	0.3	8	0.1	41	0.8	Y	C	27	27	0.5	0.5
France	1244	1.9	1115	1.7	1096	1.7	914	1.4	Y	C	933	933	1.4	1.4
Germany	775	0.9	820	1.0	828	1.0	766	0.9	Y	C	681	678	0.8	0.9

Greece	58	0.5	41	0.4	74	0.7	155	1.4	Y	C	86	84	0.8	0.8
Hungary	202	2.0	79	0.8	331	3.3	1117	11.3	Y	C	1556	1548	15.7	16.3
Iceland	2	0.6	1	0.3	4	1.3	0	0.0	Y	C	0	0	0.0	0.0
Ireland	40	0.9	18	0.4	28	0.6	47	1.0	Y	C	21	21	0.5	0.4
Italy*	726	1.2	439	0.7	458	0.8	1279	2.1	N	C	163	163	-	-
Latvia	292	13.8	49	2.4	11	0.5	12	0.6	Y	C	20	20	1.0	1.0
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lithuania	10	0.3	17	0.6	113	3.8	64	2.2	Y	C	17	17	0.6	0.6
Luxembourg	2	0.4	0	0.0	2	0.4	3	0.6	Y	C	5	5	0.9	0.9
Malta	3	0.7	4	1.0	0	0.0	0	0.0	Y	C	4	2	0.5	0.5
Netherlands	252	1.5	115	0.7	112	0.7	105	0.6	Y	C	97	97	0.6	0.6
Norway	46	0.9	22	0.4	40	0.8	51	1.0	Y	C	75	75	1.5	1.5
Poland	153	0.4	64	0.2	70	0.2	48	0.1	Y	C	76	75	0.2	0.2
Portugal	10	0.1	12	0.1	10	0.1	15	0.1	Y	C	23	23	0.2	0.2
Romania	3493	17.2	2581	12.8	3603	17.9	4173	20.8	Y	C	6667	6646	33.3	34.8
Slovakia	1449	26.9	400	7.4	124	2.3	204	3.8	Y	C	735	735	13.6	13.7
Slovenia	9	0.4	11	0.5	11	0.5	23	1.1	Y	C	11	11	0.5	0.6
Spain	740	1.6	463	1.0	557	1.2	629	1.3	Y	C	607	598	1.3	1.3
Sweden	85	0.9	54	0.6	87	0.9	105	1.1	Y	C	84	84	0.9	0.9
United Kingdom	408	0.7	277	0.4	314	0.5	309	0.5	Y	C	334	334	0.5	0.5
EU/EEA	13471	2.7	12785	2.6	13369	2.6	12550	2.5	.	C	13724	13678	3.0	3.2

Source: Country reports. Legend: Y = yes, N = no, C = case based, A = aggregated, . = no data reported, ASR: age-standardised rate, - = no report

\*Provisional data for 2014. Notification rates not calculated

In 2014, 19 countries reported fewer than 100 confirmed cases, while eight countries reported more than 500 cases (Figure 1). Compared with the four-year average between 2009 and 2013, Hungary, Norway (reporting cases linked to a multi-national outbreak [1-4]), Portugal, Romania and Slovakia reported large increases in the number of confirmed cases. Large decreases were reported by Bulgaria and Italy (where in 2013 and 2014 most cases were related to a large and prolonged international outbreak [4,5]). In the 27 countries where this information was available, 983 (19.0%) cases were travel-associated. France (n=399), Germany (n=190), the Netherlands (n=53) and Spain (n=52) accounted for three quarters of all travel-associated cases.

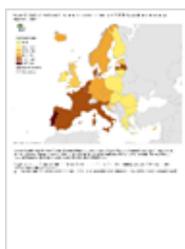
Figure 1. Reported confirmed hepatitis A cases: number of cases, EU/EEA, 2014



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

In 2014, two thirds of the countries (19/29) had notification rates below 1 confirmed case per 100 000 population (Figure 2). The four countries reporting notification rates higher than 5 cases per 100 000 population were Bulgaria (8.3 cases), the Czech Republic (6.4), Hungary (15.7), Romania (33.3) and Slovakia (13.6).

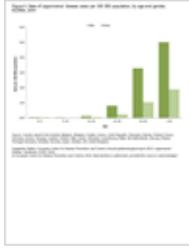
Figure 2. Reported confirmed hepatitis A cases: rate per 100 000 population, EU/EEA, 2014



Source: Country reports from Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland, Slovakia, Slovenia, Sweden, United Kingdom.

In 2014, the highest notification rate was observed in the age group 5 to 14 years (10 confirmed cases per 100 000 population), followed by the age groups 0 to 4 years (6 confirmed cases per 100 000 population) and 15 to 24 years (4 confirmed cases reported per 100 000 population). About 1 800 confirmed cases were older than 44 years of age. Male confirmed cases had slightly higher notification rates than female confirmed cases in all age groups (Figure 3).

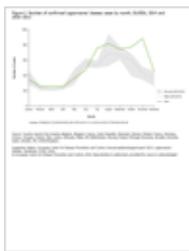
Figure 3. Reported confirmed hepatitis A cases: rates by age group and gender, EU/EEA, 2014



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

Hepatitis A has a marked seasonality in EU/EEA countries, with a peak of confirmed cases reported between September and November (Figure 4). The 2014 autumn peak was particularly pronounced with more than twice as many cases reported in 2014 compared with the same period in 2010–2013. From January to June, the monthly number of reported confirmed cases was slightly higher than the mean monthly number of cases reported in the same period in 2010–2013. From July to December, the monthly number of reported confirmed cases was considerably higher than the monthly mean number of cases reported in the same period in 2010–2013.

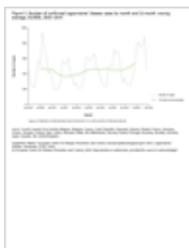
Figure 4. Reported confirmed hepatitis A cases by month, EU/EEA, 2014 compared with 2010–2013



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

After a decrease in 2010 and 2011, hepatitis A case numbers showed an increasing trend until 2014, when the 12-month moving average and the peak of reported confirmed cases were at their highest level for the period 2010 to 2014 (Figure 5).

Figure 5. Reported confirmed hepatitis A cases: numbers and trend, EU/EEA, 2010–2014



Source: Country reports from Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Latvia, Lithuania, Malta, the

Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom.

#### Threats description for 2014

A large and prolonged European multinational outbreak was reported in EPIS FWD in 2013 and 2014, mostly affecting Italy and Norway, with cases also reported in Finland, France, Germany, Ireland, the Netherlands and Sweden. Cases were found to be strongly associated with consumption of frozen mixed berries [1-4].

Two independent clusters of cases with similar molecular characteristics in Germany and Sweden were reported in EPIS FWD, but no international dimension was identified for any of the two.

#### Discussion

The number of cases reported in 2014 was the highest since 2010. This finding could not be explained by known changes in national surveillance systems: the number of reporting countries and the types of surveillance did not change in 2014.

As in previous years, most cases were reported in young people who are more likely to develop a mild or very mild disease, which is difficult to capture through disease surveillance systems. It is therefore possible that our findings represent an underestimate of the actual case numbers.

Although the majority of cases was in young people, about 1 800 cases were in older adults at risk of severe outcome (hepatitis A severity is directly correlated to the patient's age). This shows the risk associated with sporadic transmission within the growing cohort of susceptible older European individuals.

Similarly to previous years, but more markedly so, eastern EU countries reported a higher number of cases. The available literature provides only limited information with regard to the large number of cases observed in eastern Europe. To our knowledge, the circulating viruses have only rarely been genetically characterised – if at all – which makes it difficult to further explore this development.

Although a large multinational foodborne outbreak was reported in 2013 and 2014, the majority of the countries that reported increases in 2014 were not known to be affected by this outbreak. A large proportion of the cases reported in eastern EU countries are associated with person-to-person transmission, unlike the rest of EU/EEA where a substantial part of the cases appears to be associated with infection abroad or food-borne transmission.

The large decrease observed in Italy is unexplained, but could possibly be a result of underreporting. The decrease in Bulgaria is considered to represent the cyclical variation normally observed in the incidence rate of hepatitis A in Bulgaria [personal communication, T. Georgieva, National Centre of Infectious and Parasitic Diseases, Sofia, 20 Sep 2016].

The large number of cases reported in 2014 and the increasing trend of cases which has been reported in the EU/EEA since 2011 highlights the challenges that EU/EEA Member States are facing with regard to the prevention and control of hepatitis A.

#### Public health conclusions

Hepatitis A continued to pose a threat to public health in EU/EEA countries: a large food-borne outbreak associated with consumption of mixed frozen berries was reported in several EU/EEA countries in 2014, and eastern European EU countries reported a higher number of cases than in previous years. Prompt alerts in EPIS FWD of clusters or outbreaks, combined with rapid harmonised

investigations, can reduce the risk of large or prolonged outbreaks in the EU/EEA. Also, increasing the frequency of reporting for hepatitis A cases in TESSy from yearly to quarterly could support timelier outbreak detection and response and reduce the underreporting of cases.

The most recent large multistate outbreaks reported in the EU/EEA were mostly of foodborne origin and characterised by large numbers of sporadic cases scattered across different regions, which made it difficult to spot these outbreaks. Molecular characterisation and sharing of sequences at the international level offers the opportunity to rapidly link sporadic cases and detect outbreaks. Molecular characterisation of hepatitis A viruses and sharing of sequences should be prioritised at the European level.

As an option for intervention, EU/EEA countries should consider following WHO vaccination recommendations (i.e. universal childhood vaccination in countries at intermediate endemicity, and vaccination of groups at increased risk of infection and of severe outcome, in low and very low endemicity countries).

Vaccination recommendations to travellers to HAV endemic areas should be further promoted in all EU/EEA countries in accordance with the national guidelines.

## References

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## Additional information

ECDC Surveillance Atlas of Infectious Diseases

## Annex

Table. Hepatitis A, surveillance systems overview, 2014

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The image shows a screenshot of a data table from the European Surveillance System (TESSy). The table is titled "Not reported during surveillance period (n=0)" and contains multiple columns and rows of data. The columns include various identifiers and numerical values. The data is organized in a grid format with a header row and several rows of data points.

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