

## SURVEILLANCE REPORT

# Hepatitis A

## Annual Epidemiological Report for 2017

### Key facts

- In 2017, 30 EU/EEA countries reported 26 294 cases of hepatitis A, 26 149 (99.4%) of which were confirmed.
- The EU/EEA notification rate was 5.1 cases per 100 000 population, more than double the average of the previous four years' notification rate. Except Cyprus, Denmark, Finland and Norway, all EU/EEA countries had rates over one confirmed case per 100 000 population. Countries with the highest notification rates were Slovakia (12.6), Romania (16.1) and Bulgaria (35.3).
- In 2017, both the number of reported cases and the notification rates were the highest reported since published TESSy data are available.
- Adult males between 25 and 44 years of age were the population group with the highest notification rate (12 cases per 100 000 population).
- Year 2017 was characterised by an unprecedented large and prolonged outbreak disproportionately affecting men who have sex with men associated with three simultaneously circulating hepatitis A virus (HAV) of sub-genotype 1A.

### Introduction

Hepatitis A is an inflammation of the liver caused by the hepatitis A virus. In children, hepatitis A virus infection is often asymptomatic or mild. In adults, the onset of illness is usually abrupt, characterised by fever, malaise, and abdominal discomfort. Jaundice is the predominant symptom. Very severe disease is unusual, but the infection can lead to acute liver failure and death, particularly in older adults and patients with liver disease. Symptoms may last from one or two weeks to months.

The hepatitis A virus is highly transmissible and has an average incubation period of four weeks, ranging from two to six weeks. Transmission most often occurs via the faecal–oral route through contaminated food and water or via person-to-person contact (e.g. among household contacts, sexual contacts, day-care centres or schools).

### Methods

This report is based on data for 2017 retrieved from The European Surveillance System (TESSy) on 11 September 2018. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases. For a detailed description of methods used to produce this report, please refer to the Methods chapter [1].

An overview of the national surveillance systems is available online [2].

A subset of the data used for this report is available through ECDC's online Surveillance Atlas of Infectious Diseases [3].

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In 2017, 30 EU/EEA Member States (28 EU Member States, plus Iceland and Norway) reported hepatitis A data to TESSy. Liechtenstein did not report. Twenty-five countries used EU case definitions: 14 countries used the EU-2012 case definition and 11 countries used the EU-2008 case definition. The remaining five reporting countries used 'unspecified' or 'other' case definitions. Reporting of hepatitis A was compulsory in 29 countries, and one country (the United Kingdom) had other arrangements. Twenty-nine countries had a comprehensive surveillance system, and one country (Belgium) undertook an unspecified kind of surveillance. In 29 countries, surveillance was based on either laboratory or physician reporting or a combination of the two. Romania reported only hospitalised cases. Twenty-eight countries reported case-based data, and two countries (Belgium and Bulgaria) reported aggregated data.

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) and in the Early Warning and Response System (EWRS).

## Epidemiology

In 2017, 30 EU/EEA countries reported 26 294 cases of hepatitis A, 26 149 (99.4%) of which were classified as confirmed (Table 1). The number of confirmed cases reported in 2017 was more than double (210% increase) the mean number of cases reported from 2013 to 2016, and the largest ever observed since published TESSy data have been available [4].

Comparing confirmed cases reported in 2017 with those in 2016, particularly large increases were observed in Poland (8 560%), Portugal (1 055%), Croatia (920%), Latvia (750%), Italy (720%), Estonia (647%), France (489%), Malta (450%), the Netherlands (448%), and Finland (433%). Iceland reported five confirmed cases, the first hepatitis A cases reported in the country since 2012. Czechia, Hungary, Romania and Slovakia were the only countries reporting a decrease in confirmed cases compared to the previous year.

Thirteen countries reported more than 500 confirmed cases, while 11 countries reported fewer than 100 confirmed cases. Spain reported the largest number of confirmed cases: 17.3% of all EU/EEA confirmed cases.

In the 24 countries reporting information on travel history for all or part of their cases, 2 054 (12.2%) of 16 491 cases with available information were travel-associated. France (n=838), Germany (n=244), Spain (n=232), and Poland (n=177) accounted for around three quarters (72.6%) of all travel-associated cases.

**Table 1. Distribution of confirmed hepatitis A cases, EU/EEA, 2013–2017**

Country	2013		2014		2015		2016		2017			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Austria	78	0.9	47	0.6	60	0.7	92	1.1	242	2.8	2.8	242
Belgium	134	NR	125	NR	113	1.0	152	1.3	368	3.2	3.3	368
Bulgaria	1 819	25.0	601	8.3	1 061	14.7	1 625	22.7	2 510	35.3	39.5	2 510
Croatia	0	0.0	7	0.2	4	0.1	5	0.1	46	1.1	1.1	47
Cyprus	2	0.2	8	0.9	4	0.5	3	0.4	6	0.7	0.7	6
Czechia	348	3.3	673	6.4	724	6.9	930	8.8	772	7.3	7.6	772
Denmark	103	1.8	29	0.5	19	0.3	37	0.6	38	0.7	0.7	38
Estonia	6	0.5	12	0.9	6	0.5	7	0.5	45	3.4	3.5	45
Finland	41	0.8	27	0.5	45	0.8	6	0.1	26	0.5	0.5	26
France	914	1.4	933	1.4	743	1.1	693	1.0	3 387	5.1	5.4	3 387
Germany	766	1.0	679	0.8	844	1.0	729	0.9	1 225	1.5	1.5	1 232
Greece	155	1.4	84	0.8	62	0.6	207	1.9	276	2.6	2.7	279
Hungary	1 117	11.3	1 548	15.7	963	9.8	685	7.0	366	3.7	3.9	368
Iceland	0	0.0	0	0.0	0	0.0	0	0.0	5	1.5	1.5	5
Ireland	47	1.0	21	0.5	35	0.7	37	0.8	67	1.4	1.4	67
Italy	1 388	2.3	601	1.0	487	0.8	523	0.9	3 766	6.2	6.9	3 784
Latvia	12	0.6	20	1.0	6	0.3	10	0.5	75	3.8	4.0	75
Liechtenstein	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lithuania	64	2.2	17	0.6	7	0.2	17	0.6	38	1.3	1.4	57
Luxembourg	3	0.6	5	0.9	5	0.9	6	1.0	7	1.2	1.2	7
Malta	0	0.0	2	0.5	4	0.9	6	1.3	27	5.9	5.8	27
Netherlands	105	0.6	97	0.6	75	0.4	77	0.5	345	2.0	2.2	345

Country	2013		2014		2015		2016		2017			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Norway	51	1.0	75	1.5	32	0.6	42	0.8	49	0.9	0.9	49
Poland	48	0.1	75	0.2	49	0.1	35	0.1	2 996	7.9	-	3 013
Portugal	15	0.1	23	0.2	26	0.3	53	0.5	559	5.4	5.9	560
Romania	4 173	20.8	6 646	33.3	5 176	26.0	3 190	16.1	2 477	12.6	13.4	2 512
Slovakia	204	3.8	735	13.6	883	16.3	1 358	25.0	673	12.4	12.4	673
Slovenia	23	1.1	11	0.5	5	0.2	13	0.6	35	1.7	1.7	35
Spain	629	1.3	594	1.3	557	1.2	1 308	2.8	4 528	9.7	10.3	4 570
Sweden	105	1.1	84	0.9	96	1.0	88	0.9	110	1.1	1.1	110
United Kingdom	309	0.5	334	0.5	435	0.7	496	0.8	1 085	1.6	1.7	1 085
EU/EEA	12659	2.5	14113	2.8	12526	2.4	12430	2.4	26149	5.1	5.2	26294

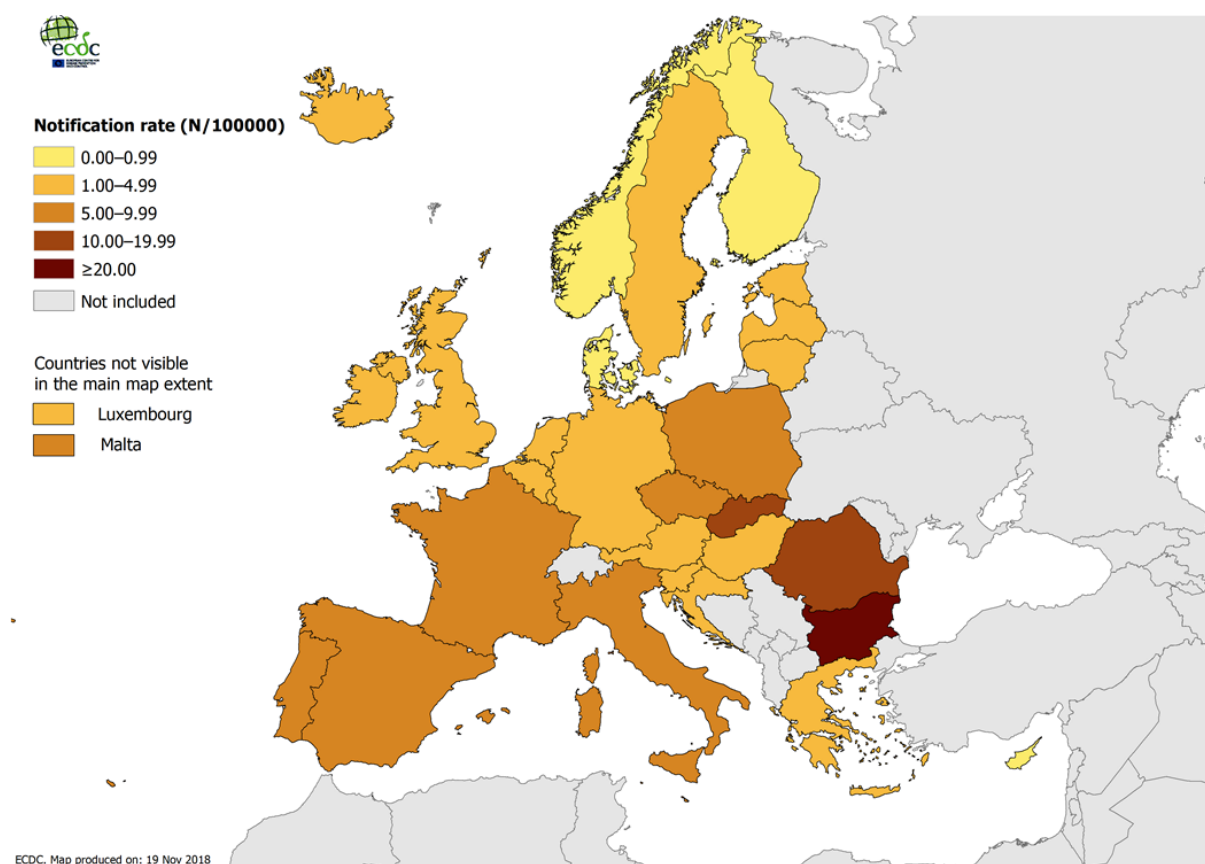
ND: no data reported

NR: no rate calculated

ASR: age-standardised rate

The EU/EEA notification rate was 5.1 confirmed cases per 100 000 population, ranging from 0.5 in Finland to 35.3 in Bulgaria (Table 1). Contrary to previous years, all EU/EEA countries except Cyprus, Denmark, Finland, and Norway had notification rates over one confirmed case per 100 000 population (Figure 1). The highest notification rates were reported in Bulgaria (35.3), Romania (12.6), and Slovakia (12.4). Age-standardised notification rates did not differ substantially from crude rates.

**Figure 1. Distribution of confirmed hepatitis A cases per 100 000 population by country, EU/EEA, 2017**

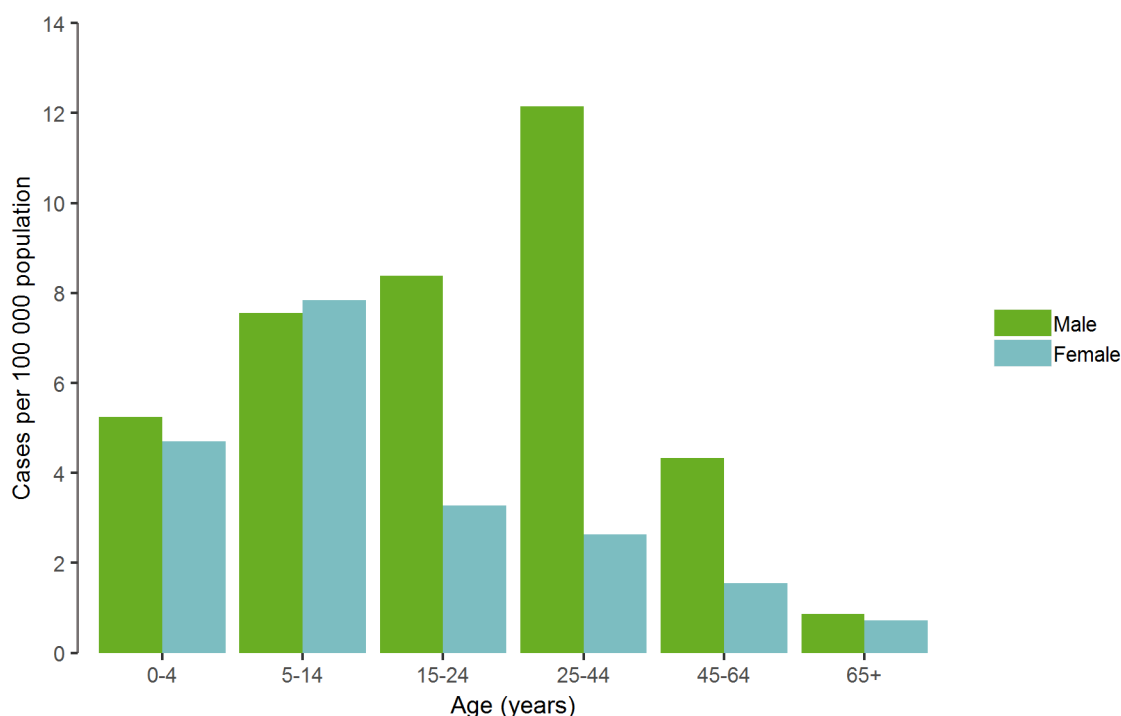


Source: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the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

In 2017, the highest notification rate was observed in the age groups 5–14 years and 25–44 years (7.8 confirmed cases per 100 000 population in both groups), followed by the age group 15–24 years (6.1 confirmed cases per 100 000 population). In all age groups, except for the age group 5 to 14 years, males had higher notification rates

than females. Such male predominance was particularly strong in the age groups from 15 to 64 years. Notably, in the age group 25 to 44 years, male notification rates were almost five times higher than female notification rates. The overall male-to-female ratio was 2.5:1; more than double than in previous years. Confirmed cases older than 44 years of age were 4 918, 21% of all confirmed cases with a known age.

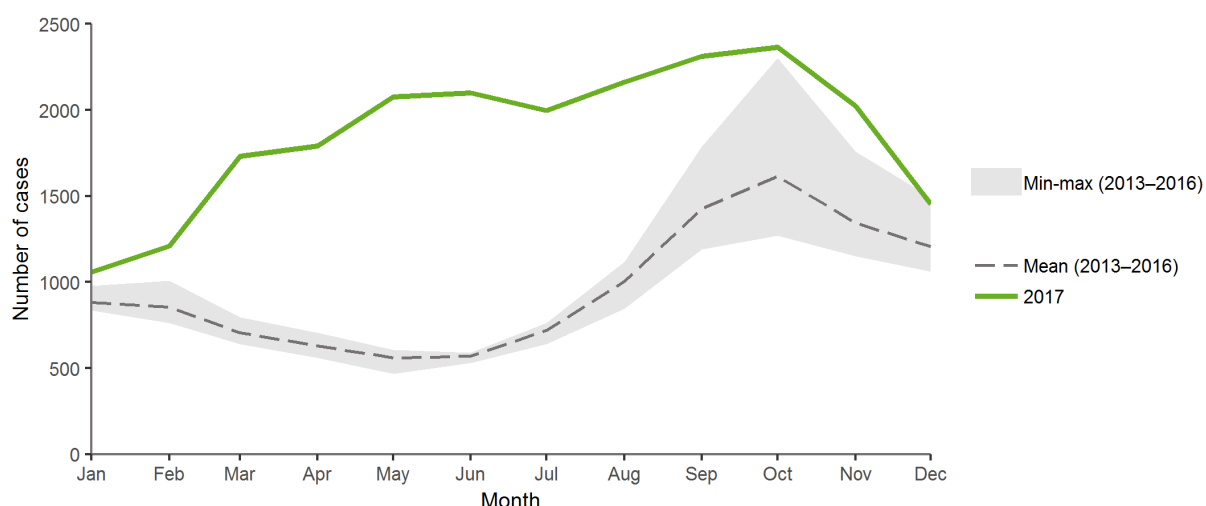
**Figure 2. Distribution of confirmed hepatitis A cases per 100 000 population, by age and gender, EU/EEA, 2017**



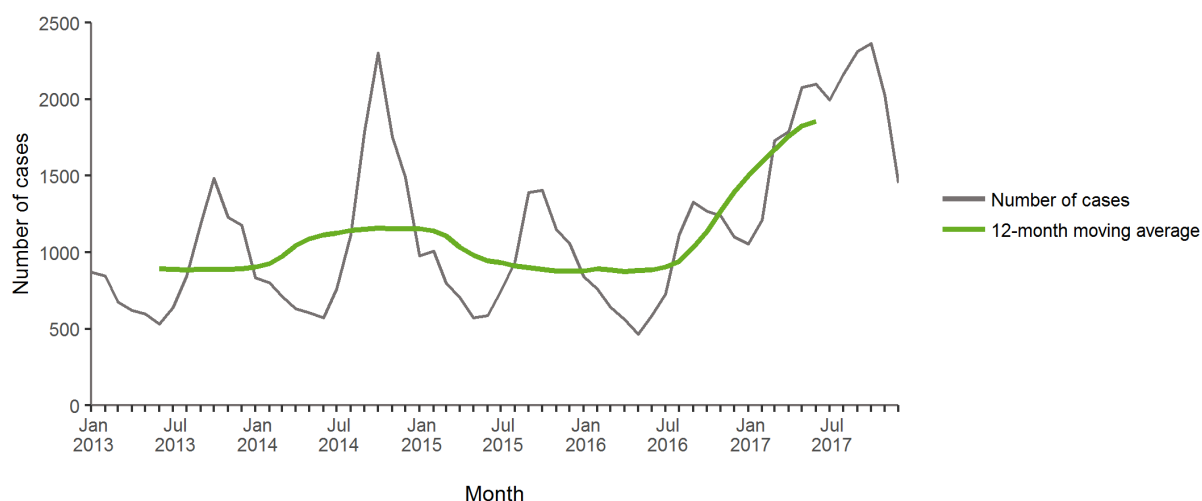
Source: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the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

The number of cases reported by month in 2017 was consistently higher than the maximum number of monthly cases reported in the period 2013-2016, except for the month of December. The difference was particularly pronounced between March and July, when the 2017 monthly cases were at least the double of the maximum monthly cases reported in the previous four-year period.

The characteristic seasonality of hepatitis A in the EU/EEA, with a marked peak in reported cases occurring in late summer/early autumn, was not as marked in 2017, when the largest number of monthly cases was still reported in October, but a rather stable volume of hepatitis A cases was reported from May to November (Figure 3). For this reason, the 2017 peak was not only associated with a much higher maximum number of cases than in most previous years, but lasted considerably longer than the very large peak in 2014 (Figures 3 and 4).

**Figure 3. Distribution of confirmed hepatitis A cases by month, EU/EEA, 2017 and 2013–2016**

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

**Figure 4. Distribution of confirmed hepatitis A cases by month, EU/EEA, 2013–2017**

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

## Outbreaks and other threats

Between 1 January and 31 December 2017, ECDC monitored five threats reported in the same year in addition to three threats reported in 2016. The eight hepatitis A events were launched by five EU countries and one non-EU/EEA country. Four events were related to cluster of cases affecting men who have sex with men (MSM) and two events were suspected to be related to food-borne outbreaks (both to soft berries). The two remaining events were related to a cluster of cases in people who inject drugs (PWID) and to an increase of notifications in the general population, respectively.

In 2017, ECDC published three rapid risk assessments to update the description, assessment and actions for response about a very large European outbreak disproportionately affecting MSM [5-7].

## Discussion

In 2017, both hepatitis A cases and notification rate were the highest ever observed in the EU/EEA since TESSy data have been published. The large increase in 2017 was not due to a change in surveillance practices, nor was it part of a trend observed in previous years, but was largely related to a prolonged cross-border outbreak disproportionately affecting MSM. In addition to the EU/EEA, several other countries in the Americas, Asia, and Oceania reported outbreaks disproportionately affecting MSM [8]. The first EU alert of this global outbreak, characterised by three different viral strains of sub-genotype 1A, was launched by the Netherlands in 2016, while an earlier increase had been observed in Taiwan in the second half of 2015 [9].

An early analysis of this European outbreak reported on 1 400 confirmed cases, mostly unvaccinated (92%), self-identified as MSM (84%), and in part with a travel history to Spain during the incubation period (43%), which was one of the countries most affected by the outbreak [10].

As in previous years, Nordic countries reported the lowest notification rates, while eastern European countries reported the highest. However, in 2017 most eastern EU countries reported a decrease in hepatitis A notifications (except Poland), while most western and central EU countries reported large increases compared to the previous years, probably reflecting a larger involvement of these countries' population in the MSM outbreak [10].

Notification rates among children aged 15 years and below and adults aged 65 years and above were similar to previous years, while adults between 15 and 65 years of age had much higher notification rates. Although such an increase was particularly noticeable in male cases, it could also be observed in females, showing that large hepatitis A outbreaks cannot be circumscribed to a single population group at increased risk of infection (MSM, in this case). The 2017 outbreak affected the whole community with transmission associated not only with high-risk sexual behaviours but also with person-to-person transmission linked to non-sexual practices, and food-borne transmission due to contamination from food-handlers [10].

Many of the cases in 2017 were among children. Since most children develop a mild or very mild disease, it is possible that surveillance systems were only able to capture a part of the infections in this population group, thereby underestimating the true number of cases [11]. Adults older than 44 years also accounted for almost 5 000 EU/EEA cases in 2017. Older adults are at increased risk of severe disease and hospitalisations, and in rare cases death [12]. A substantial number of cases in 2017 also appear to be associated with infections acquired abroad. The number of cases reported as travel-associated is likely to be underestimated due to under-reporting of travel information. A more detailed analysis of such cases in the EU/EEA found a higher proportion of travel-associated cases, stressing how travel is still a major risk factor for HAV infection in the EU/EEA [13].

Finally, as in previous years, national authorities reported investigating cluster of cases suspected to be associated with food-borne transmission or with transmission taking place among PWID, a group known to be at increased risk of infection [14]. In both food-borne events investigated by national authorities, soft berries were the suspected vehicle of infection confirming that contamination of this food is often associated hepatitis A transmission in Europe [15].

## Public health implications

The large outbreak disproportionately affecting MSM taking place in 2017 reminds us of the importance of vaccinating for hepatitis A people in groups with an increased risk of infection. For those countries at low and very low HAV endemicity, like most EU/EEA countries, the World Health Organization (WHO) recommends vaccinating MSM, travellers to endemic areas, and PWID [11,14]. The same group should be targeted by communication campaigns to increase awareness on the infection and on the mode of transmission.

In low and very low HAV endemicity settings, WHO also recommends vaccinating people who are at risk of a severe outcome (i.e. immunocompromised individuals and older adults).

In countries of intermediate endemicity, WHO recommends universal childhood vaccination [14].

In all settings, actions aiming at improving hygiene and sanitation and rapid implementation of outbreak response are essential to reducing HAV transmission, including rapidly implementing tracing of contacts of cases to reduce the likelihood of secondary and tertiary transmission, and implementing strong collaboration between the public health and the food safety sectors to reduce food-borne infections.



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