



SURVEILLANCE REPORT

Annual Epidemiological Report for 2016

Botulism

Key facts

- In 2016, 30 EU/EEA countries reported 152 cases of botulism of which 128 (84.2 %) were confirmed.
- Sixteen countries notified zero cases.
- The overall notification rate was 0.02 cases per 100 000 population.
- Italy notified the highest number of cases (n=37).
- Romania presented the highest notification rate (0.08 cases per 100 000 population).

Methods

This report is based on data for 2016 retrieved from The European Surveillance System (TESSy) on 21 February 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].

Epidemiology

For the purpose of this report only tables and figures are presented. Please refer to the 2019 and more recent annual epidemiological reports for the most up-to-date information relating to botulism.

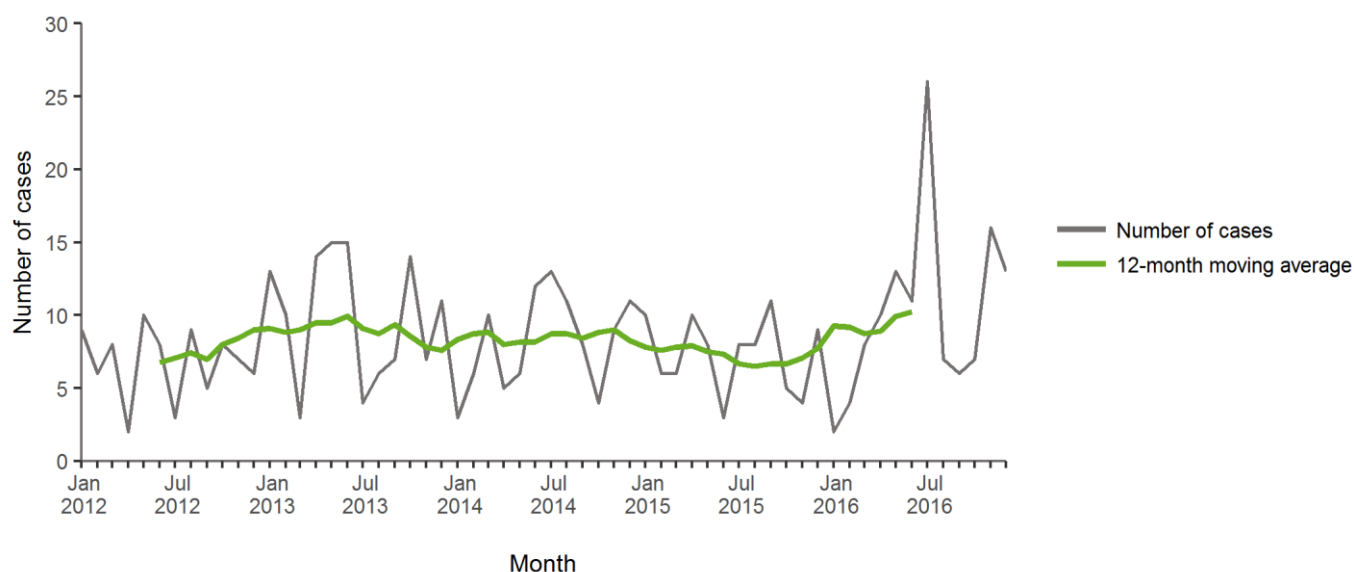
Table 1. Distribution of confirmed botulism cases by country and year, EU/EEA, 2012–2016

Country	2012		2013		2014		2015		2016			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Austria	0	0.00	1	0.01	1	0.01	4	0.05	3	0.03	0.04	3
Belgium	0	0.00	0	0.00	1	0.01	2	0.02	0	0.00	0.00	0
Bulgaria	2	0.03	1	0.01	3	0.04	2	0.03	0	0.00	0.00	3
Croatia	-	-	0	0.00	0	0.00	5	0.12	1	0.02	0.03	2
Cyprus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Czech Republic	0	0.00	4	0.04	1	0.01	0	0.00	0	0.00	0.00	0
Denmark	2	0.04	0	0.00	0	0.00	2	0.04	0	0.00	0.00	0
Estonia	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Finland	0	0.00	1	0.02	0	0.00	0	0.00	0	0.00	0.00	1
France	6	0.01	15	0.02	6	0.01	15	0.02	18	0.03	0.03	21
Germany	0	0.00	6	0.01	5	0.01	3	0.00	14	0.02	0.02	14
Greece	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Hungary	4	0.04	2	0.02	12	0.12	3	0.03	5	0.05	0.05	5
Iceland	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Ireland	0	0.00	1	0.02	1	0.02	0	0.00	0	0.00	0.00	0
Italy	34	0.06	40	0.07	12	0.02	20	0.03	37	0.06	0.06	37
Latvia	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.	.
Lithuania	1	0.03	4	0.13	3	0.10	2	0.07	0	0.00	0.00	0
Luxembourg	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Malta	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Netherlands	1	0.01	0	0.00	0	0.00	0	0.00	2	0.01	0.01	2
Norway	0	0.00	8	0.16	4	0.08	13	0.25	1	0.02	0.02	1
Poland	9	0.02	8	0.02	17	0.04	18	0.05	18	0.05	0.05	26
Portugal	0	0.00	1	0.01	1	0.01	6	0.06	3	0.03	0.03	3
Romania	15	0.07	25	0.12	31	0.16	0	0.00	15	0.08	0.07	17
Slovakia	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Slovenia	2	0.10	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0
Spain	5	0.01	1	0.00	2	0.00	2	0.00	6	0.01	0.01	9
Sweden	2	0.02	2	0.02	1	0.01	0	0.00	1	0.01	0.01	1
United Kingdom	3	0.00	0	0.00	0	0.00	15	0.02	4	0.01	0.01	7
EU/EEA	86	0.02	120	0.02	101	0.02	112	0.02	128	0.02	0.03	152

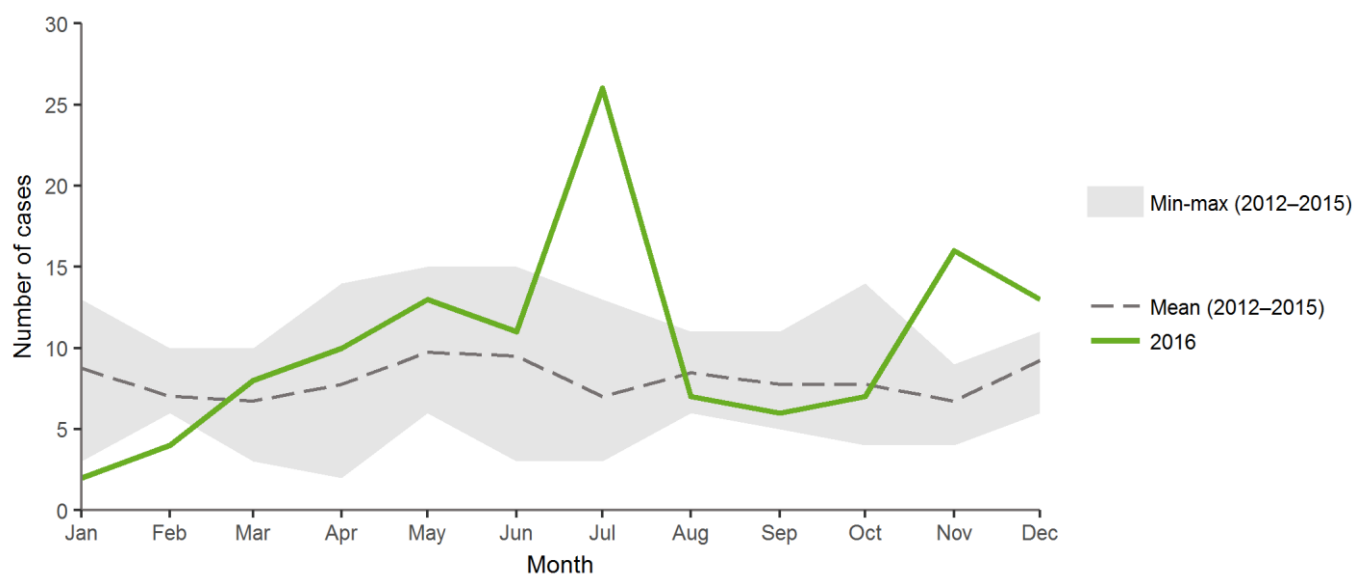
ASR: age-standardised rate

-: no rate calculated

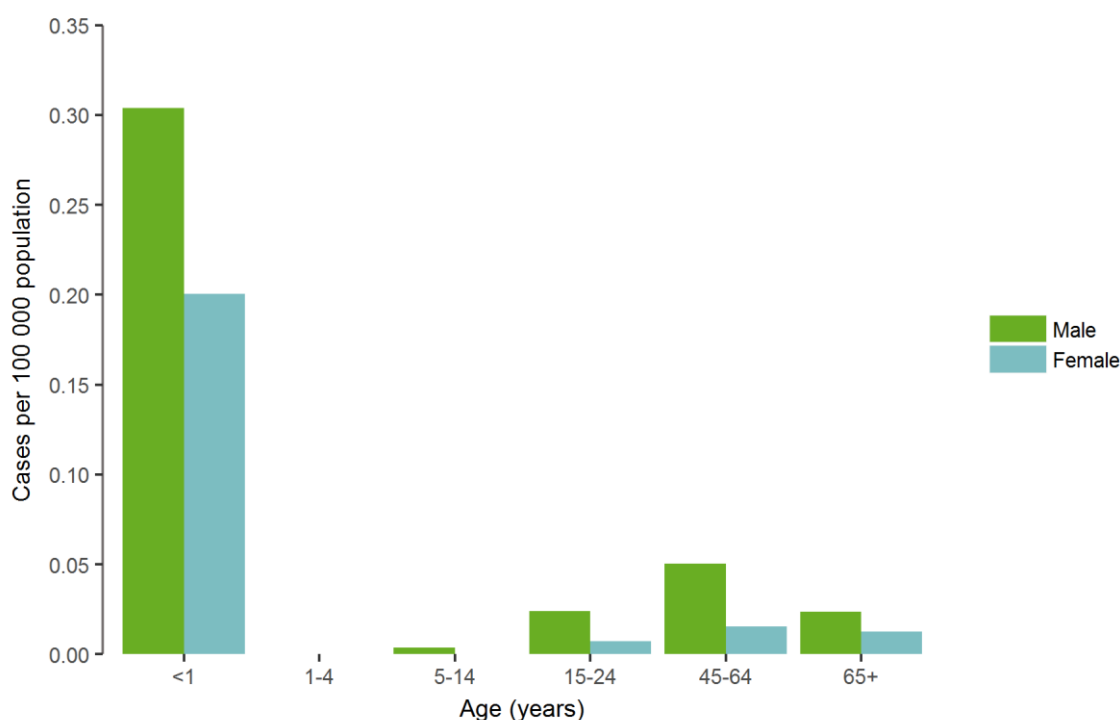
.: no data reported.

Figure 1. Distribution of confirmed botulism cases by month, EU/EEA, 2012–2016

Source: Country reports from Austria, Belgium, Bulgaria, Cyprus, 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 and the United Kingdom.

Figure 2. Distribution of confirmed botulism cases by month, EU/EEA, 2016 and 2012–2015

Source: Country reports from Austria, Belgium, Bulgaria, Cyprus, 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 and the United Kingdom.

Figure 3. Distribution of confirmed botulism cases by age and gender, EU/EEA, 2016

Outbreaks and other threats

Between 1 January and 31 December 2016, ECDC monitored two botulism threats. One type E cross-border botulism outbreak was associated with dried fish products leading to five intoxications in two countries [4]. The other event was related to botulism clusters reported in people who inject drugs (PWID) [5].

Public health implications

There is no routine vaccination against botulism. In order to reduce the number of cases, preventive measures should be strengthened by applying a multidisciplinary approach that should take into account all routes of intoxication. Care should be taken when canning food, either commercially or at home, to make sure *C. botulinum* spores are destroyed by sufficient heat treatment before storage and consumption. The development of filters for spore-forming bacteria for PWID may open a new way to reduce the incidence of infections in this risk group [6].

Foodborne outbreaks due to botulinum neurotoxin F are of concern because bivalent AB antitoxin and trivalent ABE antitoxins may lack effectiveness for the treatment of type F botulism, which may progress rapidly towards respiratory failure requiring ventilation support [7]. Preparedness for treatment of type F botulism with heptavalent antitoxin is warranted in the EU/EEA. One cases of botulism caused by toxin type F were recorded in EU/EEA in 2016.

Due to the extremely high potency of the toxin, botulism is included among the potential bio-terrorist threats in preparedness and response activities.

References

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2. European Centre for Disease Prevention and Control. Surveillance systems overview [internet, downloadable spreadsheet]. Stockholm: ECDC. Available from: [Surveillance systems overview for 2016 \(europa.eu\)](http://ecdc.europa.eu/surveillance-systems-overview)

3. European Centre for Disease Prevention and Control. Surveillance atlas of infectious diseases [Internet]. Stockholm: ECDC. Available from: <https://atlas.ecdc.europa.eu/public/index.aspx?Dataset=27&HealthTopic=7>
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5. European Centre for Disease Prevention and Control. Communicable diseases threats report, 24-30 July 2016, week 30 Stockholm: ECDC; 2016. Available from: <https://ecdc.europa.eu/en/publications-data/communicable-disease-threats-report-24-30-july-2016-week-30>.
6. Alhusein N, Scott J, Kasprzyk-Hordern B, Bolhuis A. Development of a filter to prevent infections with spore-forming bacteria in injecting drug users. Harm Reduction Journal. 2016 Dec 1;13(1):33.
7. Trehard H, Poujol I, Mazuet C, Blanc Q, Gillet Y, Rossignol F, et al. A cluster of three cases of botulism due to *Clostridium baratii* type F, France, August 2015. Euro Surveill. 2016;21(4).