

Salmonellosis

Annual Epidemiological Report for 2018

Key facts

- Salmonellosis is the second most commonly reported gastrointestinal infection, and an important cause of food-borne outbreaks in the EU/EEA.
- In 2018, 92 881 laboratory-confirmed cases of salmonellosis were reported, out of which 121 were fatal.
- The EU/EEA notification rate was 20.0 cases per 100 000 population.
- Salmonellosis notification rates have stabilised in the last six years, after a long period characterised by a declining trend.
- Young children (0–4 years) had the highest notification rate with 94.9 cases per 100 000 population, eight times higher than in adults (25–64 years).

Introduction

Enteric infections due to *Salmonella* are generally referred to by the term 'salmonellosis' when they are caused by *Salmonella* species other than *Salmonella* Typhi and *Salmonella* Paratyphi. Various animals (especially poultry, pigs, cattle and reptiles) can be reservoirs for *Salmonella*. Humans generally become infected by eating poorly cooked, contaminated food. The incubation period and the symptoms depend primarily on the amount of bacteria present in the food, and the immune status of the infected individual.

Methods

This report is based on data for 2018 retrieved from The European Surveillance System (TESSy) on 17 September 2019. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

For a detailed description of the methods used to produce this report, please refer to the 'Methods' chapter in the 'Introduction to the Annual Epidemiological Report' [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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Epidemiology

For the purpose of this report, only tables and figures have been presented. Please refer to the more recent annual epidemiological reports (such as 2021 and 2020) for the most up-to-date information relating to non-typhoid salmonellosis.

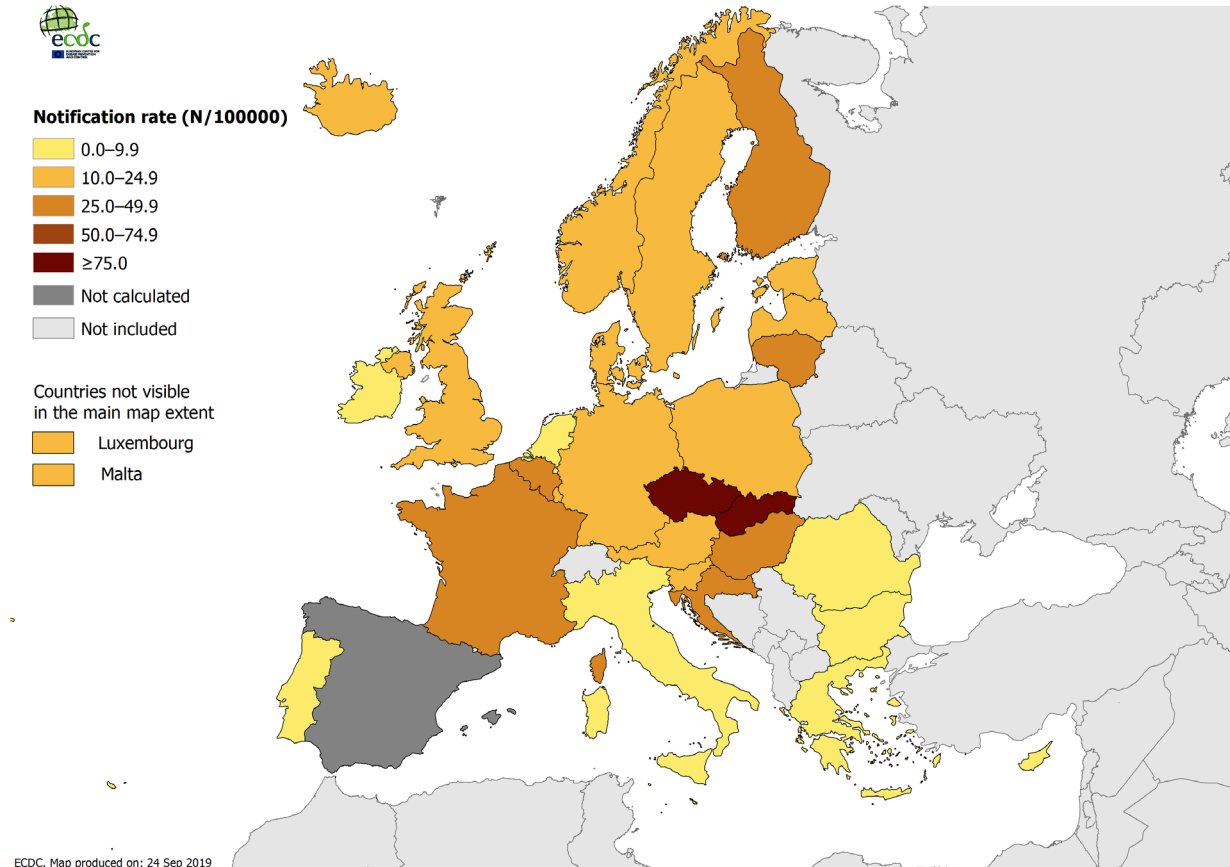
Table 1. Distribution of confirmed salmonellosis cases and rates per 100 000 population by country and year, EU/EEA, 2014–2018

Country	2014		2015		2016		2017		2018			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
Austria	1 654	19.4	1 544	18.0	1 415	16.3	1 667	19.0	1 538	17.4	18.2	1 538
Belgium	2 698	-	3 050	27.1	2 699	23.9	2 298	20.2	2 958	26.0	24.9	2 958
Bulgaria	730	10.1	1 076	14.9	718	10.0	796	11.2	586	8.3	8.8	587
Croatia	1 494	35.2	1 593	37.7	1 240	29.6	1 242	29.9	1 323	32.2	33.3	1 345
Cyprus	88	10.3	65	7.7	77	9.1	59	6.9	44	5.1	5.2	44
Czechia	13 255	126.1	12 408	117.7	11 610	110.0	11 473	108.5	10 901	102.7	105.3	11 340
Denmark	1 124	20.0	925	16.3	1 081	18.9	1 067	18.6	1 168	20.2	20.0	1 168
Estonia	92	7.0	112	8.5	351	26.7	265	20.1	314	23.8	24.3	323
Finland	1 622	29.8	1 650	30.2	1 512	27.6	1 535	27.9	1 430	25.9	27.0	1 430
France	8 880	28.0	10 305	32.3	8 876	27.7	7 993	24.9	8 936	27.8	26.7	8 936
Germany	16 000	19.8	13 667	16.8	12 858	15.6	14 051	17.0	13 293	16.1	16.8	13 529
Greece	349	3.2	466	4.3	735	6.8	672	6.2	640	6.0	6.3	649
Hungary	5 249	53.1	4 894	49.7	4 722	48.0	3 922	40.0	4 161	42.6	44.3	4 640
Iceland	40	12.3	44	13.4	39	11.7	64	18.9	63	18.1	19.3	63
Ireland	259	5.6	270	5.8	299	6.3	379	7.9	352	7.3	7.2	367
Italy	4 467	7.3	3 825	6.3	4 134	6.8	3 347	5.5	3 635	6.0	6.3	3 656
Latvia	278	13.9	380	19.1	454	23.1	225	11.5	409	21.1	21.1	439
Liechtenstein	.	.	.	.	.	.	.	.	.	.	.	.
Lithuania	1 145	38.9	1 082	37.0	1 076	37.3	1 005	35.3	779	27.7	27.6	793
Luxembourg	110	20.0	106	18.8	108	18.7	118	20.0	135	22.4	22.5	135
Malta	132	30.7	126	28.7	162	36.0	107	23.2	116	24.4	25.7	116
Netherlands	970	9.0	974	9.0	1 150	10.6	954	8.7	1 061	9.6	9.7	1 061
Norway	1 118	21.9	928	18.0	865	16.6	992	18.9	961	18.1	18.3	961
Poland	8 042	21.2	8 245	21.7	9 718	25.6	8 921	23.5	9 064	23.9	24.9	9 651
Portugal	244	2.3	325	3.1	376	3.6	462	4.5	302	2.9	3.2	322
Romania	1 512	7.6	1 330	6.7	1 479	7.5	1 154	5.9	1 410	7.2	7.4	1 443
Slovakia	4 078	75.3	4 841	89.3	5 299	97.7	5 789	106.5	6 791	124.8	127.6	7 222
Slovenia	597	29.0	401	19.4	311	15.1	275	13.3	274	13.3	13.6	274
Spain	6 633	-	9 015	-	9 818	-	9 426	-	8 730	-	-	8 730
Sweden	2 211	22.9	2 312	23.7	2 247	22.8	2 280	22.8	2 041	20.2	20.3	2 041

Country	2014		2015		2016		2017		2018			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Confirmed cases	Rate	ASR	Reported cases
United Kingdom	8 099	12.6	9 490	14.6	9 900	15.1	10 108	15.4	9 466	14.3	14.2	9 466
EU/EEA	93 170	20.7	95 449	21.0	95 329	20.4	92 646	19.6	92 881	20.0	20.3	95 227

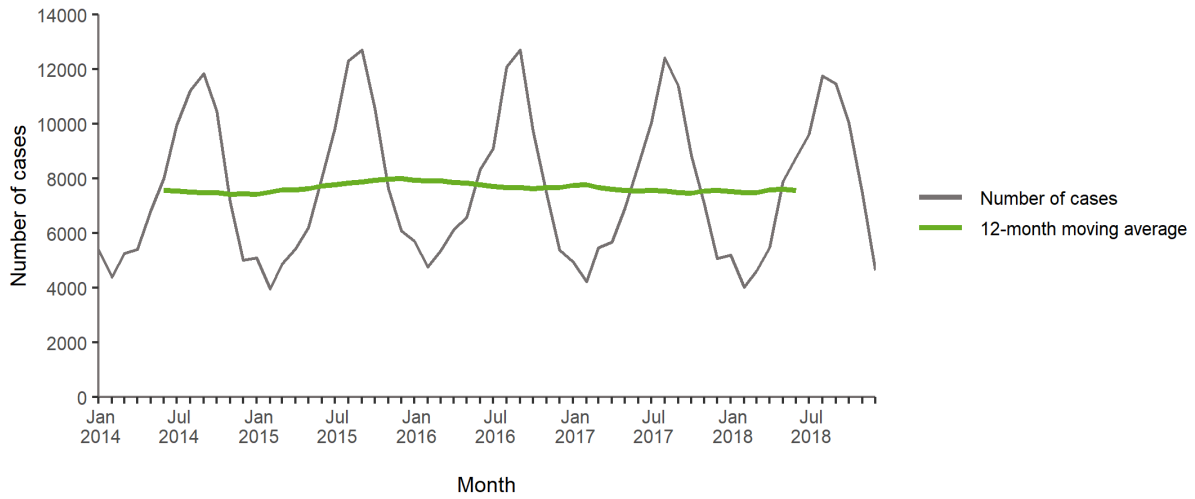
Source: country reports
 ASR: age-standardised rate
 ∴ no data reported
 ∴ no rate calculated

Figure 1. Distribution of confirmed salmonellosis cases per 100 000 population by country, EU/EEA, 2018



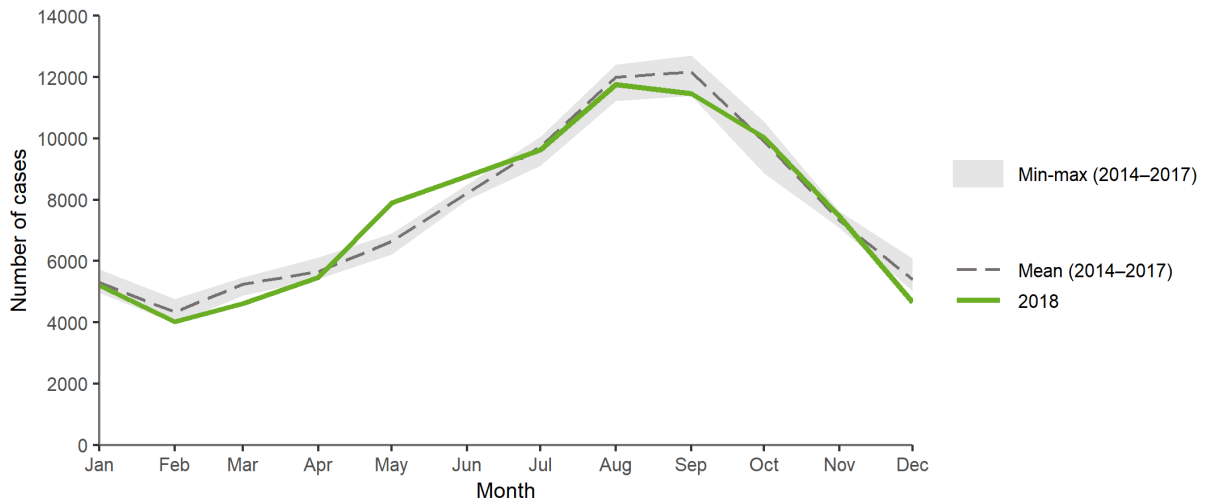
Source: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United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

Figure 2. Distribution of confirmed salmonellosis cases by month, EU/EEA, 2014–2018



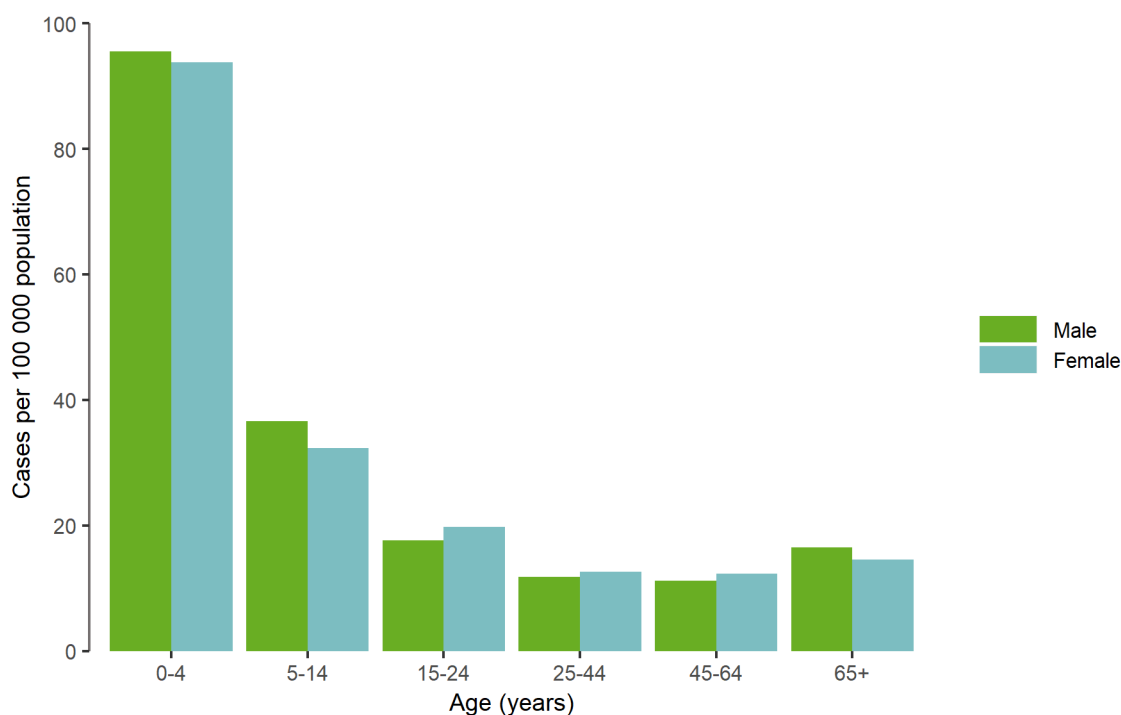
Source: Country reports from Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United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

Figure 3. Distribution of confirmed salmonellosis cases by month, EU/EEA, 2014–2017 and 2018



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, the United Kingdom.

Figure 4. Distribution of confirmed salmonellosis cases per 100 000 population, by age and gender, EU/EEA, 2018



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, the United Kingdom.

Public health implications

The rates of non-typhoidal salmonellosis vary between EU/EEA countries, reflecting differences in prevalence in food and animals used for food production, animal trade between countries, the proportion of travel-associated cases, and the quality and coverage of surveillance systems.

Eggs and egg products continue to be the highest risk foods in *Salmonella* outbreaks, as clearly exemplified by the extensive *S. Enteritidis* outbreak that started in 2016 and continued in 2018 [4, 5]. Proper *Salmonella* control measures at the primary production level, sufficient laboratory capacity and reporting are prerequisites to reduce *Salmonella* prevalence in food-producing animals.

References

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2. European Centre for Disease Prevention and Control (ECDC). Surveillance systems overview for 2018. Stockholm: ECDC; 2017. Available at: <https://www.ecdc.europa.eu/en/publications-data/surveillance-systems-overview-2018>
3. European Centre for Disease Prevention and Control (ECDC). Surveillance Atlas of Infectious Diseases. Stockholm: ECDC; 2017. Available at: <http://atlas.ecdc.europa.eu/public/index.aspx?Dataset=27&HealthTopic=46>
4. European Centre for Disease Prevention and Control (ECDC) and European Food Safety Authority (EFSA). Joint rapid outbreak assessment: Multi-country outbreak of *Salmonella* Enteritidis infections linked to Polish eggs. Stockholm/Parma: ECDC/EFSA; 12 December 2017. Available at: <https://www.ecdc.europa.eu/en/publications-data/joint-rapid-outbreak-assessment-multi-country-outbreak-salmonella-enteritidis-0>
5. Pijnacker R, Dallman TJ, Tijsma ASL, Hawkins G, Larkin L, Kotila SM, et al. An international outbreak of *Salmonella enterica* serotype Enteritidis linked to eggs from Poland: a microbiological and epidemiological study *Lancet Infect Dis*. 2019 July;19(7):778–86. Available at: <https://www.sciencedirect.com/science/article/pii/S1473309919300477?via%3Dihub>