

Shigellosis

Annual Epidemiological Report for 2021

Key facts

- Shigellosis is a relatively uncommon disease in the EU/EEA, but remains of concern in some countries and for some population groups.
- For 2021, 30 EU/EEA countries reported 2 115 confirmed cases of shigellosis.
- The overall notification rate was 0.8 cases per 100 000 population. This is a slight increase compared to 2020, when the lowest ever shigellosis rate was reported, due to the combined effects of the COVID-19 pandemic and the absence of UK data following the country's withdrawal from the EU.
- The highest notification rate was observed in children under five years of age and male adults aged 25–44 years. Sexual transmission of shigellosis among men who have sex with men (MSM) is thought to have contributed to the gender imbalance in the latter group.

Introduction

Shigellosis is a gastrointestinal infection caused by one of four species of *Shigella* bacteria: *Shigella sonnei*, *S. flexneri*, *S. boydii* and *S. dysenteriae*. Humans are the only primary reservoir and they become infected by swallowing material contaminated with human faeces, either via the hands or on objects which have been in contact with faeces. Infections can also be transmitted via contaminated food and water. In low-income settings, the disease largely affects children, although when it occurs in other settings, travellers and MSM are identified as the main risk groups. The increasing level of resistance to first- and second line antimicrobials is of concern.

Methods

This report is based on data for 2021 retrieved from The European Surveillance System (TESSy) on 9 October 2022. 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 purposes of this report, only tables and figures are presented. Please refer to the 2022 and more recent annual epidemiological reports for the most up-to-date information relating to shigellosis.

Table 1. Distribution of confirmed shigellosis cases and rates per 100 000 population by country and year, EU/EEA, 2017–2021

Country	2017		2018		2019		2020		2021	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Austria	54	0.6	69	0.8	72	0.8	25	0.3	39	0.4
Belgium	353	3.1	427	3.7	423	3.7	115	1.0	199	1.7
Bulgaria	308	4.3	235	3.3	219	3.1	47	0.7	27	0.4
Croatia	1	0.0	29	0.7	17	0.4	1	0.0	3	0.1
Cyprus	0	0.0	4	0.5	2	0.2	0	0.0	0	0.0
Czechia	166	1.6	142	1.3	127	1.2	72	0.7	41	0.4
Denmark	137	2.4	146	2.5	192	3.3	51	0.9	57	1.0
Estonia	16	1.2	17	1.3	29	2.2	4	0.3	2	0.2
Finland	85	1.5	111	2.0	154	2.8	41	0.7	30	0.5
France	997	3.4	1 132	3.8	1 167	3.9	564	1.9	769	2.6
Germany	438	0.5	655	0.8	614	0.7	139	0.2	141	0.2
Greece	81	0.8	78	0.7	104	1.0	61	0.6	23	0.2
Hungary	18	0.2	13	0.1	45	0.5	61	0.6	30	0.3
Iceland	6	1.8	4	1.1	4	1.1	1	0.3	1	0.3
Ireland	97	2.0	101	2.1	121	2.5	66	1.3	59	1.2
Italy	17	NRC	32	NRC	40	NRC	14	NRC	14	NRC
Latvia	3	0.2	17	0.9	14	0.7	3	0.2	1	0.1
Liechtenstein	NDR	NRC	NDR	NR	NDR	NR	NDR	NR	0	0.0
Lithuania	9	0.3	21	0.7	17	0.6	2	0.1	2	0.1
Luxembourg	9	1.5	11	1.8	13	2.1	13	2.1	8	1.3
Malta	2	0.4	4	0.8	9	1.8	0	0.0	0	0.0
Netherlands	410	2.4	484	2.8	516	3.0	187	1.1	202	1.2
Norway	115	2.2	102	1.9	133	2.5	37	0.7	33	0.6
Poland	31	0.1	89	0.2	34	0.1	12	0.0	18	0.0
Portugal	12	0.1	24	0.2	8	0.1	5	0.0	11	0.1
Romania	122	0.6	147	0.8	117	0.6	15	0.1	17	0.1
Slovakia	257	4.7	195	3.6	146	2.7	103	1.9	131	2.4
Slovenia	16	0.8	26	1.3	24	1.2	14	0.7	18	0.9
Spain	325	0.7	455	1.0	512	1.1	72	NRC	162	NRC
Sweden	13	2.1	259	2.6	305	3.0	81	0.8	77	0.7
United Kingdom	2 040	3.1	2 617	3.9	3 270	4.9	NA	NA	NA	NA
EU-EEA	6 338	1.7	7 646	2.0	8 448	2.2	1 806	0.7	2 115	0.8

Source: Country reports.

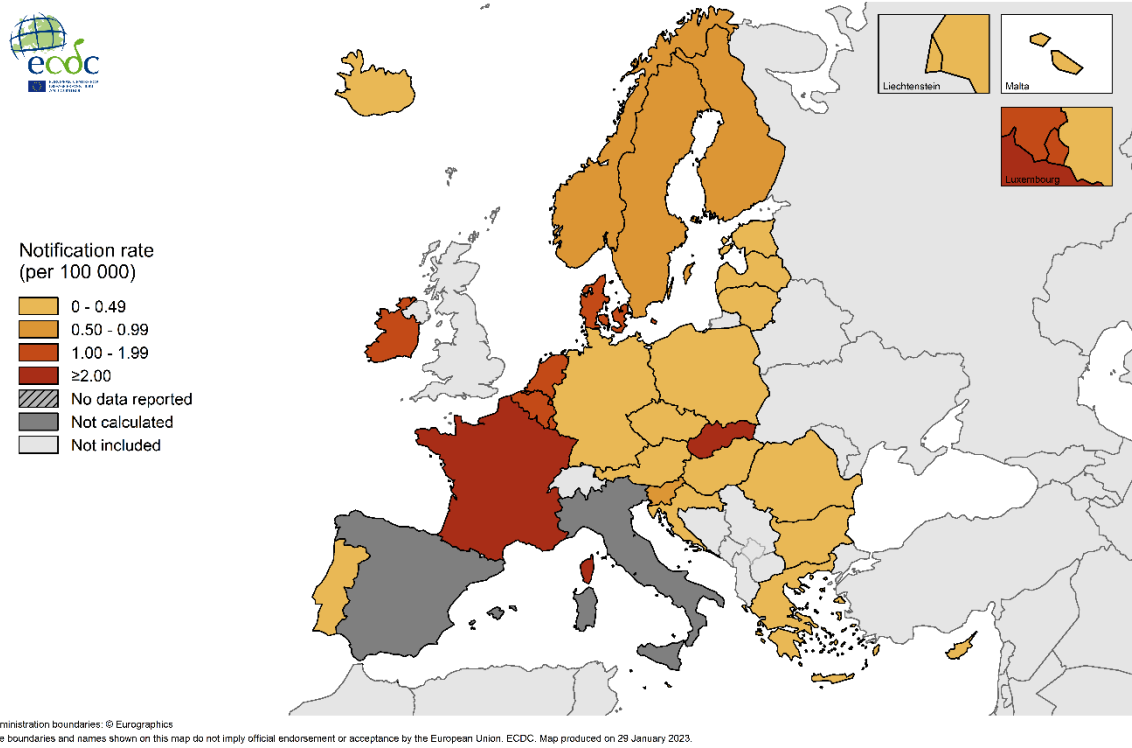
NDR: no data reported.

NRC: no rate calculated.

NA: Not applicable.

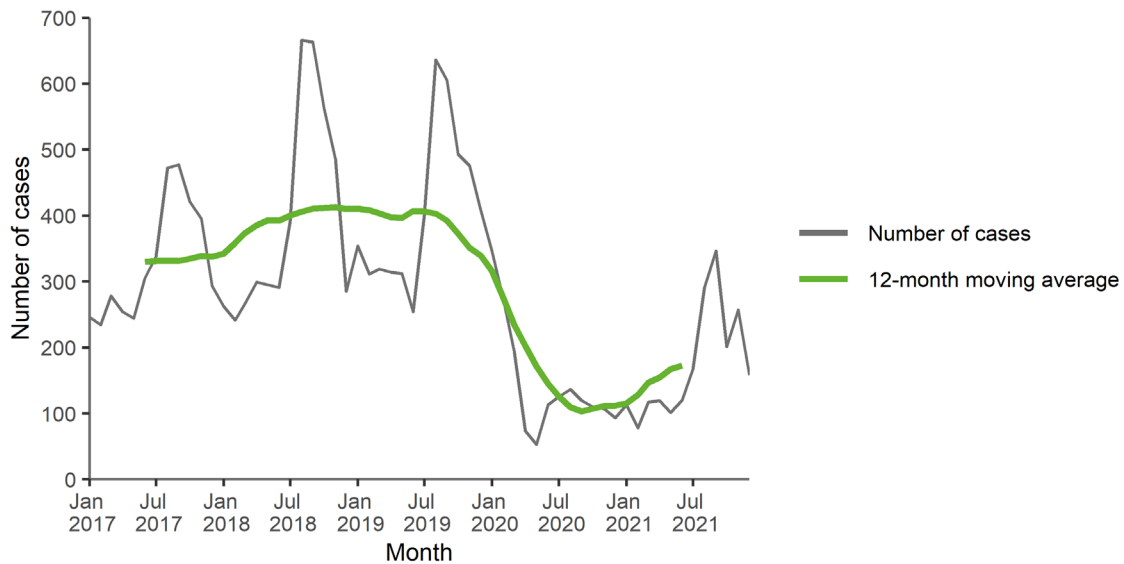
Data were not reported by the United Kingdom for 2020–2021 due to its withdrawal from the EU on 31 January 2020.

Figure 1. Number of confirmed shigellosis cases per 100 000 population by country, EU/EEA, 2021



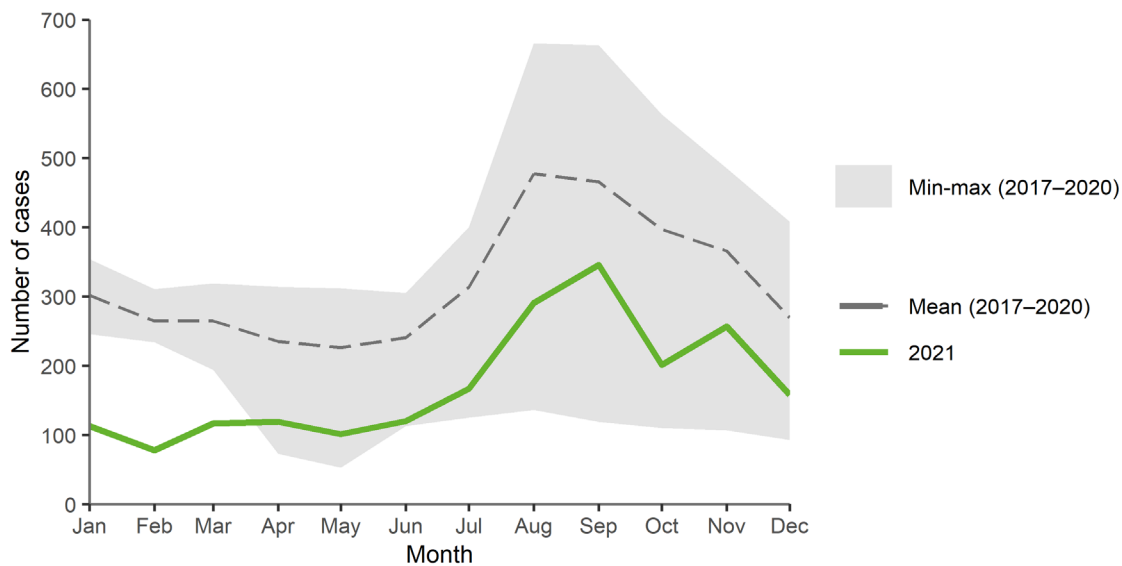
Source: country reports

Figure 2. Number of confirmed shigellosis cases by month, EU/EEA, 2017–2021



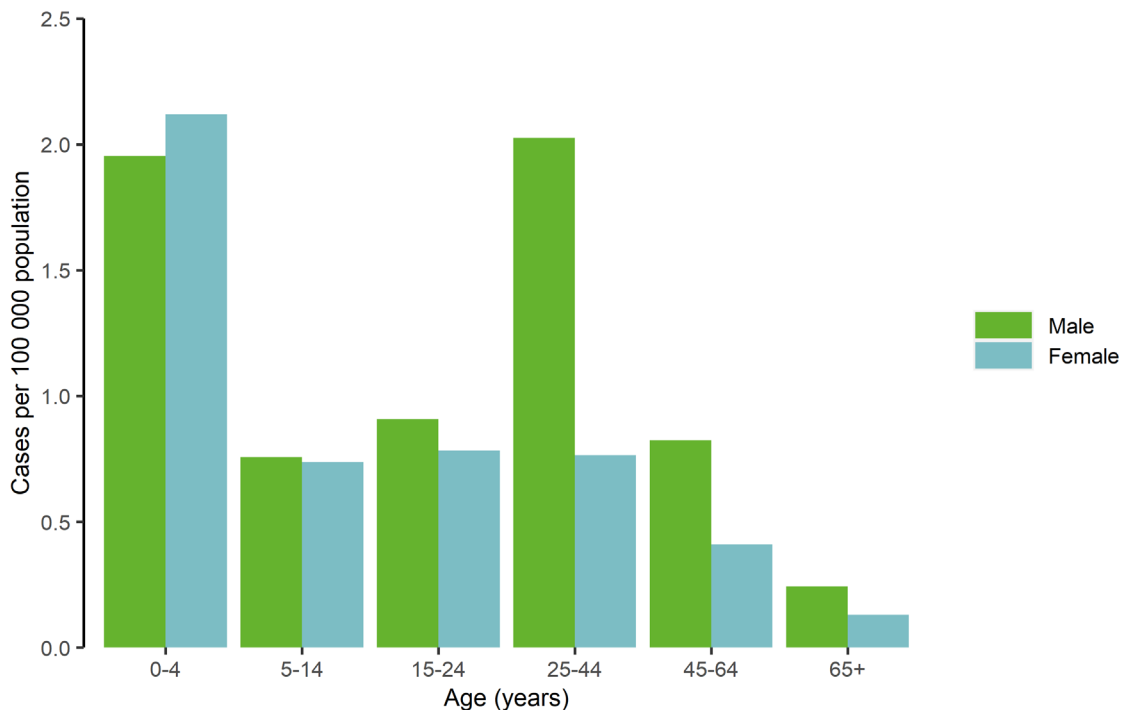
Source: Country reports from Austria, Belgium, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

Figure 3. Number of confirmed shigellosis cases by month, EU/EEA, 2021 and 2017–2020



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

Figure 4. Number of confirmed shigellosis cases per 100 000 population, by age and gender, EU/EEA, 2021



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

Microbial surveillance

Table 2. Number of confirmed shigellosis cases by species, EU/EEA, 2021

Pathogen	Number of cases	Percentage
<i>Shigella sonnei</i>	1 057	53.7%
<i>Shigella flexneri</i>	841	42.7%
<i>Shigella boydii</i>	55	2.8%
<i>Shigella dysenteriae</i>	16	0.8%
Total	1 969	100%

Source: TESSy data extracted 28 August 2023.

Table 3. Antimicrobial resistance in isolates from confirmed shigellosis cases by pathogen, 2021

	Susceptibility	Ampicillin (Five countries)		Azithromycin* (One country)		Cefotaxime (Four countries)		Ceftazidime (Four countries)		Ciprofloxacin (Five countries)		SXT (Three countries)	
		N	%	N	%	N	%	N	%	N	%	N	%
<i>S. sonnei</i>	R	65	44.8	NA	NA	57	39.6	7	4.9	45	31.0	24	92.3
	I/NWT	0	0.0	12	52.2	0	0.0	47	32.6	1	0.7	0	0.0
	S/WT	80	55.2	11	47.8	87	60.4	90	62.5	99	68.3	2	7.7
	Total	145	-	23	-	144	-	144	-	145	-	26	-
<i>S. flexneri</i>	R	73	89.0	NA	NA	3	3.7	0	0.0	12	15.4	3	33.3
	I/NWT	0	0.0	8	-	0	0.0	3	3.7	0	0.0	0	0.0
	S/WT	9	11.0	4	-	79	96.3	78	96.3	66	84.6	6	66.7
	Total	82	-	12	-	82	-	81	-	78	-	9	-

Source: Country reports from Austria, Belgium, Estonia, Italy, and Lithuania. TESSy data extracted 25 October 2023.

N: Number of isolates; NA: Not applicable.

#: Percentage of tested isolates; R: Resistant; I/NWT: Susceptible, increased exposure or non-wild type.

S/WT: Susceptible, standard dosing regimen or wild type; SXT: Trimethoprim-sulfamethoxazole.

* Azithromycin classification is based on epidemiological cut-off values and therefore the terminology wild type and non-wild type is used.

Outbreaks and other threats

No foodborne shigellosis outbreaks were reported to EPIS/EpiPulse in 2021. One multi-country outbreak of extensively-drug resistant *Shigella sonnei* infections in MSM was reported in 2022 which had already begun in 2021, affecting at least nine EU/EEA countries and the United Kingdom [4].

Public health implications

Humans are the only primary reservoir for *Shigella* species, with transmission occurring either through person-to-person contact or ingestion of contaminated food or water [5]. Over the past few decades, cases of sexually-transmitted *Shigella* have been reported [5]. Within low-income settings, children are those most affected by shigellosis, while in other settings, travellers and MSM are identified as the main risk groups [5,6]. In general, prevention of infection and control of outbreaks relies on good personal and environmental hygiene practices to prevent faecal-oral transmission, particularly during sexual activities. Those visiting endemic areas should follow advice on how to avoid food and water-borne infections when travelling. Targeted information campaigns to increase awareness of shigellosis could help reduce the spread of infection among risk groups.

While the main therapy for shigella infection is fluid replacement to prevent dehydration, in the event of dysentery antibiotics can be used to limit the duration of symptoms and pathogen shedding [7]. However, prescribing clinicians should be aware of increasing resistance among commonly-prescribed therapy regimens, especially among high-risk groups.

References

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