



EPIDEMIOLOGICAL DATA FOR SALMONELLOSIS IN GREECE, 2004-2025 MANDATORY NOTIFICATION SYSTEM

Key points

- Based on the data for the period 2004-2025:
 - The notification rate of the disease was higher among children <15 years old and especially in the age group of 0-4 years old.
 - A seasonal pattern was apparent: the mean annual notification rate increased during summer, reaching a peak in August.
 - 15.7% of the cases reported one or more people with similar symptoms among their contacts.
 - *S. Enteritidis* and *S. Typhimurium* were the most frequently reported serovars.
 - In 2025, the notification rate of salmonellosis decreased by 11% compared to 2024.

Salmonella spp. is one of the most important etiological agents responsible for foodborne infections, as well as the leading bacterial cause of foodborne disease outbreaks, in many European countries. It is a common cause of diarrheal illness among children and the elderly; however, it can affect people of all ages [1].

Time trend

During 2004-2025, 14,583 salmonellosis cases were reported in Greece. The mean annual notification rate of salmonellosis was 6.14 cases per 100,000 population (SD: 2.7). In 2025, the notification rate decreased by 11% compared to 2024. In 2024 and 2023, the notification rate of the disease increased by 12.6% and 47%, respectively, compared to the previous year.

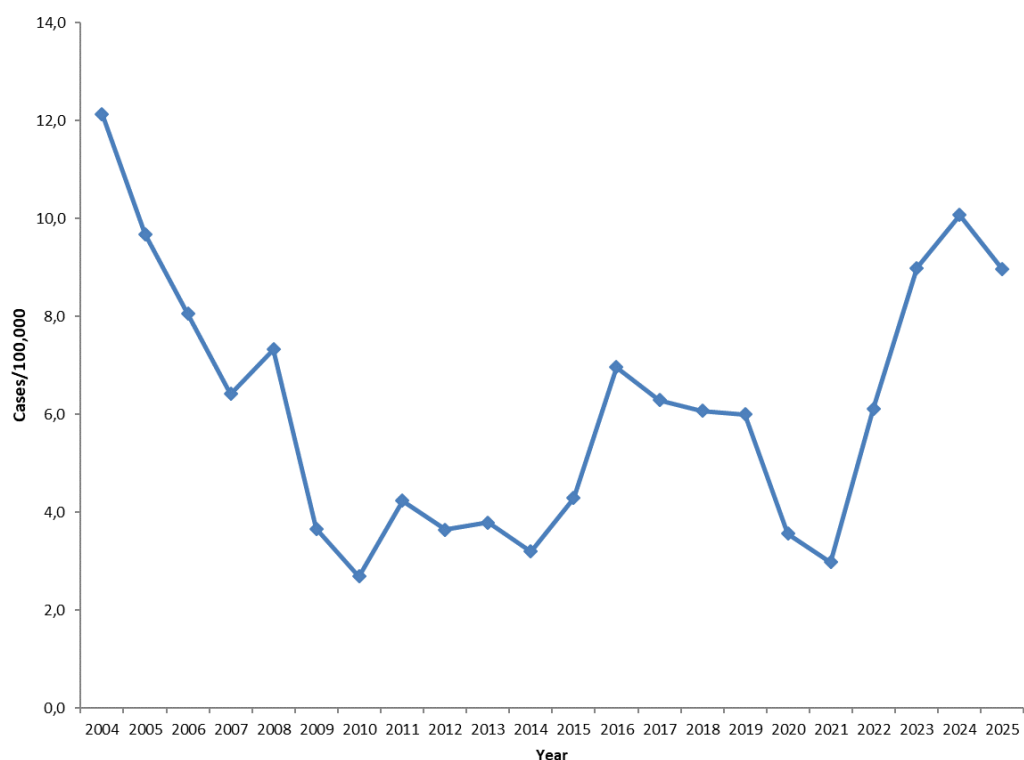
The number of reported cases with the respective notification rate per year is presented in **Table 1**.

Table 1. Annual number of notified cases and notification rate of salmonellosis, Mandatory Notification System, Greece, 2004-2025.

Year	Number of cases	Annual notification rate (per 100,000 population)
2004	1,327	12.13
2005	1,062	9.68
2006	886	8.05
2007	708	6.42
2008	810	7.32
2009	406	3.66
2010	299	2.69
2011	471	4.23
2012	404	3.64
2013	417	3.79
2014	349	3.19
2015	465	4.28
2016	750	6.95
2017	677	6.29
2018	652	6.07
2019	643	6.00
2020	381	3.55
2021	318	2.98
2022	640	6.12
2023	936	8.99
2024	1,053	10.07
2025	929	8.96
Total	14,583	6.14*

*Mean annual notification rate for the period 2004-2025

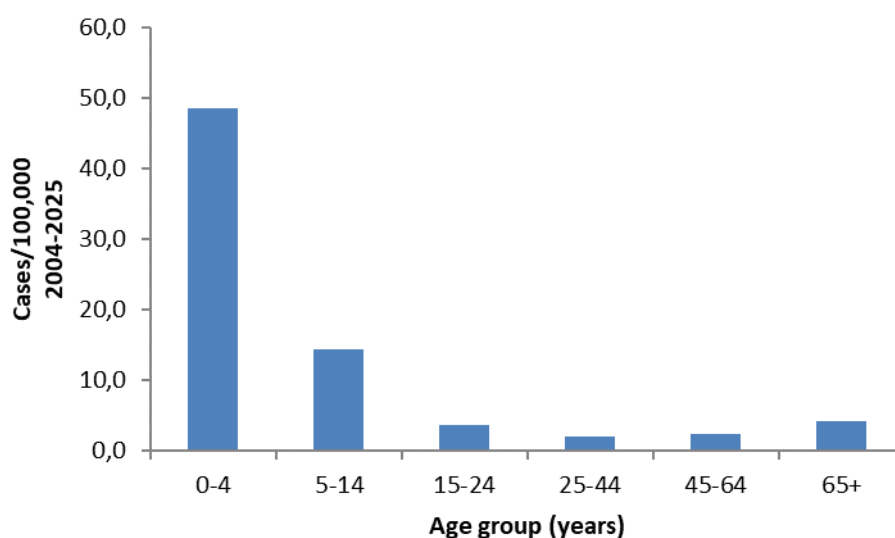
The temporal distribution of salmonellosis notification rate is depicted in **Graph 1**.



Graph 1. Time trend of salmonellosis notification rate, Mandatory Notification System, Greece, 2004-2025.

Age and gender distribution

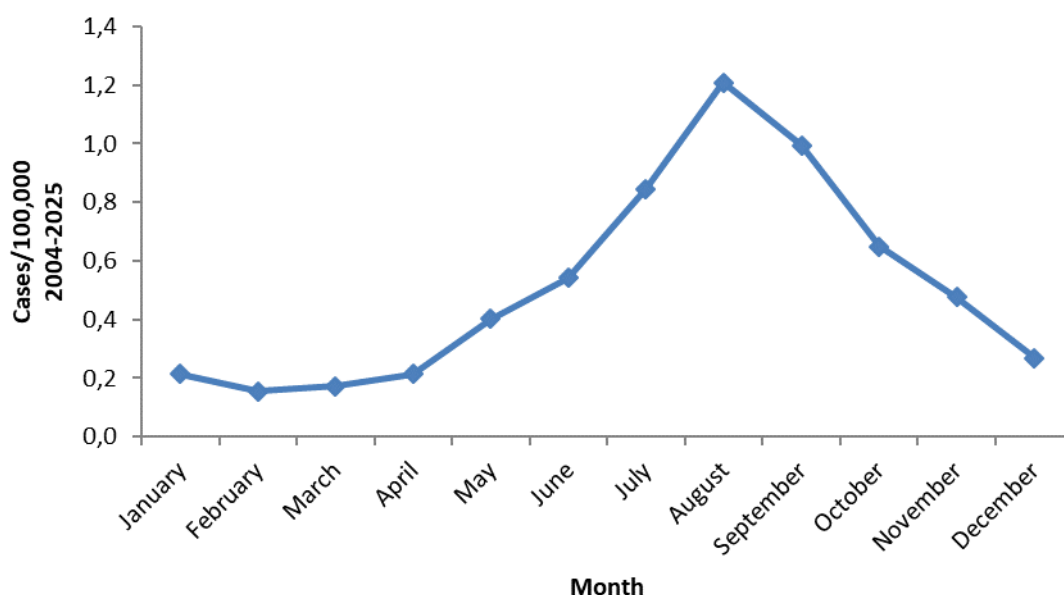
For the period 2004-2025, salmonellosis was more frequently reported among children, particularly in the 0-4 years age group (**Graph 2**). In this age group, the mean annual notification rate was 48.5 cases per 100,000 population, whereas in the remaining age groups it did not exceed 14.4 cases per 100,000 population. The notification rate among males and females was 6.6 and 5.7 cases per 100,000 population, respectively.



Graph 2. Annual notification rate (cases/100,000 population) of salmonellosis by age group, Mandatory Notification System, Greece, 2004-2025.

Seasonality

There was an apparent seasonal pattern of disease frequency, with the mean annual notification rate increasing during summer, reaching a peak in August and gradually decreasing over the following months (**Graph 3**).



Graph 3. Mean annual notification rate (cases/100,000 population) of salmonellosis by month, Mandatory Notification System, Greece, 2004-2025.

Geographical distribution

During the period 2004-2025, the geographical area of Northern Aegean islands had the highest mean annual notification rate (9.2 cases/100,000 population) and that of the Southern Aegean islands the lowest (3.0 cases /100,000 population) (**Figure 1**).

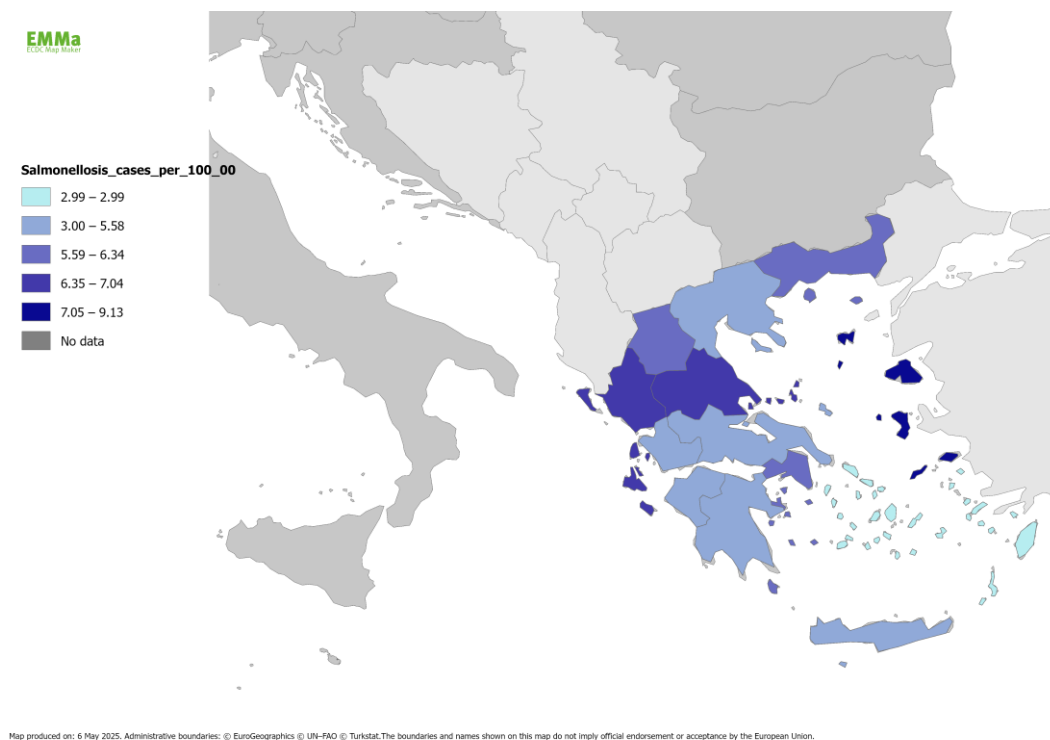
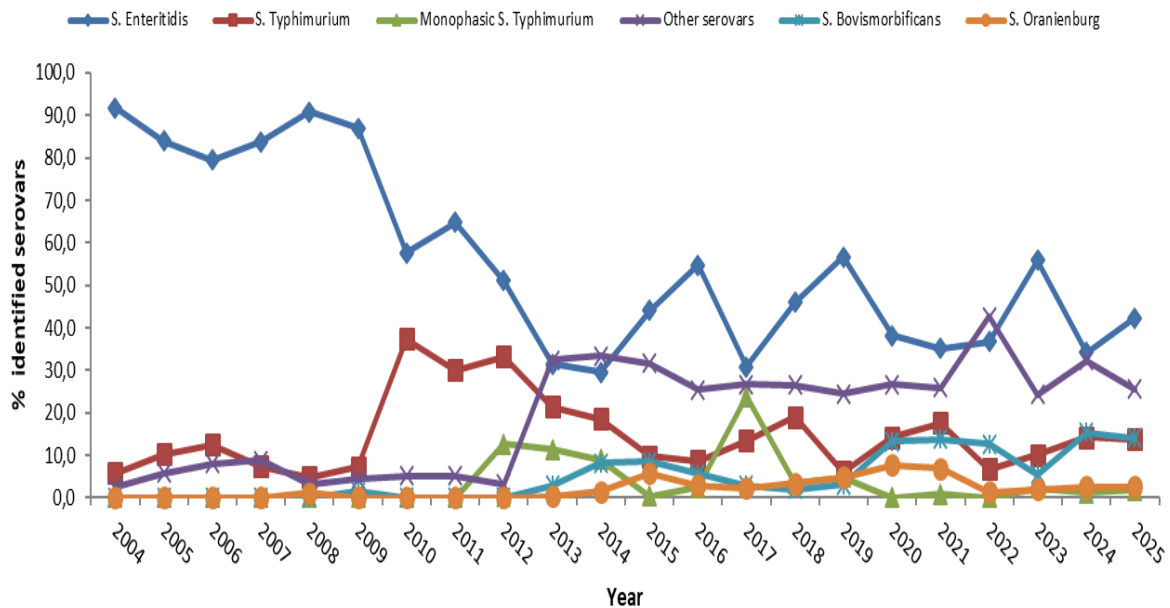


Figure 1. Mean annual notification rate (cases/100,000 population) of salmonellosis by region, Mandatory Notification System, Greece, 2004-2025.

Laboratory data

The proportion of *Salmonella* serovars (out of the total number of identified serovars), for the period 2004-2025, is depicted in **Graph 4**. *Salmonella* Enteritidis, *S. Typhimurium*, *S. Bovismorbificans*, monophasic *S. Typhimurium* and *S. Oranienburg* were the most frequently identified serovars. In 2023, the isolation rate of *S. Enteritidis* increased by 52.5% compared to 2022. However, in 2024, this rate decreased by 38.8% compared to 2023. In contrast, the isolation rates of the *S. Typhimurium* and *S. Bovismorbificans* serotypes increased, compared to those of 2023, by 40.9% and 181.6%, respectively.



Graph 4. Annual percentage of identified *S. Enteritidis*, *S. Typhimurium*, monophasic *S. Typhimurium*, *S. Bovismorbificans*, *S. Oranienburg* and other serovars, Mandatory Notification System & National Salmonella Shigella Reference Centre, Greece, 2004-2025.

The frequency of the reported serovars for the period of interest is presented in **Table 2**. It should be noted that the data presented in this report refers to the cases reported through the Mandatory Notification System. For a subset of these cases, serotype information is available from the National Salmonella, Shigella Reference Centre (SSRC), to which clinical isolates from hospitals across the country are submitted for serotyping and further testing. Data on the total number of isolates serotyped at the SSRC, as well as on antimicrobial resistance, are available online at <http://www.mednet.gr/whonet/>.

Table 2. Frequency distribution of *S. Enteritidis*, *S. Typhimurium*, monophasic *S. Typhimurium*, *S. Bovismorbificans*, *S. Oranienburg* and other serovars per year, Mandatory Notification System & National Salmonella Shigella Reference Centre, Greece, 2004-2025.

Year	<i>S. Enteritidis</i> n (%)	<i>S. Typhimurium</i> n (%)	Monophasic <i>S. Typhimurium</i> n (%)	<i>S. Bovismorbificans</i> n (%)	<i>S. Oranienburg</i> n (%)	Other serovars n (%)	Total n (%)
2004	347 (92)	22 (6)	0 (0)	0 (0)	0 (0)	9 (2)	378 (100)
2005	305 (84)	37 (10)	0 (0)	0 (0)	0 (0)	21 (6)	363 (100)
2006	228 (80)	36 (12)	0 (0)	0 (0)	0 (0)	23 (8)	287 (100)
2007	170 (84)	15 (7)	0 (0)	0 (0)	0 (0)	18 (9)	203 (100)
2008	168 (91)	9 (5)	0 (0)	0 (0)	2 (1)	6 (3)	185 (100)
2009	60 (87)	5 (7)	0 (0)	1 (1)	0 (0)	3 (4)	69 (100)
2010	68 (58)	44 (37)	0 (0)	0 (0)	0 (0)	6 (5)	118 (100)
2011	140 (65)	65 (30)	0 (0)	0 (0)	0 (0)	11 (5)	216 (100)
2012	97 (51)	63 (33)	24 (13)	0 (0)	0 (0)	6 (3)	190 (100)
2013	75 (32)	51 (21)	27 (11)	7 (3)	1 (0)	77 (32)	238 (100)
2014	62 (30)	39 (19)	19 (9)	17 (8)	3 (1)	70 (33)	210 (100)
2015	145 (44)	32 (10)	1 (0,3)	28 (9)	19 (6)	104 (32)	329 (100)
2016	202 (55)	32 (9)	9 (2)	21 (6)	11 (3)	94 (25)	369 (100)
2017	106 (31)	46 (13)	82 (24)	10 (3)	8 (2)	92 (27)	344(100)
2018	97 (46)	40 (18)	7 (3)	4 (2)	7 (3)	56 (27)	211(100)
2019	93 (57)	10 (6)	8 (5)	5 (3)	8 (5)	40 (24)	164 (100)
2020	40 (38)	15 (14)	0 (0)	14 (13)	8 (8)	28 (27)	105 (100)
2021	46 (35)	23 (18)	1 (1)	18 (14)	9 (7)	34 (26)	131 (100)
2022	55(37)	10(7)	0(0)	19(13)	2(1)	64(42)	150(100)
2023	194 (56)	35(10)	8(2)	19(6)	7(2)	84(24)	347 (100)
2024	142 (34)	59 (14)	5 (1)	64 (15)	11 (3)	134 (32)	415 (100)
2025	147 (42)	48 (14)	6 (2)	49 (14)	9 (3)	89 (26)	348 (100)

Risk factors

During the period 2004-2025, 15.7% of the notified cases reported the presence of at least one person with similar symptoms among their contacts, whereas 467 (3.6%) reported they had travelled abroad within the incubation period.

Conclusion

Salmonellosis was the second most frequently reported foodborne disease (8.96 cases per 100,000 population), in Greece in 2025, following campylobacteriosis (11 cases per 100,000 population). The mean notification rate reported by the EU and EEA/EFTA countries (excluding UK) was 18.62 cases per 100,000 population for the year 2024 [2]. When interpreting this difference, the surveillance systems’ probable under-reporting should be considered.

The decline in the notification rate of salmonellosis in Greece prior to the COVID-19 pandemic can probably be attributed to the actual decrease in disease incidence, a trend also observed in other European countries [2]. This decrease could be possibly explained by the implementation of the national salmonella control programmes in the different poultry species (breeding, laying and broiler hens of *Gallus gallus*, as well as breeding and fattening turkeys), which was initiated in Greece in 2007 in compliance with the requirements of EU Regulation No 2160/2003. The aim of these programmes is to reduce the prevalence of specific *Salmonella* serotypes (targeted *Salmonella* serotypes) that have an important impact on public health. These include *S. Enteritidis* and *S. Typhimurium* (including monophasic *S. Typhimurium*). The programmes' objectives are achieved through enhanced surveillance of the disease across poultry species and the application of restrictive measures during the disposal of products (meat and eggs) originating from infected flocks.

The finding that *S. Enteritidis* and *S. Typhimurium* were the most frequently reported *Salmonella* serovars among humans, in Greece, is in accordance with the findings of other European countries [2,3]. The reported increase of monophasic *S. Typhimurium* in 2017 can be partially explained by two outbreaks caused by this serovar [4].

The seasonal pattern of the disease occurrence and the fact that the highest notification rate was reported in the 0-4 years age group was also consistent with the findings from other European countries [2].

The decrease in salmonellosis notification rate in the period 2020-2021 may be explained by COVID-19 pandemic and the implemented public health measures and is compatible with other countries' data [3].

The increase in the isolation rate of the *S. Bovismorbificans*, observed in 2024, is explained, among other factors, by an outbreak caused by this serotype, which occurred in a Regional Unit of the country in May 2024.

NPHO, in collaboration with the competent bodies for animal health and food safety, is monitoring the increasing trend in salmonellosis notification rate that has been reported in recent years, with the aim of implementing appropriate measures to protect public health and animal health, as well as to strengthen food safety.

References

1. Heymann DL. Control of Communicable Diseases Manual. 21st Edition, 2022. Washington DC: American Public Health Association.
2. European Centre for Disease Prevention and Control. Surveillance Atlas of Infectious Diseases. Salmonellosis - Data by Country and Year. Current time period: 2024. Available online: <https://atlas.ecdc.europa.eu/public/index.aspx>
3. EFSA and ECDC (European Food Safety Authority and European Centre for Disease Prevention and Control), (2025). The European Union One Health 2024 Zoonoses Report. EFSA Journal, 23(12), e9759. <https://doi.org/10.2903/j.efsa.2025.9759>
4. Mandilara G, Sideroglou T, Chrysostomou A, Rentifis I, Papadopoulos T, Polemis M, Tzani M, Tryfinopoulou K, Mellou K. The Rising Burden of Salmonellosis Caused by Monophasic *Salmonella* Typhimurium (1,4,[5],12:i:-) in Greece and New Food Vehicles. Antibiotics (Basel). 2021 Feb 13;10(2):185. doi: 10.3390/antibiotics10020185.

Last updated: June 2026

Keywords: salmonellosis; notification rate; serovars; epidemiological data; Greece