



EPIDEMIOLOGICAL DATA FOR SHIGELLOSIS IN GREECE 2004-2025 MANDATORY NOTIFICATION SYSTEM

Key Points

- The notification rate of shigellosis in Greece is low.
- Based on data from the 2004-2025 period:
 - The mean annual notification rate of the disease was 6.1 cases per 1,000,000 population (SD=3.0).
 - A seasonal trend was observed in the disease notification rate, with the mean monthly notification rate increasing during the summer months and reaching a peak in August.
 - The disease was more frequently reported among children, especially in the age group of 0-4 years.
 - 8.3% of the cases were travel related.
 - 48.6% of the notified cases were Roma.
 - The reported notification rate of the disease in 2025 increased by over 100% compared with the previous year

Shigellosis, also referred to as bacillary dysentery, is a disease caused by the bacteria of the genus *Shigella*. *Shigella* comprises of four species or serogroups: *S. dysenteriae* (Group A), *S. flexneri* (Group B), *S. boydii* (Group C) and *S. sonnei* (Group D) [1].

The incubation period of the disease is usually 1-3 days, ranging from 12 to 96 hours; for *S. dysenteriae* it can extend up to one week [1].

The pathogen can cause both sporadic cases and outbreaks [1,2]. In Greece, shigellosis is a mandatory notifiable disease.

Time trend

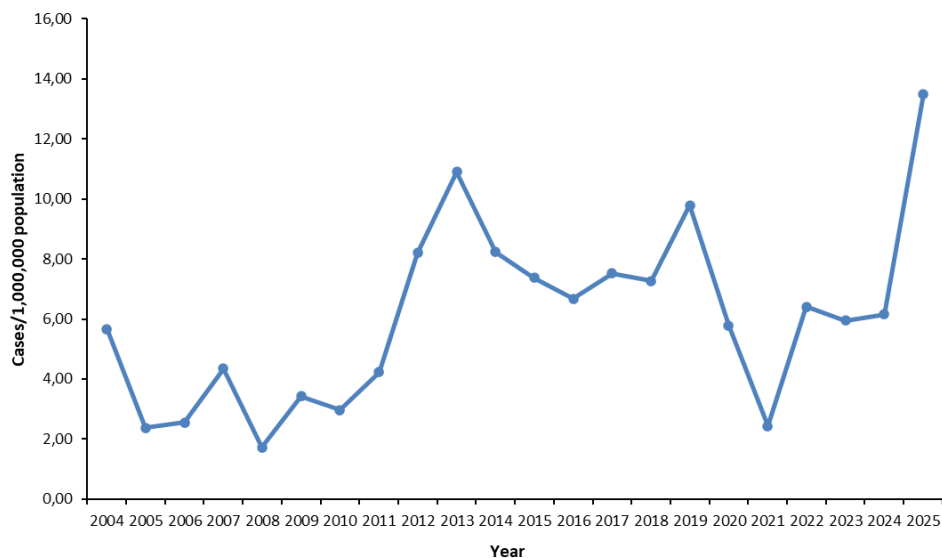
The number of reported cases with the respective notification rate per year, for the period 2004-2025, are shown in **Table 1**.

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

Year	Number of cases	Annual notification rate (per 1,000,000 population)
2004	61	5.6
2005	26	2.4
2006	28	2.5
2007	48	4.3
2008	19	1.7
2009	38	3.4
2010	33	3.0
2011	47	4.2
2012	91	8.2
2013	120	10.9
2014	90	8.2
2015	79	7.3
2016	74	6.9
2017	80	7.4
2018	78	7.2
2019	105	9.8
2020	62	5.8
2021	26	2.4
2022	67	6.3
2023	62	6.0
2024	64	6,2
2025	140	13.5
Total	1,439	6.1*

*Mean annual notification rate for the period 2004-2025

The temporal distribution of shigellosis notification rate for the same years is depicted in **Graph 1**.



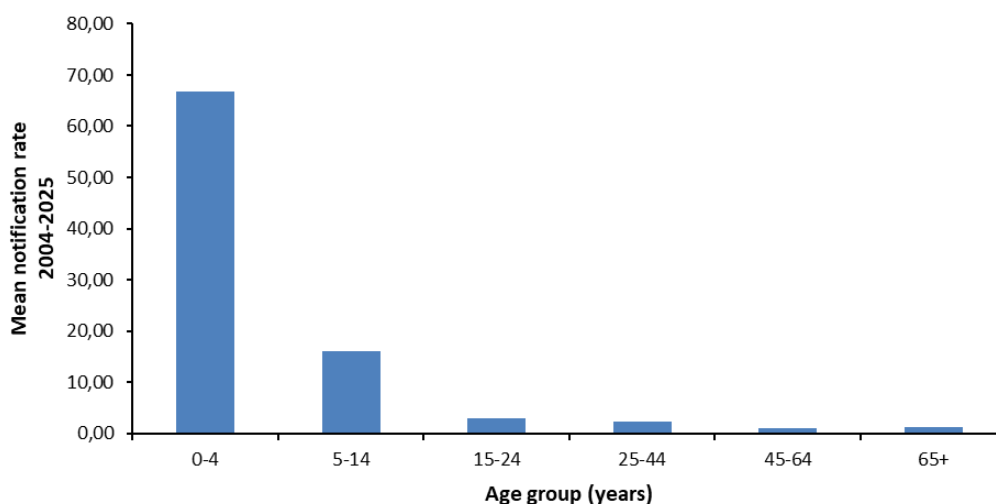
Graph 1. Shigellosis notification rate (cases/1,000,000 population) by year, Mandatory Notification System, Greece, 2004-2025.

The annual notification rate ranged from 1.7 cases in 2008 to 13.5 cases per 1,000,000 population in 2025. The mean annual notification rate for the period 2004-2025 was 6.1 cases per 1,000,000 population (standard deviation: 3.0) and the mean annual number of reported cases was 65.4 (standard deviation: 31.8).

The reported incidence of the disease in 2025 increased by over 100% compared with the previous year.

Age and gender distribution

Over the period 2004-2025, the disease had a higher mean annual notification rate in the age group 0-4 years (67 cases per 1,000,000 population), followed by the age group of 5-14 years (16 cases per 1,000,000 population) (**Graph 2**).

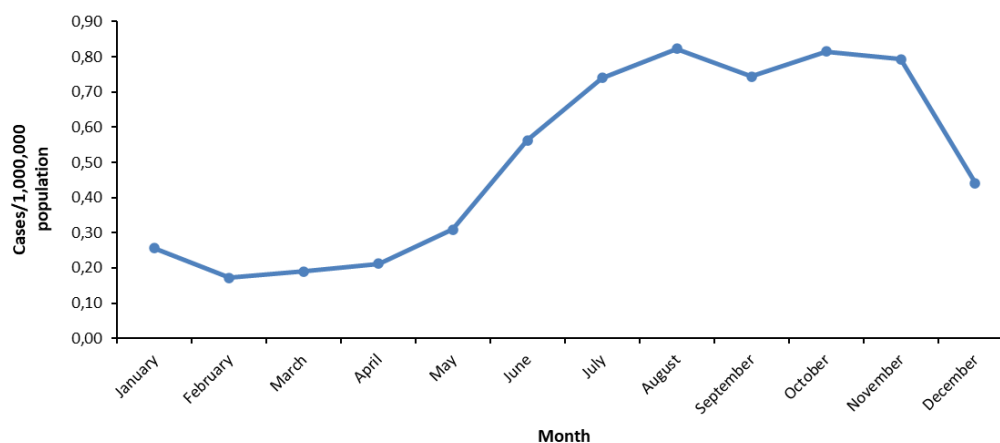


Graph 2. Mean annual notification rate (cases/1,000,000 population) of shigellosis by age group, Mandatory Notification System, Greece, 2004-2025.

During the same period, the mean annual notification rate did not differ between males (6.4 cases/1,000,000 population) and females (5.6 cases/1,000,000 population).

Seasonality

The mean monthly notification rate for the period 2004-2025 increased during summer, reaching a peak in August, and remained high during autumn (**Graph 3**).



Graph 3. Mean monthly notification rate (cases/1,000,000 population) of shigellosis, Mandatory Notification System, Greece, 2004-2025.

Geographical distribution

The geographical region of Western Greece had the highest mean annual notification rate (10.5 cases per 1,000,000 population), while the lowest rate was noted in the region of Southern Aegean (0.6 cases per 1,000,000 population). The mean annual notification rate of shigellosis by region for the period 2004-2025 is depicted in **Figure 1**.

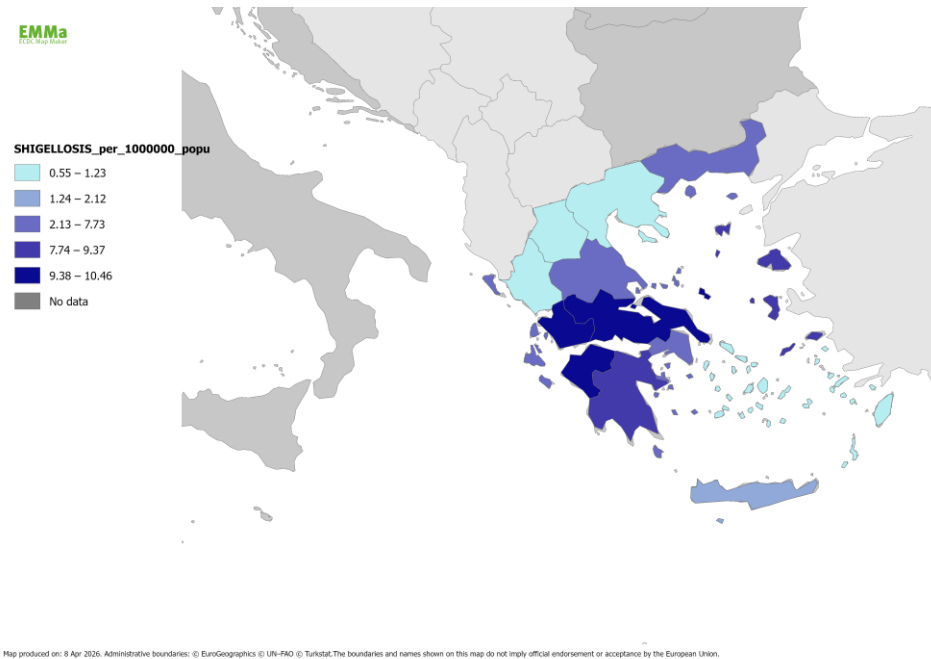


Figure 1. Mean annual notification rate (cases/1,000,000 population) of shigellosis by region, Mandatory Notification System, Greece, 2004-2025.

Laboratory data

During the period 2004-2025, *S. flexneri* and *S. sonnei* were the most frequently identified *Shigella* species. Only five cases of *S. dysenteriae* were identified. It should be noted that in a high proportion of strains, species identification was not performed, as isolates were not submitted to the National Salmonella, Shigella Reference Centre (SSRC). The frequency distribution of shigellosis for the period 2004-2025 is depicted in **Table 2**. The data presented in this report regard the cases notified via the Mandatory Notification System (MNS). Serogroup information from the SSRC is available for some isolates but not for others.

Regarding the laboratory testing of cases, the laboratory diagnosis of shigellosis is established through the culture of a clinical specimen. Over the past few years, however,

rapid molecular methods (culture-independent diagnostic tests, CIDsTs) have been performed more frequently, and their use has been included in the revised case definition [3]. It should be noted that in 2025, 23% of cases were diagnosed using CIDsTs, whereas the corresponding proportion in 2024 was 8%.

Table 2. Frequency distribution of *Shigella* species, Mandatory Notification System & National Reference Laboratory for Salmonella-Shigella, Greece, 2004-2025.

	<i>S. flexneri</i>	<i>S. sonnei</i>	<i>S. boydii</i>	<i>S. dysenteriae</i>	Unknown	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
2004	19 (31)	13 (21)	1 (2)	0 (0)	28 (46)	61 (100)
2005	8 (30)	11 (42)	1 (4)	0 (0)	6 (24)	26 (100)
2006	4 (15)	2 (7)	1 (4)	0 (0)	20 (74)	27 (100)
2007	4 (8)	23 (49)	0 (0)	0 (0)	20 (43)	47 (100)
2008	7 (50)	1 (7)	0 (0)	0 (0)	6 (43)	14 (100)
2009	17 (50)	1 (3)	1 (3)	0 (0)	15 (44)	34 (100)
2010	17 (63)	2 (8)	0 (0)	2 (7)	6 (22)	27 (100)
2011	16 (37)	1 (2)	1 (2)	0 (0)	26 (59)	44 (100)
2012	27 (30)	1 (1)	0 (0)	0 (0)	63 (69)	91 (100)
2013	54 (49)	27 (25)	0 (0)	1 (1)	28 (25)	110 (100)
2014	37 (43)	19 (22)	1 (1)	0 (0)	30 (34)	87 (100)
2015	45 (61)	18 (24)	4 (5)	2 (3)	5 (7)	74 (100)
2016	29 (41)	12 (17)	4 (6)	0 (0)	25 (36)	70 (100)
2017	25 (33)	31 (41)	1 (1)	0 (0)	18 (24)	75 (100)
2018	25 (39)	21 (32)	2 (3)	0 (0)	17 (26)	65 (100)
2019	28 (27)	31 (30)	2 (2)	0 (0)	44 (42)	105 (100)
2020	14 (23)	11 (18)	11 (18)	0 (0)	26 (42)	62 (100)
2021	9 (35)	1 (4)	3 (11)	0 (0)	13 (50)	26 (100)
2022	28 (42)	2 (3)	4 (6)	1 (1)	32 (48)	67 (100)
2023	16 (26)	4 (7)	0 (0)	0 (0)	42 (68)	62 (100)
2024	29 (45.3)	6 (9.4)	0 (0)	0 (0)	29 (45.3)	64 (100)
2025	34 (24.3)	23 (16.4)	6 (4.3)	0 (0)	77 (55)	140 (100)

Characteristics of cases

For the period 2004-2025, 237 of the 1,293 notified cases (18.3%), for which the respective information was available, reported the presence of another person with similar symptoms among their contacts, whereas 96 (8.3%) cases had recently travelled abroad (during the incubation period). Two outbreaks among refugees/migrants were reported; one in 2015 in

Attica [4] and one in 2019 in the Reception and Identification Center of Samos island [5]. During the same period, 675 (48.6 %) of the notified cases were among Roma population. Regarding the increase in the notification rate of the disease that occurred in 2025, 63 (46%) of the notified cases occurred among the Roma population. Within this population group, most of the cases (70%) were reported in children aged 0–4 years. The number of cases in this age group increased substantially, from 11 cases in 2024 to 44 cases in 2025. In the non-Roma population, the age distribution of cases was broader. The highest proportions of cases were observed in the 5–14 and 25–44-year age groups, accounting for 26% and 20% of the total number of cases, respectively. An increase in cases was observed across all age groups, except for the 0–4-year age group. The largest increase (>100%) was recorded in the 25–44-year age group, where cases increased from 6 in 2024 to 15 in 2025.

Discussion

The notification rate of shigellosis in Greece remains low (13.5 cases per 1,000,000 population for the year 2025). In 2025 the highest incidence of the period 2004-2025 was recorded, with an increase of more than 100% compared to the previous year.

The mean notification rate of shigellosis in the EU and the EEA/EFTA countries (excluding UK) was 21.4 laboratory confirmed cases per 1,000,000 population for the year 2024 [6]. The seasonal and age distribution agrees with that reported by other European countries [6]. The high incidence among Roma and refugees/migrants indicates the need for public health measures targeting at these specific populations. This finding is further supported by the increase observed in 2025 among the Roma population, particularly in children aged 0–4 years.

The low notification rate of shigellosis during the 2020–2021 period may be explained by the COVID-19 pandemic and the implemented public health measures [2].

The increase observed in the reported incidence of the disease in 2025 is likely attributable to multiple factors. In addition to the increase observed among the Roma population, an increase was also noted in the general population and warrants further investigation. Furthermore, the observed increase may also have been influenced by awareness-raising activities directed at healthcare facilities across the country, aimed at improving the reporting of shigellosis cases, as well as by the progressively wider use of rapid molecular diagnostic methods for the laboratory diagnosis of the disease.

The epidemiological data on shigellosis in Greece, for the period 2004–2025, underscore the importance of the consistent implementation of personal and environmental hygiene measures, as the disease is primarily transmitted via the fecal–oral route [1]. Thorough hand hygiene, particularly after using the toilet and before handling or consuming food, remains the most important preventive measure. In addition, adherence to environmental hygiene practices—including the safe management of wastewater and solid waste, the provision of safe drinking water, improvements in water supply and sanitation systems, particularly in populations living under disadvantaged conditions, regular cleaning and disinfection of surfaces and sanitary facilities, and the proper handling and storage of food—plays a key role in limiting the spread of the pathogen. Maintaining high standards of hygiene both in households and in settings characterized by close interpersonal contact or communal living, such as educational institutions, accommodation facilities, and catering establishments, together with continuous public health education and strengthened epidemiological surveillance, is essential for preventing disease transmission and reducing the risk of outbreaks [7,8]. Finally, given the increasing number of multi-country clusters of multidrug-resistant and extensively drug-resistant shigellosis reported in recent years, with a substantial proportion of cases occurring among men who have sex with men, targeted health promotion and awareness-raising initiatives for this population are considered essential [9,10].

References

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Last updated: June 2026

Key words: shigellosis, notification rate, preventive measures, Greece