

**Directorate of Epidemiological Surveillance and Interventions for Infectious Diseases**  
**Department of Vaccine Preventable and Congenital Diseases**

**EPIDEMIOLOGICAL DATA FOR MUMPS IN GREECE, 2004-2022**

**(MANDATORY NOTIFICATION SYSTEM)**

**Key points**

- Mumps is a vaccine preventable disease. In recent years, the incidence shows a downward trend fluctuating at low levels. High MMR vaccination coverage remains of paramount importance to prevent mumps outbreaks and reduce disease severity.
- Based on data for the period 2004-2022, mumps is more common in children, adolescents and young adults with the age group of 15-24 years-old most frequently affected.
- Cases are usually either unvaccinated or not fully vaccinated.
- No deaths were reported.

Mumps is a viral disease. It is caused by the mumps virus, which belongs to the paramyxoviridae family. The virus is spread through airborne transmission with droplets or by direct contact with infected droplet nuclei or saliva. Mumps is a vaccine preventable disease [1].

**Time trend**

During the period 2004-2022, the number of reported mumps cases was 158. It is worth noting that in the years 2021 and 2022 no cases were reported, possibly in the context of the ongoing COVID-19 pandemic.

The notification rate in the period 2004-2022 ranged from 0.00/100,000 population to 0.44/100,000 population (Figure 1). The mean annual notification rate was 0.08/100,000 population (mean number of reported cases per year: 8.32, total number of reported cases: 158).

**Age and gender distribution**

For the period 2004-2022, the number of cases with known age and gender was 127. The highest mean annual notification rate was noted in the age group of 15-24 year-olds (0.23/100,000 population). Among the other age groups, the mean annual notification rate ranged from 0.002 in the age group >65 years old to 0.15/100,000 population in the age group of 0-4 years old (Figure 2). The overall male-to-

female ratio for all notified cases was 2:1 (males: 0.09/100,000 population, females: 0.04/100,000 population).

### Geographical distribution

During the period 2004-2022, the disease presented the highest mean annual notification rate in geographical areas of Northern Greece (0.14/100,000 population) and the Aegean islands/Crete (0.12/100,000 population). The notification rate for the geographical areas of Central Greece and Attica was 0.03/100,000 population and 0.02/100,000 population respectively. In addition, 22 cases were of foreign origin (19 of them were UK citizens and 3 from other countries). More specifically, during April and May of 2009, a mumps outbreak was reported from a tourist area in Crete (19 cases), concerning young British travelers, who were visiting the island as tourists or as circumstantial workers during summertime.

### Laboratory data

During the period 2004-2022, 14.6% of the notified cases were laboratory-confirmed.

### Vaccination status - Hospitalization - Outcome

Among the 158 notified cases for the period 2004-2022, vaccination status was known for 110 (69.6%). Fifty-seven (51.8%) cases were reported to have been vaccinated with MMR. Among the 30 cases, for which the respective information was available, 16 (53.3%) were reported to have been vaccinated with a single dose of the vaccine in the past. Complications and hospitalization due to mumps were rare. No deaths were reported.

### Conclusion

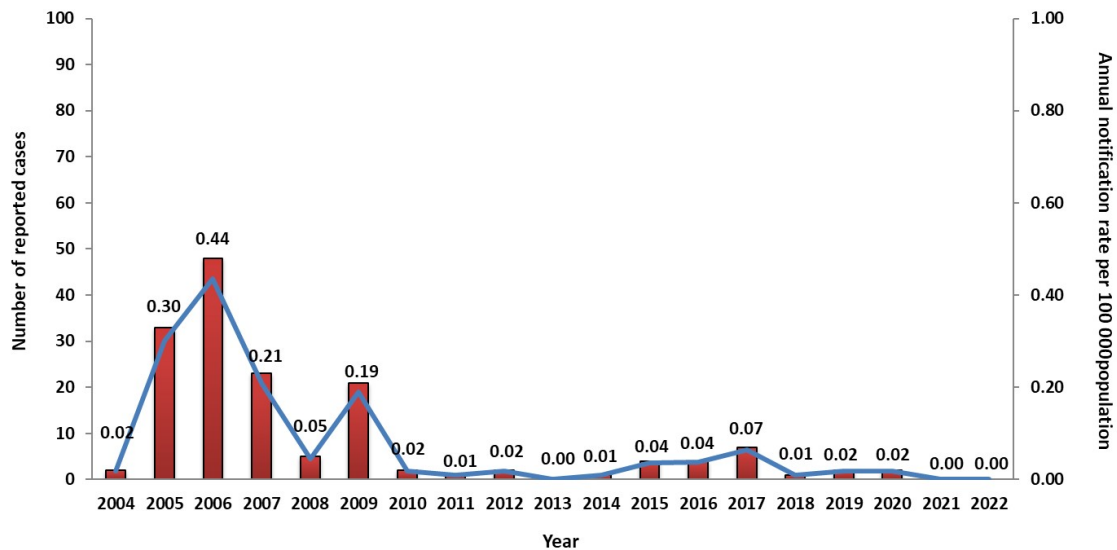
Mumps notification rate is low in Greece. Mean annual notification rate for the period 2004-2022 was lower than the mean notification rate for the EU and EEA countries (2.6/100,000 population for the year 2018) [2]. The age group most frequently affected is 15-24 years-old. In the other EU and EEA countries those aged 10-19 years experienced the highest age specific notification rates [2]. Regarding the outbreak concerning young UK citizens (visiting Crete), during April and May of 2009, it is noted that vaccination with MMR was introduced in their national vaccination programme in 1988 (one dose), whereas a second dose of the vaccine was introduced in 1996. Thus, people born in the 80's had an increased probability of being inadequately vaccinated against mumps [3]. In addition, post licensure studies determined that vaccine effectiveness of one dose of mumps or MMR vaccine was 78% and two dose mumps vaccine effectiveness is 88%. [4].

### References

1. Barskey A. Mumps. In: Control of communicable diseases manual, 20th edition. Heymann DL ed. American Public Health Association 2015; p. 419-423.
2. European Centre for Disease Prevention and Control. Mumps. Annual Epidemiological Report for 2018. Stockholm: ECDC; Feb 2021. Available from: <https://www.ecdc.europa.eu/sites/default/files/documents/mumps-annual-epidemiological-report-2018.pdf>
3. Spanaki A, Hajioannou J, Varkarakis G, Antonakis T, Kyrmizakis DE. Mumps epidemic among young British citizens on the island of Crete. Infection 2007;35(2):104-6.

4. Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Hall E., Wodi A.P., Hamborsky J., et al., eds. 14th ed. Washington, D.C. Public Health Foundation, 2021.

**Figure 1.** Age distribution of the mean annual notification rate of mumps (cases/100,000 population), Greece, 2004-2022



**Figure 2.** Mean annual notification rate (cases/100,000 population) of mumps by age group, Greece, 2004-2022 (N=127)

