NATIONAL PUBLIC
HEALTH ORGANIZATION

Directorate of Epidemiological Surveillance and Interventions for Infectious Diseases

Department of Vaccine Preventable and Congenital Diseases

EPIDEMIOLOGICAL DATA FOR TETANUS IN GREECE, 2004-2024

(MANDATORY NOTIFICATION SYSTEM)

Key Points

Based on data for the period 2004-2024:

- The notification rate of the disease remains low.
- The disease affects mostly people belonging to the age group >65 years old.
- No cases of tetanus have been reported in newborns.
- Due to the severity of tetanus, there is a need to maintain high vaccination rates in all age groups.

Tetanus is caused by *Clostridium Tetani*, a gram positive rod-shaped anaerobic bacterium, which can form spores. The bacterium and its spores are found in the soil, dust and in the feces of many animals. It can enter the human body through a break in the skin, i.e., trauma, burn or ocular coloboma. The acute symptoms of the disease are the result of the production of an exotoxin, called tetanospasmin. The most characteristic symptom is painful muscle spasms, starting from the head and neck and progressing to the body. Mortality ranges from 10 to 80% and it is higher among newborns and the elderly [1,2].

Time trend

Between 2004 and 2024, 100 cases of tetanus were reported through the mandatory notification system. During this period, the notification rate varied from 0.02 to 0.10 cases per 100,000 population (Figure 1). The mean annual notification rate for the period 2004-2024 was 0.04 cases per 100,000 population (mean number of reported cases per year: 4.76; total number of reported cases for 2004-2024: 100).

Age and gender distribution

Between 2004 and 2024, the disease was most frequently observed in individuals over 65 years old, with a mean annual notification rate of 0.15 cases per 100,000 population. This rate was notably higher compared to other age groups (5–14, 15–24, 25–44, and 45–64), none of which exceeded 0.03

cases per 100,000 population. No cases were reported in children under the age of 4 years. The mean annual notification rate for men and women was similar (0.04 per 100,000 population).

Geographical distribution

Between 2004 and 2024, the disease had the highest mean annual notification rate in the Aegean Islands and Crete, with 0.10 cases per 100,000 population. A slightly lower rate of 0.07 cases per 100,000 population was observed in Central Greece. Northern Greece and Attica reported lower mean annual notification rates of 0.03 and 0.01 cases per 100,000 population, respectively.

Vaccination coverage – Risk factors - Burden of disease

Among 100 reported cases between 2004 and 2024, the majority (64 cases, or 64%) involved unvaccinated individuals. Only 10 cases were documented as vaccinated: 4 had received one vaccine dose, 2 had two doses, 1 had three doses, and for 4 cases, the number of doses administered was unspecified. Vaccination status was unknown for 26 cases. Notably, in the age group over 65 years, 91% of the cases were unvaccinated.

During the same period, 98 cases (98%) required hospitalization, and 48 cases (48%) experienced complications, primarily affecting the respiratory system. Despite these challenges, tetanus outcomes were generally favorable, with only 6 deaths reported in adults aged over 61 years during the 20-year span, corresponding to a fatality rate of 6%.

Conclusions

The mean annual notification rate for the period 2004–2024 slightly exceeded the average rate reported for EU and EEA/EFTA countries in 2022 (0.02 cases per 100,000 population) [3]. The majority of reported cases occurred in adults over 65 years old, most of whom were not vaccinated. This highlights the critical need for high vaccination coverage across all age groups. To be noted that all adults who received full childhood immunization against tetanus should follow the National Immunization Program's recommendation of a Td or Tdap booster dose every 10 years.

References

1. Tiwari TS. Tetanus. In: Control of communicable diseases manual, 20th edition. Heymann DL ed. American Public Health Association 2015; p. 607-613.
2. American Academy of Pediatrics. Tetanus In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. Red Book: 2018 Report of the Committee on Infectious Diseases. 31st ed. Itasca, IL: American Academy of Pediatrics; 2018: p. 793-798.
3. European Centre for Disease Prevention and Control. Tetanus Annual Epidemiological Report for 2021. Stockholm: ECDC; Available from: https://www.ecdc.europa.eu/sites/default/files/documents/TETA_AER_2022_Report%20FINAL.pdf

Figure 1. Time trend of tetanus reported cases and annual notification rate per 100,000 population in Greece, 2004-2024

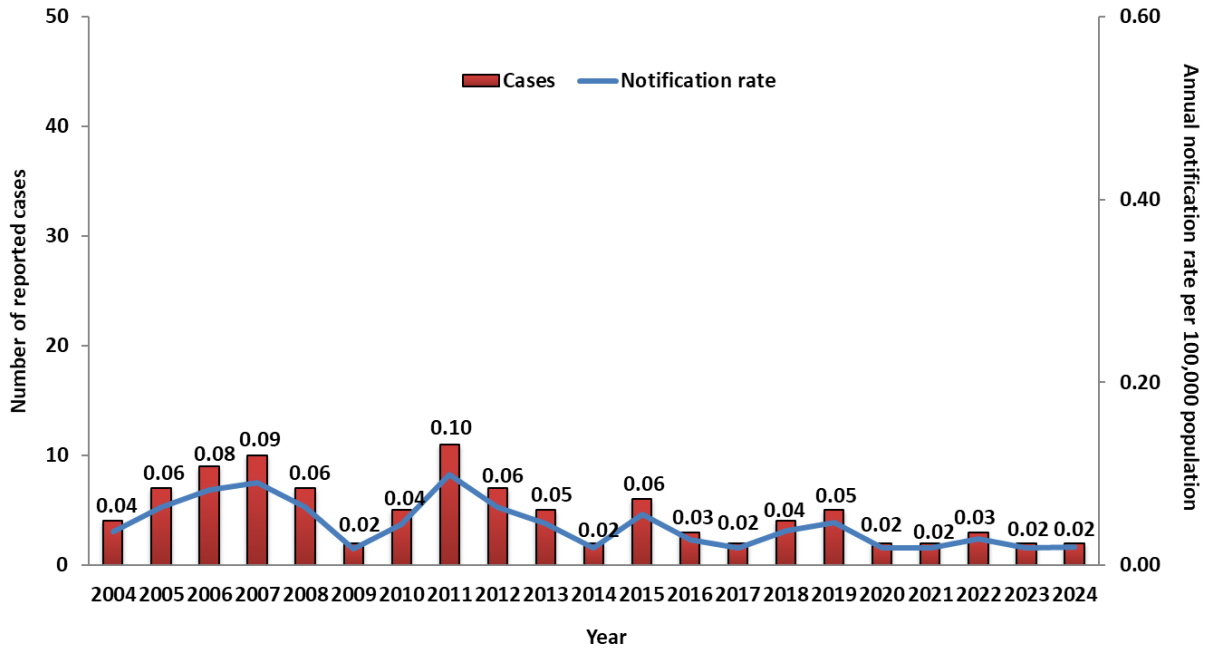
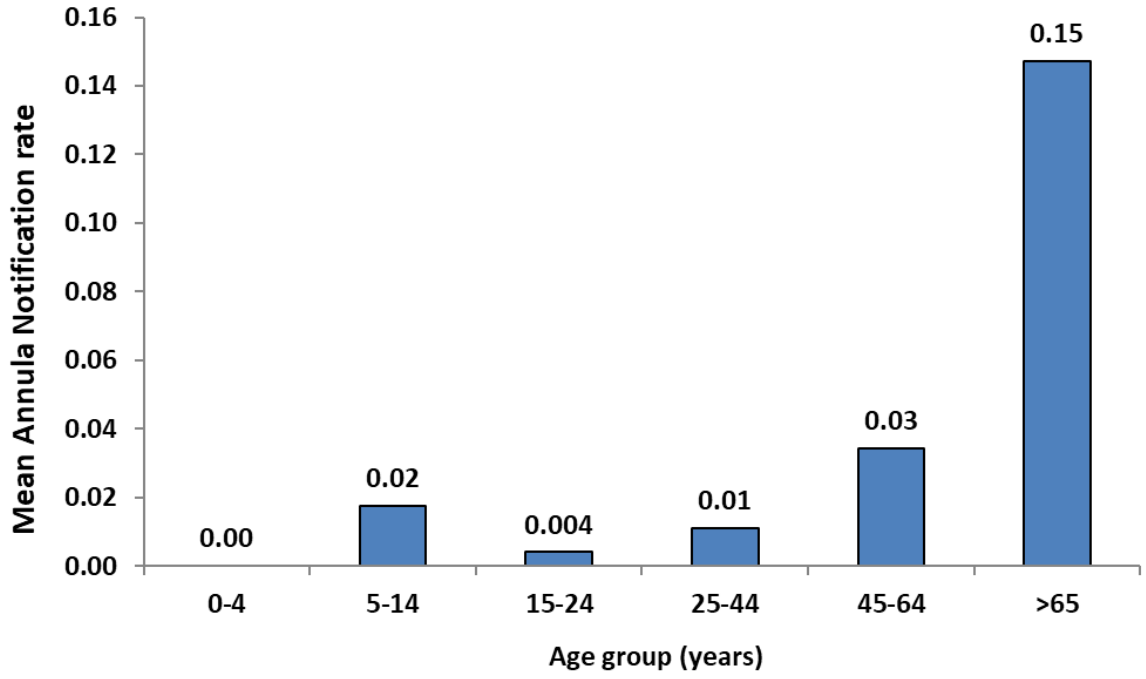


Figure 2. Age distribution of the mean annual notification rate of tetanus (cases/100,000 population), Greece, 2004-2024 (N=100)



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