NATIONAL PUBLIC
HEALTH ORGANIZATION

Directorate of Epidemiological Surveillance and Interventions for Infectious Diseases

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EPIDEMIOLOGICAL DATA FOR VARICELLA WITH COMPLICATIONS, 2004-2024 (MANDATORY NOTIFICATION SYSTEM)

Key Points

- In Greece, varicella was classified as a mandatory notifiable disease until 2004, when it was redefined to cover only varicella cases with complications.
- Between 2004 and 2011, the incidence of the disease consistently decreased, but this was followed by a slight increase in subsequent years.
- The age group 0-4 years old exhibits the highest incidence of the disease.

Varicella is an infectious disease that is caused by varicella-zoster virus (VZV), which is one of the 8 known types of herpes viruses that can infect humans. The virus mode of transmission is airborne, or with direct contact with infected droplets, excretions of the respiratory tract, saliva (infected surfaces-objects). The main complications of the disease are secondary bacterial infection of the vesicles (especially by streptococcus group A or staphylococcus), pneumonia, Reye syndrome, arthritis, encephalitis, and other complications from the central nervous system [1].

Time trend

Varicella was classified as a mandatory notifiable disease until 2004, after which only cases involving complications were reported. Between 2004 and 2024, the notification rate fluctuated between 0.01 and 0.31 cases per 100,000 population (Figure 1). The mean annual notification rate during this period was 0.11 cases per 100,000 population (mean number of reported cases per year: 12, total number of reported cases for 2004-2024: 248).

Age and gender distribution

The disease exhibited the highest incidence in the age group 0-4 years, with a mean annual notification rate of 0.75 cases per 100,000 population (number of cases: 81, among which 23 under one year of age). The age group 5-14 years followed with a rate of 0.21 cases per 100,000 population, while the remaining age groups had mean notification rates of ≤0.09 cases per 100,000 population (Figure 2). Additionally, the mean annual notification rate was slightly higher among men (0.13 cases per 100,000 population) compared to women (0.09 cases per 100,000 population).

Geographical distribution

Between 2004 and 2024, the disease presented the highest mean annual notification rate in Northern Greece (0.14 per 100,000 population), while the lowest rate was observed in the Aegean Islands and Crete (0.06 per 100,000 population).

Laboratory data

Of the 248 reported cases during this period, 149 (60.8%) were laboratory-confirmed. Most of the remaining cases (n=86) were classified as probable, meeting clinical criteria and having an epidemiological link to a laboratory-confirmed case.

Vaccination coverage

Among the reported cases from 2004 to 2024, 167 (67.3%) were unvaccinated, while 5 (2.0%) were incompletely vaccinated (Figure 3). For the remaining 30.6% of cases, vaccination status was unknown. The majority of unvaccinated cases were observed in children aged 0-14 years.

Hospitalization status – Complications - Outcome

The number of hospitalized cases during the period 2004-2024 reached 226 (91.1%), reflecting a tendency to primarily report hospitalized cases. The most common complications included pneumonia (34.7%, n=86), secondary bacterial infection of the vesicles (32.3%, n=80), central nervous system complications (17.3%, n=43) and other complications such as bacteremia, hepatitis, etc. (19.0%, n=47). To be noted that in some cases more than one complication was reported. During this period, a single death was reported, corresponding to a fatality rate of 0.4%.

Conclusion

Varicella is a prevalent childhood infection. Surveillance systems of varicella in the EU countries are highly heterogeneous. While most countries utilize mandatory notification systems to monitor disease frequency, some rely on sentinel or combined surveillance systems, and others lack any varicella surveillance system [2]. In Greece, surveillance focuses specifically on varicella cases with complications [3]. Despite being generally mild, varicella can lead to serious complications, making it a significant public health concern. It is of high importance to achieve good vaccination coverage among the general population as well as of high-risk groups (Roma children and migrants/refugees).

References

1. Marin M and Bialek SR. Varicella/ Herpes Zoster. In: Control of communicable diseases manual, 20th edition. Heymann DL ed. American Public Health Association 2015; p. 669-675.
2. ECDC. Public health guidance on varicella vaccination in the European Union. Feb 2015. Available from: https://www.ecdc.europa.eu/en/publications-data/public-health-guidance-varicella-vaccination-european-union
3. EUVAC.NET. Surveillance of varicella and Herpes Zoster in Europe, as of November 2010. Available from: http://www.ecdc.europa.eu/en/publications/Publications/varicella_zoster_report_2009_euvacnet.pdf

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

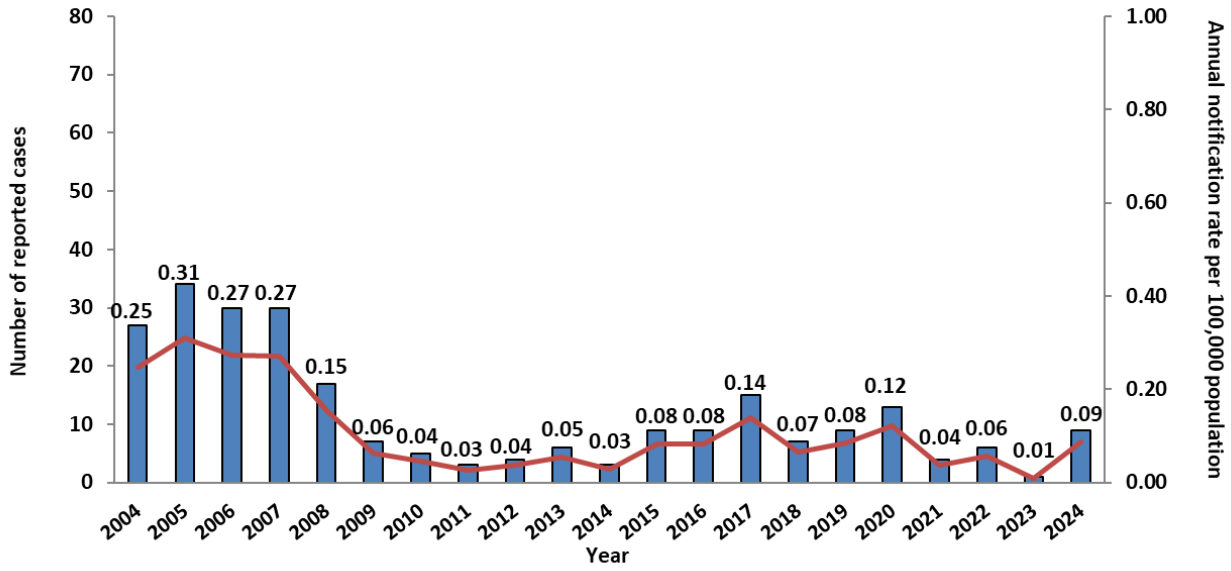


Figure 2. Mean annual notification rate of varicella with complications per age group, Greece 2004-2024

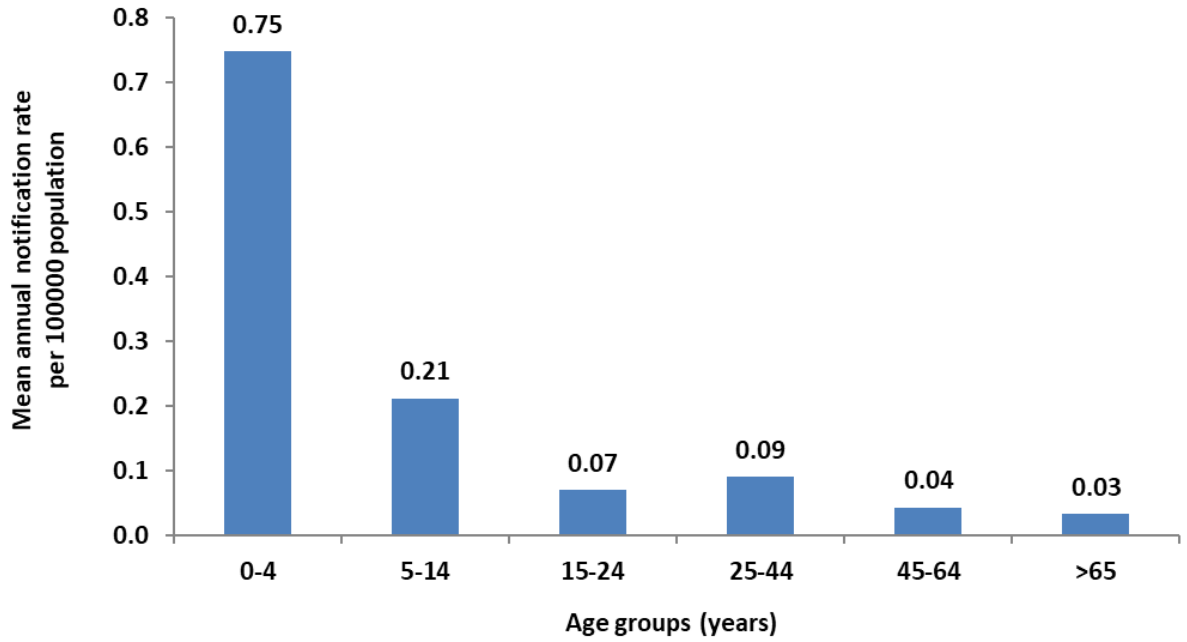
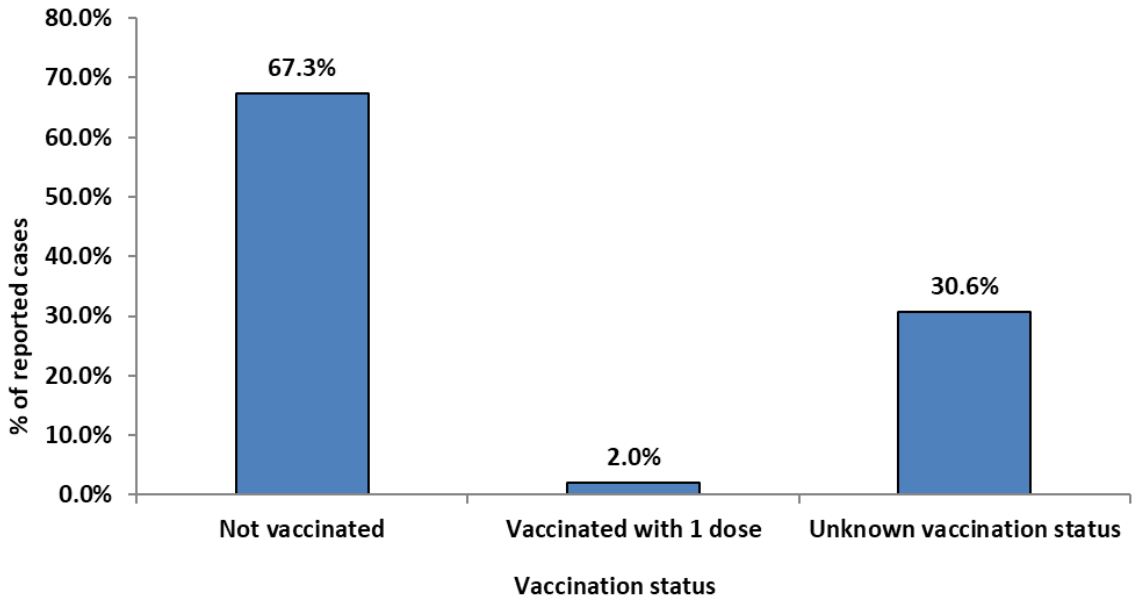


Figure 3. Distribution of notified cases of varicella with complications in relation with their vaccination status, Greece 2004-2024



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