

## Directorate of Epidemiological Surveillance and Interventions for Infectious Diseases

### Department of Vaccine Preventable and Congenital Diseases

#### EPIDEMIOLOGICAL DATA FOR VARICELLA WITH COMPLICATIONS, 2004-2023 (MANDATORY NOTIFICATION SYSTEM)

##### Key Points

- In Greece, varicella was a mandatory notification disease until 2004, when it was replaced by varicella with complications.
- During the period 2004-2011, a constant decrease of the disease's incidence was recorded, followed by a slight increase in the next years.
- The disease presents the highest incidence in the age group 0-4 years old.

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 a mandatory notification disease until 2004, when it was replaced by varicella with complications. During the period 2004-2023, the notification rate of the disease varied between 0.01 cases /100,000 population and 0.31 cases /100,000 (Figure 1). The mean annual notification rate for the period 2004-2023 was 0.11 cases per 100,000 population (mean number of reported cases per year: 12, total number of reported cases for 2004-2023: 239).

##### Age and gender distribution

The disease presented the highest incidence in the age group 0-4 years old, with a mean annual notification rate of 0.79 cases per 100,000 population (number of cases: 81, among which 23 under one year of age). The age group 5-14 years old is following (0.22 cases per 100,000 population), whereas in the other age groups, the mean notification rate ranged in levels  $\leq 0.09$  cases per 100,000 population (Figure 2). The mean annual notification rate was slightly higher in men (0.13 cases per 100,000 population) than in women (0.09 cases per 100,000 population).

## Geographical distribution

During the period 2004-2023, the disease presented the highest mean annual notification rate in Northern Greece (0.14/100,000 population). The lowest mean annual notification rate was recorded in the Aegean Islands/Crete (0.06/100,000 population).

## Laboratory data

Among the 239 reported cases for the period 2004-2023, 140 (58.6%) were laboratory confirmed, whereas most of the rest (n=87) were probable, i.e., they met the clinical criteria and had epidemiological link with a laboratory confirmed case.

## Vaccination coverage

Among the reported cases for the period 2004-2023, 160 (66.9%) were unvaccinated, whereas 5 (2.1%) were incompletely vaccinated (Figure 3). For the rest of the cases (31.0%) the vaccination status was unknown. The majority of unvaccinated cases were children 0-14 years old (56.0%, n=130).

## Hospitalization status – Complications - Outcome

The number of hospitalized cases during the period 2004-2023 reached 218 (91.2%), as there was a trend to mainly report hospitalized cases. The main complications included secondary bacterial infection of the vesicles (33.5%, n=80), pneumonia (35.1%, n=84), complications from the central nervous system (15.9%, n=38) and various other complications (such as bacteremia, hepatitis, etc.) (16.7%, n=40). To be noted that in some cases more than one complication was reported. During this period, only one death was reported corresponding to a mortality of 0.4%.

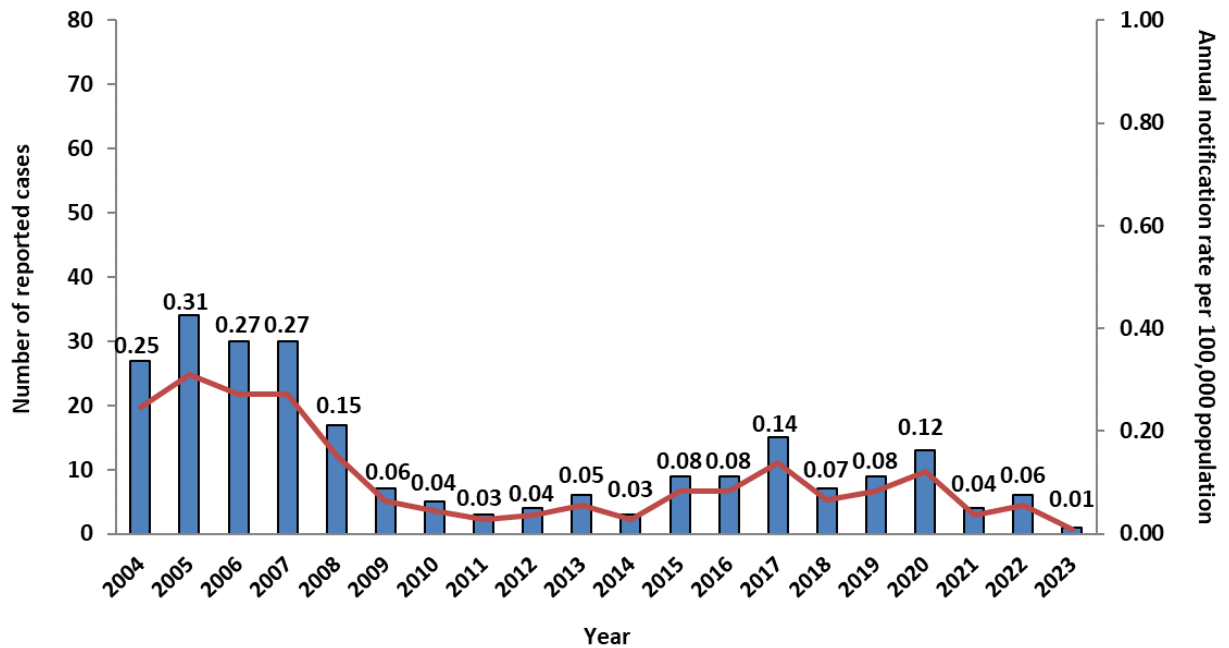
## Conclusion

Varicella is a common infection in childhood. Surveillance systems of varicella in the EU countries are highly heterogeneous. Most countries monitor the disease frequency via mandatory notification systems, some countries use a sentinel system or combined surveillance systems, whereas some countries have no varicella surveillance system in place [2]. Greece has under surveillance varicella with complications [3]. Although varicella is a mild disease, it can present serious complications, thus representing an important public health concern. It is of high importance to achieve good vaccination coverage of the population as well as of the high-risk groups (Roma children and migrants/refugees).

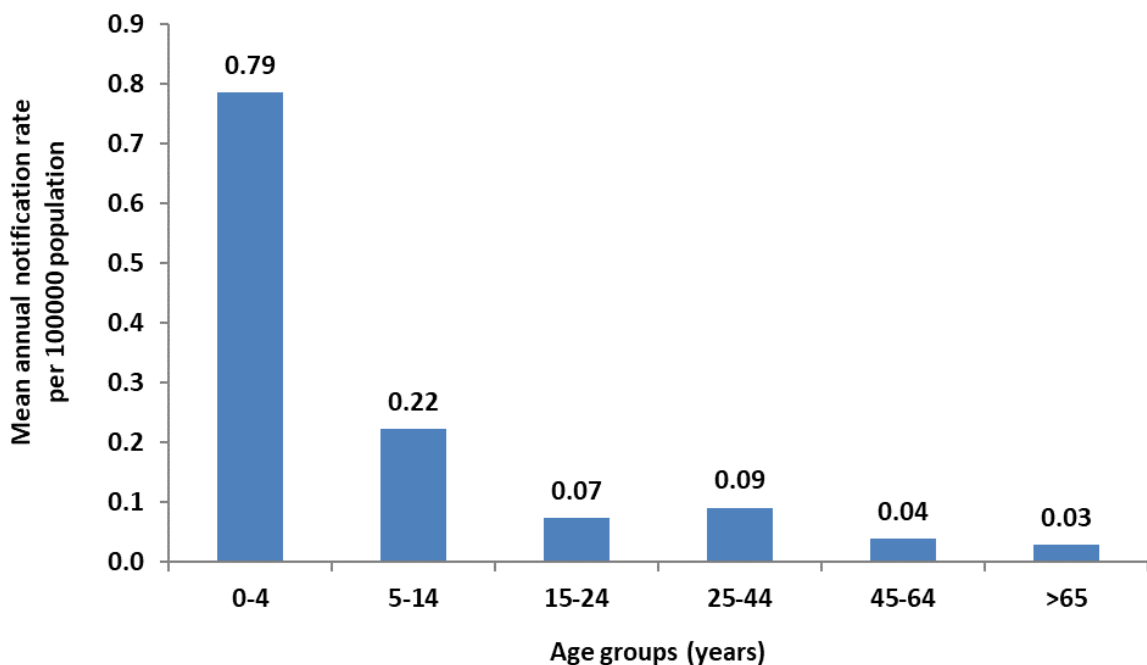
## References

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](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, 2004-2023



**Figure 2.** Mean annual notification rate of varicella with complications per age group, Greece 2004-2023



**Figure 3.** Distribution of notified cases of varicella with complications in relation with their vaccination status, Greece 2004-2023

