

## Department of Epidemiological Surveillance and Intervention

### EPIDEMIOLOGICAL DATA FOR VARICELLA WITH COMPLICATIONS 2004-2017

#### (MANDATORY NOTIFICATION SYSTEM)

#### Key Points

- In Greece, varicella was a mandatory notification disease until 2004, when it was replaced by varicella with complications.
- For the period 2004-2014, there was a constant decreasing tendency in the disease's incidence, but, in the last three years there has been a gradual increase in the incidence of the disease.
- The disease presented the highest frequency of occurrence 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 2004-2017, the notification rate of the disease varied between 0.03 cases /100,000 population and 0.31 cases /100,000 (Figure 1). The mean annual notification rate for the period 2004-2017 was 0.13 cases per 100,000 population (mean number of reported cases per year: 14, total number of reported cases for 2004-2017: 199).

#### Age and gender distribution

During the period 2004-2017, the number of reported cases with known age and gender was 199. The disease presented the highest frequency of occurrence in the age group 0-4 years old, with a mean annual notification rate of 0.91 cases per 100,000 population (number of cases: 67, among which 19 below one year of age). The age group 5-14 years old is following (0.30 cases per 100,000 population), whereas in the other age groups, the mean notification rate ranged in levels below 0.11 cases per 100,000 population (Figure 2). The mean annual notification rate was slightly higher in men (0.16 cases per 100,000 population) than in women (0.10 cases per 100,000 population).

## Geographical distribution

During the period 2004-2017, the disease presented the highest mean annual notification rate in Northern Greece (0.27/100,000 population). The lowest mean annual notification rate was recorded in the Aegean Islands/Crete (0.07/100,000 population).

## Laboratory data

Among the 199 reported cases for the period 2004-2017, 118 (59.3%) were laboratory confirmed, whereas the majority of the rest (n=77) were probable, ie they met the clinical criteria and had an epidemiological link with a laboratory confirmed case.

## Vaccination coverage

For the period 2004-2017, vaccination coverage was known for 148 cases, among which 145 (97.9%) cases were unvaccinated. Incomplete vaccination coverage is reported only for 3 cases with the administration of one dose of the monovalent vaccine against the varicella virus (Figure 3).

## Risk factors – Burden of disease

For the period 2004-2017, the majority of the reported cases concerned unvaccinated children 0-14 years of age (55.8%, n=111). The number of cases that needed to be hospitalized during the same period reached 188 (94.5%), as the cases reported concerned mainly hospitalized cases. The main complications included pneumonia (34.8%, n=71), secondary bacterial infection of the vesicles (33.8%, n=69), complications from the central nervous system (15.2%, n=31) and other complications (such as bacteremia, hepatitis, etc) (16.2%, n=33). Some cases reported more than one complication.

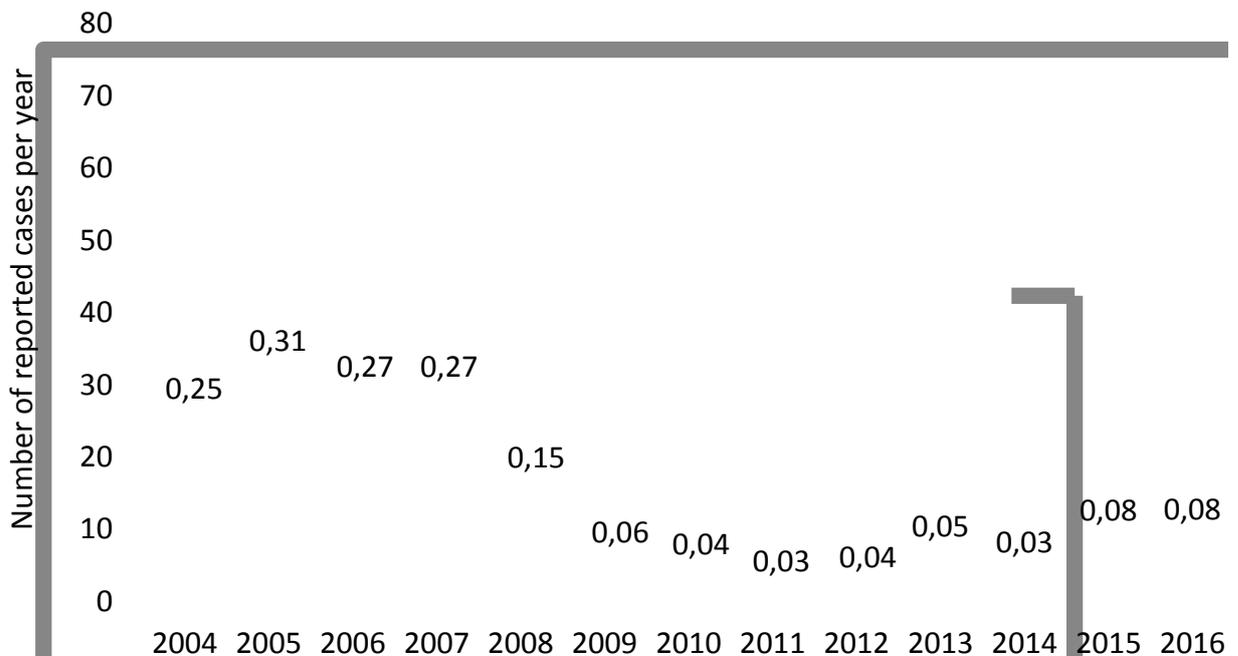
## Conclusion

Varicella is a common infection in childhood. Surveillance systems of varicella in the EU countries are highly heterogeneous. The majority of the countries monitor the disease's frequency via mandatory notification systems, some countries use a sentinel system, few countries use a combined surveillance system, whereas some countries had no varicella surveillance in place [2]. Greece monitors the frequency of occurrence of 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 a good vaccination coverage of the population as well as of the high risk groups (Roma children and migrants/refugees).

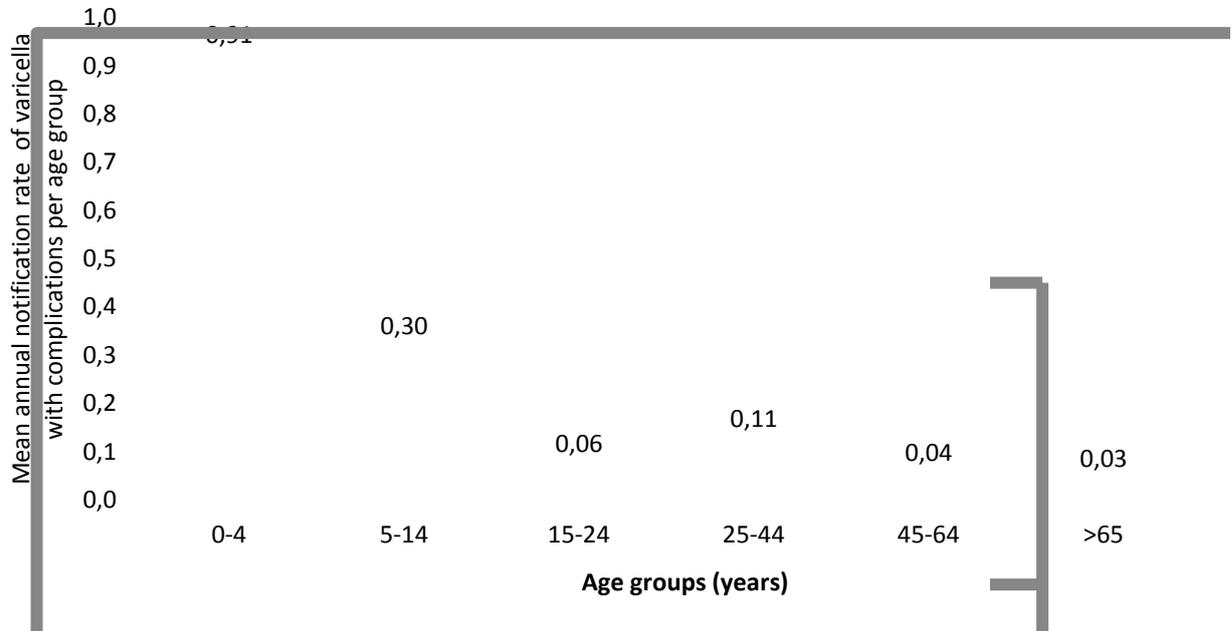
## References

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2. ECDC. Varicella vaccination in the European Union. January 2015. Available from: <https://www.ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/Varicella-Guidance-2015.pdf>
2. 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 / 100,000 population in Greece, 2004-2017



**Figure 2.** Mean annual notification rate of varicella with complications per age group, Greece 2004-2017



**Figure 3.** Frequency distribution of varicella with complications notified cases in relation with vaccination status, Greece 2004-2017

