NATIONAL PUBLIC
HEALTH ORGANIZATION

EPIDEMIOLOGICAL DATA FOR HEPATITIS A IN GREECE, 2004-2023

MANDATORY NOTIFICATION SYSTEM

Main points

- Based on the data for the period 2004-2023:
  - 23.6% of the notified cases were Roma; 88.9% of them were < 15 years of age
  - 14.4% reported travelling abroad within the incubation period
  - 22.0% were newly arrived/permanent migrants
  - Outbreaks occurred in Roma populations (2007 and 2013), in the population of newly arrived migrants staying at accommodation facilities (2016) and among men having sex with men (2017)
  - Since 2019 a decrease in the notification rate of hepatitis A in Greece has been observed

Hepatitis A is an acute, self-limited disease of the liver, which is caused by the hepatitis A virus (HAV). HAV has been classified as a member of the Picornaviridae family [1,2]. In Greece, hepatitis A is a mandatory notifiable disease.

Time trend

During the period 2004-2023, 1.985 cases of hepatitis A were reported. The mean annual number of reported cases was 99 (standard deviation: 86). The mean annual notification rate was 0.91 case per 100,000 population. The annual number of reported cases and the annual notification rate for the period 2004-2023 are depicted in **Table 1** and **Graph 1,** respectively.

Age and gender distribution

For the 2004-2023 period, the highest notification rate of the disease was recorded for children under 15 years of age. The mean annual notification rate was 3.0 and 2.5 cases per 100,000 population in the age groups of 0-4 and 5-14 years old, respectively. For the same period, 61.7% of the reported cases were male, while the mean annual notification rate was 1.1 cases per 100,000 population in males and 0.7 per 100,000 in females. The notification rate of hepatitis A by gender and age group (0-4, 5-14, 15-24, 25-44, 45-64, 65+ years) is depicted in **Graph 2**.

Geographical distribution

The mean annual notification rate of hepatitis A by region for the period 2004-2023 is depicted in **Figure 1.** The highest mean annual notification rate was reported in the geographical area of Eastern Macedonia-Thrace (2.9 cases per 100,000 population) and the lowest in the geographical area of Western Macedonia (0.3 cases per 100,000 population).

Seasonal distribution

The mean monthly notification rate for the period 2004-2023 is depicted in **Graph 3**.

Characteristics of cases

For the 2004-2023 period, 576 (30.7%) of the notified cases of hepatitis A reported the presence of another person with similar symptoms among their contacts. Two hundred and fifty-one (14.4%) of the reported cases had travelled abroad within the incubation period of the disease. The majority (1,664-95.4%) of cases reported that they had not been vaccinated against hepatitis A.

Four hundred and forty-six (23.6%) of the reported cases were Roma and 437 (22.0%) were newly arrived/permanent migrants. Regarding the age distribution, 88.9% of Roma cases and 73.9% of cases among newly arrived/permanent migrants were children < 15 years old, while in the general population*, only 12.6% belonged to this age group (**Graph 4**).

Conclusion

The mean annual notification rate of hepatitis A in Greece is low (0.08 cases per 100,000 population in 2023). According to the latest reported data of the European Centre for

*Population after subtracting newly arrived/permanent migrants, travelers, and the Roma population

Disease Prevention and Control, the mean notification rate reported by the EU and EEA/EFTA countries (excluding UK) was 1.00 cases per 100,000 population for the year 2022 [3]. When interpreting this difference, the surveillance systems' probable under-reporting should be considered.

During the period 2004-2023, hepatitis A outbreaks occurred in the population of Roma in 2007 and in 2013, in the population of newly arrived migrants who were staying at accommodation facilities in 2016 and in the population of men who have sex with men (MSM) in 2017 [4].

Hepatitis A was a childhood disease among Roma and refugees/migrants, while in the general population it mainly occurred among susceptible adults. Data for the period of interest, indicated the need for educating the general population regarding the disease's modes of transmission, and for improving the vaccination coverage of high-risk groups of the population [4,5].

Since 2019 a decrease in the notification rate of hepatitis A in Greece has been observed, which can be attributed to COVID-19 pandemic [3] and the increased under-reporting of the disease in the Mandatory Notification System [6]. Other contributing factors are the improvement of the socioeconomic conditions over the last decades and the vaccination of all healthy children older than one year of age [7] and of high-risk groups adults [8] against the disease. However, hepatitis A outbreaks may occur in the future.

References

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3. European Centre for Disease Prevention and Control. Surveillance Atlas of Infectious Diseases. Hepatitis A - Data by Country and Year. Current time period: 2022. Available from: https://atlas.ecdc.europa.eu/public/index.aspx

4. Mellou K, Chrysostomou A, Sideroglou T, Kyritsi M, Georgakopoulou T, Tsiodras S, Hadjichristodoulou C. Epidemiology of hepatitis A in Greece in the last decade: management of reported cases and outbreaks and lessons learned. Epidemiol Infect. 2020 Feb 13;148:e58. https://doi.org/10.1017/S0950268820000382

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6. National Public Health Organization. Evaluation of underreporting in the Mandatory Notification System of laboratory confirmed salmonellosis, shigellosis, listeriosis, Hepatitis A Virus infection, typhoid/paratyphoid fever cases by Public General Hospitals in Greece, 2022. Available from: https://eody.gov.gr/disease/ipatitida-a-oxeia/

7. Ministry of Health. National Immunization Program of children and adolescents 2023. Available from: https://bitly.ws/3eAtu

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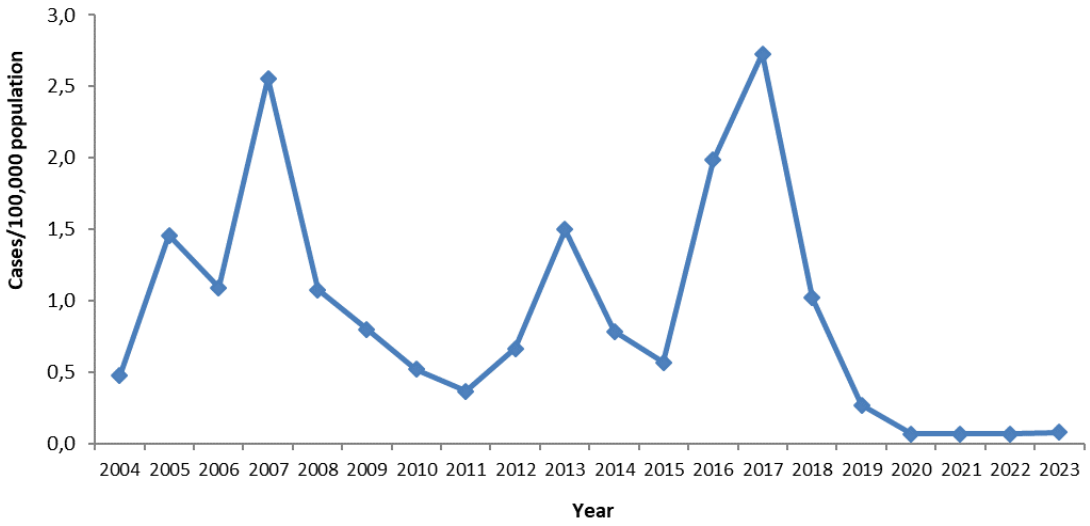
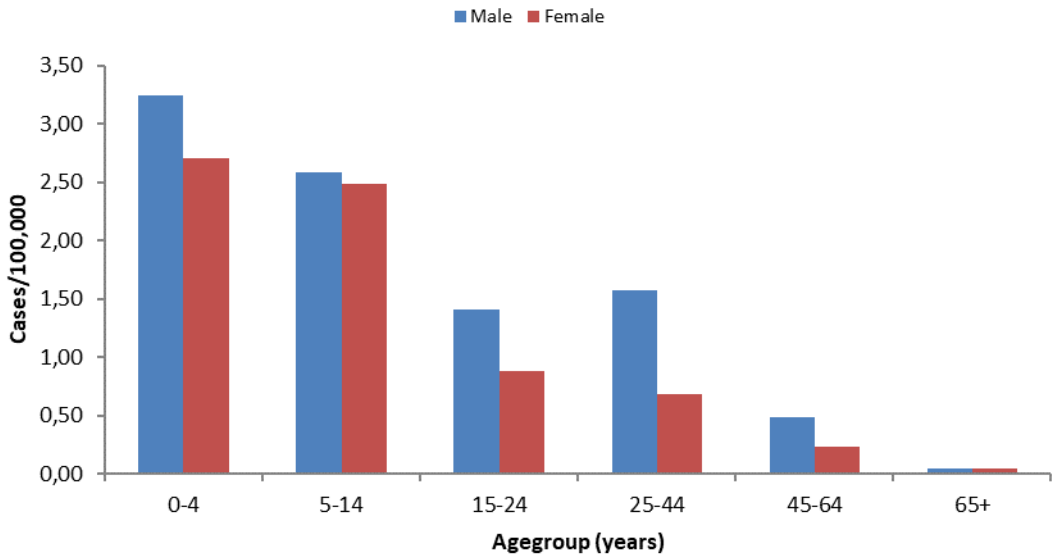
Table 1. Number of notified cases and annual notification rate of hepatitis A in Greece, Mandatory Notification System, 2004-2023.

Year	Number of cases	Annual notification rate (per 100,000 population)
2004	52	0.48
2005	160	1.46
2006	120	1.09
2007	282	2.56
2008	119	1.08
2009	89	0.80
2010	58	0.52
2011	41	0.37
2012	74	0.67
2013	165	1.50
2014	86	0.79
2015	62	0.57
2016	214	1.98
2017	276	2.56
2018	110	1.01
2019	29	0.27
2020	8	0.07
2021	7	0.07
2022	7	0.07
2023	8	0.08
Total	**1,985**	**0.91***

*Mean annual notification rate for the period 2004-2023



Graph 1. Time trend of hepatitis A notification rate (number of cases per 100,000 population), Mandatory Notification System, Greece, 2004-2023.



Graph 2. Notification rate of hepatitis A (cases/100,000 population) by gender and age group in Greece, Mandatory Notification System, 2004-2023.

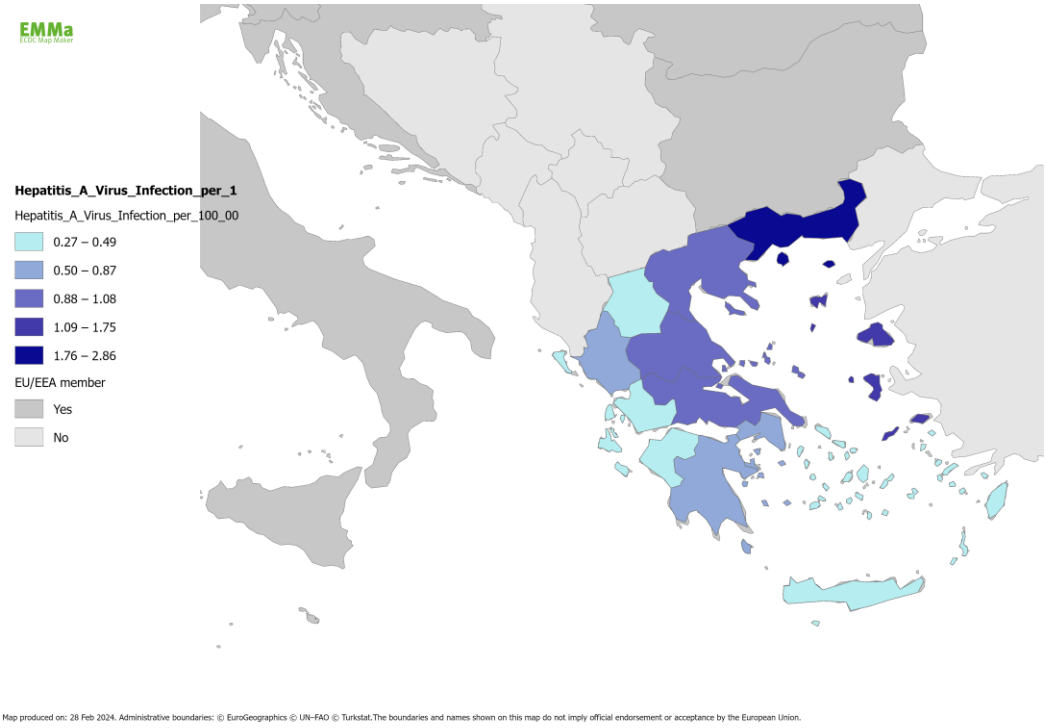
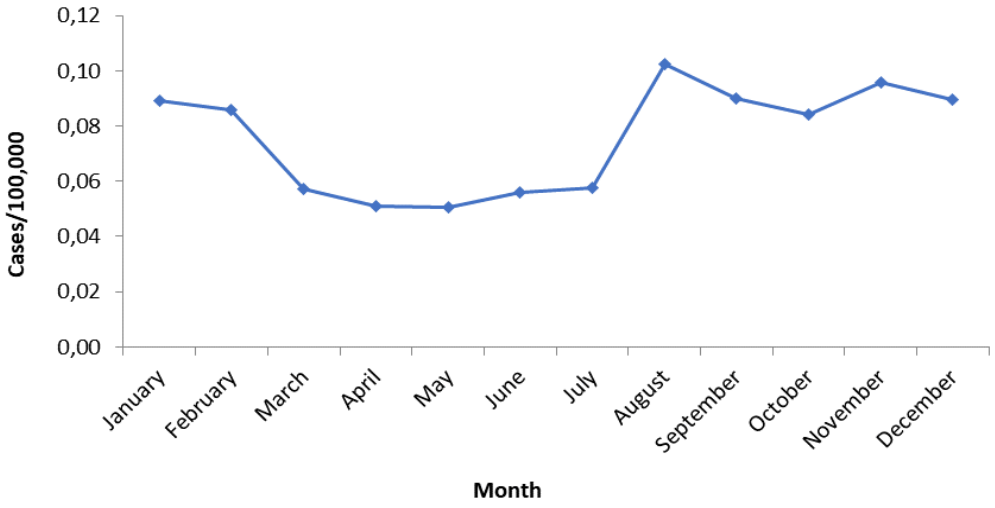
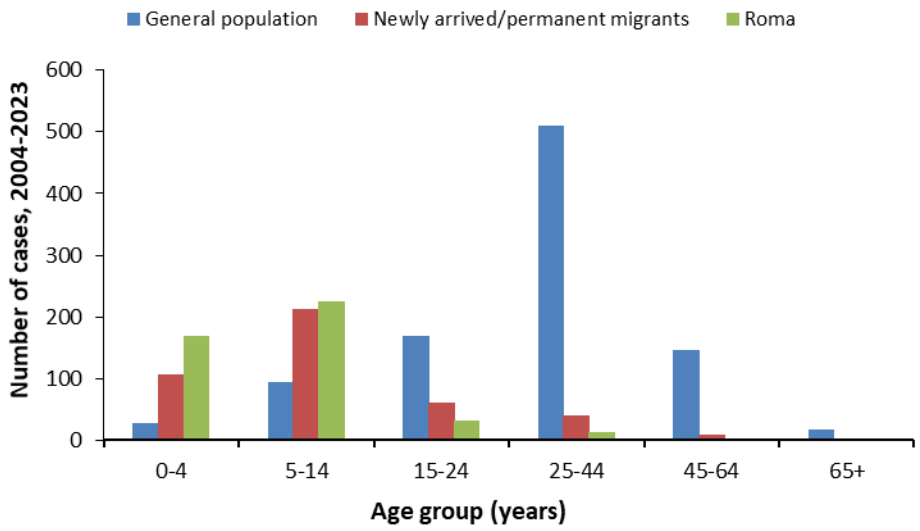


Figure 1. Mean annual notification rate (cases/100,000 population) of hepatitis A by geographical region, Mandatory Notification System, Greece, 2004-2023.



Graph 3. Mean monthly notification rate (cases/100,000 population) of hepatitis A in Greece, Mandatory Notification System, 2004-2023.



Graph 4. Number of hepatitis A notified cases per age group in the general population (population after subtracting newly arrived/permanent migrants, travelers, and the Roma population), newly arrived/permanent migrants and Roma in Greece, Mandatory Notification System, 2004-2023.

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