



Department of Food-borne and Water-borne diseases

EPIDEMIOLOGICAL DATA FOR CAMPYLOBACTERIOSIS

IN GREECE, APRIL 2022-DECEMBER 2023

MANDATORY NOTIFICATION SYSTEM

CAMPYLOBACTER REFERENCE LABORATORY

Main points

- Based on the data for the period April 2022-December 2023:
 - The notification rate of the disease was higher among children in the age group of 0-4 years old.
 - The notification reached a peak in October.
 - 4.7% of the cases reported one or more persons with similar symptoms among their contacts.
 - *Campylobacter jejuni* and *Campylobacter coli* were the most frequently reported species.

Campylobacter spp. is one of the etiological agents of foodborne infections, as well as the second-following *Salmonella spp.*- bacterial cause of foodborne disease outbreaks, in Europe [1,2]. In Greece campylobacteriosis was introduced in Mandatory Notification System in April 2022.

Number of reported case-Notification rate

During April 2022-December 2023, 937 campylobacteriosis cases were reported in Greece. In specific, in the period April-December 2022 and in 2023, 302 and 635 cases of the disease were notified, respectively. The mean annual number of cases was 469 (standard deviation: 235.5). The notification rate was 4.5 cases per 100,000 population.

Age and gender distribution

For the period April 2022-December 2023, the disease was more frequently reported among children in the 0-4 years age group (**Graph 1**). In this age group, the mean annual notification rate was 21.5/100,000 population, whereas it was less than 8.2/100,000 in the rest of the population.

The notification rate among males and females was 4.9 and 4.1 cases per 100,000 population, respectively.

Seasonality

The mean monthly notification rate for the period of interest reached a peak in October and gradually decreased in the following months (**Graph 2**).

Geographical distribution

The geographical area of Crete had the highest notification rate (8.8/100,000 population) and Northern Aegean the lowest (0.5/100,000 population).

Laboratory data

The most frequently identified species -out of the total number of identified species-, for the period of interest, was *Campylobacter jejuni* (88.7%) and *Campylobacter coli* (11.3%).

It should be noted that the presented data here concern the cases reported via the Mandatory Notification System. For some of them, the respective information from the Campylobacter Reference Laboratory (CRL) of the Central Public Health Laboratory, is available while for others it is not. The Health Care Units of the country are recommended to send the clinical isolates to the CRL for further identification and antimicrobial susceptibility testing. The CRL in the context of the 4-years European Program FWD AMR-RefLabCap [3] send the DNA of 50 *Campylobacter spp.* clinical isolates (ECDC sequencing support Campylobacter AMR capacity building molecular surveillance) of the year 2023 for Whole Genome Sequencing (WGS) to a European collaborating laboratory. WGS results revealed diversity in STs (31 STs) with ST572 and ST827 being the most prevalent among the *C. jejuni* and *C. coli* clinical isolates respectively.

Risk/Protective factors

During April 2022-December 2023, 4.7% of the notified cases reported the presence of at least one person with similar symptoms among their contacts, whereas 36 (4.2%) reported they had travelled abroad within the incubation period.

Conclusion

Campylobacteriosis was the second most commonly notified foodborne gastrointestinal infection in humans following non-typhoid/paratyphoid salmonellosis, during the period April 2022-December 2023, in Greece; the notification rate of campylobacteriosis was 6.2 cases per 100,000 population in 2023. The mean notification rate in the EU and EEA countries (excluding UK) was 46.93 cases per 100,000 population for the year 2023 [4]. When interpreting this difference, the surveillance systems' under-reporting should be considered [5].

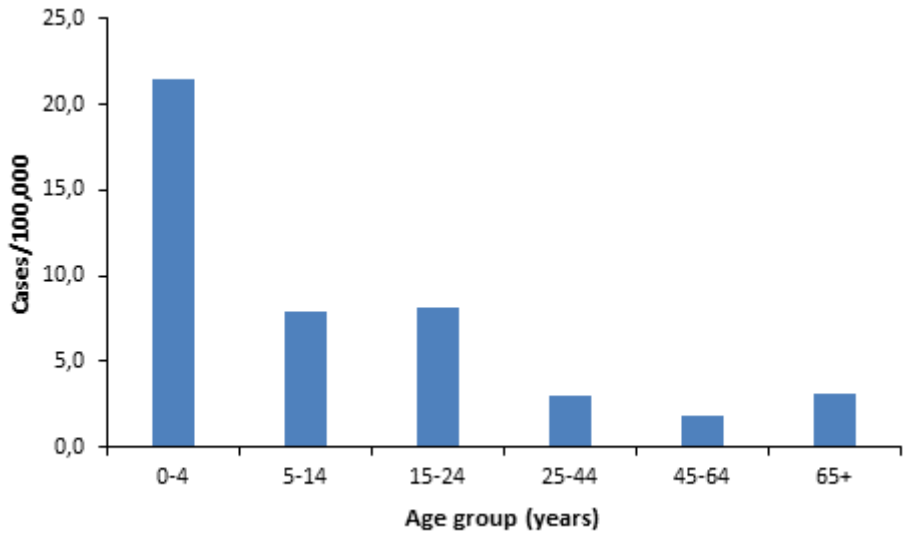
The low percentage of notified cases with epidemiological link is in line with the fact that *Campylobacter spp.* sporadic cases are much more than the outbreaks-related cases [6]. The highest notification rate reported in the 0-4 years age group and the gender distribution of cases were also consistent with the findings from other European countries [4].

Regarding the results of the genomic analysis, the STs that emerged appear as the most prevalent in the relevant literature in clinical and animal isolates [7-9]. A larger volume of samples will be sequenced in order to draw more reliable conclusions.

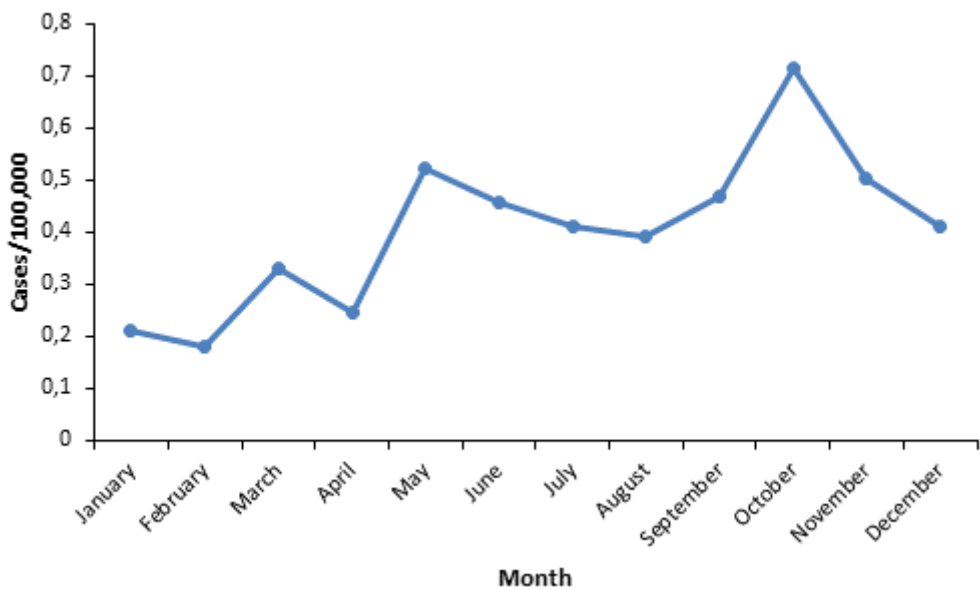
Finally, the observed increase on October 2023 can be partially explained by the enhancement of laboratory capacity of FWDs diagnosis that took place, in the context of prompt response in terms of public health protection after the floods, in the Region of Thessaly. In specific, PCR equipment and reagents for the syndromic testing of 22 different enteric pathogens (bacteria, viruses, parasites) directly from stool specimens were provided to 14 healthcare facilities (HCFs) in the affected region. Thus, the clinical laboratories in those HCFs managed to identify *Campylobacter spp.* which was not feasible in previous years.

References

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Graph 1. Mean annual notification rate (cases/100,000 population) of campylobacteriosis by age group, Mandatory Notification System, Greece, April 2022-December 2023.



Graph 2. Notification rate (cases/100,000 population) of campylobacteriosis by month, Mandatory Notification System, Greece, April 2022-December 2023.

** Due to the fact that campylobacteriosis was introduced in Mandatory Notification System in April 2022, there were no data available for the months January-March 2022.*

The present report was produced under the collaboration of the Department of Food-borne and Water-borne Diseases with the Campylobacter Reference Laboratory of the Laboratory for Antimicrobial Resistance and Nosocomial Infections

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