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The Relationship Between Income Per Capita and Meningococcal Serogroup B Vaccination Rates in Greece: An Ecological Correlation Analysis

GDP per capita may be correlated with 4CMenB vaccination rates in Greece

Digital poster

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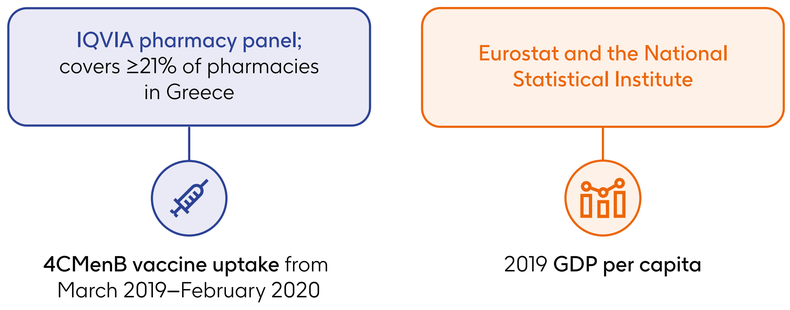
Aims

To estimate four-component meningococcal serogorup B (4CMenB) vaccination rates across Greece and their association with gross domestic product (GDP) per capita (socioeconomic status proxy)

Methods

- In this retrospective, ecological correlation study, 4CMenB vaccination rate and socioeconomic data were obtained (**Figure 1**)
- 4CMenB vaccination rate was estimated as the number of 4CMenB vaccine sales attributed to infants (2–24 months), divided by doses required for a complete 2+1 schedule (2 doses for those aged 2–12 months, 1 dose for those aged 13–24 months) by administrative region
- Correlation between 4CMenB vaccination rates and GDP per capita at regional and territorial levels was investigated using Spearman's correlation

Figure 1: **Schematic of databases used**

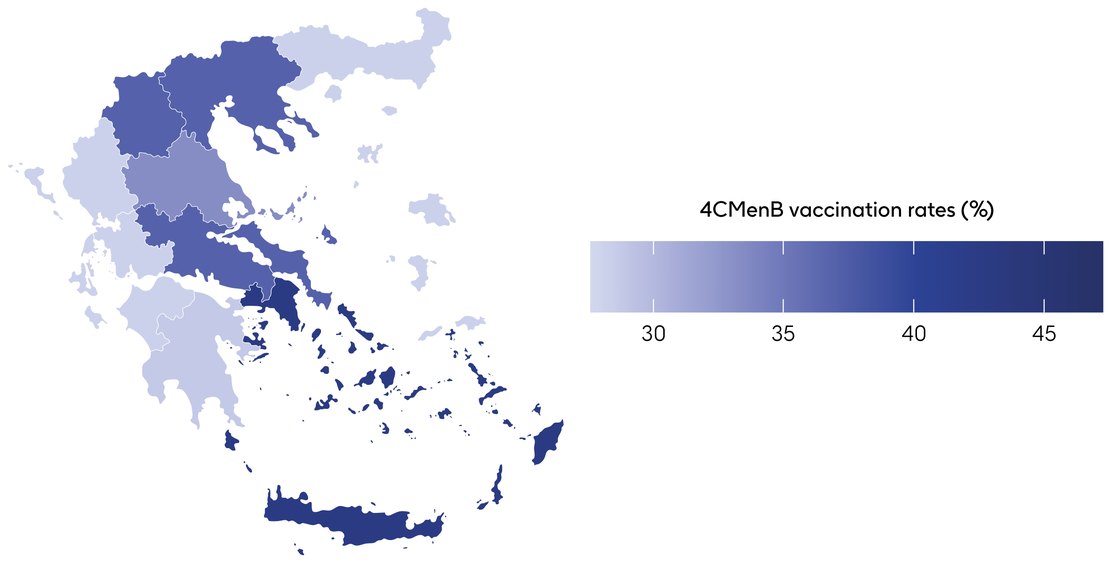


Results

Vaccination rates

- The infant 4CMenB vaccination rate was 41.0% nationally
- Regionally, vaccination rate was highest in South Aegean, Crete and Attica, and lowest in Eastern Macedonia and Thrace and North Aegean (**Figure 2**)

Figure 2: **Infant 4CMenB vaccination rates across Greek regions in 2019**

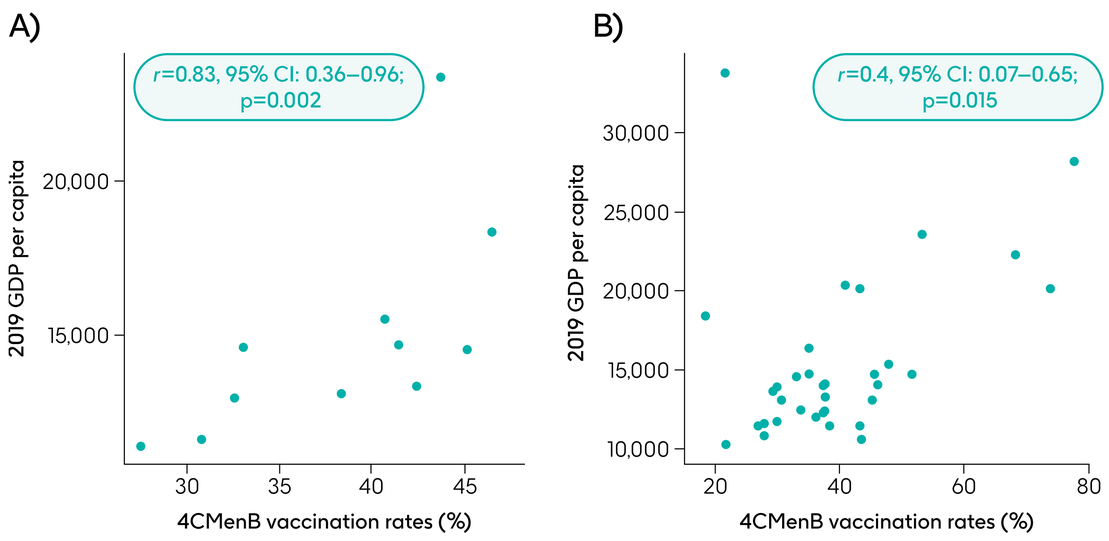


	2019 infant 4CMenB vaccination rates (%)
Overall	41.0
Administrative Regions	
South Aegean	47.3
Crete	45.2
Attica	43.7
Central Macedonia	42.4
Western Macedonia	41.5
Central Greece	40.7
Thessaly	38.4
Peloponnese	33.1
West Greece - Ionian - Epirus	32.6
Eastern Macedonia and Thrace	30.9
North Aegean	27.6

Correlation between 4CMenB vaccination rates and GDP per capita

- There was a positive, statistically significant correlation between 4CMenB vaccination rates and GDP per capita at both regional and territorial levels (**Figure 3**)

Figure 3: **Correlation between infant 4CMenB vaccination rates and GDP per capita across Greek regions (A) and territories (B) in 2019**



Correlation measured using Spearman's coefficient; Two-tailed p-value used. 4CMenB vaccination uptake from March 2019–February 2020; GDP per capita in 2019

Correlation between DtaP-IPV-HBV-Hib hexavalent vaccination rates and GDP per capita

- The above analysis was repeated for 3 fully reimbursed DtaP-IPV-HBV-Hib hexavalent vaccines and revealed no correlation between vaccination rates and socioeconomic status at a regional and territorial level (**Table 1**)

Table 1: **Correlation between DtaP-IPV-HBV-Hib hexavalent vaccination rates and GDP per capita across Greek regions and territories in 2019**

	Administrative regions	Territories
Spearman's correlation coefficient (95% CI)	0.15 (-0.49–0.69)	0.18 (-0.15–0.48)
p-value (two-tailed)	0.65	0.274

Background

- Annual Greek incidence of invasive meningococcal disease (IMD) in children aged 0–4 years from 2004–2019 was 4.78 cases/ 100,000 population, with most cases caused by serogroup B[1]
- At the time of this analysis, the 4CMenB vaccine, which protects against meningococcal serogroup B, was included in the Greek National Immunisation Program for high-risk individuals only. The 4CMenB vaccine is now also included for those aged 2–18 months[2–4]
- As 4CMenB vaccination was not funded for the infant population at the time of this analysis, access to vaccination may have varied due to socioeconomic factors

Conclusions

Socioeconomic status may be correlated with vaccination rates of non-publicly funded vaccines, such as 4CMenB at regional and territorial levels across Greece

Inclusion of 4CMenB vaccination into the Greek National Immunisation Program could reduce the inequity seen in vaccination rates

Abbreviations

4CMenB, four-component meningococcal serogroup B; CI, confidence interval; GDP, gross domestic product; IMD, invasive meningococcal disease

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Disclosures

GN: employee of, holds financial equities in and has received grants/contracts from GSK; **AA** and **VP:** employees of GSK; **AGA**, **ADR** and **AM:** employees of and hold financial equities in GSK; **MZ** and **CL:** employees of IQVIA, which was contracted/funded by GSK for this study

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