

Estimation of the cost of the National Immunization Program for children and adolescents in Greece

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INTRODUCTION

- Immunization has been shown to be the most effective public health intervention, apart from water purification¹.
- Prevention of disease through vaccination represents a unique opportunity to keep people healthy and improve population health outcomes.
- Greece has an extensive pediatric and adolescent vaccination program².
- To ensure its future smooth expansion, health policymakers need evidence-based estimates regarding the cost and the coverage of the current program³.
- Investment in vaccination has been rarely addressed in the literature and remains poorly documented (e.g., the magnitude of the necessary investment) .

AIM

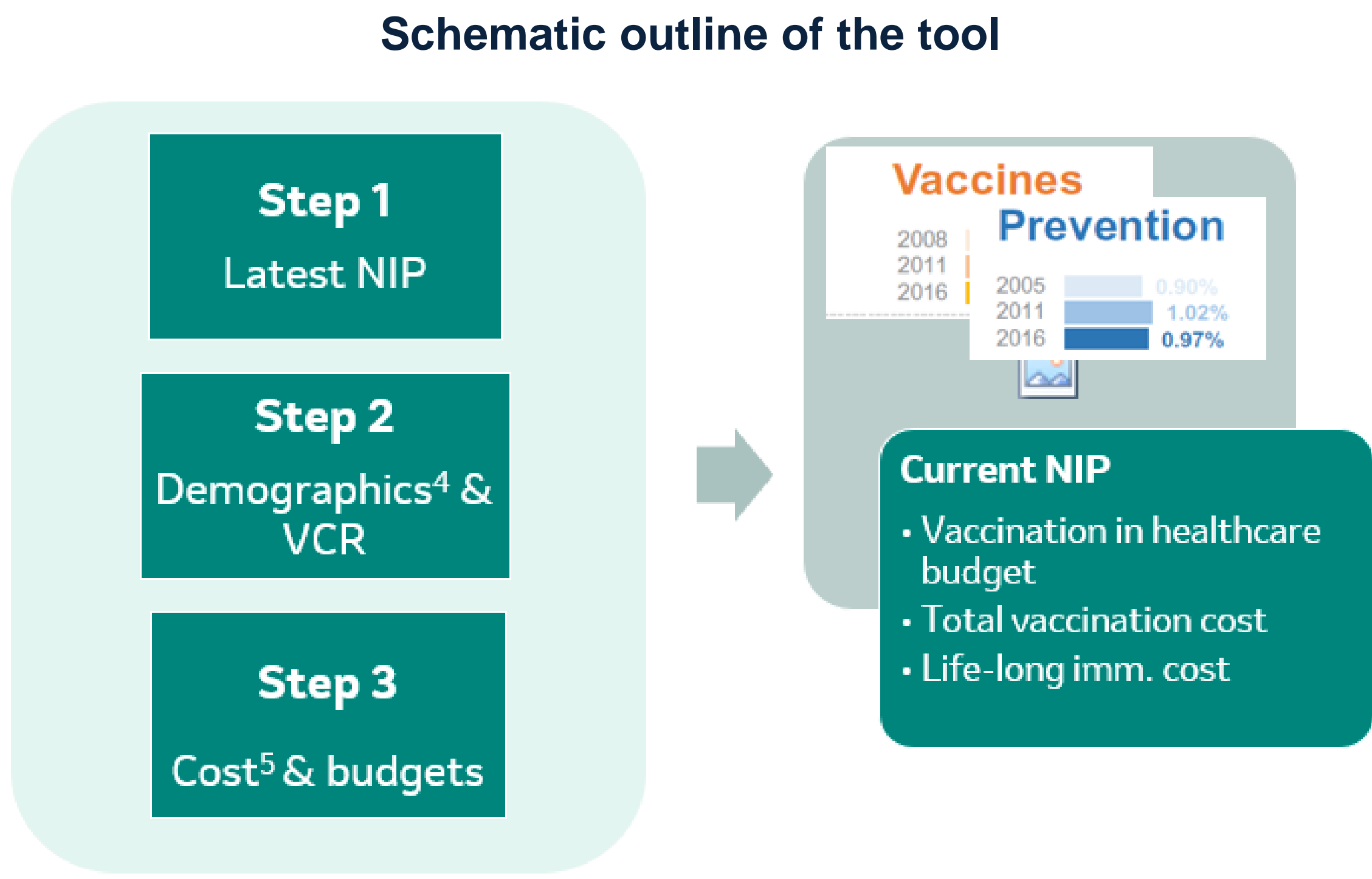
- To estimate:
- A) the immunization cost of the current National Immunization Program (NIP) for children and adolescents (individuals <18 years old)
 - B) the annual number of children who miss routine vaccination

METHODS

Description of the tool

- A published economic tool seeded with recent NIP for children and adolescents was utilized⁴.
- Vaccination coverage was estimated based on Greek health insurance payer (EOPPY) units (EOPYY KMES database) and the age-specific distribution of the population of Greece from the United Nations database.
- Number of vaccines units administered per year and cost data were retrieved from the EOPPY Prescription Center and the latest Positive list of reimbursed medicines and vaccines⁵.
- Administration costs were not considered in the analysis.

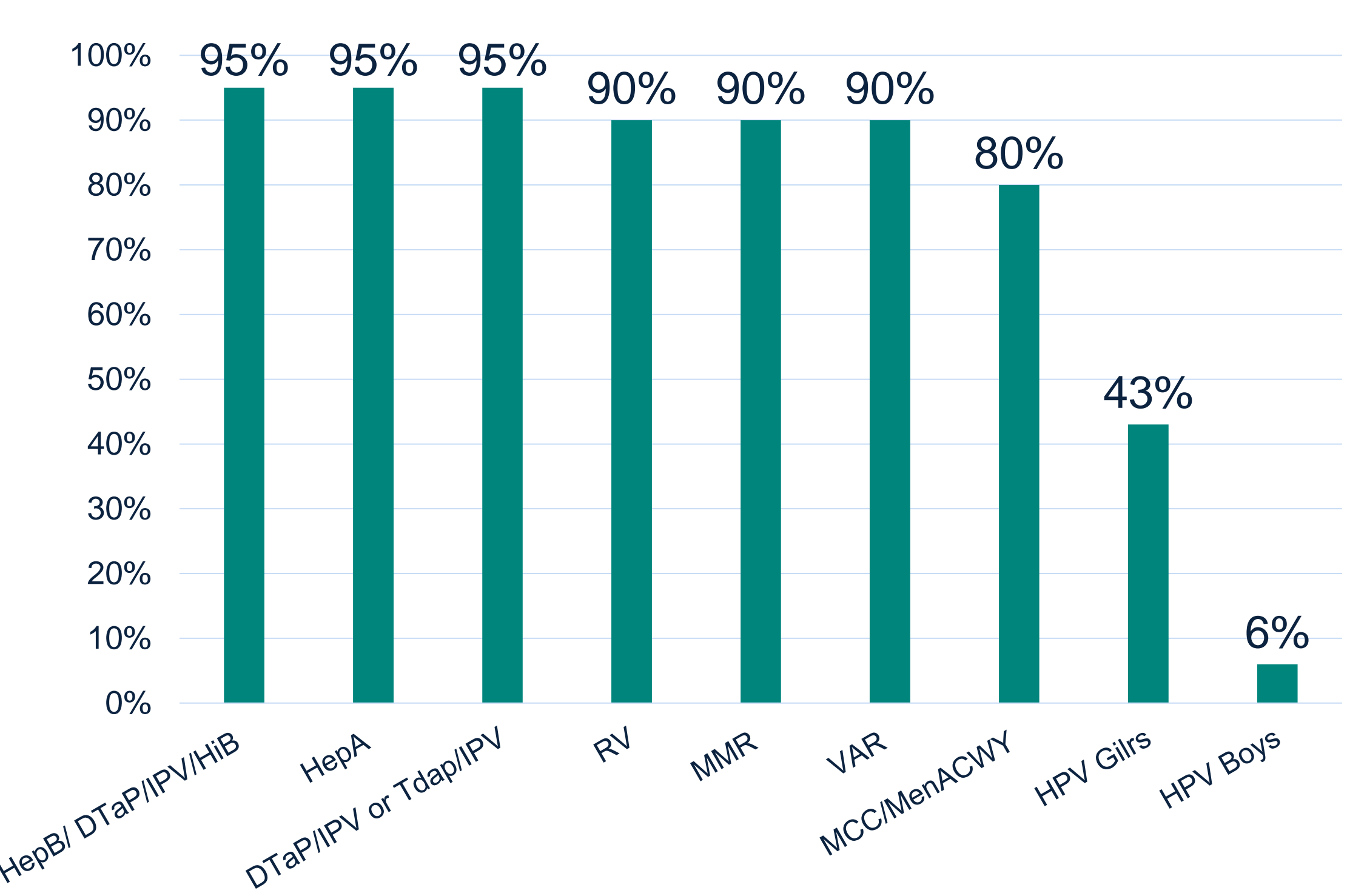
Pediatric immunization program in Greece	
Vaccine	Schedule
Diphtheria and tetanus toxoid with acellular pertussis	2, 4, 6, 15-18 months; 4-6 years
Hepatitis B	Birth, 1-2 months; 6-18 months
Inactivated polio	2, 4, 6-18 months; 4-6 years
Haemophilus influenzae type b	2, 4, 6, 12-15 months
Pneumococcal conjugate	2, 4, 12 months
Meningococcal C conjugate	12 months
Meningococcal ACWY-135 conjugate	11-12 years
Measles, mumps, and rubella	12-15 months; 2-3 years
Varicella vaccine	12-15 months; 2-3 years
Hepatitis A	2-6 years (2 doses, 6 months apart)
Human papillomavirus	9-14 years (primary cohort)
Rotavirus	2, 4, 6 months (Number of doses depend on vaccine presentation)



RESULTS

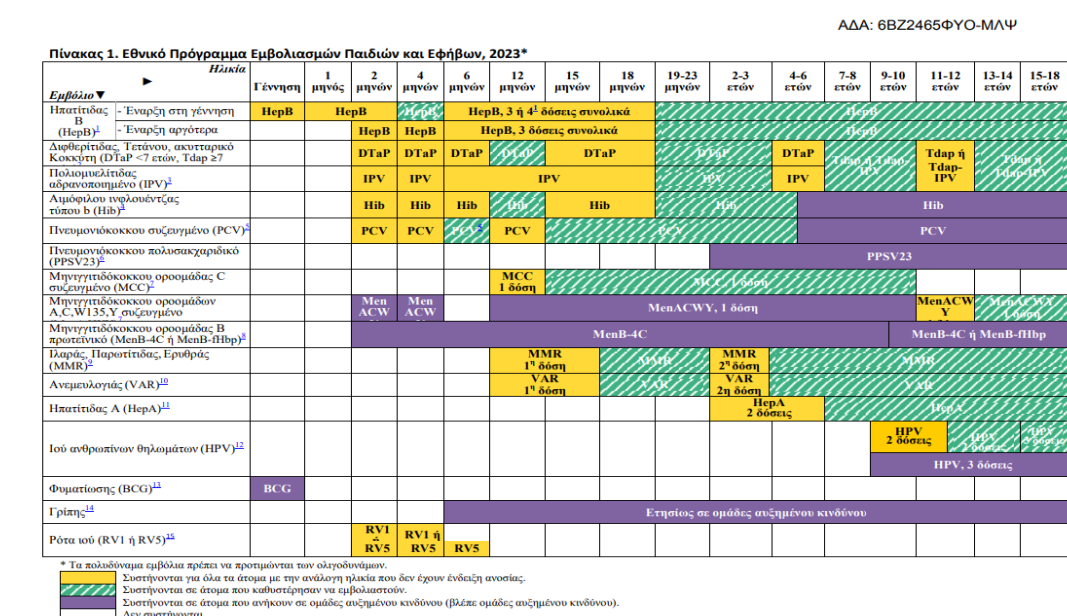
Vaccination coverage rate in 2022

Estimated 1 year vaccination coverage rate (VCR) at the end of 2022



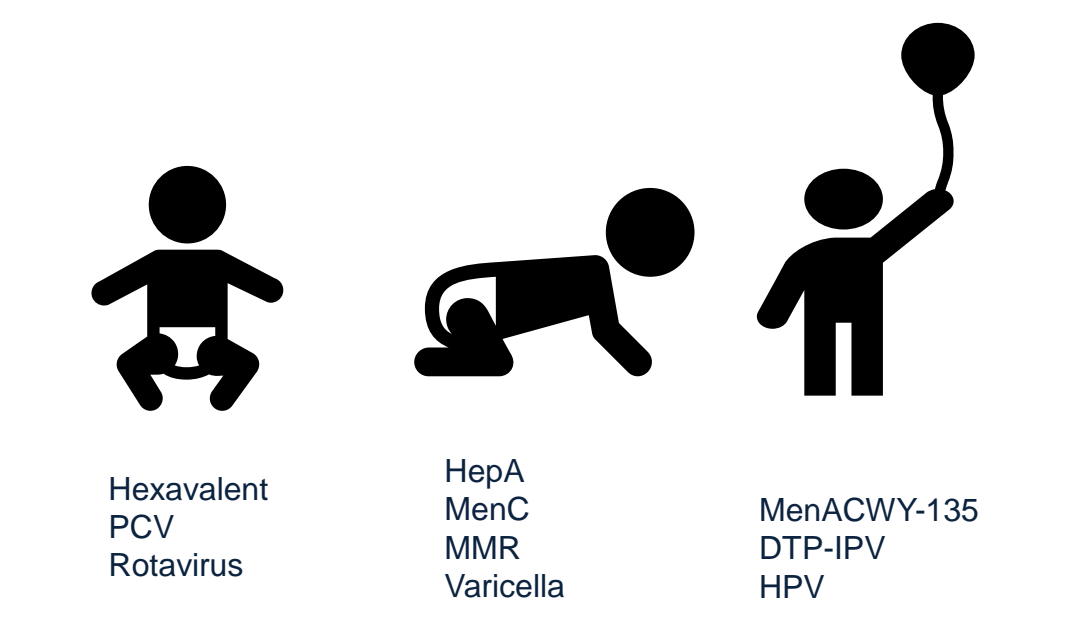
- High VCR coverage in most pediatric vaccines.
- Efforts are needed to increase VCR in HPV and MCC
- The low HPV VCR in boys can be partially explained by the fact that is logical since they are eligible for HPV vaccination since from April 2022

Vaccination budget of 2022



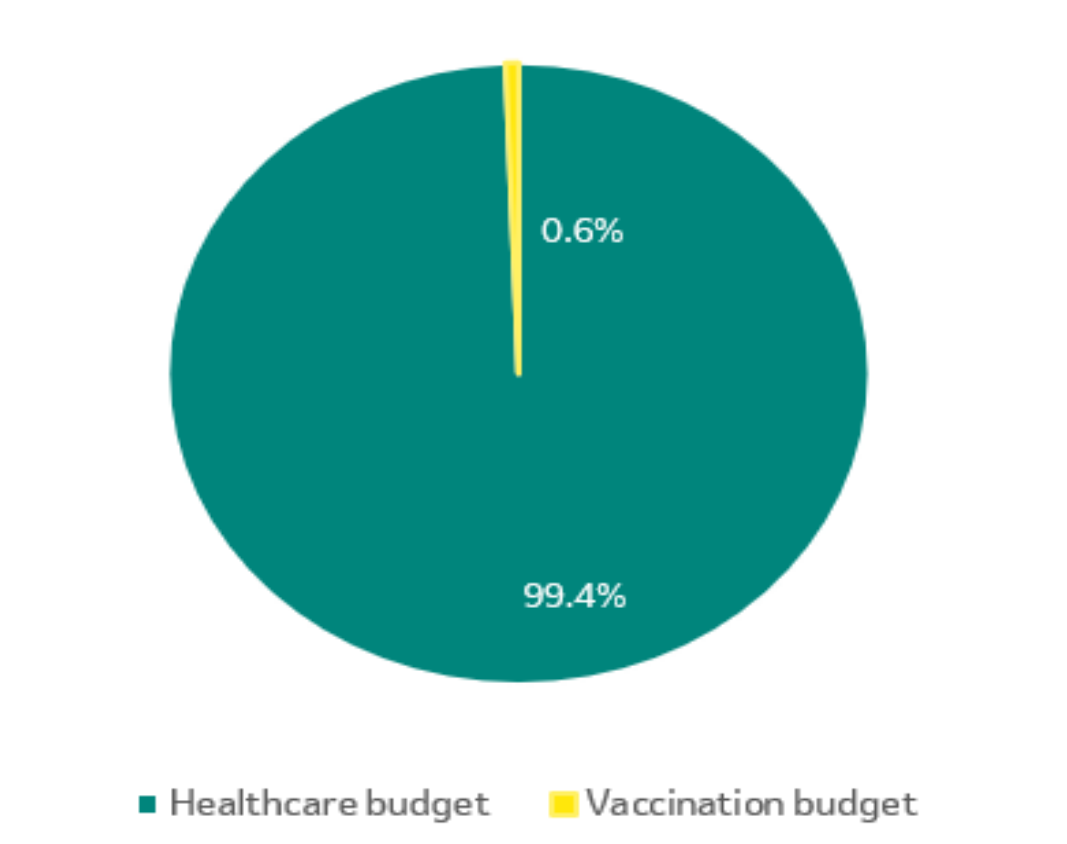
Under the estimated VCR and using the retail market prices, the annual immunization cost was estimated at €93.6 million.

Vaccination cost per child



The vaccination cost per child needed during childhood and adolescence was €1130.

Vaccination cost as % of the total health care budget



Vaccines represent 0.6% of the total healthcare budget in 2022

CONCLUSIONS

- Although vaccination is widely recognized as one of the most cost-effective public health interventions for disease prevention, the results of this analysis shows that vaccines still entail a relatively low level of investment in Greece (€93.6 million).
- Results show that the current NIP cost absorb just 0.6% of the total healthcare budget. The vaccination cost per child needed during childhood and adolescence was €1130.
- Coordinated efforts are needed to increase the vaccine coverage of HPV.
- Setting appropriate budgets and improving coverage rates should be regarded as an essential and smart investment in health, given its broader economic impact and societal value.

REFERENCES

1. Ethen et al. 2018. Hum Vaccin Immunother. 2. Bencina et al. 2023 Expert Rev Vaccines. 3. Ethgen et al. 2016. Hum Vaccin Immunother. 4. Ministry of Health, Greece. Available from: <https://www.moh.gov.gr/articles/health/dieythynsh-dhmosias-ygieinhs/metadotika-kai-mh-metadotika-noshmata/ethnika-programmata-emboliasmw/> 5. Greece Drugs Price Bulletin 2022 6. OECD Healthcare expenditure database 2019 <https://stats.oecd.org/Index.aspx?DataSetCode=SHA>

DISCLOSURES

This study was funded by Merck Sharp & Dohme LLC, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA (sponsor)