

Cost-effectiveness evidence – a case study

This document is intended to support immunization programme managers and staff in their efforts to secure sustainable funding for immunization.

HOW TO USE THIS DOCUMENT

It is important that decision-makers and partners appreciate the importance of immunization, not just as a public health intervention but as a national investment that yields socioeconomic returns and health care savings.

This document presents summaries and key findings from a cost-effectiveness study. It is one of ten such studies drawn from evidence published in peer-reviewed journals and official documentation. The summaries can be drawn upon to support your

country's efforts to raise the profile of immunization and ensure continued investment in it within the context of health care prioritization.

Use the summaries as inspiration, to prepare for a meeting or to hand out to stakeholders.

The case studies will help most when they are used to help paint a national picture and a strong country-specific case for continued support in immunization. Present the studies alongside descriptions of the national issues and challenges. If available, supplement them with your own national data. If the same data is not available, consider using other national data that can serve as a proxy.



Cost-effectiveness evidence for the introduction of a vaccine

Case study: Georgia – PCV¹

KEY FINDINGS

A cost-effectiveness study of Pneumococcal Conjugate Vaccine (PCV) introduction in Georgia produced the following key findings.

- PCV introduction in Georgia is predicted to:
 - prevent 4 deaths and 717 cases of acute otitis media per year;
 - prevent 533 cases of pneumonia per year;
 - result in treatment cost savings of US\$ 2.14 million;
 - have a net cost of US\$ 2.3 million;
- Introduction of PCV10 vaccine in Georgia was estimated to be cost-effective based on WHO criteria² even in the worst-case scenario tested.

Methods

A cost-effectiveness analysis on the introduction of PCV10 in Georgia was conducted from the Government's perspective.

The analysis was conducted using a TRIVAC decision-analytic model time horizon of 10 years, 2014 to 2023. The introduction of PCV10 was compared to a scenario of no PCV vaccination.

Input parameters included:

- demographics and disease burden
- vaccine efficacy and coverage
- health services utilization and costs
- vaccine programme costs.

About *Streptococcus pneumoniae*

These bacteria cause a wide range of diseases including meningitis, pneumonia, sinusitis and otitis media.

Worldwide, about 14.5 million episodes of serious pneumococcal disease occur each year, and it is the most important cause of vaccine-preventable deaths in children younger than 5 years of age.

The two available PCVs target either 10 or 13 of the most prevalent serotypes, which cause over 70% of serious pneumococcal disease in children.

¹ Komakhidze T, Dolakidze T, Shakhnazarova M, Chlikadze R, Kopaleishvili N, Goginashvili K, Kherkheulidze M, Mosina L, Clark A, Blau J. Cost-effectiveness analysis of the introduction of the pneumococcal conjugate vaccine (PCV) in Georgia.

² Adams T, Baltussen R, Tan-Torres T, Evans D, Hutubessy R, Acharya A, Murray CJL. Making Choices in Health. In: WHO Guide to Cost-Effectiveness Analysis. Geneva: World Health Organization; 2003.

Results

Health impact

Table 1: Aggregated outcomes prevented due to PCV programme for 10 cohorts

DEATHS	CASES AOM	ADMISSIONS (PNEUMONIA)	ADMISSIONS (SP. MENINGITIS)	ADMISSIONS (SP. NPNM SEPSIS)	MENINGITIS SEQUELAE	DALY (ALL DISEASES)
41	7 170	5 325	87	508	17	1 438

AOM: acute otitis media; NPNM: non-pneumonia non-meningitis; DALY: disability-adjusted life-years.

Economic Impact

Table 2. Costs of the PCV10 programme 2014 to 2023

TOTAL COSTS OF PCV PROGRAMME	TREATMENT COSTS	TOTAL NET COSTS
US\$ 4.44 MILLION	US\$ 2.14 MILLION	US\$ 2.30 MILLION

Conclusion

PCV vaccination in Georgia would be **very cost-effective** by WHO criteria² in most scenarios modelled. The cost per DALY averted is US\$ 1599 from the Government perspective.

In the **worst-case scenario modelled**, the introduction of PCV10 in Georgia would still be **cost-effective**.