

# Financial Sustainability and Efficiency of Vaccination Strategies in Developing Countries: Substitute or Complementary Approaches? A Tentative Answer Based on Grey Literature



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## Introduction

- The objective of the study
  - *To understand the existing state of knowledge on efficiency of immunization programs in developing countries*
    - Poor quality and quantity of studies
- Methods and material
  - A historical perspective
  - non systematic review of the literature
    - Published economic studies and literature reviews
    - Reports from various institutions
    - Grey literature
      - ➔ Dissertations from trainees engaged in a vaccine management training course in French-speaking Africa (EPIVAC)

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## The early stages of Economics of Vaccination in developing countries

- Scarcity of resources is a precondition for Economic Analysis
  - *Initially, universal coverage as a strategic goal*
    - in 1977, WHO defined the target as a 80% vaccination rate for children in 1990
    - International organizations granted the top priority to Expanded Program on Immunization (EPI) in developing countries
    - Emphasis was on coverage, whatever the resources used
      - *Illusion of non-scarce resources*
      - *Impact on behavior and program management*

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## The early stages of Economics of Vaccination in developing countries

- Intensive use of resources then understood as unsustainable
  - *Later on, a two-times reaction to scarcity recognition*
    - The need for Costing (How much to be paid?)
      - *to fill the information gap and answer managerial concerns*
      - *WHO Costing Guidelines of EPI in 1979*
    - The need for Financing (How to finance services?)
      - *concerns for the sustainability of development projects*
      - *issue of "donor dependence"*
      - *projection of increasing expenses with introduction of new vaccines*

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## A critical view on economic evaluation in developing countries

- Is there a place for Economic Evaluation?
  - *The economics of vaccination is delimited by these two approaches (costing and financing)*
  - *Economic evaluation defined as the search for efficiency is related to choice among alternative strategies*
  - *Efficiency first developed as a complement of cost analyses*
    - considerable interest in the 1980s
      - ➔ *many published studies*
      - ➔ *efficiency defined as (reduced to) cost-effectiveness*
      - ➔ *Average Cost per Fully Immunized Child (FIC) as the Gold Standard*

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## A critical view on economic evaluation in developing countries

- Weaknesses of these economic evaluations
  - *quantity and quality of evidence are poor*
    - very few full economic evaluation
      - ➔ *explicit analysis of both costs and effectiveness of at least two alternatives*
    - Average cost per FIC reduces comparison between strategies and countries
    - inadequate transparency of cost components
    - partial definition of interventions under consideration

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## A critical view on economic evaluation in developing countries

- Weaknesses of these economic evaluations
  - *many methodological shortcomings*
    - on the costing side
      - ⇒ *no consideration of households contribution to direct costs (important with increasing cost recovery)*
      - ⇒ *exclusion of indirect costs*
      - ⇒ *viewpoint of Ministry of Health and donors*
      - ⇒ *Financial costing rather than economic costing*
      - ⇒ *No reference to opportunity cost principle*

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## A critical view on economic evaluation in developing countries

- Weaknesses of these economic evaluations
  - *many methodological shortcomings*
    - on the outcome measurement
      - ⇒ *outcome reduced to effectiveness*
      - ⇒ *effectiveness measured by FIC*
      - ⇒ *vaccination with DTP3 used as a proxy for full coverage*
      - ⇒ *Which children? Age < 1 year or all?*
      - ⇒ *Measles vaccine given 5 to 6 months after DTP3*
      - ⇒ *What about immunization of pregnant women and women of childbearing age for neonatal tetanus prevention?*
      - ⇒ *Outcome not modified with additional vaccines*

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## A critical view on economic evaluation in developing countries

- Results of these so-called "cost-effectiveness" studies
  - *Mean cost per FIC is quite low but varies widely*
    - range from US\$ 2.19 to US\$ 59.90 depending on costs included
      - ⇒ US\$ 5.00 to US\$10.00 for MoH concerning 30 EPI cost-effectiveness studies in the 1980s
      - ⇒ mean cost per FIC US\$ 13.00-15.00 when including donors contributions and local costs
      - ⇒ in a more recent review, cost per FIC ranges from US\$ 2.19 to US\$ 59.90
  - *Only the World Bank estimated a cost per DALY averted in 1993 to be US\$ 14.30*

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## A critical view on economic evaluation in developing countries

- These cost-effectiveness studies are only a by-product of the costing approach
  - *Not tailored for choice among alternative strategies*
    - Fixed facilities+mobile teams Vs fixed facilities alone
    - What is the ICER of adding a new vaccine?
- One basic conclusion: immunization services such as EPI are highly cost-effective
  - *Implicit message: it is no more important to perform economic evaluation*
  - *Rather than trying to refine and improve quality of these economic evaluations attention is directed towards financing*

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## From costing to financing

- Financial Sustainability then appears as a substitute for Efficiency
  - *the cost per FIC is used as a benchmark*
    - analysis of cost incurred before and after a FSP
      - ⇒ *risk of confusing cost-effectiveness with cost-savings (emphasis on cost containment and wastage reduction)*
      - ⇒ *cost and outcome measurement inadequate*
      - ⇒ *mean cost per FIC always increasing with introduction of new vaccines or attempts to reach more children*

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## From costing to financing

- Financial Sustainability then appears as a substitute for Efficiency
  - *the cost per FIC is used as a price tag*
    - rewarding US\$ 20 per additional FIC
      - ⇒ *nothing is said on how to attain such a value*
      - ⇒ *hypothesis of constant marginal cost*
      - ⇒ *how to improve effectiveness, how to reduce cost?*
      - ⇒ *the goal is defining a strategy of financial sustainability not an efficient strategy*
      - ⇒ *the search for efficiency is implicit*

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## From costing to financing

- This is not the full story
  - *At the same time, economic evaluation may be a complement of financial sustainability*
    - first because GAVI refers to efficiency even if no details are given on it
    - second because there is a need to compare two alternatives
      - ⊖ *expanding coverage Vs introducing new vaccines*
      - ⊖ *here we have full economic evaluations to perform*
      - ⊖ *limitations of efficiency approach must be recognized as an equity problem also emerges*

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## Conclusions

- Poor quality of economic evaluation of immunization programs in developing countries
  - Evaluation reduced to mean cost per FIC
  - Performance comparison rather than choice
- Explanation could be the emphasis on costing and financing
- Financial sustainability substitutes for efficiency
  - Efficiency is (only) part of the (broader) problem
  - Efficiency is assumed to be managed at local level
  - Creation of an Agency promoting and rewarding economic evaluations?
- Financial sustainability and Efficiency should be developed as complements
  - Efficiency is partly the solution to financial sustainability
  - Other issues also to be addressed

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