
Title of Model-based Economic Evaluation

[should clearly represent the study question]

Presentation to [WG/ NACI] on [Date]

Author Names and Affiliations

Can include logos, as desired, to identify affiliation of authors.

TO PROMOTE AND PROTECT THE HEALTH OF CANADIANS THROUGH LEADERSHIP, PARTNERSHIP, INNOVATION AND ACTION IN PUBLIC HEALTH.

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Conflicts of Interest and Funding

- List any potential conflicts of interest for each author (including financial and intellectual). If there are no potential conflicts of interest, a statement to that effect must be included.
 - *ex. Author A: No conflicts of interest.*
- Describe how the study was funded and the role of the funder in the identification, design, conduct, and reporting of the analysis. Describe other non-monetary sources.

Decision Problem

- The study question should be well defined, stated in an answerable form and relevant to the decision the target audience is facing.
 - For example: What is the cost-effectiveness of routinely vaccinating population X against Disease Y, using vaccine A compared to the current approach of B?

Methods

Population(s) and Intervention(s)

- Define the study population(s) for the vaccination program and comparators
 - Include population at risk for the disease, and populations indirectly affected (i.e., by externalities or spillover effects)
 - Specify any subgroups
- Define the interventions to be compared
 - For vaccination program: State the brand and generic names of the vaccine, dosage of vaccine, the number of doses required, dose schedule, whether any booster doses are required, expected dose completion, handling of vaccine wastage, assumptions on waning, coverage estimates
- Define **setting(s)** for delivery of interventions and comparators

Study Characteristics

- Specify **study perspectives**
- Specify **time horizon** and justify
- Specify **discount rate** used

Economic Model

- Specify **type of economic evaluation** (i.e., CUA, CBA) and the **summary measure used** (e.g., cost per QALY)
- Provide **schematic of model structure**
- Specify **study design** (e.g., decision tree, Markov cohort model)
- Describe **attributes** of the model (e.g., static versus dynamic, stochastic versus deterministic) and justify.

Dynamic Model [Use this slide if a dynamic model was developed separately from the economic model]

- Specify **type of dynamic model** used (e.g., SIR)
- Describe model (e.g., contact patterns, differential equations if applicable, rules underpinning agent behaviours if applicable, and transmission dynamics over the model time horizon)
- Show a **schematic diagram with suitable annotation**

Impact Inventory Table

- Highlight notable areas of impact included/ excluded in the analysis
 - Screenshot sections of the completed impact inventory table
 - Or list

Key Assumptions

- List key assumptions. They may include:
 - Adequate supply of vaccine
 - Waning vaccine immunity
 - Wastage of vaccine (i.e., sum of vaccines discarded, lost, damaged or destroyed)
 - Assumptions when a vaccine has not yet been developed or data on vaccine efficacy are not in the public domain
 - Assumptions necessary to transfer cost data when they are applied from other countries
 - Assumptions on how many infections are medically attended
 - Assumptions on how disease affects different subpopulations
 - Assumptions on how costs differ across subpopulations

Health System Perspective: Key Inputs

Variable	Description	Mean	Range/ Distribution	Source
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[May have >1 of these slides]

Inputs that should always be presented include:

- Disease incidence
- Vaccine efficacy/ effectiveness – provide strength of the evidence, details of clinical studies from which data were used, any extrapolation performed
- Duration of immunity
- Vaccine coverage
- Unit costs of vaccination doses and comparators; other intervention-related costs (e.g., distribution costs, administration costs)

Societal Perspective: Key Inputs

Variable	Description	Mean	Range/ Distribution	Source
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[May have >1 of these slides]

Include inputs that were not covered in the health system perspective slide(s)

Uncertainty

- Describe sensitivity and scenario analyses:
 - State the values and assumptions test
 - Justify

Equity Considerations

- State equity assumptions
- State any equity objectives (e.g., increasing vaccine uptake in specific under-immunized groups)
- Identify the equity-relevant characteristics of the main subgroups that may benefit, or be adversely affected by, the vaccination program, and describe how they were analyzed

Summary of Methods

Analytic technique	Cost-utility analysis
Disease	Pneumococcal disease (pneumonia, otitis media, invasive pneumococcal disease)
Population	Infants
Intervention	PCV13
Comparator(s)	No vaccine
Outcomes	Cases, deaths, QALYs, cost
Perspective	(i) health system, (ii) societal
Time horizon	Lifetime
Discounting	1.5% for costs and outcomes
Uncertainty	Scenario #1, #2
Study design	Decision tree

Results and Discussion

Results

- Present results for each intervention across all affected populations over entire time horizon:
 1. Outcomes
 2. Costs
 3. Summary measure(s) such as ICERs or net monetary/ net health benefit
- Present in disaggregated manner by types of costs and outcomes
- Present mean estimates and precision (e.g., 95% confidence intervals)
- Present results for each perspective
- Results can be summarized in example table on subsequent slide

Example Table: Results of an economic evaluation from health system perspective

	Vaccine Program A	Vaccine Program B	Vaccine Program C
Outcomes:			
LYs			
Cases averted			
Hospitalizations averted			
Deaths averted			
QALYs			
Costs:			
Intervention-related			
Program-related			
Total			
Incremental Cost per QALY Gained:			
Versus Program A			
Sequential ICER			

Additional Results [1-2 slides, if needed]

- Consider presenting additional tables and/or graphs (e.g., health production functions, cost-effectiveness efficacy frontiers)
- Consider presenting results for **key subgroups such as equity-relevant subgroups**

Uncertainty Analyses [1-2 slides]

- Present results from sensitivity and scenario analyses
- Present uncertainty graphically (e.g., cost-effectiveness plane scatter plots, tornado diagrams, cost-effectiveness acceptability curves, cost-effectiveness acceptability frontier)
- Present influential variables

Study Limitations

- Discuss key limitations (e.g., methodological, validity of assumptions, strength of the data, and relationships or links used in the model)

Generalizability

- Comment on the generalizability or relevance of results, and the validity of the data and model for the relevant jurisdictions and populations
- Comment on regional differences in terms of disease epidemiology, population characteristics, clinical practice patterns, resource use patterns, unit costs, and other factors of relevance. Where differences exist, discuss the impact on the results (expected direction and magnitude), and the conclusions

Equity Considerations

- Indicate the distributional considerations (e.g., intergenerational effects of the vaccination program)
- List other ethical and equity implications or issues

Relation to Other Studies [if appropriate]

- Compare results to results from other studies, including a discussion on similarities, differences, and significance

Conclusions

- Summarize the key findings and uncertainty of the economic evaluation

References

Supplementary Material

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- Can consider presenting model validation results; goodness-of-fit