

# Use of cost and economic evaluation evidence in policy brief development

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WHO EMRO

Capacity Building for Development of Policy Briefs: Advanced Training of Trainers Workshop  
for Researchers and Policy-Developers

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# Session content

- WHO EMRO multi-concept approach to evidence-informed policy-making
- Key principles of economic evaluation studies
- Use of economic evaluation and Health Technology Assessment studies in policy brief development
  - When and how to use them – critical appraisal
  - Transferability of economic evaluation results to local context
  - Use of local cost data in selecting policy interventions
- Use of national cost data for estimating cost of policy implementation
  - Sources and validity of data
  - When to use cost data
- Presenting cost and cost-effectiveness data in a policy brief

# Framework for improving national institutional capacity for use of evidence in health policy-making

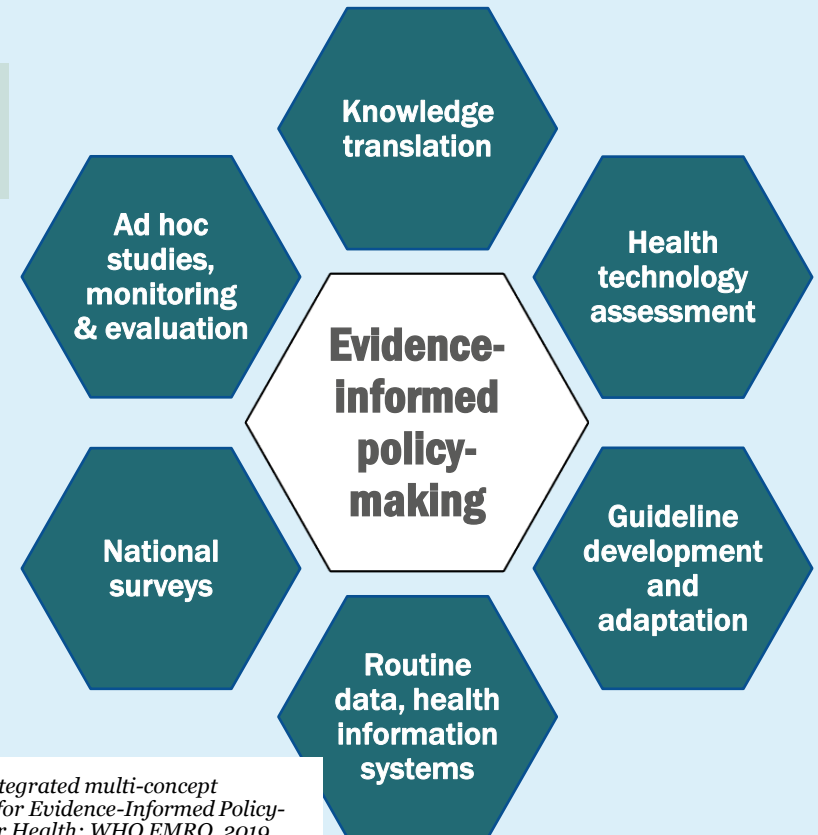
*in the Eastern Mediterranean Region (2020–2024)*

(EM/RC66/R.5; approved Oct 2019)

EMR countries committed to the ***integrated multi-concept approach*** for institutional capacity and action for use of evidence in health-policy making

## Requirement of the integrated multi-concept approach:

1. Internal programmatic coherence within each key program, avoiding duplications
2. Systematic links between the key programs



Source: *Integrated multi-concept approach for Evidence-Informed Policy-Making for Health; WHO EMRO, 2019*

# Academic institutional capacity for EIPM: WHO guidance

The Regional Action Plan provides key guidance under:

**Strategy 1.** Enhance demand and advocacy for evidence-informed policy-making

**Strategy 2.** Enhance decision-making structures and processes for use of evidence at national level

**Strategy 3.** Enhance resources for evidence-informed policy-making

Source: [Regional action plan for the implementation of the framework for action to improve national institutional capacity for the use of evidence in health policy-making in the Eastern Mediterranean Region \(2020–2024\)](#)

## Regional action plan

for the implementation of the framework for action to improve national institutional capacity for the use of evidence in health policy-making in the Eastern Mediterranean Region

(2020–2024)



# Why using cost analyses and economic evaluation studies in a policy brief?

Cost analyses can provide:

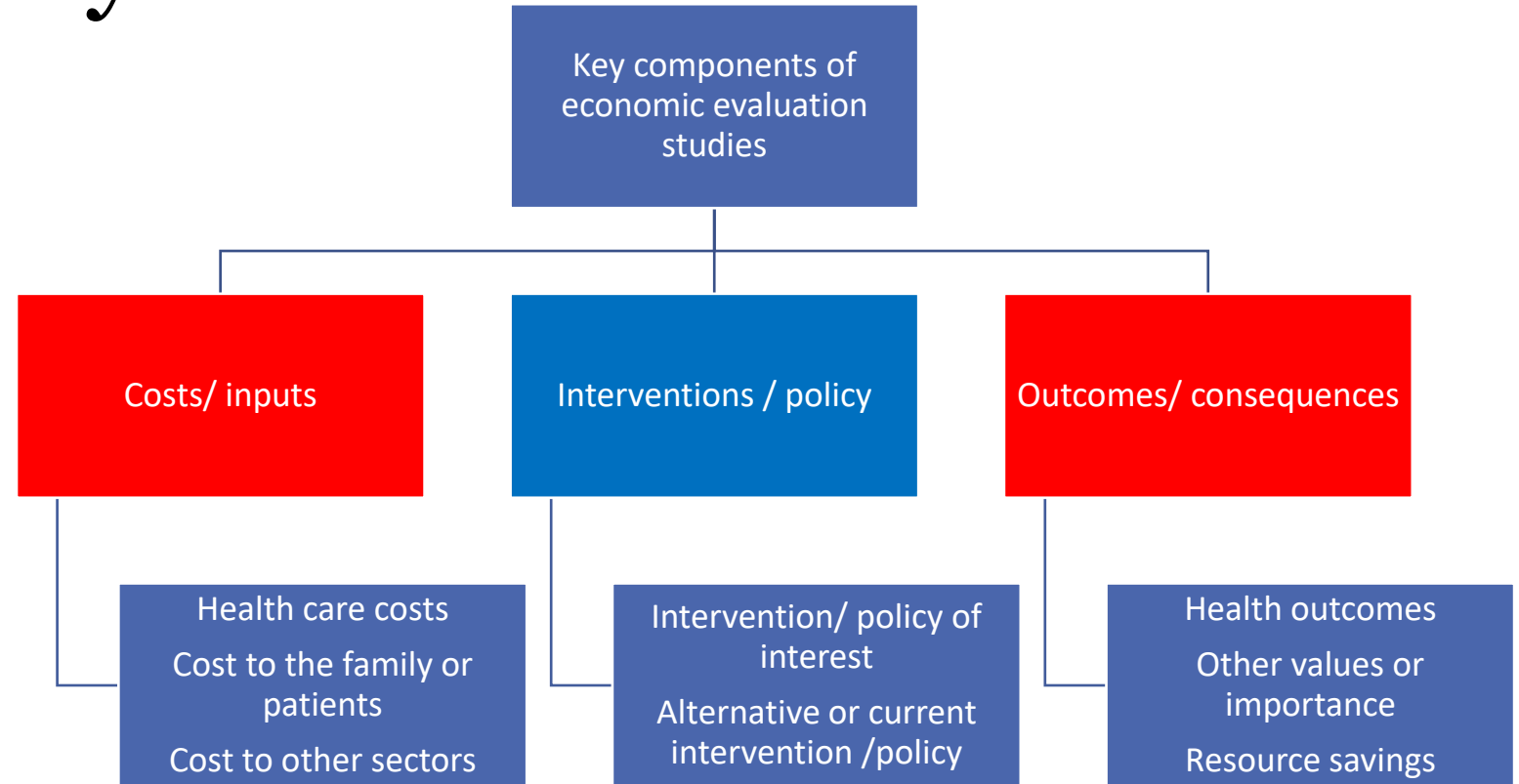
- Information on **cost (overall or unit cost)** of the intervention/policy
- Evidence on **sustainability or affordability** of the policy
- Information to complement economic studies conducted in other settings to the country context

**Economic evaluation** studies are

- **Tools** to assist in **selecting preferred interventions or policies** noting that **resources are limited**, and that **different interventions result in different consequences**
- They help in **selecting the interventions** that provide lowest opportunity cost
  - Among potential options

# Key requirements of an economic evaluation study

An economic evaluation study is a **comparative** analysis of alternative interventions or policies in terms of their **costs** and **health consequences**



# Typology of the studies

- Cost analyses
- Individual economic evaluation studies
  - Cost minimization studies
  - Cost effectiveness studies
  - Cost utility studies
  - Cost benefit studies
- Systematic reviews and or modeling of economic evaluation studies or cost data
  - Using rely on more than one study and sources of data
- Health Technology Assessment (HTA) studies
  - Include assessment of effectiveness, cost-effectiveness, acceptability and equity consideration

# Main steps in conduct of an economic evaluation

- Specify the question, and baseline comparison group
- Specify the viewpoint, type and coverage of economic study
- Specify key variables to estimate cost and outcomes (effectiveness)
  - Measure differences in quantities of resource use and value them
- Specify the method to value health outcomes
  - Measure outcomes and value them (e.g. morbidity, death, QALY)
- Consider sensitivity analysis



# Example 1 - a key policy question

You are tasked with developing the policy brief to help decision making

- Country A has decided to **increase the number of ICU beds** in the country **in response to the COVID-19 pandemic** and the substantial increase in need for ICU beds.
- They are considering whether to
  - increase the number of beds in already **existing ICU wards (hospitals)**or
  - **establish new ICU wards in hospitals without such resources** (to increase geographical access).

How do you collect the required cost data?

What are the main cost related variables that should be noted in making such a decision?

# Key sources of cost data

- All **important** costs and effects should be included

## Costs

- consumables, medicines, staff time, equipment, rent, overheads
- Broader health service – e.g. doctor visits
- Patient (& family) costs

## Effects

- Important disease-specific outcomes
- Quality of life and (all-cause) mortality
- Spill-over effects; Productivity gains

- **Sources of cost data**

- Published studies (ideally systematic review or cost analyses)
- Specific sources for reference unit costs – staff cost, medicines, services ...
- Collect information locally (small surveys, expert consultation, expenditure records)
- RCTs may not always be the best source of data for models

# Economic evaluations can be misleading

## *Quality appraisal is the key*

Depending on the way they have answered questions such as:

- Valuing non-market items
- Adjustments to existing market prices
- Consideration of capital costs
- Use of average cost or marginal cost
- ...

Let's discuss ICU  
beds example

# Example 1 - a key policy question

You are tasked with developing the policy brief to help decision making

- Country A has decided to **increase the number of ICU beds** in the country **in response to the COVID-19 pandemic** and the substantial increase in need for ICU beds.
- While developing the policy brief, you focus further on the policy problem and note that it **can be rephrased as**
- Country A has decided to **increase the critical care capacity and access to medical oxygen in hospitals** in the country **in response to the COVID-19 pandemic** and the substantial increase in need for ICU beds.
- ***Now you note that there are more policy options!***

What other policy options are there in response to this policy question?

# Potential policy options

- Increasing the number of beds in already **existing ICU wards (hospitals)**
- **Establishing new ICU wards in hospitals without such resources** (to increase geographical access).
- Increasing **access to medical oxygen in non-ICU hospital wards**
- ...

What are the additional cost and consequence variables to be measure for this policy option?

# Additional variables of interest

- Increasing **access to medical oxygen in non-ICU hospital wards**
  - (cost) Oxygen use
  - (capital cost) Enhancing hospital infrastructure for medical oxygen distribution
  - (consequence) Safety concerns for medical oxygen use
    - (example of accidents in countries of the region)
  - (capital cost) National capacity for medical oxygen production...
  - (other consequences) Availability of medical oxygen for other patient groups
  - .....

Are there further policy options to consider?

# Economic evaluations can be misleading

## *Quality appraisal is the key*

Depending on the way they have answered questions such as:

- Valuing non-market items
- Adjustments to existing market prices
- Consideration of capital costs
- Use of average cost or marginal cost
- The follow up period for costs (and consequences)
- Inclusion of unrelated healthcare (and non-health care) costs
- Consideration of shared and overhead costs, and productivity costs

# Economic evaluations can be misleading

## *Quality appraisal is the key*

If not adequately assessed for:

- The viewpoint of the study
  - E.g. health care system vs society
- The basic assumptions of the study
  - E.g. certain costs or consequences can be ignored
  - Weights given to different elements in modelling studies
- Variation in cost elements on proportionality of different costs
  - E.g. medicines costs (pricing dependent) or health provider cost



# Example 2 - a key policy question

You are tasked with developing the policy brief to help decision making

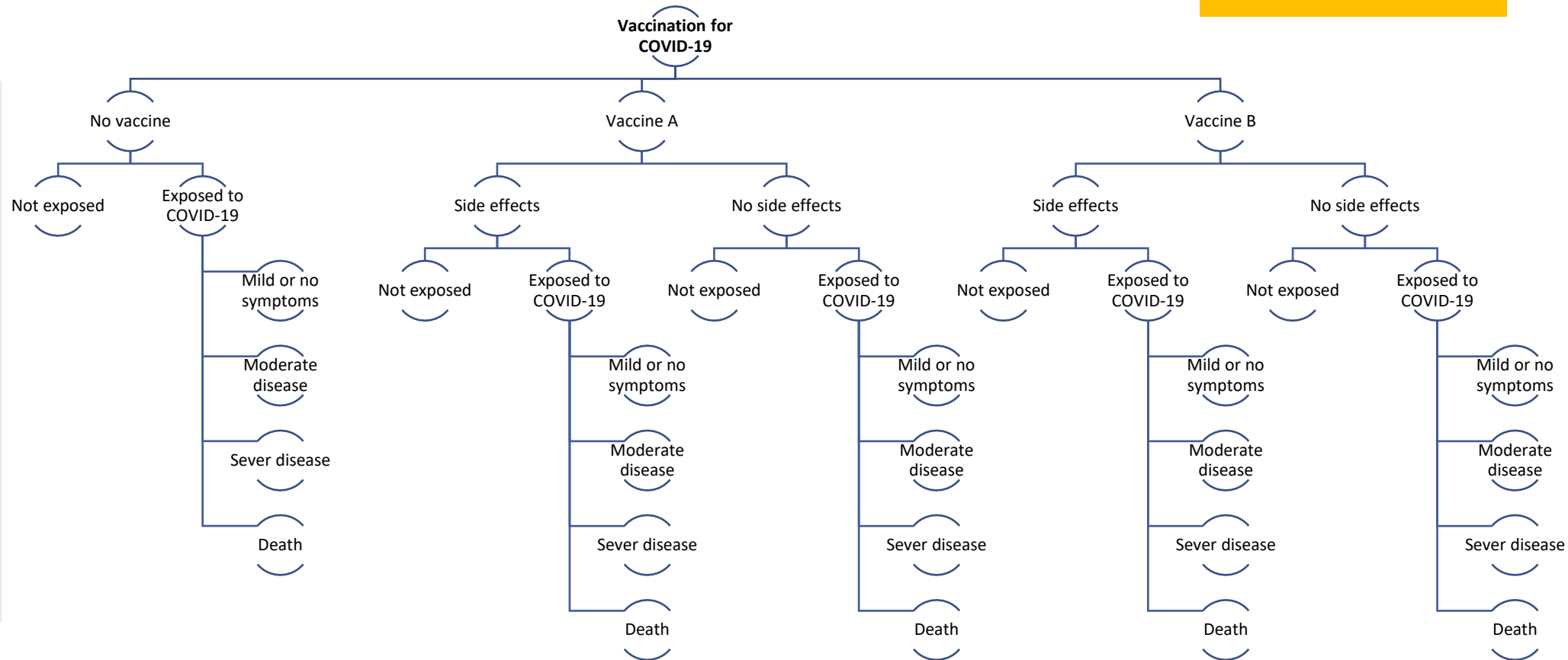
- It is early 2021! Country B is developing its **vaccination agenda against COVID-19**. There are those in the society (and in the government) who are not favorable with the vaccination program.
- You decided to develop a decision tree to analyze cost and consequences of different options to help policy makers in their decisions and advocating for the benefits of the vaccination at national level

# Example of a decision tree modeling: COVID-19 vaccination

Are there any other outcomes or options to add the decision tree?

## Steps in conducting a decision tree modelling

- Identifying all important outcomes or consequences
- Estimating probability of each outcome or consequence
- Estimating costs of each outcome or consequence
- Comparing each arm total costs using probabilities



# What to add to the model?

- Option of vaccinating key target groups?
  - remember early months of 2021
- Analyzing according to age groups?
- Include waning of vaccine effect over time?
- Include emergence of new variants of concern?
- Non-health related outcomes?
- .....

# Appraising decision models and cost-effectiveness studies – assess whether:

- All important alternatives considered?
- All important costs and effects included?
- Were the probabilities and health outcomes valid and credible?
- Were the utilities valid and credible (e.g. QALY in cost-utility studies)?
- Were the costs (resource use and prices) valid and credible?
- Was the robustness of the conclusions tested (any sensitivity study conducted)?
- Are the results applicable to your setting?

# Possible scenarios for availability of economic evaluation evidence for a policy brief

- When an evidence-based guideline is used for developing a policy brief
  - More focus on use of CEA studies
  - Applicability; and context are the focus
- When a Health Technology Assessment study is used for developing a policy brief
  - More focus on transferability and relevance of CEA findings
- When public health questions are the focus of policy brief, without prior HTA or public health guidance
  - Often CEA studies are lacking
  - Cost analyses, sustainability and acceptability issues

# Presentation of economic evaluation and cost data in a policy brief (WHO EMRO template for policy briefs, 2022)

<b>Policy options</b>	<b><i>Policy option 1</i></b>	<b><i>Policy option 2</i></b>	<b><i>Policy option 3</i></b>
<b>Description</b>	<i>Description of policy option 1</i>	<i>Description of policy option 2</i>	<i>Description of policy option 3</i>
<b>Main advantages**</b>	<i>Main advantages of policy option 1</i>	<i>Main advantages of policy option 2</i>	<i>Main advantages of policy option 3</i>
<b>Main disadvantages**</b>	<i>Main disadvantages of policy option 1</i>	<i>Main disadvantages of policy option 2</i>	<i>Main disadvantages of policy option 3</i>
<b>Cost and feasibility of implementation</b>	<i>Cost and feasibility of implementation of policy option 1</i>	<i>Cost and feasibility of implementation of policy option 2</i>	<i>Cost and feasibility of implementation of policy option 3</i>
<b>Stakeholders' responsibilities</b>	<i>Stakeholders' responsibilities of policy option 1</i>	<i>Stakeholders' responsibilities of policy option 2</i>	<i>Stakeholders' responsibilities of policy option 3</i>

As suggested Table format\* for this section could be as below:

\* Add or reduce columns depending on the number of policy options. Keep the table concise.

\*\* Consider effectiveness, cost-effectiveness, acceptability, equity implications including evidence and certainty of evidence.

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# Thank you

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