

Budget Impact Analysis and Return on Investment

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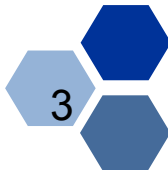
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Outline

- Budget impact analysis (BIA)
- Return on investment (ROI)

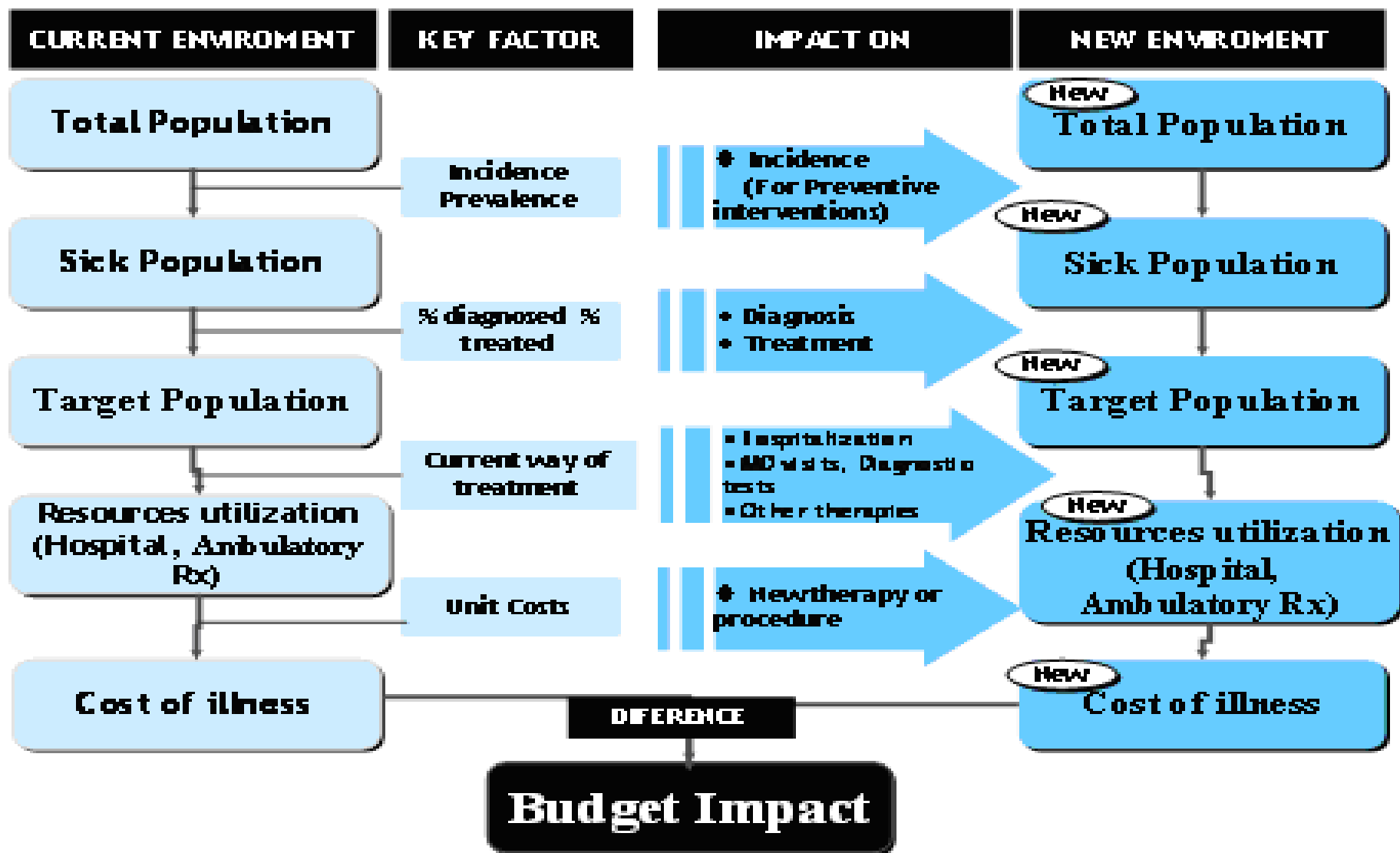
BUDGET **I**MPACT **A**NALYSIS (BIA)



Definition of BIA

- Budget Impact Analysis (BIA) is an essential part of a comprehensive economic assessment of a health care technology
- The impact of implementing the intervention on healthcare budget and on other constraints should be clearly and separately identified.
- Increasingly required, along with economic evaluation (EE), prior to formulary approval or reimbursement.





Adapted from: Brosa M, Gisbert R, Rodrez Barrios JM y Soto J.
Pharmacoeconomics Spanish Research Articles 2005; 2: 65-79.

The Purpose of BIA

- To estimate the financial consequences of adoption and diffusion of a new health care intervention within a specific health care setting given inevitable resource constraints
- To predict how a change in the mix of drugs and other therapies used to treat a particular health condition will impact the trajectory of spending on that condition
- To use for budget planning, forecasting and computing the impact of health technology changes on premiums in health insurance schemes



Users of BIA

- Those who manage and plan for health care budgets
 - administrators of national
 - regional health care programs
 - administrators of private insurance plans
 - administrators of health care delivery organizations
 - employers who pay for employee health benefits

- Each has a need for clearly presented information on the financial impact of alternative health care interventions.



BIA and EE

- BIA should be viewed as complementary to EE, not as a variant or replacement.
- **EE** evaluates the costs and outcomes of alternative technologies over a specified time horizon **to estimate their economic efficiency.**
- **BIA** addresses the financial stream of consequences related to the uptake and diffusion of technologies **to assess their affordability.**



BIA and EE

- EE and BIA share many of the same data elements and methodological requirements.
- However, there are important differences in how these data and methods are incorporated into the models because of their different intended use.



BIA VS EE

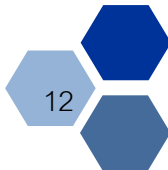
Details	BIA	Economic evaluation
Concept	<ul style="list-style-type: none"> Affordability 	<ul style="list-style-type: none"> Value for money
Objective	<ul style="list-style-type: none"> Financial impact of introducing a technology 	<ul style="list-style-type: none"> Economic efficiency of alternative technologies
Study timeframe	<ul style="list-style-type: none"> Budget holder preference (usually 1-5 years) 	<ul style="list-style-type: none"> Preferably lifetime
Health outcomes	<ul style="list-style-type: none"> Excluded 	<ul style="list-style-type: none"> Included (e.g. quality-adjusted life years)
Perspective	<ul style="list-style-type: none"> Budget holder/Manager 	<ul style="list-style-type: none"> Society/Third payers/other

BIA VS EE

Details	BIA	Economic evaluation
Comparison	<ul style="list-style-type: none">Scenarios in which they can design the degree of incorporation of the new technology in the population with a mixture of utilization	<ul style="list-style-type: none">Specific technologies: a new technology will be used throughout cohort intervention
Study population	<ul style="list-style-type: none">Open cohort	<ul style="list-style-type: none">Close cohort
Discounting	<ul style="list-style-type: none">Not recommended	<ul style="list-style-type: none">Highly recommended
Presenting result	<ul style="list-style-type: none">Total and incremental annual costs	<ul style="list-style-type: none">Incremental cost per unit of health outcome achieved
Generalization of results	<ul style="list-style-type: none">Inadequate: impact studies budget are designed to specific circumstances	<ul style="list-style-type: none">Possible, with limitations

What is the budget impact methodological specification?

- Presented the budget impact in a manner that is relevant to the decision problem and the needs of the intended decision maker
- Disaggregate and reflect the costs to all parties as a result of implementation of the intervention
 - government and social insurance budgets
 - households and direct out of pocket expenses
 - third-party payers
 - external donors, etc.
- Annual budgeting is preferable



Example: BIA on Stem Cell Transplantation for Severe Thalassemic Patients

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Table 4 Estimated budget impact during fiscal years 2008 to 2022 of provision of HSCT to 200 severe thalassemic patients (aged 1-10) per year

Fiscal year	Estimated budget impact (million THB)		Incremental budget
	BT-ICT	Related HSCT	
2008	7	98	91
2009	14	104	90
2010	20	103	83
2011	26	102	76
2012	32	101	69
2013	37	100	63
2014	42	99	57
2015	46	99	53
2016	50	98	48
2017	54	97	43
2018	58	96	38
2019	61	95	34
2020	64	93	29
2021	67	92	25
2022	69	91	22
Total	647	1,468	821

BT-ICT: blood transfusion combined with subcutaneous iron chelating therapy; HSCT: hematopoietic stem cell transplantation; and THB: Thai baht (in 2008 value).

RETURN ON INVESTMENT (ROI)

What is ROI?

- A financial measure to determine benefit to the organization
- A form of cost-benefit analysis that measures the costs of a program versus the financial return from that program



Why is ROI important for decisions?

- The financial impacts of the implementing the interventions
- Effectiveness of interventions in terms of their financial return

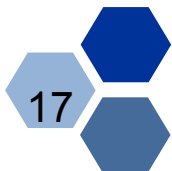
ROI Analysis

- A measure used to:
 - Evaluate the efficiency (net financial benefits) of the investment
 - Compare the efficiency of different investments
- Formula:

Total benefits – Total costs

Total costs

For instance, a \$100 investment earns \$150 in benefit program, then ROI = 50%



What is the ROI methodological specification?

- ROI is useful when costs and benefits are tangible.
- It is usually calculated from the perspective of the organization implementing the program.
- An analysis over a year, future costs and benefits need to be discounted.

Considerations for using ROI

- Many costs and benefits in the future are difficult to quantify.
- Benefits in health intervention (e.g. case averted and QALY gained) are not easy to value in the monetary unit.
- ROI could not value the essential of public health interventions.

Thank you very much, any question?



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