

Setting priorities in health: Supporting GFF countries

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Today's session

- Problem statement and common myths
- Introduction to economic evaluation
- How do you use an economic evaluation?
- Health Technology Assessment
- Case study exercise
- Discussion

Learning objectives

- Get to know the different types of economic evaluation
- Understand roughly how economic evaluation works
- Understand what to read in an economic evaluation paper
- Ask me questions about priority setting more widely

Problem statement

- Resources are scarce and choices need to be made
- If they are not made ex-ante, choices are made ad-hoc and in a non-transparent fashion
- The landscape of interventions/services/drug/commodities is very wide and difficult to navigate
- Bad decisions cost lives
- Opportunity costs are more important when the money is little
- Showing value for money can help making the case for health investments and complement DRM efforts
- Technical outputs can help you make those choices, but there are many other non-technical concerns

Breaking common myths (I)

Global guidance is sufficient, we don't need local evidence

Global norms such as WHO clinical guidelines or other produced by other agencies will not take into account your local health systems constraints

- Constraints = resources, infrastructure, capacity to deliver, budget constraints, or acceptability
- Ex. Trastuzumab for treatment of breast cancer

Breaking common myths (2)

Setting priorities is about getting rid of interventions that are not effective

Difficult choices because almost all interventions are somehow effective (i.e. they have positive impacts on health)

... but are they effective ENOUGH?

... how do they compare to other interventions?

... are they **cost**-effective?

Breaking common myths (3)

Setting priorities is rationing, saving money or delivering services at the lowest cost

Unit costs are one of the many considerations in priority setting and should not be the sole criteria for decision-making.

Cost-effectiveness implies that costs are considered alongside the effects of an intervention.

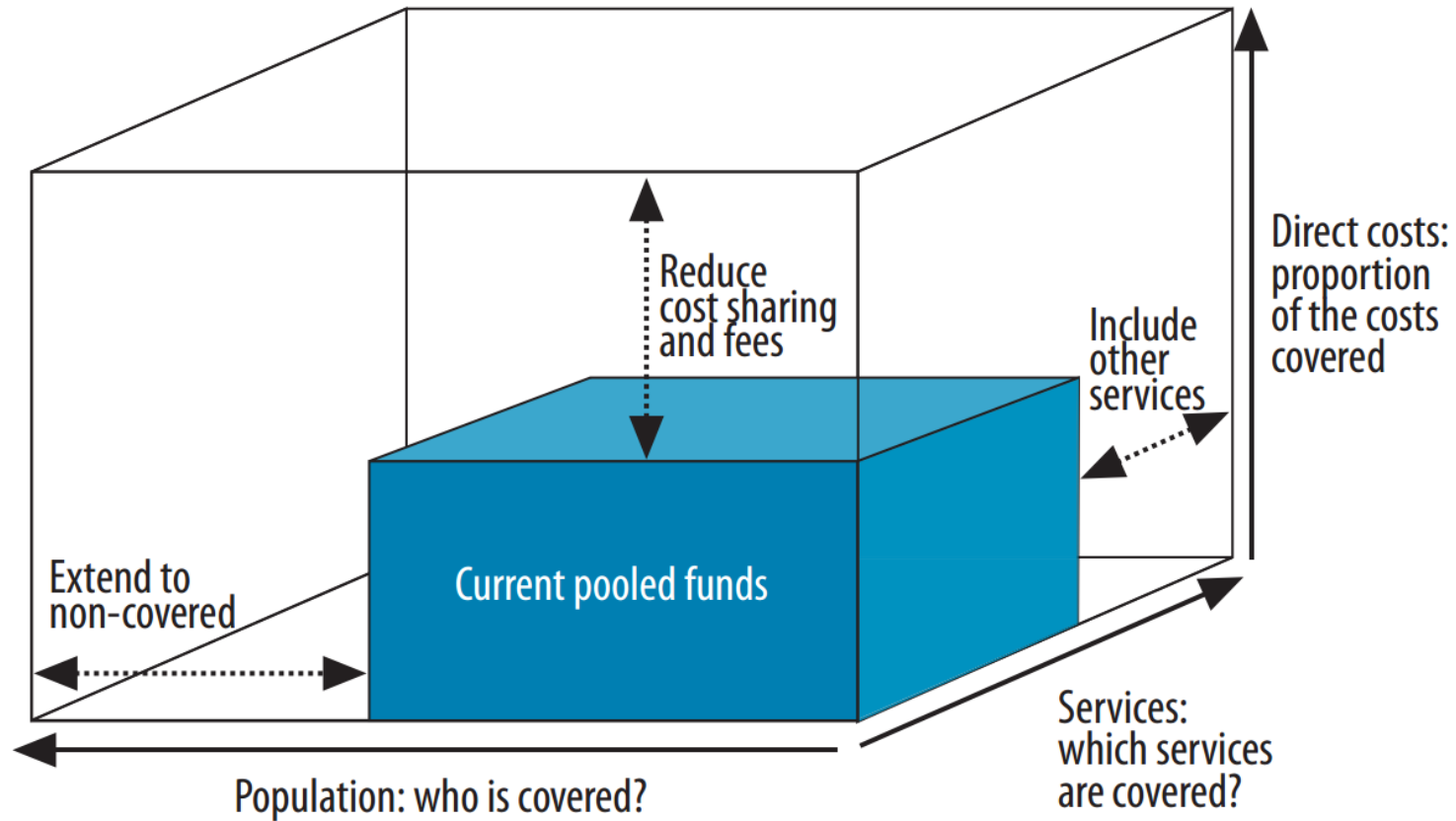
Breaking common myths (4)

There is very little health budget in my country, therefore I may not need to set priorities

All countries in the world purchase at some level of commodities or drugs or has a minimum package/essential medicines list.

However, the need for setting priorities is greater when money is scarce because funding the 'wrong' interventions can exhaust the health budget quickly

How can we move forward?



When should I think about priority setting?

**Any resource allocation decision
Any choice with competing alternatives**

- Health Benefits Package/package of services
- Essential Medicines List
- At the provider level: investment in infrastructure and capital
- Expanded Programs on Immunization
- Design of policies (geographic roll out, scale up etc.)

Types of questions

Is this intervention worthwhile?

Can I afford this?

?

How does intervention A compare to intervention B?

Who are the beneficiaries of the intervention?

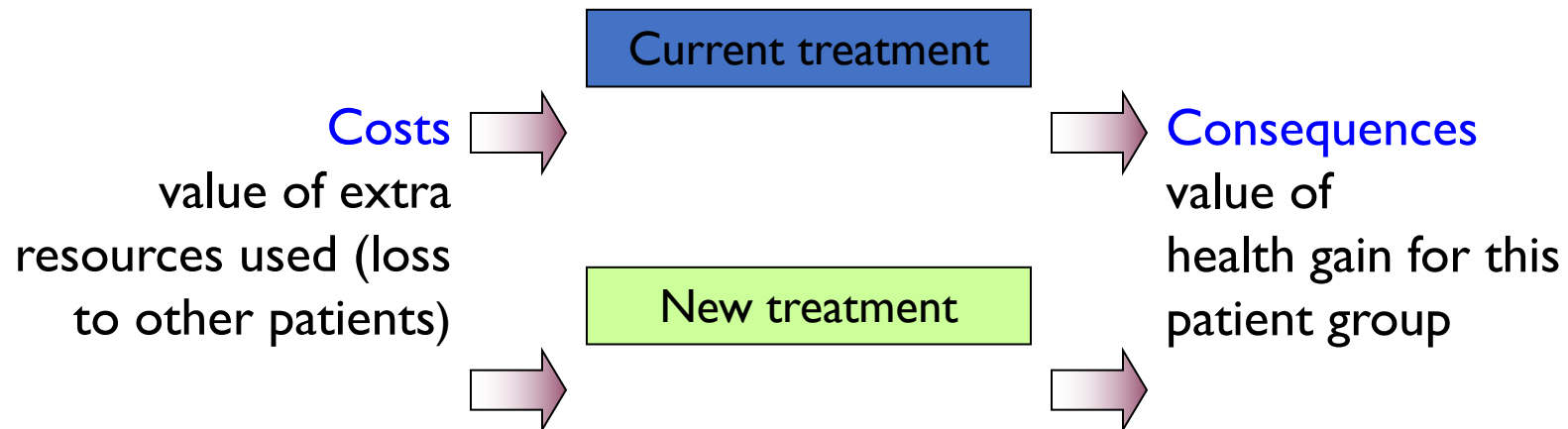
Where should I invest resources?

Type of analysis	Where it is used
Cost-of-illness analysis	A determination of the economic impact of an illness or condition (typically on a given population, region, or country) e.g., of smoking, arthritis, or diabetes, including associated treatment costs
Cost-Effectiveness Analysis	A comparison of costs in monetary units with outcomes in quantitative non-monetary units. When outcomes are in a measure of utility such as Quality Adjusted Life Years (QALYs) or averted Disability Adjusted Life Years (DALYs), it is often termed “cost-utility analysis” (CUA)
Budget Impact Analysis	Can be conducted in addition to a CEA to determine the impact of implementing or adopting a particular technology or technology-related policy on a designated budget , e.g., for a drug formulary or health plan.
Cost-Consequence analysis	A form of cost-effectiveness analysis that presents costs and outcomes in discrete categories , without aggregating or weighting them
Cost-Benefit analysis	compares costs and benefits, both of which are quantified in common monetary units

Using Economic evaluation

“... the comparative analysis of alternative courses of action in terms of both their costs and consequences.”

Drummond, Stoddart & Torrance, 1987



Analysis should be conducted separately for each subgroup of patients.

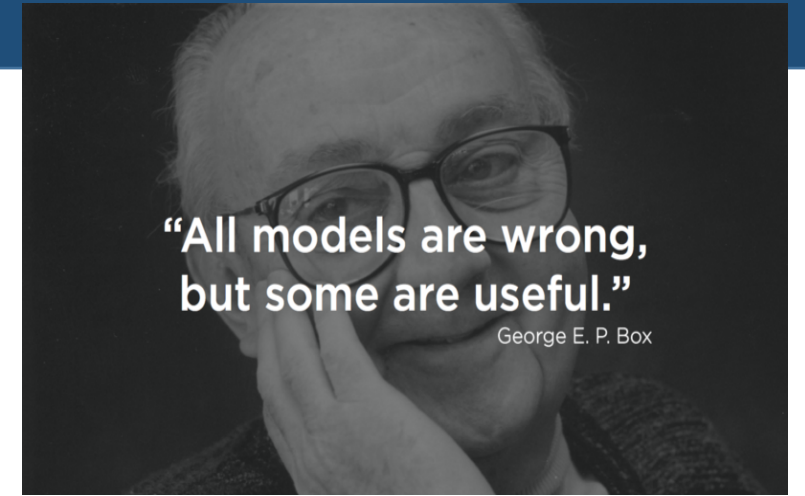
Outcome: the Incremental Cost-Effectiveness Ratio (ICER)

$$\frac{\text{cost}_{\text{new}} - \text{cost}_{\text{current}}}{\text{health gain}_{\text{new}} - \text{health gain}_{\text{current}}}$$

Health gain can be expressed in any metric that suits the nature of the decision or the needs of the decision maker – e.g. hospitalisations avoided, life years gained, no. of people successfully initiated on treatment.

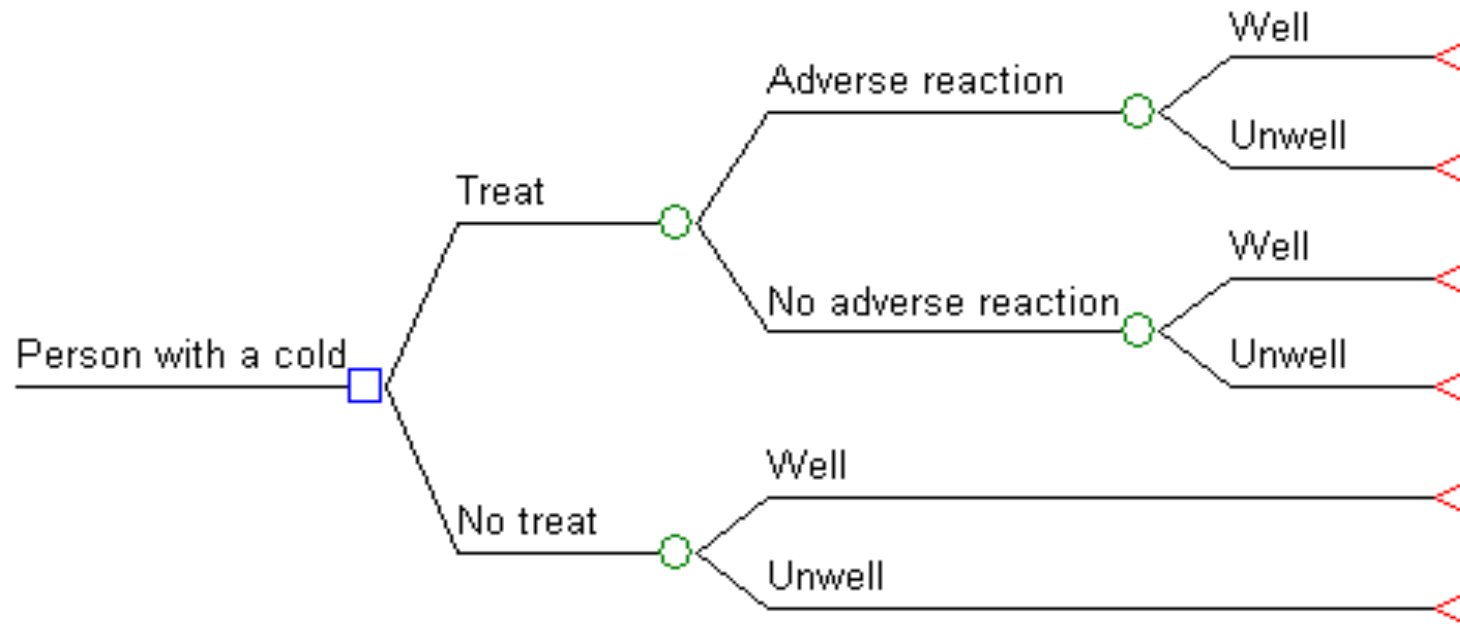
A generalised measure that takes into account length and quality of life eg Quality Adjusted Life Years (QALYs) or Disability Adjusted Life Years (DALYs averted) allows comparability across decisions and consideration of allocative efficiency

Measuring health



- Typically from clinical trials or quasi experimental designs
- Decision models help extrapolate between outcomes seen in trials and long-term outcomes
- Decision models: typically a simplification of the real world, not one approach for all diseases
- Quality of Life measures help synthesize and compare

A simple decision model

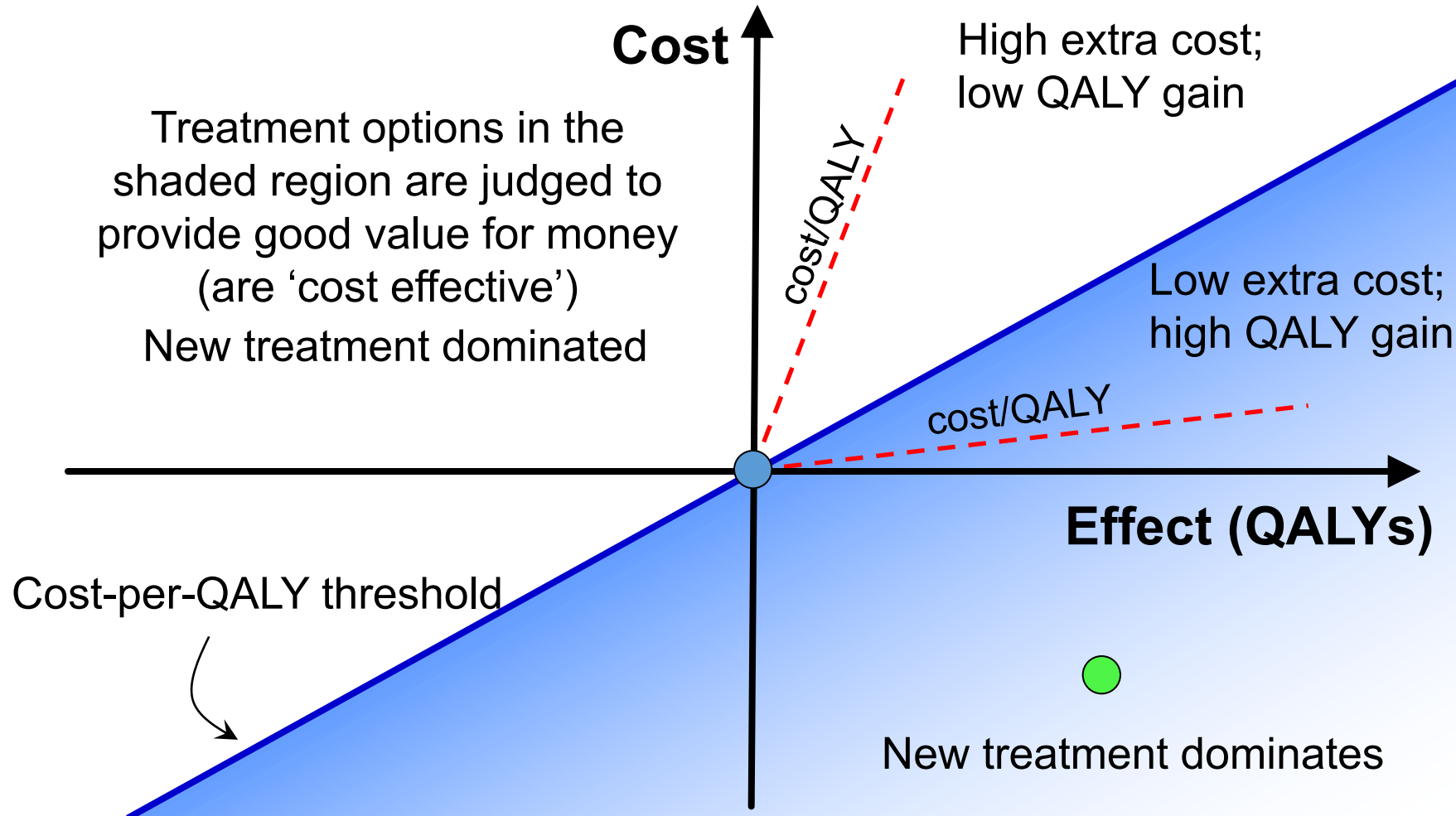


What to do with an ICER?

Ex. Avastin: 200,000/QALYs (NICE, 2010)

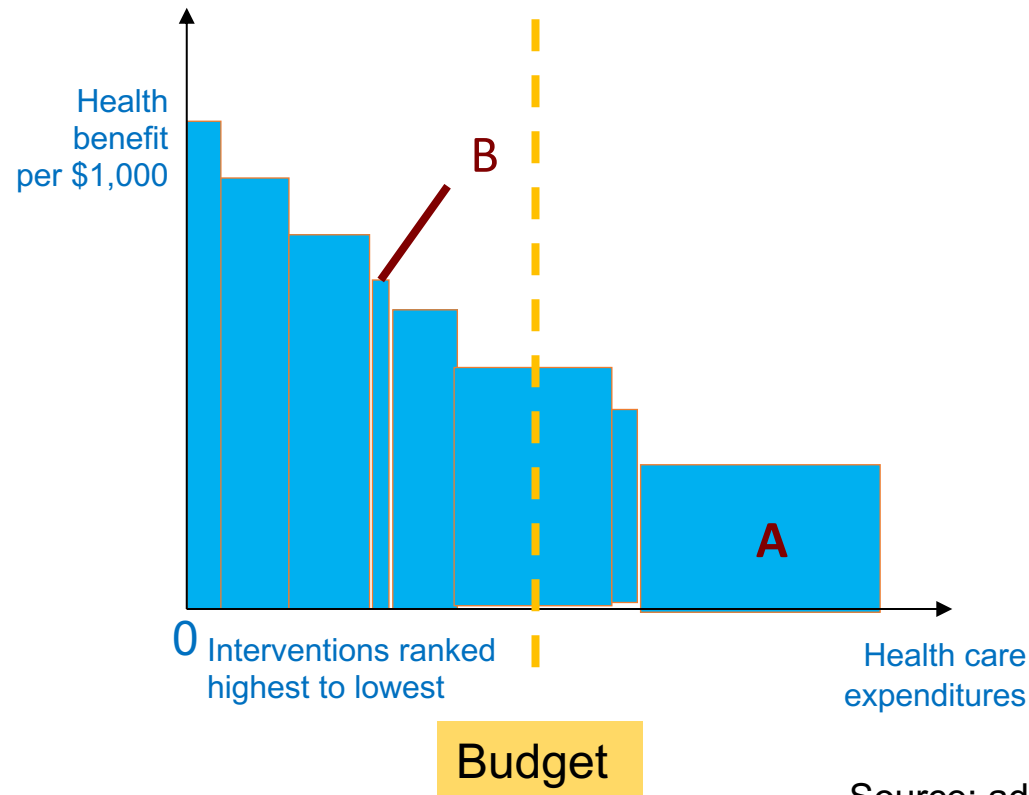
- Compare two interventions to identify which is preferred (same objectives)
- Estimate the value for money of an intervention using a cost-effectiveness threshold
- Compare interventions across a wide range of interventions

How do we use the ICER ? (2)



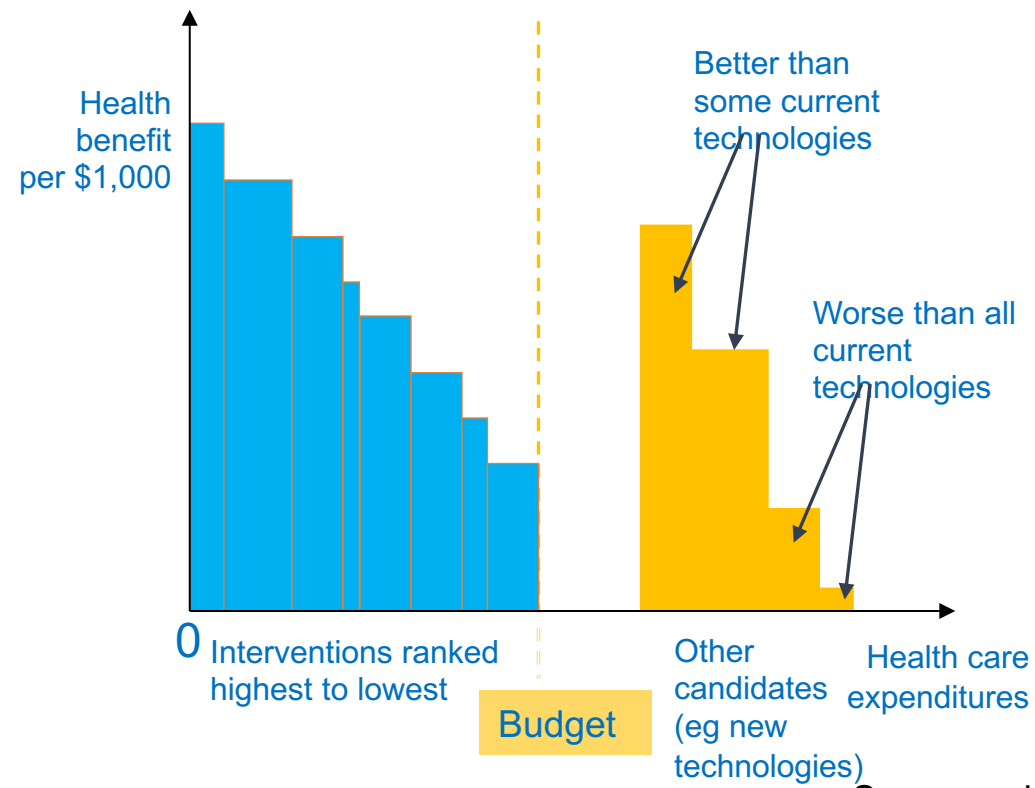
Package approach to CEA: the bookshelf metaphor

Height of bars is “cost effectiveness”, width of bars is budget impact



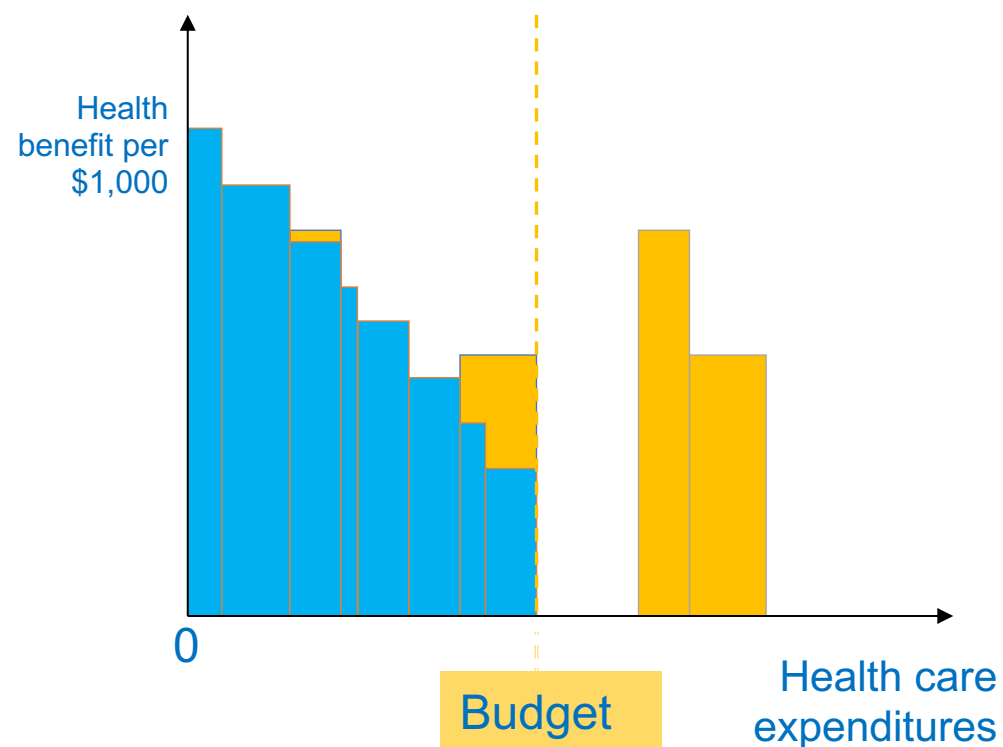
Source: adapted from Culyer (2016)

Package approach to CEA: the bookshelf metaphor



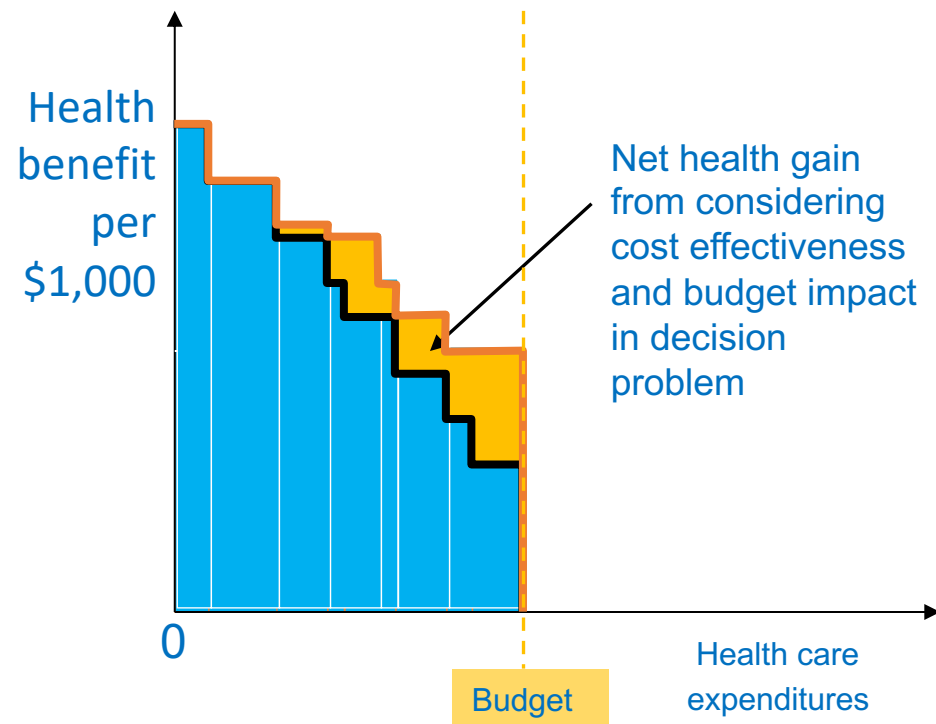
Source: adapted from Culyer (2016)

Package approach to CEA: the bookshelf metaphor



Source: adapted from Culyer (2016)

Package approach to CEA: the bookshelf metaphor



Source: adapted from Culyer (2016)

Ghana: hypertensive medicines

- NHIS under considerable financial pressure: reduction in expenditure
 - 46% of claims costs = polypharmacy, inappropriate medicines
 - Antibiotics and antihypertensives – 60% of total drug expenditure
- Model the cost-effectiveness of four first line drugs to reduce blood pressure and prevent CVD
 - ACE inhibitors (ACE)
 - Beta blockers (BB)
 - Calcium channel blockers (CCB)
 - Thiazide-like diuretics (TZD)
 - Angiotensin receptor blockers (ARB)
 - No intervention – comparator
- Outcomes: Disability Adjusted Life Years (DALYs)

Ghana (continued)

Results: ICER & budget impact

Incremental cost-effectiveness analysis (per person)

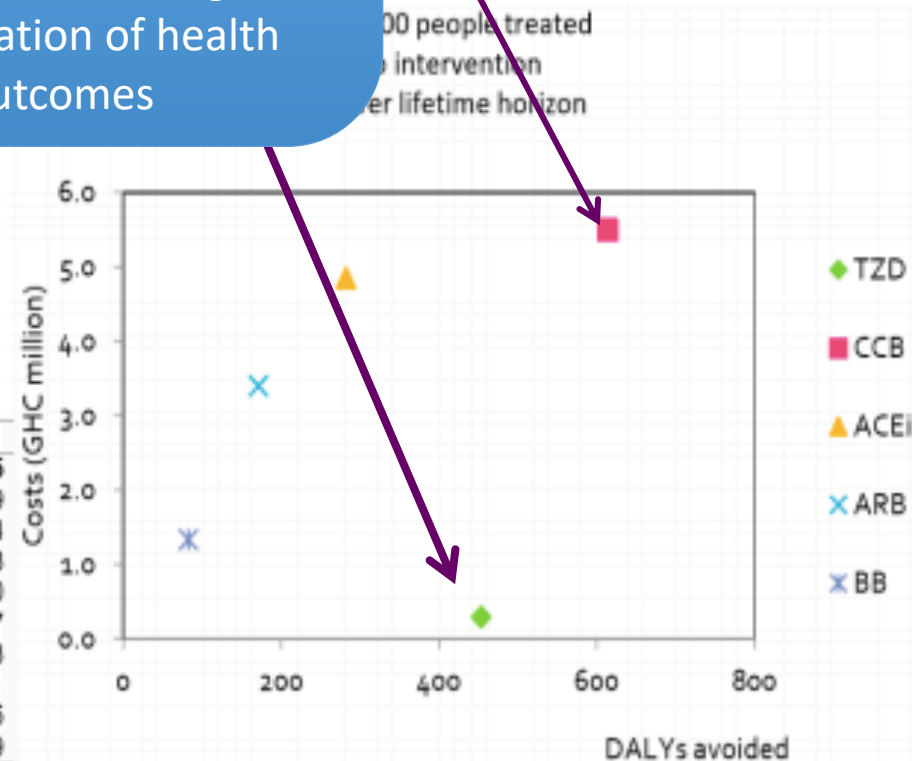
	Compared with no intervention		DALYs avoided	ICER (GHC/DALY)
	Additional cost (GHC)	DALYs avoided		
TZD	290,933	453	642	0.45
CCB	5,498,126	614	32,482	8.96
ACEi	4,847,175	282	Dominated	
ARB	3,398,147	171	Dominated	
BB	1,334,573	83	Dominated	

Budget impact over 5 years

	Total costs (GHC discounted)				
	Year 1	Year 2	Year 3	Year 4	Year 5
NI	5,347,183	6,082,649	6,499,465	6,708,038	6,781,829
TZD	8,181,309	12,548,675	12,526,516	12,373,027	12,134,744
CCB	69,386,769	127,865,019	121,118,914	114,705,942	108,654,743
ACEi	64,168,270	117,113,688	110,582,387	104,394,251	98,589,550
ARB	47,124,757	84,772,356	80,167,115	75,758,854	71,599,337
BB	21,841,437	37,149,504	35,569,569	33,942,948	32,335,183
TZD vs NI	2,834,127	6,466,027	6,027,051	5,664,989	5,352,915
CCB vs TZD	61,205,459	115,316,343	108,592,399	102,332,914	96,519,999

Policy scenarios

Change from CCB to TZD (10% shift) could save 18.4% of the total hypertensive expenditure, although with a slight deterioration of health outcomes



Health Technology Assessment

HTA is the ***systematic evaluation*** of the properties and effects of a health technology, addressing the ***direct and intended effects*** of this technology, as well as its ***indirect and unintended consequences***, and aimed mainly at ***informing decision making*** regarding health technologies.

HTA: a vehicle for decision making

- Way to systematically document what you want to know
- Multidisciplinary in nature – Consequences =
 - Economic
 - Equity
 - Budget impact
 - Clinical effectiveness
 - Ethical
- Not a normative process, can include specific cultural considerations

Problems with economic evaluation...

- Hard to incorporate other concerns in one measure (ICERs)
- Methods can be all over the place and this can limit comparison between studies
- Doing an economic evaluation takes time, resources and capacity...!

Benefits of economic evaluation...

- How else would you compare the value of interventions?
- Structure discussions which are otherwise hard to navigate
- Evidence-based decisions ensure that the process of allocating resources is not captured by interests
- Local evidence is the best evidence!

Be practical...

- Choose your topic wisely: you won't do an economic evaluation for everything
- Learn from your peers
- Learning process: capacity building with local staff
- Use a reference case!

Reference case

- Set norms
- Ensures comparability
- Unit cost repository: can re-use data from one disease area to another



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The International Decision Support Initiative Reference Case for Economic Evaluation: An Aid to Thought



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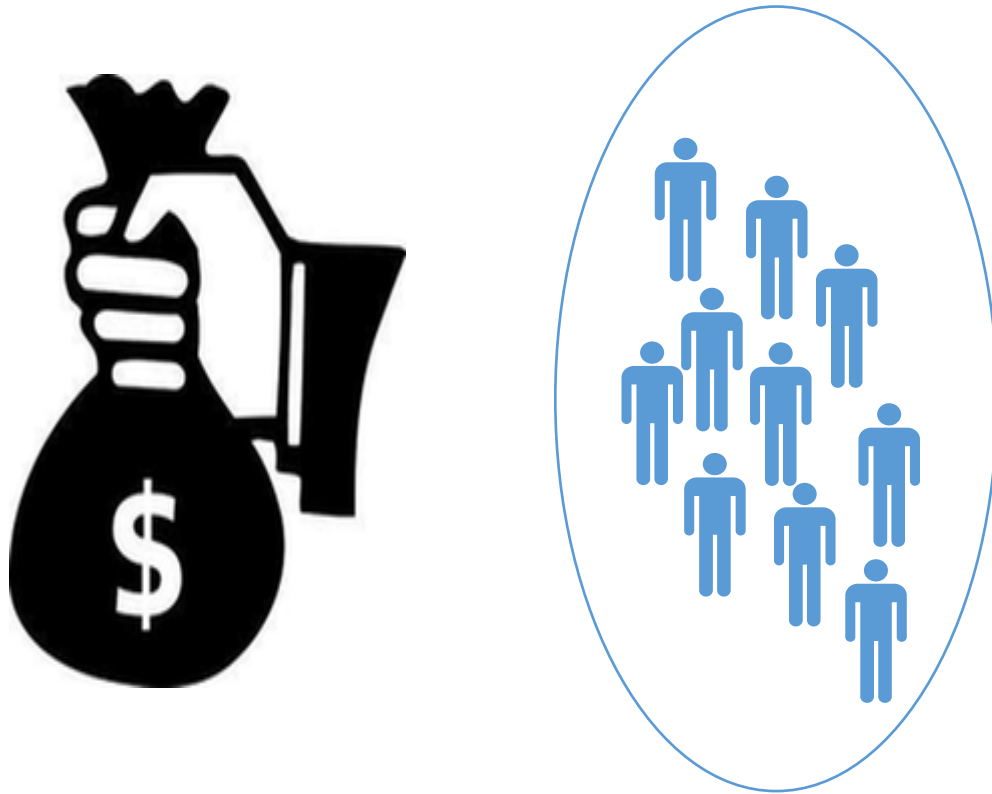
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Where to find economic evaluation evidence

- Data and evidence mapping
- Disease Control Priorities (global evidence)
- Tufts repository
- Grey literature



Mini case study exercise



4 Scenarios

- No budget constraints
- Burden of disease
- Cheapest vaccine
- Priority setting

What you need

Group work #2: The health impact of different resource allocation scenarios

This exercise is being used in a fictional setting, primarily aimed at applying concepts discussed in the previous sessions but a lot of it is from existing data and evidence (e.g. Disease priorities Control, Gavi, IHME).

You will need:

- This instruction sheet
- A pen
- A computer to load the **excel spreadsheet** with the exercise (please ask a staff member if you do not have a computer or have difficulties opening the **spreadsheet**).

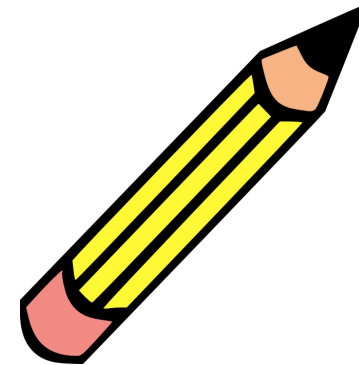
You are the budget holder of the child immunization programme at **JLNtopia**. **JLNtopia** has made major strides in decreasing under-5-mortality (USM) in the last decade. Deaths from diphtheria, tetanus, whooping cough and meningitis have declined drastically from the introduction of the **Pentavalent** vaccine. However, USM in **JLNtopia** is still high compared to the regional average and much of the USM has been attributed to vaccine preventable diseases. Despite the expansion of the immunization programme, coverage for some key vaccines is still incomplete, resulting in lost lives.

This year the Ministry of Health of **JLNtopia** decided to increase funding to the vaccine programme to \$4 million to further increase immunisation rates. You will have to allocate programme resources to the 5 vaccines that are currently in your programme portfolio (Table 1).

Table 1. Vaccines and the diseases targeted, with corresponding burden of disease



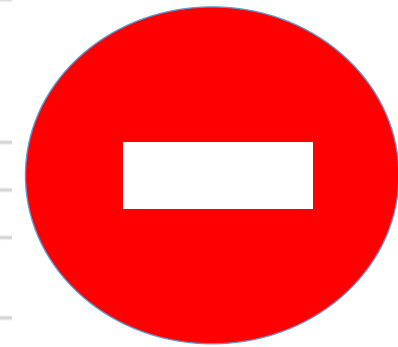
Excel sheet
exercise



Guidelines for the use of the excel spreadsheet

Enter the answer

Scenario #4: Allocation based on burden of disease				
Vaccine	% of budget	Budget in \$	Number of children immunized	DALYs averted
Pentavalent		0	0	0
Measles vaccine		0	0	0
BCG vaccine		0	0	0
Pneumococcal conjugate vaccine		0	0	0
Rotavirus vaccine		0	0	0
Total	0%	4,000,000	N/A	0



Do not touch anything else!

Outcomes automatically update

What data do you have

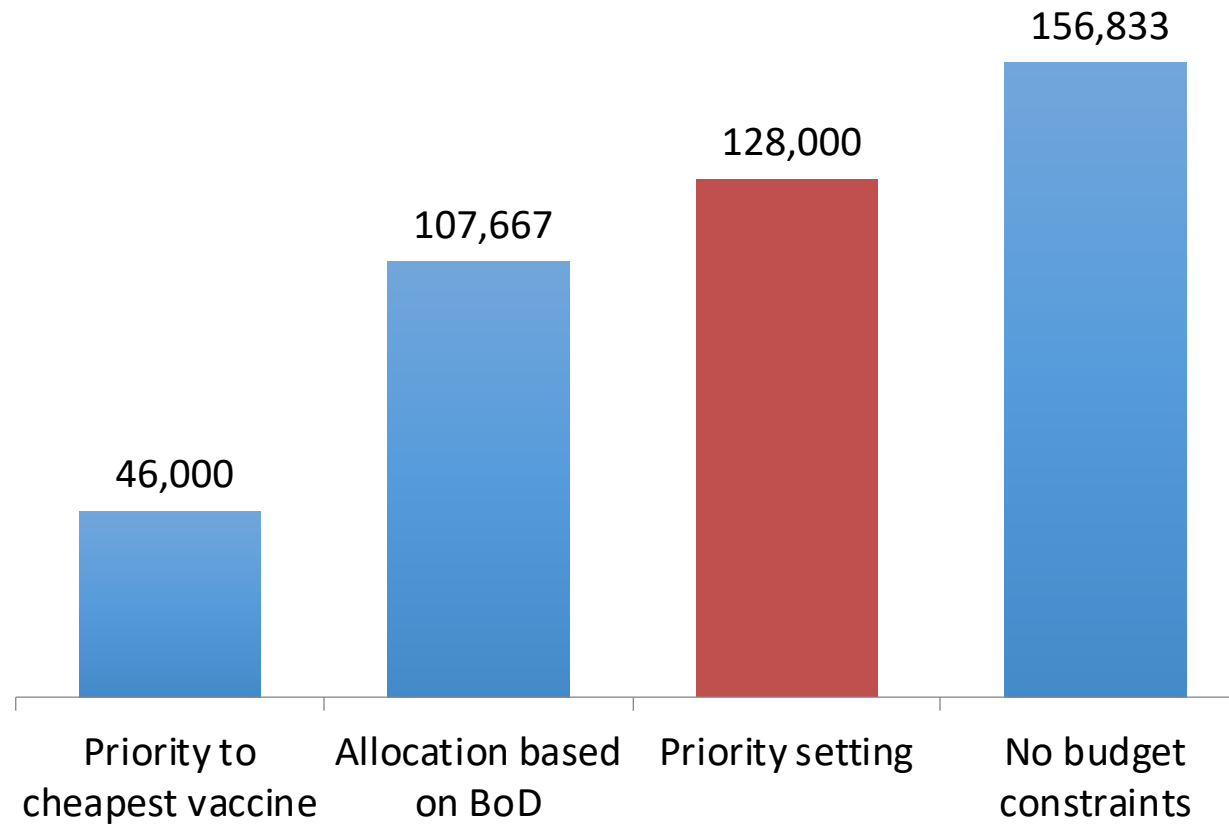
Table 1. Vaccines and the diseases targeted, with corresponding burden of disease

Vaccine	Target	Share of total burden of disease attributed to the diseases targeted by vaccine ¹
<u>Pentavalent (combined vaccine)</u>	<u>Diphtheria</u> , Tetanus, pertussis, <u>HiB</u> and <u>HepB</u>	40%
Measles vaccine	Measles	20%
BCG vaccine	Tuberculosis	15%
Pneumococcal conjugate vaccine	Pneumococcal disease	15%
Rotavirus vaccine	Rotavirus	10%

Table 2. Cost and cost-effectiveness ratios

Vaccine	\$ per immunization	\$/DALYs averted	DALYs averted per immunization
<u>Pentavalent (combined vaccine)</u>	10	20	0.50
Measles vaccine	6	60	0.10
BCG vaccine	4	120	0.03
Pneumococcal conjugate vaccine	8	100	0.08
Rotavirus vaccine	8.5	120	0.07

Results



Thank you!

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My group...

International Decision Support Initiative



We work in partnership with countries to build long-term institutional capacity for priority-setting and sustainable UHC.



We ensure policies are
**EVIDENCE
INFORMED**
and fair



We encourage
**LOCAL
OWNERSHIP**
and capacity



We strive for
**LONG-LASTING
SOLUTIONS**
and in-country capabilities

Knowledge Transfer and Exchange (KTE) and Advocacy

Tailor and deliver evidence-informed messages to influence the right audiences to buy into iDSI's model, enabling greater health gains and more value for money

Country engagement

Support countries to develop institutional capacities and transparent governance processes, enabling maximum health gains and transition from aid

Institutional Strengthening

Smart Purchasing

Empower countries to spend their own budgets smarter and implement more efficient and equitable HBPs and delivery platforms, making UHC and SDGs a reality

Knowledge products

Generate, integrate and deploy policy-relevant data and knowledge to support better decisions at global and national levels

Data, Evidence, and Analytics

Methods, Processes, and Tools

Co-create global public goods to support countries and funders in standardizing, contextualizing and applying approaches to improve value-for-money in health

Sample of our work

iDSI Reference Case for Economic Evaluation: Now being adapted by LMICs in developing their own domestic reference cases (e.g. China, India).

What's In, What's Out: Designing a Health Benefits Plan for

Universal Coverage: Tailored courses being planned for Kenya and India

HTA Toolkit: Accessible, practical online resource on the building blocks of sustainable and locally-relevant HTA mechanisms – piloting in 14 countries

Ghana study on CVD prevention: Supported government on drug procurement

South African Values and Ethics for UHC (SAVE-UHC): Wellcome-funded project to develop a context-specific, operationalizable ethics framework for HTA in South Africa