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 (1)

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.
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?

![Diagram showing current pooled funds, extend to non-covered, reduce cost sharing and fees, include other services, direct costs proportion of the costs covered, and population: who is covered?]
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?
- How does intervention A compare to intervention B?
- Can I afford this?
- Who are the beneficiaries of the intervention?
- Where should I invest resources?
<table>
<thead>
<tr>
<th>Type of analysis</th>
<th>Where it is used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost-of-illness analysis</td>
<td>A determination of the <strong>economic impact of an illness</strong> or condition (typically on a given population, region, or country) e.g., of smoking, arthritis, or diabetes, including associated treatment costs</td>
</tr>
<tr>
<td><strong>Cost-Effectiveness Analysis</strong></td>
<td><strong>A comparison of costs in monetary units with outcomes in quantitative non-monetary units.</strong> 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)</td>
</tr>
<tr>
<td>Budget Impact Analysis</td>
<td>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.</td>
</tr>
<tr>
<td>Cost-Consequence analysis</td>
<td>A form of cost-effectiveness analysis that presents <strong>costs and outcomes in discrete categories</strong>, without aggregating or weighting them</td>
</tr>
<tr>
<td>Cost-Benefit analysis</td>
<td>compares costs and benefits, both of which are <strong>quantified in common monetary units</strong></td>
</tr>
</tbody>
</table>
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.
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)

Cost

Effect (QALYs)

Treatment options in the shaded region are judged to provide good value for money (are ‘cost effective’)

New treatment dominates

High extra cost; low QALY gain

Low extra cost; high QALY gain

Cost-per-QALY threshold

New treatment dominates
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)
  • Antagonist angiotensin receptor blockers (ARP)
  • No intervention – comparator

• Outcomes: Disability Adjusted Life Years (DALYs)
Ghana (continued)

Results: ICER & budget impacts

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
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 (MCHIP, Govt, WHO)).

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 Jihwasa. Jihwasa has made major strides in decreasing under-5 mortality (U5M) in the last decade. Deaths from diphtheria, tetanus, whooping cough and meningitis have declined drastically from the introduction of the Diphtheria vaccine. However, U5M in Jihwasa is still high compared to the regional average and much of the U5M has been attributed to vaccine preventable diseases. Despite the expansion of the immunization programme, coverage for some key vaccines is still incomplete, resulting in lasting issues.

This year the Ministry of Health of Jihwasa decided to increase funding to the vaccine programme to $4 million to further increase immunization 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
Guidelines for the use of the excel spreadsheet

Enter the answer

Outcomes automatically update

Do not touch anything else!

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>% of budget</th>
<th>Budget in $</th>
<th>Number of children immunized</th>
<th>DALYs averted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentavalent</td>
<td>0%</td>
<td>4,000,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Measles vaccine</td>
<td>0%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>BCG vaccine</td>
<td>0%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pneumococcal conjugate vaccine</td>
<td>0%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rotavirus vaccine</td>
<td>0%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0%</strong></td>
<td><strong>4,000,000</strong></td>
<td><strong>N/A</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>
**What data do you have**

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

**Table 2. Cost and cost-effectiveness ratios**

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>$ per immunization</th>
<th>$/DALYs averted</th>
<th>DALYs averted per immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentavalent (combined vaccine)</td>
<td>10</td>
<td>20</td>
<td>0.50</td>
</tr>
<tr>
<td>Measles vaccine</td>
<td>6</td>
<td>60</td>
<td>0.10</td>
</tr>
<tr>
<td>BCG vaccine</td>
<td>4</td>
<td>120</td>
<td>0.03</td>
</tr>
<tr>
<td>Pneumococcal conjugate vaccine</td>
<td>8</td>
<td>100</td>
<td>0.08</td>
</tr>
<tr>
<td>Rotavirus vaccine</td>
<td>8.5</td>
<td>120</td>
<td>0.07</td>
</tr>
</tbody>
</table>
Results

Priority to cheapest vaccine: 46,000
Allocation based on BoD: 107,667
Priority setting: 128,000
No budget constraints: 156,833
Thank you!

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

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
- 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
- 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.