How to consider equity in HBP design

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Motivation for this session

• Health equity is recognised as an important health policy objective
  • Health and healthcare access are vital to economic and social wellbeing
  • Currently affected by income (and other social factors)

• A wealth of techniques have been developed to measure and promote health equity
  • Some can be used to aid HBP design
Relationship to LEGS Framework

• Consideration of health equity in HBP design complements the ethics component of LEGS

• In LEGS: Ethics and fairness instilled in the design and structure of health system
  • Transparent processes, appeals, stakeholder consultation

• This session focuses on who receives health services and distribution of health outcomes
Roadmap

- Define health equity
- Measuring health equity
- Equity-efficiency trade-offs
- Equity in economic evaluation
- Equity in health benefits packages
WHAT IS HEALTH EQUITY?
Key concepts in health equity

- Inequalities are differences
- Inequities are unfair differences
- Fairness – a complex philosophical, political, social judgement
An unequal world

Inequalities in healthcare utilisation

- Use of basic maternal and child health services by lowest and highest economic quintiles, 50+ countries.

Source: Marmot et al. (2008)

Reprinted, with permission of the publisher, from Gwatkin, Wagstaff & Yazbeck (2005).
An unequal world

Inequalities in health outcomes

Source: Marmot et al. (2008)
Relationship with UHC

Accelerating health equity: the key role of universal health coverage in the Sustainable Development Goals

Viroj Tangcharoensathien\textsuperscript{1*}, Anne Mills\textsuperscript{2} and Toomas Palu\textsuperscript{3}
Social values inform equity considerations

Social factors:
- Income
- Education
- Gender
- Religion
- Ethnicity
- Rural

Clinical factors:
- Severity of illness
- End of life
- Health benefits

Political & economic factors

Social value judgements

Resource allocation decisions
MEASURING HEALTH EQUITY
Measuring equity

- Gap measures
- Linear indices
- Concentration curves
Linear indices

- Slope index (SII)
  - “27 additional deaths per 1000 births in least wealthy vs most wealthy”

- Relative index (RII)
  - “Deaths per 1000 births at bottom 90% higher than at top”

Source: McKinnon et al. (2015)
Concentration curves

if $C^{\text{Need}} > C^{\text{Utilisation}}$ then pro-rich inequity in healthcare utilisation
Concentration curves

- Summarised by concentration index
  - Compares observed distribution with an equal one
  - Equals 0 if same as equal
  - Equals 1 (or -1) if complete inequality

Cumulative Proportion of Population Ranked by Income
EQUITY-EFFICIENCY TRADE-OFFS
A problem

You can provide drugs for one of two groups of patients.

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<tr>
<td>Life expectancy</td>
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Social welfare

- A metric of ‘everything of social value’ – still awaiting invention!

- Simpler social welfare functions can trade-off between inequality and total health (efficiency)

- \( SW = Health \times (1 - Ineq) \)
  - For an inequality measure that ranges from 0 (no inequality) to 1 (complete inequality)
  - Can include an ‘inequality aversion’ parameter – strength of social preference for reducing inequalities
EQUITY IN ECONOMIC EVALUATION
Cost-effectiveness plane

- More effective, less costly: 
  - Accept

- Less effective, more costly: 
  - Reject

- More effective, more costly: 
  - Reject

- Less effective, less costly: 
  - Accept

Opportunity Cost of Health Budget

$\Delta$ Cost

$\Delta$ Effectiveness
Approach 1: Distributional cost-effectiveness analysis

- Intervention
  - Health impact
    - Distribution by equity groups
  - Opportunity costs
    - Distribution by equity groups
- Net health
- Change in total health
- Baseline health inequality
- Change in health inequality
- Post-intervention health inequality
A (very) simple DCEA

- Evaluating the effect of the marvellous new vaccine Curitall on healthy life years (HLYs)

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<tr>
<td>At baseline</td>
<td>50</td>
<td>55</td>
<td>52.5</td>
<td>0.0120</td>
<td>51.9</td>
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<tr>
<td>Effect of Curitall</td>
<td>+3</td>
<td>+5</td>
<td>+4</td>
<td>+0.0078</td>
<td>+3.5</td>
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<tr>
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<td>56.5</td>
<td>0.0198</td>
<td>55.4</td>
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- Recall: $SW = Health \times (1 - Ineq)$
DCEA case study – Rotavirus vaccination

- Dawkins and colleagues conducted a DCEA on rotavirus vaccination in Ethiopia
  - Standard vaccination programme vs targeted programme focusing on poor and rural areas

- Survey and GBD data used to construct baseline health in terms of HALYs
  - Limited effectiveness and epidemiological data available by wealth quintile
  - Model health impacts for these 5 groups
DCEA case study – Rotavirus vaccination
DCEA case study – Rotavirus vaccination

Standard programme better

Targeted programme better
Extended cost-effectiveness analysis

- DCEA looks at (i) total health gain and (ii) health inequalities
- ECEA goes beyond health
Extended cost-effectiveness analysis

- Trade-offs more complicated to model – left to decision-maker

Source: Driessen et al. (2015)
EQUITY IN HEALTH BENEFITS PACKAGE DESIGN
Malawian EHP case study

- DCEA methods applied Malawian Essential Health Package (EHP)
  - 106 interventions included in EHP
  - Each assigned to disease area
  - Survey data used to allocate health benefits to wealth quintiles (DHS, HIS, MICS)
  - Baseline health estimated from DHS and GBD data
Equity characteristics of EHP recipients

Patients spread evenly over urban/rural areas

Higher proportion in least wealthy group

Lower proportion in wealthiest group
Distribution of EHP health impact

- Rural/urban inequality ≈ 3.5 HLYs
- Socioeconomic inequality ≈ 6.5 HLYs
- 5.9 HLYs after EHP

Chart showing Healthy Life Expectancy (HALE) for different income groups before and after the EHP intervention.
Distribution of implementation improvements

Implementation improvements evenly split between urban/rural

Larger gains for least wealthy groups
Summary

- Health equity is a socially important objective
- Available methods can assess changes to health inequality and financial protection in addition to health
- Adaptable to HBP design