

East, Central and Southern Africa Health Community Fostering Regional Cooperation for Better Health



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



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

Inequalities in healthcare utilisation

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



An unequal world

Figure 2.1: Inequity in infant mortality rates between countries and within countries by mother's education.



 Inequalities in health outcomes

Source: Marmot et al. (2008)

Relationship with UHC

Tangcharoensathien et al. BMC Medicine (2015) 13:101 DOI 10.1186/s12916-015-0342-3

Medicine for Global Health

COMMENTARY



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

Viroj Tangcharoensathien1*, Anne Mills2 and Toomas Palu3

Social values inform equity considerations



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



Cumulative Proportion of Population Ranked by Income

Concentration curves

Summarised by
concentration index

Cumulative 1 Proportion of Healthcare Utilisation / Need*

- 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

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



	Group A	Group B
Life years	10	10

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



	Group A	Group B
Life years	10	10
Healthy life years	10	9

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



	Group A	Group B
Life years	10	10
Healthy life years	10	9
Life expectancy	60	40

- 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



Approach 1: Distributional costeffectiveness analysis

A (very) simple DCEA

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

	HLYs (low income)	HLYs (high income)	Mean HLY
At baseline	50	55	52.5
Effect of Curitall	+3	+5	
After Curitall	53	60	56.5

A (very) simple DCEA

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

	HLYs (low income)	HLYs (high income)	Mean HLY	$\mathbf{I}_{\mathbf{A}}$	SW
At baseline	50	55	52.5	0.0120	51.9
Effect of Curitall	+3	+5	+4	+0.0078	+3.5
After Curitall	53	60	56.5	0.0198	55.4

• 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

Health Inequality Aversion (Atkinson)

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

Distribution of EHP health impact

Distribution of implementation improvements

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