Health Inequality Monitoring: Approaches and Challenges

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Should inequality be monitored alongside average?

Illustration by Jeff Danziger
Monitoring health

1. Select health indicators
2. Obtain data
3. Analyse data
4. Report results
5. Implement changes

Diagram: Cycle of health monitoring.
Selecting health indicators & equity Stratifiers

- Selecting health indicators: similar to methodology used for monitoring health

Equity stratifiers – dimensions of inequality
- Economic status (e.g. income)
- Education
- Sex
- Age
- Place of residence
- Race or ethnic background
- Any other stratifier that can distinguish population minority subgroups
Data requirements for equity analysis

- Data sources must contain both health indicators & equity stratifiers

Or

- Possibility to link data sources must exist

Select indicators & stratifiers

Obtain data

Implement changes

Analyse data

Report results
Data source mapping

All data for health inequality monitoring

Surveillance systems

Population-based sources

Censuses

Vital registration systems

Household surveys

Resource records (e.g. number of hospitals)

Service records (e.g. number of immunizations provided)

Individual records (e.g. hospital charts)
Data analysis

Calculating health estimates **disaggregated by equity stratifiers**
- Prevalence of NCD risk factors by education
- Access to health facilities by sex

Calculating **measures of inequality**
- Rural/urban difference in U5MR
- Richest-to-poorest quintile ratio in hypertension treatment
Communicating results

Essential considerations

- Audience-conscious reporting
- Designing effective data visualizations
- Key aspects of reporting:
  (a) latest status
  (b) trend over time
  (c) benchmarking
Communicating results – time trend

### Communicating results – latest status

**Births attended by skilled health personnel by wealth quintile in Malawi, DHS 2010**

<table>
<thead>
<tr>
<th>Quintile 1 (poorest)</th>
<th>Quintile 2</th>
<th>Quintile 3</th>
<th>Quintile 4</th>
<th>Quintile 5 (richest)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.9</td>
<td></td>
<td></td>
<td></td>
<td>89.6</td>
</tr>
</tbody>
</table>

The table above shows the percentage of births attended by skilled health personnel across different wealth quintiles in Malawi. The data is from the DHS 2010 survey.
Communicating results - benchmarking

Births attended by skilled health personnel by wealth quintile in Malawi against other low-income African countries, DHS 2005–2010

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<tbody>
<tr>
<td>Percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
<td>62.7</td>
<td>89.6</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>35.5</td>
<td>45.6</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>65.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>27.9</td>
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Communicating results

What to be reported

- Disaggregated data along with summary measures of inequality
- Multiple dimensions of inequality simultaneously
Describing patterns of health inequality using disaggregated data

Coverage of births attended by skilled health personnel in Bangladesh, Gambia, Jordan and Viet Nam, by wealth quintile, DHS and MICS 2005–2007

- Complete coverage
- Marginal exclusion
- Queuing
- Mass deprivation
Communicating results

What to be reported

• Disaggregated data along with summary measures of inequality
• Multiple dimensions of inequality simultaneously
Multiple dimensions of inequality simultaneously (1)

Under-five mortality rate in Nigeria, by place of residence, DHS 2008

Source: Adapted from World Health Organization Centre for Health Development: country profiles on urban health, Nigeria.
Multiple dimensions of inequality simultaneously (2)

Under-five mortality rate in Nigeria, by place of residence and wealth, DHS 2008

![Bar chart showing under-five mortality rate in Nigeria by place of residence and wealth, with rural rates at 221, urban overall at 139, urban poorest quintile at 252, and urban richest quintile at 50. The national average is 201.]
Assessing the situation and defining the priorities

Assessing inequality and national average in reproductive, maternal and child health interventions in the Philippines with a simple numerical scale (simplified version)

1 indicates no further action is needed

2 indicates further action is needed

3 indicates further action is needed urgently

<table>
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<th>National status score</th>
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<td>Wealth</td>
<td>Education</td>
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<td>Contraceptive prevalence: modern methods</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Antenatal care: at least one visit</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Births attended by skilled health personnel</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Full immunization coverage among 1-year-olds</td>
<td>2</td>
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Assessing the situation and defining the priorities

Prioritizing inequality and national average in RMCH interventions in the Philippines, using average scores for health indicators and equity stratifiers (simplified version)

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<td></td>
<td>2</td>
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<tr>
<td>Antenatal care: at least one visit</td>
<td>1 2 1 1 → 1.3</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Births attended by skilled health personnel</td>
<td>3 3 3 3 → 3.0</td>
<td></td>
<td>3</td>
</tr>
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<td>Full immunization coverage among 1-year-olds</td>
<td>2 3 1 3 → 2.3</td>
<td></td>
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Score by equity stratifier

<table>
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<td>2</td>
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Why conduct health inequality monitoring?

Agenda setting and implementing changes

- Political will
- Popular support
- Funding
- Feasibility
- Timing
- Cost-effectiveness

Select indicators & stratifiers

Obtain data

Analyse data

Report results

Implement changes

Social determinants of health framework: *Multisectoral action*
Reference

Handbook on Health Inequality Monitoring: with a special focus on low- and middle-income countries

WHO Global Health Observatory Health Equity Monitor