Poverty and Health

10 – 90 Gap
Millennium Development Report
NGOs and International Development

Links between Poverty and Health

Indicators like health and education have been studied empirically and documented:
- Poor people have worse health
- Ill health generates poverty
- Income and education are key determinants of health

Millennium Development Goals

- 147 heads of State and Government – and 191 nations in total – adopted the Millennium Declaration.
- MDGs help focus national and international priority setting as goals and targets are limited in number, stable over time, and being communicated easily to a broad audience
  - Goal 1: Halving extreme poverty and hunger
  - Goal 2: Achieving universal primary education
  - Goal 3: Promoting gender equality
  - Goal 4: Reducing under-five mortality by two-thirds
  - Goal 5: Reducing maternal mortality by three-quarters
  - Goal 6: Reversing the spread of HIV/AIDS, malaria and TB
  - Goal 7: Ensuring environmental sustainability
  - Goal 8: Developing a global partnership for development, with targets for aid, trade, debt relief

What are the MDGs?

- MDGs help focus national and international priority setting goals and targets
- are limited in number,
- stable over time,
- being communicated easily to a broad audience
- Millennium Declaration set 8 mutually reinforcing time-bound development goals and related targets for progressively eradicating poverty
- MDGs and targets now at forefront of development agenda: agreed by developing countries and development partners – capture multidimensionality of poverty
- Baseline for MDGs 1990: target for realization 2015

Global Mortality of Children Under 5

The 10/90 Gap in Health Research

Only 10% of R&D spending is currently directed at the health problems that cause 90 percent of the world’s disease burden

(Global Forum for Health Research, 2002)
The 10/90 Gap

- USD $73 billion investments in health research (1998), of which less than 10% for 90% of the world's health problems.
- Because of the vicious circle between poor health and poverty, correction of this gap could make a major contribution to the fight against poverty.

Attention to this problem started in 1990 only!

Urgency to correct the 10/90 gap in health research

Because:
- central importance of health research for health
- central importance of health for development
- central importance of health to fight poverty
- central importance of development and a reduction of poverty for global security

An example of R&D Neglect: Malaria

- At risk: 1/3 of the World’s population
- Mortality: 1-2 Million per year, mostly children
- Share of the World’s Disease Burden: 3%
- Research outlays: $100 million, or $2.2 per DALY
- Average disease gets $42 per DALY

Caveat

- The 10/90 gap is useful in drawing attention to the fact that few resources are spent on diseases affecting the developing world
- But...
- Disease burden differs across countries
- R&D needed to reduce the burden from a specific disease will vary substantially across diseases
- Danger of oversimplification: research alone is no ‘silver bullet’ for health in developing countries
Health Research in the Context of International Development

The Role of Research in Improving Health in Developing Countries
- Generate new knowledge where diseases are insufficiently understood
- Find alternative solutions where the transferability of existing knowledge is limited or tools are inadequate
- Understand health status in each country and inform health policy
- The “know-do gap” (Pang, 2003): many useful results are not being applied in places where they could improve health

Types of Health Research
- Many different types of research relevant to improving health-
  - Biomedical and clinical research
  - Epidemiologists
  - Health systems research
  - Social and behavioral science
  - Health economics
  - …

Health Research is Fragmented
- “Research” is often seen as purely biomedical
- Diseases-based versus ‘issues’ based approach
- Different disciplines doing research relevant to health mostly work in isolation
- There is little communication between researchers and policy makers
- There is often little communication between producers of research and those who will use it

Linking Research and Policy
- Literature on how health research and policy are best linked in developing countries is thin
- Central point of concern is the relationship between the Researcher and the Policy maker
- Few attention is given to incorporating end-user

Linking Research and Policy
- Some Common Themes:
  - Agenda-setting: integration of researchers and policy makers at an early stage
  - Communication gap/ Cultural differences between researchers and policy makers
  - Importance of mediating bodies
The critical role of academia
• Making a difference in global health by
• Contributing to knowledge base
• Education and service
• addressing root causes
• Understanding and framing issues
• Convening authority
• Providing an evidence-base for critical policy issues

The Role of NGOs in global health
• NGOs have become major players in the field of international development.
• Since the mid-1970s, the NGO sector in both developed and developing countries has experienced exponential growth.
• From 1970 to 1985, total development aid disbursed by international NGOs increased ten-fold.
• In 1992, international NGOs channeled over $7.6 billion of aid to developing countries.
• It is now estimated that over 15 percent of total overseas development aid is channeled through NGOs.
• While statistics about global numbers of NGOs are notoriously incomplete, it is currently estimated that there is somewhere between 6,000 and 30,000 national NGOs in developing countries.

Types of NGOs
• Local
• National
• International
• operational NGOs - whose primary purpose is the design and implementation of development-related projects, and;
• advocacy NGOs - whose primary purpose is to defend or promote a specific cause and who seek to influence policy.

NGO Strengths and Weaknesses
• STRENGTHS
  ▫ strong grassroots links;
  ▫ field-based development expertise;
  ▫ the ability to innovate and adapt;
  ▫ process-oriented approach to development;
  ▫ participatory methodologies and tools;
  ▫ long-term commitment and emphasis on sustainability;
  ▫ cost-effectiveness.
• WEAKNESSES
  ▫ limited financial and management expertise;
  ▫ limited institutional capacity;
  ▫ low levels of self-sustainability;
  ▫ isolation/lack of inter-organizational communication and/or coordination;
  ▫ small-scale interventions;
  ▫ lack of understanding of the broader social or economic context.

Incomplete List of NGOs
NGOs
  • AFRICARE
  • CARE
  • CATHOLIC RELIEF SERVICES
  • MEDECINS SANS FRONTIERS (Doctors without borders)
  • WORLD VISION
  • FAMILY HEALTH INTERNATIONAL
  • ACADEMY FOR EDUCATIONAL DEVELOPMENT
  • JOHN SNOW, INTL
  • POPULATION COUNCIL
  • FUTURES GROUP
  • INTERNATIONAL RESCUE COMMITTEE
  • POPULATION SERVICES INTERNATIONAL

Health and Development Indicators
A few definitions...

- **Indicator**: A variable measured to monitor progress or assess what works and what does not.
- **Validity**: Validity refers to the extent to which a measurement is capturing what it is intended to measure. There are different types of validity such as face validity, content validity, criterion validity (denoting predictive validity and concurrent validity), and construct validity (comparing assumptions and measurement validity).
- **Reliability**: Reliability refers to the consistency of a set of measurements or measuring instruments; for example, test-retest reliability, inter-rater reliability, etc.
- **Comparability**: Comparability refers to the comparability of measurements across different settings or subgroups.
- **Out of sample**: Predictions about ranges of values that are not in the investigator's sample (i.e., the investigator's sample does not cover the predicted data).
- **Out of time**: Predictions about individuals, populations, etc., in time outside the range of the investigator's sample.
- **Forecasting**: Forecasting refers to the prediction of future values.
- **Farcasting**: Farcasting refers to the prediction of values in a place that may be far away but is not a future value.
- **Prior**: Prior refers to some information the investigator has before the observations in the data set (the investigator should state explicitly how the information on the prior was obtained). The prior is the sum of what is known about the relationship under study.

### Health Indicators framework

**HEALTH STATUS**

<table>
<thead>
<tr>
<th>Health Conditions</th>
<th>Human Function</th>
<th>Well-Being</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

**DETERMINANTS OF HEALTH**

<table>
<thead>
<tr>
<th>Health Behaviors</th>
<th>Living &amp; Working Conditions</th>
<th>Personal Resources</th>
<th>Environmental Factors</th>
</tr>
</thead>
<tbody>
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</table>

**HEALTH SYSTEM PERFORMANCE**

<table>
<thead>
<tr>
<th>Acceptability</th>
<th>Accessibility</th>
<th>Adequacy</th>
<th>Comparability</th>
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<tbody>
<tr>
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</tbody>
</table>

**COMMUNITY/HEALTH SYSTEM CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Community Characteristics</th>
<th>Health System</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

### Leading Health Indicators

- Physical Activity
- Overweight & Obesity
- Tobacco Use
- Substance Abuse
- Responsible Sexual Behavior
- Mental Health
- Injury and Violence
- Environmental Quality
- Immunization
- Access to Health Care

### Types of Indicators

- Health status
  - Life expectancy
  - Infant mortality
  - Maternal mortality
  - Disability-adjusted life years
- Self-reported health
- Health outcomes
  - Change in life expectancy
  - Improved quality of life
  - Reduced burden of disease, illness and injury
  - Quality of service
  - Waiting times for key diagnostic and treatment services
  - Patient satisfaction
- Hospital readmission for selected conditions
- Access to 24/7 first contact health services
- Home and community care services
- Public health surveillance and protection
- Health promotion and disease prevention

### Indicators are Powerful...and Subjective

**What we measure:**
- reflects what we value as a society;
- determines what makes it onto policy agendas;
- influences behavior

### Factors fuelling tension between supply and demand for high quality indicators

1. The need for greater accountability and transparency from governments and international agencies is increasing demand for indicators
2. Media, civil society, and general public are more skeptical about both statistical and scientific claims
Factors fuelling tension between supply and demand for high quality indicators

3. Many representatives of technical and scientific community and the general public are becoming increasingly sophisticated consumers of information.

4. Global Health programs feel need to produce more information for public consumption.
   - Yearly reports
   - Websites
   - Publications
   - Meetings
   - Funding

Factors fuelling tension between supply and demand for high quality indicators

5. As demand for health information grows, primary data collection platforms in most developing countries are not rapidly improving.

Focusing on Priority Indicators

- The health community needs to focus its efforts on improving measurement in a small set of priority areas. This is important for two reasons:
  1. Cost
     - Human resources in the measurement field are extremely scarce both nationally and internationally.
  2. Visibility
     - Indicators drive policy attention nationally and internationally.
     - Health problems with priority indicators will receive more attention than those that are not measured or well measured.

What is the proposed indicator intended to measure?

Indicators can be classified into 6 categories:
1. Health outcomes
2. Risk factors
3. Intervention coverage
4. Structure
5. Process
6. Non-health related results

What is the public health significance of the indicator?

- Health outcomes can have public health importance but problems change with new challenges so assessment of public health significance must be regularly assessed.
- Coverage of interventions is important because only through delivery of effective interventions to those in need can health outcomes be improved.
- Risk factors can be so strongly linked to health outcomes that they are effectively measures of future health outcomes themselves (ie tobacco use).

Public health importance is greatest for indicators of health outcomes, intervention coverage, and risk factors.


<table>
<thead>
<tr>
<th></th>
<th>Annual Income</th>
<th>Infant Deaths</th>
<th>Under 5 Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>POOR</td>
<td>$296</td>
<td>100</td>
<td>159</td>
</tr>
<tr>
<td>RICH</td>
<td>$25,730</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>$500</td>
<td>92</td>
<td>151</td>
</tr>
</tbody>
</table>

How well does the indicator measure the quantity of interest?
• Does the proposed indicator measure the actual health outcome, a component of the outcome, or a proxy that is believed to be correlated to health outcome?
• Use of partial or proxy measures runs the danger that they become the de facto quantity of interest in policy debates and distract attention from original objective!

Is the indicator value readily interpretable?
• Birth rate
• Child mortality
• Tobacco usage
• Condom usage
• Caesarean section
• Antibiotic use

Is there a practical measurement strategy?
• Indicator should not be a priority unless a measurement strategy that will produce valid, reliable, timely, and comparable measurements has been developed.
• Comparability is crucial!

How should equity dimensions of an indicator be captured?
Average levels for an indicator can mask widening equalities
• Between group inequality vs. within group inequality.
• Choice of groups for indicator disaggregation such as rich and poor, urban vs. rural, occupation, race or ethnic origin could change the comparisons of inequality across populations over time.

Measuring Inequality
• Health services?
• Hospital Admissions?

Example: Nutrition and health indicators
Different indicators are used for assessment and analysis purposes.

Indicators used to define the nutritional problem
They address the following questions:
• Who suffers from malnutrition?
• What is the type of malnutrition?
• When?
• Where?

Indicators used to analyse the causes of the problem
They address the following question:
• Why are people malnourished or at risk of malnutrition?
Example: Nutritional status indicators

There are three primary anthropometric indices for children under five years of age: Wasting, Stunting, and Underweight.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>What it measures/What it is used for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low weight-for-height</td>
<td><strong>WASTING</strong> (acute malnutrition).</td>
</tr>
<tr>
<td>Low height-for-age or Low length-for-age</td>
<td><strong>STUNTING</strong> (chronic malnutrition).</td>
</tr>
<tr>
<td>Low weight-for-age</td>
<td><strong>UNDERWEIGHT</strong> (acute or chronic malnutrition, or both).</td>
</tr>
</tbody>
</table>

Example: Nutritional status indicators

### Additional anthropometric indicators:

<table>
<thead>
<tr>
<th>Index/indicator</th>
<th>What it measures/What it is used for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Mass Index (BMI)</td>
<td>• It measures thinness in adolescents, adults and the elderly. • It is calculated as weight divided by height squared.</td>
</tr>
<tr>
<td>Low Birth Weight (LBW)</td>
<td>• It measures newborn weight. • It is associated with poor nutrition in mothers (although other factors can also contribute to low birth weight).</td>
</tr>
<tr>
<td>Mid-Upper Arm Circumference (MUAC)</td>
<td>• It is an index of body mass. • It is usually measured using a MUAC tape that is placed around the middle of the upper arm. • It is particularly good for identifying children with a high risk of mortality.</td>
</tr>
</tbody>
</table>

Example: Nutritional status indicators

### Indicators to interpret nutritional status

Key information on health and care practices are also needed to analyse the causes of malnutrition.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>What it measures Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low weight-for-height <strong>(Wasting)</strong></td>
<td>acute malnutrition <strong>EMERGENCIES</strong></td>
</tr>
<tr>
<td>Low Mid-Upper Arm Circumference <strong>(MUAC)</strong></td>
<td>acute malnutrition <strong>EMERGENCIES</strong></td>
</tr>
<tr>
<td>Low height-for-age <strong>(Stunting)</strong></td>
<td>chronic malnutrition <strong>STABLE SITUATIONS</strong></td>
</tr>
<tr>
<td>Low weight-for-age <strong>(Underweight)</strong></td>
<td>acute or chronic malnutrition or both <strong>STABLE SITUATIONS</strong></td>
</tr>
<tr>
<td>Low Body Mass Index</td>
<td>adolescent/adult/elderly nutritional status <strong>EMERGENCIES and STABLE SITUATIONS</strong></td>
</tr>
<tr>
<td>Low Birth Weight</td>
<td>newborn underweight (proxy for maternal malnutrition) <strong>STABLE SITUATIONS</strong></td>
</tr>
</tbody>
</table>

Example: Nutritional status indicators

### Crude health statistics

- Crude health stats are measurements of indicators that come directly from primary data collection with no adjustment or corrections.

<table>
<thead>
<tr>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Incomplete ascertainment</td>
</tr>
<tr>
<td>• Non representativeness</td>
</tr>
<tr>
<td>• Instrument bias</td>
</tr>
<tr>
<td>• Misclassification</td>
</tr>
<tr>
<td>• Distortion</td>
</tr>
</tbody>
</table>

Example: Nutritional status indicators

- **Crude health statistics**

| Data courtesy of the CDC Global AIDS Program, PNLS DRC, 2004 |

| Rates of HIV in pregnant women, 2004, DRC |

- **LODJA** 5.2% 2.5% 5.7% 6.6% 3.2% |
- **MBANDAKA** 3.2% 3.7% 6.7% 4.5% 6.6% |
- **KINDU** 3.8% 5.4% 7.0% 3.2% |
- **KISANGA** 6.6% 6.6% |
- **MBUJI** 7.0% 3.2% |
- **GOMA** 4.5% 6.6% |
- **KINSHASA** 6.6% 6.6% |
- **KARAWA** 7.0% 3.2% |
- **LUBUMBASHI** 6.6% 7.0% |
- **LUNDU** 5.4% 6.6% |
- **MIKALAYI** 3.1% 3.7% 6.7% |
- **BUNIA** 6.7% 4.5% |
- **NEISU** 3.2% 3.7% 6.7% |
- **MBUJI** 6.6% 6.6% |
- **MAYI** 7.0% 3.2% |
- **VANGA** 5.4% 6.6% |
- **MATAD** 3.1% 3.7% 6.7%
Censuses
Strengths
- Available in most countries
- Excellent population coverage
- Availability of small area data
- Periodic, regular data collection

Limitations
- Very limited number of questions
- Lack of detailed data on characteristics of interest, therefore may miss important subgroups

Administrative data
Strengths
- Access to very detailed medical data

Limitations
- Not available in many countries
- Coverage of population may be limited
- Coverage governed by programmatic definitions
- Comparability of data is problematic since data are specific to country and context

Surveys
Strengths
- Can obtain more detailed data compared to a census
- Good population coverage (can target population of interest)

Limitations
- Costly
- Labor intensive
- Many countries do not have the resources for such surveys

Corrected Health Statistics
- Measurements of indicators for which two types of analytical effort might have been taken:
  1. Mapping to the quantity of interest (all measurements where primary data collected are an indirect result of event under study)
  2. Correction for range of known biases

Drawback
- Details of efforts to correct for known biases are not often in public domain and can introduce more error into statistics

Predicted health statistics
- Predicted statistics are based on a model relating the quantity of interest
- Two types are commonly used:
  1. Forecasting: a relation is established during a period of observation that can be used to predict out of time in the future
  2. Farcasting: Prediction out of sample but within the same time period

Be sure your data is standardized!