Frameworks for Understanding Nutrition Problems
Rebecca Stoltzfus, PhD
Professor
Division of Nutritional Sciences
Cornell University
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Types of Frameworks

- Causal Frameworks
  - UNICEF Framework
- Planning and Decision-Making
  - Mainstreaming Nutrition Framework (Generic)
  - SUN Framework (Specific)
- Accountability and Measurement
  - Global Burden of Disease
  - Millenium Development Goals

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Poor water/sanitation and inadequate health services

Child malnutrition, death and disability

Inadequate maternal and child-care practices

Insufficient access to food

Inadequate dietary intake

Disease

Outcomes

Immediate causes

Underlying causes at household/family level

Basic causes at societal level

Potential resources: environment, technology, people

UNiceF Framework


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BOX 1. Examples of critical assessment questions for each of the three assessment domains

Biologic and epidemiologic
What nutrition interventions are critical to deliver?
Where during the life cycle?

Operational
How can the delivery of nutrition interventions be integrated with other Maternal and Child Health programs, services, and initiatives?
Who can deliver interventions?
How much will delivering key interventions cost?

Sociopolitical
How is the nutrition problem perceived?
What are the values and interests of people and organizations who will need to take action to move the nutrition agenda (or not)?
SUN Framework for Action

- Starting principle: What ultimately matters is what happens at the country level

- Sharply scale up evidence-based cost-effective interventions
  - To prevent and treat undernutrition
  - Highest priority to the minus 9 to 24-mo window of opportunity

- Multi-sectoral approach
  - Integrating nutrition in related sectors
  - Use indicators of undernutrition as a key measure of success in these sectors

- Scale up domestic and external assistance
  - Support country-owned nutrition programs and capacity

The “Lancet 13”
- Each group of interventions has been costed
- Total estimated cost to scale these interventions up in 36 high burden countries:
  $10.3 billion per year

At Country Level:
- Multi-Sectoral Engagement
- National Planning
- Donor Commitment

Accountability:
Each Sector adopts nutrition-related indicators relevant to its activities

Finance & Planning

Donors

Agriculture

Education

Women's Affairs

Health

Donors
Sunday, July 31, 2011
Malawi Rises Early to Launch the Sun
By Chancy Batson Mauluka

After being launched by the United Nations Secretary General in September 2010, the government of Malawi, on 28th July 2011, through the Office of President and Cabinet (OPC), launched the SUN 1000 Special Days Campaign in Malawi. The SUN (Scaling up Nutrition) 1000 Special Days Campaign is an approach of implementing nutrition activities that cover the first one thousand days of a child’s life. The one thousand days signify the number of days from pregnancy (conception) to the time the child is two years old. The SUN emphasizes on the 1000 days because this is the crucial period in life since stunting, underweight, wasting and any other malnutrition disorders that occur during the first 100 days, are not reversible.

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How do we measure global health & nutrition?

• Many, many indicators are used
  – Demography
  – Epidemiology
  – Economics
  Quantitative disciplines. They like to count things.
• One very basic indicator: count deaths

10 Leading Causes of Death
By Broad Income Group

<table>
<thead>
<tr>
<th>Low-income Countries</th>
<th>High-income countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower respiratory infections</td>
<td>1. Coronary heart disease</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>2. Stroke &amp; cerebrovascular diseases</td>
</tr>
<tr>
<td>Diarrhoeal diseases</td>
<td>3. Trachea, bronchus, lung cancers</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>4. Lower respiratory infections</td>
</tr>
<tr>
<td>Stroke &amp; cerebrovascular diseases</td>
<td>5. COPD</td>
</tr>
<tr>
<td>COPD</td>
<td>6. Alzheimer and other dementias</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>7. Colon and rectum cancers</td>
</tr>
<tr>
<td>Neoratal infections</td>
<td>8. Diabetes mellitus</td>
</tr>
<tr>
<td>Malaria</td>
<td>9. Breast cancer</td>
</tr>
<tr>
<td>Prematurity and low birth weight</td>
<td>10. Stomach cancer</td>
</tr>
</tbody>
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How do we measure global health?

• Many, many indicators are used
  – Demography
  – Epidemiology
  – Economics
  Quantitative disciplines. They like to count things.
• One very basic indicator: count deaths
  – But is a death at age 60 the same as a death at age 1 or 20?
  – What about diseases that disable but do not (always) kill?
The Global Burden of Disease Project (GBD) answers the question:

How much death and disability in the world is attributable to X, and how does that compare to health burdens from other factors, if a common methodology and common metric is applied?

Disability-adjusted life year (DALY) (from the discipline of economics)

- DALY’s are a common currency by which deaths at different ages and disability may be measured.
- One DALY can be thought of as one lost year of healthy life, and the burden of disease can be thought of as a measurement of the gap between current health status and an ideal situation where everyone lives into old age, free of disease and disability.
- Disability score = relative weight of disability on a scale of 1 (=dead) to 0 (=full health)
- DALY’s lost = incidence x duration x disability score

Disability weights used to derive DALYs

<table>
<thead>
<tr>
<th>Severity weight</th>
<th>Indicator conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00-0.02</td>
<td>Vitiligo on face, extreme thinness</td>
</tr>
<tr>
<td>0.02-0.12</td>
<td>Watery diarrhea, severe sore throat, severe anemia</td>
</tr>
<tr>
<td>0.12-0.24</td>
<td>Radius fracture in a stiff cast, infertility, erectile dysfunction, rheumatoid arthritis</td>
</tr>
<tr>
<td>0.24-0.36</td>
<td>Below-the-knee amputation, deafness</td>
</tr>
<tr>
<td>0.36-0.50</td>
<td>Rectovaginal fistula, mild mental retardation, down syndrome</td>
</tr>
<tr>
<td>0.50-0.70</td>
<td>Unipolar major depression, blindness, paraplegia</td>
</tr>
<tr>
<td>0.70-1.00</td>
<td>Active psychosis, dementia, severe migraine, quadriplegia</td>
</tr>
</tbody>
</table>

Highly simplified illustrations of the concept

<table>
<thead>
<tr>
<th>Healthy Life Span: 70 y</th>
<th>DALY’s Lost:</th>
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<tbody>
<tr>
<td>Person 1 dies in a car accident at age 40</td>
<td>30</td>
</tr>
<tr>
<td>Person 2 is born with Down Syndrome and lives to 70 y Down Syndrome disability weight is 0.5</td>
<td>35</td>
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DALY’s Lost:
Healthy Life Span: 70 y

Person 1 dies in a car accident at age 40

Person 2 is born with Down Syndrome and lives to 70 y
Down Syndrome disability weight is 0.5

Person 3 suffers a below-the-knee amputation at age 60, lives to 70
Disability weight is 0.3

Leading Causes of Mortality and Burden of Disease world, 2004

<table>
<thead>
<tr>
<th>Mortality</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ischaemic heart disease</td>
<td>12.2</td>
</tr>
<tr>
<td>2. Cerebrovascular disease</td>
<td>9.7</td>
</tr>
<tr>
<td>3. Lower respiratory infections</td>
<td>7.3</td>
</tr>
<tr>
<td>4. COPD</td>
<td>5.1</td>
</tr>
<tr>
<td>5. Diarrhoeal diseases</td>
<td>3.7</td>
</tr>
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</tr>
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<td>2.3</td>
</tr>
<tr>
<td>9. Road traffic accidents</td>
<td>2.2</td>
</tr>
<tr>
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<td>2.0</td>
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</tr>
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<td>3. Depression</td>
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<td>7. Prematurity, low birth weight</td>
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Simple GBD Framework

Disease → DALY → Death → Disability

Risk Factor

Diarrhea → DALY → Death → Disability

Malnutrition

Millenium Development Goals

1. Eradicate Extreme Poverty and Hunger
2. Achieve Universal Primary Education
3. Promote Gender Equality and Empower Women
4. Reduce Child Mortality
5. Improve Maternal Health
6. Combat HIV/AIDS, Malaria and other Diseases
7. Ensure Environmental Sustainability
8. Develop a Global Partnership for Development
MDG 1 Targets and Indicators

Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day
1.1 Proportion of population below $1 (PPP) per day
1.2 Poverty gap ratio
1.3 Share of poorest quintile in national consumption

Target 1.B: Achieve full and productive employment and decent work for all, including women and young people
1.4 Growth rate of GDP per person employed
1.5 Employment-to-population ratio
1.6 Proportion of employed people living below $1 (PPP) per day

Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger
1.8 Prevalence of underweight children under-five years of age
1.9 Proportion of population below minimum level of dietary energy consumption

How are we doing on MDG 1?

- The world is on track to meet the MDG target of halving the proportion of people living on <$1 per day
  - This is despite the economic crisis of 2008-09
  - Even so, in 2015, about 920 million people will be living on <$1.25 per day (new WB adjusted cutoff)

- Global achievements so far are largely the result of extraordinary success in Asia, mostly East Asia.
  - Since 1980, poverty rates in E Asia have fallen by 60%
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- Progress toward hunger goal has stalled since 2000
  - In 1990: 825 million people chronically hungry
  - In 2010: 925 million people chronically hungry

- Global progress toward reducing underweight in children is too slow to meet the goal
  - Globally, reduced from 31% in 1990 to 26% in 2008
  - But strongly influenced by success in E Asia, especially China
  - Only progress in South Asia (India)
  - No progress or deterioration in many African nations.

Frameworks help us see the world by focusing our vision and reducing complexity

They can also blind us to reality, so:

- Question your frameworks
- Work to get good data

http://www.mdgmonitor.org/index.cfm