Considerations for the Health System for Addressing the Double Burden of Malnutrition

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International Symposium
Understanding the Double Burden of Malnutrition for Effective Interventions
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Health is a Social Challenge NOT a Medical Problem

Human Nutrition
Health
Clinical care
Public health

Food availability
Individual
Population
Quantity, quality

Individual
Population
Concern for vulnerability
Biological, sociological
Individual vs Community
  mutual support for better practice
Healthy opportunity for growth vs unhealthy options
  insist on best environment for children
  empower and enable women
Leadership
  government and their health advisors
John Waterlow
TMRU, Jamaica
Application of isotopic methodologies, 1960

Non-alcoholic fatty liver disease
WHO Treatment Manual

Severe Malnutrition

1981
Management of Severe Malnutrition

Case Mortality over 20%

Good case management less than 5 - 10%

<table>
<thead>
<tr>
<th>Decade</th>
<th>Case Fatality</th>
<th>Mortality Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950’s</td>
<td>20</td>
<td>9 - 50</td>
</tr>
<tr>
<td>1960’s</td>
<td>26</td>
<td>11 - 53</td>
</tr>
<tr>
<td>1970’s</td>
<td>25</td>
<td>16 - 37</td>
</tr>
<tr>
<td>1980’s</td>
<td>14</td>
<td>3 - 53</td>
</tr>
<tr>
<td>1990’s</td>
<td>22</td>
<td>4 - 34</td>
</tr>
</tbody>
</table>
Nutritional Lens

Effective care counterintuitive

Good basic science
to characterise metabolic phenotype,
to enable translation
to effective clinical care

Reductive adaptation:
protein turnover

Specific nutrient deficiencies
K+, Zn.

Silent infection, stressors

Ten point structured care
### WHO: ten steps to treating severe malnutrition

<table>
<thead>
<tr>
<th>Activity</th>
<th>Initial treatment</th>
<th>Rehabilitation</th>
<th>Follow-up</th>
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<tbody>
<tr>
<td></td>
<td>days 1-2</td>
<td>weeks 2-6</td>
<td>weeks 7-26</td>
</tr>
<tr>
<td>Treat or prevent:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hypoglycaemia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hypothermia</td>
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<tr>
<td>dehydration</td>
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<td></td>
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<tr>
<td>Treat infection</td>
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<tr>
<td>Correct electrolyte imbalance</td>
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<td></td>
<td></td>
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<tr>
<td>Correct micronutrient deficiencies</td>
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<td></td>
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<tr>
<td>Begin feeding</td>
<td></td>
<td></td>
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<tr>
<td>Increase feeding to recover lost weight (“catch-up growth”)</td>
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<tr>
<td>Stimulate emotional and sensorial development</td>
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<tr>
<td>Prepare for discharge</td>
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</tbody>
</table>
Successes: % dying before and after implementation of WHO guidelines

<table>
<thead>
<tr>
<th>Country</th>
<th>Before (%)</th>
<th>After (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil (IMIP)</td>
<td>31%</td>
<td>11%</td>
</tr>
<tr>
<td>Ecuador</td>
<td>70%</td>
<td>8%</td>
</tr>
<tr>
<td>India</td>
<td>17%</td>
<td>3%</td>
</tr>
<tr>
<td>Myanmar</td>
<td>18%</td>
<td>9%</td>
</tr>
<tr>
<td>Bangladesh (ICDDR)</td>
<td>19%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Active case finding
Assessment for severe acute malnutrition
degree of wasting

Treat:

Ready to Use Therapeutic Food RUTF

COMMUNITY-BASED MANAGEMENT OF SEVERE ACUTE MALNUTRITION

DEVELOPMENT CONTEXT?
Integrated Management of Malnutrition

Nutritional status (anthropometry)

- Normal
- Food security
- Mild to moderate malnutrition, stunting
- Supplementary feeding
- Severe Acute Malnutrition
- Therapeutic food
- Severe Acute Malnutrition
  - oedema
  - appetite loss
  - Facility based care
Remedial supplementation + stimulation: RCT with Jamaican stunted children

Grantham-McGregor et al, 1991

Jamaica Home Visiting Intervention Study
Cost of Growth in relation to Change in Body Composition
during recovery from severe malnutrition
Jackson, 1977
School of thought
dynamic tension, equipoise
adaptation, resilience
multilevel systems problem solving

Aspire after excellence
intellectual enquiry, creative reflection
address real problems of practical significance
adopt/adapt state of the art technologies

Trust
people, share, mentor, high expectations
honesty, openness, transparency
organised application – efficiency
research delivery pipeline
discovery, efficacy, effectiveness, going to scale
Malnutrition eLearning: International Malnutrition Task Force

Pre-service training and in-service training

Increased knowledge.

Changed attitudes.

Changed behaviour

Changed organisation and delivery of practice

Improved identification and treatment

Saved lives.
Model: Community Based Approach

Create an Environment/People Centred Health Systems

Cannot do it TO people – pharma model

Have to do it for themselves: help, encourage, enable

Age-friendly communities that foster support for younger and older age groups

Community based care: fit for purpose, context specific

Develop skilled capability

Role of Stressors