Mainstreaming Nutrition: The Case of Zinc

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Infant & Child Nutrition Interventions with Sufficient Evidence for Implementation

• Promotion of breast feeding  
• BCC for improved CF  
• Zinc supplementation  
• Zinc in treatment for diarrhea

Bhutta ZA, et al. 2008
Infant & Child Nutrition Interventions with Sufficient Evidence for Implementation

- Promotion of breast feeding
- BCC for improved CF
- Zinc supplementation
- Zinc in treatment for diarrhea
- Vit A fortification/suppl
- Salt iodization
- Hygiene interventions
- Treatment of severe acute malnutrition

The Need for Mainstreaming Nutrition

- As individual interventions, they almost always have problems of sustainability
- Vita A, nutrition education, zinc, iodization, treatment of SAM, immunization, etc need to be mainstreamed into existing public health programs
Mainstreaming Nutrition Initiative

- Led by ICDDR,B, with support from the World Bank, in collaboration with Cornell University, USC, global partnerships (PMNCH), the SCN, the Aga Khan University, and other organizations.
- Overarching objective is to form a nutrition-focused partnership that can drive the convergence of nutrition and health agendas.

Globally 10% of deaths and disability-adjusted life-years (DALYs) in children younger than 5 years are attributable to micronutrient deficiencies, with nearly all this burden due to deficiencies of vitamin A and zinc.

Bhutta ZA, et al. 2008
Zinc Supplementation Results in:

**Fewer episodes of**
- diarrhea (rate ratio 0.86, 0.79–0.93)
- severe diarrhea or dysentery (0.85, 0.75–0.95)
- persistent diarrhea (0.75, 0.57–0.98)
- reduced stunting (effect size for change in ht 0.35, 0.19–0.51)
- reduced mortality (risk ratio 0.91, 0.82–0.99)

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**Zinc Coverage by Countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Diarrhea episodes in U-5 chld per yr</th>
<th>ORS coverage</th>
<th>Zinc coverage</th>
<th>Source of zinc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pakistan</td>
<td>88 mil</td>
<td>33%</td>
<td>2.3%</td>
<td>Imp/local</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>43 mil</td>
<td>52%</td>
<td>12.4%</td>
<td>Local</td>
</tr>
<tr>
<td>India</td>
<td>280 mil</td>
<td>26%</td>
<td>&lt;1%</td>
<td>Local</td>
</tr>
<tr>
<td>Nepal</td>
<td>11.3 mil</td>
<td>29%</td>
<td>&lt;1%</td>
<td>Imported</td>
</tr>
</tbody>
</table>

DHS, 3rd International Zinc Conference, Dhaka, 2006
### Zinc Coverage by Countries

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<th>Source of zinc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>9.5 mil</td>
<td>21%</td>
<td>-</td>
<td>Imported</td>
</tr>
<tr>
<td>Indonesia</td>
<td>61 mil</td>
<td>56%</td>
<td>&lt;1%</td>
<td>Imported</td>
</tr>
<tr>
<td>Mali</td>
<td>12.8 mil</td>
<td>45%</td>
<td>&lt;1%</td>
<td>Imported</td>
</tr>
<tr>
<td>Chad</td>
<td>13 mil</td>
<td>27%</td>
<td>&lt;1%</td>
<td>Imported</td>
</tr>
</tbody>
</table>


### Constraints to Increasing Zinc Coverage

- Absence of clear national policy on zinc
- No strategy for scaling up zinc
- Non-availability of zinc
- Lack of complete endorsement by pediatricians
- Poor awareness among health workers, people
- Poor compliance to home-based treatment

Most-The USAID micronutrient program
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?
Why might organizations buy into the nutrition agenda?

**Biological Considerations**

- **Women of Reproductive Age & Adolescents**
  - Folic Acid
  - Iron
  - Iodine
  - Vitamin A

- **Pregnancy**
  - Exclusive BF
  - Nutrition support for BF women
  - Food supp.
  - Deworming

- **Newborn**
  - Encouraging adequate weight gain
  - Iron supp. to LBW infants

- **6 – 24 m**
  - Exclusive BF
  - CF

- **2 – 5 y**
  - BF educ.
  - Nutrition support for BF women
  - Zinc

- **Sick Child**
  - Treatment of anemia
  - Nutrition support for BF women
  - Zinc

**Policy Decisions about Nutrition Actions**

- Decision Support & Consensus Building

**Implementation Considerations**

- Tradeoffs

**Sociopolitical Considerations**

- Tradeoffs

**Core MNI Framework**

Locus of Mainstreaming
- Donors
- Partnerships
- National Government
- Ministries of Health
- NGOs
- District health teams

Dimensions of Mainstreaming Process
- Biological considerations
  - Tradeoffs
- Implementation Considerations
  - Tradeoffs
- Sociopolitical Considerations

**What** nutrition interventions are critical to deliver?
**When** during the lifecycle?
**How** can the delivery of nutrition interventions be integrated with other MCH programs/services/initiatives?
**Who** can deliver interventions?

**Why 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?
**Why** might organizations buy into the nutrition agenda?

**Key Nutrition Actions & Interventions**

- Defining key interventions:
  - The Lancet Nutrition Series Paper 3 has provided the evidence base for many interventions

**Key Questions of Interest**
- Which nutrition interventions are most critical to include at each life cycle stage, and why?
- What is the impact of these nutrition interventions on nutritional and non-nutritional outcomes for each life cycle group (e.g., maternal mortality, neonatal mortality, child survival, child development, etc.)?
- How can we reconcile timing of delivery of intervention with timing of impact?

Adapted from the Essential Nutrition Actions approach
### IMPLEMENTATION CONSIDERATIONS: MATCHING KEY NUTRITION INTERVENTIONS WITH MCH DELIVERY STRATEGIES

**Key Nutrition Actions & Interventions**

<table>
<thead>
<tr>
<th>Life Cycle Point</th>
<th>Women of Reproductive Age &amp; Adolescents</th>
<th>Pregnancy</th>
<th>Newborn</th>
<th>Well Child</th>
<th>Sick Child</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Folic Acid</td>
<td>Iron</td>
<td>Iodine</td>
<td>Vitamin A</td>
<td></td>
</tr>
<tr>
<td>6 - 24 m</td>
<td>Exclusive BF</td>
<td>Iron</td>
<td>Iodine</td>
<td>Vitamin A</td>
<td></td>
</tr>
<tr>
<td>0 - 6 m</td>
<td>EXCLUSIVE BF</td>
<td>Iron</td>
<td>Iodine</td>
<td>Vitamin A</td>
<td></td>
</tr>
<tr>
<td>0 - 2 y</td>
<td>Nutritional support for BF women</td>
<td>Iron</td>
<td>Iodine</td>
<td>Vitamin A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Food sup.</td>
<td>Iron</td>
<td>Iodine</td>
<td>Vitamin A</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Encouraging adequate weight gain</td>
<td>Iron</td>
<td>Iodine</td>
<td>Vitamin A</td>
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</tr>
<tr>
<td></td>
<td>Exclusive BF</td>
<td>Iron</td>
<td>Iodine</td>
<td>Vitamin A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Delayed cord clamping (at delivery)</td>
<td>Iron</td>
<td>Iodine</td>
<td>Vitamin A</td>
<td></td>
</tr>
</tbody>
</table>

**Contacts with clients across the MNCH life cycle spectrum can occur at various delivery points:**

- Home visits
- Community groups
- Local primary health care clinics/ dispensaries/mobile clinics
- Secondary health facilities, campaigns

Efforts to integrate nutrition interventions into MNCH programs and services will have to simultaneously consider the life cycle contact point as well as the delivery strategy, since not all interventions for a given life cycle stage can be delivered at all delivery points.

All delivery strategies will have to consider how to maximize access and coverage while still ensuring quality of service implementation.

Adapted from the Essential Nutrition Actions approach & the Saving Newborn Lives continuum of care framework.

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### SOCIOPOLITICAL DIMENSION: Policy Change Happens Through Convergence, Alertness, Flexibility and Opportunism

Policy actions are often the result of the coming together of the 3 streams of problems, solutions and political conditions to create a window of opportunity that is then seized by an alert policy entrepreneur. Although often considered fortuitous, a well informed and skilled policy entrepreneur or policy community can move the policy change process along effectively.

“Chance favors the prepared mind.” - Louis Pasteur.