Global Level Policies and Programs in Combatting Micronutrient Deficiencies
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Outline

• Current situation
  - Global Burden of Diseases
  - Hidden Hunger Map

• Advocacy
  - Copenhagen Consensus
  - SUN Movement
  - Nutrition for Growth 2013

• Research agenda and platform
Burden of disease attributable to 20 leading risk factors in 2010, as a % of global DALYs

High BMI accounted for 3.4 M deaths and 3.8% of global DALYs in 2010. Poor diet and physical inactivity 10% of global DALYs.

Maternal and child undernutrition accounted for 1,400,000 deaths or 6.7% of the global burden of disease in 2010:

- **childhood underweight**: 860,000 deaths, 3.1% DALYs
- **iron deficiency anaemia**: 120,000 deaths, 1.9% DALYs
- **sub-optimal breastfeeding**: 544,000 deaths, 1.9% DALYs
- **Vitamin A**: 120,000 deaths, <0.8% DALYs
- **zinc deficiency**: 97,000 deaths, <0.8% DALYs
Global prevalence of zinc deficiency (2010)

- Little information available on biomarkers of zinc status
- Current estimates based on prevalence of child stunting

~30% of children worldwide have HAZ <-2SD

Figure 2. Global map presenting hidden hunger index based on the prevalence estimates (HHI-PD) in 149 countries and prevalence of low urinary iodine concentration in 90 countries with 2007 Human Development Index <0.9. The hidden hunger index HHI-PD was estimated based on national estimates of the prevalence of stunting, anaemia due toiron deficiency, and low serum retinol concentration.

doi:10.1371/journal.pone.0076565.g002
The Lancet’s Series on Maternal and Child Undernutrition

Figure 5. Global map presenting the population-adjusted hidden hunger associated Disability Adjusted Life Years (DALY) (HH-HDa) in 136 countries. The hidden hunger index HH-HDa was estimated based on estimates of the DALYs per 100,000 population, attributable to iron, vitamin A, and zinc deficiencies.

do: 10.1016/j.jorma.2013.09.005
There is a unique window of opportunity between pregnancy & age two where 1,000 DAYS CAN SHAPE A CHILD'S FUTURE

EVERY YEAR 3.5 MILLION YOUNG CHILDREN DIE FROM UNDERNUTRITION. 1

ALL CHILD DEATHS WORLDWIDE

TOTAL DISEASE BURDEN WORLDWIDE

0 = 10,000 children

Evidence-Based Interventions

Systematic review of efficacy or effectiveness of 45 possible interventions that affect maternal and child undernutrition and nutrition-related outcomes, including:

- Breastfeeding promotion
- Complementary feeding promotion strategies with or without provision of food supplements
- Micronutrient interventions (fortification & supplementation)
- General supportive strategies for improving family and community nutrition and disease burden reduction
- Interventions for the treatment of severe acute malnutrition

www.GlobalNutritionSeries.org
Copenhagen Consensus 2008
Hunger and Malnutrition

Highly Effective versus Mortality
• vitamin A supplementation
• therapeutic use of zinc for diarrhea
• breastfeeding promotion

Effective versus Mortality
• iron supplementation for pregnant women
• anthelmintics for pregnant women
• community-based nutrition education

Ref. Horton et al 2008

The Lancet Maternal and Child Nutrition Series 2013
Figure 2: Framework for actions to achieve optimum fetal and child nutrition and development

Figure 3: Conceptual framework

Bhutta et al. Lancet, June 6, 2013 http://dx.doi.org/10.1016/S0140-6736(13)60996-4
The SUN approach

Global Networks of stakeholders shift resources & align actions to support country efforts.

With overall support and coordination provided by the SUN Secretariat and SUN Lead Group

Country Network

Civil Society Network

Donor Network

Business Network

United Nations Network

Global nutrition targets endorsed by the WHA in May 2012

1. 40% reduction in the number of children under 5 who are stunted
2. 50% reduction of anemia in women of reproductive age
3. 30% reduction in low birth weight
4. No increase on childhood overweight
5. Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%
6. Reduce and maintain childhood wasting to less than 5%
Feeding Practices & Behaviors: Support for exclusive breastfeeding up to 6 months of age and continued breastfeeding together with appropriate and nutritious food up to 2 years of age and beyond.

Fortification of foods

Micronutrient supplementation

Treatment of severe acute malnutrition

Agriculture: Making nutritious food more accessible to everyone, and supporting small farms as a source of income for women and families.

Clean Water & Sanitation: Improving access to reduce infection and disease

Education & Employment: Making sure children have the energy they need to learn and earn a sufficient income as adults

Health Care: Improving access to services that ensure women and children stay healthy

Support for Resilience: Establishing a stronger, healthier population and sustained prosperity to better endure emergencies and conflicts

SUN supports alignment of Specific Nutrition Actions and Nutrition-Sensitive Strategies.

The SUN Movement evolves.

SUN Framework for Action is developed & endorsed by over 100 global entities – establishing the foundation for the Movement.

SUN builds momentum and commitment for scaling up nutrition – 19 countries join the Movement.

The Movement grows to 33 countries & a high-level group of 27 international leaders are appointed to the SUN Lead Group & endorse the SUN Movement Strategy for 2012-2015

Moving into 2013, SUN will focus on mobilizing resources behind national movements, to achieve measurable progress & impact.

The way forward.
Pre-G8: High Level Nutrition Event
“Nutrition for Growth”
London, June 8, 2013

Expectation:
Commitment of nutrition as a global priority –
• Government policy and budgets
• Donor, Business and Philanthropic support
• Scientific research and civil society action

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Achievements:
• Commitment by 90 stakeholders
• 14 Govts to increase natl resources for scaling up
• New $4.16 bn for nutr-specific and $19 bn for nutr-sensitive
• Business & Science R & D
• Scale up research, knowledge sharing, S-S partnership
• Next – High level nutrition event during 2016 Rio Olympics
**Global Research Agenda- Nutr Science**

Sackler Inst for Nutr Sc under NYAS & WHO (2012) – Focus Areas:

1. Environmental/societal trends affecting F/N -vulnerable grs

2. Unresolved issues of nutrition in the life cycle – featuring micronutrients
   - Preconception to early childhood
   - Move from single nutrient to food-based systems biology
   - Malnutrition, infection, developmental & functional outcomes– interact with interventions

3. Delivery Science
Identify problems & what works

- **INDICATORS:** exposure, status, function—
- **CONFOUNDERS** -- from biology to environment eg **INFECTION**
- Single vs multiple micronutrient deficiencies
- Technical feasibility and capacity

Initiatives in response: European Micronutrient recommendations aligned (Eurreca); Biomarkers of Nutrition for Development (BOND)

### BOND - Scope of Work

- Define biomarkers to address ‘exposure’, status, functions
- Current process for decision on utility of biomarker, potential for harmonization— decision trees
- Apply core concepts to case studies of VA, iron, zinc, folate/B12, iodine
- Research gaps/needs
FROM RESEARCH/EFFICACY

POLITICAL COMMITMENT

CAPACITY DEVELOPMENT

SCALED-UP PROGRAMS/POLICY

Zn/Fe

Vit A/Iodine

Research/ evidence

Commitment

Capacity

Effectiveness

Evaluation

Scaled up programs

The Micronutrient Community must link with broader agendas

Development and Poverty Reduction

Health

Nutrition

Micro-nutrients
Micronutrient Forum: 2-6 June 2014, Ethiopia

• An emphasis on bridging scientific advances and multi-sectoral programming needs to ensure adequate micronutrient intake and status across the life cycle

• Four tracks: situation/assessment; intervention impact (focus functions); scaling up (national); stakeholders/sustainability (global)

www.micronutrientforum.org