Informal Consultation with Member States and UN Agencies on A Proposed Set of Indicators for the Global Monitoring Framework for Maternal, Infant and Young Child Nutrition
WHO/HQ, Geneva, 30 September – 1 October 2013

50% REDUCTION OF ANAEMIA IN WOMEN OF REPRODUCTIVE AGE
Outline

• Background for target
  – Rationale
  – Definition
• Logical framework joining the indicators
• Proposed outcome indicators
  – Strengths
  – Limitations
  – Data availability
• Proposed process indicators
  – Strengths
  – Limitations
  – Data availability
Background

- Anaemia is a condition in which haemoglobin and the number of red blood cells (and consequently their oxygen-carrying capacity) is insufficient to meet the body’s physiologic needs.

- Specific physiologic needs vary with a person’s age, gender, residential elevation above sea level (altitude), smoking behaviour, and different stages of pregnancy (WHO, 2011).

- Anaemia prevalence in women of reproductive age decreased from 33% (95% CI 29—37) to 29% (24—35) since 1995. It currently affects 496 million of women (95% CI 409—595) (Stevens et al, 2013).
Background

• Iron deficiency is thought to be the most common cause of anaemia globally (50-60% of the cases) (Stevens et al, 2013).

• Other nutritional deficiencies (including folate, vitamin B$_{12}$ and vitamin A), acute and chronic inflammation, parasitic infections, and inherited or acquired disorders that affect haemoglobin synthesis, red blood cell production or red blood cell survival, can all cause anaemia (WHO, 2001).
Background

About 50 percent of anemia is caused by iron deficiency, but this can vary by geography and socioeconomic status. Other context-specific causes of anemia must be considered in addition to iron deficiency.
Actions to address anemia in women of reproductive age

• Iron and folic acid supplementation
  – Intermittent iron and folic acid supplementation in women of reproductive age (WHO, 2011)
  – Daily iron and folic acid supplementation in pregnant women (WHO, 2012)
• Iron and folic acid fortification of wheat and maize flours (and other staples) (WHO, 2010)
• Dietary interventions
• Control of infections
  – Malaria:
    • Intermittent preventive treatment for pregnant women
    • Insecticide treated bednets
    • Indoor residual spraying
    • Artemisinin-containing antimalarial combination therapy
  – Control of Hookworms
• Birth spacing (WHO, 2001)
Policies, production, delivery, quality, & behaviour change communication

Availability of intervention in country

Coverage of intervention

Importation, production & distribution of products meeting quality standards & specifications

Providers / distributors have knowledge & motivation to adequately distribute, inform & problem solve with target population

Target population uses intervention appropriately

Target population knows, demands, accepts, & has ability to appropriately use the intervention

Impact on intake, status and function in target population

Decreased mortality & morbidity

Improved nutritional status

Improved development, performance & productivity

Achieved Millennium Development Goals

Other interventions

Efforts to improve success rates

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WHO/NMH/NHD/MNM/11.5

EFFECTIVE PROJECT MANAGEMENT & MONITORING AND EVALUATION
Rationale

• Anaemia in women of reproductive age is an indicator of both poor nutrition and poor health.

• The most dramatic health effects of anaemia in women of reproductive age are increased risk of maternal and child mortality due to severe anaemia and reduced work capacity (WHO 2001).

• Most women throughout the world enter pregnancy with less than desirable iron reserves, which reduces their reproductive performance (Viteri, 2005).
**Definition**

Haemoglobin levels to diagnose anaemia at sea level (g/l)±

<table>
<thead>
<tr>
<th>Population</th>
<th>Non-Anaemia*</th>
<th>Mild*</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children 6 - 59 months of age</td>
<td>110 or higher</td>
<td>100-109</td>
<td>70-99</td>
<td>lower than 70</td>
</tr>
<tr>
<td>Children 5 - 11 years of age</td>
<td>115 or higher</td>
<td>110-114</td>
<td>80-109</td>
<td>lower than 80</td>
</tr>
<tr>
<td>Children 12 - 14 years of age</td>
<td>120 or higher</td>
<td>110-119</td>
<td>80-109</td>
<td>lower than 80</td>
</tr>
<tr>
<td>Non-pregnant women (15 years of age and above)</td>
<td>120 or higher</td>
<td>110-119</td>
<td>80-109</td>
<td>lower than 80</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>110 or higher</td>
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<td>70-99</td>
<td>lower than 70</td>
</tr>
<tr>
<td>Men (15 years of age and above)</td>
<td>130 or higher</td>
<td>110-129</td>
<td>80-109</td>
<td>lower than 80</td>
</tr>
</tbody>
</table>

± Adapted from references 5 and 6
* Haemoglobin in grams per litre
a "Mild" is a misnomer: iron deficiency is already advanced by the time anaemia is detected. The deficiency has consequences even when no anaemia is clinically apparent.

## Definition

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*Data needs to be adjusted for altitude and smoking

Data Sources

- Many nutrition surveys include haemoglobin measurements among women of reproductive age;
  - most national micronutrient surveys,
  - DHS,
  - some UNICEF Multiple Indicator Cluster Survey (MICS)
  - most CDC Reproductive Health surveys.
- WHO Vitamin and Mineral Information System (www.who.int/vmnis)
107 (56%) countries, covering 85% of the global population of women and children, had at least one data source. Data were most sparse in high-income regions and in central and eastern Europe.

Source: Stevens et al, 2013
WHO Vitamin and mineral nutrition information system
Proposed intermediate outcome indicators

• Proportion of adolescent girls with Hb concentration below 12 g/dL (120 g/L)
  – Rationale: A good iron status early in life allows to get to reproductive years and pregnancy with good iron status
  – Data availability: VMNIS (less data than for women of reproductive age), health systems?
  – Limitations: Under or over estimation of anaemia prevalence. Less data for trend-analysis.

• Prevalence of malaria (Estimated data of malaria cases, per 100,000)
  – Rationale: malaria is a contributing factor to anaemia
  – Data availability: Global Health Observatory
  – Limitations: There are no clear figures about the contribution of malaria to anaemia, particularly mild and moderate.
Proposed intermediate outcome indicators (additional)

- Proportion of children below five years of age with Hb concentration below 11 g/dL (110 g/L)
  - Rationale: A good iron status early in life allows to get to reproductive years and pregnancy with good iron status

- Data availability: VMNIS (less data than for women of reproductive age)

- Limitations: Under or over estimation of anaemia prevalence in women of reproductive age. Not easy to separate by sex.
Proposed process indicators (1)

• Proportion of pregnant women receiving iron and folic acid supplements.

  – Rationale: iron and folic acid supplementation prevents anaemia after pregnancy

  – Data availability: collected in DHS, records

  – Limitations: does not fully apply to the target group. Ideally, there should be coverage data of intermittent iron and folic acid supplementation in non pregnant women.
Proposed process indicators (2)

- Percentage of households consuming iron-fortified wheat and maize flour/products.
  
  - Data availability :
    - programmes with adequate monitoring and evaluation frameworks.
    - Information is limited.
  
  - Limitations. Indicators are not standardised. There are very few programmes at national scale that are fully implemented. Staple foods are not the same in all countries.
Proposed process indicators (optional)

- **Use of micronutrient powders**
  - Data availability: Home fortification technical advisory group database
  - Limitations: Very few programmes use this intervention in women of reproductive age

- **Use of insecticide-treated bednets**
  - Data availability: Global Health Observatory
  - Limitations: There are no clear figures about the contribution of malaria to anaemia, particularly mild and moderate.

- **Proportion of children under five of age receiving iron supplements**
  - Data availability
  - Limitations
Limitations

• The validity of comparisons over-time depends on the comparability of the estimates, at national or sub-national levels.

• Different survey sampling methods may have somewhat different procedures (e.g. numbers of households per cluster), may provide not be comparable prevalence.

• Monitoring trends in process indicators may be similar to outcome indicators if these are routinely included in health and nutrition surveys.

• Ascribing causality and evaluating impact may be difficult.
Operationalizing indicators

- WHO and CDC have developed an eCatalogue for indicators for micronutrient programmes.

- The operationalization of indicators followed broad consultations with agencies and stakeholders in nutrition and health programme implementation.

- A descriptive metadata is used to operationalize indicators beyond the titles and help public health managers in understanding their use with examples.

- The current indicators recommended by WHO and other agencies were used in the pilot identifying limitations in their definition.
Operationalizing indicators

descriptive metadata

• Name
• Description
• Rationale
• Definition and considerations for the calculations
• Things to keep in mind for data collection
• Strengths
• Limitations
• Examples
• References and Links