Landscape analysis of anaemia in Africa

Anaemia Action Alliance Webinar
Evidence to practice – Aligning anaemia reduction efforts in Africa

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Practice Area Director Research, Innovation, and Evaluation
Nutrition International
Landscape Analysis

- Background
- Prevalence
- Etiology
- Direct Causes
- Summary and Recommendations
Prevalence of Anaemia- Africa Summary

- Little change 2011-2019
- Moderate (>20%) or severe (>40%) all regions
- Highest prevalence in central and west Africa

Severity of anaemia as a public health problem (2019 estimates)

<table>
<thead>
<tr>
<th>Region</th>
<th>Women of Reproductive Age</th>
<th>Pregnant Women</th>
<th>Children 6-59 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>moderate</td>
<td>severe</td>
<td>severe</td>
</tr>
<tr>
<td>North Africa</td>
<td>moderate</td>
<td>moderate</td>
<td>moderate</td>
</tr>
<tr>
<td>East Africa</td>
<td>moderate</td>
<td>moderate</td>
<td>severe</td>
</tr>
<tr>
<td>Central Africa</td>
<td>severe</td>
<td>severe</td>
<td>severe</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>moderate</td>
<td>moderate</td>
<td>moderate</td>
</tr>
<tr>
<td>West Africa</td>
<td>severe</td>
<td>severe</td>
<td>severe</td>
</tr>
</tbody>
</table>
Anaemia Aetiology

- Complex and multi-factorial
- Main causes vary by context
- Requires coordinated, data driven, multi-sectoral response
## Micronutrient deficiencies

Prevalence ranges for national surveys in Africa (past 10 y)

<table>
<thead>
<tr>
<th>Deficiency</th>
<th>Adolescent Girls</th>
<th>Women of Reproductive Age</th>
<th>Pregnant Women</th>
<th>Non-pregnant Women</th>
<th>Children 6-59 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>-</td>
<td>10-30% (2 countries)</td>
<td>7-26% (3 countries)</td>
<td>2-28% (10 countries)</td>
<td>2-39% (13 countries)</td>
</tr>
<tr>
<td>Folate</td>
<td>3-84% (6 countries)</td>
<td>0-86% (10 countries)</td>
<td>32-37% (2 countries)</td>
<td>-</td>
<td>0-8% (2 countries)</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>0-48% (5 countries)</td>
<td>1-37% (8 countries)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>2-56% (3 countries)</td>
<td>2-57% (7 countries)</td>
<td>-</td>
<td>-</td>
<td>3-69% (14 countries)</td>
</tr>
<tr>
<td>Zinc</td>
<td>32-93% (4 countries)</td>
<td>28-82% (6 countries)</td>
<td>34-61% (4 countries)</td>
<td>-</td>
<td>5-83% (5 countries)</td>
</tr>
</tbody>
</table>

Infection, inflammation, chronic diseases - Malaria

- 95% of global cases occur in Africa (2021)
- Major cause of anemia in endemic regions
- Mechanisms:
  - Hemolysis of red blood cells
  - Defective RBC production
  - Altered iron metabolism
- Children <5 and pregnant women at greatest risk

Infection, inflammation, chronic diseases - Hookworms

- Causes anemia through chronic blood loss
- 232 million children in Africa estimated to need chemoprevention (2021)

Total number of children requiring preventive chemotherapy for soil-transmitted helminthiases (2021)

Retrieved from https://apps.who.int/neglected_diseases/ntddata/sth/sth.html
Infection, inflammation, chronic diseases - Tuberculosis

- Africa hosts 20% of the global TB burden (2021)
  - 212 cases/100,000 people
  - 2.5 million new cases in 2021

- 25-99% of individuals with active pulmonary TB exhibit anaemia

- Mechanisms for causing anaemia:
  - Inflammation
  - Blood loss in sputum
  - Decreased RBC production
  - Poor appetite and dietary intake

Global Health Observatory, World Health Organization. Tuberculosis.
Retrieved from https://www.who.int/data/gho/data/themes/tuberculosis
Inherited Red Blood Cell Disorders

- RBC disorders account for 15% of global anaemia burden
- 18% of Africa’s population carries trait genes for RBC disorders
- RBC disorders most prevalent in malaria-endemic areas; may mitigate malarial infection
- Mechanisms for causing anaemia:
  - Altered RBC structure (sickle cell disease: 79 million individuals in Africa)
  - Abnormal hemoglobin synthesis (thalassemias)
  - Enzyme abnormalities (G6PD deficiency)

Overview:
Direct Causes of Anaemia

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Micronutrient deficiencies | Iron deficiency in different population groups can range from 2-40%  
Folate and B12 deficiency in adolescents and women can be important factors in some countries |
| Malaria                  | 95% of global cases occur in Africa  
Major cause of anemia in endemic regions                                                                                       |
| Hookworms                | 25% of infected children live in Africa  
232 million children in Africa estimated to need chemoprevention (2021)                                                        |
| Schistosomiasis          | 90% of infected people live in Africa  
229 million people in Africa estimated to need chemoprevention (2021)                                                          |
| HIV                      | 25.6 million people in Africa live with HIV  
Prevalence of anaemia among individuals living with HIV ≈ 40-50%                                                                     |
| TB                       | Africa hosts 20% of the global TB burden  
25-99% of individuals with active pulmonary TB exhibit anaemia                                                                  |
| Gyn & Obst Conditions    | Heavy menstrual bleeding affects 20-40% of women globally  
Up to 10.5% of women giving birth in Africa experience PPH                                                                      |
| Inherited RBC disorders  | 18% of Africa’s population carries trait genes for RBC disorders  
RBC disorders account for 15% of global anaemia burden                                                                           |
## Overview:
### Intermediate Risk Factors

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Total number/Prevalence in AU member states</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate food insecurity</td>
<td>426 million people</td>
</tr>
<tr>
<td>Need for family planning satisfied with modern contraceptive methods</td>
<td>20-87%</td>
</tr>
<tr>
<td>Pregnant women receiving at least 4 antenatal care visits</td>
<td>24-87%</td>
</tr>
<tr>
<td>Coverage of reproductive, maternal, infant and child health (RMNCH) services (index score)</td>
<td>Africa: 50/100 Individual countries: 17-86/100</td>
</tr>
<tr>
<td>Population using safely managed drinking-water services</td>
<td>34%</td>
</tr>
<tr>
<td>Population using safely managed sanitation services</td>
<td>26%</td>
</tr>
</tbody>
</table>

Summary and Recommendations

- Anaemia prevalence is moderate to severe across all regions
- Highest prevalence in western and central Africa
- Main causes vary by setting and population group
- Intermediate and underlying risk factors also prevalent
- Data gaps, especially for direct causes of anaemia (e.g., MN)
- Many programs to address anaemia already in place
- Need for multisectoral integrated, costed anaemia national action plans that are contextual
Acknowledgements

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  - Gertrude Kara
  - Priscilla Wanjiru

- **Nutrition International**
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  - Hana Bekele
  - Mayur Mandalia

- **United Nations Children’s Fund**
  - Charity Zvandaziva
Thank you

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Accelerating Anaemia Reduction in Africa

19 July 2024

Gertrude Masautso Kara
Technical Advisor - Nutrition Policy
African Union Commission

Evidence to Practice – aligning anaemia reduction efforts in Africa
Rationale

- Africa Regional Nutrition Strategy (ARNS) 2016-2025 includes a goal of reducing anaemia in women by 50%

- Specific sub-strategy needed for this goal
  - Limited progress against 2025 anaemia target
  - Anaemia etiology is complex and context-specific
  - Anaemia is a cross-cutting health and development issue

- Strategic Framework for Anaemia recommended for AU’s 2022 Year of Nutrition workplan
  - Supported by WHO and Nutrition International
  - Informed by Landscape Analysis of Anaemia and its determinants in Africa
  - Guided by Technical Advisory Group (AUC, NI, WHO, UNICEF)
Goal and objective

Goal

➢ Provide strategic, evidence-based implementable actions for reducing anaemia prevalence in AU member states

➢ Contribute to improved maternal, child and population health and well being

Objective

➢ Guide member states in developing contextualized, costed, multi-sectoral national action plans for the prevention and management of anaemia, that include a monitoring and evaluation framework
Conceptual Framework for Accelerating Anaemia Reduction in Africa

**Agenda 2063: Healthy and well-nourished citizens (Goal 3, Aspiration 1)**

**ARNS 2026 to 2035 Goal:** Achieve a 50% reduction of anaemia in adolescent girls and women of reproductive age (15-49 years) in Africa by 2035

**Physiological Mechanisms**
- Optimize haemoglobin synthesis, prevent excessive destruction of red blood cells, and decrease blood loss

**Tackling the Direct Causes of Anaemia**
- **Outcome 1:** Improved micronutrient status
- **Outcome 2:** Reduced infection, inflammation, and chronic diseases
- **Outcome 3:** Reduced gynaecological and obstetric conditions (e.g., abnormal uterine bleeding)
- **Outcome 4:** Improved screening and management of inherited red blood cell disorders

**Costed Action Plans to Improve Sustained, Equitable, and Effective Coverage of Priority Interventions for Anaemia Prevention, Diagnosis, and Treatment**

**Action Areas**
- Analyze data on the causes and risk factors of anaemia for effective decision making
- Prioritize key preventive and therapeutic interventions
- Improve integrated service delivery platforms for anaemia prevention and control across sectors
- Strengthen governance, leadership, partnerships, and communication and coordination at all levels
- Improve evidence-based knowledge generation and dissemination on prevention and control of anaemia

**Contributing Sectors**
Action Area 1:
Analyse data on the causes and risk factors of anaemia for effective decision making

Recommended actions:

1. Conducting a landscape analysis of national and subnational anaemia prevalence and determinants using existing data sources

2. Conducting an analysis of monitoring data and of policies and guidelines to identify opportunities for integration across sectors and platforms.
Action Area 2:
Prioritize preventive and therapeutic interventions

Strategic framework includes suggested actions for each of the interventions

**a. Improving micronutrient status**
1. Dietary diversification
2. Staple food fortification
3. Supplementation
4. Point-of-use fortification
5. Biofortification
6. Promotion of optimal breastfeeding and IYCF

**b. Preventing and treating infection and inflammation**
1. Malaria prevention and control
2. Helminth and Schistosomiasis prevention and control
3. HIV/AIDS
4. Tuberculosis

**c. Managing gynecological and obstetric conditions**
1. Modern contraception
2. PPH management
3. Uterine fibroids management
4. Cord clamping

**d. Managing genetic blood disorders**
(Sickle cell anaemia, G6PDD)
1. Testing, counselling, management
2. Newborn screening
3. Malaria treatment (G6PDD)
Action Area 3:
Improve integrated service delivery platforms for anaemia prevention and control across sectors

Recommended actions:
2. Broadening community-level service delivery.
3. Developing an integrated monitoring and evaluation plan.
Action Area 4:
Strengthen governance, leadership, partnerships, and communication and coordination at all levels

Recommended actions (Strategic Framework includes specific actions for each):

1. Coordinating **governance and leadership** on anaemia at all levels.
2. Strengthening **accountability mechanisms** at all levels.
3. **Enabling environment and political will** (present economic cost of inaction).
4. **Fundraising and innovative financing** for anaemia.
Action Area 5:
Improve evidence-based knowledge generation and dissemination on prevention and control of anaemia

Recommended actions:
1. Developing an **anaemia research agenda** for data generation and use in policies and program design and implementation.
2. Conducting **implementation research** to understand factors influencing coverage, equity, and quality of anaemia programs and interventions.
3. Conducting **evaluations** to improve programs.
4. Facilitating **knowledge dissemination** among academia, institutes, and other relevant stakeholders.
Monitoring Progress Towards the Nutrition Target for Anaemia Reduction in African Continent

**ARNS 2026 to 2035 Goal:** Achieve a 50% reduction of anaemia in adolescent girls and women of reproductive age (15-49 years) in Africa by 2035
- Prevalence of anaemia (Hb)

**OUTCOME 1**
**Improved micronutrient status**
- Markers of iron status, folate status, vitamin B12 status, vitamin A status

**PROCESS/OUTPUT INDICATORS**
- % women 15-49 attaining MDD, % population consuming fortified foods, % pregnant women 15-49 using 90+ IFA supplements, % children 6-24 months receiving MNPs, % population consuming biofortified foods, % children 6-24 months attaining MAD, % infants under 6 months who are exclusively breastfed

**ACTION AREAS (Indicators)**
- Analyse data on the causes and risk factors of anaemia for effective decision making
  - Integrated M&E system, Data collected on anaemia and its determinants systematically analyzed and used for decision making

**OUTCOME 2**
**Reduced infection, inflammation, and chronic diseases**
- Incidence of malaria, incidence of helminths/schistosomiasis

**PROCESS/OUTPUT INDICATORS**
- % HH using ITN/IRS, % children/PW receiving malaria chemoprevention, % children/PW receiving chemoprevention for helminths, % eligible population receiving schistosomiasis chemoprevention, % HIV-affected individuals receiving ART, % TB vaccination in high-risk groups

**ACTION AREAS (Indicators)**
- Prioritize key preventive and therapeutic interventions
  - % trained CHW/CHV, % communities with interventions available

**OUTCOME 3**
**Reduced gynaecological and obstetric conditions**
- Prevalence of PPH, prevalence of heavy menstrual losses

**PROCESS/OUTPUT INDICATORS**
- % women 15-49 years receiving modern contraceptives, % pregnant women receiving uterotonics

**ACTION AREAS (Indicators)**
- Improve integrated service delivery platforms for anaemia prevention and control across sectors
  - Integration process across policies conducted

**OUTCOME 4**
**Improved screening and management of inherited red blood cell disorders**
- % newborns identified with sickle cell, thalassemia, % individuals with sickle cell disease/thalassemia treated

**PROCESS/OUTPUT INDICATORS**
- % newborns screened for hemoglobinopathies

**ACTION AREAS (Indicators)**
- Strengthen governance leadership, partnership, communication, and coordination at all levels
  - Multi-sectoral anaemia task force in place, accountability mechanisms in place

**ACTION AREAS (Indicators)**
- Improve evidence-based knowledge generation and dissemination on prevention and control of anaemia
  - Anaemia research agenda developed, implementation research conducted to understand factors influencing coverage, equity, and quality of anaemia program delivery
## Monitoring Progress Towards Anaemia Reduction in Africa

<table>
<thead>
<tr>
<th>Objective Hierarchy</th>
<th>Suggested Indicators</th>
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<tbody>
<tr>
<td><strong>Impact</strong></td>
<td>Anaemia prevalence in adolescent girls and women of reproductive age (15-49 years)</td>
</tr>
<tr>
<td>Reduced anaemia in adolescent girls and WRA (15-49 years)</td>
<td></td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td></td>
</tr>
<tr>
<td>Improved micronutrient status</td>
<td>• % of adolescent girls/women of reproductive age/pregnant women/children with adequate iron status (e.g., serum ferritin)</td>
</tr>
<tr>
<td></td>
<td>• % with adequate folate status (e.g., serum folate, RBC folate)</td>
</tr>
<tr>
<td></td>
<td>• % with adequate Vitamin B12 status (e.g., serum B12)</td>
</tr>
<tr>
<td></td>
<td>• % adequate Vitamin A status (e.g., serum retinol)</td>
</tr>
<tr>
<td>Reduced infection, inflammation, and chronic diseases</td>
<td>• Incidence of malaria (per 1000 population at risk)</td>
</tr>
<tr>
<td></td>
<td>• % children/adolescent girls/pregnant women requiring preventive chemotherapy for helminths</td>
</tr>
<tr>
<td></td>
<td>• % population requiring schistosomiasis chemoprevention</td>
</tr>
<tr>
<td></td>
<td>• Prevalence of HIV among adults</td>
</tr>
<tr>
<td></td>
<td>• Incidence of tuberculosis (per 100,000 of population per year)</td>
</tr>
<tr>
<td>Reduced gynecological and obstetric conditions</td>
<td>• Prevalence of postpartum haemorrhage in adolescent girls and women 15-49 years</td>
</tr>
<tr>
<td></td>
<td>• Prevalence of heavy menstrual losses in adolescent girls and women 15-49 years</td>
</tr>
<tr>
<td>Improved screening and management of hemoglobinopathies</td>
<td>• % newborns identified as carriers of sickle cell</td>
</tr>
<tr>
<td></td>
<td>• % newborns identified as carriers of thalassemia</td>
</tr>
<tr>
<td></td>
<td>• % individuals with sickle cell disease treated</td>
</tr>
<tr>
<td></td>
<td>• % individuals with thalassemia treated</td>
</tr>
</tbody>
</table>
Indicators Used in the Continental Nutrition Accountability Scorecard

<table>
<thead>
<tr>
<th>I: NUTRITION STATUS INDICATORS</th>
<th>II: SERVICES COVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Children under 5 years old who are stunted (moderate and severe)</td>
<td>Infant and Young children Feeding</td>
</tr>
<tr>
<td>% of Children under 5 years old who are wasted (moderate and severe)</td>
<td>Minimum Dietary Diversity (%). Proportion of children 8-23 months of age who receive foods from 4 or more food groups) *</td>
</tr>
<tr>
<td>% of Children under 5 who are overweight (moderate and severe)</td>
<td>Exclusive breastfeeding (EBF) rate among infants 0-6 months of age</td>
</tr>
<tr>
<td>% of women of reproductive age (15-49 years of age) with anemia</td>
<td></td>
</tr>
<tr>
<td>% of children under five with anemia</td>
<td></td>
</tr>
<tr>
<td>% of low birth weight newborns*</td>
<td></td>
</tr>
</tbody>
</table>

- SOCIO-ECONOMIC IMPACT
  Cost of malnutrition (GDP Losses (%))*

- GOVERNANCE, POLICY AND LEGAL PROVISIONS
  Legislation on mandatory fortification for foods
  Legislation on code of marketing of breast milk substitutes

- NUTRITION FINANCING
  Budget Allocation to sectors implementing National Nutrition Plan and Strategies *
  Budget spending per US child on nutrition specific interventions *

- Education
  Upper secondary completion rate (females) *

- Social Protection coverage
  % of population living below poverty line

- Water and Sanitation coverage
  % population with access to safely managed sanitation facilities
  % population with access to safely managed drinking water services

https://afdb-scorecard.invenus.dev/en
Next Steps on Finalization of the Strategic Framework for Prevention and Management of Anaemia in Africa

<table>
<thead>
<tr>
<th>Activity</th>
<th>Timeline</th>
<th>Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation to the Specialized Technical Committee on Health, Nutrition, Population and Drug Control (STC)</td>
<td>August 2024</td>
<td>AUC</td>
</tr>
<tr>
<td>Presentation to the Executive Committee</td>
<td>February 2025</td>
<td>AUC</td>
</tr>
<tr>
<td>Launch Strategic Framework</td>
<td>March 2025</td>
<td>AUC</td>
</tr>
<tr>
<td>Dissemination to Member States by Region and implementation</td>
<td>April 2025 onwards</td>
<td>AUC, AUDA-NEPAD, Africa CDC, RECs, Partners</td>
</tr>
</tbody>
</table>
Towards “Healthy and well-nourished citizens”

Thank you

Merci