Malaria Prevention and Nutrition – An Integrated Delivery Approach

August 23, 2017
Expert Connections Webinar
Speakers

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Director, Health and Nutrition, Dangote Foundation

Live Tweet:
#IntegratingMalariaNutrition
Dr. Peter Olumese
Medical Officer, Prevention Diagnosis and Treatment, Global Malaria Programme, World Health Organization
Malaria Prevention and Nutrition - Linkage, Challenges and Recommendations

Malaria Prevention and Nutrition – An integrated Delivery Approach

GBCHealth / CAMA Expert Connections Webinar
23rd August 2017.

Dr. Peter OLUMESE,
Global Malaria Programme
WHO, Geneva, Switzerland.

Global Malaria Programme
World Health Organization
Malaria, anemia and malnutrition

- are key public health challenges among the pediatric population
- contributing significantly to childhood morbidity and mortality in sub-Saharan Africa

Malnutrition is the underlying cause of over 50% of child deaths in developing countries

Malnutrition and infection interrelate synergistically

- Malnutrition increases susceptibility to infection,
- Episodes of infections, in turn precipitates nutritional deficiencies

Similar target populations

- Mainly children under 5 years of age
- Similarity in seasonality

Similar mechanisms for delivery – Systems and personnel (facility and community delivery services and mechanisms)
Challenging Implementation environment – Humanitarian and fragile settings

HUMANITARIAN AND FRAGILE SETTING CHALLENGES

60% of maternal deaths, and 53% of child deaths occur in fragile states and humanitarian settings.

Women and children are up to 14 times more likely than men to die in a disaster.

51.2 million forcibly displaced persons and 16.7 million refugees in 2013.

Of the 1.4 billion people living in fragile states, the population under 25 years is almost 60%.
Global Malaria burden - in 2015,

- **The Global Malaria Picture**
  - 91 countries and territories
  - Half world at risk (3.2 billion)

- **highly concentrated in sub-Saharan Africa**
  - There were an estimated 212 million cases of malaria (range 148–304 million) ≈ 90% in Africa
  - 429 000 deaths (range 235 000–639 000) - 92% in Africa, 70% in children under 5

- malaria was the 4th highest cause of death among children in Africa (10% of child death in sub-Saharan Africa), - claiming the life of 1 child every 2 minutes.
Malaria is a major disease of poverty

Inverse relationship between level of GNP per capita and the burden of malaria
Key antimalarial interventions & strategies

**Prevention**
- Insecticide-treated mosquito nets (LLINs)
- Indoor Residual Spraying
- IPT in pregnancy (IPTp)
- IPT in infancy (IPTi)

**Diagnosis & Treatment**
- Parasite-based diagnosis
  - Microscopy
  - Rapid Diagnostic Tests
- Artemisinin-based combination therapies (ACTs)
- Severe Malaria
  - Artesunate

**Surveillance, M & E**
- Routine HMIS
- Malaria surveillance and response systems
- Household surveys
- Health Facility Surveys

Strengthening health systems in endemic countries
Commonalities: Nutrition and SMC Programs

a) Similar target population - Under 5 year

b) Seasonality – Both malaria and undernutrition are highly seasonal - peaks in rainy seasons

c) High burden for both malnutrition and Malaria

- In West and Central Africa, one million children under five die from causes related to malnutrition.
- Malnutrition contributes to 35 per cent of all the child deaths in the region.
- Malnourished children fall sick more often.

- Malaria was the 4th highest cause of death among children in Africa (10% of child death in sub-Saharan Africa), claiming the life of 1 child every 2 minutes.
- It is estimated that 39 million children live in SMC-eligible areas in Africa;
- these children experience 33.7 million episodes of malaria and
- 152,000 childhood deaths from malaria each year
Opportunities for integration

• Integrate nutrition screening and referral of identified cases of acute malnutrition as part of the SMC outreach
• Provision of food supplements
• Integration of BCC to mothers to improve rates of early and exclusive breastfeeding
SMC target population vs. target populations for nutritional interventions...

**IYCF Programme**
- Complementary feeding. (Children 6-23m)
  Health facility and community levels

**Micronutrient Programme**
- Supplementation
  - Vitamin A (Children 6-59m) Health Facilities, campaigns, outreach
  - Zinc (with ORS) Children 0-59m
- Fortification (MNPs, Low dose LNS) Children 6-23m, Health facilities (for use at HH level)

**SAM Programme**
- Screening and referrals (Children 6-59m), Health facility/community
- Treatment uncomplicated cases (Children 6-59m), Outpatient care, (HF, Community)
- Treatment complicated cases (Children 6-59m) Inpatient care
- Prevention approaches e.g Multi-sectoral approach, Early detection and management of MAM
Why Integrated health services?

• An effort to move towards reduction of missed opportunities and provision of a continuum of preventive and curative services

• Sustainability - Long term focus
  • Vertical programs provide a short-term solution, allowing countries to postpone desperately needed health care system reforms.

• Harnesses efficiency and effectiveness of countries preparedness efforts to reduce malaria
  • it is important to optimize limited financial and human resources available by seeking efficiencies and avoid duplication.
### Programmatic considerations of integrating various programmes with SMC

<table>
<thead>
<tr>
<th>Area</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration</td>
<td>• Ensure there is good collaboration between the disease programs including a harmonized approach with respect to training, tools, supervision etc.</td>
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<td></td>
<td>• Ensure that there are no funding imbalances, i.e. synchronizing and maximizing co-funding opportunities for both interventions</td>
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<td></td>
<td>• Flexibility in financing can mitigate mis-aligned investments</td>
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<tr>
<td>MOH prioritization</td>
<td>• Government advocacy to ensure both programmes work together e.g. dedicated task forces; joint planning by relevant programmes</td>
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<td></td>
<td>• Targeting and prioritization based on disease burden</td>
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<td></td>
<td>• Ensure country-level technical agencies are well briefed and capacitated to ensure advocacy and resources are being dedicated to both programmes in time for the SMC campaigns</td>
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</table>
Programmatic considerations of integrating various programmes with SMC

<table>
<thead>
<tr>
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</thead>
</table>
| Referral systems          | • Functional referral system – to cater for child in a wholistic manner.  
                           • CHWs or health facility workers training needs to be able to capture if there are danger signs for both interventions  
                           • Ensuring there is adequate capacity for appropriate care at the referral sites |
| Supply chain              | • Joint missions are important to drive funding towards integrated systems  
                           • Division of labor, e.g. some agencies are better and strengthening the national supply chain to deliver, parallel systems for just one disease should be discouraged |
| Monitoring & evaluation   | • Prioritization of an integrated indicator can help drive resources and programming |

Global Malaria Programme

World Health Organization
<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>CHALLENGES</th>
</tr>
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<tbody>
<tr>
<td>-Avoid missed opportunities on comorbidities</td>
<td>-Need to train staff and supervise activity</td>
</tr>
<tr>
<td>-Same age group</td>
<td>-Need specific tally (increase of paperwork)</td>
</tr>
<tr>
<td>-Relatively simple: Nutritional screening (can be done in Fixed site and Door-to-door)</td>
<td>-Need to ensure staff and supplies at Health center level in order to ensure compliance</td>
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</table>
In conclusion

- The Sahel region is a region where child malnutrition rates and high seasonal malaria coincide geographically and seasonally.
- Policies and systems exist to improve efficiency of delivery of life-saving interventions through integration.
- Combined strategies can increase coverage of integrated child preventive packages.
- However effective integration requires joint planning and synchronised resourcing and implementation.
- Detailed cost analysis of the different programs also essential for effective implementation.
- Country ownership is the bedrock for success and sustainability.

Photo Credit: Malnutrition care in Cameroon VOA 2014
1. **SURVIVE**  
End preventable deaths

2. **THRIVE**  
Realize the highest attainable standard of health

3. **TRANSFORM**  
Achieve transformative and sustainable change
Thank you
Dr. Maxwell Kolawole
Nigeria Country Director, Malaria Consortium
Integrating management of malnutrition into management of other childhood illnesses: Malaria Consortium experience
Kolawole Maxwell
CAMA webinar, 23 August 2017
Contents

1. Background
2. Overview of our integrated projects
3. Conclusions
4. Recommendations for the future
Background

• Burden of childhood illnesses and malnutrition in Nigeria is high in children under five:
  • mortality rate is 108.8 (deaths/1,000 live births)
  • One-third are stunted
  • GAM at 7.2 and SAM at 1.8 in 2014

• Access to quality basic healthcare services is low
  • Public funding for health is low with just 4.17% of 2017 national budget for health

• Inequity is high
Integration of health programmes:

“The organization and management of health services so that people get the care they need, when they need it, in ways that are user friendly, achieve the desired results and provide value for money.”

- WHO
Integration of health programmes:

• It is a continuum

• Should result in greater value for money
  • Economy
  • Efficiency
  • Effectiveness

• Tailored for different levels of care

N.B: Management of malnutrition at community level as part of iCCM programmes is the focus of this presentation
Overview of our integrated projects
CMAM project in South Sudan

- Burden of disease is high and access to healthcare is poor
  - Infant mortality (75 per 1,000) and under-five mortality (105 per 1,000)
  - GAM (2.6%) and SAM (2.5%)
- South Sudan government response:
  - 2009: Community-based child survival programme is introduced
  - 2011: MC commenced iCCM implementation
  - 2013: Nutrition integrated into iCCM
## CMAM project in South Sudan

<table>
<thead>
<tr>
<th>Details of health activities at the community level</th>
<th>Nutrition</th>
<th>Malaria, pneumonia and diarrhoea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oversight</td>
<td>Project officers</td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>Health workers at outpatient therapeutic programme (OTPs)</td>
<td>Community-based distributor supervisors</td>
</tr>
<tr>
<td>Supervision - MC</td>
<td>Field officers</td>
<td></td>
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<tr>
<td>Provision of services</td>
<td>Community nutrition workers and assistants</td>
<td>Community-based distributors</td>
</tr>
<tr>
<td>Community mobilisation</td>
<td>Community mobilisers</td>
<td></td>
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</tbody>
</table>
CMAM project in South Sudan

<table>
<thead>
<tr>
<th>Parameters</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of admissions</td>
<td>3,011</td>
<td>3,106</td>
<td>4,644</td>
</tr>
<tr>
<td>No. of defaulters</td>
<td>208</td>
<td>1,265*</td>
<td>156</td>
</tr>
<tr>
<td>Community-based management of acute malnutrition (CMAM) coverage</td>
<td>24.3%</td>
<td>43%</td>
<td>58.1%</td>
</tr>
</tbody>
</table>

*819 of these were in January 2014 when there was an outbreak of violence and CMAM activities ceased until February
Key findings

• **iCCM + nutrition** has shown to improve delivery and increase coverage of nutrition services

• The referral of children to **OTPs strategically located in the community** is a key feature in the iCCM + nutrition approach
  
  • This has resulted in **high recovery rates** of children admitted with severe acute malnutrition
Key findings

• For future programming aiming to reduce morbidity and mortality from malnutrition:
  • Strengthen the **connection between iCCM and nutrition**
  • Improve **training and supervision** of field staff
  • Follow up after referrals
RISE project in Nigeria

• 2013: iCCM implementation commenced

• 2017: Pilot integration of nutrition commenced in two local government areas in Niger state

• RISE project is funded by ECF with IRC as the prime
RISE project in Nigeria

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<tr>
<th>Logical framework</th>
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<td><strong>Goal</strong></td>
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<tr>
<td><strong>Objective</strong></td>
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<td><strong>Results</strong></td>
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Malaria Consortium’s iCCM projects

• All iCCM projects have a component of **screening for acute malnutrition** using MUAC and **referring cases** of malnutrition

• Some projects include providing **infant and young child feeding advice** for children with moderate acute malnutrition and for those at risk

• Projects in: Myanmar, Mozambique and Nigeria (Niger and Kebbi), South Sudan, Uganda
Conclusion

• Integration of management of malnutrition into that of other childhood illnesses is feasible

• However:
  • It does not mean integration of all into one package
  • It is not a solution for inadequate resources
Recommendations

• Gather lessons learnt on enabling factors and possible entry points for integration

• Explore and pilot innovative options for better integration e.g. private sector

• There is the need to do more research into the value for money of integration of iCCM and CMAM
Key messages

• Integration of management of malnutrition into other childhood illnesses programme is feasible in Nigeria

• Lessons from previous pilots are available to inform its scale up in Nigeria

• Lessons from scale – up in Nigeria will be essential to scaling – up in sub Sahara Africa
Further reading

• Evaluating access and coverage of community-based management of acute malnutrition in South Sudan

• Integrating severe acute malnutrition into the management of childhood diseases at community level in South Sudan

• More resources: www.malariaconsortium.org
Thank you
Dr. Francis Aminu
Director, Health and Nutrition, Dangote Foundation
Outline

• Big picture: Undernutrition – underlying cause of child deaths

• Undernutrition: prevalence, causes & interventions

• Aliko Dangote Foundation Integrated Nutrition (ADFIN) Programme: Approach & Process
6.3 million children under age five years died in 2013, nearly 17,000 every day.

75 countries that together account for > 95% of child deaths worldwide.
Why do Nigerian children die?

- 32% child deaths in neonatal period; most of these can be prevented
- Understanding the cause of death distribution is important for program development and monitoring
- Undernutrition is a major underlying cause of child deaths

### Causes of under-five deaths, 2012

- Neonatal death: 32%
- Injuries: 4%
- Malaria: 20%
- Measles: 1%
- HIV/AIDS: 3%
- Other: 17%
- Preterm: 10%
- Pneumonia: 14%
- Asphyxia*: 10%
- Other: 2%
- Congenital: 1%
- Sepsis**: 6%
- Diarrhoea: 9%

* Intrapartum-related events  ** Sepsis/ Tetanus/ Meningitis/ Encephalitis

Globally nearly half of child deaths are attributable to undernutrition

Source: WHO/CHERG 2014
Childhood Undernutrition in Nigeria

Stunting (H-A) by Geopolitical Zones

- North West: 54.8%
- North East: 42.3%
- North Central: 29.3%
- South West: 22.2%
- SS: 18.3%
- SE: 16%

National: 37%

Underweight (W-A) by Geopolitical Zones

- North West: 47.4%
- North East: 30.8%
- North Central: 18.5%
- South West: 14.9%
- SS: 12.8%
- SE: 11.4%

National: 29%

Wasting (W-H) by Geopolitical Zones

- North West: 27.1%
- North East: 19.5%
- North Central: 13.9%
- South West: 10%
- South South East: 11.1%
- South South West: 11.9%

National: 18%

- Nutritional status varies substantially by background characteristics.
- Children living in the North stand out as being particularly disadvantaged in terms of nutritional status.
- Emergency wasting levels in the entire country (>10%) 2013 NDHS
Major causes of childhood undernutrition and how to act

Childhood Malnutrition
(poor growth, micronutrient deficiencies, overweight/obesity)

Individual/patient level
- Dietary Intake
- Infection/inflammation
- Age, Sex, Genetics

Community level
- Food Security
- Maternal and Child Care Practices
- Environment, Healthcare Services

Societal level
- Social status, employment, education
- Political ideology, war, natural disasters

Nutrition-specific interventions:
- Infant and young child feeding
- Micronutrient supplementation & fortification
- Treatment of severe undernutrition
- Prevention & management of infection

Nutrition-sensitive interventions:
- Agriculture and food security
- Social safety nets
- Women's empowerment
- Early childhood development
- Child protection
- Health systems
- Conflict resolution
Dangote Foundation’s Strategic Response

- An international operating foundation based in Lagos, Nigeria.
- The Vision is An Africa whose people are healthier, better educated and empowered. A shift towards Africans helping Africans and sometimes Africans helping the world.
- It was established in 1994 by Alhaji Aliko Dangote to extend the impact of his growing business interests. Aliko Dangote Foundation works through large strategic and targeted programmes that:

1. **Improve Health by**:
   a) tackling food insecurity and malnutrition
   b) expanding access to portable water and sanitation
   c) improving health care services

2. **Promote Economic Empowerment through**:
   a) Innovative high impact programmes that target youth and women.
   b) Livelihoods and grassroots enterprise development (access to affordable capital,
   c) cash transfers, business/financial literacy and skills development).

3. **Enhance Education outcomes by**:
   a) Improving access to and quality of basic education, including through enhanced teach training.
   b) Broadening the availability of quality vocational and technical education aligned to labour market needs.
ADFIN Programme: Goal & Objectives

Reduce the prevalence of undernutrition by 60% by 2025 by breaking the vicious cycle of poverty and malnutrition through a combination of proven nutrition-specific and nutrition-sensitive interventions.

1. Treat at least 1,000,000 children with SAM using a CMAM approach by 2025
2. Reach 1,000,000 vulnerable households from communities that contribute the most to the SAM burden with engendered optimal nutrition, hygiene and care-seeking behaviours by 2025
3. Reach 1,000,000 vulnerable households from communities that contribute the most to the SAM burden with improved food security and livelihoods, especially among women, that increase access to a diverse nutritious diet by 2025
4. Improve federal, state and local government capacity to deliver nutrition interventions through advocacy and coordination
5. Improve capacity at community level to deliver nutrition interventions through empowerment and participation
ADFIN Program: Geographic Focus

**ADFIN Program States**

**Socio-economic Profiles**

<table>
<thead>
<tr>
<th>Indices</th>
<th>ADFIN States</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Stunted Children (million)</td>
<td>6.8</td>
<td>11.1</td>
</tr>
<tr>
<td># Acute (Wasted) Children (million)</td>
<td>1.2</td>
<td>2.4</td>
</tr>
<tr>
<td>Poverty Incidence (%)</td>
<td>57 (Kaduna) – 91.9 (Zamfara)</td>
<td>53</td>
</tr>
<tr>
<td>Access to improved water (%)</td>
<td>18 (Kebbi) – 80 (Jigawa)</td>
<td>52</td>
</tr>
<tr>
<td>Access to improved sanitation (%)</td>
<td>5 (Zamfara) – 43 (Kano)</td>
<td>37</td>
</tr>
</tbody>
</table>
ADFIN Program Approach: CMAM plus

- Behaviour Change Interventions (BCI): DBC, IYCF, WASH, etc
- Livelihood/ Economic Empowerment
- Food Security
ADFIN Program: Process & Interventions

COMMUNITY OUTREACH:
- Community mobilization, participation, nutrition assessment & surveillance, follow up SAM children

Outpatient Therapeutic Program (OTP):
- SAM with appetite & without complications
  - RUTF
  - ORS
  - Malaria prophylaxis
  - VA, amoxicillin
  - Immunizations (@ discharge)
  - Food Basket

INPATIENT CARE:
- SAM with complications & without appetite

VULNERABLE HOUSEHOLDS:
- Nutrition-sensitive interventions (BCI, Food Security, Livelihood/Economic Empowerment)

INTEGRATED SERVICES/PROGRAMMES:
- Addressing MAM

COUNSELLING:
- MIYCN, WASH, LLIN, etc.

REFERRAL:
- Child health services (immunization, malaria, diarrhea, etc) and supplementary programmes (if any)

Nutrition Leadership & Governance + MEAL

MUAC<115 mm or Oedema
- Refer to health centre

MUAC=115-124 mm & No Oedema
- Follow-up child with SAM to household
THANK YOU FOR LISTENING
Q & A

Please use the chat function to share your questions

For more information contact:

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Ian Matthews - imatthews@gbchealth.org