

# Integrating severe acute malnutrition

into the management of childhood diseases at community level in South Sudan



## Learning paper series

Since starting operations in 2003, Malaria Consortium has gained a great deal of experience and knowledge through technical and operational programmes and activities relating to the control of malaria and other infectious childhood and neglected tropical diseases.

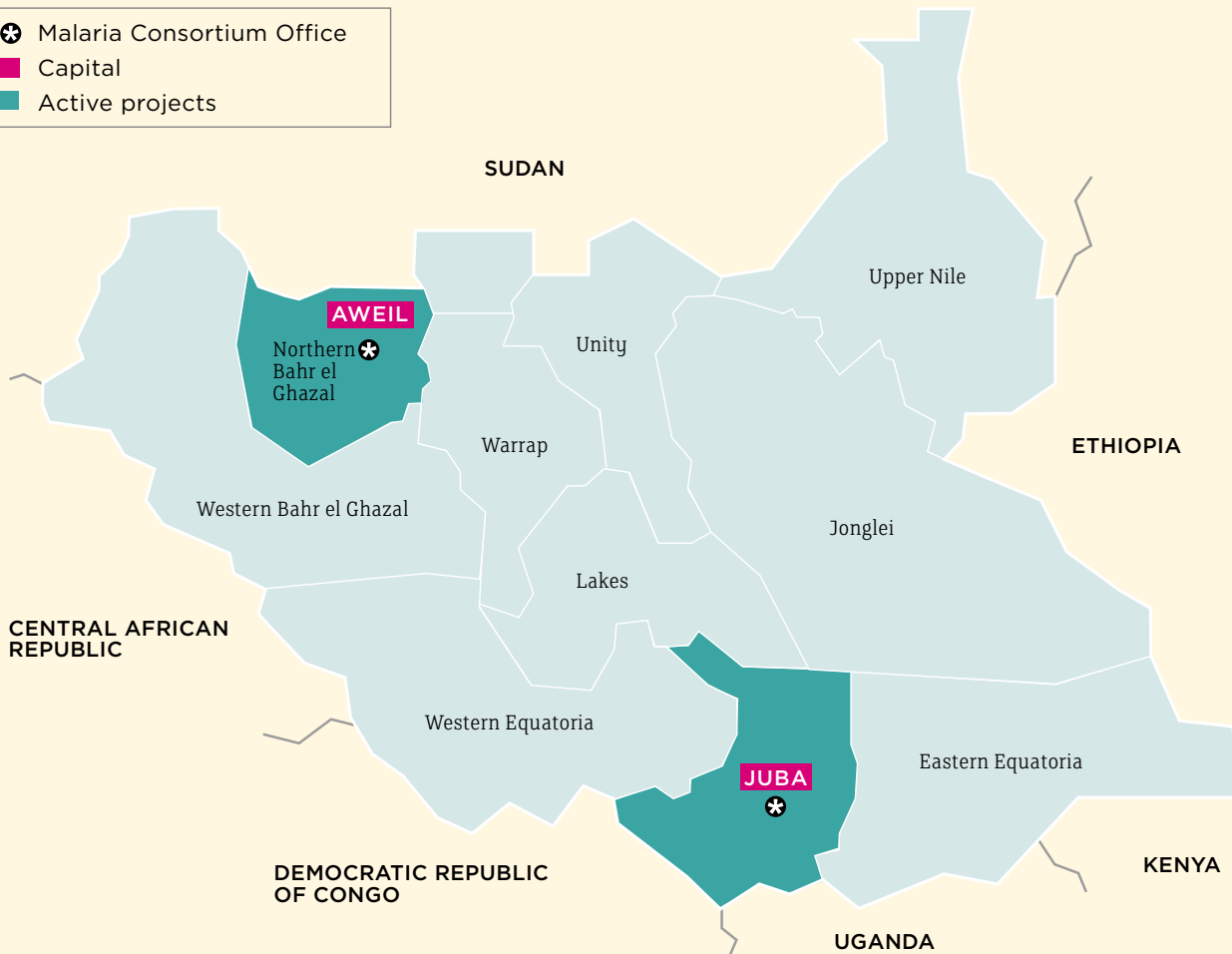
Organisationally, we are dedicated to ensuring our work remains grounded in the lessons we learn through implementation. We explore beyond current practice, to try out innovative ways – through research, implementation and policy development – to achieve effective and sustainable disease management and

control. Collaboration and cooperation with others through our work has been paramount and much of what we have learned has been achieved through our partnerships.

This series of learning papers aims to capture and collate some of the knowledge, learning and, where possible, the evidence around the focus and effectiveness of our work. By sharing this learning, we hope to provide new knowledge on public health development that will help influence and advance both policy and practice.

## South Sudan

- ✱ Malaria Consortium Office
- Capital
- Active projects



# Contents

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## 2. Introduction

---

### 4. Section 1. Childhood diseases and malnutrition

### 4. Context, current interventions

### 6. Combined approach, policy environment

---

### 8. Section 2. The volunteers

### 12. Incentives and motivation

### 14. Training

### 15. Service delivery

### 16. Treatment protocol

### 18. Coverage, admissions, monitoring and evaluations

### 20. Routine reporting

### 24. Prevention strategies

### 25. Stock and supply management

---

### 26. Section 3. Key lessons learned

---

### 28. Conclusion

---

### 30. Recommendations

---

### 32. About Malaria Consortium

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# Introduction

Despite several advances towards Millennium Development Goal 4 (MDG4) to reduce childhood mortality, the diseases of poverty – pneumonia, diarrhoea and malaria, together with under-nutrition – remain among the leading causes of child mortality across the world.

It is estimated that globally there were 6.9 million deaths in children under five in 2011.<sup>1</sup> Of these deaths, it has been recognised that over a third are due to under-nutrition. Children suffering with severe acute malnutrition (SAM), a particular form of under-nutrition, are some of the most vulnerable and have a greater than nine-fold increased risk of dying than children who are well nourished.

South Sudan ranks 15th highest in the world in terms of mortality rates for children under five<sup>1</sup>. Malaria is the leading cause of illness in all age groups, with 100 percent of the population at risk. It also accounts for approximately 30 percent of all hospital admissions. Up to 35 percent of children under five had suffered from a fever during the two weeks preceding the 2009 Malaria Indicator Survey (MIS). Broadly speaking, the leading disease pattern contributing towards deaths in children under five in South Sudan is similar to global trends, with pneumonia, diarrhoea and malaria being the leading causes. Malnutrition is widespread throughout the country with 28 percent of children under five being underweight, 31 percent stunted and 23 percent wasted.<sup>2</sup>

Since December 2010, Malaria Consortium has been implementing an innovative approach to community management of SAM, 'piggy-backing' onto an existing integrated community case management (ICCM) programme in the Republic of South Sudan. This learning paper considers Malaria Consortium's experience of this combined approach in a highly complex context and shows whether the management of SAM is an effective, acceptable and feasible component of ICCM programming.

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## Integrated community case management

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The term integrated community case management (or ICCM) generally refers to an integrated approach for assessing and classifying signs and symptoms of pneumonia, diarrhoea, and malaria in children under five years old, and providing home-based treatment or referral for these diseases. The approach also normally includes health promotion and preventive activities such as sleeping under a net and hand washing. This care is provided by volunteers in the community who are trained by health workers on the ICCM approach

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A mother and her son wait their turn at a community outpatient therapeutic feeding centre in Hong village, Aweil West

1. Levels & Trends in Child Mortality Report 2012  
[www.unicef.org/uk/Documents/UNICEF%20Child%20mortality%20report%202012.pdf](http://www.unicef.org/uk/Documents/UNICEF%20Child%20mortality%20report%202012.pdf)  
 2. South Sudan Household and Health Survey, 2010



# Childhood diseases and malnutrition

In an extremely resource-limited setting such as South Sudan, there is a double challenge: a high burden of childhood disease and death, coupled with limited healthcare services to treat these diseases. There is a clear association between under-nutrition and the leading diseases (malaria, diarrhoea and pneumonia) causing deaths in children under five. Children suffering from these diseases are more likely to enter into a vicious cycle of becoming malnourished through poor absorption of nutrients, while those already malnourished are more likely to die from these diseases due to a compromised immune system. These challenges require innovation in programme delivery models in order to address the needs with the resources that are available.

## Context

Decades of conflict have led to collapse of basic infrastructure across the country including health clinics, schools, roads, government offices, communication systems and water and sanitation supply. Despite the efforts of the government, donors, international and national non-governmental organisations, South Sudan still faces numerous challenges. The lack of infrastructure is overlaid with a range of acute crises resulting from flooding, disease outbreaks and renewed localised and international conflicts resulting in large population movement and displacement.

The Government of the Republic of South Sudan's austerity measures has also required a re-prioritising of limited national financial resources and already low commitments to basic services have been further reduced. Renewed hostilities with the Republic of Sudan, driven by a stalemate on post-secession arrangements, led to the decision at the end of January 2012, to shut down oil production, which the World Bank suggested would force economic collapse, as oil revenue accounted for 98 percent of the government's budget.

Health facility use is low in South Sudan. Outpatient visits are only 0.2 visits per person per year despite 44 percent of the population being settled within a five-kilometre radius of a functional health facility<sup>3</sup>. Even five kilometres can be an impossible journey in parts of the country, especially in the rainy season where floods and swollen rivers may make any access to services impossible. Access to treatment for common childhood disease still remains low. Only 39.6 percent of children under five have access to anti-malaria treatment within 24 hours of fever onset; 54.6 percent of the children with diarrhoea are treated with oral rehydration salts<sup>4</sup> and 38.5 percent treated with appropriate antibiotics according to treatment guidelines.<sup>5</sup> This low service use is the result of lack of human resources and qualified staff, shortage of drugs and medical supplies, cultural

and financial barriers, long distances to health facilities with poor roads and transport, a dysfunctional referral system and limited or no ambulance service.

While pneumonia, diarrhoea and malaria are still the main cause of death for children under five, they result from a range of causes closely linked to poverty and are all preventable. Pneumonia, diarrhoea and under-nutrition can result from a lack of access to health services, poor hygiene practices, poor infant and child feeding practices. These include low exclusive breast feeding practices for six months, lack of suitable nutritious weaning food for infants and young children, a poor care environment, living conditions, lack of access to vaccination, safe drinking water and basic sanitation. The lack of availability and use of long lasting insecticidal nets (LLINs) is another factor contributing to the malaria burden.

## Current interventions

### Integrated community case management

In South Sudan, where health facility access and use is so low, ICCM is a complementary and appropriate strategy for the delivery of lifesaving curative interventions for common childhood illnesses. ICCM should not 'stand alone' as a community intervention outside of the formal health service delivery system but should, instead, support the skills of existing cadres of community health workers (CHWs) at the facility level.

### Community management of acute malnutrition

Since the early 2000s there has been a growing accumulation of global evidence from a variety of contexts (emergency, transitional, development) showing that community management of severe acute malnutrition (CMAM) is an effective and safe public health approach. This marks a shift from the resource intensive inpatient care that was previously practiced.

## Community health worker terminology

ICCM is carried out by community drug distributors in South Sudan, also known as community based distributors. CDDs receive six days' initial training and operate like volunteer community health workers in other parts of Africa. It is important to note that in South Sudan, community health workers are not volunteers, but rather fits within the Ministry of Health and are mostly based at health facilities after having received nine months' training

A child suffering from severe acute malnutrition receives a nutritional supplement at an outpatient therapeutic feeding site in Aweil West

3. South Sudan Health Facility Mapping 2011

4. EPI Coverage survey 2011/2012

5. Lot quality assurance sampling community-based survey 2011



## Combined approach

While ICCM and CMAM were previously being implemented in South Sudan as separate interventions, Malaria Consortium was the first organisation to combine these approaches. There are five overall aims of both programmes and, owing to the interdependent nature of infectious diseases and SAM on mortality, they need to be addressed simultaneously for this to be achieved.

### Maximum coverage and access

Both CMAM and ICCM programmes are designed to achieve the greatest possible coverage by making services accessible to the highest possible proportion of a population in need. Both approaches aim to reach the entire target population (children with malaria, pneumonia, diarrhoea and SAM), especially including those in hard-to-reach areas

### Timeliness

Both approaches rely on treating conditions rapidly before they progress and complications develop. ICCM aims to treat cases early in the onset of the symptoms of diseases while CMAM aims to begin case finding and treatment before the malnutrition escalates and additional medical complications occur.

### Appropriate care

CMAM and ICCM both provide simple, effective outpatient care for those who can be treated at home and referral to clinical care for those who have complications.

### Task shifting

The majority of cases are identified and treated in the community using simple protocols. This allows a lower cadre of health workers, including community volunteers, to deliver care for the majority of cases. This is particularly needed in a context where there are low numbers of formally trained health staff within the health system.

### Community base

Both approaches rely on strong community involvement and ownership. They are dependent on community confidence in the CMAM and ICCM providers for effective mobilisation, referral and follow-up, and need to work through the same community networks for the programme to succeed.

### The four components of CMAM

**1. Community mobilisation** stimulating the understanding, engagement and participation of the target population

**2. Supplementary feeding programmes (SFP)** providing dry take-home food rations and routine basic treatment for children with moderate acute malnutrition without complications

**3. Outpatient therapeutic programmes (OTP)** providing ready to use therapeutic foods and routine treatment using simple medical protocols for children with severe acute malnutrition without complications

**4. Stabilisation centres** providing inpatient care for acutely malnourished children with medical complications

### Shared key health promotion and messaging

As there is a shared causality between malnutrition and these infectious diseases, the same population is targeted with relevant health interventions. These include optimal infant and young child feeding, hand washing with soap, safe preparation of water, sleeping under a LLIN, etc.

## Policy environment

As both management of childhood disease and severe acute malnutrition are cross-cutting between health facility and community based interventions, aspects of the programme are included within several different policies at various stages of evolution in South Sudan. At the time of writing there was no explicit policy to support the model of delivery Malaria Consortium is implementing, however Malaria Consortium's approach complemented the following aspects of existing policies and guidelines including *The Basic Package of Health and Nutrition Services (BPHNS) – updated in 2011*, *the Government of South Sudan MoH Integrated Management of Severe Acute Malnutrition (IMSAM) Guideline – 2009* and *the Child Survival Strategy – 2009*.

South Sudan is currently in the process of developing the *Home Health Promoters (HHP) – 2012 (draft)* and *ICCM Policy and Implementation* guidelines. In June 2012 the Ministry of Health renewed its support for ICCM programming in South Sudan and formed an ICCM taskforce.

Community nutrition worker Simon Deng Garrang assesses a malnourished child at his OTP site in Aweil West





# The volunteers

CDDs are volunteer community members, predominantly women, trained to provide basic health education messages to communities as well as ICCM. Each CDD is responsible for approximately 40 households. CDDs are supervised by CDD supervisors, who are also community volunteers, preferably with additional training in community health and are literate. Each CDD supervisor is responsible for overseeing the work of 15 CDDs. CDD supervisors are, in turn, supervised by Malaria Consortium staff. The NBeG programme had 1,683 CDDs across two counties (Aweil West and Centre) and 112 CDD supervisors. Supervisors supply commodities and collect data for central analysis and follow up of perceived problems. The intention is for the nutrition aspects of the programme to be integrated into the existing community child survival or ICCM programme, rather than creating an additional, separate vertical programme.

## AIM

To maximise the community coverage of the nutrition programme for early detection and referral of SAM cases and provision of prevention messaging

The ICCM programme is designed to maximise the coverage and access to treatment for malaria, pneumonia and diarrhoea and to cover the counties of operation. Based on the extremely low literacy rates of the majority of CDDs, it was not deemed feasible that the CDDs could also provide treatment for SAM as the protocol requires numeracy and detailed record-keeping. However, community screening using mid upper arm circumference (MUAC) and oedema screening is feasible for volunteers without literacy or numeracy, as the coloured bands on the MUAC tape can be used to decide whether or not to refer a child to an Outpatient Therapeutic Site where trained Community Nutrition Workers (CNWs) following defined algorithms can manage the care of children with uncomplicated SAM. The CDDs, therefore, added an initial screening and referral of SAM cases to the role of mobilising the community and their ICCM case work.

## RECOMMENDATION

Use the ICCM CDD volunteer network to provide screening, referral, follow up and counselling for infant and young child feeding practices in the community

## AIM

To have sufficient nutrition technical capacity to supervise and support the CNW volunteers to deliver quality SAM treatment at the OTPs

When the programme was initially implemented, CDD supervisors took a dual role: supervising CDDs as part of the ICCM programme and to run the outpatient therapeutic programme (OTP) site as a community nutrition worker two days a week. CDD supervisors generally ran their OTP sites from their homes, carrying out clinical management of the identified cases according to the OTP treatment guidelines and coordinating follow-up of cases.

However CDD supervisors who had this dual role reported having insufficient time to complete both duties. CDD supervision required them to be mobile to supervise the CDDs in their network whereas SAM treatment at the OTP sites required them to stay at home. In addition, some OTPs saw more than 100 beneficiaries per week. This resulted in CDD supervisors/CNWs feeling overstretched and beneficiaries having to wait a long time to receive treatment.

In response to these challenges, additional volunteers were selected to act as CNWs. The involvement of the community and MoH in selection of the volunteers improved mechanisms for accountability. This allowed the CDD supervisors to return to their original roles, moving around providing support to their network of CDDs, while the CNWs remained at their OTP sites to provide treatment.

The number of children receiving treatment at OTP sites was reviewed and thresholds for the maximum number of beneficiaries that can be managed by one individual were established. In the busiest sites, additional volunteers were trained to ensure that manageable beneficiary-to-CNW ratios were maintained.

## RECOMMENDATION

Have nutrition specific, trained and experienced staff to supervise the nutrition treatment programme.

The CDDs added an initial screening and referral of SAM cases in addition to their ICCM case work and mobilising the community

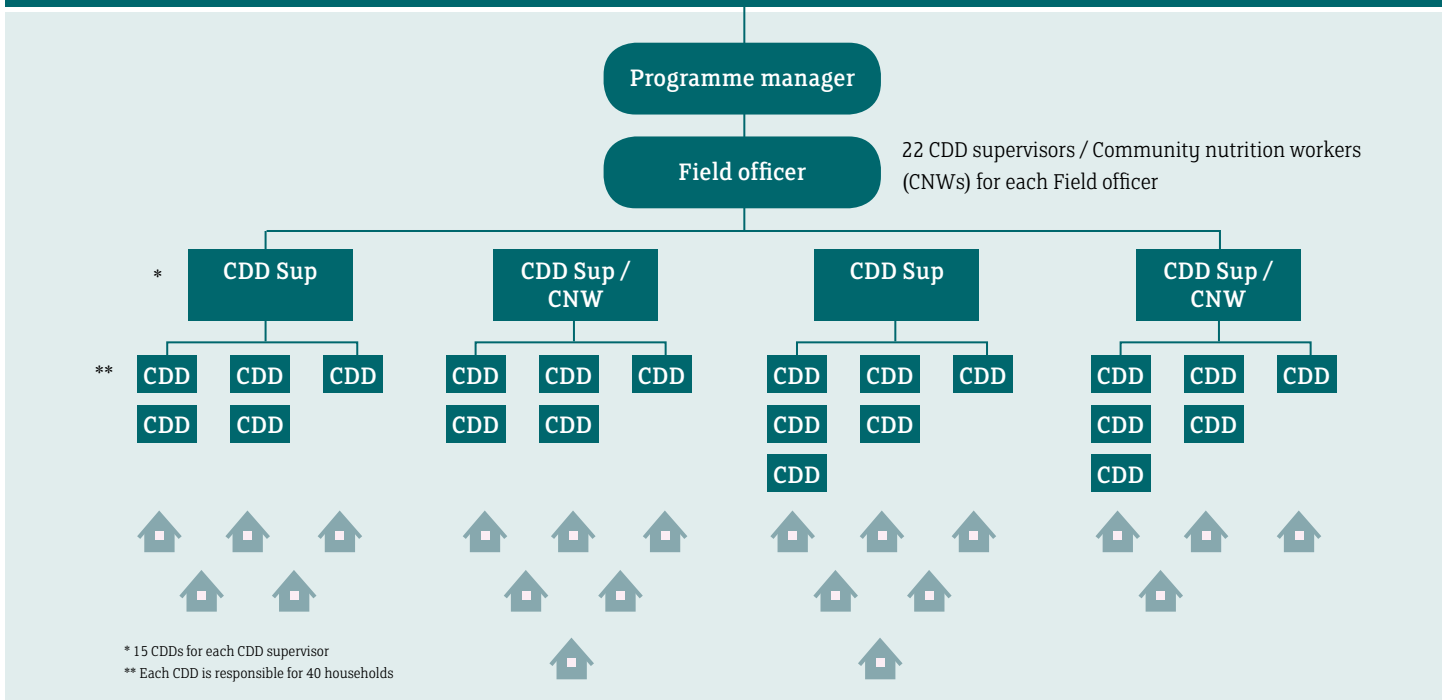
CDD Supervisor, John Uguak Deng, Aroyo, Aweil Centre

FOSTER'S

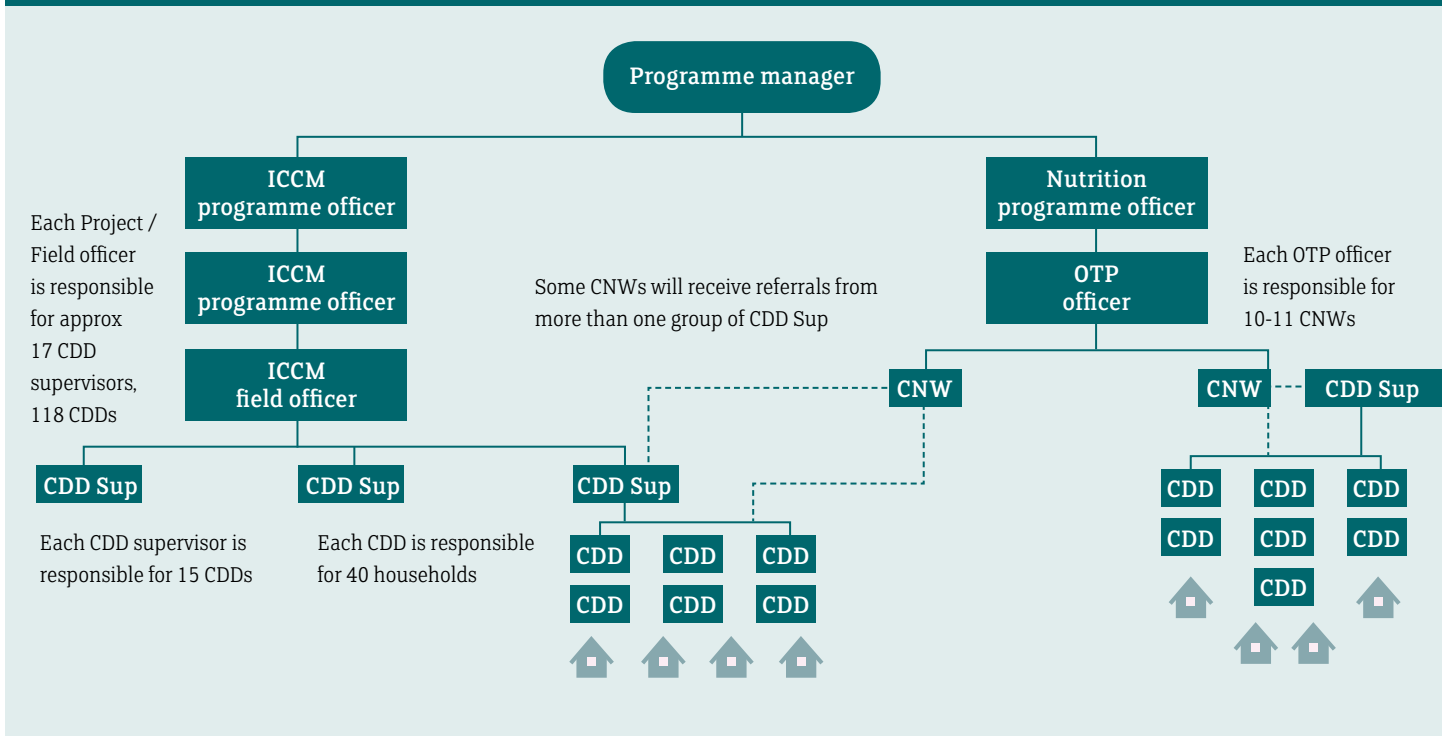


HOUSING CENTER

## Programme HR structure - Phase 1



## Programme HR structure - Phase 2



### AIM

To have sufficient qualified volunteers resources to deliver SAM treatment effectively

In the initial phase of implementation, field officers (Malaria Consortium staff with clinical training) also had a dual role, providing supportive supervision to CDD supervisors, collecting reports and providing supplies for both the ICCM and nutrition programmes.

Again, the work practices for effective supervision and technical knowledge in the ICCM programme and the nutrition treatment programme were different. Ideally the field officers should be observing and supporting the CDD supervisors in their supervision duties to CDDs, as well as giving direct supportive supervision to the CDDs. Although field officers had received formal medical training, they had varying levels of training in nutrition. It was challenging for field officers to provide effective supervision to OTP sites without having much experience in running them. In addition, it was recognised that the field officer to CDD supervisor ratio was too high to ensure quality supervision. This was made worse by the fact that the CDD supervisors were often spread over large areas.

In order to provide specialised OTP supervision to the CNWs, Malaria Consortium recruited extra staff to act as OTP officers. This allowed the ICCM field officers (and newly recruited project officers) to focus fully on supervision of ICCM activities.

### RECOMMENDATION

Have additional numerate and literate CDDs and community nutrition workers to deliver treatment of SAM at the outpatient therapeutic programme sites, with close linkages to CDD supervisors and the CDD network

### AIM

To ensure coverage of OTP services at health facilities is complemented by additional community level treatment in remote areas

health and nutrition services in line with BPHS and Government of South Sudan strategy and improves access to services in remote areas.

It was initially envisaged that all CDD supervisors would be trained in recognition and management of severe acute malnutrition (SAM). However, it was recognised that not all CDD supervisors had the capacity to perform the treatment protocol effectively. As a result, only the most skilled CDD supervisors were selected to act as both CNWs and provide SAM treatment. The majority of OTP sites (27 of 33) were concentrated in Aweil West a smaller geographical area than Aweil Centre, but with a much larger population. Concern Worldwide was also operating in Aweil West with health facility-based OTP sites; Malaria Consortium therefore targeted those areas not covered by Concern Worldwide.

Malaria Consortium received additional funding which allowed for the expansion of the programme in Aweil Centre, where the majority of the health facilities were run by the MoH without any additional NGO support for OTP services. Twelve new OTP sites were opened, nine health facility-based and three community-based. The addition of these new sites ensured that all functional health facilities in Aweil Centre had an OTP site delivering treatment for uncomplicated SAM cases. These sites opened in September 2012. The expansion resulted in a dramatic increase in admissions into the OTP programme, indicating that many more children were being reached by services.

### RECOMMENDATION

Place a CNW in health facilities that were not providing OTP services. This allows integrated health and nutrition services in line with BPHS and Government of South Sudan strategy and improves access to services in remote areas

## Incentives and motivation

### AIM

To ensure that volunteers perform to expected standards in the OTP sites and are incentivised to do so

CDD supervisors/CNWs are not salaried staff. In Phase 1 of implementation, CDD supervisors were provided with cash incentives of approximately US\$40 per month for operating the OTP sites for treatment two days per week. This was in addition to the US\$40 per month for supervising the ICCM programme. CDD supervisors were also provided with bicycles and bags to carry reports, allowing them to cover the area that their CDDs serve. However, despite these cash and in-kind incentives, the volunteers showed varying degrees of motivation to perform their expected duties. Some CDD supervisors/CNWs were absent from the OTPs on treatment days or would not conduct supervision activities within the programme reporting timetables. Some CDD supervisors/CNWs would complete reports, but to an extremely low standard. This suggested that they were more focused on completing the reports than ensuring that they were of an acceptable quality.

In order to address these issues, in Phase 2 a performance-based element was introduced into CNWs' incentives with the aim of improving the quality and consistency of their service provision. CNW cash incentives became dependent on the provision of completed reports within the expected timeframe to the expected standard. In an attempt to encourage and support excellence, additional 'bonuses' are now being offered for CNWs who achieve beyond expectations.

In addition to the incentives provided by Malaria Consortium, the community also gives feedback, which adds to volunteers' motivation. Volunteers are recognised as having skills and as providing services within their community and in some cases have been given formal recognition for this, for example being allowed to jump the queue at a water point. Conversely, where volunteers have not been performing their duties, the community reports to Malaria Consortium about poor performance and in extreme cases will request that volunteers are replaced.

### AIM

To enable CDDs to have a healthy household and to provide examples to community members

In both phases of implementation, CDDs received non-cash incentives to motivate them. In Phase 1 the items were largely focused on supporting them in their role as CDDs (T-shirt, cap, torches, drug boxes). In Phase 2, there was an attempt to provide them with additional items that would assist them in creating a healthy environment in their homes: soap for hand washing, jerry cans for safe water storage, and LLINs. It is anticipated that these items will help CDDs demonstrate healthy behaviour and practices in their communities which will back up the health messages they are providing.

### RECOMMENDATION

Provide CDD volunteers with in-kind incentives that enable them to have a healthy environment at home and demonstrate it to community members

CDD supervisors/CNWs are not salaried staff. In Phase 1 of implementation, CDD supervisors were provided with cash incentives of approximately \$40 for operating the OTP sites for treatment two days per week. This was on top of the \$40 per month for supervising the ICCM programme

## Case study #1

Name **Pual Malong**

Personal info **Community nutrition worker, trained by Malaria Consortium**

Address **Gueng Village in Mariem East Payam, Aweil West County**

Pual Malong is a community nutrition worker in Gueng Village in Mariem East Payam, Aweil West County. He has been a community nutrition worker since 2011 when he was first trained by Malaria Consortium. Previously he had been a supervisor for 133 community drug distributors.

the nearest health facility or Aweil Hospital. He has enrolled 32 children in the malnutrition and ICCM programme at his OTP site. Malong's work has been well-received by his community, especially by community leaders and caregivers, who are now able to access malaria and malnutrition treatment, recognise

drugs used for ICCM. He also commented that the lack of storage facilities for the supplies needed to be improved as they are currently stored at his house. A simple shelter for OTP days in the rainy season would also be good, he added hopefully. His usual location is under a tree.

"When the nutrition programme was introduced to treat severe malnutrition cases, the community again selected me to be the community nutrition worker. I was then trained again by Malaria Consortium, after I had received the initial ICCM programme training. So far I have received two ICCM and three nutrition trainings and I have got all the skills for carrying out ICCM and as a community nutrition worker."

common disease symptoms and seek appropriate healthcare for their children.

But despite these concerns, he is generally very pleased with how his work is going.

"The caregivers like the programme and they use the service, especially now they are able to recognise some danger signs in their children and immediately go to health facility or to the OTPs. The treatment they receive at the OTP site and the daily Plumpy'nut supply for malnourished children helps so much."

"The nutrition and ICCM programmes work well based on my experience as an ICCM supervisor and community nutrition worker. We refer most of the cases that might be beyond the capacity of the ICCM and nutrition programmes, based on the danger signs."

Malong's training has meant he is able to not only help his community with ICCM care, but he is also able to help tackle malnutrition, which is a common problem for children in the area, increasing the risk of disease and mortality. Malong screens children brought to his outpatient therapeutic feeding (OTP) site, where he provides general health education. He screens the children for severe acute malnutrition and provides nutritional supplements (Plumpy'nut) to those who need it and refers more complex cases to

Malong was concerned, however about delays in the supply of Plumpy'nut and some of the

"The programme is liked by all in the community and the leaders appreciate it and encourage the programme's continuity in the community to serve their children."

Malong screens children brought to his outpatient therapeutic feeding (OTP) site, where he provides general health education. He screens the children for severe acute malnutrition and provides nutritional supplements (Plumpy'nut) to those who need it and refers more complex cases to



Community nutrition workers fill out detailed patient records to ensure clear reporting

## Training

### AIM

To ensure that CNWs are supported and trained to perform OTP protocols adequately

Before the initial implementation of the programme, Malaria Consortium used regional technical experts to design and implement a training package. This would enable selected CDD supervisors and other volunteers selected by their communities to become CNWs based on the integrated CMAM training package, but adapted for the protocol agreed with the MoH. CDDs/CNWs were given a rapid training in MUAC screening and referral early in 2011. CDD supervisors were given a refresher-training course in OTP protocols soon after the initial training to ensure that the concepts and skills from the initial training were understood and applied correctly.

Recognising that refresher training is essential to ensure that community health workers retain the skills that they have gained in initial training, Malaria Consortium expanded staff capacity to ensure this would take place. A senior national nutrition programme officer and four OTP officers have been recruited to provide technical support and supervision to the CNWs. With an expanded nutrition team, it will be possible to deliver refresher training quarterly, based on identified particular training needs.

### RECOMMENDATION

Ensure there is sufficient capacity within the programme management team to conduct refresher trainings at least once every three months

### AIM

To ensure that health facilities understand services delivered in the OTPs, are able to provide referral services and have strengthened capacity to deliver OTP services

Health facility staff were, in many cases, overstretched with their existing responsibilities and did not have the additional capacity to directly implement treatment for SAM, but it was important for them to understand the treatment delivered in the OTPs. In many cases, health facility staff had not had experience or received training in OTP services.

### RECOMMENDATION

Provide short course, on-the-job training for health facility staff on OTP protocols

### AIM

To have an effective system of referral of complicated SAM cases from the community/ out-patient services to in-patient/stabilisation centre care

As part of the medical assessment and screening at OTP sites, CNWs are expected to identify the small number of cases of SAM which have medical complications and require specialised in patient care delivered through a stabilisation centre. In the first phase of implementation there was little information on the referrals that had been made; programme staff and volunteers were too overstretched to perform adequate follow-up. The children who have been identified as having complicated SAM are the most vulnerable and at increased risk of mortality and, therefore, in particular need of follow-up.

In order to understand better the outcome of referrals and the barriers to achieving referral, Malaria Consortium designed a referral pilot to address this gap.

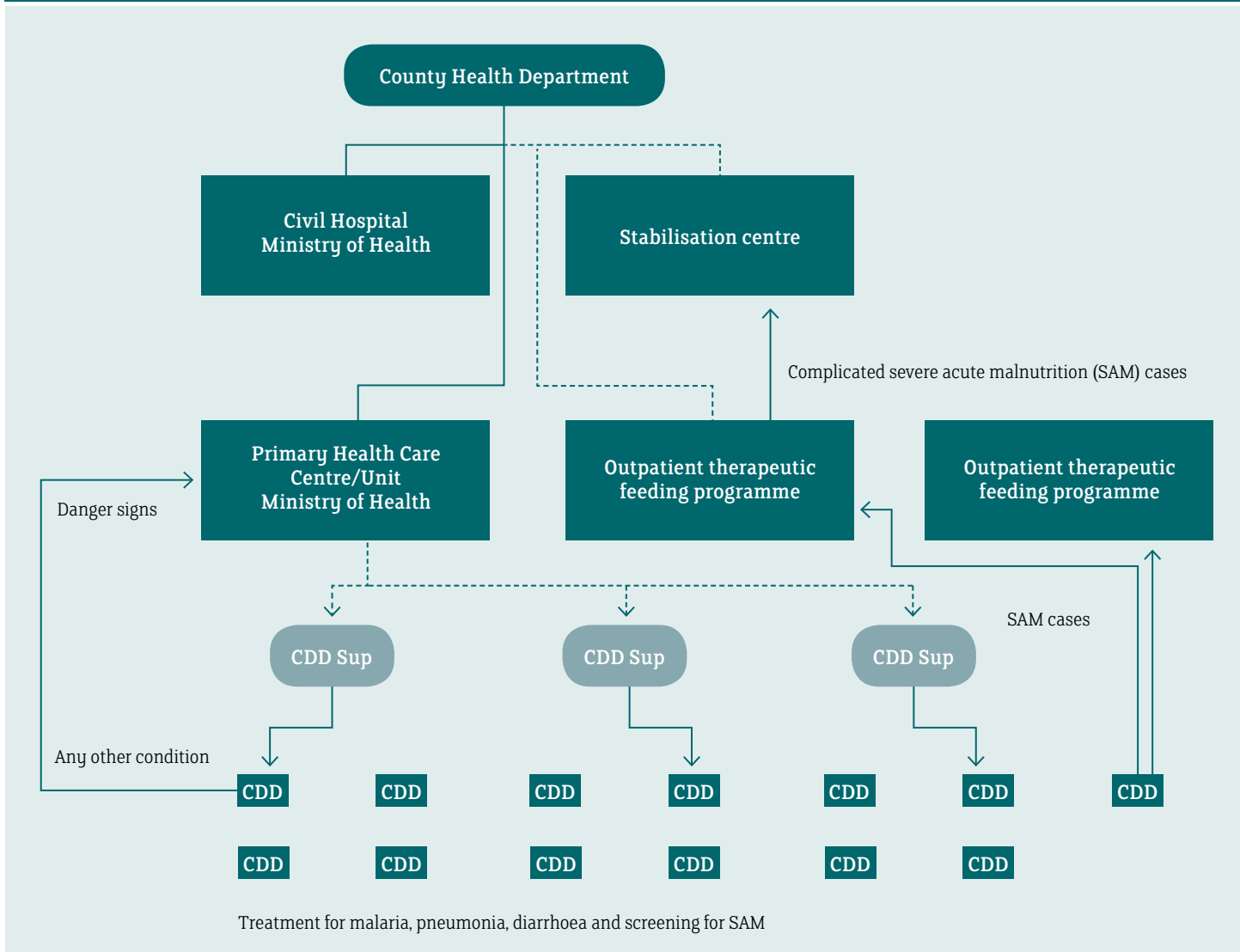
### The pilot had four stages

- 1. Needs assessment:** to collect quantitative and qualitative information on referral outcomes, barriers to referral and community identified solutions to support referral
- 2. Intervention design:** based on the outcomes of the needs assessment Malaria Consortium worked closely with partners (community, Ministry of Health, agencies providing in-patient stabilisation centre care) to design an intervention to support community referrals from the OTP to the stabilisation centre
- 3. Intervention implementation:** to be implemented for at least six months.
- 4. Intervention evaluation:** to understand if the intervention has been successful in supporting community referrals of complicated SAM cases and if so, if it could be replicable and scaled-up



# Service delivery

## Treatment, referrals and Ministry of Health



## Treatment protocol

### AIM

To have a feasible and technically appropriate treatment protocol for the treatment of SAM based on national guidelines

The programme adopted the government's IMSAM approach in line with the South Sudan nutrition strategies and standards. However, as the programme was being implemented in a specific context, some specific modifications to the treatment protocol were discussed and agreed with the Directorate of Nutrition in the MoH. These were as follows:

1. Admission to OTP on MUAC and oedema criteria only.
2. Treatment of children with uncomplicated malaria, pneumonia or diarrhoea and SAM without further complications at the OTP.
3. Discharge 'cured' criteria altered from 15 percent to 20 percent weight gain for two consecutive visits and/or green MUAC.
4. All asymptomatic children with SAM will be treated for malaria routinely using a full treatment course of anti-malaria drugs.

### RECOMMENDATION

Implement a modified version of the Government of South Sudan's IMSAM that takes into account the limitations of the community delivery model

### AIM

To integrate management of MAM into the implementation model

Throughout both phases of implementation, treatment has focused on treatment of SAM, community mobilisation and referral of complicated SAM cases to stabilisation centres. It excludes the management of moderate acute malnutrition (MAM). The adequate management of MAM is vital to prevent and lessen the incidence of SAM, and increased risk of morbidity and mortality. Historically, partners in South Sudan have found it difficult to achieve good programme outcomes with traditional food based approaches for MAM management without the presence of a general food distribution. However, the Ministry of Health South Sudan together with the Nutrition Cluster has formed a working group, which is producing guidelines for MAM management. This has shown some promising results.

Malaria Consortium plans to implement a Targeted Supplementary Feeding Programme pilot in two sites. One site in the community is at the returnee camp site of Apada. This site has extreme food insecurity and extremely high rates of malnutrition. The other site will be based in a health facility (primary health care centre) with a high patient load. The approach will be evaluated for its effectiveness and will compare the experience of community and facility-based sites. Based on the outcomes of the pilot the programme may be scaled up.

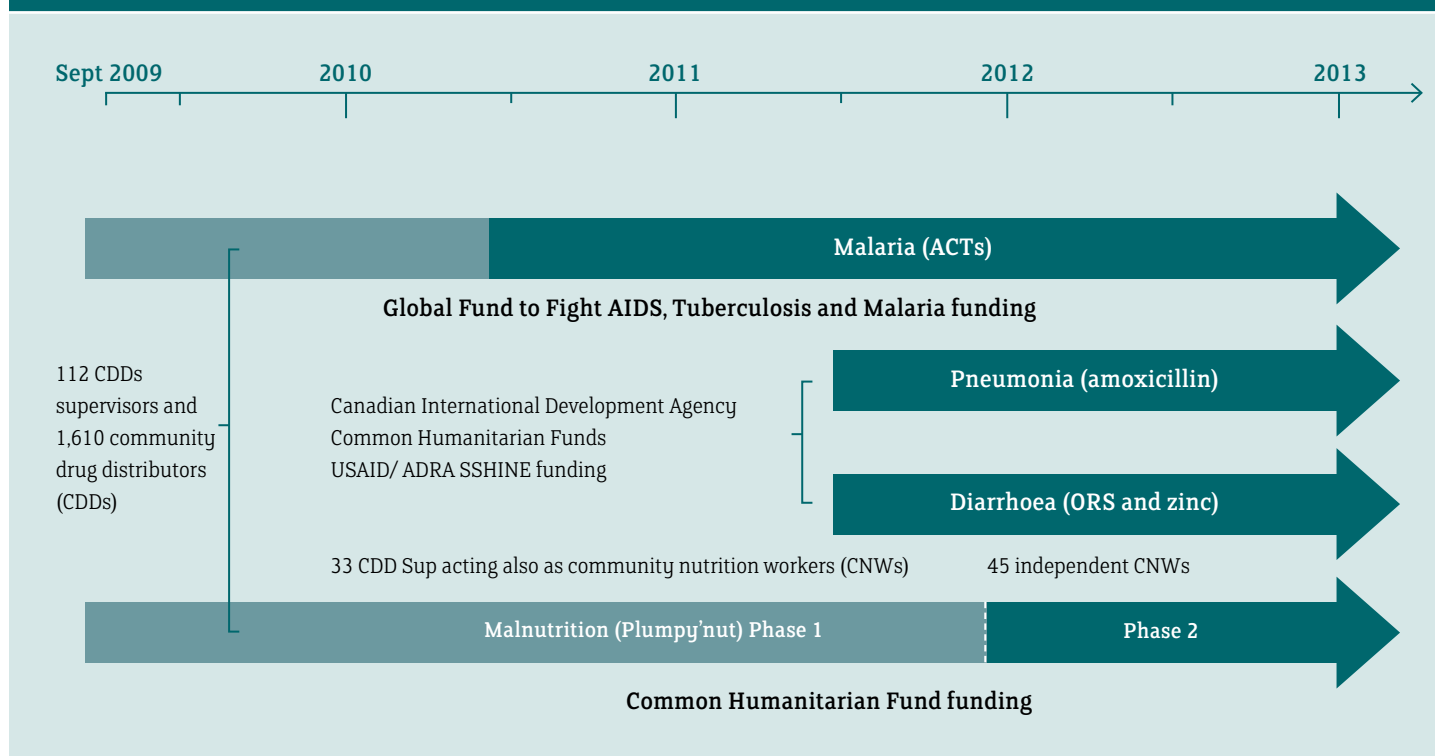
### RECOMMENDATION

Pilot some initiatives for management of MAM using the MoH recommended approach and consider linkages with other programmes (food security, livelihoods, WASH, etc) for other innovative approaches

### CMAM discharge outcomes explained

- **Cure:** a beneficiary who reaches the programme-defined discharge criteria
- **Defaulter:** a beneficiary who is lost to the programme before reaching discharge criteria, and whose actual status (dead, recovered, other) is not known. If the beneficiary has not attended the OTP for three consecutive visits they will be considered a defaulter
- **Death:** a beneficiary lost-to-follow-up who is reported dead by the family or by home visitors
- **Non-response:** a beneficiary who did not meet the discharge criteria after four months in treatment. During the treatment, these children would have shown signs of non-response to treatment and should be referred to inpatient care or for medical investigation

## ICCM implementation roll out - Northern Bahr el Ghazal



Children will only be discharged from the OTP if they show a 20 percent weight gain over two consecutive visits or have a green MUAC measurement

## Coverage

More than 90 percent of the target population is within less than one day's return walk (including time for treatment) of the programme site. Coverage is greater than 50 percent in rural areas, and 70 percent in urban areas and more than 90 percent in camp situations.

## Admissions

The OTP sites in NBeG were established in late 2010 to early 2011. The programme began to gain momentum after the referendum period in January 2011. In South Sudan there are also seasonal trends in malnutrition patterns. There is a 'lean period' before the harvest, which generally runs from March to June in which malnutrition rates reach their peak. The 'post harvest' period is from October to December where malnutrition rates are generally expected to drop. Established OTP programmes usually see this trend in admissions.

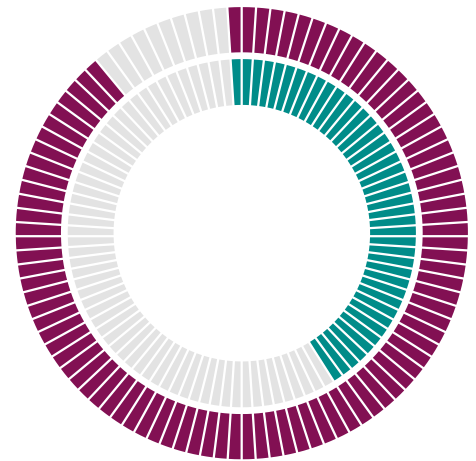
In the first year of implementation, 1,204 children were admitted to the programme. The majority of admissions were new admissions, with only two percent of admissions overall being readmissions. High numbers of readmissions would not be expected, though, as it was a new programme.

In the second year of implementation, 3,564 children were admitted, more than double those admitted in the first year, with two months of data yet to be collected. Six percent of cases were readmissions, suggesting that there are children who have been discharged from the programme relapsing into SAM. Admissions peaked dramatically in September 2012 as 12 new OTP sites were opened in Aweil Centre. This indicated that the previous eight OTP sites alone were not adequate.

### Quality of Treatment Delivered in the Programme

In Phase 1, the programme performance quality was extremely high, with an overall cure rate for the year of 94 percent, death one percent and defaulter rate of two percent, well within the SPHERE standards. In Phase 2, the overall performance was in line with the first year, with an overall cure rate of 89 percent, death rate of one percent and default rate of six percent

### Programme admissions and reporting rates, Phase 1 and 2, NBeG

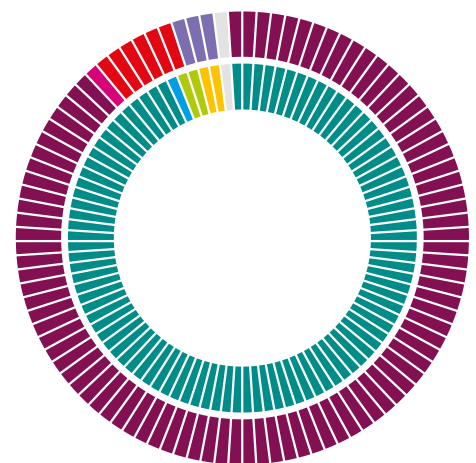


2011  
Total admissions 1,204 Reporting rate 42%

2012  
Total admissions 3,564 Reporting rate 90%

*Note: 2012 figures are missing November and December data*

### Discharge outcomes programme performance indicators. Phases 1 and 2, NBeG



2011	2012
94% Cured	89% Cured
1% Died	1% Died
2% Defaulter	6% Defaulter
2% Non Respondent	3% Non Respondent

*Note: 2012 figures are missing November and December data*

## Monitoring and evaluation

### AIM

To support the development of policy relating to community health, child survival and nutrition, based on the evidence gained through implementing the ICCM and nutrition programme

In the initial start-up phase of the programme, Malaria Consortium conducted the majority of the programme supervision and management with little involvement of the SMOH (State Ministry of Health) or CHD (Community Health Department). However, in order to build ownership, oversight and capacity within the MoH, a greater involvement in monitoring and management of the programme was required.

Malaria Consortium has developed a supervision framework for the ICCM teams that details key guidance including the frequency, content and approach for supervision visits. Learning from this, the programme is also developing a supervision framework for the nutrition team involving the CHD and SMOH in periodic supervision visits. This should also provide a bridge for greater integration between the health services delivered by MoH staff and nutrition treatment delivered by the CNW volunteers.

### RECOMMENDATION

Advocate to the Ministry of Health, donors and ICCM partners that SAM management is an effective and feasible aspect of ICCM delivery and should be included in policy frameworks where appropriate



In the lean period before the harvest in Northern Bahr el-Ghazal state (March to June), malnutrition rates are at their highest

## Routine reporting

### AIM

To integrate nutrition programme data through the same platform as the ICCM programme

In the first phase of implementation, the Malaria Consortium M&E team developed a database to collect key performance indicators for the programme: cure, death, defaulter and non responder rate, length of stay and weight gain. This allowed Malaria Consortium to report at a County level the performance of the programme to the MoH, UNICEF and the Nutrition Cluster using the standardised reporting tool developed by the Cluster.

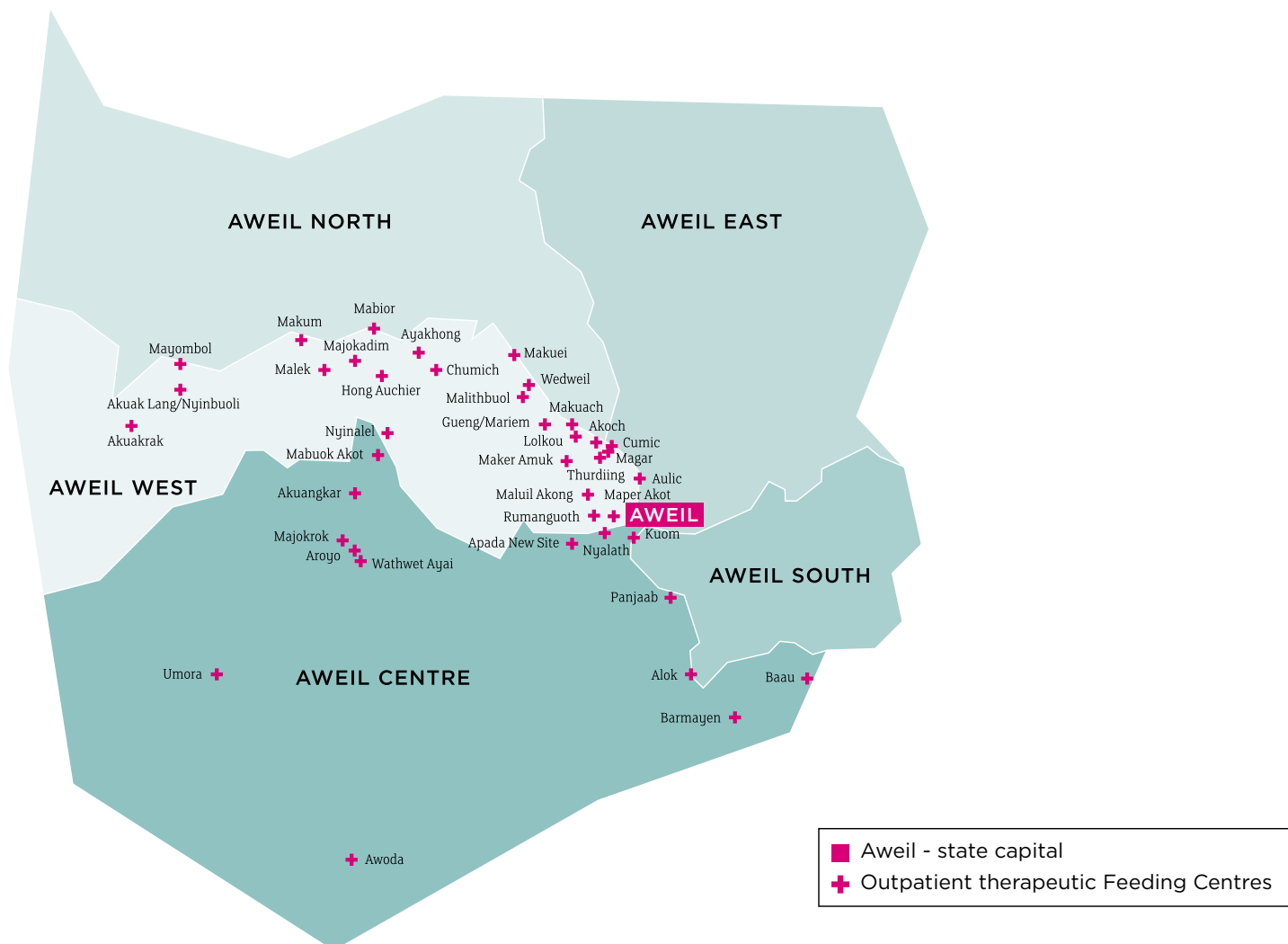
After a period of implementation, the programme staff found that it would be useful to have additional information recorded and reported such as proportions of returnee or host population admissions. Also, a District Health Information System (DHIS) database

had been developed by the consortium of ICCM partners, which allowed community level treatments to be reported to the MoH and donors using the same platform as the facility-based Health Management Information System (HMIS).

Following the success of the ICCM DHIS database, Malaria Consortium set about developing a DHIS database for the nutrition programme. This supported a higher level of analysis of programme data than previously possible with the original database. It could also potentially be used by other partners who are hoping to report at the facility/OTP level.

### RECOMMENDATION

Develop a DHIS database for nutrition programme monitoring



## Case study #2

Name **Ayak Mangok**

Personal info **Care giver whose child received treatment**

Address **Malithbuol Village, Gumjur East Payam, Aweil West County**

<p>Ayak Mangok, the mother of two-year old Akol Bol from Malithbuol village in Aweil West County, describes the care her child received at the Malaria Consortium outpatient therapeutic feeding site.</p>	<p><b>Can you describe the changes in your child since he started receiving treatment?</b></p>	<p>There are many patients seeking care during OTP days and this delays treatment for patients with more serious cases at home. The lack of examination facilities at the OTP site to review some sicknesses and sometimes there not enough supplies for the patients.</p>
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**Can you describe what led you to seek treatment for Akol Bol at the OTP site?**

The first symptoms he had were a cough and convulsions. I took the child to Aweil Hospital for treatment, but he fell sick again. I returned with him to Aweil Hospital and was referred by Medecin Sans Frontiers staff to the Malaria Consortium OTP site.

**How long does it take you to travel from your home to the OTP site?**

It is a 30 minute walk.

**What impact do you think malnutrition has on your community?**

Malnutrition is a problem. It is why our children are getting sick and the time we spend caring for them interrupts our business and work activities.

**Have you experienced any challenges in accessing treatment?**

**How was your child before they started to receive treatment?**

Before receiving treatment my son was sick, very weak and thin, and couldn't play. But now after getting the treatment he is very healthy and playing actively, he looks strong and eats well.

**How long has your child been in the treatment programme?**

My child has been enrolled in the treatment programme for three months.



Community based OTP sites are usually under a convenient tree

## Surveys

At the time of writing, the South Sudan Nutrition Cluster and UNICEF encourage partners implementing nutrition programmes to conduct bi-annual SMART survey assessments using a standardised tool with two primary and three secondary objectives:

### Survey results – post harvest 2011

As Concern Worldwide was conducting a survey in Aweil West during this period, Malaria Consortium focused on Aweil Centre. The results showed extremely concerning malnutrition and mortality rates: the global acute malnutrition (GAM) rate was 17.7 percent - well above the WHO emergency threshold of 15 percent -

and the SAM rate was 5.3 percent. Similarly mortality rates were of great concern with the crude mortality rate extremely close to the emergency threshold for sub-Saharan Africa (0.78 per 10,000 per day compared to 0.8 per 10,000 per day). The under-five mortality rate was above the threshold for sub-Saharan Africa (2.23 per 10,000 per day compared to 2.1 per 10,000 per day). These rates of malnutrition and mortality would not generally be expected to be so high during the post-harvest period, when it is normally expected that food security should be at its highest and malnutrition at its lowest rate. Aweil Centre had experienced a large influx of returnees from Sudan during the referendum and independence period. They were living in camp-like situations and so had particular difficulties with food insecurity and vulnerabilities to infectious diseases.



Nineteen year old Akek Akol Maehol is a returnee from Sudan to Aweil West. Her two year old daughter is severely malnourished



## Survey results – pre harvest 2012

The primary objectives are to estimate:

- malnutrition rates through anthropometric surveys
- infant and crude mortality rates through retrospective mortality surveys

The secondary objectives are to assess key behaviours in the study group relating to:

- health and infant and young child feeding practices (IYCF)
- food security and livelihoods (FSL)
- water, sanitation and hygiene (WASH)

The surveys are intended to cover the whole county with the aim of capturing the variation between pre- and post-harvest malnutrition rates. This evidence should then provide information to assess the need for any alterations in programme approach.

After the initial Aweil Centre survey, it became apparent that the majority of the returnees were unlikely to move in the near future. Their underlying characteristics were fundamentally different from the host population. In the first survey they had been treated as one group but additional analysis showed that malnutrition rates and food security were different between the groups. Malaria Consortium conducted two different assessments. The results showed that both populations had malnutrition rates well in excess of the WHO emergency threshold of 15 percent for GAM (21.6 percent in Aweil Centre and 27.4 percent in Apada), providing clear justification that therapeutic programming is required to control excess mortality. Apada returnee camp in particular showed a worryingly high rate of SAM with almost one in 10 children having SAM (9.3 percent) and very poor food security indicators suggesting the need for a comprehensive emergency nutrition intervention including a general food distribution.

The results of these surveys were validated by the Nutrition Cluster's Technical Working Group and were widely shared with partners, including the MoH, UNICEF, World Food Programme and other NGOs operating in the state.

### AIM

To build organisational and Ministry of Health capacity to conduct surveys

Recognising that specialised skills involving both experience and technical training are required to conduct SMART surveys, Malaria Consortium recruited an external national consultant for the first post-harvest survey in 2011. However, as periodic assessments and surveys are required to monitor programme performance, Malaria Consortium invested in strengthening the organisation's ability to conduct surveys.

Malaria Consortium has worked with the MoH at county and state level for the planning and coordination of the surveys. Representatives from the MoH have also been involved in sensitising the communities about the survey and sharing survey results. There was a recognition that, in future, there is a need for greater involvement of the MoH in the data collection, data entry and analysis of surveys.

### RECOMMENDATION

Provide in-house training to conduct surveys and involve the county and state Ministry of Health in all aspects of the process

### AIM

To evaluate the performance of the programme as a whole

Malaria Consortium was conducting a new programme approach that other partners had not yet conducted in South Sudan, combining ICCM and nutrition. It was realised that it was necessary to have an evaluation of the effectiveness of the approach and to identify areas which needed improving.

Malaria Consortium conducted a two-week in-country programme evaluation to review the design, implementation and results of the programme over its first 18 months. The aim was to determine its efficiency, effectiveness, impact, sustainability and the relevance of its objectives. A programme evaluation report with clear recommendations was discussed with the in-country team for follow-up action. External programme evaluations will also be considered in the future.

### RECOMMENDATION

Conduct periodic programme evaluations at defined intervals to assess the overall effectiveness of the programme and identify areas that need to be improved

## Prevention strategies

### AIM

To provide appropriate and targeted preventive health and nutrition messaging through the community volunteers

The initial focus of both the ICCM and nutrition programmes was to ensure that treatment was delivered successfully. There was less focus on the preventive aspects of the programme, although simple health and nutrition messaging was delivered to caregivers while their children were receiving treatment in the programme. When Malaria Consortium revised the training materials for ICCM<sup>6</sup> in early to mid-2012, significant focus was put on strengthening the prevention messages that CDDs delivered to caregivers during consultation.

Moving forward, there will be qualitative assessments providing a better understanding of the barriers to healthy behaviour among individuals, communities and community structures. In addition to the messages at the point of treatment, there will be outreach services and messaging to reach the community before disease and malnutrition develop. As the diseases targeted through ICCM and malnutrition have similar and shared causes, there is value in addressing prevention in an integrated way.

### RECOMMENDATION

Conduct qualitative assessments to understand the barriers to healthy behaviours and develop the most effective mechanism to deliver integrated preventive health messaging using the ICCM community volunteer network

### AIM

To improve Vitamin A and deworming coverage in children under five in the areas of operation

South Sudan's Lot Quality Assurance Sampling survey showed low micronutrient supplementation (Vitamin A) and deworming coverage in Malaria Consortium's areas of operation despite the routine immunisation services delivered through the formal health system. Vitamin A supplementation for under-fives is one of the 'scale up nutrition' supported interventions and is included in the South Sudan Nutrition Cluster's strategy.

Malaria Consortium's ICCM programme design is to have full coverage in the counties of operation. It therefore presents greater potential for delivering biannual Vitamin A supplementation and deworming than other approaches. As the target group is children under five, it is also an ideal opportunity to conduct MUAC screening, and to refer children with SAM for treatment and to identify children with MAM for preventive interventions. Community volunteers with low levels of literacy are able to conduct the supplementation and basic reporting using pictorial based tally sheets.

### RECOMMENDATION

Use the community volunteer network supported through the ICCM programme to deliver Vitamin A, deworming and MUAC screening to under-fives

6. Malaria Consortium Learning Paper: Developing and implementing training materials for integrated community case management in South Sudan 2012  
<http://www.malariaconsortium.org/resources/publications/182/developing-and-implementing-training-materials-for-integrated-community-case-management-in-south-sudan>

## Stock and supply management

### AIM

To avoid stock-outs of ready to use therapeutic foods (RUTF) in the programme

In both Phase 1 and 2, the programme experienced stock-outs of RUTF. Stock-outs have serious implications for the programme, interrupting the treatment of children enrolled in the programme and jeopardising community trust and acceptance. Malaria Consortium introduced a series of measures based to lessen the risk of stock-outs.

- Establishing minimum stock levels at the OTP sites. In the first phase of implementation there was limited storage space (for one month) at the community OTP sites. In many cases, these were the homes of the CNWs. This meant the CNWs would only be provided with one month's stock which provided no buffer against limited access to the sites due to environmental factors such as floods or a sudden increase in beneficiaries. In the second phase, Malaria Consortium invested in developing improved storage facilities at the sites to allow for additional buffer stock to be stored.
- Improved mechanisms for reporting stock levels using the DHIS system. CNWs experienced great challenges in reporting on stock levels. In the first phase of implementation there was limited supportive supervision and training to support the development of these skills. This resulted in poor information being provided to the programme management team about the stock levels at the OTP sites. Following the introduction of the DHIS database and improved reporting tools, programme staff were better able to monitor stock usage and levels.
- Prepositioning supplies ahead of the rainy season. In South Sudan there are many challenges in reaching remote rural areas. The counties where Malaria Consortium operates experience extreme seasonal flooding for four to six months a year. Malaria Consortium used staff who had good local knowledge and local authorities to work in areas that were likely to be cut off by flooding. RUTF and other supplies were brought in to these areas ahead of the rainy season.

- Procurement of RUTF using alternative funds. In South Sudan RUTF is procured centrally through UNICEF and is provided to implementing partners. In late 2011, due to the influx of returnees and multiple humanitarian disasters in South Sudan, the RUTF supply in country was insufficient. This was resolved in 2012. To mitigate against the risk of national stock-outs, Malaria Consortium has now procured additional RUTF as a buffer stock.

### RECOMMENDATION

Ensure adequate storage at community level to accommodate minimum stock levels, together with swift and accurate reporting systems that allow spikes in admissions to be detected. Malaria Consortium introduced a series of measures based to lessen the risk of stock-outs.

### AIM

To minimise leakage and misuse of RUTF

Following the scaling-up of community treatment of SAM in South Sudan there have been reports of RUTF being sold in the local markets and not used for treatment as intended. The leakage of RUTF in to the markets is extremely damaging to the CMAM programming. In both phases of implementation, Malaria Consortium received some reports of RUTF being sold and misused by CNWs. In these cases Malaria Consortium worked closely with the local communities to replace the CNW concerned and reported these occurrences to the county health department and state MoH. Malaria Consortium worked with the state MoH to make a statement about the gravity and consequences of selling RUTF. The improved stock management reporting introduced through the DHIS database means there are now additional methods for monitoring stock usage.

### RECOMMENDATION

Work with local communities and the MoH to monitor, report on and take action if RUTF is being sold or misused

# Key lessons learned

## 1. OVERALL PROGRAMME STRATEGY AND IMPLEMENTATION IS RECOGNISED AND SUPPORTED BY PARTNERS IN COUNTRY

Since the inception of the programme, the MoH at all levels has been supportive of the addition of SAM management into the ICCM model. Other partners implementing ICCM will be adding on the component of SAM management as part of the existing package for treatment of diarrhoea, pneumonia and malaria.

## 2. THE MODEL DELIVERS HIGH QUALITY INDICATORS FOR TREATMENT

In both years of implementation, the quality of treatment provided has been consistently high and within the acceptable SPHERE minimum standards. Although coverage has not yet been evaluated it is expected that this will also be high because of the decentralised approach and high levels of community involvement.

## 3. THE INCREASED HEALTH FACILITY-BASED OTP SITES HAVE LED TO THE PROGRAMME REACHING MANY MORE CHILDREN

In a context where the MoH is unable to implement SAM treatment directly through their supported facilities, adding this component into the current health system using support from international NGOs has been effective.

## 4. SUFFICIENTLY WELL TRAINED, EXPERIENCED NUTRITION STAFF AT ALL LEVELS OF PROGRAMMING IMPROVES PROGRAMME PERFORMANCE

While the community and treatment aspects of the nutrition programme are relatively simple, and capacity to deliver these services can be quickly built, it is vital to have in-country experience and expertise in nutrition for the management aspects of the programme. The introduction of a senior national nutritionist to the programme and OTP officers trained and experienced in SAM treatment has resulted in improved supervision, treatment compliance and reporting.

## 5. REGULAR (QUARTERLY) REFRESHER TRAINING RESULTING IN BETTER COMPLIANCE WITH THE TREATMENT PROTOCOL AND REPORTING

Increased regularity of refresher training has resulted in improved compliance with treatment protocols and a massive increase in programme reporting rates, also linked to the increased supportive supervision. In a post conflict/low education context, it is extremely important to continue to provide a combination of 'on the job' and classroom refresher training.

## 6. REGULAR MONITORING AND ASSESSMENT OF THE NUTRITION SITUATION IS FEASIBLE IN THIS CONTEXT AND VALUABLE FOR DIRECTING PROGRAMME APPROACHES

Based on the new bi-annual SMART survey data, there is growing evidence about the ranges of malnutrition rates experienced in programme implementation sites. This is valuable as the area of operation involves a chronic emergency overlaid with spasmodic acute emergencies. It is necessary to have this background of evidence in order to decide if additional emergency intervention is required.

## 7. DEVELOPMENT OF THE HMIS SYSTEM HAS RESULTED IN EASY-TO-USE TOOLS FOR MONITORING PROGRAMME QUALITY AND HAS THE POTENTIAL TO BE INTEGRATED IN TO THE MOH SYSTEM

As the ICCM programme already reports using the HMIS system it would be beneficial to have nutrition data processed through the same platform. As nutrition is not yet included in the MoH's routine HMIS reporting system, the reporting system developed by Malaria Consortium could be integrated into this.

## 8. INDEPENDENT PROCUREMENT OF RUTF BUFFER STOCK PROVIDES THE PROGRAMME WITH PROTECTION AGAINST BREAKAGES IN THE NATIONAL SUPPLY CHAIN

Owing to the numerous logistical and access challenges in South Sudan, it is beneficial to have emergency stock prepositioned in programme implementation sites. Cooperation with the MoH and local communities is essential to ensure appropriate security and correct use of these supplies.

The Ministry of Health at all levels has been very supportive of the inclusion of SAM management into the existing community package for treatment of diarrhoea, pneumonia and malaria (ICCM)

ICCM trained community drug distributor, Nyidumo Uthur Uguak, is based in Aroyo, Aweil Centre. She shows her timer and beads for assessing child patients for pneumonia, but she also knows how to assess and refer children with SAM to the OTP



# Conclusion

This Learning Paper has highlighted the synergy and complementary nature of ICCM and nutrition programme approaches. While ICCM and the IMSAM have been implemented separately in South Sudan, Malaria Consortium's experience of combining the two approaches has proved an effective means of reaching more malnourished children in the community.

The addition of SAM assessment using the MUAC tape and oedema of the feet has been shown to be an acceptable additional activity for CDDs who are already carrying out ICCM activities. This has meant that these simple and quick techniques can benefit from the strong community base already in place, allowing large numbers of children to be screened, admitted to the programme and treated, with extremely promising outcomes.

The community base for ICCM and nutrition also provides a strong foundation for establishing preventive measures towards ensuring child survival. To date, this base has not yet been fully developed. More work is needed on how to build those linkages with BCC and other health interventions (e.g. vaccination and micronutrient supplementation vitamin A). Pre-hunger season or six-monthly regular house to house screening by CDDs could also be done.

The approach of delivering SAM treatment as part of the ICCM model has proven successful and supportive to the health system, by ensuring that health facilities are able to provide OTP services, while supplementary community-based treatment sites improve the reach of the programme to more remote areas. It has been embraced by the MoH at national, state and county level and fits within existing policy frameworks. There is potential for this approach to be included in new policy development currently underway in South Sudan.

Based on lessons learned by Malaria Consortium through integrating its ICCM and SAM programmes in South Sudan, this model has proven feasible, effective and acceptable, saving many lives of children under five. It is a model that can be replicated by other ICCM partners in South Sudan and elsewhere with sufficient government and donor support for implementation.

Malaria Consortium's approach to integrate ICCM and nutrition at the community level has been successful in strengthening preventive treatment that has helped save lives

Community based OTP treatment site in a remote village in Aweil West





# Recommendations

1.

## MALNUTRITION RATES

In a context such as South Sudan that experiences chronic emergency malnutrition rates, community management of SAM should be considered as an integral part of the ICCM delivery model. ICCM partners in South Sudan should consider scaling up their programmes to include community SAM management based on Malaria Consortium's experience.

2.

## COMMUNITY TREATMENT

Community treatment of SAM through ICCM should be included in the current policy development in South Sudan, specifically: ICCM Guideline and Strategy, Home Health Promoters and the final version of the government's IMSAM/CMAM guidelines. Careful consideration should be paid to investigating the most effective and sustainable way to motivate home health promoters.

3.

## MULTI-YEAR NUTRITION

In order to build and sustain capacity for the programme there is a need for longer term, multi-year nutrition funding for this approach. To date, the programme has only received short term, emergency funding which impedes the opportunity for sustained capacity building. Funding mechanisms should take a more developmental approach, in line with ICCM funding timeframes rather than short emergency funding. SAM may be considered by some donors as a response to famine situations but in the context of political instability, and chronic and recurrent food shortages such as exist in the Sahel belt of Africa, SAM will occur with high prevalence even when there is no acute emergency, such as in the Sahel region of Nigeria.

4.

## MINISTRY OF HEALTH

In order to support the Ministry of Health in the scale up of this approach there should be research conducted into the cost effectiveness of the programme and the relative cost compared to other implementation models currently practiced in South Sudan. This will help decision makers decide where to allocate resources.

5.

## MAM MANAGEMENT

Further exploration is required on how management of MAM could be incorporated into the model. This should be done through a series of evaluated pilots using food and non-food interventions both in the community and at health facilities.

6.

## KEY PROGRAMME QUALITY INDICATOR

Programme coverage should be evaluated for access and coverage as a key programme quality indicator showing if the programme is actually reaching those in need. It is expected that the decentralised delivery model will result in high coverage, a presumption supported in part by the low defaulting rates and death rates and high cure rate.



## **7. BUILDING LINKS**

Further work is required to build links that can be made with cross sectoral preventive interventions including WASH (especially improved hygiene), education, food security and livelihoods. This should be informed by conducting a nutrition causal analysis to understand the factors that lead to malnutrition which can, in turn, be targeted by interventions.

## **8. REFERRAL PILOT**

Based on the findings of the referral pilot, there is a need to scale up support for a community referral system linking outpatient to inpatient treatment for SAM and other serious and life threatening diseases.

## **9. RELAPSES**

With growing numbers of relapses being admitted into the programme in the second year, there is a need to conduct research into the longer-term outcomes of SAM treatment and possible related health or behavioural factors in the family by following up on patients post discharge.

## **10. COMMUNICATION PROGRAMMES**

Behaviour change communication programmes need to be developed, perhaps using a community dialogue approach<sup>7</sup> to see how much of the malnutrition is due to poor infant and young child feeding practices.

## **11. COMMUNITY LINKS**

In order to maintain strong links with the community and to ensure continued acceptance and support for the programme, there is a need to develop systems for community feedback and accountability.

## **12. COLLABORATION**

Implementing organisations need to work collaboratively with the Ministry of Health to strengthen its capacity to monitor and manage the SAM programme and to plan a strategy for the handover of responsibilities.

## **13. ICCM IMPLEMENTATION**

This approach should be considered and adapted for other country contexts where ICCM is being implemented and acute malnutrition is of public health significance.

# Malaria Consortium

Malaria Consortium is one of the world's leading non-profit organisations specialising in the comprehensive control of malaria and other communicable diseases – particularly those affecting children under five.

Malaria Consortium works in Africa and Southeast Asia with communities, government and non-government agencies, academic institutions, and local and international organisations, to ensure good evidence supports delivery of effective services.

Areas of expertise include disease prevention, diagnosis and treatment; disease control and elimination; health systems strengthening, research, monitoring and evaluation, behaviour change communication, and national and international advocacy.

An area of particular focus for the organisation is community level healthcare delivery, particularly through integrated case management. This is a community based child survival strategy which aims to deliver life-saving interventions for common childhood diseases where access to health facilities and services are limited or non-existent. It involves building capacity and support for community level health workers to be able to recognise, diagnose, treat and refer children under five suffering from the three most common childhood killers: pneumonia, diarrhoea and malaria. In South Sudan, this also involves programmes to manage malnutrition.

Malaria Consortium also supports efforts to combat neglected tropical diseases and is seeking to integrate NTD management with initiatives for malaria and other infectious diseases.

With 95 percent of Malaria Consortium staff working in malaria endemic areas, the organisation's local insight and practical tools gives it the agility to respond to critical challenges quickly and effectively. Supporters include international donors, national governments and foundations. In terms of its work, Malaria Consortium focuses on areas with a high incidence of malaria and communicable diseases for high impact among those people most vulnerable to these diseases.

[www.malariaconsortium.org](http://www.malariaconsortium.org)



Malaria Consortium is committed to a practical approach that integrates engagement between the community and health services, and national and global policy makers. It is an approach that is underpinned by a strong evidence base and driven by shared learning within and between countries

Aknot Aleu Wol and her son return home from visiting the community OTP site, Aweil West



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