Examining the feasibility of community health worker delivery of severe acute malnutrition treatment using an innovative simplified low-literacy protocol: Results from Nigeria

Olusola Oresanya, MD, MPH

68th ASTMH, National Harbor, Maryland

Presentation number: 1991

Content

- Introduction
- Review of evidence
- Study objectives
- Context
- Methodology
- Results
- Summary of key findings
- Challenges
- Recommendations

Introduction

The problem

- Globally,

- malaria, diarrhoea and pneumonia are the leading causes of death among   children under five, with malnutrition being an underlying cause in half of all cases

- undernutrition increases the frequency and severity of common infections in children and delays recovery, putting them at greater risk of death

- the World Health Organization estimates that 30–50% of severe acute malnutrition cases in under-fives are fatal.

- In Nigeria,

- acute malnutrition levels have remained alarmingly high at 5–10% since 2014

- about 2 million children suffer from severe acute malnutrition

- the 2018 National Nutrition and Health Survey estimates that 7% and 1.5% of under-fives suffer from global and severe acute malnutrition respectively.

Access to treatment

- Only 20% of Nigeria's local government areas (LGAs) are covered by the nutrition programme led by the Ministry of Health.
- While these LGAs are concentrated in the north, GAM prevalence is as high as 6.8% in the southwest zone.

LGAs Covered by Nutrition Program
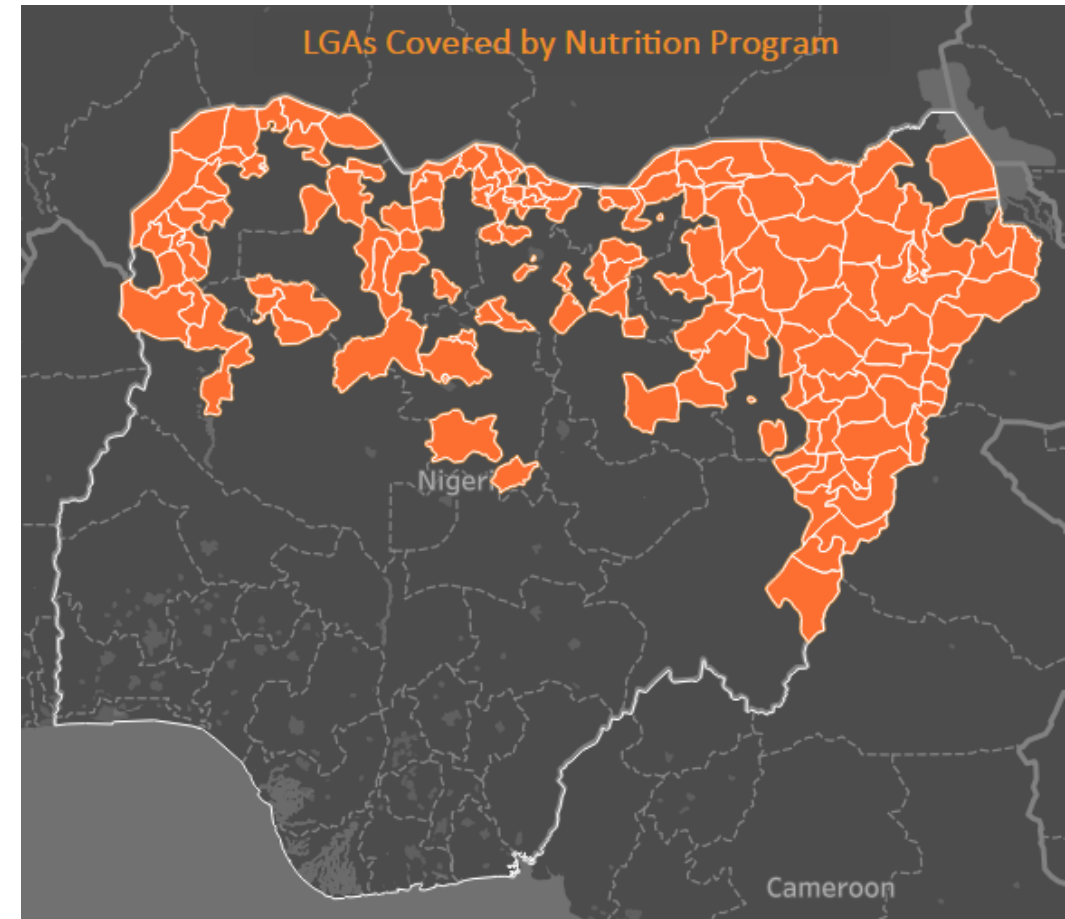
(Source: Unicef, 2019)

Review of evidence:
Increasing access through community intervention

Currently…

- Uncomplicated SAM cases are treated at outpatient therapeutic feeding sites (OTPs) that are usually based in hospitals and are only accessible to a subset of the population.

- Although integrated community case management (iCCM) is recognised as a strategy to increase access to life-saving treatment, malnutrition is not properly addressed in iCCM guidelines.

- A community delivery model for SAM treatment beyond OTPs is urgently needed to achieve universal health coverage.

- However, there are concerns about the patients' safety, extra workload for the community health workers (CHWs) and effects on the quality of care provided.

Evidence on the safe treatment of SAM by CHWs

"With minimal training, CHWs are able to appropriately treat SAM in the community … without compromising treatment outcomes and can lead to improved access to treatment."

Evidence on the safe treatment of SAM by CHWs
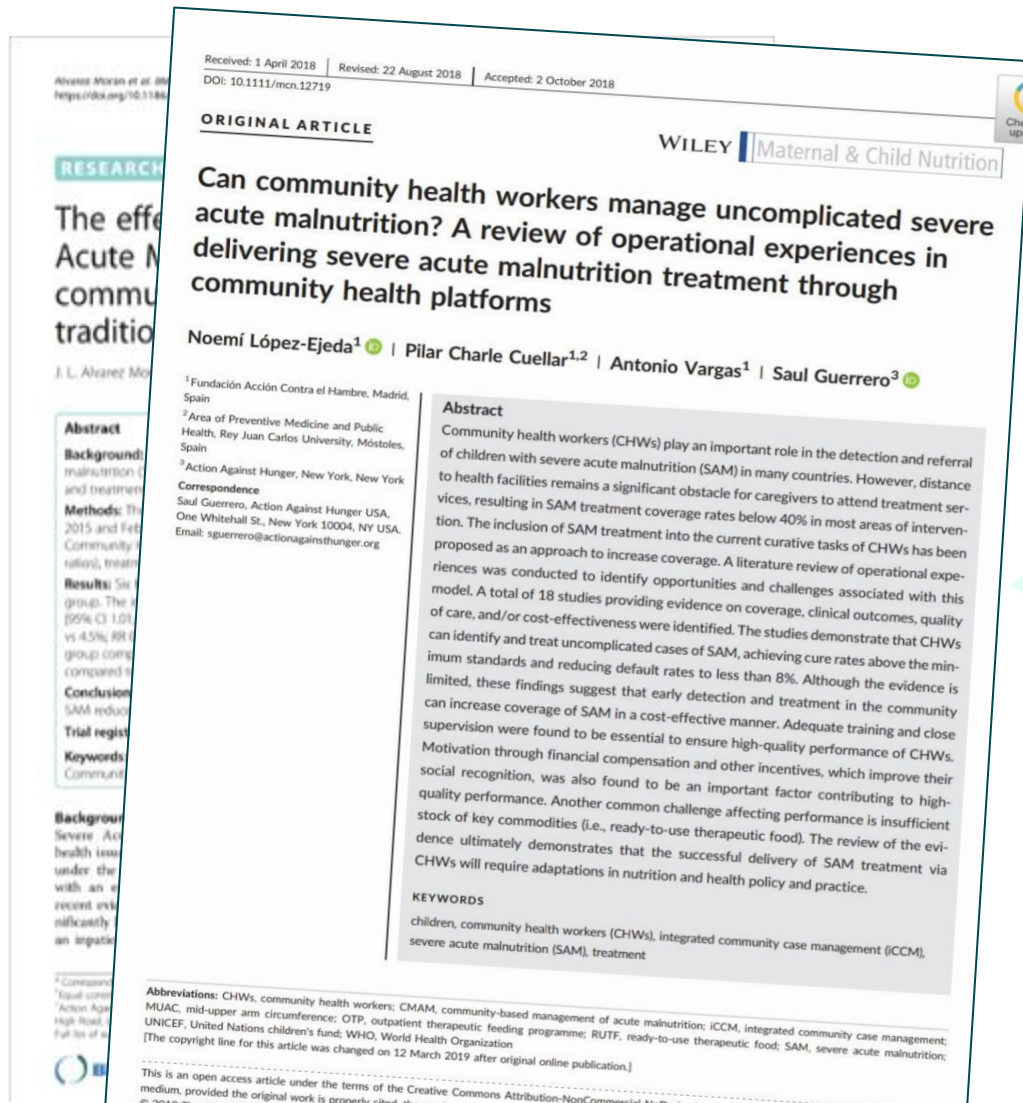
"The review of the evidence ultimately demonstrates that the successful delivery of SAM treatment via CHWs <u>will require adaptations in nutrition and health policy and practice</u>."

Evidence on the safe treatment of SAM by CHWs

Wiley Online Library

Read the full text > | About

Maternal & Child Nutrition / Volume 9, Issue 1

Original Article

Quality of care for severe acute malnutrition delivered by community health workers in southern Bangladesh

Chloe Puett ✉, Jennifer Coates, Harold Alderman, Kate Sadler

First published: 20 April 2012
https://doi.org/10.1111/j.1740-8709.2012.00409.x

Cited by: 21

"In this setting, well-trained and supervised CHWs were able to effectively manage cases of SAM. These findings suggest the feasibility of further decentralization of treatment from current delivery models for community-based management of acute malnutrition."

Evidence on the safe treatment of SAM by CHWs

Food and Nutrition Bulletin

Does Greater Workload Lead to Reduced Quality of Preventive and Curative Care among Community Health Workers in Bangladesh?

Chloe Puett, Jennifer Coates, Harold Alderman, more...   Show all authors ▼

First Published December 1, 2012 | Research Article

Check for updates

https://doi.org/10.1177/156482651203300408

Altmetric 0

Received: 1 April 2018 | Revised: 22 August 2018 | Accepted: 2 October 2018
DOI: 10.1111/mcn.12719

ORIGINAL ARTICLE

Matern Child Nutr. 2019;15:e12719.
https://doi.org/10.1111/mcn.12719

"This was one of the first trials adding the treatment of SAM to a CHW workload and suggests that adding SAM to a well-trained and supervised CHW's workload, including preventive and curative tasks, does not necessarily yield lower quality of care."

Justification and objective

- Although promising community delivery models exist, adapting them for low-literacy settings had not been studied widely.

- Malaria Consortium implemented a pilot study to determine whether CHWs could use simplified tools to treat SAM without medical complications.

Field Exchange

Can low-literate community health workers treat severe acute malnutrition? A study of simplified algorithm and tools in South Sudan

Summary of research [1]
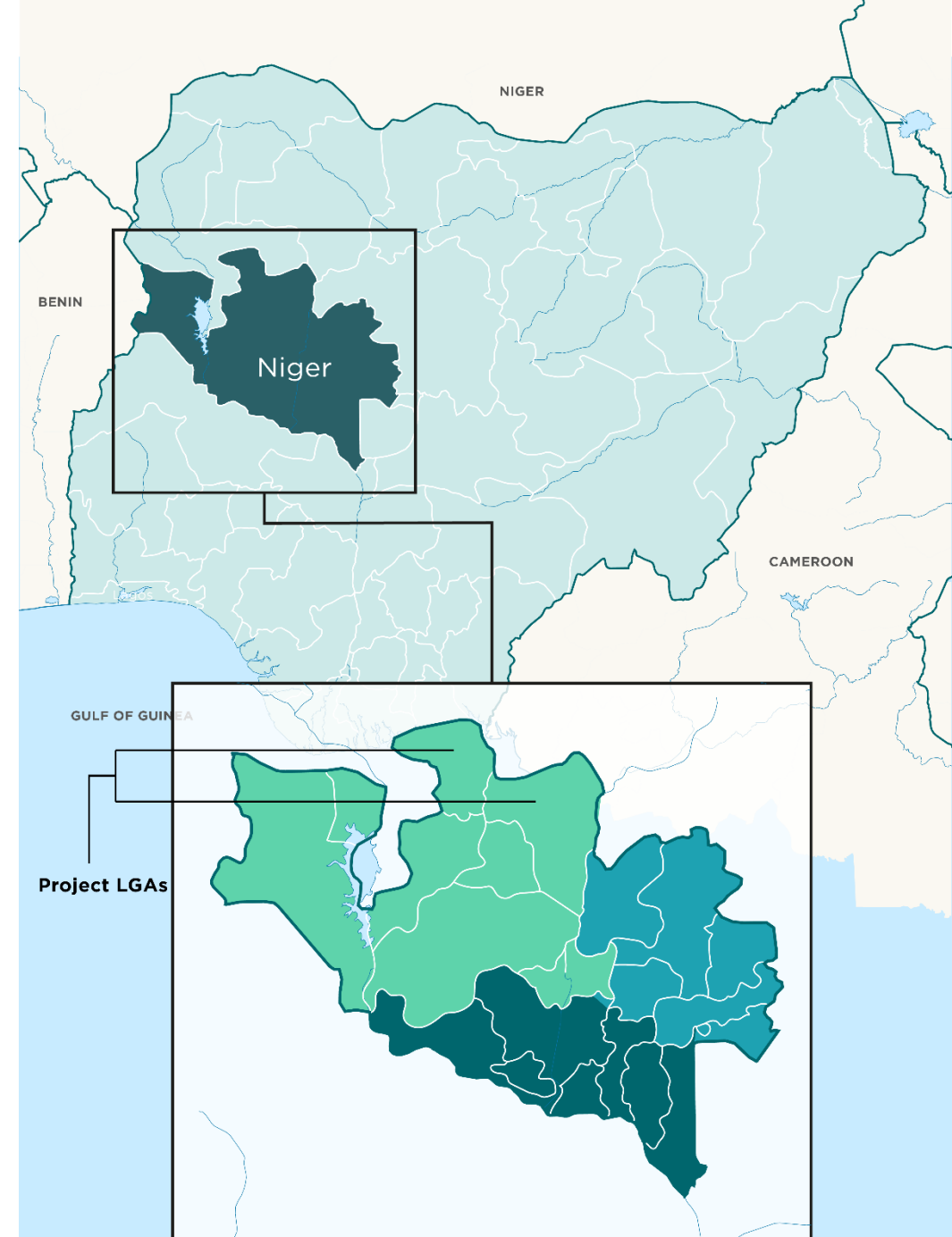
By Naoko Kozuki, Casie Tesfai, Annie Zhou and Elburg van Boetzelaer

The authors would like to acknowledge financial support from the Eleanor Crook Foundation.

Study area and context

- Niger state

- Total population: 5,586,003

- Literacy: 50% of the adult population

- Global acute malnutrition: 6.1%

- Severe acute malnutrition: 0.5%

- Moderate acute malnutrition: 5.6%

Methodology

Study design and sampling

- Feasibility and acceptability study, with qualitative and quantitative components

- Sample size: 176 eligible children sampled to test non-inferiority against the Sphere humanitarian standard of 75% recovery rate for SAM

- Training: 67 CHWs and 20 community health extension workers (CHEWs) already delivering iCCM were trained to use the simplified protocol and tools for SAM, and provided with job aids for treating co-morbidities.

- Implementation: seven months

- Supervision: CHEWs supervised the CHWs weekly for the first two months, then bi-weekly.

Enrolment into CHWs' SAM treatment

- Screening for danger signs followed the regular iCCM algorithm and appetite test.

- Admission to CHWs' nutrition treatment was based on the child's mid upper arm circumference (MUAC), measured with modified colour coded MUAC strip.
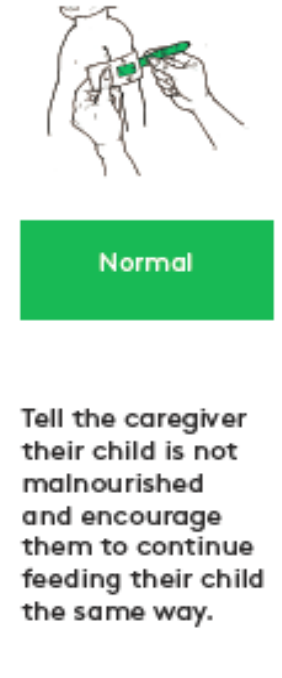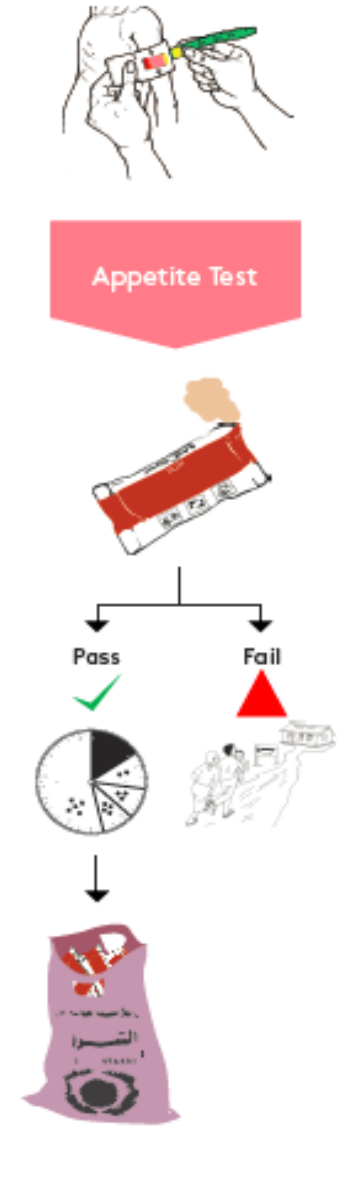
Simplified algorithm and tools for low-literate CHWs

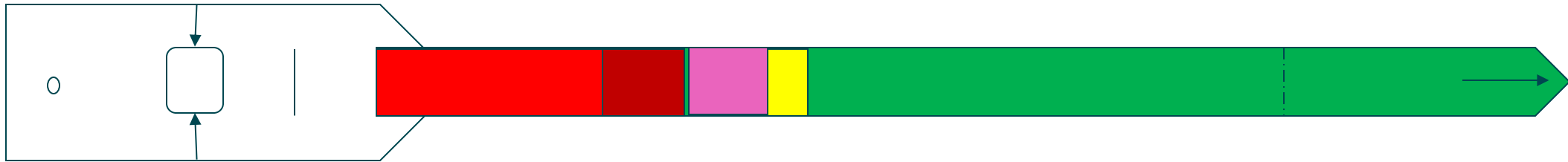# Simplified SAM Treatment Algorithm:

Red on MUAC

or other danger signs

Referral to Health facility

Appetite Test

Pass ✓ | Fail ▲

Appetite Test

Pass ✓ | Fail ▲

Nutrition Counselling

Normal
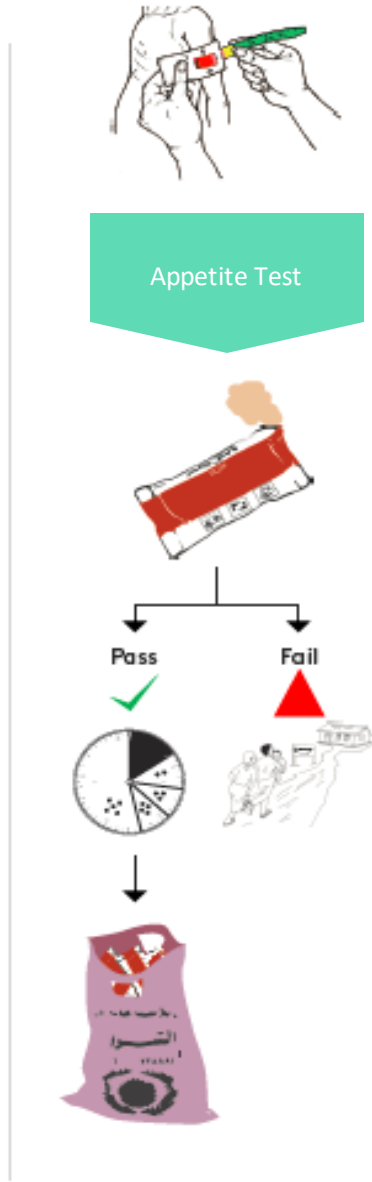
Tell the caregiver their child is not malnourished and encourage them to continue feeding their child the same way.

1. Simplified MUAC tape

Traditional tape		Revised tape	
Categories	Action	Categories	Action
Red: <11.5cm	Treatment at OTP	Red: <9cm	Refer to nearest nutrition clinic
		Dark red: 9 - <10.25cm	Treatment by CHW
		Pink: 10.25 - <11.5cm	Treatment by CHW
Yellow: 11.5 to <12.5cm	Nutrition counselling	Yellow: 11.5 - <12.5cm	Nutrition counselling
Green - ≥12.5cm	No treatment	Green - ≥12.5cm	No treatment

2. Dosage scale
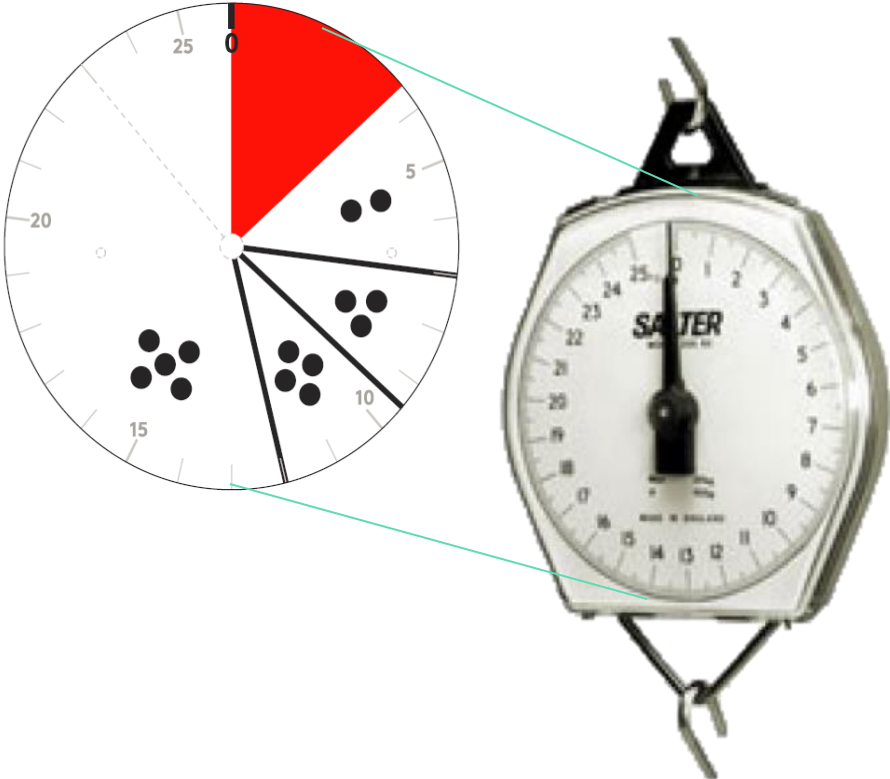
3. Dosage calculator
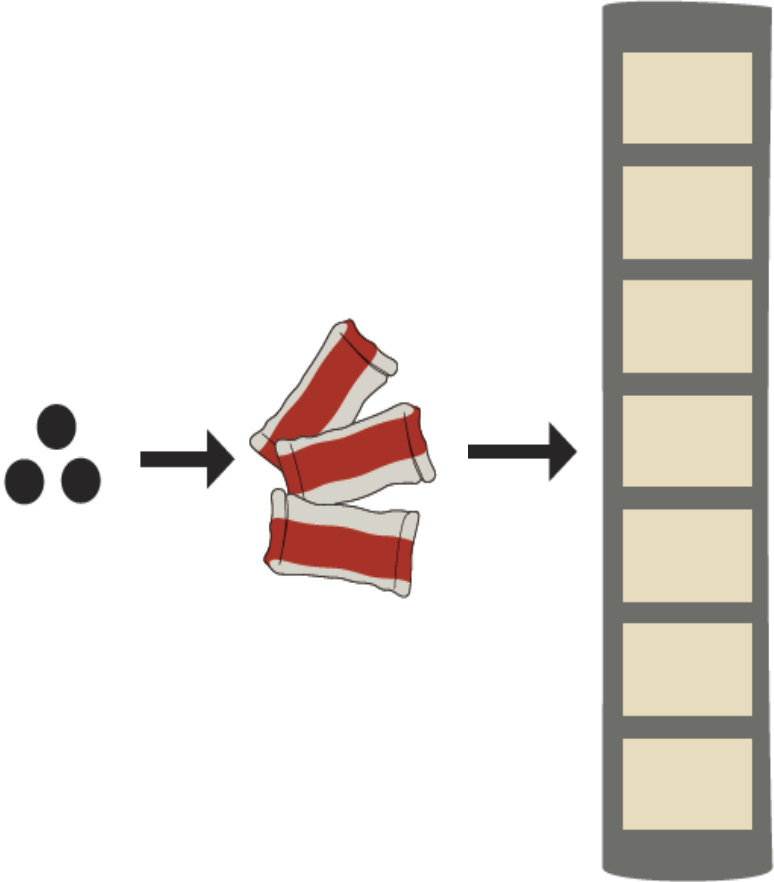
4. Flip chart

5. Patient register

Follow-up and discharge

Weeks 3–12: follow-up and discharge criteria

MUAC colour	CHW's action
Red	**Refer** to health facility
Two greens in a row	Recovered, **DISCHARGE**
Two missed visits in a row	Defaulted, **DISCHARGE**
MUAC is below admission MUAC	Deteriorated, **refer, DISCHARGE**
If never had two greens in a row in 12th week	Non-response, **refer, DISCHARGE**
Otherwise	Continue treatment

Study data collection and analysis

- Patients' information was collected — including sex, age and MUAC colour at enrollment — and focus group discussions and key informant interviews were held with CHWs and caregivers.

- Treatment outcomes (% recovered, % defaulted, % non-response, % death) and treatment time were calculated. Data were stratified by key characteristics such as the child's age and severity of malnutrition at enrollment.

- Test for one-sample non-inferiority against 75% Sphere standard, assuming 10% difference was done.

Results

Treatment outcomes by MUAC colour at enrollment

- At enrollment:
  - 303 children seen (data analysis N=288)
  - 20.1% in severe range (deep red)
  - 79.9% in less severe range (pink)

	Recovered	Non-response	Default	Referred
Deep red N=58	28 (48.3%)	5 (8.6%)	12 (20.7%)	13 (22.4%)
Pink N=230	152 (66.1%)	6 (2.6%)	42 (18.3%)	30 (13.0%)

- Median weeks until recovered: 6.5 (range 4–12 weeks)
  - 8 weeks (deep red) and 6 weeks (pink)

Overall treatment outcomes

	Without referrals in denominator	With referrals in denominator
Recovered	180 (73.4%)	180 (62.5%)
Non-response	11 (4.5%)	11 (3.8%)
Default	54 (22.0%)	54 (18.8%)
Referred		43 (14.8%)

*There was no record of deaths in the study

Summary of key findings

- The recovery rate was high (73 percent), which is close to the Sphere minimum standard for treatment of SAM (75 percent).

- The non-response rate was 4.5 percent, excluding referred cases.

- The median number of weeks needed for patients to recover was 6.5, which is average for nutrition programmes.

- The default rate was higher than expected. Caregivers deciding not to continue care, seeking care elsewhere or relocating were reported as some of the reasons.

- The programme was well-received by CHWs, who felt motivated by children's recovery and the community recognition they gained for having acquired the skills to treat children with SAM. They also listed free care and shorter distance to reach care as advantages for caregivers.

- Caregivers were positive about the pilot, having seen improvements in their children's health.

- The programme revealed that the prevalence of SAM in Niger state is likely much worse than estimated.

This study was implemented by Malaria Consortium in collaboration with the Federal and Niger State Ministries of Health as part of a multi-country study led by the International Rescue Committee with funding from the Eleanor Crook Foundation.

Thank you

www.malariaconsortium.org