Overview of Community-Based Management of Acute Malnutrition (CMAM)

Module 1. Learning Objectives

- Discuss acute malnutrition and the need for a response.
- Identify the principles of CMAM.
- Describe innovations and evidence making CMAM possible.
- Identify the components of CMAM and how they work together.
- Explore how CMAM can be implemented in different contexts.
- Identify national and global commitments relating to CMAM.

What is Undernutrition?

- A consequence of a deficiency in nutrients in the body
- Types of undernutrition?
  - Acute malnutrition (wasting and bilateral pitting oedema)
  - Stunting
  - Underweight (combined measurement of stunting and wasting)
  - Micronutrient deficiencies
- Why focus on acute malnutrition?

What is Undernutrition?

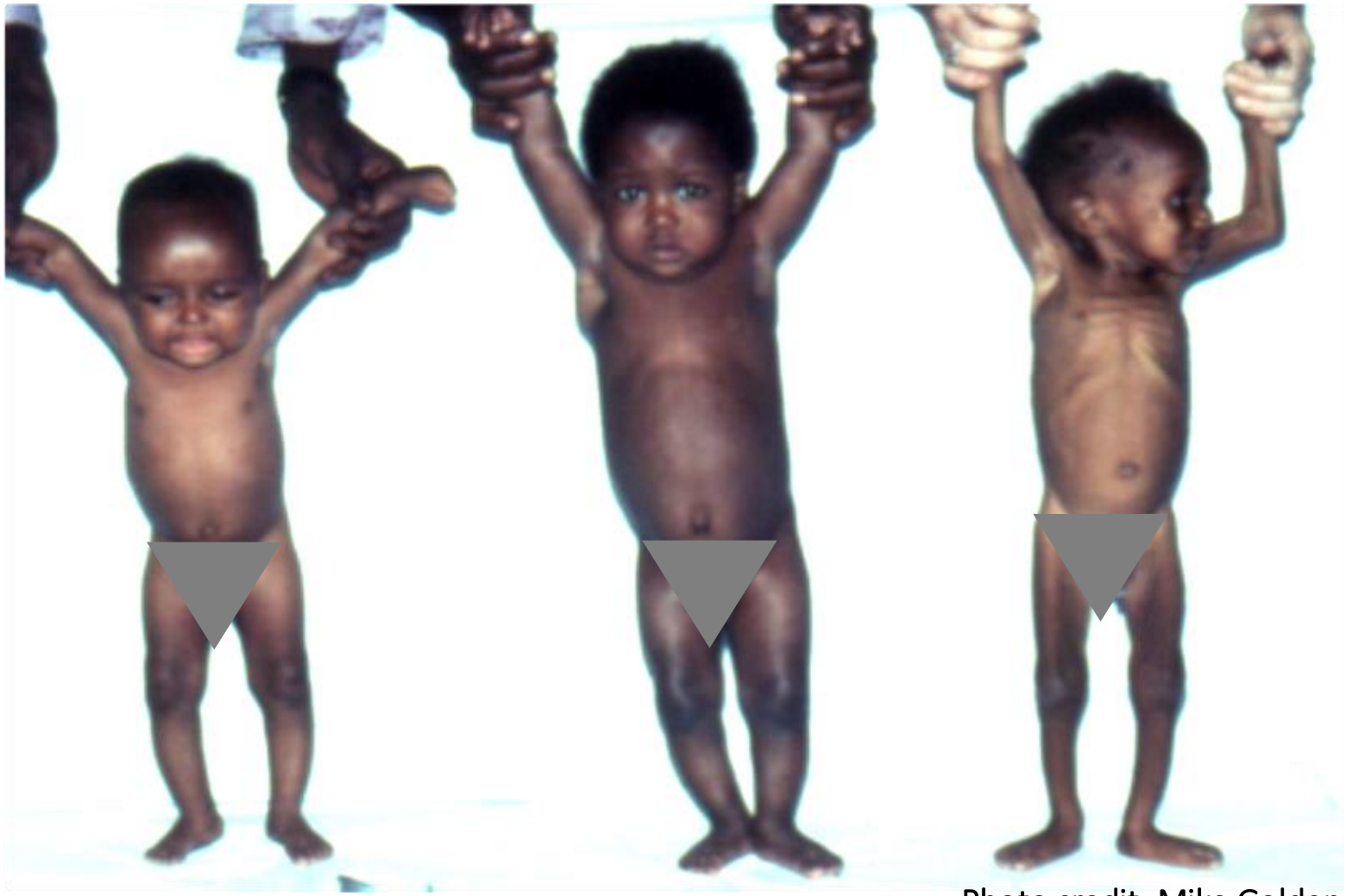
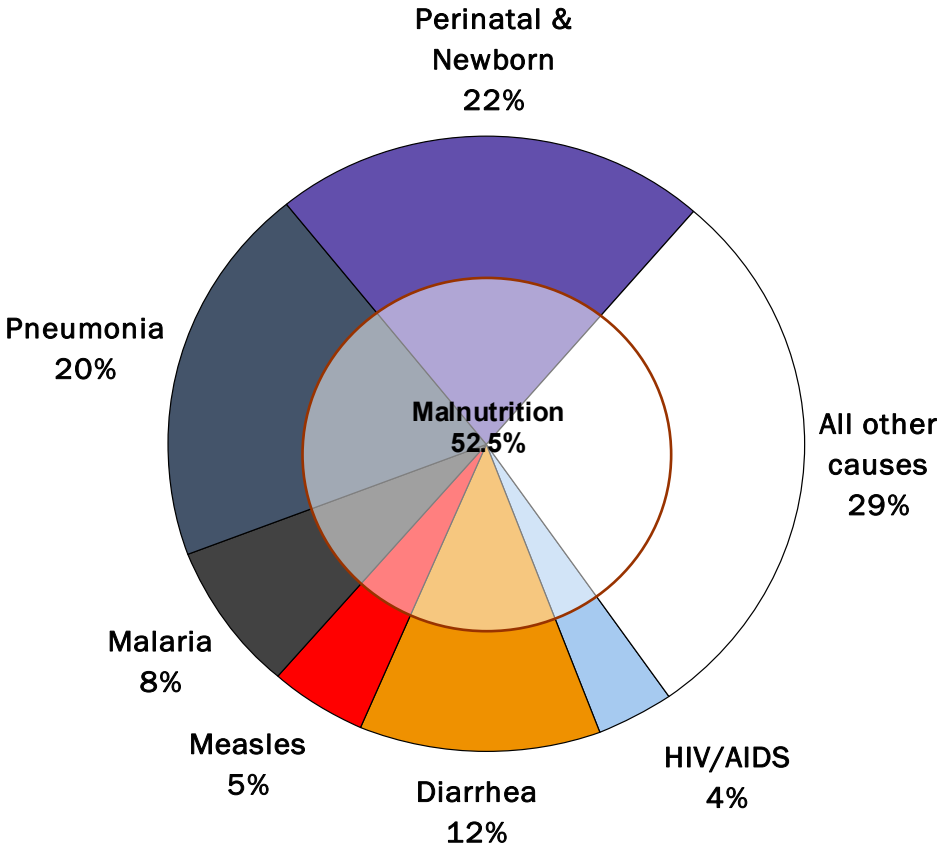


Photo credit: Mike Golden

Undernutrition and Child Mortality



- 52.5% of child mortality is associated with **underweight**
- Severe wasting is an important cause of these deaths (it is difficult to estimate)
- Proportion associated with acute malnutrition often grows dramatically in emergency contexts

Caulfied, LE, M de Onis, M Blossner, and R Black, 2004

Magnitude of 'Wasting' Around the World (2017) – not only in emergencies

Current wasting prevalence

Percentage of children under 5 wasted and severely wasted, Global, 2017

Current numbers wasted

Number (millions) of children under 5 wasted and severely wasted, Global, 2017

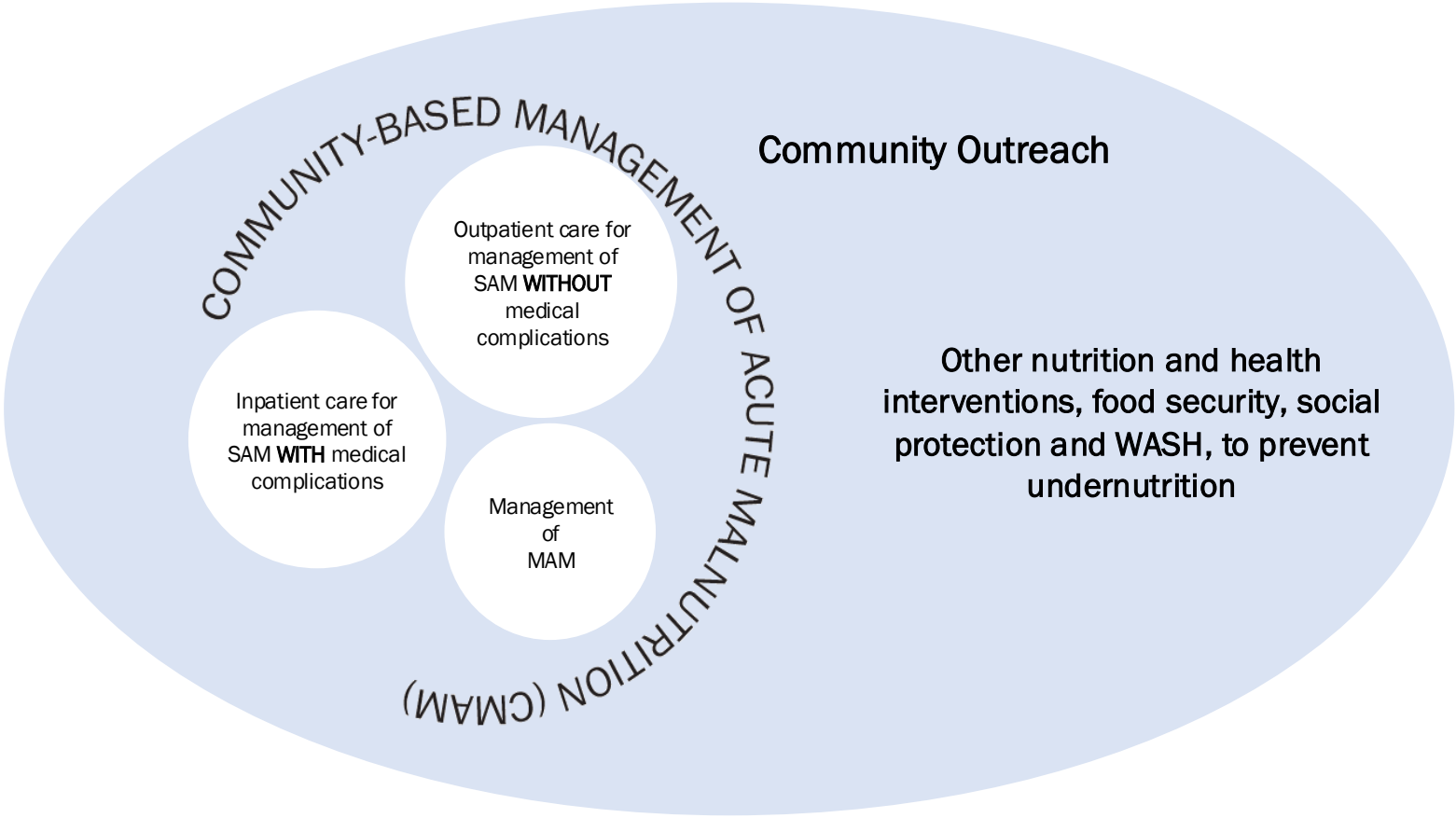
Source: UNICEF/WHO/World bank Group. Joint Child Malnutrition Estimate. 2017 http://datatopics.worldbank.org/child-malnutrition/

What Is Community-Based Management of Acute Malnutrition (CMAM)?

CMAM

- A community-based approach to treating acute malnutrition
  - Infants under 6 months and children 6-59 months with without medical complications are treated as outpatients at accessible, decentralised sites
  - Infants under 6 months and children 6-59 months with medical complications are treated as inpatients
  - Community outreach for community involvement and early detection and referral of cases
- Previously known as community-based therapeutic care (CTC)
- In some countries referred to as integrated management of acute malnutrition (IMAM)

Core Components of CMAM (1)



Core Components of CMAM (2)

1. Community Outreach:

- Community assessment
- Community mobilisation and involvement
- Community outreach workers:
  - Early identification and referral of children with SAM before the onset of serious complications
  - Follow-up home visits for problem cases
- Community outreach to increase access and coverage

Core Components of CMAM (3)

2. Outpatient care for children 6-59 months with SAM without medical complications at decentralised health facilities and at home

- Initial medical and anthropometry assessment with the start of medical treatment and nutrition rehabilitation with take home ready-to-use therapeutic food (RUTF)
- Weekly or bi-weekly medical and anthropometry assessments monitoring treatment progress
- Continued nutrition rehabilitation with RUTF at home

ESSENTIAL: A good referral system to inpatient care, based on Action Protocol

Core Components of CMAM (3)

- Infants under 6 months of age who are nutritionally vulnerable without medical complications can also be treated in outpatient care.
  - Initial medical, feeding and anthropometry assessment, counselling and feeding support is provided.
  - Weekly or bi-weekly medical, feeding and anthropometry assessment and monitoring of treatment progress
  - Continued counselling and feeding support

ESSENTIAL: A good referral system to inpatient care, based on Action Protocol

Core Components of CMAM (4)

3. Inpatient care for children 6-59 months with SAM with medical complications or no appetite, and nutritionally vulnerable infants under 6 months with medical complications.

- Infant or child is treated in a hospital for stabilisation of the medical complication
- Infant or child resumes outpatient care when complications are resolved

ESSENTIAL: Good referral system to outpatient care

Core Components of CMAM (5)

4. Services or programmes for the management of moderate acute malnutrition (MAM)

- Supplementary Feeding

Recent History of CMAM

- Response to challenges of centre-based care for the management of SAM
- 2000: 1st pilot programme in Ethiopia
- 2002: pilot programme in Malawi
- Scale up of programmes in Ethiopia (2003-4 Emergency), Malawi (2005-6 Emergency), Niger (2005-6 Emergency)
- 2007-2009 many agencies and governments involved in CMAM programming in emergencies and non-emergencies
  - E.g., Malawi, Ethiopia, Niger, Democratic Republic of Congo, Sudan, Kenya, Somalia, Sri Lanka
- Today CMAM is a globally accepted approach for the management of acute malnutrition and implemented in over 70 countries globally

Principles of CMAM

Maximum access and coverage

Timeliness

Appropriate medical and nutrition care

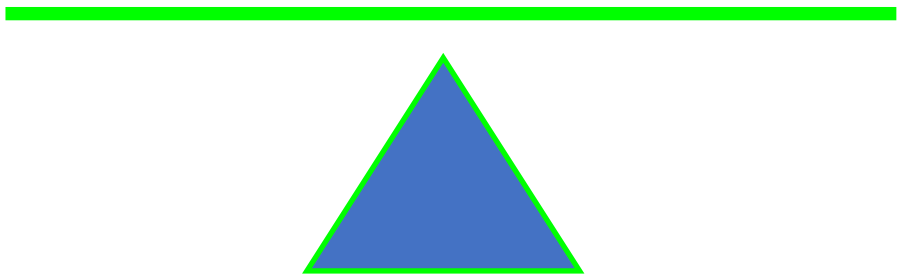
Care for as long as needed

Following these steps ensure maximum public health impact!

Maximise Impact for Focusing on Public Health

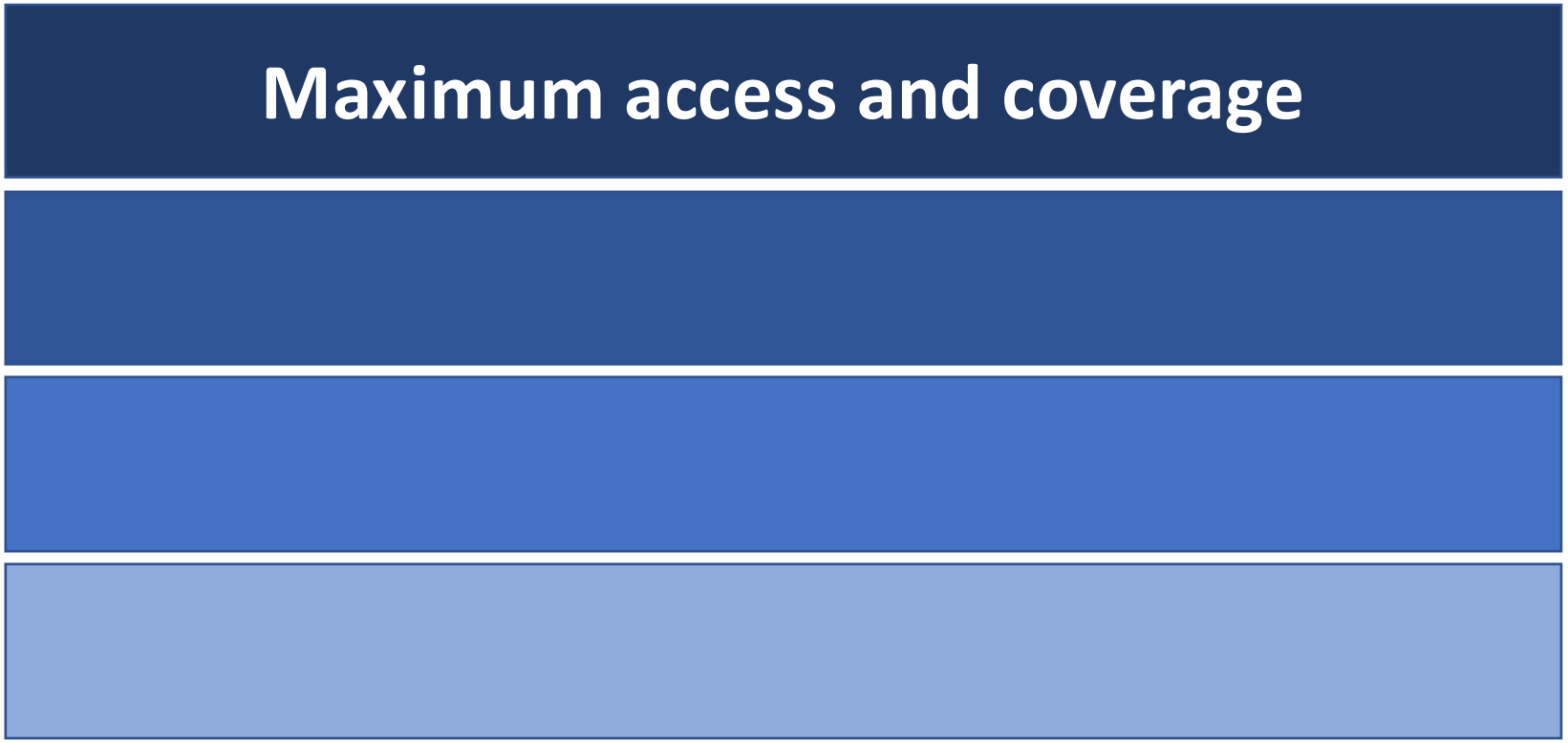
SOCIAL FOCUS **CLINICAL FOCUS**

Population level impact (coverage)

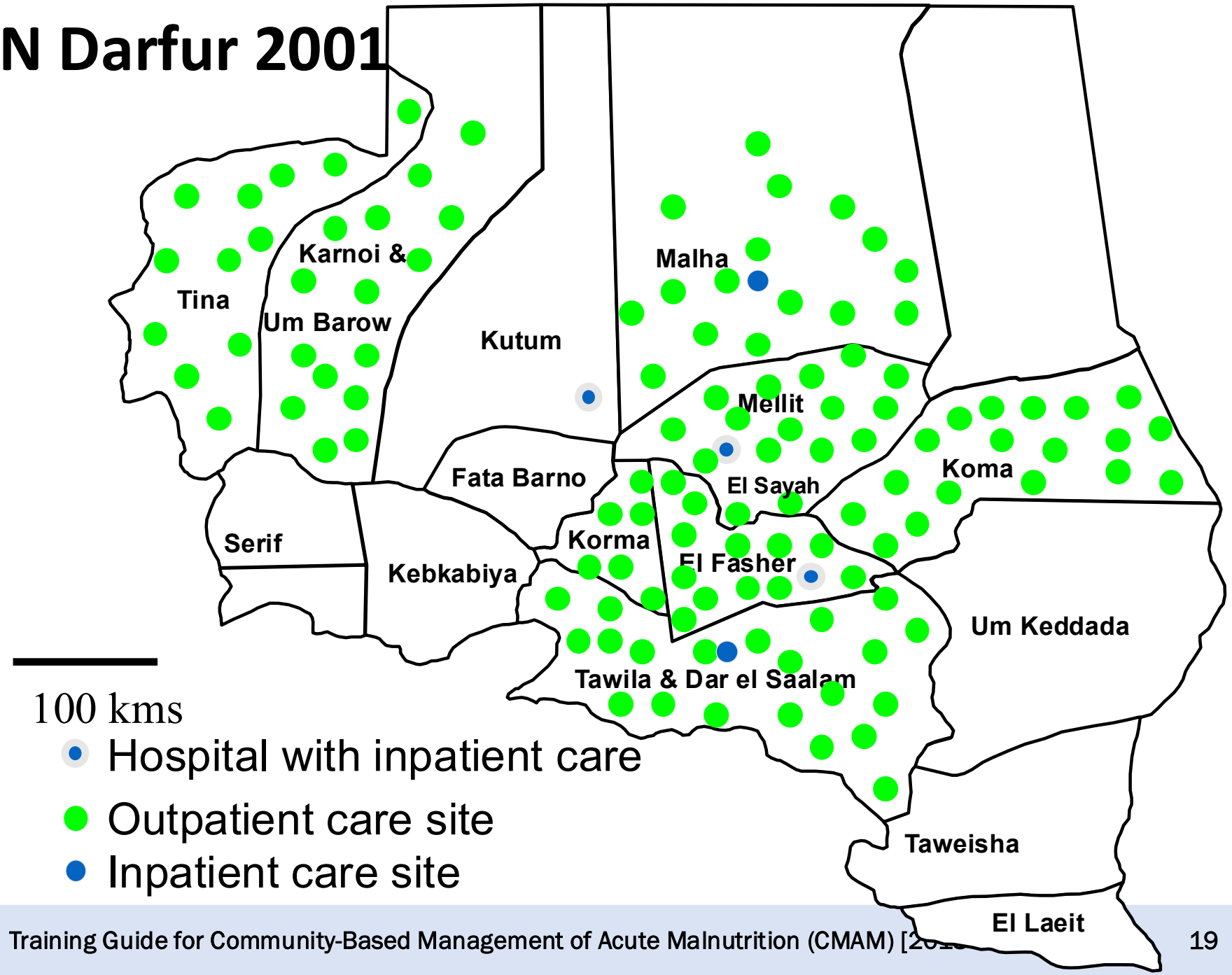


Individual level impact (cure rates)

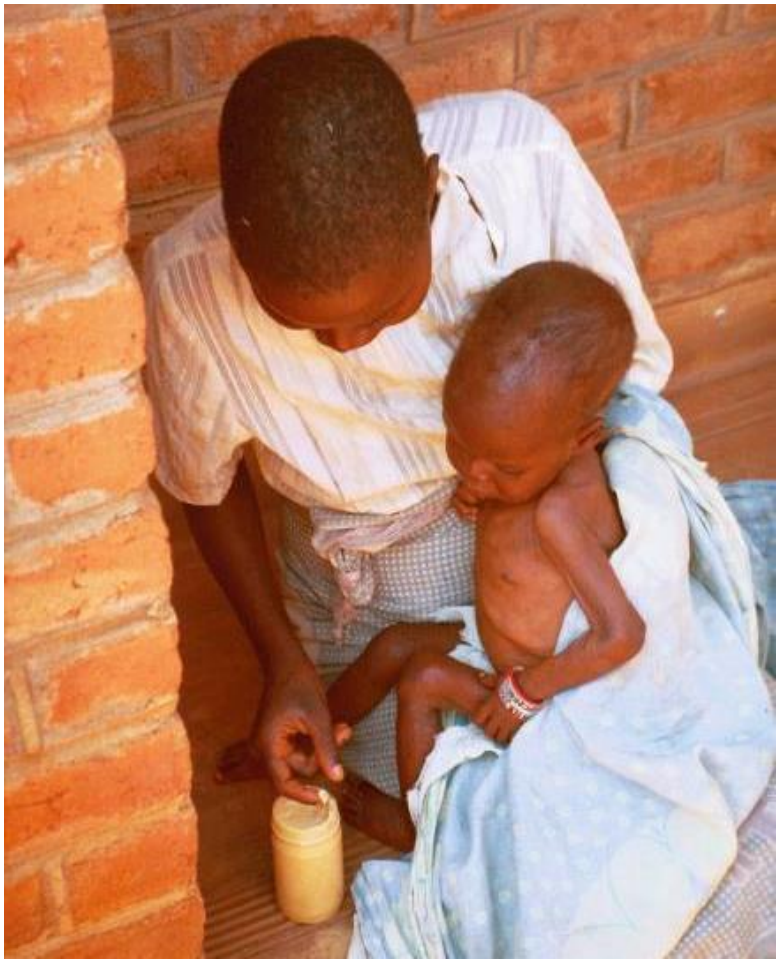
Key Principle of CMAM



N Darfur 2001



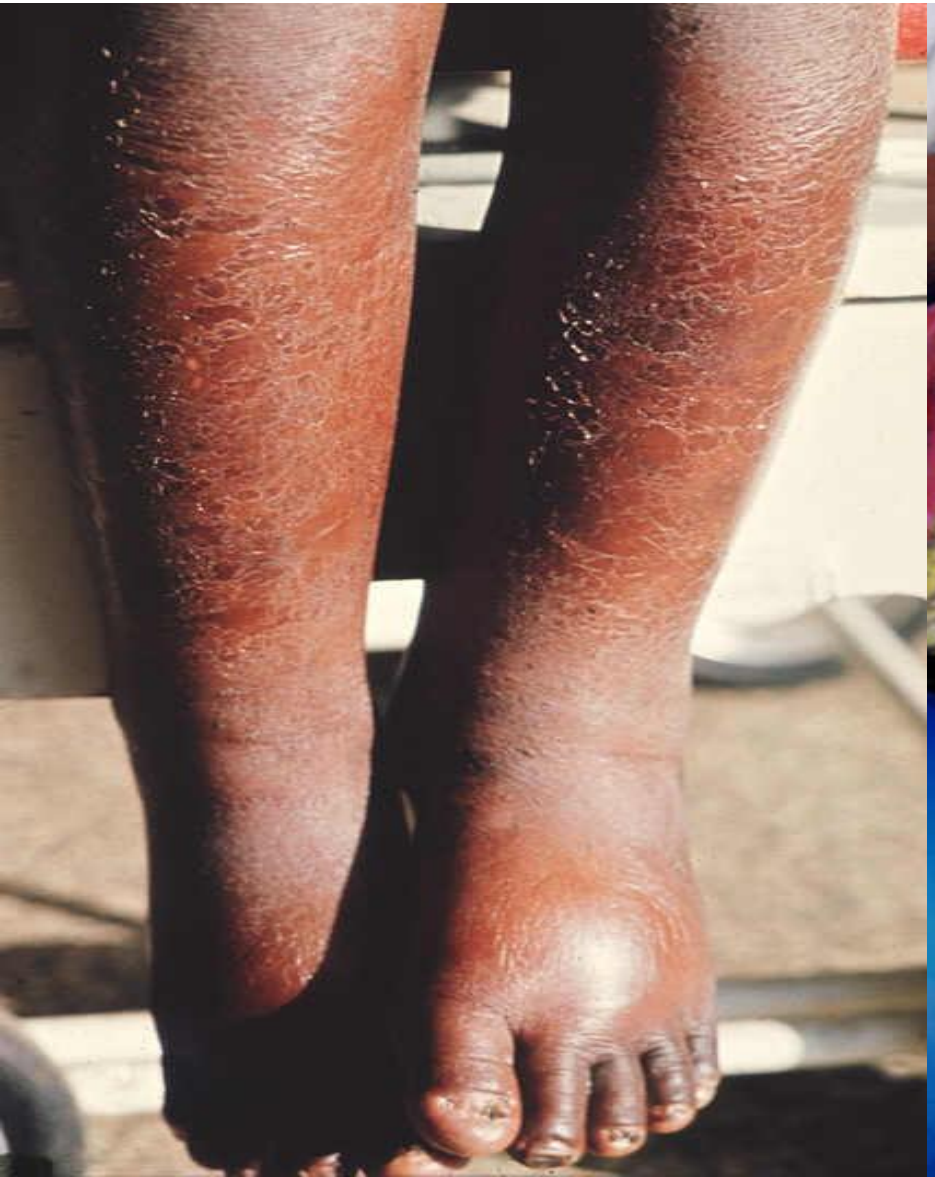
Bringing Treatment into the Local Health Facility and the Home

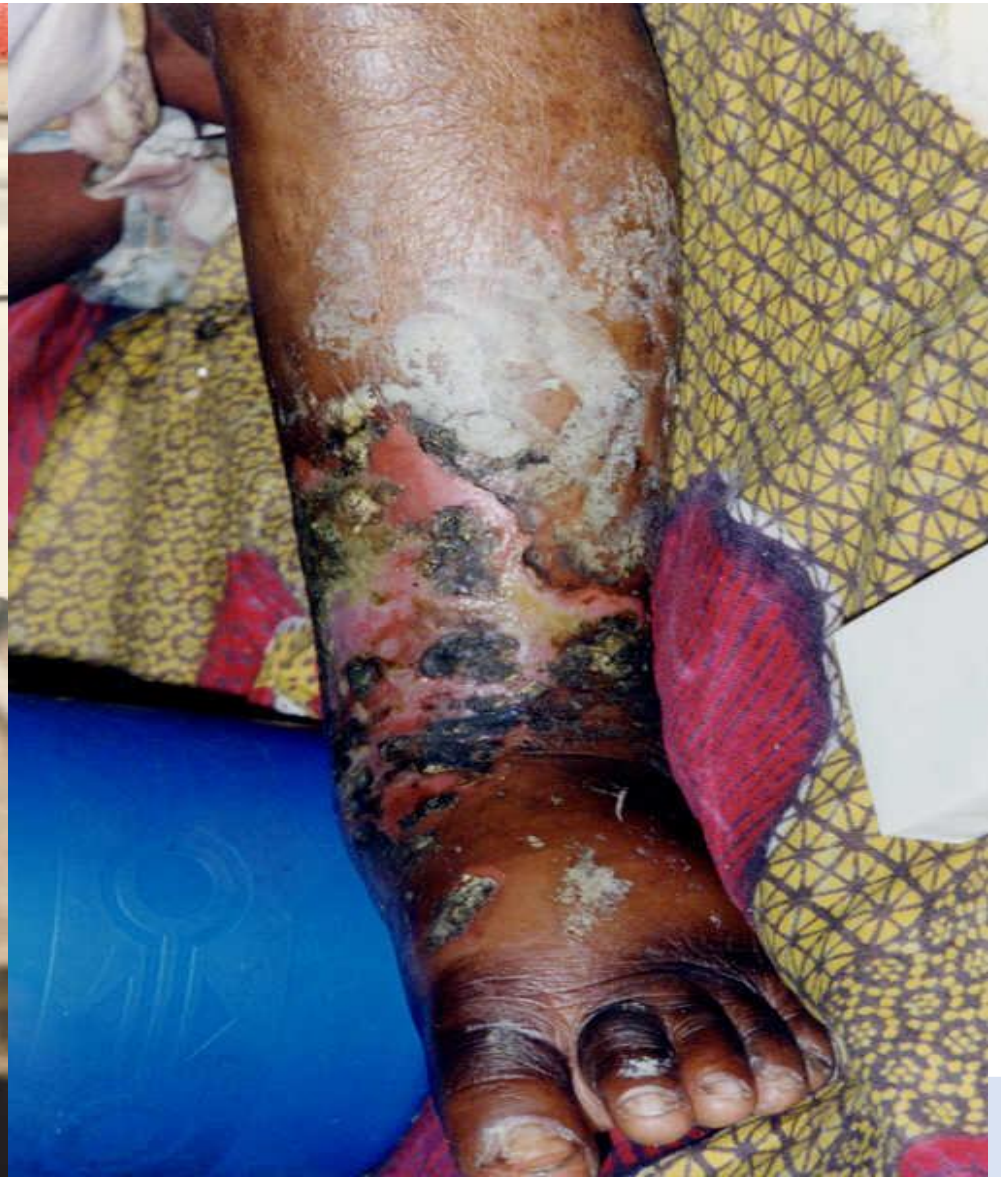


Key Principle of CMAM

Timeliness

Timeliness: Early Versus Late Presentation



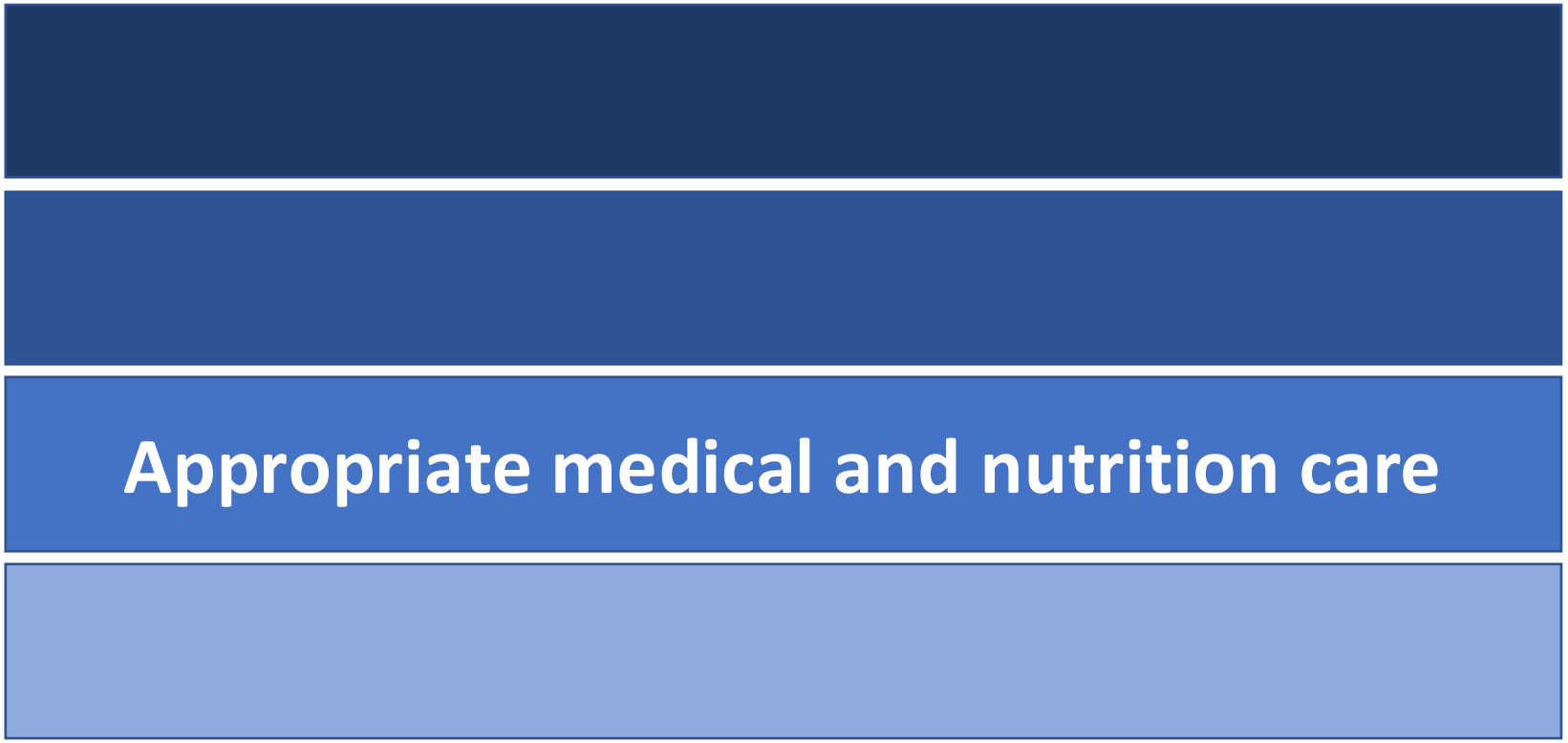


Timeliness (continued)

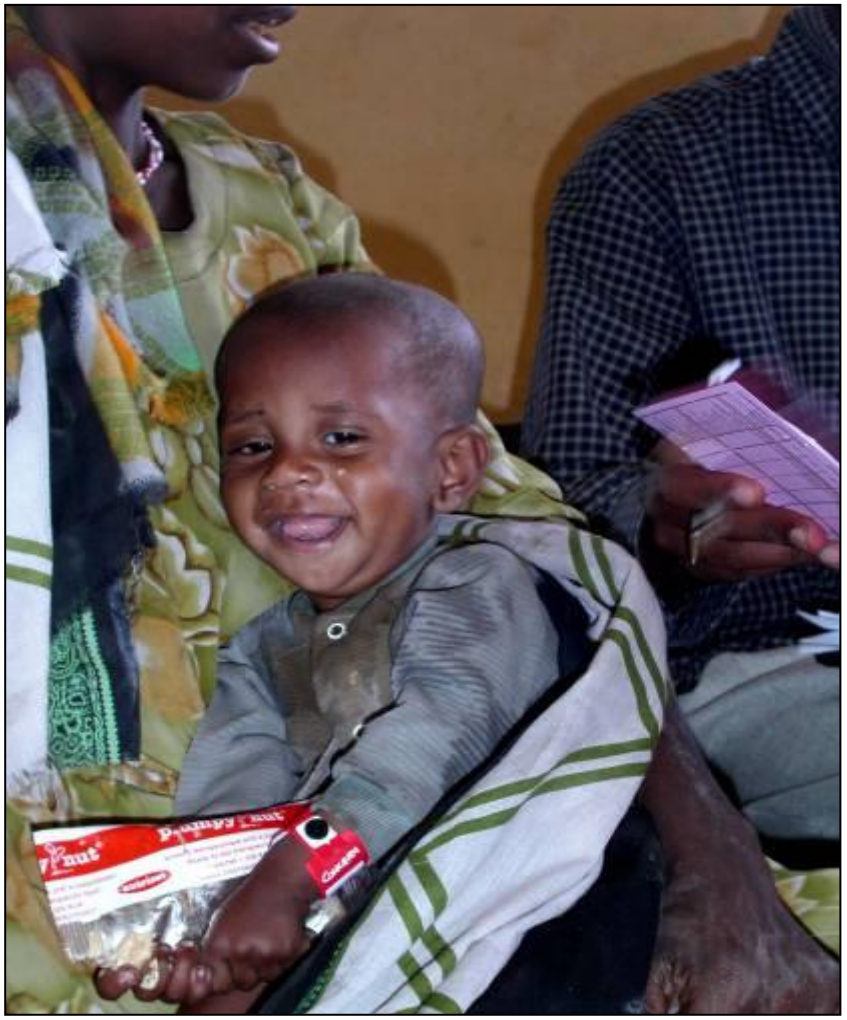
- Find children before SAM and medical complications arise
- Good community outreach is essential
- Screening and referral by outreach workers (e.g., community health workers [CHWs], volunteers)
- Screening and referral by mothers and family members

Catching Acute Malnutrition Early

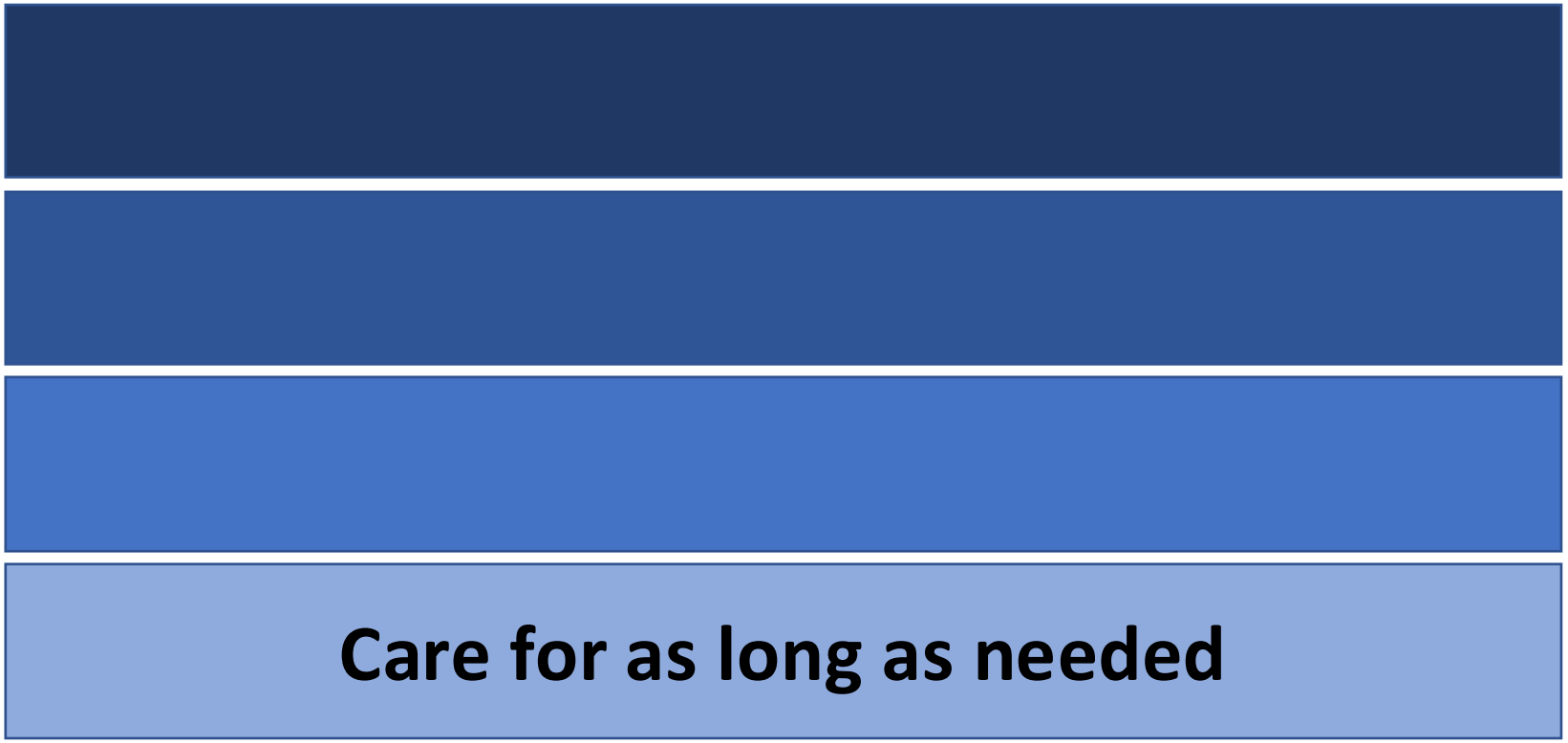
Key Principle of CMAM



Appropriate Medical Treatment and Nutrition Rehabilitation Based on Need



Key Principle of CMAM



Care For as Long as Needed

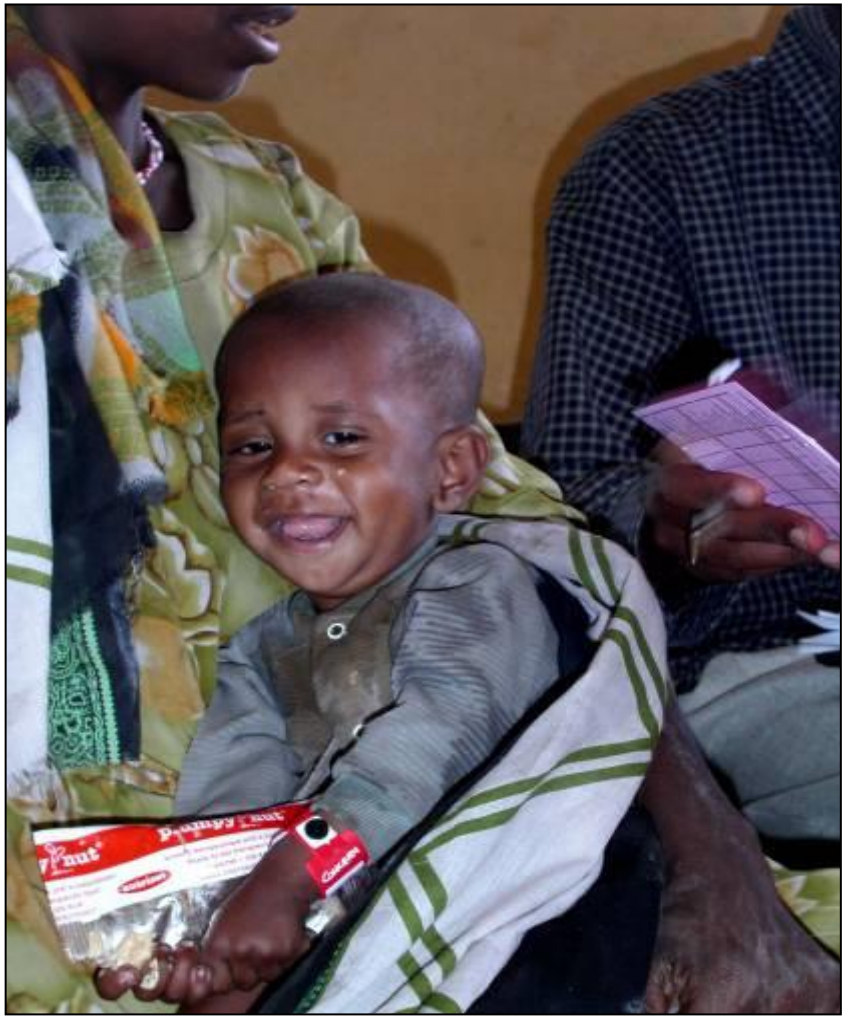
- Care for the management of acute malnutrition is provided as long as needed
- Services to address acute malnutrition can be integrated into routine health services of health facilities, if supplies are present
- Additional support to health facilities can be added during certain seasonal peaks or during a crisis

Innovations Making CMAM Possible

- RUTF
- Classification of acute malnutrition
- Mid-upper arm circumference (MUAC)

  Accepted as independent criteria for admission and discharge of SAM

Ready-to-Use Therapeutic Food (RUTF)



- Energy and nutrient dense: 500 kcal/92g
- Same formula as F100 (except it contains iron)
- No microbial growth even when opened
- Safe and easy for home use
- Is ingested after breast milk
- Safe drinking water should be provided
- Well liked by children
- Can be produced locally
- Is not given to infants under 6 months

RUTF (continued)

- Producers of RUTF include:
  - Nutriset France produces 'PlumpyNut®' and works with partners producing in 10 countries.
  - Valid Nutrition (Malawi)
  - Project Peanut Butter (Malawi, Sierra Leonne and Ghana)
- Ingredients for lipid-based RUTF:
  - Peanuts (ground into a paste)
  - Vegetable oil
  - Powdered sugar
  - Powdered milk
  - Vitamin and mineral mix (special formula)
- Additional formulations of RUTF are being researched

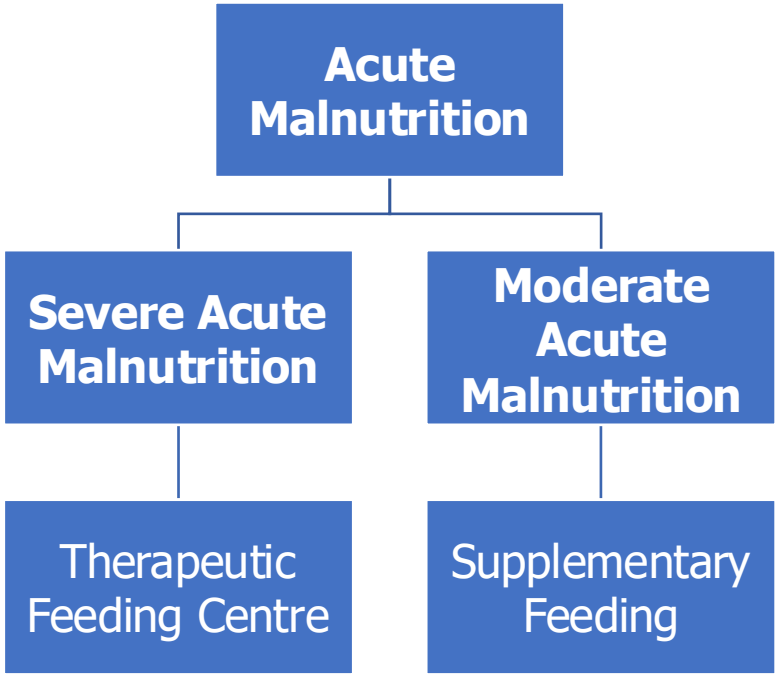
Local Production: RUTF

Effectiveness of RUTF

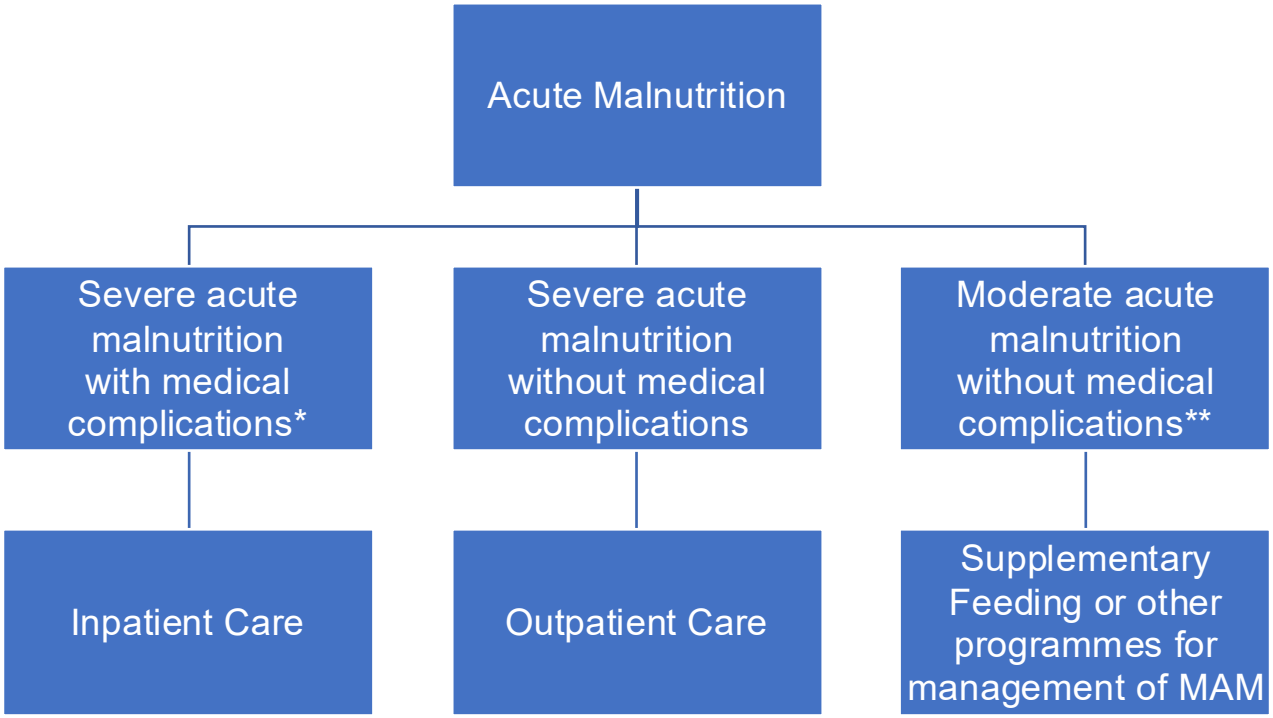
- Treatment at home using RUTF resulted in better outcomes than centre-based care in Malawi
  (Ciliberto, et al. 2005.)
- Locally produced RUTF is nutritionally equivalent to PlumpyNut®

  (Sandige et al. 2004.)

Old Classification for the Treatment of Malnutrition



Classification for the Community-Based Treatment of Acute Malnutrition

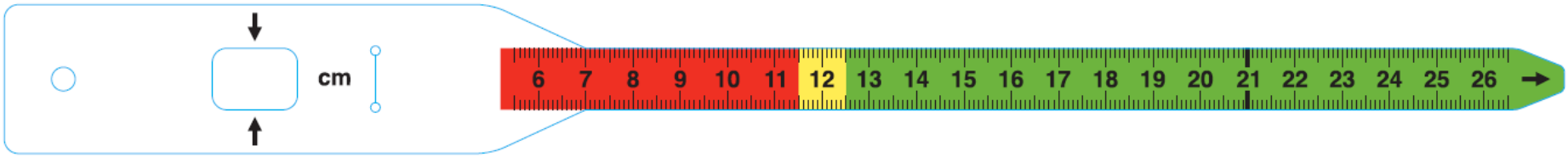


***Complications:** anorexia or no appetite, intractable vomiting, convulsions, lethargy or not alert, unconsciousness, lower respiratory tract infection (LRTI), high fever, dehydration, persistent diarhoea, severe anaemia, hypoglycaemia, or hypothermia, eye signs of vitamin A deficiency and skin lesions

**Children with MAM with medical complications are admitted to a programme for management of MAM e.g. supplementary feeding but are referred for treatment of the medical complication as appropriate

Mid-Upper Arm Circumference (MUAC) for Assessment, Admission and Discharge

- A transparent and understandable measurement
- Can be used by community-based outreach workers (e.g., CHWs, volunteers), mothers and family members for case-finding in the community



Screening, Admission and Discharge Using MUAC

- Initially, CMAM used 2 stage screening process:
  - MUAC for screening in the community
  - Weight-for-height (WFH) for admission at a health facility

  = Time consuming, resource intense, some negative feedback, risk of refusal at admission
- MUAC for admission and discharge from CMAM (with presence of bilateral pitting oedema, with WFH optional)

  = Easier, more transparent, child identified with SAM in the community will be admitted, thus fewer children are turned away
- Emerging evidence on the use of MUAC in **infants under 6 months**.
  - Classification cutoff has not yet been established.
  - Countries and programmes are encouraged to collect MUAC data for infants under 6 months to help build on evidence

MUAC: Community Referral

Components of CMAM

1. Community outreach
2. Outpatient care for the management of SAM without medical complications
3. Inpatient care for the management of SAM with medical complications
4. Services or programmes for the management of MAM

1. Community Outreach

Key individuals in the community:

- Sensitize communities on acute malnutrition
- Make treatment of acute malnutrition understandable
- Understand cultural practices, barriers and systems
- Dialogue on barriers to uptake
- Promote community case-finding and referral
- Conduct follow-up home visits for problem cases

Community Mobilisation and Screening

2. Outpatient Care

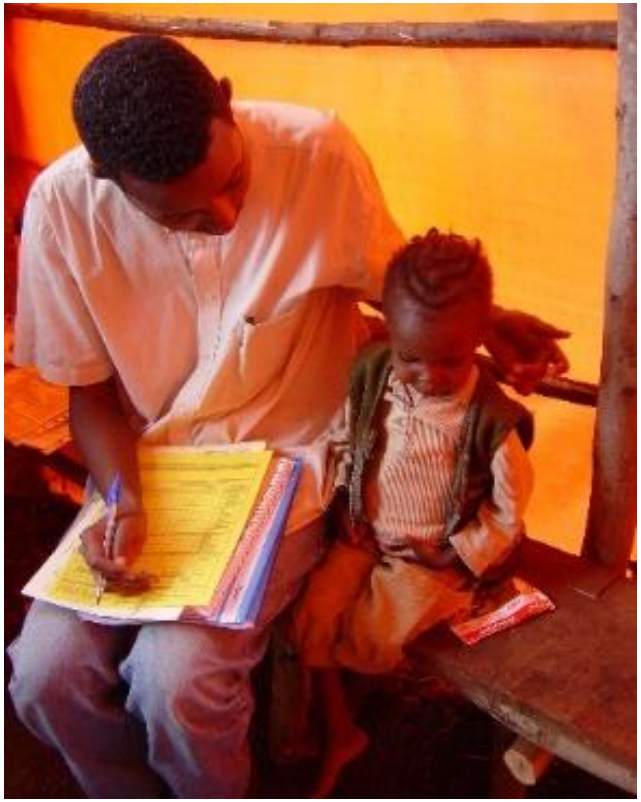
- Target children 6-59 months with SAM WITHOUT medical complications AND with good appetite
  - Activities: weekly outpatient care follow-on visits at the health facility (medical assessment and monitoring, basic medical treatment and nutrition rehabilitation)
- Also target infants under 6 months of age who are nutritionally vulnerable WITHOUT medical complication (i.e. moderate nutritional risk).
  - Activities: weekly outpatient care follow-on visits at the health facility (feeding assessment, medical assessment and monitoring, counselling and feeding support)

Clinic Admission for Outpatient Care

Outpatient Care: Feeding Assessment for Infant Under 6 months

Outpatient Care: Appetite Test for Children 6-59 Months

Outpatient Care: Medical Examination



Outpatient Care: Routine Medication

- Amoxycillin
- Anti-malarials
- Anti-helminths
- Measles vaccination

Outpatient Care: Counselling and Feeding Support for At-risk Mothers and Infants Under 6 Months

RUTF Supply for Children 6-59 Months

3. Inpatient Care

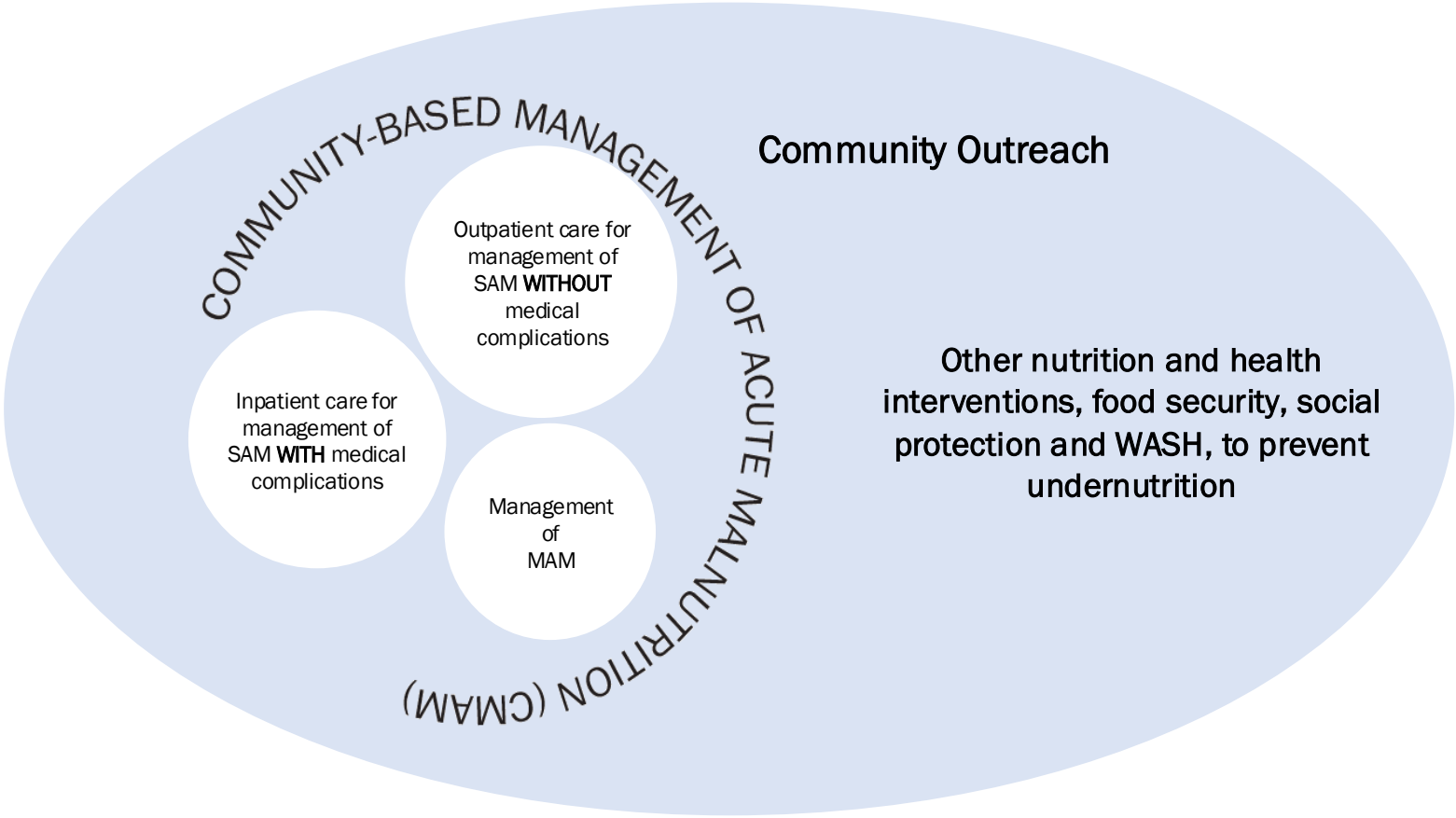
- Child 6-59 months with SAM with medical complications or no appetite
- Infants < 6 months who are nutritionally vulnerable with medical complications (i.e., high nutritional risk)
- Medical treatment according to WHO and/or national protocols
- Infant and child return to outpatient care after complication is resolved, oedema reduced or resolved, appetite regained and feeding well.

4. Services or Programmes for the Management of MAM

Activities

- Routine medication
- Take home supplementary ration
- Basic preventive health care and immunisation
- Health and hygiene education; infant and young child feeding (IYCF) practices and behaviour change communication (BCC)

Components of CMAM



Relationship Between Outpatient Care and Inpatient Care

Complementary

- Inpatient care for the management medical complications until the medical condition is stabilised and the complication is resolving

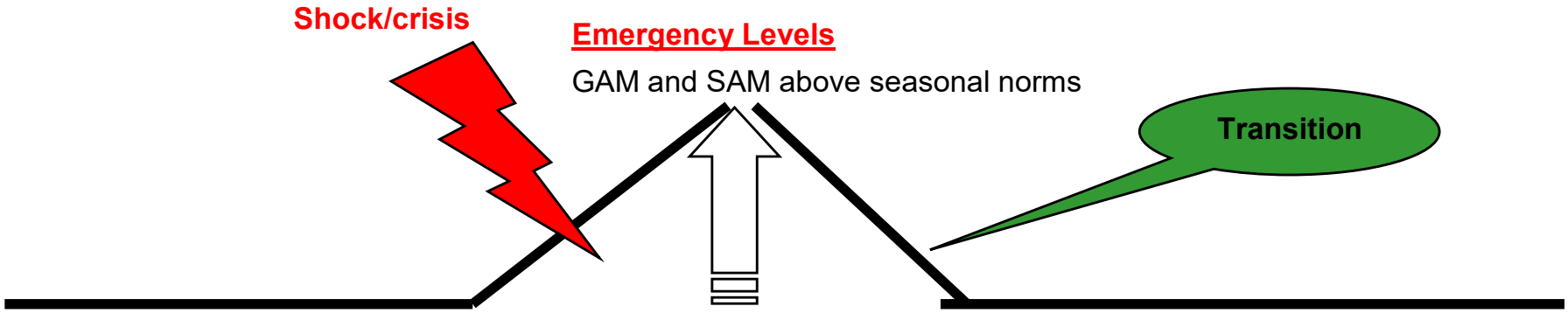
Different priorities

- Outpatient care prioritises early access and coverage
- Inpatient care prioritises medical care and therapeutic feeding for stabilisation

CMAM in Different Contexts

- Extensive emergency experience
  - Some transition into longer term programming, as in the cases of Niger, Malawi and Ethiopia
- Non-emergency or development contexts
  - e.g., Ghana, Kenya, Zambia, Rwanda, Haiti, Nepal
- Experience in high HIV prevalent areas
  - Links to HIV testing and counselling and antiretroviral therapy (ART)

When Rates of SAM Increase:



Non-Emergency

Capacity to manage acute malnutrition strengthened in ongoing health and nutrition programs within existing health system

Community based prevention based nutrition programs. Acute malnutrition identified in GMP and screening through MUAC

Emergency Levels

(Exceed MoH capacity)
Facilitate MOH to cope with increased numbers
(in-country rapid response)

Post emergency

High numbers reducing
MoH resumes normal programming within existing health system

Link outpatient and inpatient care with health/nutrition community based programming

Global Commitment for CMAM (1)

- United Nations (UN) joint statement on community-based management of severe acute malnutrition (May 2007) – support for national policies, protocols, trainings, and action plans for adopting approach: e.g., Ethiopia, Malawi, Uganda, Sudan, Niger etc..
- WHO and UNICEF joint statement on child growth standards and identification of SAM in infants and children (2009) – identification and admission of infants and children with SAM using MUAC and WFH
- WHO update on the management of SAM in infants and children (2013) – provides guidance on outpatient and inpatient management of SAM, and use of MUAC for admission and discharge.
- New UN (WHO/UNICEF/WFP) joint statement expected to be released in 2018/19, that will reflect on the emerging evidence and global commitments on the management of acute malnutrition.

Global Commitment for CMAM (2)

- Collaboration on joint technical support and trainings between UN agencies (WHO, UNICEF, UNHCR, WFP) and donors
- Donor support for CMAM development, coordination and training
- Several agencies supporting integration of CMAM into national health systems
- Several international initiatives on the management and prevention of acute malnutrition with ongoing research and evidence generation.