Global CMAM Surge Approach:

Operational Guide

CONCERN worldwide

Acknowledgments

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To all: a huge thank you and congratulations for getting the approach and the guide this far, and we looking forward to working with you as it evolves and expands!

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Acronyms

CHW	Community Health Worker
CMAM	Community-based Management of Acute Malnutrition
DHIS	District Health Information System
DHMT	District Health Management Team
DRR	Disaster Risk Reduction
HF	Health Facility
HMIS	Health Management Information System
HMT	Health Management Team
HR	Human Resources
HSS	Health System Strengthening
HW	Health Worker
IMAM	Integrated Management of Acute Malnutrition
M&E	Monitoring and Evaluation
MAM	Moderate Acute Malnutrition
MOH	Ministry of Health
MOU	Memorandum of Understanding
NGO	Nongovernmental Organisation
RHMT	Regional Health Management Team
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SOP	Standard Operating Practice
WASH	Water, Sanitation and Hygiene

Glossary of Terms

Caseload	The number of children receiving services for Severe Acute Malnutrition (SAM) at any point in time. Some countries refer to this as Total In-Charge or Total in the Programme.
Phase	A term that refers to the capacity of the health system (or a part of it) at any point in time, i.e. how overstretched the health facility (or district, region, etc.) is based on thresholds set. In this guide, the phases are named Normal, Alert, Serious and Emergency but these might be different according to decisions in each country. For descriptive definitions of the phases, refer to Tool 7 and 20.
Surge Actions	An activity that has been defined in order to increase capacity when thresholds have been surpassed, including activities that are carried out by the actor themselves or by others to support the actor.
Surge Focal Point	The person within the Ministry of Health (MOH) at the district, regional or national level that is responsible for managing and following the implementation of the surge approach. At the district level, this person is usually the person contacted when a threshold has been surpassed within a health facility.
Surge Package	The full list of surge actions that are put in place in order to increase capacity when crossing thresholds into higher phases. There are different packages, depending on the level that it is referring to, i.e. HF or DHMT Surge Package.
Surge Stakeholders	The combination of actors that are involved in surge and its set up. This includes the health facility, the District Health Management Teams, community representatives, partners (UN, NGOs), etc.
Thresholds	Thresholds reflect the boundary between one phase and another, at which point the health system (or a part of it) is overstretched beyond their capacity and requires action in order to cope with the situation.
Workload	In the context of the health facility, this is the overall number of patients seen per day, including all services. For the district/regional/national MOH, this relates to the overall amount of work that they have to manage.

Preface: This Guide

The Community-based Management of Acute Malnutrition (CMAM)[1] was endorsed by the United Nations in 2007. CMAM was often introduced in countries as an emergency, directly implemented vertical programme, but is now increasingly being integrated into routine health service delivery and scaled up as an essential and routine solution for management of acute malnutrition. Over 60 countries are currently implementing CMAM, many of these with the management of severe acute malnutrition embedded within government policies. This has been a significant change from the former 'emergency-focused' response, often delivered with stop-start support and funding. In 2010, a framework for the **surge approach** was proposed as an alternative way of working to strengthen services for CMAM with the aim of providing a more sustainable, less disjointed and less emergency focused approach.

Concern Worldwide, an international nongovernmental organisation, with government (Ministry of Health) counterparts, further developed the concept and ran pilots in some vulnerable areas of Kenya and Niger, also using the approach operationally during emergencies in northern Uganda. The approach has been well received in these contexts and the governments of Kenya and Uganda have expressed their desire to scale up the CMAM Surge Approach nationally. Other nutrition actors in various countries have also expressed their interest in the approach. This operational guide and the accompanying facilitators' guide have been developed to facilitate this expansion into new contexts.

The current guide is largely based on the experience from Kenya with input from Uganda counterparts as well as from practitioners in East and West Africa during two workshops held in 2016. Tools and templates have been compiled from these experiences but this final guide has not been field tested. The methods and materials presented in the guide will need to be adapted to fit each new context. The CMAM Surge Approach is also relatively young, and we expect significant learning to take place as the approach and the guide are put into practice. Feedback and shared experiences are welcomed and the guide will be revised in early 2018 to incorporate new developments as the approach expands to different contexts, countries and stakeholders.

[1] Also known as Integrated Management of Acute Malnutrition (IMAM) in some countries

What is in the guide?

The **CMAM Surge Approach: Operational Guide** provides an overview of the approach and describes eight steps covering the implementation and monitoring processes. It provides a toolkit with guidance and templates for each step. Currently the approach focuses on the management of severe acute malnutrition but can also include moderate acute malnutrition if this is part of routine health services. Other considerations to develop as the approach is scaled up and possibly broadened beyond nutrition services are included in coloured boxes at the end of each step. The **CMAM Surge Approach: Facilitators' Guide** and **Toolbox** complement this guide.

Who is this guide for?

The primary audience is the Ministry of Health management teams at district, state or regional level who are responsible for overseeing HF activities and would be expected to lead the process of analysis and planning outlined in this guide. The guide also serves to orientate national level Ministry of Health staff, key HF staff, focal points representing the community and all relevant partners in the targeted area who should also be involved in any surge planning and response. Partners could play an instrumental role or even a facilitator role in supporting the health management teams as well as the health facilities. Links should be made to any national disaster or drought management body or contingency planning groups who need to be aware of, and possibly involved in, any planned or required surge actions that require their input.

Adapting the guide to different contexts

Content within the guide is kept as generic as possible with the intention that when applied the materials are adapted to the context. Countries should use their own administrative divisions (e.g. district, county, commune, etc.) and substitute their own terms for health system components (e.g. District Health Office, primary health care unit, etc.) where appropriate. For this guide the following are used:

- District Health Management Team, for the first level of management above the HF and Regional Health Management Team for the level above that
- HF for both secondary (health centre) and tertiary (health post) unit of health service delivery
- Health worker, HF In-Charge, community health worker or volunteer as the three primary health actors from HF to community level.

Additionally, templates or tools are based on current experience but it is recommended that these templates are adapted to make them country specific.

The number of threshold based phases used and their names do not need to be maintained – these should be based on the local context and local decisions.

Part A:

Introduction – The CMAM Approach

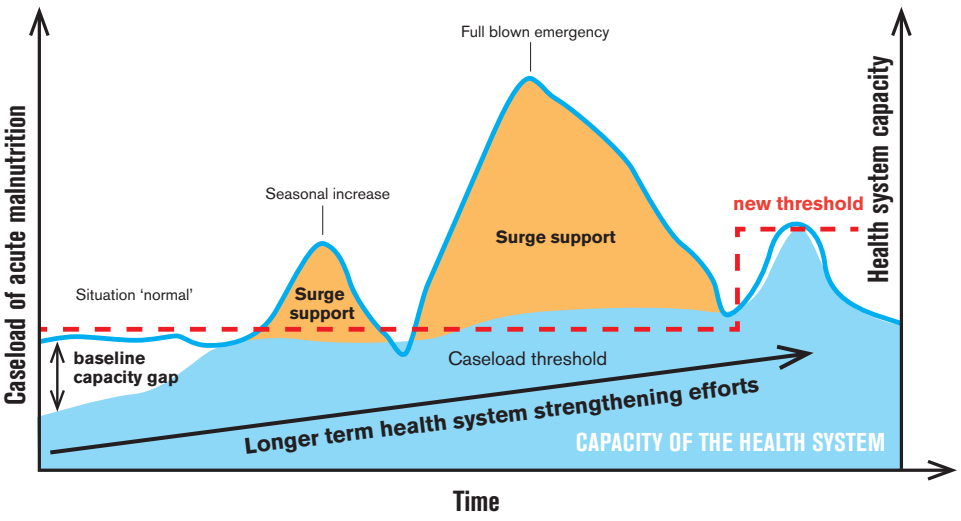
What is the CMAM Surge Approach?

The aim of the CMAM Surge Approach is **to make health systems more resilient over time by making them better able to cope with periodic peaks in demand for services for acute malnutrition - when the potential to save lives is often greatest - without undermining the capacity and accountability of government health actors.**

The Community-based Management of Acute Malnutrition (CMAM) was endorsed by the United Nations in 2007[1]. It started more as an emergency, directly implemented vertical programme, but the management of severe acute malnutrition (SAM) is being increasingly integrated into routine service delivery and incorporated into government policies: in 69 countries by the end of 2014 according to UNICEF[2]. Despite this progress, in many vulnerable contexts, treatment of SAM is still seen as an 'emergency' activity and continues to be implemented in 'start-stop' episodes of external response. Traditionally, emergency nutrition responses have come quite late in the malnutrition cycle, missing the peak in caseload and often not tailored to existing capacity and specific needs, thereby missing opportunities, or even worse damaging initiatives, to improve efficiency and support and strengthen the health system. Exit strategies for external emergency nutrition support have also often been unclear and developed with limited partnership or understanding of the existing health system contributing to an overall disjointed response. These emergency programmes have tended to undermine local capacity, accountability and may also damage ongoing Health System Strengthening (HSS) efforts.

The CMAM Surge Approach was first proposed in an article in 2010[3], suggesting a more holistic approach to managing acute malnutrition over time by helping the health system - in partnership with external actors - to better prepare for and respond to episodic peaks in admissions of malnourished children (see Figure 1).

FIGURE 1: THEORY OF THE SURGE APPROACH



Adapted from P. Hailey and D. Tewoideberha, ENN, 2010, issue 39

The approach was then further developed by Concern Worldwide and now comprises a set of simple and practical tools to help government health teams to better respond to surges in malnutrition. Health system resilience is built through a series of steps that link analysis of context, risks, health system capacity and needs at each level of the health system with agreement on actions and capacity support required from within and outside the government. The analysis process allows the setting of specific thresholds that, when crossed, move the health system into a higher phase (normal, alert, serious, emergency) and trigger the pre-agreed actions and capacity support. The triggering process is based on ongoing analysis of health and nutrition data. Action is triggered when the situation deteriorates and deactivated as the situation normalises.

The CMAM Surge Approach should be seen as a component of HSS efforts. It is not designed to strengthen all aspects of the health system on its own. Instead, it aims to make a health system better able to cope with the surges in demand for services for SAM caused by the regular shocks and stresses that cause malnutrition in many vulnerable contexts, and in this way to make the health system more resilient over time. This is of particular concern in more vulnerable areas with an environment of frequent shocks and the resulting increases in need and demand for health services. The CMAM Surge Approach has the ability to tailor this capacity support to local contexts and develop local solutions to local problems and needs. Through this local ownership, the CMAM Surge Approach supports and protects the long term positive impacts of HSS through a reduction in vulnerability and fragility of the health system. Thus the health system becomes more adaptive and flexible.

What CMAM surge is ✓	**What CMAM surge is not** ✗
Contributes to health system strengthening.	Not a comprehensive HSS approach.
Encourages the MOH to lead, with support provided by partners when the MOH decides that they do not have the capacity required to respond to changes in workload.	Does not involve an expatriate team of technical specialists.
Introduced in a non-emergency time to help prepare and strengthen existing capacity. **Note: Large scale emergencies can be the trigger for investment in preparedness, of which the surge approach could be part.**	An intervention that should be applied during the peak of an emergency.
It may improve coverage indirectly, as services are expected to be of a higher quality and better linkages are established with communities.	It is not primarily an approach to directly improve coverage.
A means to trigger action based on the HF's capacity to respond to increasing caseloads of SAM.	A response based on the broader indicator of the prevalence of acute malnutrition.

Underlying principles

The surge approach is underpinned by the following guiding principles:

Government led: Government is in the driving seat and determines when and how they require additional capacity support. The aim is to leverage and strengthen local capacity for effective service delivery in line with government priorities.

Efficient: Builds on existing capacity within the Government health system and specifically from within the HF and then, if needed, mobilising tailored, pre-agreed support, from within the system itself and then, as a last resort, from other partners.

Strengthens Health System Resilience: Builds on the premise underpinning much of current resilience programming i.e. that an appropriate, early response is more cost-effective than a traditional, large-scale response launched once an emergency is underway.[4]

Adaptable and Flexible: The surge thresholds and surge support provided are based on real time analysis of HF data. Thresholds are regularly reviewed and adapted based on the changing context and health system capacity.

Innovative: Searches out and uses local solutions for local problems within an environment of limited resources.

Participatory, promoting transparent partnership: Based on participative set up and regular review for effective response and accountability. All relevant actors in the same area work together to establish clear and transparent agreements on who does what, when specific caseload thresholds are passed.

Contributes to Health Systems Strengthening: Allows HSS activities to continue over time and protects the health system from being pushed to breaking point during peaks in demand, thus ensuring gains made through wider HSS are not reversed. Makes the health system more resilient, allowing it to 'bounce back better' from periods of high demand.

Sustainable. Minimises disruption to broader capacity development by avoiding dramatic shifts from 'development' to 'emergency' mode, during which parallel systems are often introduced and the lines of accountability for health service delivery (between the government, NGOs and the UN) often become blurred. Endeavours to link district level health system alerts to national early warning and emergency response systems for funding and other support over the long term.

Specific objective of the CMAM Surge Approach

The ultimate aim of the CMAM Surge Approach is to improve the resilience of a health system – its staff, its supply systems, and its infrastructure – so it is able to serve more people and save more lives over time. **The specific objective of the approach is to help health systems better anticipate, prepare for and deliver services for the treatment of acute malnutrition during those periods of high demand when the potential to save lives is greatest.** The CMAM Surge Approach lays out a series of steps to do this, without negatively affecting the delivery of other services or undermining the capacity of government health actors.

Where has the surge approach come from?

The need for the approach and a basic framework for taking it forward was first proposed in a published article[5] as a way to avoid stop-start emergency support that used to be associated with operating "emergency" programmes and instead to use and strengthen the capacity of the health system to respond to recurring problems of acute malnutrition. Led by an international nongovernmental organisation (NGO), Concern Worldwide, the concept was translated into an approach, a number of tools were developed and a pilot project was initiated in Kenya in collaboration with Sub-County Health Management Teams and HF staff from May 2012 to the end of 2014 in 14 health facilities in Marsabit County. These efforts were expanded in Kenya in 2014 and 2015 to three additional counties (Wajir, Baringo, and East Pokot) in an additional 24 health facilities with the support of Save the Children, Islamic Relief and World Vision. Concern have also implemented surge in Karamoja Region of Uganda in 2009 and 2012 as well as preparatory work done in Niger.

LEARNING FROM PAST EXPERIENCES

The potential effectiveness of the surge approach has been shown in one pilot project in Kenya[6, 7]. Internal and external evaluations of the Concern Worldwide Kenya[8] programme and a scoping exercise of the Uganda[9] work suggest that the approach is technically feasible and working well (good to satisfactory level). *"The pilot was able to show that it has contributed to strengthening the health system to cope with increased caseloads of acute malnutrition during predictable AND un-predictable emergencies without undermining ongoing health system strengthening efforts. Therefore, the evaluation recommends further scale up within the pilot sub-counties and at a wider scale in Kenya and elsewhere."* [v] Acceptance of the approach was closely related to its simplicity. However, several areas were highlighted that still require further consideration (also see **Part D** for suggested future research):

- Improve ways to incorporate communities into the approach
- Ensure periodic reviews of the thresholds are conducted given changes in local context (e.g. facility capacity, health and nutrition needs and health seeking behaviour)
- Better establish the lead and ownership of higher level government health management teams i.e. county/regional level (especially for issues of human resources and supply responses to triggers)
- Give attention to the sustainability and efficiency of the financing of the surge approach
- Consolidate more practical tools.

When should you use the CMAM Surge Approach?

The CMAM Surge Approach is particularly suited for situations where there are frequent fluctuations in the prevalence of undernutrition and demand for services for the management of acute malnutrition, in more extreme cases often interpreted as being an 'emergency'. In reality, young children in these populations live in a chronic state of poor and rapidly fluctuating nutrition status – this is often the case in the fragile areas of the ASAL region of Kenya and northern part of Uganda as well as other parts of East Africa and the Sahel region. Contexts where:

- Management of SAM (and moderate acute malnutrition (MAM) if part of routine services) has been introduced and is endorsed by the government as a standard health activity,
- There are recurring, often seasonal spikes in the prevalence of acute malnutrition and demand for services to manage undernutrition, with associated risks of significant increases in morbidity and mortality,
- The health system functions at a moderate standard during non-emergency times and on-going HSS efforts are in place (if needed)[2].

What is the future of surge?

The CMAM Surge Approach is at an early stage of development and much is still to be learned about how best to apply it, especially in different contexts and countries. This guide is based on Concern and government experience in Kenya and Uganda. It has also had input from practitioners from 9 countries shared via two workshops. It is hoped that this first version will be adapted and applied to different contexts, with learning documented and shared. In addition, there is scope to apply the concepts beyond management of SAM to broader health and nutrition services and this learning should also be incorporated in future surge approaches.

Concern Worldwide hopes to put in a place a more formal mechanism for promoting and sharing learning, including rigorously monitoring and evaluating the CMAM Surge Approach in different contexts, under different parameters and conducting a more formal cost effectiveness analysis to understand if and how a surge approach could be better value for money than the traditional, NGO-led emergency approach. Concern Worldwide welcomes feedback on the current manual and comments can be sent to Kate Golden (kate.golden@concern.net).

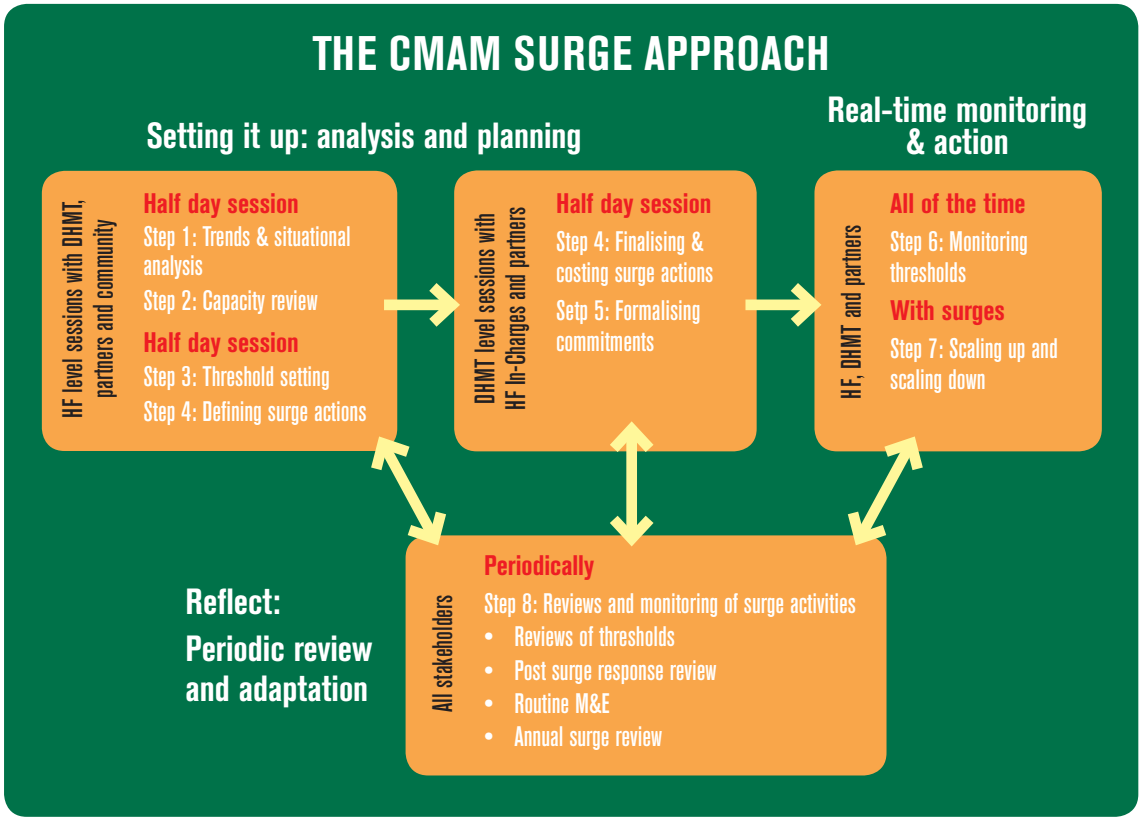
2 Ideally it functions with government as lead, but in other contexts where non-governmental actors are central to the health system function, the surge can also apply, with modifications.

Part B:

Implementing the CMAM Surge Approach focusing on the HF

The CMAM Surge Approach is made up of 8 steps that can be divided into 2 main stages – the set-up stage followed by a real-time monitoring and action stage, with regular periods of reflection and adaptation.

FIGURE 2: OVERVIEW OF THE CMAM SURGE APPROACH FOCUSING ON THE HEALTH FACILITY



Country level adaptations prior to set-up

Prior to set-up of the surge approach within a country, it is recommended that national and regional level stakeholders are part of a decision making process, or at a minimum, are briefly oriented on the approach to build ownership and prepare them for support they might be requested to provide down the line. The orientation should introduce the approach and engage their expertise to adapt the global approach and guide to the new country or local context. Tools and mechanisms that already exist within the local health system should be used as much as possible to implement the CMAM Surge Approach. Some issues to consider when adapting the guide and approach to a new context are outlined below.

The type and number of health facilities to include: Prior to starting the set-up phase, define which health service units will be involved, i.e. health centres, health posts, hospitals[3], etc., and if all or only selected facilities within a district or region will be involved. Facilities with high or potentially high SAM caseloads should be included. Stakeholders may wish to pilot the approach initially and then expand as experience and results are gained, bringing in more national partners as it evolves.

Who will lead the set up stage: Most of the steps in this guide take place within each HF with the HF team but with the DHMT facilitating; while this is the suggested method to implement the surge approach, it is recognised that this may not be feasible in all contexts. An alternative would be to train the HF In-Charges – at a meeting held at DHMT level and for the HF In-Charges to then facilitate the set-up process within their facilities.

MAM: While this guide focuses on management of SAM, if services for MAM are also a standard part of health services, they can be included in the surge approach. For example, MAM caseload could also be used to set thresholds, although initial experience suggests that MAM admission trends may not be as reliable (as MAM services are often less continuous throughout the year and are more subject to stock outs than SAM services). Preparing for more efficient delivery of MAM services during peak periods, however, will be critical in contexts where the health services are the main delivery channel for managing MAM cases.

Community participation: Within each context, the most appropriate existing community structures should be engaged in the set-up activities of the surge approach within the HFs. In the absence of strong existing community structures, stakeholders may wish to elect a community representative to participate.

Linking with national emergency bodies: Clear linkages need to be made with any National Response, Drought or Emergency Offices and contingency planning mechanisms in the event of a largescale nutritional deterioration (see Part C). These bodies should be identified at the outset and means of linking thought through.

Orienting national and regional stakeholders: As explained above, this is important to foster ownership of the approach and to promote a network for sharing and learning on the approach in the new country context. This could be done via a half day or day long workshop where the basics of the approach are presented and stakeholders are briefly walked through the key steps of the guide.

Main actors

The main actors involved in the CMAM Surge Approach are generally all those who contribute to the function of the health system and delivery of health services. It is important to have a clear understanding of the roles and responsibilities of each actor within the health system before setting up the CMAM Surge Approach, as they can be different in each context. Below is a list of the main actors and a description of their role in CMAM surge.

- ***Health workers (HW) at facility and community level*** are the central focus of the surge approach, enabling reduction in morbidity and mortality related with SAM. The CMAM Surge Approach aims to draw out the capacities and weaknesses of this team and empower it to request support when needed to ensure any increases in demand for SAM services can be handled when they occur.

  As many of the HWs as possible should be involved in the set-up process as each brings knowledge of the HF and the catchment area to this participatory process. This includes any Community Health Workers (CHWs) or Community Health Volunteers (CHVs) that are linked to the HF.

3 While this guide does not adequately cover work at the hospital level, the surge approach can also be applied within hospital settings.

- ***Hospital or Inpatient therapeutic service staff:*** focal point(s) from referral facilities should be included in all steps as the flow between inpatient and outpatient care needs to be streamlined during surges to avoid any bottlenecks or overcrowding as numbers rise.
- ***District Health Management Team (DHMT)*** has a critical role in the implementation of the CMAM Surge Approach in their district. They facilitate the set-up process with all the HFs; they are the first point of contact during any scale-up; and they should be the hub for any support required. It is only with the participation of the DHMT that the CMAM Surge Approach becomes a reality that responds to needs of the population.
- ***Community representatives*** have three key roles in the surge approach: 1) as the central stakeholder for services, to bring community concerns and perspective to the HF, 2) to ensure that information from the HF flows back to the communities and, 3) to carry out community-led actions when surges trigger action. These roles help the community be active participants in the health system, improving communication with the HF as well as strengthening any actions taken in response to increases in demand for services. The community should be represented in each step of the surge implementation process through whichever relevant community structures are in place.
- ***Partners (national and international, including UN agencies, NGOs and potentially private sector providers)*** play a critical role in supporting, or possibly even facilitating, the implementation and scale up of CMAM services, especially when caseloads are high or capacity is low. They should be actively involved in each step of the CMAM Surge Approach, according to the level they are supporting i.e. HF, community, DHMT, RHMT, with the intention of encouraging the HF and the DHMT to take an increasing role in managing peaks in SAM caseloads.
- ***Regional Health Management Team (RHMT)*** has a role in supporting the DHMT when the situation (caseloads or HW capacity) starts to overwhelm the capacity of the DHMT to respond adequately or efficiently on its own.

Note: For simplicity within Part B of this guide, the set-up steps use the term HF stakeholders or District stakeholders to refer to the group of people that participate in the steps at each of these levels.

HF-level stakeholders should consist of: a) all the HF staff members, b) several community based health workers and/or volunteers, c) the DHMT or at least one representative to facilitate the process, d) any partners working with them (if appropriate), as well as e) community representatives (where feasible). This group should participate in all set-up activities that take place at the HF level.

District-level stakeholders should consist of: a) the DHMT, b) all HF In-Charges, and c) any relevant partners working in the district. This group should participate in all set-up activities that take place at the DHMT level.

Figure 3 provides an overview of the full Toolkit.

FIGURE 3: CMAM SURGE APPROACH - TOOLKIT OVERVIEW

CMAM Surge Approach - Toolkit Overview				
Timing	**Process**	**Tools**		
		HF focus	**DHMT focus**	**All**
	Country-level adaptation for the Surge Approach			Facilitators' Guide
Stage 1: Setting it up – analysing and planning				
Allow 2-3 weeks	Preparation for set up			
1/2 day session	Step 1: Trends & Situation Analysis	Tool 1, 2 & 3		
	Step 2: Capacity Review	Tool 4, 5 & 6	Tool 19	
1/2 day session	Step 3: Threshold Setting	Tool 7 & 8	Tool 20 & 21	
	Step 4: Defining & Costing of Surge Actions	Tool 9, 10, 11 & 12	Tool 22 & 23	
1/2 day session	Step 5: Formalising Commitments	Tool 13 & 14		
Stage 2: Real-time monitoring and action				
All the time	Step 6: Monitoring Thresholds	Tool 15, 16 & 17	Tool 17	
With surges	Step 7: Scaling Up & Scaling Down			
Periodically	Step 8: Reviews & Monitoring of surge activities	Tool 18		

Stage 1: Setting it up – Analysing and planning for the HF level

The set up stage is made up of 5 steps, outlined here. Depending on the context, they can largely be conducted in three half-day sessions (two at the HF level and one at the DHMT level), or alternatively, during a 1 to 2-day workshop at the DHMT level. The first alternative is summarised in Figure 2.

Step 1. Trends and situational analysis

Step 2. Capacity review

Step 3. Threshold setting

Step 4. Defining and costing of surge actionsw

Step 5. Formalising commitments

Preparation of data

Before starting the set-up, data can be prepared in advance. The following data should be included:

- Number of new admission per month for the previous 2 years for:
  - SAM
  - MAM, if services are offered at the HF
  - Diarrhoea
  - Pneumonia
  - Key relevant illnesses, e.g. Malaria
- Number of patients seen per day from the HF register throughout the 2 years, to establish:
  - Average for the year
  - Range
  - Fluctuations throughout the year

It is best if the preparation of data can be started 2-3 weeks before the sessions, to give ample time to get everything that is needed.

Consideration: It is possible that some steps may be a part of other health system or CMAM activities, for example the trends and situational analysis or the capacity review. However, all steps are included here to ensure that the analysis is comprehensive. Where possible, it is recommended to use or modify existing activities and efforts to implement each CMAM surge step.

STEP 1: Trends and situational analysis

Step 1 Objectives

- To identify what key factors generally affect demand for SAM services among the catchment population through examination of past trends in clinic and contextual data
- To understand the relationship between these factors and the trends in workload for the HF
- To identify key factors that should be monitored to better plan for future responses

Who is involved?

Facilitator from the DHMT, HF staff or HF In-Charges, hospital/inpatient focal point, CHWs, key community representatives, partners working in the area

What is needed?

- Pre-printed charts (Tool 2) or flipchart paper
- Data for a) the number of new admissions for SAM and key morbidities (e.g. diarrhoea, pneumonia, malaria, others) for under-fives and overall for the previous 2-3 years if available, as well as any especially "bad year(s)", and b) the number of patients seen per day from the HF register throughout the 2-3 years

1.1 Method

A. DEVELOPING THE CHARTS (TOOL 1)

HF stakeholders participate in a process to graph information on two charts (blank flip charts or pre-printed charts provided in Tool 2) – a seasonal events calendar and past trends in cases of acute malnutrition and illness seen at the HF.

Chart 1: Seasonal events calendar: Factors that have an effect on SAM in the community and on the SAM caseload at the facility are considered, including both factors that cause the number of children with malnutrition to increase or decrease as well as factors that affect if people seek health services. These factors are then charted for later analysis.

Chart 2: Past trends in malnutrition and morbidity caseloads: The total consultations/cases treated for SAM in children under-five as well as for other leading illnesses, e.g. diarrhoea, pneumonia and malaria, including MAM if relevant, are plotted using data from HF registers or the DHIS.

See Figure 5 and Figure 6 for examples drawn during a workshop in Kenya and **Tool 2** for a template that can also be used.

FIGURE 4: DOES HEALTH FACILITY CASELOAD REFLECT THE AMOUNT OF MALNUTRITION IN THE COMMUNITY?

Malnutrition might spike in the community but the children may not arrive in the health facility

Tool 1: Trends and situational analysis: drawing up the charts

Chart 1: Seasonal events calendar

- List any **factors that have an effect on the HF SAM caseload**. These could be factors that cause the number of children with malnutrition to increase or decrease e.g. rainfall, disease outbreaks, mass screenings, livestock condition, health and nutrition campaigns, etc. Specific population groups e.g. pastoralists, IDPs, refugees may contribute to higher SAM levels.
- List any **factors that affect if people seek health care,** e.g. workload of households (particularly women), population movement, festivals, conflict, road condition

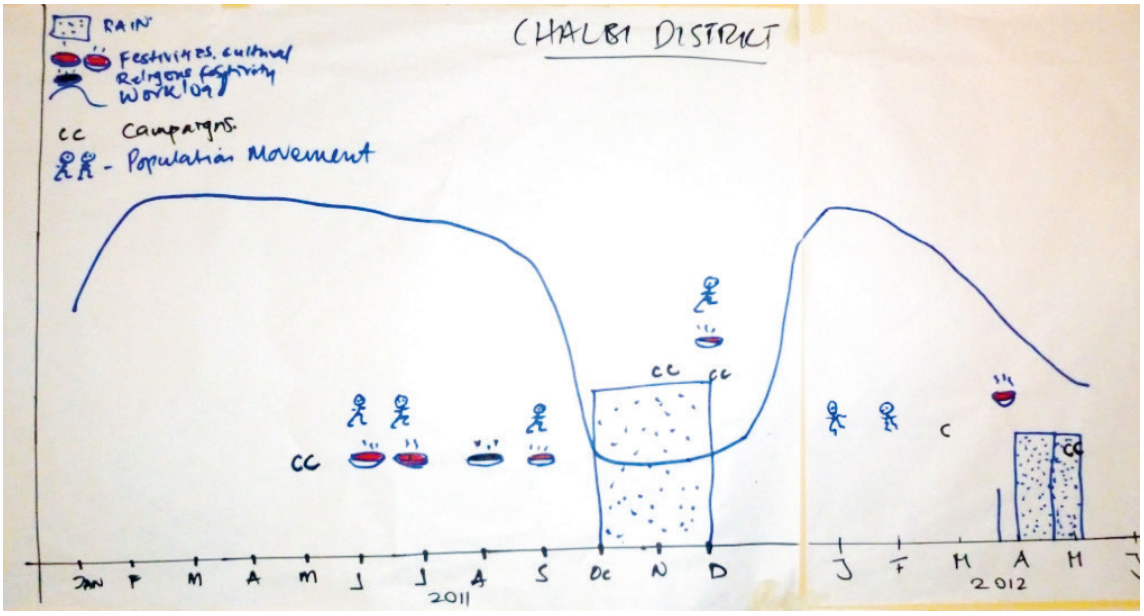
Note: Not all of these factors will be important in any one area, but all important ones should be included.

- Draw a chart and write the months of the year across the horizontal axis. Use blank flipchart paper or pre-printed charts (see **Tool 2** for an example template).
- Write these factors onto the chart for each HF using symbols or lines to indicate when (which month) these key events or factors occur or increase/decrease over the course of the year.

Chart 2: Past trends in malnutrition and morbidity caseloads

- Draw a chart with the months of the year along the horizontal axis and 'total consultations' or 'total cases treated' along the vertical axis. Use flipchart paper or pre-printed charts (**Tool 2**).
- Plot the total consultations/cases per month treated for SAM in children under-five seen at the HF the previous year (represent this with a single line). Do the same for each of the leading illnesses, e.g. diarrhoea, pneumonia and malaria, including MAM if relevant (as single line for each illness). Other illnesses relevant to the catchment area can be considered, but it is best to keep to the most common 3 or 4 illnesses to avoid overcrowding the charts.
- At a minimum the last year's data should be charted, but if available the last two to three years' data, or data from a particularly 'bad year' with higher malnutrition rates should be included to provide a realistic idea of previous trends.

FIGURE 5: EXAMPLE SEASONAL EVENTS CALENDAR



Considerations: *changing nutritional situation vs changing coverage*

Two key factors determine the number of SAM cases arriving at a HF:

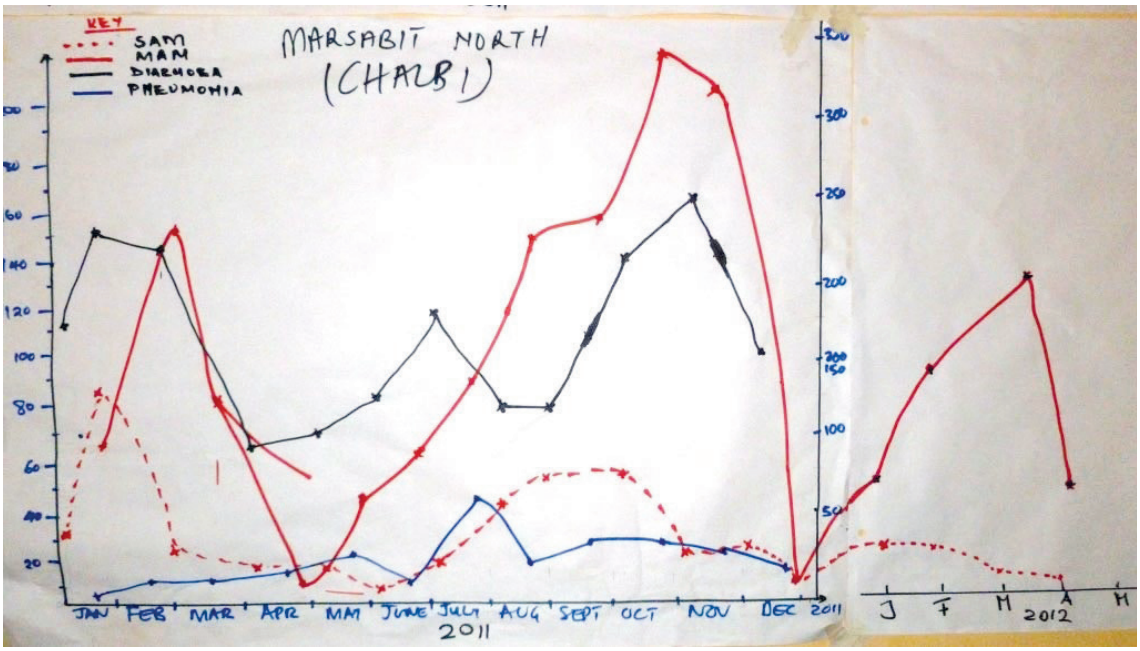
– The prevalence of SAM (actual cases in the wider community)

– Programme coverage (total SAM cases actually receiving therapeutic treatment)

It is important to understand that an increase in both prevalence and coverage will lead to a very high caseload. However, it is also important to understand that caseloads arriving at the HF may *not* reflect the actual situation in the community. As shown in Figure 4, the number of cases arriving for treatment will depend on physical access to health services; caretakers time, workload and financial resources; and health seeking behaviour among other things. If the prevalence is high but coverage is low because many of these factors are preventing children from accessing treatment, a true emergency at the community level may not be detected at the facility level. Conversely, if the actual prevalence is relatively low, but coverage suddenly is very high (e.g. after a screening campaign at the community level), the health facility may still be temporarily overwhelmed despite the prevalence of acute malnutrition being well below emergency levels.

It is therefore important to monitor coverage as much as possible via CMAM coverage surveys, where resources are available. This will give you the full picture and assist the HF to plan and better meet service demand as it fluctuates throughout the year.

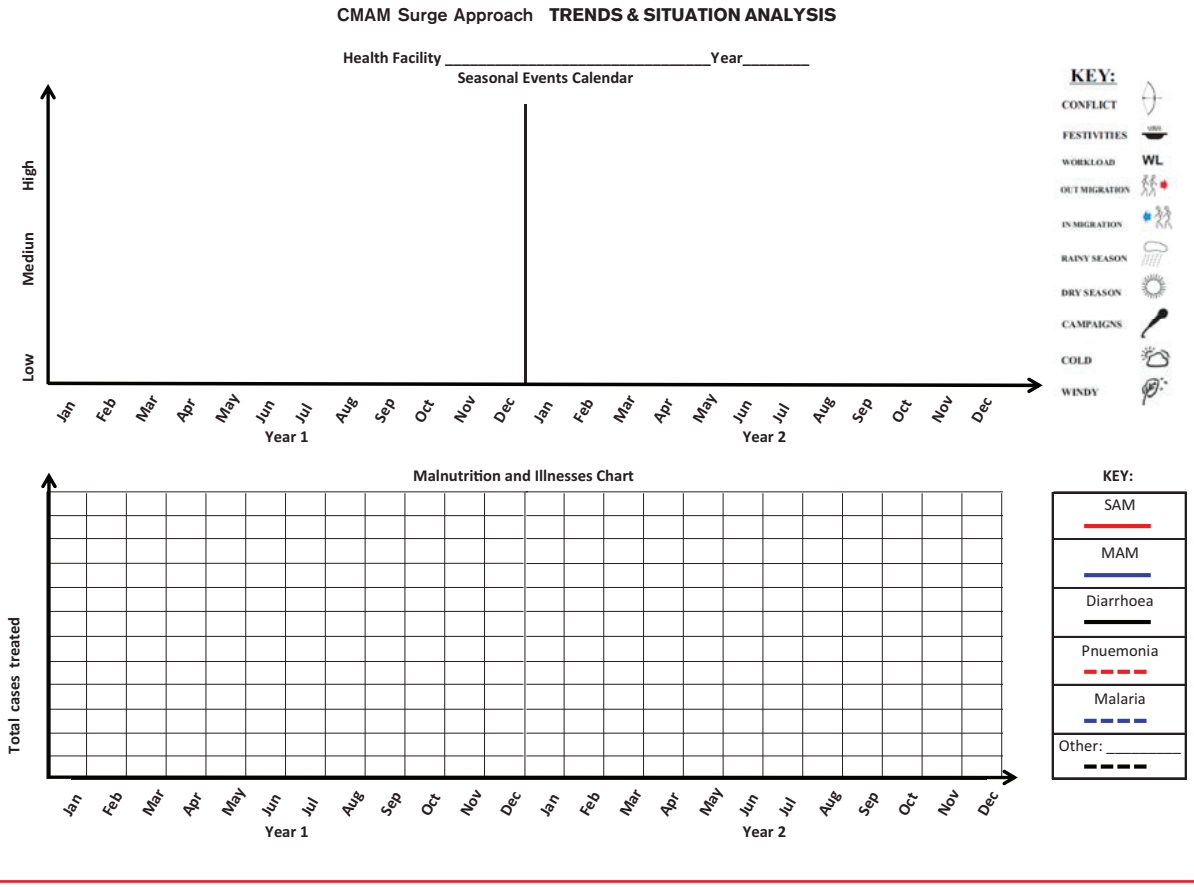
FIGURE 6: EXAMPLE SAM & ILLNESS CASELOAD CHART



B. ANALYSING THE PAST TRENDS THROUGH THE CHARTS

Place the completed charts on the wall, with the events/seasonal calendar on top and the malnutrition and morbidity chart below, or refer to the completed printed template (see **Tool 2**).

Tool 2: Trends and situational analysis: template example



Facilitate a participative process to take the HF stakeholders through the analysis of what they have charted in terms of when and why cases of SAM increased and any relationship to key events or morbidity trends. This is guided by the questions in **Tool 3** below. The responses will form the foundation for discussions on both the capacity review and surge actions in Step 2 and 4, respectively. Any analysis done could be filed for future reference by the HF In-Charge.

Tool 3: Trends and situation analysis: guide to analyse the charts

- Place the completed charts on the wall, with the seasonal events calendar on top and the malnutrition and morbidity chart below.
- Use the following questions to guide discussion.

Guiding questions:

1. Was there an increase or decrease of SAM admissions at the time you expected it?
   - How did different events (i.e. workload, rain, population movement, festivals, conflict etc.) impact on admissions for SAM?
   - Do you see a concentration of seasonal events just before a peak in SAM admissions – if so what factors seem to be important and when do they concentrate?
   - Did diarrhoea, pneumonia or malaria increase prior to an increase in SAM or is the pattern different?
   - Were there any health system activities or events that took place during the period that might explain any increases or decreases seen in the graph?
   - Were there any disease outbreaks e.g. measles, kala-azar etc.?
2. Was the scale of the increase/ decrease as high as you expected it to be?
3. Do you find anything unusual/ unexpected in your charts?

C. CONSIDERING THE CURRENT AND FUTURE SITUATION

The HF stakeholders discuss the current situation and how they expect it to develop over the coming months, considering what they have learned from their analysis of previous years. For example, if in May, June and July of the previous two years, a spike in diarrhoea has been seen that is followed by an increase in SAM cases, instead of waiting for this to happen again, the HF can plan prevention activities for the catchment area in an effort to reduce the number of people affected.

During this session, forward planning should consider the full coming year to generally discuss and anticipate when increases or surges are likely to occur. A new chart is produced with the current year's data for both SAM new admissions and total SAM caseload. This chart should be on display at the HF and will be completed regularly with new data, using either a poster on the wall or a small A4 template (see **Tool 2** for an example). This overview discussion of the year ahead and the preparation of the new chart pave the way for the monthly monitoring of thresholds that will take place (explained in Step 3 and 6), which includes the opportunity to do more in depth forward planning for the coming few months.

Observation: Visualising data

Simply visualising morbidity and admission data and linking it to an events calendar can improve interpretation of routine service/programme data and create better understanding of seasonal trends and factors influencing health seeking behaviour i.e. the "drivers" of caseload and demand for services.

This step has been quoted as an "eye opener" in past workshops as rarely are routine data looked at in such detail or sufficient time given to interpret and understand the trends.

STEP 2: Capacity Review

Step 2 Objectives

HF level:

- To reflect on the capacity of the HF to manage CMAM services during normal times, highlighting gaps that need to be addressed through 'normal' HSS activities
- To reflect on the HF's past experience during peaks in demand for CMAM services to identify actions that need to be undertaken a) *before* future surges (preparedness) and b) *during* future surges (actual surge actions)
- To determine what a 'normal' SAM caseload is for the HF – a caseload that can be managed without overstretching staff or compromising quality (this will serve as a basis for establishing thresholds during Step 3)

DHMT level:

- To enable the DHMT and District stakeholders to understand which HFs are weaker and/or have highest caseloads and will require more support if/when a peak in SAM admissions occurs

Who is involved?

Facilitator from DHMT, HF staff, hospital/inpatient focal point, CHWs, key community representatives, partners working in the area

What is needed?

- Capacity assessment tool (In-country version or Annex 2)
- Patient registers

If a HF has weak capacity during 'normal times' this will be amplified at alert levels. It is also often the case that the weakest facilities will face the highest caseloads and potentially the biggest surges because their communities are often the most disadvantaged, and the facilities tend to be the most difficult to reach (both by the population and the DHMT). These distant HFs may also find it difficult to attract and retain staff, maintain supply chains and even find it harder to attend trainings. The DHMT should therefore focus its support on those HFs that have a combination of weaker capacity and highest expected admissions – this include normal HSS efforts as well as specific support to help the HFs prepare for surges and cope with surges when they arise.

2.1 Method

The capacity review is undertaken in four parts to understand a) the HF's general capacity in CMAM during normal times using each of the health service building blocks (see **Annex 1** for brief explanation of the building blocks), b) the HF's capacity to adapt as well as call on additional resources to handle increases or surges in CMAM admissions, c) what can be considered a 'normal' caseload based on the HF's own experience, and, finally, d) the relative capacity of each HF in the district and their likelihood to require support when surges occur. The first three components are done at the HF level while the final one is at the DHMT level.

A) GENERAL CMAM GAP ANALYSIS:

CMAM capacity assessments are often standard practice within the national health system or at least as part of a more vertical national CMAM programme. Where a CMAM capacity assessment tool already exists, it should be used or adapted as needed. If a capacity assessment has recently taken place, the results can be brought into this

step instead of repeating the assessment. In the event that one does not exist, a tool has been provided in **Annex 2** that can help to identify factors that generally hinder quality CMAM service delivery.

Any gaps identified during this general CMAM capacity assessment should be noted and lead to immediate action through normal HSS activities (e.g. ordering equipment or supplies, requesting additional staff or undertaking staff trainings, etc.). These should be incorporated into the broader annual work plan and budget for the health district. If using the CMAM Gap Analysis tool in Annex 2, the HF team will be encouraged to give themselves an overall score under each health system building block, identify capacity gaps and list any actions planned to address those gaps over the next 12 months. Priority HSS activities to address these underlying gaps will be identified in **Step 4**.

B) REFLECTION ON HF CAPACITY TO HANDLE SURGES

This sub-step starts by reviewing the wall chart of past trends in admissions developed in Step 1 and reflects back on the times when spikes in the number of SAM admissions occurred. If there were any particularly bad spikes that the HF stakeholders remember, these should be the focus of the discussion. **Tool 4** should guide this discussion. The aim of this sub-step is to help the HF team identify what worked well in their efforts to cope with surges (so those actions can be repeated) and what the major weaknesses were during previous surges (so the HF can better prepare for surges at the HF and get the appropriate, prompt support from the DHMT during future surges).

Tool 4: Reflection on capacity to handle past surges

The following questions are meant as a guide to help bring out strengths and weaknesses of the HF when coping with past peaks in SAM caseload. The questions should spark discussion and are not meant to be exhaustive. However, answers should be recorded so that needs can be addressed.

Using the wall charts of the past trends, look at the peaks that occurred and discuss the following:

General questions

- What happened when you had these peaks?
- How did you handle the situation? What did you do?
- What did you change about your normal facility procedures?
- What went well? What worked to cope during these peaks?
- What didn't go well? What were the 'bottlenecks' to the response? What were your gaps?
- Were the types of actions/responses appropriate and adequate?
- How was the timing of your actions/responses (late, on time)?
- Were there things that you wanted to do but couldn't? If so, why not?
- What would you do differently to respond if you had a second chance?

Think these through using the HS building blocks (Service Delivery; Community; Human Resources; Medicines, Supplies, Equipment and Infrastructure; Health Information; Leadership & Governance; Financing) to further understand the HF's strengths and challenges.

While continuing to consider these same peaks, discuss the following ***specific questions:***

- Was the HF able to manage the SAM caseload and overall workload?
- Was there appropriate communication and involvement of key stakeholders?
- Was the community informed? Involved in finding solutions?
- How was the linkage between inpatient and outpatient and community?
- Were drug supplies and RUTF supplies sufficient and timely?
- Was the infrastructure (space for patients, storage, WASH facilities) adequate?
- Did most cases of malnourished children receive services? Were families satisfied with the services that they received?
- What preparedness actions could have been taken to prevent the situation or at prevent it from getting worse?

C) ESTABLISHING WHAT A 'NORMAL' CASELOAD IS

This sub-step aims to establish what a 'normal' or manageable caseload is based on what the HF feels they can handle without overstretching themselves or sacrificing quality of care. The information is gained through a discussion amongst the HF stakeholders using **Tool 5** with data that comes from the patient registers.

In this sub-step, initially stakeholders gain a holistic understanding of how busy the HF is through an examination of the overall workload as seen through the total consultations per day. As you move through the step, SAM caseload is also considered, since ultimately, this will be the indicator that is brought forward into the threshold setting in Step 3.

Annex 3 includes an optional tool that can be piloted to complement this discussion with an objective component. It allows for a more thorough understanding of the current workload including a calculation of the potential number of patients that can be seen in a day, cross checking this with the reality of what happens on a daily basis as seen through the patient registers and reflecting any differences seen and where efficiency could be gained, particularly in a surge.

Tool 5: Workload capacity discussion guide

Discuss the following topics to understand the HF's workload capacity and approximately how many patients that can be seen in a day without being overstretched. The questions aim to guide and stimulate discussion but are not exhaustive.

Data from the patient registers should be collected in advance to answer the questions below and the registers themselves can be used as reference throughout the discussion.

Number of consultations per day

- How many patients are normally seen per day?
- Is this the same throughout the year?
  - Which months have more consultations per day?
  - Which months have fewer consultations per day?
  - What is the range (minimum/maximum) number of patients seen throughout the year?

Workload and capacity

- On a 'normal' day, how is the workload for the staff? Is it manageable? Are staff overstretched?
- During a 'normal' day, does the HF team have capacity to see a few more patients or are they at their limit?
- During months with a high number of consultations per day, how is the workload? Is it manageable? Are the staff overstretched?
- What would be the maximum number of consultations that could be seen in a day?
- What factors affect whether the HF team is able to handle the caseload arriving at the HF?
- Which consultations take the longest? (E.g. SAM treatment, vaccinations, antenatal? Others?)

Summary

- What should be considered a normal and manageable workload in terms of total consultations per day for this HF?
- What should be considered a normal and manageable workload in terms of total consultations per month for this HF? And for the SAM caseload per month?
- What workload in terms of total consultations per month would be ***too*** much? And for the SAM caseload per month?

D) PRIORITISING HFS ACCORDING TO CAPACITY:

Once each HF has assessed their own capacity, the DHMT will need to look across all the HFs to identify which are weakest and/or have the highest caseloads and are, therefore, most in need of support. This exercise to prioritise HFs should be led by the DHMT, normally in a meeting attended by all the HF In-Charges and other District stakeholders, as appropriate. During this meeting, the HFs own self-assessment is considered relative to the other HFs, and the DHMT, in discussion with the HF In-Charges and other stakeholders, will need to give each HF a final rating or score. Based on these scores, the DHMT should ensure special attention and support is provided to the weaker facilities, both to increase their capacity through normal HSS activities as well as support in preparation for and during any surges. This information should also be captured by the DHMT dashboard (see Part C).

General considerations to help rate and prioritise HFs include: catchment area, staffing levels and technical specialities/recent training (human resource), ability to provide nutrition services, performance and reporting trends (completeness and quality), supplies (therapeutic/supplementary food, essential medicines), anthropometric equipment, and overall infrastructure. **Tool 6** can be used to guide this prioritisation discussion.

Tool 6: Prioritising weak health facilities for focused support

Information should be brought in from the trends and risks analysis (Steps 1) as well as the other capacity reviews in this step.

Rating system:
4 = Excellent (managing services well with additional capacity available)
3 = Strong (managing services well but no additional capacity available)
2 = Weak, requires some assistance
1 = Very weak, requires substantial training/assistance/support

List all of the HFs within the district; discuss each one in terms of:

a) Their ability to manage CMAM services during normal times (HF CMAM gap analysis, above)
b) Their ability to manage surges in CMAM admissions (Reflection on HF capacity to handle surges, above)
c) Their likelihood of surges (previous trends analysis)
d) Number of cases seen during normal times and during surges (previous trends analysis)

If there hasn't been a capacity review for an HF, these questions can be used to quickly establish their relative capacity for the prioritisation exercise. Otherwise, this section can be skipped.

For each of the following questions, consider whether the health facility has the following ***in relation to CMAM services*** and rate them for each:

- The staff with experience and training required to provide services appropriately?
- The protocols, job aids and reporting materials in place? The equipment and materials needed, in good working condition?
- Adequate medications and supplies and an efficient way to order and receive more rapidly?
- The space and infrastructure (storage, water/sanitation/hygiene, etc.) necessary to handle the current caseload as well as any potential increases?
- Linkages with communities in their catchment area?
- Regular communication with the DHMT?

Generally

- Is the HF prone to significant increases in admissions?
- How is the access to the HF for support and supply?

What are the reasons for any weaknesses highlighted? What are obstacles to better services?
The scores are tallied for each HF and the total is noted in the list of HFs.

STEP 3: Threshold setting

Step 3 Objectives

HF level:

- To establish "thresholds" for each HF for the number of new admissions of SAM to indicate four phases, normal, alert, serious and emergency

DHMT level:

- To endorse/validate thresholds
- To collate individual HF thresholds

Who is involved?

Facilitator from the DHMT, HF staff, hospital/inpatient focal point, CHWs, key community representatives, partners working in the area

What is needed?

- The situational analysis prepared in step 1
- Capacity review analysis prepared in step 2
- Calculator

Thresholds are set for four phases, starting from a normal situation and increasing to alert, serious and emergency phase. Given the main support planned is for CMAM, the thresholds are set according to the number of new admissions to the HF for SAM. Descriptive definitions for each phase are provided in **Tool 7**.

The surpassing of thresholds into a higher phase will trigger action to ensure the HF can manage their SAM caseload. On the contrary, when crossing a threshold into a lower phase, surge actions will be phased down, whereby when there is a normal situation, the HF returns to their normal way of functioning (see **Step 7**). This approach, with action triggered based on the capacity of the HF, is a new perspective which is quite different from when action is triggered based on increased prevalence of malnutrition for the population in a wider geographic or administrative area.

Tool 7: Description of phases for the Health Facility	
Phase	**Description for the Health Facility**
NORMAL 	When the HF staff can handle their workload and have adequate resources to meet the demand for services. During this phase, there is time to work towards strengthened service delivery, including staff training, as well as staff taking leave, infrastructure repairs, etc.
ALERT 	When the HF staff members begin to be overstretched due to increased demand for SAM services but can handle the situation by reorganising to focus on key priorities with minimal external support; this phase may entail a slight simplification of procedures or some task shifting aimed at being more efficient. During this phase, the HF should be able to access additional supplies easily, as needed.
SERIOUS 	When the HF staff is overstretched from the increased caseload and requires additional support from the DHMT/partners in order to appropriately meet the additional demands; this is when reorganising within the HF and mobilisation of the HF's own resources are insufficient to handle the situation.
EMERGENCY 	When the HF staff is overstretched to the point where even greater additional support is required from the DHMT and partners in order to a) ensure that services for SAM are functioning effectively and at full capacity and b) the population is able to access appropriate services in a timely manner. Significant resource inputs from partners are likely (i.e. addiitonal human resource, supply chain support, infrastructure and equipment). Additional partner support will ideally be provided via the DHMT, but if the DHMT is overwhelmed itself, direct support to HFs may be required.

3.1 Method

Setting thresholds

- The concept of "**thresholds**" should be introduced to the health team: thresholds should reflect a combination of capacity and workload. Since the capacity of a HF can vary greatly, thresholds are set by each HF individually to indicate the levels at which the HF's capacity will be overstretched rather than purely on malnutrition prevalence in the area. A combination of factors influencing capacity (e.g. staffing levels and qualifications, presence of community workers, etc.) and admission records (SAM, pneumonia, diarrhoea, and if relevant, malaria) help in defining realistic thresholds, as well as drawing from staff members' experiences during times when service needs exceeded available resources. Learning from Steps 1 and 2 should be used for this.

- Thresholds set by HFs should be validated by those supporting surge i.e. DHMT and partners to help ensure that thresholds are set realistically i.e. *not too low or too high or too close together*. **Tool 8** provides a suggested mechanism to guide the process of setting thresholds and to confirm them. Some of the data can be prepared in advance to shorten how long the process takes.

Tool 8: Setting thresholds

A. Average number of new admissions for SAM per month:

What has been the range of number of new SAM admissions per month over the past years? What has been the average? How has this level of admissions been for the staff to manage?

B. Agree on thresholds for new SAM admission for each phase:

At this stage, the staff should have a good understanding of the HF's capacity and what number of new admissions will cause them to be overstretched. The HF stakeholders should discuss and debate what they feel are appropriate thresholds for the number of new admissions for SAM for the HF for each phase – normal, alert, serious and emergency. The HF stakeholders should arrive at a consensus for each threshold.

Use Tool 7 to aid with this process, keeping in mind that reaching the serious or the emergency phase should be something that rarely happens, i.e. approximately once every two years for the serious phase and once every 8 years or more for the emergency phase, and not something to aim for.

C. Confirmation of thresholds:

Finally, the HF stakeholders confirm whether the agreed thresholds are appropriate compared to a standard and objective means of threshold setting*. For this confirmation step, the DHMT facilitator should display and explain what standard thresholds would roughly be appropriate, if setting by purely objective means, i.e. via a calculation using the normal number of new admissions per month, as in the tables here. The example thresholds given here are for both low and high caseload examples, with a graph of the low caseload scenario shown in Figure 8. During this exercise, the stakeholders should calculate what the HFs objective thresholds would come out to using the actual normal number of new admissions.

Table 1: Setting thresholds by calculation – low caseload example

Phase	Thresholds for low caseload example 10 new SAM admissions/month
Normal	Up to 3 x normal # of new admissions
	From: 0 To: 30
Alert	3-5 x normal # of new admissions
	From: 31 To: 50
Serious	5-7 x normal # of new admissions
	From: 51 To: 70
Emergency	7 x normal # of new admissions and up
	From: 71 To: and up

Table 2: Setting thresholds by calculation – high caseload example

Phase	Thresholds for high caseload example 100 new SAM admissions/month
Normal	Up to 1.5 x normal # of new admissions
	From: 0 To: 150
Alert	1.5-2 x normal # of new admissions
	From: 151 To: 200
Serious	2-3 x normal # of new admissions
	From: 201 To: 300
Emergency	3 x normal # of new admissions and up
	From: 301 To: and up

Looking at these calculated thresholds, the stakeholders should compare to the agreed thresholds from the previous step.

- How do the calculated thresholds compare to the agreed thresholds?
- Do the stakeholders still feel their thresholds are appropriately set or do they want to adjust them at all?
- Are any big differences justifiable based on the HF's capacity?

While it is okay to have differences, the reasons for having much higher or lower thresholds should be discussed and documented.

Note: This calculation method of setting thresholds is helpful as a guide only for confirmation purposes and is not meant to be used to set thresholds on its own; it is important that threshold setting includes the component of the HF's capacity from Step 2.

* *This objective method of calculating thresholds for the low caseload example is based on the findings from evaluation of the Surge Model pilot project[8], incorporating learning from 14 HFs over a period of 29 months. The evaluation suggested using an approach that mixed objective and subjective means to set thresholds. The figures for the high caseload example come from the method Uganda has used for their surge implementation. After more experience using these objective threshold levels, they should be reviewed and adjusted as appropriate.*

Regular threshold review

- It is critical that the thresholds set by the HF with DHMT and partner support are regularly reviewed for appropriateness as it can be easy to fix thresholds too close together. If set too low, thresholds will be crossed quickly and surge actions will be requested prematurely and possibly unnecessarily. Similarly, if thresholds are set too high, surge actions will be delayed and this may affect the functioning and quality of services for SAM and other morbidities.
- It is important to stress that the thresholds are affected not only by the overall nutrition situation and rising or falling malnutrition rates i.e. demand for services, but also by the capacity within the HF. Thresholds should therefore be reviewed when there have been significant changes in the capacity, for example the HF has gained or lost a staff member or changes to the infrastructure have led to reduced RUTF storage capacity or waiting area.
- As a minimum, thresholds should be reviewed twice a year, and adjusted as considered appropriate. Whenever there is a change in staffing or when the HF feels that there has been a significant change in their capacity, thresholds should be reviewed immediately. HF staff should feel confident to decide when they think a review of the thresholds is necessary. The DHMT focal person and partners should be involved and informed of any changes made in thresholds.

Considerations:
Using new admissions verses caseload for setting thresholds
• Currently acute spikes in admissions are assumed to indicate the need for more support and have been used to set surge thresholds. There has been discussion about using the total nutrition caseload in place of new admissions for setting thresholds, or possibly to monitor both. Total caseload may have implications on when to scale down, likely delaying it. • In the future it could be more appropriate to use overall health and nutrition caseloads/ workload instead of just looking at nutrition figures, especially if the surge approach is broadened to encompass all HF activities and not just SAM.
Number of phases and their names
• Fewer than four phases could be set according to the country context. The types of fluctuations that occur within a country should be examined in making this decision, i.e. high spikes that increase rapidly or many small-medium spikes, etc. • The phase names (in this guide: Normal, Alert, Serious, Emergency) can be defined by the country using words that ensure appropriate interpretation and action within the specific context. When doing so, this should keep in mind that ownership of the approach should be felt by both 'developmental' as well as 'emergency' actors, as this will allow for the appropriate focus on both health system strengthening and preparedness for emergencies as well as rapid action when the situation warrants it.

STEP 4: Defining and costing of surge actions

Step 4 Objectives

HF level:

- To prioritise actions to be carried out during a normal situation and alert, serious and emergency phases to ensure that HFs have the capacity to manage SAM services for their catchment population at all times
- To determine what actions can be done by the HF themselves, what additional support they would need from others (i.e. DHMTs or partners) and which actions would require additional budget or resources

DHMT level:

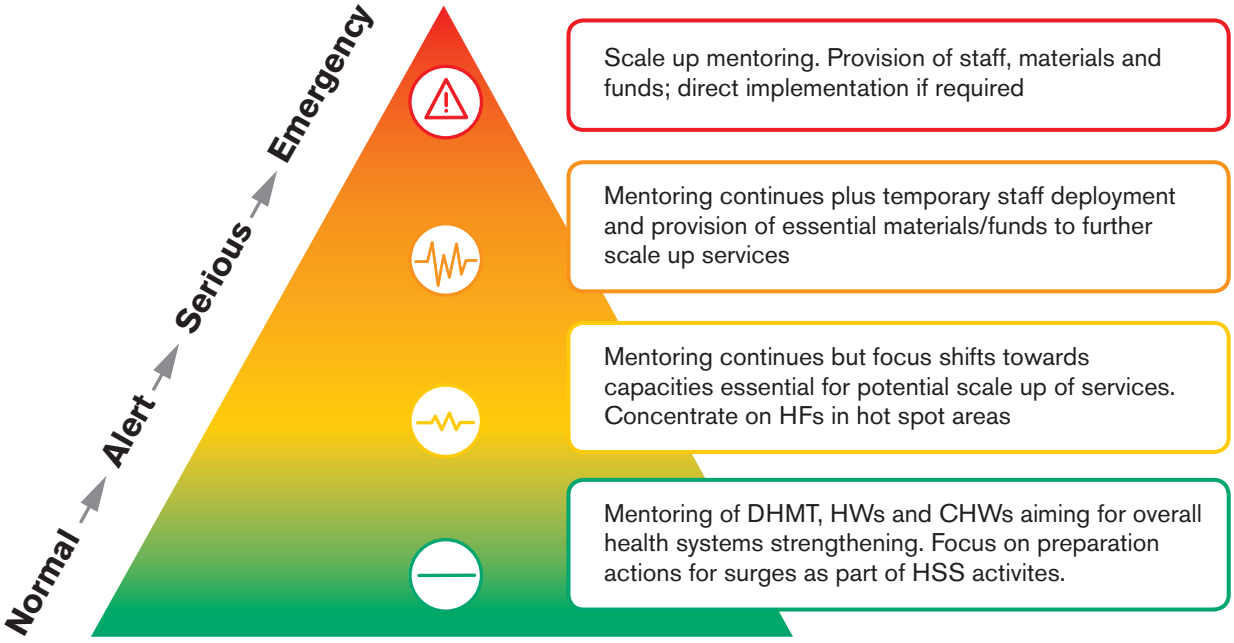
- To estimate the cost of the surge actions for each phase per HF in order for these costs to be budgeted in annual planning processes for the various HMTs, any national level disaster or drought management team and partners
- To integrate CMAM surge package and costs into the Annual Work Plan at HF and DHMT and higher level contingency plans

Who is involved?

At the HF: Facilitator from the DHMT, HF staff, hospital/inpatient focal point, CHWs, key community representatives, partners working in the area

At the District level: DHMT staff and HF In-Charges, partners working in the area, could include a RHMT representative

FIGURE 7: TYPE OF SURGE ACTION CARRIED OUT AT DIFFERENT PHASES



4.1 Method

Actions for each phase are proposed by each HF and then are consolidated, finalised and validated/endorsed at the DHMT level. They should also reflect the gaps highlighted in the capacity review. Overall there should be a trend from a strong mentoring focus during a normal phase towards a higher level of external involvement and support once the nutrition situation deteriorates as shown in Figure 7 above. Similarly, when the situation is normal, preparation activities should be carried out so that when higher phases are activated, surge actions can be implemented immediately.

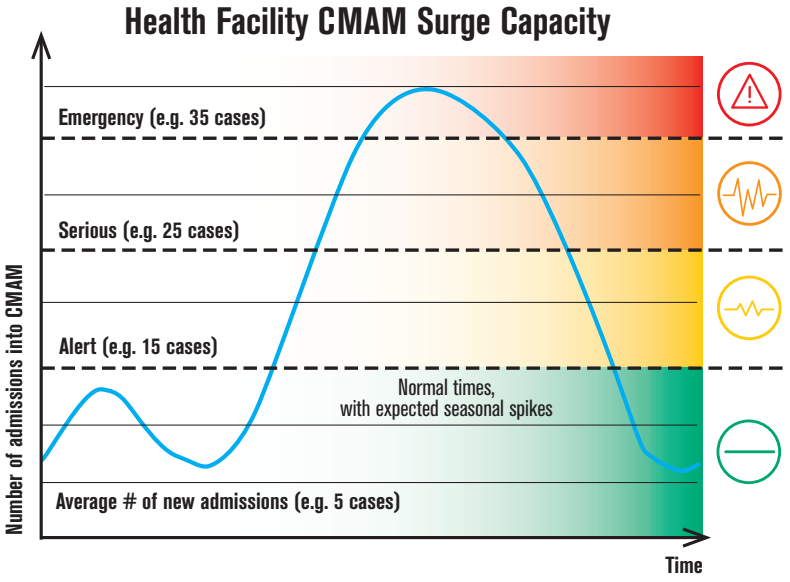
AT THE HF LEVEL

- Using the analysis from Step 2, HF stakeholders recap on what went right and what went wrong during previous years when they had increases in the number of SAM admissions. They should also bring in the findings from the other capacity reviews during Step 2.
- Work through the following activities (**Tool 9**) to define surge actions:

Tool 9: Defining and costing surge actions

1. Write on small cards (or Post-it notes) each action that should be done to be able to adapt and manage both an increasing SAM caseload and a deteriorating situation for health and nutrition. When making these cards, HF stakeholders should consider:
   - All health system functions, i.e. Service Delivery; Community; Human Resources; Medicines, Supplies, Equipment and Infrastructure; Health Information; Leadership & Governance; and Financing. (WHO building blocks are explained in **Annex 1**.)
   - Preventative activities, community actions and any specific actions for inpatient care
2. Go through these cards and indicate which actions can be done by the HF through simple modifications (e.g. reorganising patient flow, reorganising staff rotas, cancelling leave, etc.) and which activities will require resource mobilisation (seconded staff, outreach clinics, etc.).
3. Draw a curve illustrating spikes in SAM admissions (see Figure 8), putting the threshold lines on the graph to reflect the HF established thresholds from Step 3. Using the cards of actions, decide which should be carried out in each phase (normal, alert, serious, emergency). Stick each card into the respective phase to reflect when they should be carried out. An example of a completed curve is shown in Figure 9.

FIGURE 8:
CURVE OF SURGES USED TO DEFINE SURGE ACTIONS



- Preparation activities that are required to be able to carry out a surge action immediately when the phase is activated should also be included on the curve, within their corresponding phase

Tool 9: Defining and costing surge actions (continued)

4. Summarise this graph into a simple table of actions according to phase using **Tool 10**.
   - Requests that came from this activity as well as the capacity review (Step 2) should be summarised so that the DHMT has a simple and complete summary for each HF.
   - Actions that are included for normal times should be considered a priority for immediate action and should be included in the HF/DHMT work plan.
   - Actions that are included for all other phases (i.e. Alert, Serious, and Emergency) will go into the surge package, continuing on with the following steps.
   - Consider which actions will have cost implications and place an asterisk next to anything that has an additional cost involved for carrying out the action; routine costs that are already budgeted for should not be included. Refer to **Tool 11** for a catalogue (non-exhaustive) of suggested actions and compare against your own.

Note: Many of these costs will be part of routine health and nutrition service delivery, especially SAM services.

5. The summary sheet is then brought with the HF In-Charge to the meeting with the DHMT where a standard surge package will be established and agreed for each phase for all HFs in the area.

FIGURE 9: EXAMPLE SURGE RESPONSE CURVE WITH SURGE ACTIONS

Tool 10: Summary of surge actions according to phase

Phase	*Action*	*Requests*
NORMAL	•	-
	•	-
ALERT	•	-
	•	-
SERIOUS	•	
	•	
EMERGENCY	•	
	•	

Tool 11: Catalogue of surge actions for the HF level *(not exhaustive)*	
Health System Building Block	**Surge actions – for preparedness or during a surge** (* indicates an additional cost)
Service delivery	**Preparedness actions taken before a surge** • Arrange for potential ambulance/transport service to inpatient care (*), • Establish/agree an acceptable 'surge protocol' to be put in place after threshold is reached (e.g. giving bi-weekly RUTF rations)
	Actions taken during a surge • Review/redirect patient flow to speed up patient movement and efficiency • Move from weekly to daily outpatient therapeutic services • Give bi-weekly RUTF rations (i.e. fortnightly follow up) • Streamline weekly reporting and simplify weekly anthropometric measures • Ensure prompt referral between OTP, SFP and inpatient services to avoid overcrowding • Ensure discharge protocols are followed to avoid growing CMAM caseload • Implement agreed 'surge protocol'
Community	**Preparedness actions taken before a surge** • Agree with community staff/volunteers how screening and follow up with be increased during surge periods – what is feasible, what support required
	Actions taken during a surge • Increase community volunteers or paid community staff (*) • Increase number of outreach sites/set up mobile clinics to improve access (*) • Increase frequency of follow up of absentees, defaulters, non-responders • Increase regularity of screening within the community
Human Resources	**Preparedness actions taken before a surge** • Agree a plan for staff leave in case of surge • Plan for/ make temporary staff accommodation (partitions, tents, etc.) (*)
	Actions taken during a surge • Extend working hours • Second/transfer staff from district, provide incentives (*) • Recruit and train staff on temporary basis (*) or engage volunteers • Provide overtime compensation to current staff (*)
Medicines, Supplies, Equipment and Infrastructure	**Preparedness actions taken before a surge** • Pre-position buffer stocks of therapeutic/supplementary foods and drugs (*) • Expand working space within facility, repair where needed (*)
	Actions taken during a surge • More frequent inventories and stock requests • Use of text messages to facilitate communicating stock needs (*) • More frequent transport of supplies (*)
Health Information	**Preparedness actions taken before a surge** • On-the-job refresher training on use of reference materials, • Produce additional reference materials & job aids (C) for new or temporary staff
	Actions taken during a surge • Increase frequency of monitoring to fortnightly or weekly (according to phase) • Provide more mobile phone credit for increased communication (*) • Monitor thresholds and communicate when crossed (* – phone credit)
Leadership & governance	**Preparedness actions taken before a surge** • Increased communication between HF and DHMT
	Actions taken during a surge • Conduct more frequent coordination meetings (*) • Increase joint supervision visits & on-the-job training by DHTM staff (*)
Financing	**Preparedness actions taken before a surge** • Make additional budget available for personnel, stocks, phone credit, transport • Cost each surge action for HF and district
	Actions taken during a surge

AT THE DHMT LEVEL

- The objective is to come up with one agreed 'package' of actions for the district that will be 'activated' when thresholds are crossed by any HF into higher phases. The HF lists should be used as a foundation to combine them into one. This combined list should be 'validated' or 'endorsed' by the DHMT to ensure that actions listed, while comprehensive, are also realistic.
- Finalising and endorsing the HF Surge Package as well as its costing should be determined by the DHMT with the HF In-Charges. The final HF Surge Package should be shared with the HFs.
- The final surge package should also be sure to include any preparation activities, with its corresponding phase, that are required to be able to carry out a surge action immediately when the phase is activated.
- Only additional actions should be highlighted for costing i.e. additional cars/fuel for supervision, mobile clinics, etc. A surge actions costing matrix with automated formulae has been developed to help with this process (**Tool 12,** excel sheet) with an example included in Table 3.
- Later, these costs need to be incorporated into various levels of HMT annual and contingency plans and budgets as well as any national disaster or drought contingency plans.

Table 3: CMAM surge costing tool – example

Phase	A: Availability of technical staff					
	Surge action	Unit description	Unit description (calculation)	Unit costs	Number of units	Total Ksh.
Normal	Staff who are willing to rotate (to cover for others on maternity, annual or sick leave or scale up of services) are identified	no costs/ covered under budget for routine OJT/ JSS				0
Alert	List of floating staff is up-dated and stand-by staff is contacted to verify availability	no costs/ covered under budget for routine OJT/ JSS				0
Serious	Staff (highly skilled/ experienced) from other HFs within the district/ sub-country is temporarily seconded to HFs with increased caseloads	1) Already on MOH payroll: transport, food, accommodation, incentive for being seconded. 2) Not yet on MOH payroll: as above plus monthly salary.	1) Food and accommodation costs x 14 days. Two MoH staff seconded for two weeks.	21000	4	84000
Emergency	One additional nurse is provided and funded for each HF in 'emergency phase' and/ or additional DHMT/ NGO staff assists with direct implementation	assumption: nurse not yet on MOH payroll; 20% of HFs; 2 months per year	1 nurse (salary, transport, accommodation, allowances) x 2 months x 20% of HFs	90000	2	180000

Tool 12: CMAM surge costing matrix


The Costing Matrix is available in the Toolbox.

Consideration: *HSS activities and partner support in 'normal phase'*

Most of the activities to be carried out during a 'normal' situation should be part of general HSS support. It is therefore important to divide the activities for this phase into two categories – basic HSS and surge preparedness. Only if these are in place will a scale up with minimum external support be possible. A combination of on-the-job training (OJT), supportive supervision, refresher training, etc. should provide ongoing support to the HFs to reach this minimum standard.

STEP 5: Formalising commitments

Step 5 Objectives

- To ensure that there is confirmed commitment to the surge actions and that there is mutual agreement and understanding of who does what, when and how, with appropriate budgeting

Who is involved?

HF In-Charges, hospital/inpatient focal point, DHMT focal point, RHMT focal point, partners

This step is meant to ensure that all key actors have the same understanding about the surge package, who does what, when and specific responsibilities. It is also to ensure that there is confirmed commitment to this support and that it is both budgeted and funded. Without this formalising step, it can translate into delays in action when a higher phase is activated, especially if little is documented and staff turnover is common.

Surge support is:

- Defined for district
- Agreed in advance
- Formalised
- Budgeted
- Funded

5.1 Method

Prior to making agreements, it is important to work out roles and responsibilities for each surge action, including when they will be done and the resources that are required into a form of a work plan. **Tool 13** provides this work plan template that could be used to establish these responsibilities including the threshold when triggered and how soon after the surge is triggered that they would be completed. Examples might include who provides top up funds, additional staff, technical assistance or training, logistics support, therapeutic supplies and medicines, additional outreach centres or community workers.

Tool 13: Surge actions work plan

Surge Action	Phase when the action is carried out	Who leads this action? Who else is involved?	How is it done? What steps does it entail?	What resources are needed for it?	Where will they come from?	Timeframe in which to carry out action once phase is activated

With clarity on the roles and responsibilities, agreements and commitments can be formalised for the agreed roles.

Agreements can largely be divided into the following categories:

- ***Within MOH and governmental systems***

  Between different levels of the MOH system:

  a. The mechanism in each country varies but could take the form of a policy paper, a Standing Operating Procedure (SOP) or even an internal memo.

  b. Annual work plans and budgets should be adjusted at all levels to include surge actions, i.e. HF, DHMT, RHMT, and national MOH, including any contingency planning sections of them

Between the MOH and other governmental ministries/departments:

c. With the national or regional emergency response agency, agreements need to clarify when they get involved, how to incorporate surge actions into their plans and the mechanisms to request and access resources.

- ***Between DHMT and external partners:*** usually a Memorandum of Understanding (MOU) or partnership agreement will be used, but this will likely be an amendment or annex to something existing.

Tool 14 outlines points to include in any of the abovementioned agreements or MOU.

Tool 14: Surge agreements – points to include

1. Name of parties the agreement is between
2. Time period of agreement and when to be reviewed
3. Health Facilities involved
4. Roles and responsibilities for each party per phase, according to the work plan (Tool 13)
5. Lines and means of communication when thresholds are passed
6. Designation of who "approves" scaling up or scaling down surge actions and timing of approval
7. Time for fulfilling each surge action once approved and activated
8. Process of revising surge package if required e.g. changes in capacity within a HF
9. Details of how additional funds or resources (e.g. seconded personnel, stock, transport, fuel) will be channelled, who will be in charge of these, how they will be transferred, monitored and audited

As appendix:

- Surge work plan outlining roles and responsibilities (Tool 13)
- HF defined thresholds (as annex for ease of updating)
- Costing table of surge actions (Tool 12)

Stage 2: Real-Time Monitoring and Action

STEP 6: Monitoring thresholds

Step 6 Objectives

HF and community level:

- To ensure HF staff monitor against their set thresholds for the number of new SAM admissions
- To trigger a response in real time as soon as thresholds are crossed
- To ensure relevant HWs, DHMTs and partners are alerted so they can implement the surge actions they committed to

DHMT level:

- To ensure DHMT are aware of thresholds and phase of HFs and can prioritise surge support
- To ensure RHMT are kept informed/provide support when required
- To ensure key partners are kept informed and provide support when required

Who is involved?

HF In-Charge, hospital/inpatient focal point, DHMT focal point, RHMT focal point, partners working in the area. Depending on the phase triggered, potentially national MOH, national disaster or drought teams and other partners

What is needed?

At the HF

- Admission numbers
- Wall charts/monitoring sheets
- Means of communication with DHMT

At the district or county level

- Dashboard
- Means of communication with HFs

This step involves regular monitoring of SAM admissions and, optionally, SAM caseload against set thresholds at both the HF (their own admissions) and DHMT levels (admissions at all HFs). This provides the mechanism to activate or trigger the surge package when a threshold is exceeded or return to a lower phase or normal operating procedures when numbers decrease or the HF capacity is sufficient.

6.1 Method

AT THE HF LEVEL

This step is the key point on which the surge model is based and demands HF staff to monitor their services in real time and observe whether thresholds that have been set are crossed using **Tool 15**.

- The HF staff visualise their workload by plotting new admissions and, as an option, the number In-Charge on their charts for SAM using the data that they report to the HMIS. A template is provided in **Tool 16**. Some countries choose to plot other prevalent childhood illnesses as well, as a reflection of their overall workload as well as potential drivers of future cases of SAM, but it is important the chart doesn't get too crowded.

- Frequency of plotting will depend on in-country reporting requirements (i.e. weekly or monthly) and the phase. It is recommended that if monthly reporting is the standard that this is increased to fortnightly and then weekly reporting and plotting of new admissions in higher phases.
- In the case of rapidly rising SAM admissions, it is important to have very visual alerts as soon as a threshold is crossed. In addition to plotting new admissions on a weekly basis, during higher phases, a clear line in the registration book or simple pre-marked tally sheets can alert health workers on a daily basis if the threshold has been crossed. Something simple that fits easily into the HF routine will work best.
- The caseload graph has the HF defined thresholds clearly indicated for a period of six months to one year, allowing for regular review of thresholds. This can be kept as a wallchart in a visible location or using a pre-printed format kept in an accessible location for easy reference.
- As soon as a threshold is crossed for SAM, HF staff members will review the situation, consider potential reasons why there has been an increase in SAM admissions and take immediate steps to respond. The HF In-Charge will communicate the findings to the DHMT focal point to inform them of the situation and brief them on steps taken.

Tool 15: Routine monitoring and planning

1. Monitoring the thresholds

Monthly monitoring

The wall charts in **Tool 16** are used to monitor the situation on a monthly basis and they should be kept on a wall in a visible location or kept accessible.

- Seasonal events calendar – this is filled in the same way as in Step 1, but as events occur e.g. start of the rains, flooding, heavy weeding period, outbreak of fighting
- SAM caseload graph:
  - The vertical axis of this graph in Tool 16 has been left blank to allow the HF to define the appropriate range to use, therefore, a scale must be put on the graph to include more than the maximum number of SAM admissions as well as the total In-Charge (if including this).
  - Thresholds are entered into the table or can be put on the graph with coloured lines.
  - At the end of each month, data for newly admitted children with SAM are entered into the graph using a line and, if including the number of SAM In-Charge, they are put on the chart as a bar, as shown in the key.
  - The monthly number of new admissions for SAM should be compared to the thresholds to see if any have been crossed.
  - As soon as a threshold is crossed for SAM, staff members will activate surge.
  - Consider using a visual tool where the threshold is marked in a daily patient register or via a simple case by case tally sheet so health workers will be alerted each day if a threshold is passed, as explained above.

2. Forward Planning for the coming three months

Each month, the plotting on the wall chart can be used as an opportunity to review their charts from the previous years to see if they should anticipate any surges in the coming three months and plan for them. For this it is important to compare not only trends in admissions and caseloads in previous years with those for the current year but to compare the original events calendar done in step 1 for a 'normal' year against the events calendar unfolding for this year. For example, have the rains come early this year, has there been an unusual level of fighting or displacement?

The forward planning chart can be used to plan activities for each month to prepare for and prevent the spikes in diseases or malnutrition expected for each month. These may be more preparedness activities or, as caseloads increase, the activities planned for each month will become the surge activities agreed to in the surge action plan.

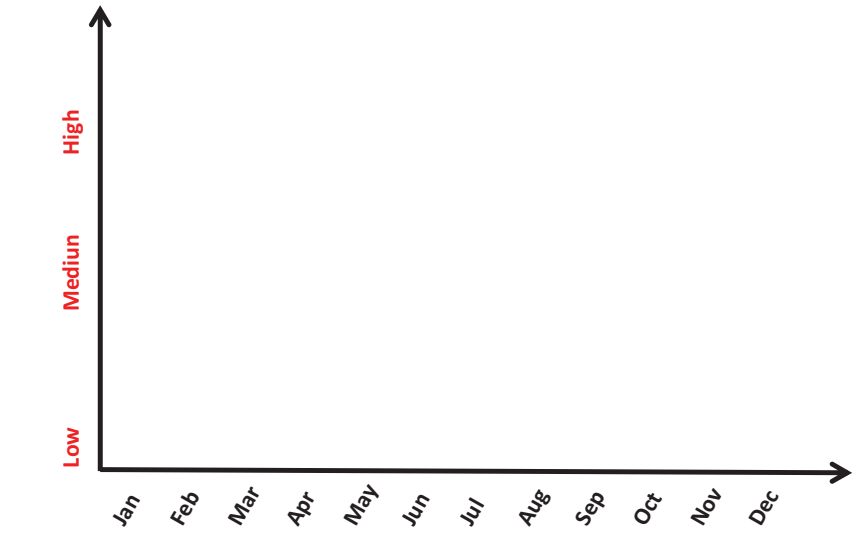
For example, if in May, June and July of the previous two years, a spike in diarrhoea has been seen that is followed by an increase in SAM cases, instead of waiting for this to happen again, the HF can plan prevention activities for the catchment area in an effort to reduce the number of people affected by diarrhoea as well as start to limit staff leave for the next month.

Tool 16: Monitoring wall charts

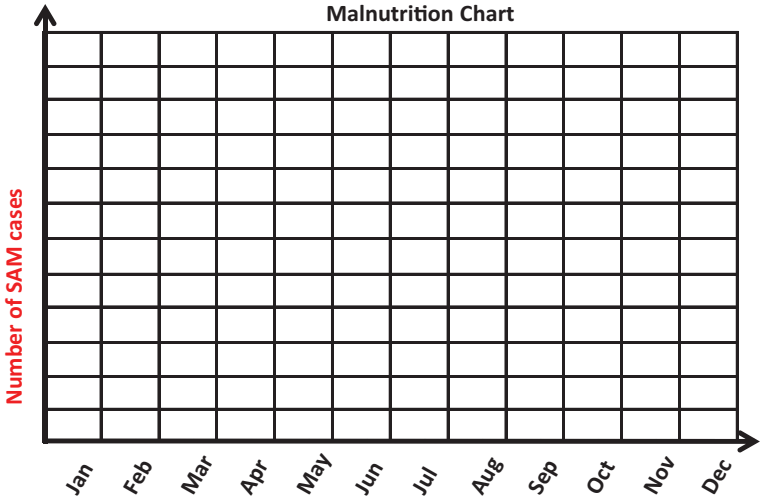
CMAM Surge Approach - Monthly Monitoring of Thresholds & Forward Planning

Health Facility _____Year_____

Seasonal Events Calendar



Malnutrition Chart



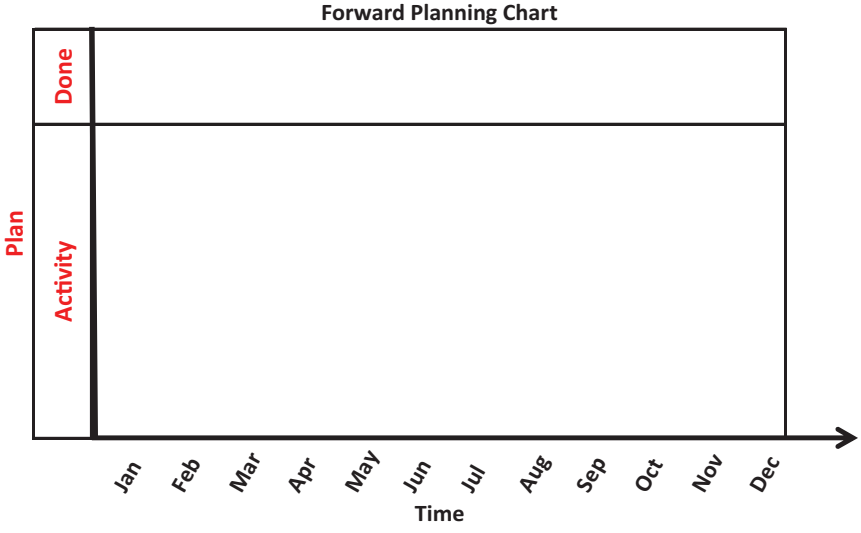
Thresholds	SAM
Normal	
Alert	
Serious	
Emergency	

KEY:

SAM new admissions

SAM in-charge

Forward Planning Chart



Consideration: *SAM caseload versus SAM admissions*
For scaling down, the total SAM caseload i.e. numbers of children in charge, is likely to be a more relevant measure than new admissions. While new admissions can reduce rapidly, the children in the outpatient therapeutic service will stay in care for some weeks, thus, there is a time lag and relying solely on new admissions could result in premature scaling down of support. To date, the experience has only been to use SAM admissions, but consideration of both could be incorporated where surge is used in the future.

AT THE DHMT LEVEL

- The DHMT regularly review the status of all of the HFs and where they are in relation to their thresholds. This serves three purposes:
  a) To allow them to have an overall perspective of the situation in the district
  b) To act as a double check to ensure that action is triggered when thresholds are crossed and
  c) To guide the DHMT on where it needs to prioritise its support and focus its attention.
- It is recommended that, at DHMT level, a simple **dashboard** is established (on paper, whiteboard or electronic) to indicate which phase each HF is in per reporting period. Depending on the existing country reporting system, this could simply involve adding phase information to the routine SAM admission figures already collected via any DHIS or CMAM reporting system.
- Depending on the number of HFs involved the information could be captured visually by a series of individual graphs replicating those plotted and monitored at HF level (with threshold lines drawn in) or consist of all HFs tabulated electronically with a monthly update of what phase each HF is in (or more frequently, if reporting is done more often). Table 4 is an example dashboard while Tool 17 provides an electronic version that could be used.
- When a HF remains in a scaled up phase for several months, the DHMT should try to make a visit to the affected HF.

Table 4: Example DHMT dashboard

Health Facility	Phase		
	Jan	Feb	Mar
Name of HF 1	Normal	Normal	Normal
Name of HF 2	Normal	Normal	Normal
Name of HF 3	Alert	Normal	Normal
Name of HF 4	Normal	Normal	Alert
Name of HF 5	Serious	Alert	Alert
Name of HF 6	Normal	Normal	Normal
Name of HF 7	Emergency	Serious	Serious
Name of HF 8	Alert	Alert	Alert
Name of HF 9	Normal	Normal	Normal
Name of HF 10	Alert	Normal	Alert

Tool 17: DHMT Dashboard


The DHMT Dashboard is available in the Toolbox.

STEP 7: Scaling up and scaling down surge actions

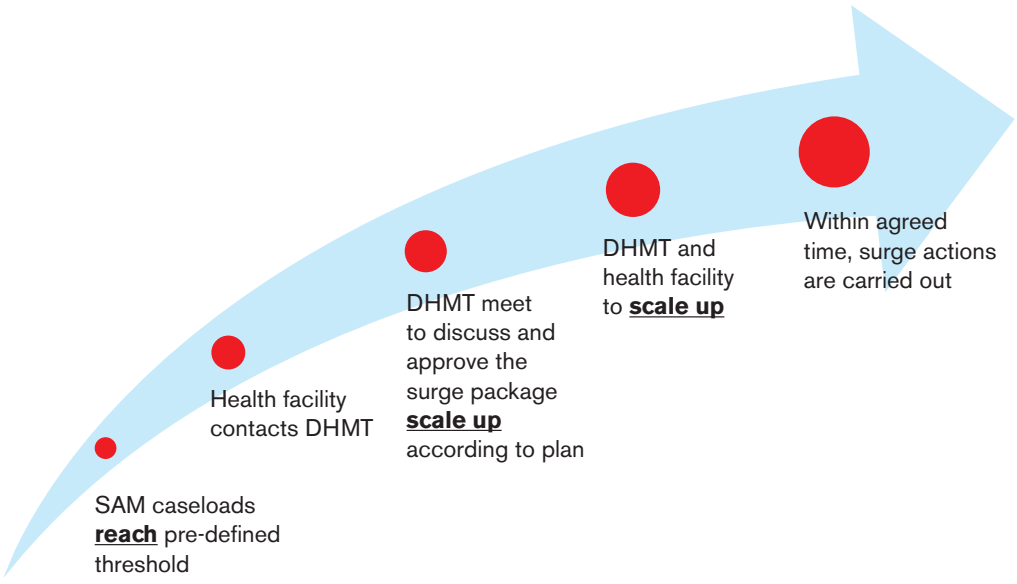
Step 7 Objectives
• To trigger and scale up the package of surge actions to cope with an increasing number of malnourished children without compromising the quality of the health services for these or any other patients • To deactivate surge actions and systematic phase of down activities as the situation normalises based on thresholds and needs
Who is involved?
HF staff, DHMT, partners, and possibly the RHMT, national MOH, or national emergency agency depending on the phase triggered
What is needed?
• Means of communication • HF data on new admissions and information on the situation

7.1 Method

Scaling up

- Once a threshold for SAM admissions is crossed, the DHMT focal person should receive the information and a briefing on the potential cause of increased numbers and immediate actions communicated by the HF-in charge. The DHMT focal person will then discuss the issue with the rest of the DHMT during a routine or a specially called meeting, confirm activation of specific surge actions and establish next steps. Figure 10 summarises the scaling up process to activate surge actions.
- Ideally, support should be provided to the HF as promptly as possible and within the time period indicated in the agreements in Step 5.

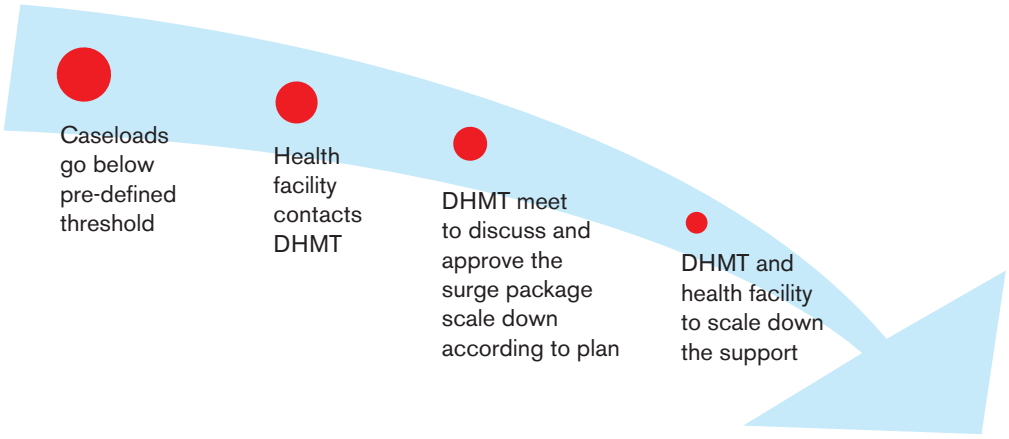
FIGURE 10: SCALING UP MECHANISM



Scaling down

- Once SAM admissions and caseloads have decreased and/or HF capacity is adequate to manage current SAM caseload, the same mechanism is used to scale down surge actions. This process is summarised in Figure 11.
- First, within the HF the situation is discussed and communicated to the DHMT focal point, who in turn shares with the rest of the DHMT and partners, then approves systematic scale down plan accordingly.

FIGURE 11: SCALING DOWN MECHANISM



Communication between HF and DHMT and partners

It is important to consider how information can move promptly between the HFs and DHMT as well as to other actors who have committed support. This is especially important if reporting frequency is increased during serious and emergency phases.

If communication is by mobile phone, mobile credit should be assured and a means to back up a phone call with electronic or paper based statistics. Rapid SMS or WhatsApp has also been proposed as a method to pass messages promptly.

It is critical that information about a threshold being crossed is transmitted rapidly to the DHMT and that in turn the DHMT 'validates' this promptly to ensure that any necessary surge actions are activated immediately.

In some contexts, it can be useful to establish a Committee of key stakeholders to assist with monitoring of thresholds and ensuring activation of surge actions within the agreed time frame. This Committee could be made up of MOH staff, key partners, community representatives, and regional representatives.

STEP 8: Reflect – regular review and adaptation

Step 8 Objectives

- To ensure that the surge approach is functioning appropriately and is achieving its purpose to improve the HFs' capacity to manage periodic increases in admissions of acute malnutrition without undermining health services for other illnesses
- To adapt and improve the surge approach, activities and actions to ensure they are responsive to the needs of the population and the capacity of the health system

Who is involved?

HF staff, DHMT members, key partners, community representatives and health service users

Other actors potentially involved: RHMT, national MOH, national emergency agency

This section describes several opportunities to step back and reflect on how the surge approach is going generally in order to make adjustments that will help make sure that the health system is better able to respond to fluctuations in demand for CMAM services. Reviews ensure that learning is ***regularly*** incorporated and put into action.

There are 4 main reviews that should take place in order to continuously improve the approach:

- Routine monitoring and periodic review/evaluation
- Annual surge review
- Post surge response review
- Review of thresholds – included in Step 3

The first three reviews are covered in this section, while last one is discussed within Step 3.

8.1 Method

A. ROUTINE MONITORING AND PERIODIC REVIEW/EVALUATION

A surge monitoring and evaluation framework should be developed within each country to allow it to be contextualised to the national systems already in place, particularly the HMIS.

It is important that the framework establishes two separate components, one that lays out specific indicators for routine monitoring of the day-to-day surge approach while the other focuses on indicators for periodic, in depth review and/or evaluation. With the approach still in its early stages, together these tools should allow substantial learning and adapting so that the health system can better handle periods of high demand for CMAM services without undermining its capacity. Suggested indicators for monitoring and evaluating the CMAM Surge Approach are discussed in **Annex 4**.

Note: The intention of monitoring and evaluating surge is to ***complement*** the M&E of CMAM services, not to duplicate these efforts. Similarly, indicators should come as much as possible from existing sources.

B. ANNUAL SURGE REVIEW

The premise behind the surge approach is that HSS should be the backdrop upon which surge is implemented. In principle, from these HSS efforts, general system capacity should continuously increase at all levels of the health system, which in turn increases the capacity to respond to surges in caseload (refer back to Figure 1: Theory of the surge approach). These improvements could be visible on a yearly basis and they mean that surge thresholds and actions should also evolve accordingly. This type of review aims to ensure that this positive capacity evolution and increasing capacity feeds back into the system itself to continually make the system stronger and more resilient.

The annual surge review will take stock of how the surge implementation is progressing – it is a holistic review at each level of the system looking at what has worked and what has not. It should include all key surge aspects, such as: the responses that have taken place, the thresholds and whether they are still appropriate, the linkages and communication between levels, etc. Since the process of doing annual reviews is usually part of standard MOH functions, this will not be explained here; aspects to include in this review should be highlighted within the monitoring and evaluation framework.

C. POST SURGE RESPONSE REVIEW

- After there has been a surge response with both scale up and scale down of actions, it is important to take time to review how this went. This can be done as a brief meeting held by affected HFs or at a larger meeting involving DHMT and RHMT focal points with HF In-Charges. The depth of the review should be based on the scale of the situation and the response. It is key that both community representatives (reflect community satisfaction) and partners working in the area are involved.
- Discussion should look at access to SAM services, quality of care and coverage.
- It is important that any key lesson learning is recorded and used to shape future surge preparation and response.

Examples of questions that could be used to review the response are in **Tool 18**.

Tool 18: Review of post surge response: example questions
1. What went well in the scale up and scale down? (I.e. what surge actions really helped?)
2. What did not go well in the scale up and scale down?
3. Was the HF able to manage the SAM caseload and overall workload? (I.e. were there any negative impacts on services for other key morbidities?)
4. Did all of the pre-planned surge actions that should have taken place actually take place? If not, why not?
5. Was routine monitoring of thresholds carried out adequately at the HF? Do the charts require any adaptation?
6. Were thresholds set appropriately or were they too high or too low or too close together?
7. Should caseloads for other diseases be considered in the triggering of surge actions?
8. Was there appropriate communication and involvement of key stakeholders (HF staff, DHMT staff, regional staff, partners, etc.?
9. Was the community adequately involved and informed?
10. Were outpatient and inpatient services and preventative activities adequately considered for the surge response?
11. Does it seem that most cases of malnourished children received services? Were families satisfied with the services that they received?
12. Recommendations of what should be improved before the next surge?

Part C: For Piloting:

The Surge Approach focusing on the DHMT & RHMT

Note: Previous surge pilots have indicated that more attention to surge at higher health system management levels is required. Therefore this section has b een added for the DHMT and RHMT level but has NOT yet been tested. **This section is an initial suggestion to be adapted and piloted with stakeholders in each region.**

In Part B, the CMAM Surge Approach focuses on the HF. It looks at their ability to manage the SAM caseload, ensuring that when there are spikes in the demand for services and the HF is overstretched that there is a system in place that will assist them to maintain a quality service for the population. This aims to avoid any potential excess mortality or prolonged morbidity from SAM that could result due to either health system weaknesses or a general deterioration in the nutritional situation.

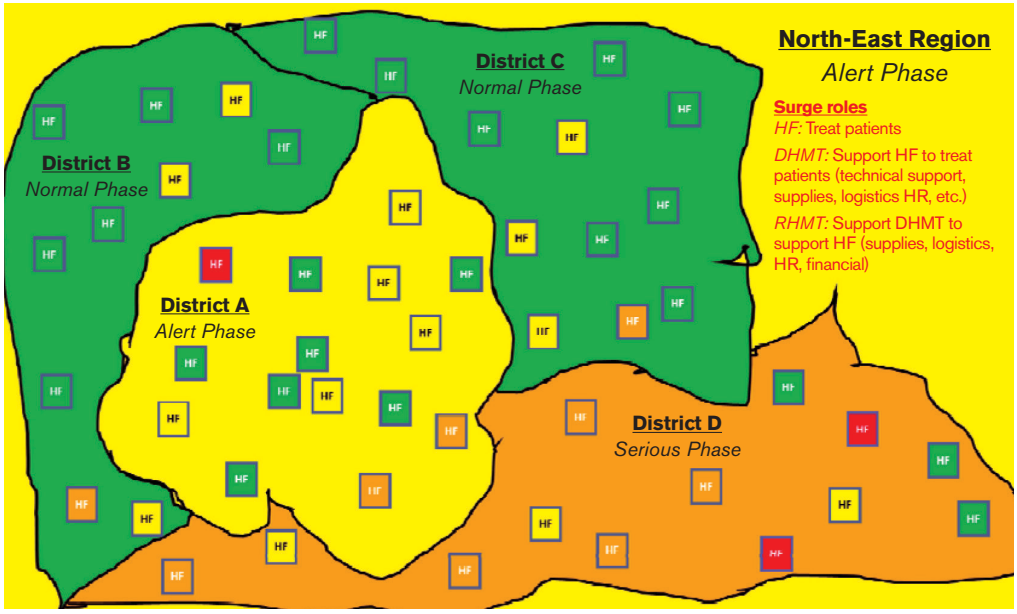
In Part C, the focus is on management levels of the health system, particularly the DHMT and the RHMT (referred to collectively as HMT). Setting up the surge approach at the HMT level is similar to that of the HF but it requires a slightly different orientation. There are two main aims:

a. To replicate and complement the HF surge approach and perspective at this level of the health system to ensure continued quality and efficient CMAM services, particularly during surges, and

b. To define the approach to be used to escalate the requests and provision of additional resources and capacity (from DHMT to RHMT and upwards), using aggregated information, to support the HMT to maintain quality and efficient services at the HF.

Figure 12 and Figure 13 depict this escalation of the surge approach to each level of the health system.

FIGURE 12: HOW SURGE COMBINES AT DIFFERENT LEVELS AND CHANGING ROLES



As the situation escalates, roles change with increased focus on supplies, logistics, financial and HR support. The number of HFs within each phase allows the district phase to be declared.

FIGURE 13: EXAMPLE SURGE THRESHOLDS AT DIFFERENT LEVELS OF THE SYSTEM

	Facility level	District level	Regional level	National level	National Emergency Body
Emergency	>50 new cases/month	>50% of facilities at serious or emergency threshold	>50% of districts at serious or emergency threshold	>50% of at risk regions at serious or emergency threshold	>50% of at risk regions at serious or emergency threshold
Serious	35-50 new cases/month	>50% of facilities at alert or serious	>50% of districts at alert or serious	>50% of at risk regions at alert or serious	>50% of at risk regions at alert or serious
Alert	10-34 new cases/month	>30% of facilities at alert or serious	>30% of districts at alert or serious	>30% of at risk regions at alert or serious	>30% of at risk regions at alert or serious
Normal (preparedness)	<10 new cases/month	100% of facilities at normal or alert	100% of districts at normal or alert	100% of regions at normal or alert	100% of regions at normal or alert

Using the CMAM Surge Approach, the DHMT should examine their ability to manage their workload and request support, if necessary, from the Regional level when they are overstretched, or likewise, the RHMT to the national level. The principle is that weaknesses in the health system at any level translate into poor health services for the population and unnecessary morbidity and potential mortality. If the HF, the DHMT, or the RHMT, are able to ask for support promptly, this will translate into stronger, more resilient health services that fulfil the needs of the population that they serve.

When a significant proportion of HFs within a region are in a higher phase, this is a likely indication of a deteriorating situation for the population, and be one that may require a greater, more coordinated response. Therefore, when a district crosses its own predefined thresholds, or likewise the region does, there should be procedures already in place to verify the situation and then raise the alarm higher up. This release of additional resources should be rapid as it will already have been incorporated into annual plans and contingency plans at various levels, including within any national drought or emergency office.

Note: Many of the steps are the same at the HMT level as for the HF level and therefore are not described in detail. Information is only provided to suggest how to adapt the step to the HMT level.

Likewise, the process is almost identical at the DHMT and the RHMT levels, although obviously it will reflect the capacity and support needs of the DHMTs rather than HFs and the different roles and responsibilities of the RHMT. This section focuses on the DHMT, but should be applied to the RHMT level as well.

In order for the HMTs to analyse their capacity to cope with surges in demand in their administrative areas some historic surge approach data will be needed. In most cases this data is not available therefore the initial threshold setting and package definition will require regular review and an iterative approach to gradually refine the HMT surge approach to provide appropriate system support to services at the HF.

Stage 1: Setting it up – Analysing and planning at the DHMT level

As a team, the DHMT should work through each step to review their capacity, set their thresholds, define and cost surge actions and monitor their thresholds. This process can be done during a 2 to 3 hour session.

STEP 1: Trends and situational analysis

Using the DHMT dashboard, the DHMT can plot how many HFs at the present time are in certain phases. In the future, they can plot the percentage of HFs per phase over time and review which factors (months, areas, etc.) carry the greatest risk of surges and demand for support. Thresholds and response packages can then be adapted to become more appropriate over time.

STEP 2: Capacity review

At the DHMT level, it is important to think through what the DHMT responsibilities are in relation to the management of SAM and how the various team members spend their time. In general terms the DHMT has the following functions:

- Supervision, monitoring and technical support for HFs
- Training of health staff
- Provision of supplies and equipment to HFs
- Planning (quarterly and annual activities and budgets) and management

Similarly, it is also important to be clear at the outset what the roles of other stakeholders – NGOs, UN agencies, the private sector - are in the delivery health services in the district. One of the main aims of the CMAM Surge Approach is to help the DHMT to lead the response when surges in caseloads occur and to gradually minimise the external inputs provided by those other actors.

The following questions should guide the DHMT through the review of their own capacity (**Tool 19**). Most of this information is inherently known by the DHMT members and simply needs to be discussed to acknowledge and manage the issues identified.

Tool 19: DHMT Capacity Review

DHMT time breakdown

Break down the working month into how many days are spent on each different function, i.e. 20/21 working days per month, how many days spent:

- Going to HFs for supervision, support and monitoring?
- Conducting training for health workers? Attending training?
- Working on supplies?
- On planning, coordination and management?
- Other responsibilities? What in specific?

How much more time is available?

(*Note:* This breakdown should be done for the *overall* DHMT workload and not specifically for CMAM, as the aim is to understand how busy the DHMT is and how much additional *overall* capacity there could be within the team in the event of surges. It should also reflect what the team *really* works and not what it would ideally work on or what the job description says it should work on.)

How many HFs are you realistically able to supervise, monitor and support per month during normal times? Consider time available, other responsibilities and obligations, logistical constraints, etc.

Discuss:

- How often is each HF visited/contacted/supported now?
- How often should it be visited/contacted/supported if the HF has an increase in CMAM admissions and is in Alert? If in Serious? If in Emergency?
- Are these additional visits/contacts/support needs that could be covered with the current resources available to the DHMT?

Summary of HFs capacity

Using the HF prioritisation exercise in Tool 6, pull in information on the capacity of each of the HFs in the district. This should highlight common issues arising from the facilities within the district that are likely to occur with surges. These weaknesses are factors that require strengthening during normal times through HSS activities. In the event of increasing demand for services, these weaknesses will be amplified and will require additional support from the DHMT. These should be anticipated by the DHMT and planned for.

DHMT strengths and weaknesses

Highlight key strengths and weaknesses of the DHMT. Consider:

- How much capacity to cope does the DHMT have? Is it able to respond quickly to all the needs of the HF in its area when required?
- How easy is it to mobilise resources for the district? i.e. staff, vehicles, medicines and therapeutic supplies, materials, etc.

STEP 3: Threshold Setting

Threshold setting is a process that must consider both capacity and workload: when the workload surpasses capacity, this is the ideal point to set a threshold. Similar to the HFs, the DHMT needs to set thresholds for Alert, Serious and Emergency phases. Unlike the HF where thresholds reflect the number of new SAM admissions, the DHMT threshold reflects the number (or percentage) of HFs that are in elevated phases, in an effort to capture when the DHMT are likely to be overstretched. Therefore, it is best if these points can be set as a number that can be monitored easily and objectively.

Before deciding on thresholds, the DHMT should use the following descriptions (**Tool 20**) to think through where their thresholds should be set:

Tool 20: Description of phases for the DHMT

Phase	Description for the DHMT
NORMAL	When the DHMT feels they can handle their workload and have adequate resources to support appropriate functioning of all of the HFs in the district.
ALERT	When the DHMT begins to be overstretched due to additional needs from HFs but can handle the situation by reorganising themselves to focus on key priorities with existing external support; this phase may entail a slight reduction in some functions that are carried out during normal times. During this phase, the DHMT should be able to access additional supplies easily and mobilise their own resources for additional supportive supervision, distribution of supplies and communication.
SERIOUS	When the DHMT is overstretched and requires additional support from Regional level (and possibly national level) in order to appropriately support the HFs in the district; this is when reorganising within the DHMT and mobilisation of the DHMT's own resources are insufficient to handle the situation. The DHMT should be able to mobilise resources from the RHMT for staff deployment, increased supplies, mentoring and communication. The RHMT may request support from national drought or emergency bodies or partners to fulfil the needs.
EMERGENCY	When the DHMT is overstretched to the point where additional support is required from the Regional and National level, including national drought or emergency bodies as well as partners in order to ensure that a) the HFs in the district cope with exceptional demand for services and b) the population is able to access appropriate services in a timely manner.

Thresholds can be set in different ways, such as using a score based on the numbers of HFs that are in Alert, Serious and Emergency phase or looking at the percentage of HFs within each phase. Here the score based system is explained, but each country should use what they feel is most intuitive.

Each facility is given a score between 0 and 3 to indicate its phase for the month, with 0=Normal, 1=Alert, 2=Serious, 3=Emergency. These scores are then added up to indicate a phase for the district. The DHMT should work through the following Threshold Setting Worksheet (**Tool 21**) to establish their thresholds.

Tool 21: DHMT Threshold Setting Worksheet – score based system (example)

1. Number of Health Facilities in the District ___10___

2. Range in potential scores for the District

Number of HFs x 0 = minimum district score if all HFs are at Normal = ___0___

Number of HFs x 3 = maximum district score if all HFs are at Emergency level = ___30___

3. Using the range established in #2, decide bands to indicate a normal situation and each phase

Normal	0 – 12
Alert	13 – 18
Alarm	19 – 24
Emergency	25 – 30

Note: Keep in mind that each DHMT-level phase could indicate a range of possibilities for the health facilities; in this example, the DHMT is in Alert with a score of 13 when out of 10 facilities:

- 5 are in Normal, 4 are in Emergency and 1 is either in Alert or Serious

or

- 7 are in Alert, 3 are in Serious

Therefore, these possibilities should be considered when setting the band for each phase.

4. Finally, after the bands are set, these should be converted into an average score for the district by simply dividing the thresholds by the number of HFs in the district (from #1 above).

Normal:	0/10 – 12/10 =	0.0 – 1.2
Alert:	13/10 – 18/10 =	1.3 – 1.8
Alarm:	19/10 – 24/10 =	1.9 – 2.4
Emergency:	25/10 – 30/10 =	2.5 – 3.0

These numbers will then be entered into the DHMT dashboard in order to automatically monitor the DHMT-level phase against these thresholds on a monthly basis.

The thresholds set should reflect when the DHMT will feel overstretched according to the descriptions of each phase above. However, each DHMT will need to try out the thresholds that have been decided to see if they feel appropriate in practice. Therefore, it is important that this is seen as a process that requires regular review and adjustment before the DHMT can feel confident that the thresholds reflect their capacity to manage the situation.

STEP 4: Defining and Costing of Surge Actions

To define surge actions for the DHMT level the team must refer back to their capacity review. For each phase they will define actions that are needed to ensure that they are able to efficiently and effectively support the HFs within their district. The team should discuss and work through the below questions in **Tool 22** to define what actions will be carried out in each phase – normal, alert, serious and emergency. The team should structure their thinking around each of the health system building blocks (explained in **Annex 1**), i.e. Leadership and Governance, Human Resources, Service Delivery, Supplies and Medicines, Financing, Information and also for Community.

Tool 22: Defining & Costing Surge Actions for the DHMT – guide

1. Define actions for a normal situation

Considering the weaknesses and strengths highlighted in the capacity review, what actions should be carried out during a normal situation to ensure that the DHMT is in the strongest position possible before any increase in phase. Any DHMT weaknesses that were highlighted should be addressed during normal times.

2. Previous experiences with increases in needs from HFs

Think back to a time when many HFs required additional support because of increasing demand for services.

- Was the DHMT able to adequately respond to their needs?
- How did the DHMT manage the additional workload?
- What helped to manage the situation?
- Were there aspects that did not go well? Why not? What could have been done differently so that it was handled more appropriately?

3. Define surge actions for Alert, Serious and Emergency Phases

Using both the work done in the capacity review regarding the HFs' capacity as well as the defined surge actions for the HFs, consider the following questions to define actions that should be carried out at each phase:

- What will be required from the DHMT when many HFs scale up?
- What will the DHMT do to fulfil the needs and requests from the HFs?
- Can the DHMT reorganise themselves and mobilise their own resources to handle the situation? If so, these actions should be considered actions for the Alert phase.
- Will the DHMT require some support from the RHMT or partners to handle the situation? If so, these actions should be considered for the Alarm phase.
- Will the DHMT require substantial support from the RHMT, partners, and even national level for a scaled up response to handle the situation? If so, these actions should be considered for the Emergency phase.

When these actions have been listed out according to the phase, ensure that actions have been considered for each building block for health systems. Some examples of actions can be found in the catalogue (not exhaustive) in **Tool 23**.

4. Costing of the surge actions

With the list of surge actions per phase, the team should go through to decide which actions have an additional cost involved in carrying them out – that is, a cost over and above that which is needed as part of the normal functioning of CMAM services. These actions should be indicated in the list by an asterisk. As in the HF level surge package costing, the same process and costing matrix can be used to cost the DHMT level surge package (**Tool 12** and excel matrix).

Tool 23: Catalogue of surge actions for the DHMT level *(not exhaustive)*	
WHO Health System Building Block	**Surge actions (* indicates an additional cost)**
Service delivery	- N/A as the DHMT does not have this function
Community	- N/A as the DHMT does not have this function
Human Resources	- Better plan/shift DHMT staff leave - Extend working hours for the DHMT - Second/transfer staff from another district/region to support additional OJT/ supportive supervision, supply, coordination, etc.; provide incentives (*) - Cancel non-essential staff trainings, workshops, etc. for the DHMT - Borrow an additional vehicle/fuel for vehicle to ease ability to do mentoring or supportive supervision (*)
Medicines, Supplies, Equipment and Infrastructure	- More frequent inventories and stock requests - Ease procedures for ordering stocks so they can get them more quickly - Use mobile technologies for rapid ordering and order follow-up (*) - Pre-position buffer stocks of therapeutic/supplementary foods and drugs (*) - Establish additional warehouse for increased stocks (*) - Dedicated/additional vehicle to distribute supplies (*)
Health Information	- Increased use and monitoring of data coming from HFs - Streamline reporting and analysis to the essentials
Leadership & governance	- Cut down on non-essential activities - Establish co-chair for coordination mechanisms to share responsibilities (*) - Delegate responsibilities to others, i.e. supporting partners (*)
Financing	- Ease procedures to request funds - Additional budget for personnel, stocks, phone credit, transport (*)

STEP 5: Formalising commitments of support

As for the HFs, it is important that commitments with other government offices or partners are documented to ensure everyone has a clear and thorough understanding of roles and responsibilities at the moment when a threshold is surpassed. Within the health system this might most easily be accomplished using the Annual Work Planning Process including contingency plans and budgets using the threshold based surge approach plans as the structure for the contingency plans.

Stage 2: Real-Time Monitoring and Action

STEP 6: Monitoring Thresholds

At the DHMT level, threshold monitoring is done using a dashboard – an excel matrix that allows the DHMT to monitor the phases of each of the HFs in their district as well as their own thresholds. The information should be entered at a minimum once a month, and more frequently if in-country reporting is more often or in higher phases.

Once HF data is entered, the dashboard can be manually or automatically (if using an electronic dashboard) updated and calculates the number and a score representing the proportion of HFs in each phase. This number is compared to the thresholds that the DHMT have set and indicates what phase the DHMT is in for that month. The dashboard is included in **Tool 17 (excel matrix)**, while an example of the dashboard and monthly monitoring is included in Table 5.

Table 5: Example of a DHMT Dashboard

	Jan		Feb		March	
Health Facility	Phase	Phase score	Phase	Phase score	Phase	Phase score
Name of HF 1	Normal	0	Normal	0	Normal	0
Name of HF 2	Normal	0	Normal	0	Normal	0
Name of HF 3	Alert	1	Normal	0	Normal	0
Name of HF 4	Normal	0	Normal	0	Alert	1
Name of HF 5	Serious	2	Alert	1	Alert	1
Name of HF 6	Normal	0	Normal	0	Normal	0
Name of HF 7	Emergency	3	Serious	2	Serious	2
Name of HF 8	Alert	1	Alert	1	Alert	1
Name of HF 9	Normal	0	Normal	0	Normal	0
Name of HF 10	Alert	1	Normal	0	Alert	1
Surge phase		0.8		0.4		0.6
		Alert		Normal		Alert

Key:	0.00-0.49 Normal	0.50-1.49 Alert	1.50-2.49 Serious	2.50-3.00 Emergency

STEP 7: Scaling up and scaling down surge actions

When the DHMT crosses a threshold either scaling up or scaling down, the process is the same as it is for the HF level, only the DHMT will contact the RHMT and so on. In contacting the next level up, resources and support should be considered both for the health facilities as well as for the extra resources and capacity that the DHMT/RHMT or National MoH will also require.

STEP 8: Reflect – regular review and adaptation

The main reviews are the same as those for the HF level.

The monitoring and evaluation framework should be sure to include every level of the health system that is implementing the surge approach.

Part D:

Other considerations

Coordination and linkages

It is important that for each country introducing CMAM Surge Approach that links are made with what is already in place. The following, while not comprehensive, provides some suggestions of areas to consider.

Existing services or bodies: Each country should note all relevant bodies and systems that might be connected to CMAM surge actions:

- national level services, including any drought or emergency bodies
- existing reporting systems for CMAM
- any contingency planning, early warning or disaster rapid response systems
- any supply chain and logistics bodies or systems.

Communication systems: questions to consider could include:

- What early warning information will be useful and complement the CMAM Surge Approach?
- What will the flow of this information be to Region, District and HF level?
- How will each piece of early warning information be used specifically?

Verification of surges: if emergency level is reached this needs to be verified and looked into why it is happening, what is the cause?

At what level is it necessary to verify a surge? If it is about capacity gaps, it is probably less important to verify; when it's about what's happening to the population, this is when it's good to see what the situation is – is this when the DHMT moves into a higher phase, indicating that many of their HFs have activated surge?

Planning: What is the process to get the CMAM surge package into each of the following plans?

1) district annual plans and contingency plans
2) region annual plans and contingency plans
3) national drought or emergency body contingency plans at regional and national level
4) referenced in any future revisions of national CMAM guidelines

Ongoing research/questions

- Additional **consideration of how thresholds are set and monitored** is warranted as if these are set too low or high this will affect how the surge actions are activated/deactivated and to date this has been one aspect proving more difficult for HFs. Setting thresholds in combination with a DHMT "validation/endorsement" and/or support from partners has proved more effective.

- There is a need to demonstrate the efficiency, especially financial, of the CMAM Surge Approach, both as an alternative to episodic injections of emergency aid and as a system that develops the capacity of the health system to respond better to and cope with emergencies. At the time of printing, Concern was developing a Value for Money framework to assist in evaluating the surge approach's financial efficiency.
- More assessment on whether to use **caseload versus new admissions for setting thresholds** is warranted, as use of each will have implications for when to scale up and when to scale down surge actions. While new admissions tends to be a better early indicator of surges, caseload remains high longer than the number of new admissions so might be more appropriate for scale down as the caseload is still under treatment and therefore additional capacity is still required. However to use a different set of thresholds would be complicated so a specific time period, e.g. scaling down two months after the threshold has been passed could be used.
- Ensuring the **community aspect is fully considered** is critical and has been insufficient in some initial pilots. Examination of whether surge can be triggered from the community level would be valuable.
- **Applying the surge concepts to higher MOH management levels** beyond the DHMT (i.e. regional or county level) and **ensuring adequate links to national levels** including contingency planning, drought or emergency offices etc.
- **Broadening the surge approach to other illnesses** beyond SAM (and MAM) has been requested and warrants consideration as the whole workload of HWs can affect the efficiency and quality of care given.
- **Ensuring linkages to other HSS or CMAM approaches that are being developed**. For example work is being done on Bottleneck Analysis (UNICEF, ACF), HSS diagnosis to programming (ACF), simplified or combined protocols for CMAM (IRC and others), CMAM scalability model Kenya (UNICEF, Kimetrica).

Frequently Asked Questions

What is the difference between a surge approach emergency and WHO nutrition emergency?

Surge approach emergency	***WHO nutrition emergency***
• Based on number of new admissions for SAM • Based on capacity to manage caseloads • Focuses at the HF level • Varies from facility to facility	• Based on the GAM rates from SMART surveys • Focuses on population level (i.e. district) • Same for a number of clustered villages/facilities, • Response is district wide

Why do you need both CMAM services and surge for CMAM as well?

CMAM services treat acutely malnourished children, similarly to the way the HF treats all illnesses.

The surge approach complements CMAM services (or potentially any services), noticing when more children come for treatment and helps the HF, DHMT, and others to act quickly so that the HF can handle them.

Do there have to be four phases? Can the phase names be changed?

Each country can decide how many phases they think are appropriate to their context. This should reflect how fluctuations in malnutrition occur in the specific location, i.e. are increases infrequent but high and rapid or are there frequent small to medium increases?

Phase names can and should defined by each country to include terms that drive action, both before the situation deteriorates and when it does.

Does the set-up of the surge approach have to be done at every health facility?

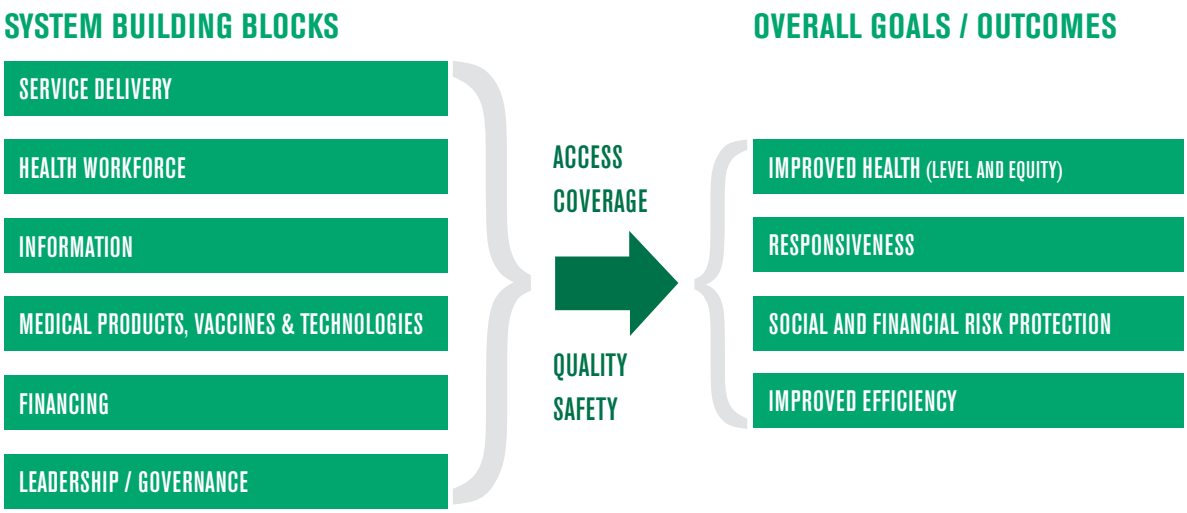
Yes and no.

While the set-up process is suggested to take place with a facilitator going to each HF, it does not have to be done like this. It is possible to facilitate the set-up in a workshop fashion. However, each HF still needs to go through the whole process to be able to set their own thresholds and establish surge actions that make up their surge package.

Annex

Annex 1: Health System building blocks explanation sheet*

THE WHO HEALTH SYSTEM FRAMEWORK



THE SIX BUILDING BLOCKS OF A HEALTH SYSTEM: AIMS AND DESIRABLE ATTRIBUTES

- Good **health services** are those which **deliver** effective, safe, quality personal and non-personal health interventions to those who need them, when and where needed, with minimum waste of resources.
- A well-performing **health workforce** is one which works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given available resources and circumstances. i.e. There are sufficient numbers and mix of staff, fairly disturbed; they are competent, responsive and productive.
- A well-functioning **health information system** is one that ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health systems performance and health status.
- A well functioning health system ensures equitable access to essential **medical products, vaccines and technologies** of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use.
- A good **health financing** system raises adequate funds for health, in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for them.
- **Leadership and governance** involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition-building, the provision of appropriate regulations and incentives, attention to system-design, and accountability.

* Extracted from:
Everybody's business: strengthening health systems to improve health outcomes: WHO's framework for action. http://www.who.int/healthsystems/strategy/everybodys_business.pdf

Annex 2: CMAM Gap Analysis Tool

** Score: 1 to 10*
(1= very weak, requires heavy assistance….10= excellent)

Health system building block Specific question	Answer / notes	Capacity score* (1-10)	Main capacity gaps	Any actions planned to address gaps during next 12 months
Service Delivery				
1. What services are included in the basic health package for delivery at this facility? Is treatment of SAM included? (this is a pre-requisite for introducing surge) 2. Are they all currently being delivered? If not, why not? 3. Have there been any gaps in service provision in the last year?		Score for Service Delivery: _____		
4. Is the referral system for cases needing inpatient care working well? What are the problems?				
5. Do you know what the current coverage rates are for treatment of SAM? For vaccination and/ or other child health services? Have any barriers to coverage and uptake been noted by studies?				
6. What are the facilities opening hours? Which days or times of the day are most busy?				
Community				
7. Are there recognised community health workers or volunteers? Do they cover all the villages in the catchment area? How many villages does each usually cover? Are they paid or any incentive provided? How does the health facility staff interact/ communicate with them?		Score for Community: _____		
8. Is there any village health committee system? Are you able to mobilise community members to volunteer time or resources if needed (via village health committees or other groups?)				

Health system building block Specific question	Answer / notes	Capacity score* (1-10)	Main capacity gaps	Any actions planned to address gaps during next 12 months
Human Resources				
9. According to health policy, how many staff should there be in this facility by grade/type? How many of those mandated positions are filled with a qualified staff actually in place and working? What are the key gaps?		Score for Human Resources: ———		
10. Which of the vacant positions are key to CMAM and for which tasks (measurements, medical check, distributing drugs, distributing RUTF, appetite test, health education)? 11. How are existing staff currently covering CMAM tasks to cope with these gaps (are you shifting any tasks to other staff?)				
12. Do you expect any new staff to begin working at the health facility in the next 12 months (to fill existing or new positions)? If so, which ones and when?				
13. How many of the existing staff are trained in the following: - Measurement of MUAC, weight, height - Medical assessment/ diagnosis/treatment for SAM - Appetite test/health education - Filling child documents - Filling monitoring forms - Managing/reporting/ordering RUTF and drugs - Others? Where are the gaps, if any?	- Measurement of MUAC, weight, height - Medical assessment/ diagnosis/SAM treatment - Appetite test/health education - Filling child documents - Filling monitoring forms - Managing/reporting/ ordering RUTF and drugs - Others?			
14. How are trainings usually conducted for facility staff, particularly CMAM (in the facility by someone from the district health office? At the district health office? NGO?)				

Health system building block Specific question	Answer / notes	Capacity score* (1-10)	Main capacity gaps	Any actions planned to address gaps during next 12 months
Medicines, Supplies, Equipment and Infrastructure				
15. In the last six months has the facility had any period where the following supplies were not available: RUTF Essential malaria drugs ORS and/or zinc? MUAC bands Scales Height boards Thermometers Stop watch If so, how long was the stock out? Are there any current stock outs?	- RUTF - Essential malaria drugs - ORS and/or zinc? - MUAC bands - Scales - Height boards - Thermometers - Stop watch	Score for Medicines, Supplies, Equipment and Infrastructure: ____		
16. What are the main reasons for the above stock out – more cases than planned for, not ordered on time, roads unpassable, none in central store, other?				
17. How is stock of RUTF and other supplies ordered/ delivered (does the district health office deliver, do staff from the health facility need to go collect it, via private transporter, via UNICEF or an NGO)?				
18. Are all the latest protocols and reporting formats available?				
19. Are all the key infrastructure elements and equipment functioning – examination room, storage (especially for RUTF), is waiting area sufficiently shaded for large crowds (covered for rain/sun), is there a handwashing station, latrines, others?)				

Health system building block Specific question	Answer / notes	Capacity score* (1-10)	Main capacity gaps	Any actions planned to address gaps during next 12 months
Health Information				
20. How are monthly reports/caseloads reported to the district health team? (By paper, phone, computer?) 21. What are the main reasons for late reports (and therefore late response to requests e.g. for more supplies)?		Score for Health Information: ____		
22. Do you compile and review monthly data for the facility as a team? Who participates and what is the outcome?				
Leadership & Governance				
23. How often does the district health office supervisor usually visit your health facility?		Score for Leadership & Governance: ____		
Financing				
24. Does the HF have a budget and funds to spend? If so, where do these funds come from? What can they be spent on? If not, how do you get the support and goods you require to run the facility?		Score for Financing (1-10): ____		
25. Who makes decisions about how to spend money/ invest in resources?				
26. If the facility suddenly requires a repair or other goods or services, how would you pay for it?				
Overall Score		(out of 70)		

Annex 3: Capacity review: objective assessment of workload capacity

Annex 3: Capacity review: objective assessment of workload capacity
Current level of staffing: How many staff does the facility have? What cadres? With what qualifications/ training? Is this sufficient for the typical increased workload during a surge?
Length of a medical consultation: How long does it take to see one patient on average? Is this the same for all patients or do some take longer? Keep in mind that all children in the SAM service receive a full medical check-up as well as an appetite test and any required medical treatment on each visit.
Number of patients that can be seen in a day: This number can be calculated using the above information (number of staff and the length of a medical consultation) combined with the number of consultation hours or pulled out from patient registers. This includes all patients regardless of the reason for the visit, not only those for SAM. Both methods are explained here. ***By Calculation*** # of patients per day = (# of consultation hours less any breaks ÷ length of consultation) × # of staff doing consultations Example: 2 staff members do medical consultations in a HF where the consultation hours are from 8 am until 12 pm; each medical consultation takes an average of 10 minutes; normally there is a 20 minute break mid-morning from consultations (# of consultation hours less breaks ÷ length of consultation) × # of staff doing consultations = 3 hours 40 minutes ÷ 10 minutes per consultation × 2 staff = 44 consultations per working day ***With patient registers:*** Review the average number of consultations per day for the HF. Is this number consistent throughout the year? Are there months when this is usually higher or lower? ***Comparison:*** Are the results between the patient registers and the calculation similar? If not, discuss why they are different – this will help to understand the facility workload better. The calculation method provides an ideal but attainable maximum number of patients per day with the HF's existing capacity; the actual number regularly seen is likely to be much lower.
Summary Based on the review of capacity and the daily patient capacity, consider: • What workload and SAM caseload should the HF be able to handle? • Can it do more than it currently is without being overstretched? • When would the workload/caseload be ***too*** much?

Annex 4: Suggested indicators for monitoring & evaluating the surge approach

Routine M&E indicators: It is presumed that all programmes implementing the CMAM Surge Approach monitor the standard CMAM indicators, as outlined in Sphere and other guidelines. Below are a number of indicators that could be used to help monitor the effectiveness of the CMAM Surge Approach more specifically. They are a mixture of quantitative and qualitative indicators, and most rely on a comparison of the indicator during surge and non-surge periods, as one of the key aims of the CMAM Surge Approach is to ensure continuous, quality services for acute malnutrition throughout the year, including the months when caseloads increase. To make this comparison, stakeholders will need to clearly define what they consider a typical surge period vs. non-surge period. As the CMAM Surge Approach introduces a new process for analysis, planning and service delivery, monitoring its success will naturally rely heavily on more process-oriented indicators. Concern does not yet have extensive experience using the below indicators, so detailed guidance is not provided here. However, if you are planning to implement the CMAM Surge Approach and would like to use some of the below indicators, we encourage you to contact Concern (kate.golden@concern.net) to explore this further. Concern will continue to develop and test this M&E component in the near future and would appreciate any thoughts or collaboration. Concern is also looking for the opportunity to more thoroughly evaluate the CMAM Surge Approach in a context where a direct comparison can be made to a more traditional emergency response or to the status quo (e.g. standard CMAM service delivery without the added steps of the CMAM Surge Approach) and a more detailed framework for this comparison is under development.

Quantitative indicators

- % of children discharged from SAM treatment services as cured, died and defaulted during the surge period and non-surge periods
- % of target health facilities with no stock-outs of key supplies e.g. RUTF during surge period and non-surge periods
- % of target health facilities with seasonal event calendars with all relevant drivers of SAM caseload clearly plotted (first year) and/or updated (subsequent years)
- % of target health facilities that have established thresholds based on a sound analysis (e.g. based on step 1-4 of this guide) of what a 'normal' caseload should be
- % of target health facilities that have a written agreement with the DHMT outlining the surge actions and surge support that will be implemented once each threshold is passed.
- % of target health facilities that have passed a threshold that implement the agreed surge actions and receive the agreed package of surge support within one week of passing a threshold
- % of patients at target health facilities who are satisfied with the services received for CMAM (or broaden to include other child health services) during surge and non-surge periods
- % of target health facilities for which surge support is scaled down within two weeks of caseloads returning to below the established threshold.
- Average waiting time for SAM services during surge periods versus during non-surge time (this can be measured via observation of a sample of patients as they arrive and leave a health facility – best to draw a sample from several representative days)

More qualitative indicators to be assessed via focus groups discussions or key informant interviews

- Perceptions of health workers regarding their workload and efficiency of delivery CMAM services using the surge approach as compared to previous years with no surge
- Perceptions of health workers regarding any negative or positive effect the CMAM Surge Approach has on other (non-CMAM) services
- Perceptions of DHMT staff regarding how the CMAM Surge Approach has affected service delivery across the district

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