

**FINAL
EVALUATION
REPORT
CONCERN
WORLDWIDE
CMAM SURGE
PILOT PROJECT,
ETHIOPIA**

JULY, 2019

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1. INTRODUCTION

1.1 CMAM Surge Approach

1.1.1 Principles and Objectives

The Community-based Management of Acute Malnutrition (CMAM) Surge approach is a localized health system strengthening initiative designed to support better anticipation of, preparation for, coping with, and bouncing back from, periodic surges in demand for acute malnutrition management services. It strives to improve the effectiveness, efficiency, and equity of CMAM services without undermining the capacity and accountability of government health actors or negatively affecting other health services. It aims to strengthen the health system's capacity to be more resilient, risk informed, and shock responsive. This is achieved by finding local solutions to local problems, building on existing capacities, and identifying and planning for potential capacity gaps that are likely to occur at the health facility or district level when caseloads increase. This helps the health system act fast to address identified needs rather than waiting for an increase in the prevalence of acute malnutrition, usually measured by periodic nutrition surveys, to trigger a response.

A framework for the Surge approach was first proposed in 2010 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.¹ Concern first piloted and refined the CMAM Surge approach in Kenya, which included the development of guidelines and supporting the Kenyan Government to scale up the approach to the counties most affected by frequent caseload increases. Following the initial pilot and scale-up in Kenya, Concern began implementing the Surge approach in Uganda and Niger and has since supported the process in Ethiopia, Chad, Pakistan, and Burundi, and a modified version of the approach for malaria in Sierra Leone². The evaluations of implementation in Kenya and Uganda were positive and this evaluation for Ethiopia, complemented by a similar one in Niger, will add to the global evidence base. Notably, the Surge approach has also been taken up by several other agencies especially in Francophone West Africa. These organizations are largely ECHO and OFDA funded and include non-governmental organizations (NGOs) working with Governments in Mali, Niger, Burkina Faso, Chad, Senegal, Mauritania and Cameroon³.

¹ Peter Hailey and Daniel Tewoldeberha (2010). Suggested New Design Framework for CMAM Programming. Field Exchange 39, September 2010. p41. www.ennonline.net/fex/39/suggested

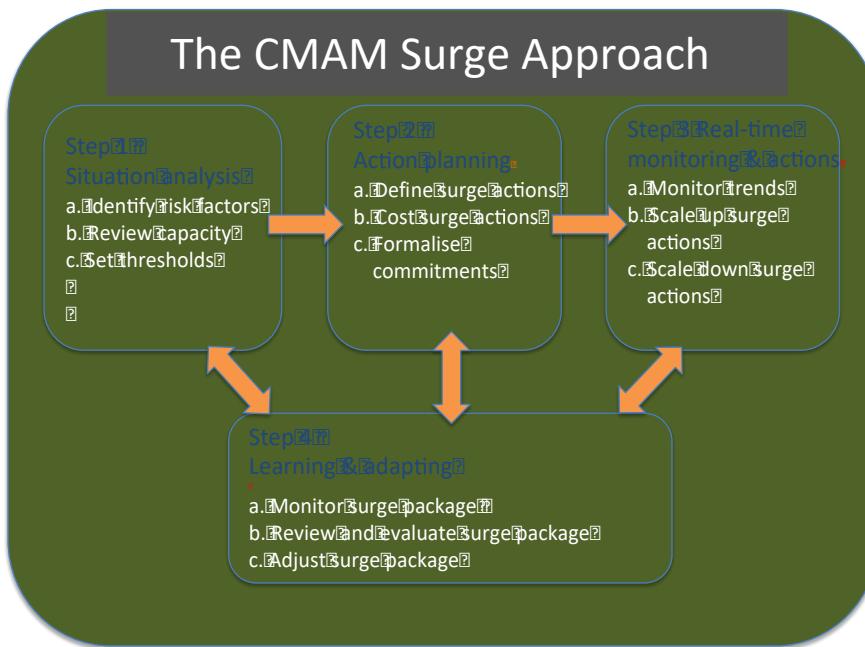
² For more details on the global CMAM Surge approach visit <https://www.concern.net/resources/cmam-surge-approach>.

³ The CMAM Surge Approach Summary Brief. Concern Worldwide. June 2019.

1.1.2 CMAM Surge Components

As described in the adapted Ethiopia CMAM Surge Guideline, the approach is made up of four interlinked steps as shown in Figure 1 and described in detail below. Notably, for Ethiopia, these steps were completed by the health facility staff from both the Health Posts (HP) and Health Centres (HC) as well as their health management team based at the Woreda (district) level commonly referred to us Woreda Health Officials (WoHO).

Figure 1: Steps in the CMAM Surge Approach Adapted for Ethiopia Study



Step 1: Situation Analysis

Identification of Risk Factors:

Involves the analysis of trends for acute malnutrition and other key childhood morbidities such as diarrhoea, malaria and pneumonia. These trends are compared with a calendar of seasons and local events in order to discuss what drives the observed caseloads.

Review Capacity: The health facility staff and in the WoHO reflect on their own capacity to handle increasing caseloads and changes in workload. In this case, capacity should encompass human resources (and their fluctuations in terms of skills, numbers as well as their roles). Infrastructure, equipment and other aspects that might affect capacity are also considered.

Set Thresholds: These are thresholds of caseloads above which internal reorganization and/or external support is required in order to maintain service quality. They are categorized as normal, alert, serious and emergency. As per the Ethiopia CMAM surge guideline, these thresholds are based on what the health facility and/or WoHO team have determined is a ‘normal’ or ‘manageable’ caseload based on their current capacity and at what point they will be a little stretched (*Alert*), moderately overstretched (*Serious*) or critically overstretched (*Emergency*) and need to trigger support from the Woreda Health Officials (WoHO) or other external actors.

Step 2: Action Planning

Define Surge Actions: This step involves defining of surge actions, for the Normal, Alert, Serious and Emergency phases to ensure that health facilities and management teams always have the capacity to provide quality SAM services for their catchment populations and according to the need. The surge actions for each phase were identified for each health facility in Bati. These were organized based on WHO health system building blocks: Service Delivery, Community, Health Workforce, Logistics and Supplies, Leadership and Governance as well as Health Information. Surge actions for Woreda level were also developed (Annex 2). Figure 2 below shows snapshot of some of the actions identified while a detailed Surge Action Plan for management of Severe Acute Malnutrition (SAM) caseloads can be found in Annex 1.

Figure 2: Snapshot of Surge Action Plans for Management of SAM Cases by Phase

BUILDING BLOCK (BB)	PHASE			
	Normal	Alert	Serious	Emergency
Service Delivery	<ul style="list-style-type: none"> - Address all target groups for nutritional screening on monthly basis - Link the identified SAM cases for outpatient department timely - Receive and give quality of SAM care and support based on the national protocols - Provide RUTF on by transferring key messages for care takers - Give follow up care and services on weekly basis without service interruption - Strengthen defaulter tracing through HDAs involvement 	<ul style="list-style-type: none"> - Address all target groups for nutritional screening on monthly basis - Increase the required amount of logistics and supplies - Receive and give quality of SAM care and support based on the national protocols - Provide RUTF on by transferring key messages for care takers - Give quality of services in collaboration with cluster HC staffs - Strengthen community level health committee - Strengthen surge actions at community level 	<ul style="list-style-type: none"> - Address all target groups for nutritional screening on monthly basis - Open additional service provision points for increasing coverage (extend screening sites and OTP sites to the nearby the community) - Receive and give quality of SAM care and support based on the national protocols - Provide RUTF on by transferring key messages for care takers - Give immediate response based on surge action packages - Strengthen community level health committee - strengthen referral linkages 	<ul style="list-style-type: none"> - Address all target groups for nutritional screening on monthly basis - Open additional service provision points for increasing coverage (extend screening sites and OTP sites to the nearby the community) - Receive and give quality of SAM care and support based on the national protocols - Strengthen the reporting frame on daily basis - Give immediate response based on surge action packages - Strengthen community level health committee - Strengthen referral linkages

Cost Surge Actions: In this stage, the costs for all the Surge Actions at both Health Facility and Woreda levels for each phase are identified. These are then listed in a table for ease of reference. According to the Ethiopia CMAM Surge Guideline, the final costed surge package should then be shared with all Health Facilities, the Zonal Health Department and Regional Health Bureaus and incorporated into the annual work plans and contingency plans of relevant entities (Health Facility, WoHO, Zonal Health Department and Regional Health Bureau). In Bati, the costing of surge actions was undertaken by the Health Centre-In-Charges, the Head and Vice Head of Bati Woreda Health Office, Public Health Emergency Management (PHEM) officer as well as Nutrition Officers. Figure 3 below shows a snapshot of the costed surge actions.

Figure 3: Costs of Surge Actions under Service Delivery Building Block by Phase

Phase	Surge action or preparation action	Unit description	Unit description (calculation)	Unit costs	Number of units	Total Cost	Total per BB per phase
Normal phase	Health facility and community are responsible for:						
	Conduct Community screening activities	No of children	It is routine activities to be conducted by HEWs		0		
	provide uninterrupted routine OTP services and session		It is routine activities to be conducted by		0		
	Purchase and provide SC equipments and Materials	Lm			0		
	Sub Total				0		
	DHMT (possibly with the support of others) is responsible for:						
	Conduct integrated Joint supportive supervision	Supervision	6person*150*3days*3 month	2700	3	8100	
Alert phase	Transportation of Logistics to HFs	Litter	19birr/liter*200L	19	200	3800	
	Sub Total				11900		11,900.0
	Health facility and community are responsible for:						
	Provide appropriate services for OTP beneficiaries in weekly basis	weekly	to be conducted routinely		0		
	Conduct Antropometric measurements on selected sites when necessary				0		
	Work closely with community level stakeholders				0		
	Transport OTP supplies from WHO to health facilities	supplies	1000 ETB/HC*6HC	1000	6	6000	
	Purchase and provide SC equipments as required	Material	2000birr/HC*6	2000	6	12000	
	SubTotal				18000		18,000.0
	DHMT (possibly with the support of others) is responsible for:						
	Follow up and support for HFs	session			0		
	Sub Total				0		18,000.0

Formalize Commitments: In this step, commitments by all the stakeholders such as community structures, Local Authorities, Health Authorities, and other partners, such as NGOs, are formalized. This is done once roles and responsibilities for the Surge Actions are clear and understood by those involved. This ensures that surge package is absorbed into the annual work plan of the Health Facility and in higher-level contingency plans with budgets allocated through a memorandum of understanding (MOU). In Bati, the costed CMAM surge action plan was signed off by the Heads of the Health Cluster and Woreda Health Office.

Step 3: Real-time Monitoring and Actions

Monitor Trends: As highlighted in the guideline, real time monitoring of the caseloads in relation to the capacity and events is the heart of the Surge approach and can be done either on a weekly or monthly basis. At the health facilities, monitoring data are plotted on a monthly wall chart usually kept in a visible place for ease of reference. The WoHO and the health cluster also monitor these through a dashboard so that they can have an overall picture of the health cluster and the Woreda respectively.

Scale-up and Scale-down of Surge Actions: This action is initiated when a threshold is crossed and involves the scale-up and scale-down of previously planned and agreed surge support actions as appropriate.

Step 4: Learning & Adapting:

Monitor Surge Package: The surge package should be routinely monitored to a) regularly review capacity and workload to reset caseload thresholds and reconfirm the relevance of the surge actions plan and b) track the performance of surge actions. The guideline suggests that an expanded M&E framework for the surge actions should be developed and aligned with the PHEM and HMIS procedures. In the pilot woreda, a CMAM dashboard monitoring SAM caseloads was developed with other indicators such as pneumonia, diarrhoea as well as MAM being added to the dashboard following the mid-term review of the pilot study.

Review and Evaluate Surge Package: To promote reflection on how the Surge approach effectively builds the resilience capacity of the local health system for CMAM surge and how it may be improved (i.e. learning by doing and translating learning into action), several learning opportunities should be created and utilized. These should complement the M&E frameworks for the surge package and CMAM services. Some of the suggested opportunities as per the guideline include: routine monitoring, including updating thresholds, post-surge response review, annual review and post surge response review (Evaluation).

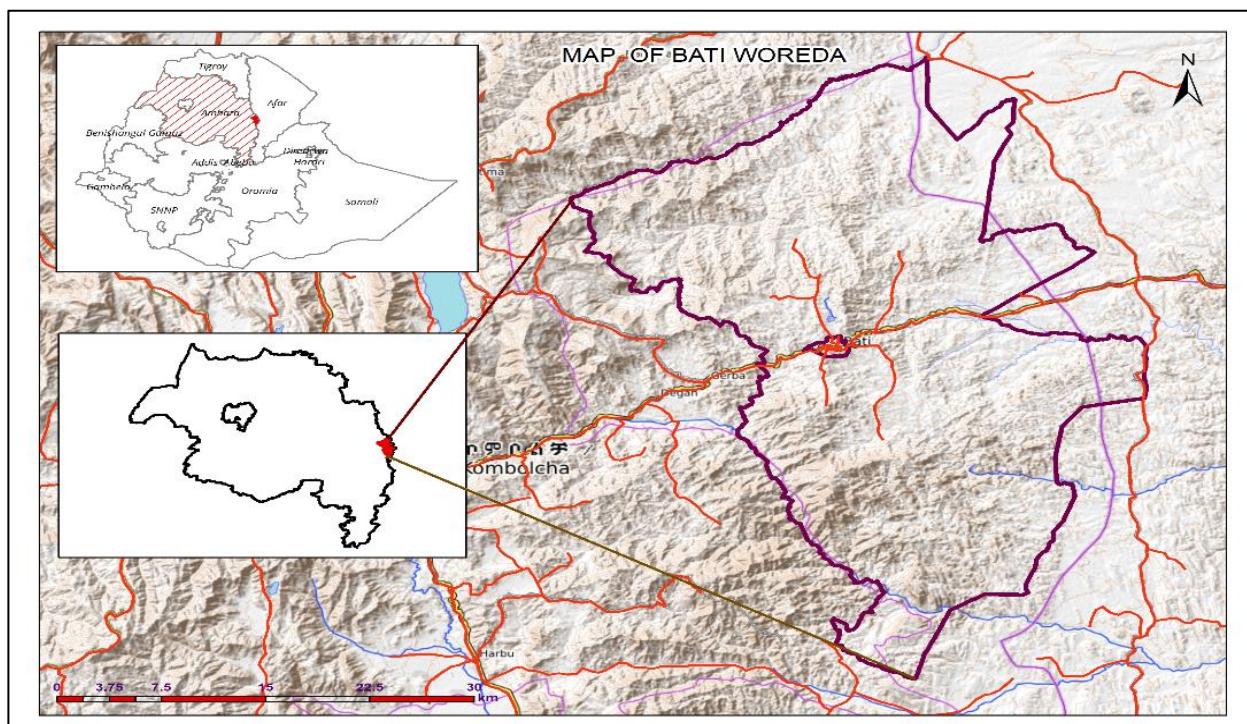
Adjust Surge Package: Depending on the findings from the periodic monitoring and review, the surge package should be updated to ensure that it responds to the needs of the population and the capacity of the health system. A similar process as outlined under the set up steps would be used.

2. CMAM SURGE IN ETHIOPIA

2.1 Background Information

Ethiopia is a landlocked country located in the Horn of Africa. It shares its borders with six countries: Eritrea, Djibouti, Somalia, Kenya, South Sudan, and Sudan. It is the second most populous country in Africa with an annual growth rate of 3.2 percent in 2011^{4,5} and has nine self-governing regions⁶. Concern Ethiopia, in collaboration with the Federal Ministry of Health of Ethiopia (MOH), Public Health and Emergency Management (PHEM) Department of the Ethiopia Public Health Institute, and actors at regional, zonal and woreda levels, is piloting the CMAM Surge approach in Amhara Region, with funding from the U.S. Agency for International Development Office of U.S. Foreign Disaster Assistance (USAID/OFDA). Specifically, the pilot is being implemented in Oromia Zone in Bati Woreda (intervention area) and Dawa Chefa Woreda (comparison area).

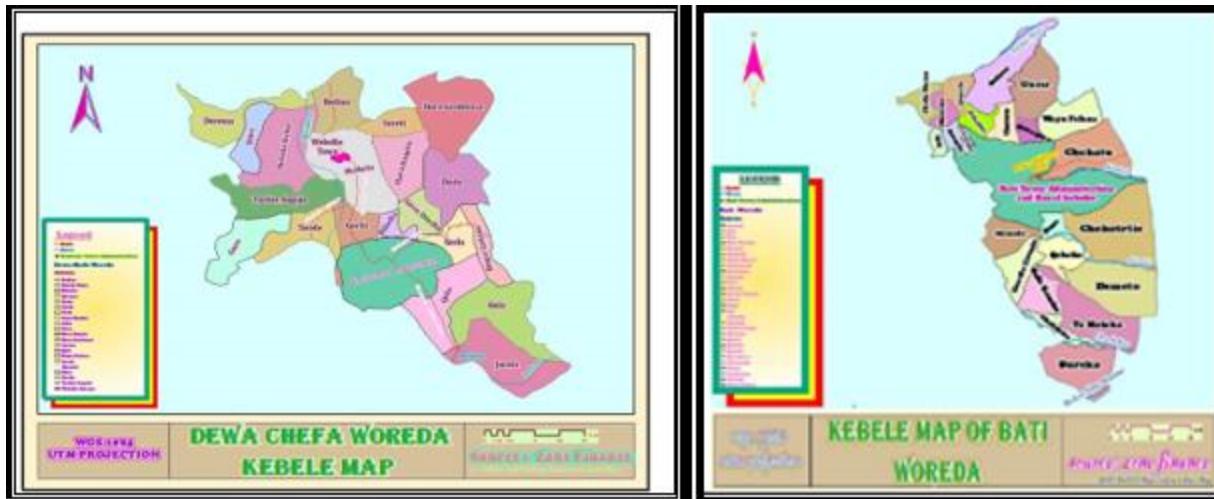
Figure 4: Maps of Bati and Dawa Chefa Woreda



⁴ Ethiopia Health Sector Transformation Plan: http://www.moh.gov.et/hu/web/guest/resources/-/asset_publisher/LxGhZlsZttR0/content/-point-rating-method-?redirect=%2Fhu%2Fweb%2Fguest%2F-%2Fhealth-sector-transformation-plan%3FinheritRedirect%3Dtrue&inheritRedirect=true

⁵ FEWSNET: A climate trend analysis of Ethiopia, 2012 : http://fews.net/sites/default/files/documents/reports/FS12-3053_ethiopia.pdf

⁶ Ethiopian Government Portal : <http://www.ethiopia.gov.et/government-structure>



These two Woreda fall under the South Wollo and Oromia Eastern Lowland Sorghum and Cattle Livelihood Zone (SWS)⁷. This Livelihood zone (LHZ) is generally less well-off than neighbouring Cheffa Valley LHZ in terms of soil fertility, availability of irrigable land and market connectivity. It is known for its livestock population, especially goats, which are sold in large numbers to markets linked to Addis. High quality *chat* is grown here and sold to markets throughout the region, providing local households with an important source of cash income. Mung beans are grown and sold for cash as well. Sorghum is the primary food crop grown, supplemented with small amounts of maize and teff. Rain fed agriculture is the norm, and ox ploughs are used to cultivate. Poorer households rely heavily on finding work in the casual labour market, both locally, on the farms of better off households (for weeding and harvesting) and in towns (on construction projects). Remittances from household members working in Saudi Arabia and other Gulf countries supplement the income of better off and some middle-income households. Cash transfers from the Government's Productive Safety Net Program (PSNP) provide a crucial supplemental source of income for poorer households.⁸

SWS is predominantly 'kolla'⁹ and hilly with undulating plains. Temperatures are 21 -33°C throughout the year with annual precipitation from 600 mm to 900 mm. The area has a moderate population density. There is a bimodal rainfall pattern with two crop production seasons. Most rainfall occurs in the *Kremt* season, from mid-June to mid-September while the short rainy season occurs in March and April (the *Belg*). The soils are moderately fertile, varying from sandy soils in Bati woreda to loamy soils in Dewa Chefa. In comparison to the rest of Amhara region, this zone is considered as chronically food insecure partly due to the erratic and unreliable nature of the rains. Figure 5 shows the seasonal calendar for the LHZ.

⁷ An Atlas of Ethiopian Livelihoods : The Livelihoods Integration Unit

⁸ Ethiopia Livelihood Baseline: Amhara Region. South Wollo and Oromia Eastern Lowland Sorghum & Cattle Livelihood Profile. June 2016

⁹ *Kolla* an area that experiences hot climatic conditions

Figure 5: Seasonal Calendar of S. Wollo and Oromia Eastern Lowland Sorghum and Cattle
LHZ¹⁰

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Rainy Seasons	■						■	■			■	■
Livestock												
Cattle												
Milk production		■	■	■	■	■	■	■	■			
Livestock migration- average year					■	■	■	■	■	■		
Livestock disease	■								■	■		
Livestock sales	■	■	■	■	■	■	■	■	■			
Crops												
Sorghum												
Maize	■	■	■	■								
Mung Beans	■	■	■	■								
Teff	■	■	■	■								
Other Income												
Agricultural labour peak	■	■	■	■								
Firewood sales								■	■	■	■	■
Construction labour					■	■	■	■	■			
Remittances peak						■	■	■	■	■	■	■
PSNP distributions						■	■	■	■	■		
Stress & High Expenditure Periods												
High Staple Prices	■									■	■	■
Human Diseases					■					■	■	■
Lean Season	■	■								■	■	■
Legend	■	■	■	■	■	■	■	■	■	■	■	■
	Land Preparation	Sowing		Weeding	Harvest							

2.2 CMAM Programme and Ethiopia Health System

CMAM was first piloted by Concern and Valid International in Ethiopia in 2000¹¹. Since then the FMoH has led the national scale up of CMAM, and management of SAM is now an integrated service within the Government Health System. The Government aims for a highly decentralized delivery of SAM services down to the Health Post (HP) level across all nine regions. Although SAM services are highly decentralized, HPs typically have minimal staff with many responsibilities.

The Ethiopian Health System is divided into three levels: tertiary, secondary, and primary. The CMAM Surge pilot is being implemented at the primary level, which is managed at the woreda level, supported by zonal, regional and federal level structures. The woreda level is made up of the Woreda Health Office (WoHO), under which the health facilities are divided into health clusters. The health clusters are made up a Health Centre (HC) that is linked to about five satellite HPs, usually one per kebele or community structure. HCs are typically staffed by one to two health officers, three to five nurses, two midwives, one pharmacy technician and one laboratory technician. HPs are usually run by two Health Extension Workers (HEWs) who are tasked with delivering Ethiopia's Health Extension Programme (HEP) initiative, which has been cited as one

¹⁰ Ethiopia Livelihood Baseline: Amhara Region. South Wollo and Oromia Eastern Lowland Sorghum & Cattle Livelihood Profile. June 2016

¹¹ <https://www.concern.net/insights/lessons-15-years-community-management-acute-malnutrition-programming>

of the major contributors to improved access and utilization of health services as well as health outcomes in Ethiopia.¹²

HEWs provide services across the four areas of the HEP: Hygiene and Environmental Sanitation; Disease Prevention and Control; Family Health Services, which includes nutrition services; and Health Education and Communication. For nutrition specifically, in addition to managing uncomplicated acute malnutrition cases in the outpatient therapeutic programme (OTP), the work also includes routine screening and health education at community level among children under five and pregnant and lactating women, linking to, and supported by, community volunteers. These community volunteers are known as the Women or Health Development Army (WDA/HDA).

2.3 Objectives of CMAM Surge Pilot Study

The overall objective of the CMAM Surge pilot is to determine the added value of the approach in the Ethiopian context by examining if it can build the capacity of the health system to better manage periodic increases in caseloads of acute malnutrition while maintaining service quality in a manner that is sustainable and acceptable to users and service providers. The approach was implemented in Bati Woreda targeting the WoHO as well as the 29 health facilities (6 HCs and 23 HPs). The actual implementation period of the pilot study was 15 months from May 2018 to July 2019.

2.4 Key Activities in Pilot Study

Various activities were undertaken prior, during, and post surge pilot study. These are termed as pilot set-up, implementation period and follow-up, for ease of reference.

Pilot Set-Up: October 2017 to March 2018

Following the approval of the pilot study by FMoH, a kick off workshop was organized in October 2017 where roles and responsibilities of various stakeholders during the study period were discussed. Health officials from both the Zonal and Woreda level attended: 17 participants in total¹³. The global CMAM Surge Operational Guide¹⁴ was then adapted to the Ethiopian context. ¹⁵. In addition, a baseline survey to assess the capacity of health facilities to deliver SAM services

¹² Wakabi, W. Extension workers drive Ethiopia's primary health care. *The Lancet*. 372(9642), 880, 2008;
Bilal, N. K., Herbst, C. H., Zhao, F., Soucat, A., & Lemiere, C. (2011). Health extension workers in Ethiopia: improved access and coverage for the rural poor. *Yes Africa Can: Success Stories from a Dynamic Continent*, 433-443. 2011.

¹³ These included : Zonal health department team (health department head, health department vice head, zonal nutrition officer, PHEM officer, finance and economic officers, M&E officer and zonal disaster risk reduction focal person); Woreda health office (woreda health office head and vice head, child health and nutrition officer, PHEM officer, finance officer and disaster risk reduction officers)

¹⁴ CMAM Surge Operational Guide. Concern Worldwide 2016. <https://www.concern.net/resources/cmam-surge-approach>

¹⁵ Guide on CMAM Surge Approach for Preparedness, Early Warning and Response to Severe Acute Malnutrition.

Ethiopia. February 2018.

and to prepare for surges in caseloads was also implemented in February/March 2018. The survey included health facilities in Bati and Dewa Chefa Woreda that were functional at the time of the survey: 25 and 32 health facilities respectively. To facilitate roll-out of the pilot, a three-day Training of Trainers (ToT) on the CMAM Surge Approach was conducted. A total of 22 participants from the zonal and WoHO levels as well as the HCs were trained on the 8 steps of CMAM Surge including conducting their actual situation analyses using available SAM data. Notably, a Cost Effectiveness Analysis (CEA) was initiated at the same time as the baseline survey to establish if there is any difference in cost effectiveness between including CMAM Surge as part of CMAM services and the comparison woreda, which is not implementing CMAM Surge. The CEA examines data for the period of April 2018 to April 2019. The findings from these assessments are discussed in section 4 below.

Implementation Period: April 2018 – July 2019

Activities were implemented in Bati woreda from April 2018 – July 2019 and Dewa Chefa from April 2018 to December 2018.

Training was cascaded to 28 HEWs from 23 HPs in Bati Woreda. The training focused on two steps of CMAM Surge: Setting up and Real-time Monitoring. To limit movements of HEWs from their work stations, these trainings were conducted at the health cluster level. As per the recommendations from the baseline survey, a total of two refresher trainings were conducted: one focused on management of SAM cases with complications (targeted woreda and HC staff) while the other was on management of SAM cases without complications (targeted HEWs). The participants were from both Bati and Dewa Chefa Woreda. In addition, two Community Mobilization Workshops were facilitated in Bati Woreda with the aim of strengthening community mobilization and referral system for malnourished cases. The first workshop was a one-day orientation workshop targeting HDA Team Leaders (HDATLs) while the second one targeted *kebele* taskforce members.

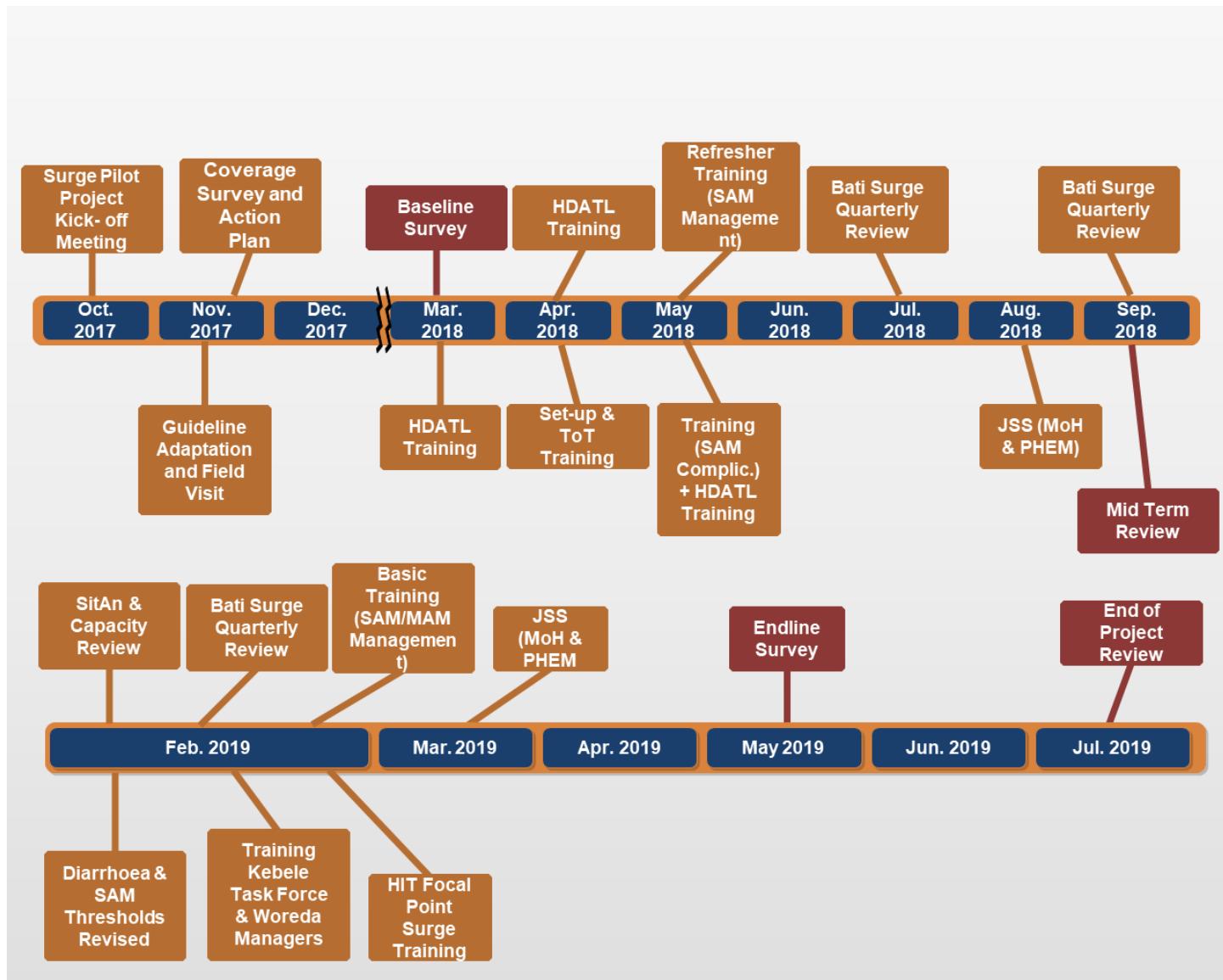
As part of the monitoring process, Concern in collaboration with the WoHO conducted quarterly review meetings in both woreda. The aim was to monitor the progress of the pilot study, identify achievements, gaps, and explore potential opportunities for improvement. Joint Supportive Supervisions (JSS) were also conducted by representatives of FMOH, PHEM, Zonal Health Department, Concern, Bati WoHO experts and Health Cluster in Charges.

As part of the review process to explore what was working/not working and to identify opportunities for improvement with regards to the pilot, a mid-term learning review was conducted at the end of September 2018. In addition, a coverage survey using Semi-Quantitative Evaluation of Access and Coverage (SQUEAC) survey methodology was undertaken in both woreda. The aim was to identify the boosters and barriers of CMAM services uptake, to estimate the woreda CMAM coverage rate, provide recommendations and to develop action plans for the identified gaps based on the survey findings.

Follow Up: July 2019 to September 2019

As a comparison to the baseline survey, an endline survey to establish the capacity of health facilities to provide SAM services post the CMAM surge pilot was completed in May/June 2019. A final evaluation of the pilot study was also undertaken from 2nd to 8th July, 2019. Figure 6 below shows a timeline of activities implemented during the pilot study.

Figure 6: Timeline of Activities Implemented during the CMAM Surge Pilot Study



3. FINAL EVALUATION APPROACH

3.1 Objectives & Scope

This evaluation builds on the findings and recommendations from the mid-term learning review of the pilot project completed in September 2018. Its principal question is:

Can the CMAM Surge approach strengthen the capacity of the health system to manage periodic increases in caseloads of acute malnutrition and other relevant child illnesses during a shock or stress while maintaining the service quality in a manner that is sustainable and acceptable to users and service providers?

The specific objectives are:

1. To assess the ***relevance and acceptability*** of the CMAM Surge approach to the Ethiopia context and identify any further adaptations required.
2. To assess the degree to which the CMAM Surge approach was ***implemented as planned/envisioned*** in line with the global guidance and the Ethiopia-specific guide developed in late 2017 and identify where further adaptations may be required.
3. To assess the ***effectiveness*** of the approach in protecting the quality of management services for acute malnutrition and other relevant childhood illnesses during periodic increases in caseloads (or potentially other predictable shocks or stresses to the health system) without having a negative impact on other services in the context.
4. To assess the ***wider impact and sustainability*** of the CMAM Surge approach in the Ethiopia context, particularly in terms of how it fits within the existing health system structures and process and other relevant government, civil society or donor mechanisms for emergency and development actions, and signs of wider impact achieved during the implementation period or potential impact should it be scaled up as well as any potential negative effects.
5. To assess the ***efficiency*** of the approach as implemented in the Ethiopia context and in light of the cost effectiveness analysis being undertaken alongside the implementation and evaluation by a separate consultancy team.

3.2 Methodology

The original intent of the evaluation was to compare the performance of health facilities in the intervention woreda (Bati) where CMAM Surge was implemented and the comparison woreda (Dewa Chefa) where SAM services were to be delivered via standard FMoH services with a nine-month routine SAM services response including training and on the job technical support implemented by Concern during the lean season.

Three adaptations were made during the pilot stage. First the pilot project in the intervention Woreda, Bati, was extended to a 15 month period. Second, instead of the 6-month emergency SAM services, routine CMAM service support was provided by Concern to Dewa Chefa for a period of 10 months. Third, the findings from routine monitoring as well as the mid-review highlighted that the two woreda were essentially different in terms of access, human resource capacity and attrition levels. Several kebeles in Bati have complicated access related to season and in some cases insecurity. Six HPs in Bati were closed due to lack of human resources during the evaluation period compared to none in Dewa Chefa.

In Bati during the pilot year, 3 thresholds were crossed. All were from normal to alert. Two were in Teamelka HC (see detailed discussion below) and one in Selate HP. This low number of thresholds crossed make it difficult to compare performance during surge periods.

Consequently, the mid-term review and the final evaluation concentrated on exploring the impact of the pilot on the operations of the health system in Bati before and during the implementation of the pilot project. Routine CMAM data was available for 12 months prior to implementation (July 2017 – June 2018) and for 12 months of implementation (July 2018 – June 2019). Limited additional data was also available for Bati woreda dating back to 2013. Dewa Chefa data was available for April 2018 – April 2019 and this data was used in the analysis where appropriate.

Overall, the data collection was rolled out in a series of phases and processes including:

- **Desk Review:** A review of all the relevant and available documents on CMAM surge related information in Ethiopia. These included guidelines and monitoring and evaluation reports by Concern. Details of the reviewed documents can be found in Annex 3.
- **Analysis of Routine Health Facility Data:** The evaluation team reviewed the available CMAM data from Bati and Dewa Chefa woreda. These were compared with data on livelihoods, seasonality as well as findings from the mid-term review and final evaluation of the pilot study.
- **Baseline Assessment (Digital Data Gathering).** An assessment to determine the capacity of health facility staff to deliver SAM services and to prepare for surges in caseloads was conducted in both Dewa Chefa and Bati Woreda. This was performed by Concern using tools listed in Annex 4.

- **SQUEAC Coverage Surveys.** A baseline survey to determine the coverage of CMAM services was conducted in both Bati and Dewa Chefa woreda, in October 2017.
- **Mid-term Learning Review:** The evaluation team conducted a midterm review to assess the progress of the pilot study. The overall objective was to identify what was working, not working and opportunities for improvement. The sites visited and participants interviewed are included in Annex 5.
- **Endline Assessment (Digital Data Gathering).** This assessment is a follow-up from the Baseline and meant to provide a contrast to look for changes with the implementation of the Surge approach. Details of tools used can be found in Annex 4.
- **Cost-Effectiveness Analysis (CEA).** Assessment to determine the cost difference of surge approach versus a standard CMAM programme.
- **Final Evaluation Visit.** The final evaluation of the overall pilot study took place from 2-8 July 2019.

Sample and Data Collection for the Final Evaluation

Health staff from health facilities implementing the CMAM surge approach, HDATLs, caretakers of children receiving SAM treatment as well as WoHO members from both Dewa Chefa and Bati woreda were purposively selected. A total of 16 semi-structured Key Informant interviews (KII) and 4 Focus Group Discussions (FGDs), each lasting 1 hour, were conducted. The KII and FGDs were audio recorded upon obtaining informed consent from the participants. In addition, a learning event aimed at facilitating deeper reflection on pilot study implementation experiences was conducted. Participants included health officials from zonal and woreda level as well as health staff from HCs and HPs. Annex 5 shows a summary of health facilities and profile of participants interviewed during the final visit.

3.3 Analytical Framework

An analytical framework was developed based on the DAC evaluation criteria described in table 1 below. The full analytical framework with the research questions for each of the criteria can be seen in Annex 4. The data collection processes were used to assess the degree to which each of the criteria was met. Subsequently, the evaluation report is organized around a results matrix providing an overall ranking as well as ranking per criteria area in the analytical framework. This ensures a clear understanding of how the programme is performing along the individual evaluation criteria as well as provides an overall assessment

Table 1: DAC Evaluation Matrix

Criteria	Rating					Rationale
	1	2	3	4	5	
Effectiveness: Measures the extent to which an activity or project achieved its objectives						
Impact: The positive and negative changes produced by a development intervention, directly or indirectly, intended or unintended. This involves the main impacts and effects resulting from the activity on the local social, economic, environmental and other development indicators.						
Efficiency: Measures outputs. It is an economic term which signifies the activity or intervention leased the uses the least costly resources possible in order to achieve the desired results. This generally requires comparing alternative approaches to achieving the same outputs, to see whether the most efficient process has been adopted.						
Acceptance/Relevance: Explores the extent to which an activity or intervention is suited to the priorities and policies of the target group, recipient and donor						
Sustainability: This is concerned with measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn. Projects need to be environmentally as well as financially sustainable.						

**1 is low while 5 is high

3.4 Limitations of the Pilot Study and the Overall Evaluation

3.4.1 Limitations of the Pilot Study

The following include challenges experienced during the implementation of the pilot study.

High Staff Turnover: High staff turnover in some of the health facilities implementing CMAM Surge affected the implementation of the pilot study. This is because some of the staff who either resigned or got transferred had been trained on CMAM Surge hence were in charge of the implementation process. This was also experienced at the Woreda level when two WoHO who had been trained on CMAM Surge and overseeing its implementation was transferred with delays in finding replacements.

Closure of Health Facilities implementing CMAM surge: A total of 6 HPs in Bati were closed at some point during the study period. 76/384 (19%) months (total reporting months for all HF) had no record of admissions. Of these only 7 months were missing data for only one month. The rest involved up to 4-6 months without record, indicating long running causes of closures. Two HP were closed throughout the pilot period; Cheleleka and Teamelka. The reasons for closure included difficulty in recruiting HEWs willing to work in some of these health facilities located in hard-to-reach areas (discussed in detail below). In addition, some HPs had to be closed as HEWs were either absent, on maternity or attending summer-school.

Insecurity: A few of the *Kebeles* and health clusters experienced insecurity during the study period. These affected some of the CMAM Surge related activities such as screening and monitoring visits.

Limitations of Dawa Chefa as a Comparison Woreda: As mentioned above, although Dawa Chefa was initially intended to be a comparison woreda, some of the data collected during the implementation period highlighted that Bati and Dawa Chefa were very different with regards to the human resource capacity and attrition levels as well as access of the health facilities. For example all Dawa Chefa Health Posts had a full complement of health workers and insecurity and weather related access problems did not occur throughout the study period. Additionally, while the original pilot study design intended to use Dawa Chefa as a comparison for an emergency response, caseloads remained low throughout the implementation period meaning that comparative support provided was more in line with standard CMAM program support activities.

3.4.2 Limitations of the Overall Evaluation

Although efforts were made to ensure rigor throughout the evaluation process, the following limitations were observed.

Completeness and quality of routine CMAM programme performance data: As per the analytical framework and the proposed evaluation methodology, several primary and secondary data sources were used to inform the overall evaluation process. Some of these include routine CMAM performance data provided by the health facilities. However, as some of the health facilities were closed during the study period, some reports were not available for analysis for both the mid-term learning review as well as the final evaluation. Two databases were kept throughout the pilot period. An OTP performance database managed by the WoHO with support from Concern and a CMAM Surge Dashboard completed by the cluster HC and collated by Concern before being shared with the WoHO. On close examination of the two databases discrepancies were discovered. Primarily differences in the recorded number of admitted cases were noted. Consequently analysis below clearly states which database was used for each part of the analysis. However the evaluation team feel that it is unlikely that the discrepancies will have any significant effect on the findings of the analysis.

Sampling Process: Despite meeting the selection criteria, some of the health facilities were excluded from the evaluation sample due to poor road access or because they were non-functional (closed) during the data collection period. This was experienced during the baseline and endline surveys as well as the mid-term learning review and the final evaluation. Notably, it was highlighted during the learning review conducted at the end of the final evaluation, that most of the health facilities excluded had reported relatively high caseloads of child morbidities with higher staff attrition in their monthly reports and review meetings respectively. Therefore, it is probable that their implementation experiences might vary from the health facilities included in the evaluation. Notably, for the accessible health facilities, efforts were made to ensure that diversity in their capacity and performance was considered during the selection process.

Use of Translators during data collection for Mid-term learning review and final evaluation: Given the language barrier, there was a need for translators during the data collection. In some instances, responses had to be translated twice: from English to Amharic then to the local language, Oromiffa and vice versa. It is therefore possible that some discussions and expressions might have been missed out. To mitigate this, the evaluation team employed several strategies including continuous briefings and debriefings with the translators, observation of non-verbal expressions as well as use of probes to promote in-depth reflection.

Recall Bias and Reflection of Actual Experiences: During the final evaluation, participants were required to recall their CMAM Surge experiences that had occurred during the 15 months implementation period of the pilot study period. It is therefore possible that some of the responses might have been inaccurate. To mitigate this, the evaluation team probed the participants to reference actual experiences rather than abstract situations. In addition, a

timeline of activities implemented during the pilot study was utilized as a reference point during the interviews.

Time Constraints: The final evaluation data collection period had to be shortened by 2 days due to a trachoma campaign. Therefore only 12 out of the planned 18 health facilities were visited. Despite this, saturation was reached as a diverse group of 39 participants were interviewed: 5 WoHO, 10 HDATLs, 8 HEW, 9 HC staff and 6 caretakers of OTP beneficiaries.

Challenges in exploring perspectives of other Stakeholders Implementing CMAM-Surge Related Approaches: Based on the discussions with the Concern team, it was highlighted that other organizations such as GOAL and ACF were implementing CMAM Surge related interventions. Notably, Concern interacts with these organizations through the nutrition coordination forums. However, the evaluation team was not able to interview individuals from these organizations to explore the existing connections with CMAM Surge as well as potential opportunities for synergies as the focal persons were not available at the time of data collection.

4. FINDINGS FROM THE OVERALL EVALUATION

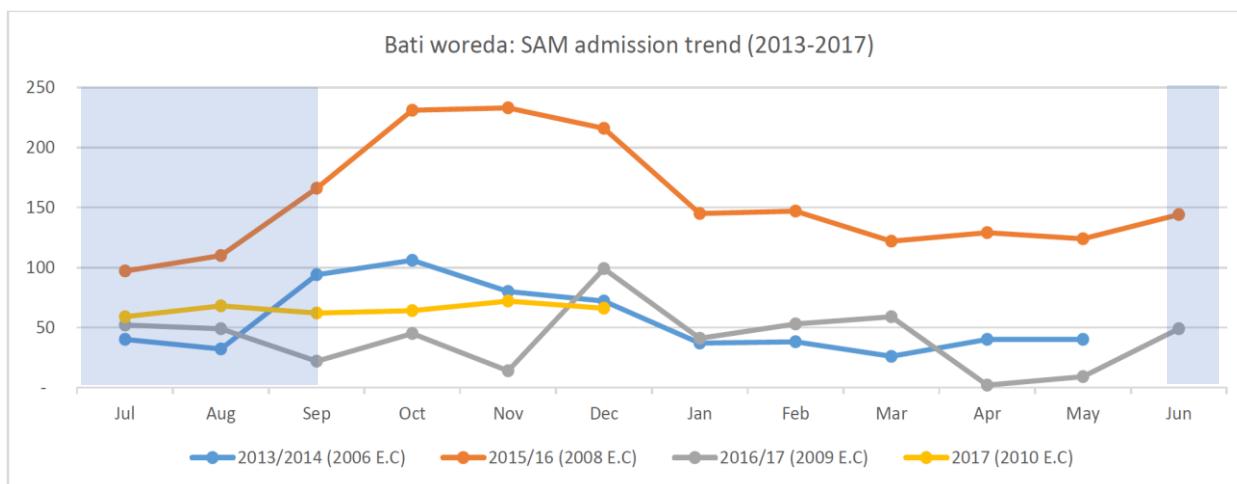
This section presents findings from all the different data sources including desk review, analysis of routine health facility data, baseline and endline surveys, mid-term review, final evaluation as well as the CEA. In addition, and as described in methodology section above, intervention and comparison period of the pilot study have been re-classified based on the routine CMAM data available for analysis. In this case, **comparison year** includes analysis of routine CMAM data for the period prior to the implementation of the pilot study: **July 2017 to June 2018**. On the other hand, **intervention year** examines routine CMAM data generated during the implementation period of the pilot study: **July 2018 to June 2019**.

4.1 Description of Routine Health Facility Data: SAM & SAM-related Child Morbidities

4.1.1 Climate Related SAM Increases or Not?

A peak in SAM admissions in Bati was observed in the period between September and November for both the 2015/2016 (Figure 7) and 2018/2019 (Figure 8) period. On comparing with the seasonal calendar in Figure 5, it was observed that these peaks correspond to the **end of the Kremt** rainy season in September. Given that this timing is apparent in two separate years there is an indication that there is a climatic related effect on SAM admissions in Bati as shown in Figure 7 below.

Figure 7: Bati Admissions Trend (2013-2017)

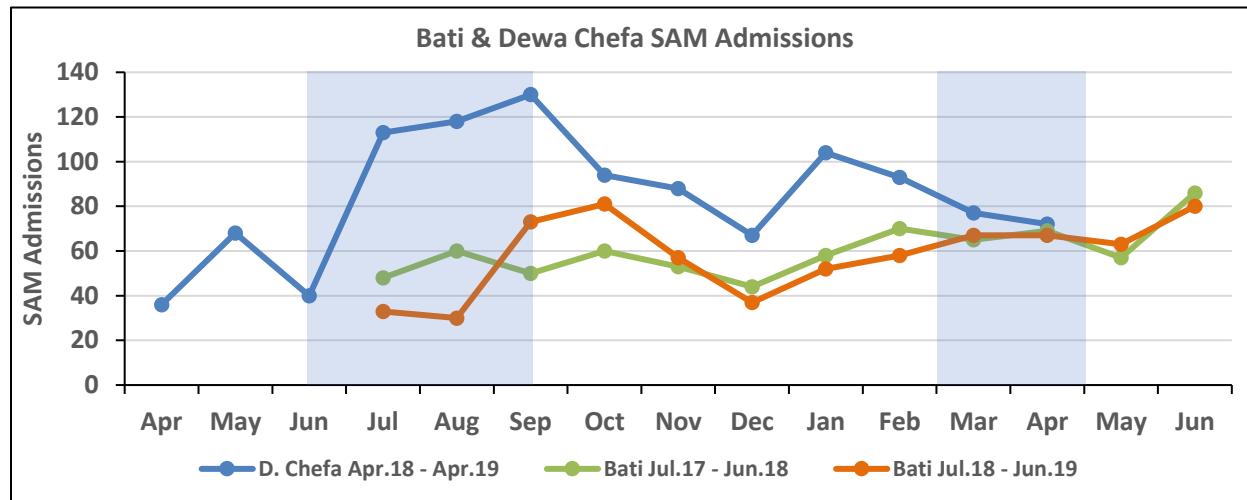


In contrast Dewa Chefa data shows a peak of SAM admissions between July and September 2018 corresponding to the middle of the Kremt rains and not the end of the rains as seen in 2 years of Bati data. The reasons for these differences are likely to be very context specific. Thus it is clear that the assumptions about the impact of seasons on SAM admissions that are in

planning the surge activities need to be challenged with evidence and local understanding of the context.

However, and as shown in Figure 7 and 8, the other years on record for Bati (2013/14, 2016/17 and 2017/18), including the comparison year for the CMAM Surge pilot (2017 – 18) do not have any significant peaks including during the post Kremt rains period.

Figure 8: Bati and Dewa Chefa SAM Admissions trends (July 2017 - June 2019)¹⁶



The lack of an increase in admissions would suggest that during these years (13/14, 16/17 and 17/18) the climatic conditions were better, hence, there was no effect on SAM. Alternatively there could have been a health system quality issue whereby utilization of the SAM management services was not sensitive to negative seasonal impacts on nutritional status.

More in depth examination of available seasonal data shows that according to the Livelihood Baseline Report for the Bati Livelihood Zone (Figure 9), 2013/14 was an average to above average year. It also suggests that 2015/16 was a drought year corresponding to the comparatively higher caseloads in Bati during this period.

¹⁶ Note – Pilot project started May 2018 until June 2019. Graph presented to be comparable Figure 7 of historic data from 2013 onward

Figure 9: Livelihood Baseline Report¹⁷

Production Year	Season	Rank	Critical Events
2016 (ET 2009)	<i>meher</i>	2	Drought year
2015 (ET 2008)	<i>meher</i>	2	Drought year
Reference year production: 2014 (ET 2007)	<i>meher</i>	4	Above average year
2013 (ET 2006)	<i>meher</i>	3	Average year
5 = an excellent season for household food security (e.g. due to good rains, good prices, good crop yields, etc.) 4 = a good season or above average season for household food security 3 = an average season in terms of household food security 2 = a below average season for household food security 1 = a poor season (e.g. due to drought, flooding, livestock disease, pest attack) for household food security			

The FEWSNET reports 2016/17¹⁸ and into the end of 2018^{19,20} suggest that these were average years with a slight worsening of the situation in 2019. The lack of increases in admissions September/January 2017 depicted in Figure 8 may also reflect relatively average conditions described by FEWSNET at this time. Thus, the increase in SAM admissions in September/January 2015/16 and no increases September/January 2013/14, 2016/17 and 2017 depicted in Figure 8 might be attributed to seasonal issues.

Despite 2018/19 being indicated by FEWSNET as an average year for Bati there was still a recorded increase in admissions at the same time of the seasonal year as 2015/16. The presence of an increase in admissions at the end of 2018 (September to November) during the pilot year possibly indicates that the health system quality has improved to such an extent that it is more sensitive to climatic impacts on nutritional status.

Therefore, it is possible the Surge pilot screening and referral systems strengthening work conducted during the pilot year increased coverage of the health system. Discussions with the Concern CMAM Surge pilot staff included suggestions that this was the case. Obviously, there is not enough data for drawing conclusion further than being speculative about what has happened. However, for future pilot projects planning for a second coverage survey conducted at the end of the pilot would be a good way of understanding more about the impact of the Surge approach on the coverage of the system.

¹⁷ Ethiopia Livelihood Baseline: Amhara Region. South Wollo and Oromia Eastern Lowland Sorghum & Cattle Livelihood Profile. June 2016

¹⁸ Food Security Outlook Update: Extreme levels of acute food insecurity to persist in south eastern pastoral areas. August 2017

¹⁹ Food Security Outlook Update: Previous drought and recent conflict maintain Crisis outcomes in the south. August 2018

²⁰ Food Security Outlook Update: Poor October to December seasonal rainfall and sustained ethnic clashes continue. December 2018

In summary, two of the last 5 years of Bati SAM admission data suggest that there is a peak in admissions just after the Kremt rains from September to November or December. It is not clear that the lack of peak in the three other years is due to better climatic conditions or lower quality programming. Dawa Chefa data suggest a peak in admissions during the Kremt rains.

It was also observed that all years of the Bati historic data including the comparison year of 2017/18 and the pilot year of 2018/19 experienced low or the lowest admissions of SAM during the Kremt rains (Jun- Sep) period. These findings contrast with the findings from the Livelihood Zone Baseline Survey²¹, which highlighted that the lean period corresponds with the *Kremt* rains (Jun- Sep). This could suggest that the causal chain from seasonal change to increases in SAM admissions may not as directly related to food security in the ways that are commonly assumed (see discussions on diarrhoea and SAM below). Day to day shocks and seasonal related impacts on service quality and coverage are likely confounding factors in this analysis.

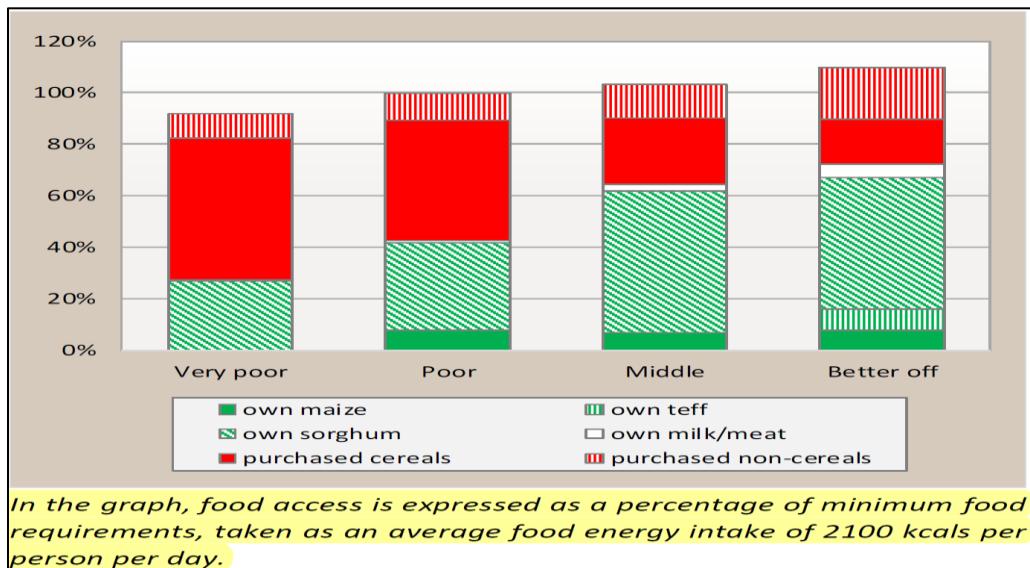
On further in-depth review of the LHZ profile²², there is a suggestion that the very poor and female-headed households are almost entirely dependent on their own sorghum production and the purchase of cereals. In terms of timing of own production, the sorghum harvest only starts in November. This is a possible explanation for the increase in SAM admissions in September and October in 15/16 and 18/19 with a corresponding decrease in admissions in November and December in both years. FEWSNET showed that both years had worse climatic conditions than the other three years for which we have SAM admissions data. Note that a poverty profile of children admitted to CMAM services is not available but it might be assumed that vulnerability to SAM is associated with poverty.

In terms of income from labour, the poorest group are heavily involved in paid agricultural work from July to November every year. The LHZ profile states that agricultural work and that “*the search for wood adds an additional labour burden on poor women*” during this period with an expected negative impact on child care. However, the paid work also means that some income becomes available for purchase of cereals. In this case analysis of the terms of trade becomes important, however this data is not easily available for one woreda. The PNSP starts in January and continues until June. The LHZ profile indicates that for the poorest groups the PSNP makes a significant impact on livelihoods. There is no clear connection between the reported significant positive impact on livelihoods and the period of the PNSP transfers.

²¹ Ethiopia Livelihood Baseline: Amhara Region. South Wollo and Oromia Eastern Lowland Sorghum & Cattle Livelihood Profile. June 2016

²² Ethiopia Livelihood Baseline: Amhara Region. South Wollo and Oromia Eastern Lowland Sorghum & Cattle Livelihood Profile. June 2016

Figure 10: Source of Income as per LHZ reference year report²³



In conclusion according to the data from the Surge pilot study, activities that aim to mitigate the peak in undernutrition suggested by the increase in admissions after the Kremt rains should focus their activities during the months prior to September. Likewise, any data collection activities whose timings are related to 'peak' malnutrition season should consider using the timing suggested by the Surge pilot rather than assuming that peak food insecurity before the Kremt rains coincides with peak undernutrition 'season'. Numbers involved in this analysis are low so more detailed study of the relationships between seasons, incidence of acute undernutrition and coverage are needed before more concrete conclusions can be made.

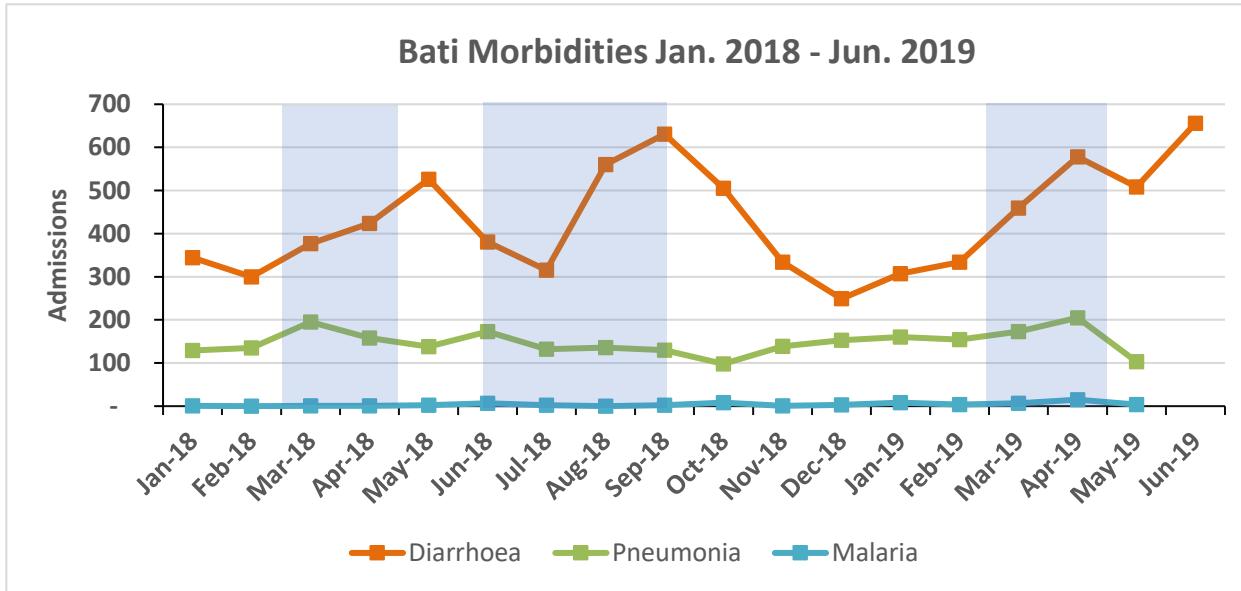
4.1.2 SAM Related Child Morbilities

Analysis of one year of the diarrhoea admissions data in Bati (18/19) shows that diarrhoea peaks twice (Figure 11). Once in May (18) or April (19) during the *Belg* rains and just before the *Kremt* rains at the end of the dry season and again in August and September during the *Kremt* rains. Whilst there is still debate in the region about the most common or most likely links between rains and increases in diarrhoea there is a growing consensus that diarrhoea incidence peaks during the rains as the population has access to and uses surface water more than in other season. Increased use of surface water, open defecation and poor hygiene combine to cause increases in diarrhoea. This appears to be the case in 2018/19 in Bati. With limited data from only one and a half years, it is not possible to draw any firm conclusions. There do not appear to be any seasonal variation on Malaria (very low admissions) or pneumonia²⁴.

²³ Ethiopia Livelihood Baseline: Amhara Region. South Wollo and Oromia Eastern Lowland Sorghum & Cattle Livelihood Profile. June 2016

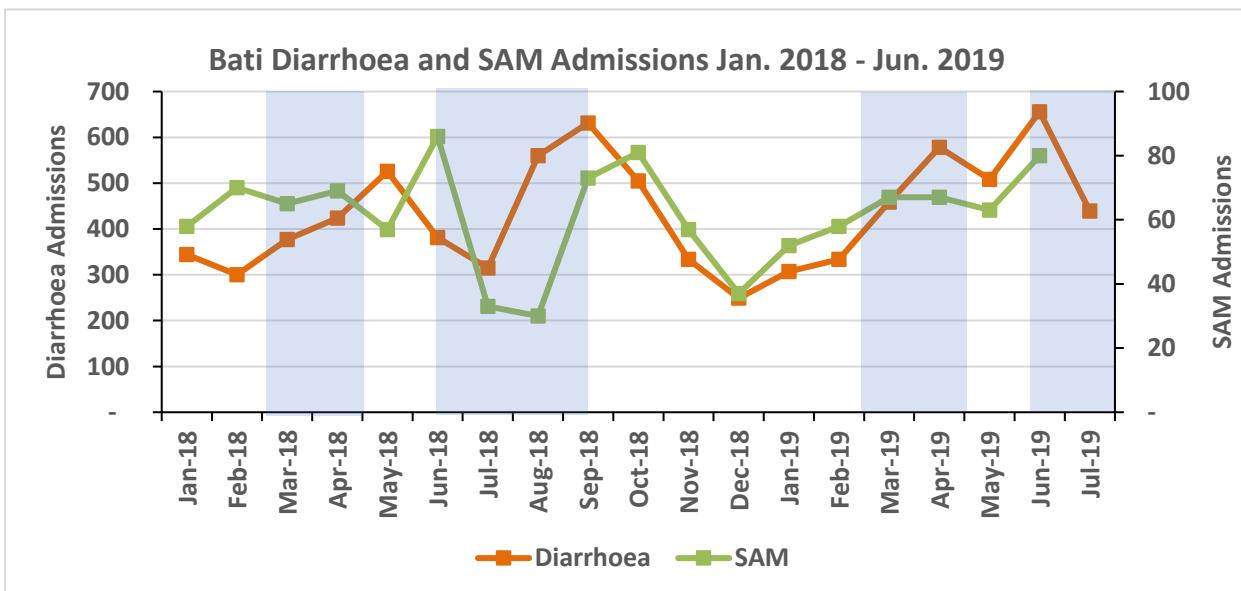
²⁴ It should be noted that the LHZ profile pays particular attention to malaria as the main morbidity in Bati. However, recorded malaria admissions during the pilot in Bati demonstrate that the malaria programme has been very successful in reducing

Figure 11: Admission Trends of SAM Related Child Morbidities for Bati



A possible explanation for the seasonal climate related increases in SAM admissions after the *Kremt* rains is a causal chain through a climate related increase in other morbidities. For instance, and as shown in Figure 12 below, SAM admissions peak one month after a peak in diarrhoea admissions. Belg related peaks in diarrhoea admissions in May 18 and April 19 are followed one month later by SAM peaks in admissions. Kremt related peaks in diarrhoea in September 18 and June 19 are followed by SAM peaks in October/June/July 19.

Figure 12: Admission Trends of SAM and Diarrhoea for Bati



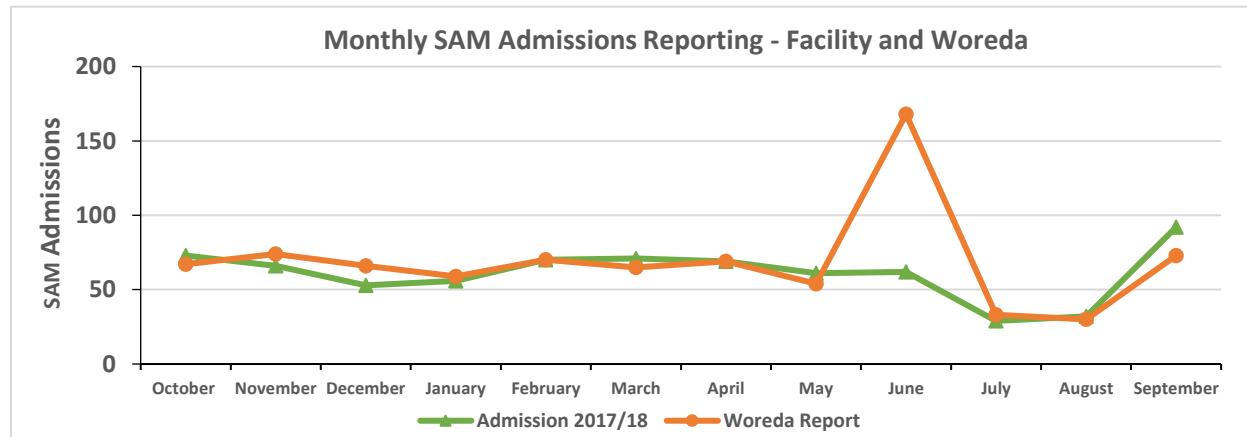
malaria admissions to very low levels. Therefore, perhaps the LHZ profile could be adapted if diarrhoea is taken as the principal climate related morbidity in Bati.

The results would suggest that some of the assumptions used in the planning for and charting of causal factors for the Surge approach need to be carefully examined. For instance, the seasonal calendars included in the Surge wall charts recorded increases in diarrhoea at a variety of times of the year. It needs to be understood if these differences are HF context specific differences or based on unverified assumptions about why diarrhoea increases. On a wider level the results also challenge us to look at other wider programming assumptions. Increases in SAM incidence are often assumed to be directly related to worsening of food insecurity. The limited data available for Bati suggests that diarrhoea incidence has a closer relationship to SAM incidence. Questions remain such as whether the causal relationship between food insecurity and SAM strengthens during a drought. Often attention to diarrhoea response is scaled up on declaration of a poor rainy season. It is not clear if the assumption that drought means less water, which will cause more diarrhoea, is correct in this context.

4.1.3 Health System Factors

In Figure 13, SAM admissions in 2018/19 have a second brief peak in June 2018. As discussed above this peak is likely to be related to the Belg rains and a peak in diarrhoea one month earlier. However, there are also some possible health system related explanations. The CMAM Coverage Survey conducted at the end of 2018 found that there “*was over-reporting of SAM admissions observed in month of June 2018 with a significant over report in Birra HP.*”

Figure 13: Actual SAM Admissions from Health Facility Records Vs Woreda Report



In addition, the KIs highlighted that there had been transition at Woreda Health Management level with a new management team replacement during these months. This had a visible impact in overall health system management not only on the CMAM component but also on other health service provision and monitoring. For instance, the monthly performance in all health centres reported 100% cure rate that month, the only month of that year reporting 100% coverage. This gap exposed not only the health service provision to be interrupted and weak community activities but also affected supervision and reporting activities in the Woreda. Figure 13 shows actual SAM admissions from health facility records vs woreda reports. The same system human resource shock explanation might also apply to the peak in diarrhoea admissions in May 2018.

Alternatively, on consulting the CMAM surge pilot study timeline Concern and the woreda carried out a wide variety of trainings with all levels of the health system in March, April and May with a particular attention to the HDATLs. Therefore, these two peaks (Diarrhoea in May and Malnutrition in June) may be related to a better functioning coverage of the health system immediately post training with a rapid fall off of the effect after June.

4.1.4 Areas for Further Analysis.

Data are too limited to draw any firm conclusions.

1. It is unclear to what extent the relatively low numbers of SAM admissions and the limited evidence for season related increases in admissions is a reality as opposed to being an artefact of weaknesses in programme coverage. Future study should examine the effects of season on coverage. A better understanding of how season affects opportunity costs of regularly attendance at clinics in health facilities will allow the programme to adapt to mitigate the negative impacts of season on demand for services.
2. Assumptions about the impact and timing of seasons on the linkages between undernutrition, food security and morbidities such as diarrhoea need to be carefully and regularly reviewed for the preparedness part of the CMAM Surge approach. Current data suggests that increases in diarrhoea incidence is strongly linked to SAM incidence.
3. Further analysis of the timing of food insecurity (Lean Period) could help to have a more nuanced perspective of the contribution of season related changes in food insecurity to changes in the prevalence of acute malnutrition.
4. Further analysis of the timing of increases in diarrhoea admissions could help to better understand the causal links between season related food and water insecurity and diarrhoea and ultimately the season related relationships between diarrhoea and acute undernutrition.
5. Assumptions about the impact of climate on livelihoods and consequently on the health and nutrition status of the population of Bati also affect decisions about the optimum timing related nutrition sensitive programmes. It could also affect other seasonally timed interventions such as nutrition and morbidity related surveys as well as assessments, emergency food distributions and regular and emergency WASH related actions.
6. There is evidence that internal health system shocks such as changes in leadership are related to changes in quality and coverage of the health system. These internal health system shocks produce at least as large impacts on workload and other stresses on the health system as season related shocks do.

5. Effectiveness

Criteria	Rating					Rationale
	1	2	3	4	5	
Effectiveness			X			Most health facilities demonstrated that they were able to set their own thresholds based on sound analysis. In addition, over 70% of the health facilities visited were monitoring their thresholds with defined surge actions available on request. However, for a majority of the health facilities the surge actions were standardized despite reported and observed variations in the capacities and context of the health facilities. Since none of the health facilities visited had crossed the thresholds, it was not possible to determine health facility performance during surge. Nevertheless, most of the health workers interviewed were aware of their roles. For these reasons, effectiveness has been ranked as moderate (3).

Q1. Are clinics able to set realistic threshold levels based on sound analysis?

Set-up Process: Situation Analysis

As discussed above, situation analysis is the initial step of setting up the CMAM surge approach. The Endline Survey found that 96% (n= 24) of the HF surveyed had their seasonal calendar, showing the situation analysis, visible to all. Similarly, the final evaluation found that most of the health facility staff interviewed were conversant with the CMAM surge set-up process. Indeed, 73% (n=11) of them reported having participated in the CMAM surge set-up training where they analysed their context in relation to CMAM services. Specifically, they described having used available SAM and SAM-related child morbidities data to explore trends and identify underlying risks as well review their capacities. This was also evident in how they described their situation analysis and threshold monitoring charts with ease and in detail.

"I know that in this season between June and July many mothers will be in the farms leaving their under two children at homeso the child might not get enough breast feeding and the other family might not provide sufficient care as they are usually the siblings...so this child is likely to get sick and malnourished" HEW- Bati HP

"Yeah! Whenever the rain seasons come, we know that diarrhoea will increase! But since we know the conditions we try and accommodate these issues. We deal with them by re-arranging our plans based on these" HEW- Bati HP

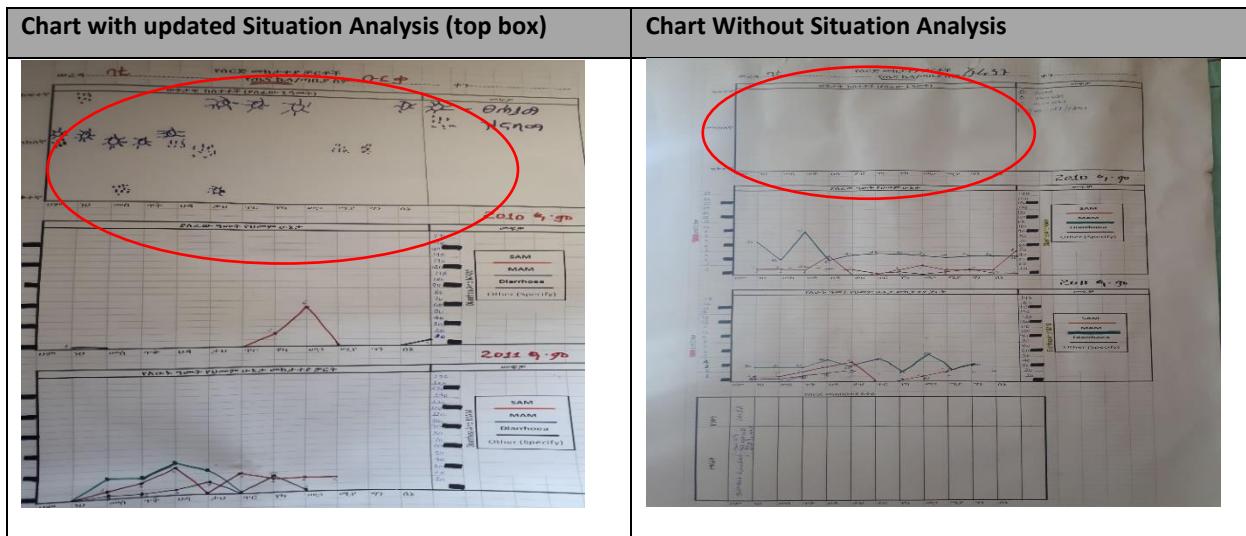
However, some of the health staff interviewed had not participated in the set-up process. On probing, it was found that they had either been away on leave, had just been transferred from a different health facility or the health facility was closed. The difference was noticeable in how

these participants struggled to explain what the monitoring charts entailed and, in some instances (n=3), the situation analysis section of CMAM surge charts were incomplete as shown in Figure 14 below.

"No, I did not take this training [CMAM surge] ... the other nurse knows but he is not here... [he] is in summer class" Health Centre Staff - Bati Woreda

"I didn't have any schedule [referring to the Situation analysis] for July, August and September, [the HP] has been closed for three months. That's the reason we don't have anybody filling it [referring to the CMAM surge monitoring chart]." Health centre Staff – Bati Woreda

Figure 14: CMAM Surge Monitoring Charts with and without an updated CMAM Surge situation analysis (top box)



In contrast, the interviews also established that some HEWs who had not participated in the initial CMAM surge training were not only aware of the approach but also involved in the implementation process. One HEW attributed this to collaboration with her colleague, which ensured continuity in service provision. Notably, this was a HP with two HEWs, hence their experience maybe different from those with 1 HEW which as mentioned above, remained closed when the HEW was away on leave.

"I don't have any training (for CMAM surge) but I know something about the programme and the project and am working on it...my colleague briefed me when I arrived, we have to do everything together... so when she is not here, I can work" HP- Bati Woreda

Q2. Are set thresholds being respected and is support being requested in a timely manner?

Thresholds: Set-up, Monitoring and Adaptations

Both the Endline Survey (n=25) and the final evaluation (n= 10) found that all the health facilities visited had completed the process of setting up CMAM surge thresholds and defining subsequent actions for each phase. These actions had been written down and, in most cases, posted on the wall for ease of reference. Notably, given the recent ban on posting charts on the health facility walls as part of the Government effort to clean up and standardize the appearance of health facilities, some had their charts stored elsewhere or tracked their data in books rather than on large charts. Nevertheless, all varieties of records were available on request.

Table 2: SAM Thresholds 2018 and 2019

No	Health Facility	SAM Thresholds 2018				SAM Threshold 2019				Changes
		Normal	Alert	Serious	Emergency	Normal	Alert	Serious	Emergency	
1	Garero HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
2	Kurkura HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
3	Jeldeytı HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
4	Hato HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
5	Kebele HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
6	Chekorti HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
7	Fura HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
8	Melkalugo HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
9	Birra HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
10	Teamelka HP	0-9	10-15	16-21	>21	0-6	7-12	13-18	>18	Change
11	Cheleleka HP	0-9	10-15	16-21	>21	0-6	7-12	13-18	>18	Change
12	Chefe hresso HP	0-9	10-15	16-21	>21	0-6	7-12	13-18	>18	Change
13	Kopafø HP	0-9	10-15	16-21	>21	0-6	7-12	13-18	>18	Change
14	Awarie HP	0-9	10-15	16-21	>21	0-9	,10-15	16-21	>21	
15	Selate HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
16	Burka HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
17	Chachatu HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
18	Felana HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
19	Dameto HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
20	Gure HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
21	Ourngo HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
22	Bofa Kemessie HP	0-9	10-15	16-21	>21	0-6	7-12	13-18	>18	Change
23	Gerfaourene HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
24	Mamed HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
25	Ella HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
26	Motuma HP	0-9	10-15	16-21	>21	0-9	10-15	16-21	>21	
27	Teamelka HC	0-12	13-21	22-28	>28	0-12	13-21	22-28	>28	
28	Garero HC	0-12	13-21	22-28	>28	0-12	13-21	22-28	>28	
29	Melkalugo HC	0-12	13-21	22-28	>28	0-12	13-21	22-28	>28	
30	Hato HC	0-12	13-21	22-28	>28	0-12	13-21	22-28	>28	
31	Ella HC	0-12	13-21	22-28	>28	0-12	13-21	22-28	>28	
32	Felana HC	0-12	13-21	22-28	>28	0-12	13-21	22-28	>28	

In Table 2 showing SAM thresholds, it can be seen that the first round of threshold setting in 2018 resulted in uniform thresholds, with all HP having the same thresholds and HC have higher thresholds. The 2019 update resulted in five HF reducing their thresholds but once again in a uniform manner. The reasons for this uniformity are the low monthly admissions rates and the relatively high capacity of health staff if they are present. However, the uniformity of thresholds also suggests that there may be weaknesses in the HP and HC leadership in setting the thresholds. The more specific HF diarrhoea thresholds shown in Table 3 below suggest that there may be room for more input from the HF in setting their own thresholds.

It is noteworthy, that none of the health facilities visited during both the mid-term learning review and final evaluation had crossed their SAM thresholds: all reported that their caseloads and capacity were within the normal phase throughout the pilot study. However, on contrasting this finding with the SAM admissions in the dashboard, it was found that SAM caseloads had increased to alert phase 3 times: twice in Teamalka HC (in September 2018 and May 2019) and once in Selate HP (October 2018). Unfortunately, these health facilities could not be visited due to poor access during the rainy season, hence these observations could not be investigated further. On exploring this finding during the learning review as well as with the Concern Surge team, it was highlighted that the increase in Teamalka HC was due to the closure of the 6 HPs linked to Teamalka health cluster while in Selate was due to increase in diarrhoea cases. The HPs in Teamalka Cluster had been closed due to poor access and high staff attrition levels.

“So, we have 8 health posts closed... because of topography, high staff turnover” Bati WoHO official – Learning Event

“It [closed HP] is a very hard place...some of these [HPs] were only open for a few months and they send all their children to the health centre. It’s a very hard place!” Bati WoHO official – Learning Event

Most of the health facilities visited during both the mid-term learning review and the final evaluation appeared to be monitoring the SAM caseloads as evidenced by the up-to-date CMAM surge monitoring charts. Like the situation analysis above, those who had not updated their charts attributed this to them being away or just transferred from other health facilities.

With regards to the frequency of updating the CMAM surge monitoring charts, it was not clear when and how often these were updated. Some health workers mentioned that they did it at the end of the month when they had collated the monthly data. Notably, OTP data is collected on weekly basis specifically on Thursdays when OTP services are offered. Similarly, nutrition data including SAM admissions are shared with PHEM on a weekly basis. This is a missed opportunity to promote more real time monitoring which is emphasized in the guideline.

In the examples above it can be seen that the actions taken part of the surge wall chart is not always filled in well. Ideally when the graph is completed the next month's actions should be filled in on the actions portion of the chart. In some cases in visited HF the actions taken were filled in at the end of the month and as illustrated in the examples above in several cases the

information recorded is of little practical use for preparedness and planning. When asked what needs to be improved in terms of monitoring of CMAM surge package, some of the health workers suggested the need to monitor the thresholds on a weekly basis and to disaggregate the data by specific *Kebeles*. This would ensure that targeted follow-up is implemented.

"I think the charts should have been updated on a weekly basis and should have space to include specific villages/kebeles...because sometimes we see more children with same issues coming from the same place.... That may give us more targeted areas for which we can target" HEW – HP Bati.

Following the mid- term review recommendations, SAM thresholds were updated as shown in Table 2 above. In addition, the surge thresholds and actions of other SAM related child morbidities such as diarrhoea have also been included as part of routine monitoring in 80% (n=12) of the health facilities visited. Moderate acute malnutrition (MAM) caseloads were also being monitored concurrently. Indeed, similar findings were observed in the Endline Survey where 84% (n= 21) of health facilities surveyed were plotting monthly cases of child illness treated on a chart visible to all.

Table 3: Example of Diarrhoea Thresholds and Monthly Reports

No	Health Facility	Setted Threshold				Month	Jan-19	Feb-19	Mar-19	Apr-19
		Normal	Alert	Serious	Emergency					
1	Garero HP	0-34	35-69	70-103	>103	0	0	5	0	
2	Kurkura HP	0-29	30-57	58-86	>98	4	18	22	6	
3	Jeldeytı HP	0-33	34-65	66-98	>98	0	0	3	5	
4	Hato HP	0-23	24-46	47-69	>69	0	1	3	3	
5	Kebele HP	0-27	28-54	55-81	>81	3	3	7	8	
6	Chekorti HP	0-24	25-48	49-71	>71	7	7	9	10	
7	Fura HP	0-30	31-60	61-90	>90	7	5	9	16	
8	Melkalugo HP	0-37	38-73	74-110	>110	2	0	2	4	
9	Birra HP	0-43	44-86	87-130	>130	0	0	6	2	
10	Teamelka HP	0-28	29-55	56-83	>83	0	0	0	0	
11	Cheleleka HP	0-17	18-35	36-52	>52	0	0	0	0	
12	Chefe huressø HP	0-36	37-73	74-109	>109	8	0	0	0	
13	Kopafo HP	0-32	33-65	66-97	>97	0	0	0	0	
14	Awarie HP	0-31	32-62	63-93	>93	0	6	7	11	
15	Selate HP	0-28	29-57	58-85	>85	10	17	16	41	
16	Burka HP	0-14	15-27	28-41	>41	24	3	5	24	
17	Chachatu HP	0-18	19-35	36-53	>53	6	8	7	11	

However, it appeared that the process of adjusting the thresholds to include SAM-related morbidities (as part of learning and adapting in step 4 of the surge approach) was not participatory as emphasized in the guidelines. Indeed, in three of the health facilities visited, the

HEWs reported that they had not been involved in the threshold adaptation process despite having the new thresholds visibly posted on the wall.

"I cannot remember as to which one of these [thresholds on wall] was the original... because I was somewhere else. But after I came back no revisions have been done for the thresholds" HEW- Bati HP

"These [thresholds on wall] were reviewed and prepared by Concern, the cluster and woreda levels... I was not there. But it was brought to me and was briefed"

As all the health facilities visited had not crossed the SAM thresholds, it was not feasible to determine if the Surge actions set were realistic and whether the response was timely and consistent with the initial commitments and agreements. Nevertheless, the KIIs highlighted that most of the health staff were aware of what their roles in each phase are. Interestingly, most were confident that their managers (HC and WoHO) would support them in a timely manner should the need to trigger external support arise. In addition, most of the health facilities were able to produce and explain their surge actions on request.

"We can manage what happens here ... we manage by ourselves, if we cannot manage, we could engage the health cluster as well as the Woreda and they will help us. That is what I have learnt and implemented in this CMAM surge approach" HP – Bati Woreda

"We monitor all the evidence, the progress and the thresholds settings and when it is beyond the capacity of the health centre ...to alert, or what is serious case we know it will be emergency ...but now we can manage...we follow this (Surge actions)" HEW- HP Bati Woreda

"We can shift other profession from other departments to the HP...we also check the stocks we are prepared and ready for action "HC Staff – Bati Woreda

However, it was observed that the set surge actions were standardized across all the health facilities visited regardless of the variation in topography, number of health facility staff as well as distance from the health management teams (health cluster and WoHO). Indeed, some of the health facilities located further from the management teams expressed dissatisfaction with the support they were receiving contrary to those who are centrally located. This suggests that their implementation experiences might have been varied, hence, should have been considered when defining surge actions.

"Normally nobody supports me here, not in the woreda, not in the cluster, after training... we go back to the health facility and do it by ourselves...we are so far from everything, it is difficult to access this place...I get better support from HDATLs" HP – Bati Woreda

As observed during the mid-term review, the Surge actions did not include local solutions. Indeed, the KIIs showed that the health workers have their own solutions to the routine or ‘day-to-day’ shocks that health systems experience. For instance, to prevent breaks in supply chain, the health workers at times paid for transportation costs of medical products from the health cluster level to the HP with the knowledge that they would be reimbursed. Borrowing of supplies from neighbouring HPs or “hitch-hike” supplies on NGO vehicles, seeking of technical advice from colleagues and reaching out to the community for help were also cited as common solutions to day-to-day challenges at the health facility level. Indeed, it appears that there is a culture for health facility staff to solve their own challenges a strategy that is integral to CMAM surge approach. However, the evaluation team observed that most of the actions detailed in the budgeted Surge action plans were quite broad and included generic HSS actions across the building blocks (Annex 1 and 2). Although some budgeted generic actions may also be necessary, planning and budgeting for the day-to-day problem-solving activities and local solutions should also be included. Notably, these ‘small’ actions need to be examined to determine acceptability, valued and captured more as they are often overlooked or viewed as routine and not innovative.

“We pay the carriers [local transport] who bring them [medical supplies from health center] to us. We pay like 80 birr ...it might delay but as they [management team] promised we will be getting that back” HEW – Bati HP

It should be noted that 2/6 HF that crossed diarrhoea thresholds also crossed SAM thresholds (Selate and Teamelka), indicating a wider capacity weakness in these HF. All but one of the thresholds passed occurred between April and June, which corresponds to the end of the Belg rains and the dry period before the Kremt rains. This timing is very similar to the one experienced in 2018 and was associated with a surge in SAM admissions in June 2018. These results add to a more nuanced view of the timing of the link between seasons and the occurrence of diarrhoea cases.

The evaluation team only visited one of the HF that crossed diarrhoea related thresholds, Burka. Whilst the health facility staff were not entirely clear on the action plan for diarrhoea surge they did indicate that the PHEM system was much more involved in the response and that the threshold set by the surge approach was helpful in the HF being able to signal to the WoHO PHEM officer that there was a need for a response. In the future a stronger link between the surge approach and the PHEM system at WoHO and levels below will be a win-win situation for both systems.

Table 4: 2019 MAM Surge Dashboard for Bati Woreda

No	Health Facility	Setted Threshold				Month					
		Normal	Alert	Serious	Emergency	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
1	Jeldeyt HP	0-38	39-75	76-113	>113	26			66	45	34
2	Chekorti HP	0-28	29-55	56-83	>83	32	30	26	30	25	22
3	Birra HP	0-50	51-100	101-150	>150	26	25	24	29	25	25
4	Chefe hresso HP	0-42	43-84	85-126	>126	26	16	5	14		19
5	Kopao HP	0-37	38-75	76-112	>112	17	5	33	8		60
6	Selate HP	0-33	34-66	67-99	>99	40	35	50	30	40	28
7	Chachatu HP	0-20	21-41	42-61	>61	57	42	59	60	49	48
8	Gure HP	0-26	27-51	52-77	>77	28	26	30	31	35	30
9	Bofa Kemessie HP	0-30	31-60	61-90	>90		9	23	29	9	
10	Mamed HP	0-47	48-93	94-140	>140	32	23	24	56	52	52
11	Teamelka HP	0-32	33-64	65-96	>96		19	25	6	19	0
Total						284	230	299	359	299	318

Eleven HF in Bati Woreda are being supported with MAM management through Supplementary Feeding Programmes (SFP) supported by WFP and Christian Children's Fund of Canada (CCFC). The dashboard shows (Table 4) many months where thresholds are crossed. With regards to MAM thresholds, eight thresholds were passed in six HFs, all from normal to alert during the 6 months that diarrhoea and MAM thresholds were set (January 2019 – June 2019). In three HFs this happened multiple times. On average 474 MAM cases were admitted each month (range 307 – 656). One HF, Ella HC, admitted 161 cases in June.

Table 4 shows that Chachatu HP has been constantly in a serious phase since the setting of thresholds and only 4/11 HF have not passed any threshold. This picture indicates issues with the capacity of the HF to manage normal admissions of MAM cases. This is, as would be expected, because of the higher caseload for MAM when compared to SAM. During the KII's all HF staff indicated that the major challenge was supply chain related with numerous stock outs and as can be seen the data these stock outs sometimes result in the service being closed for a month or more. Concern staff and HF staff were resigned to the problem and did not think that the surge approach monitoring and thresholds system would be able to support them with these issues. In the future if MAM services are being supported by another partner the surge approach should attempt to support the HF and WoHO in coordination with the other partner. If this is not possible a decision will need to be made as to whether there is an added advantage to collecting this data as part of a surge approach.

To strengthen communication and promote learning during the implementation of CMAM surge pilot study, a Telegram chat group was set up by Concern in collaboration with WoHO team in February 2019. This group is made of Zonal Health Officers, WoHO, Health Centre and HP staff. Although the initial intent was to share CMAM surge related information, this has since evolved to include all matters concerning health services provision in Bati Woreda. A quick overview of the chats showed that discussion on medical protocols, emerging evidence, meeting dates, venues and feedback, supply requests as well as technical advice were some of the common themes posted and discussed by the group members.

Conclusions & Recommendations: Effectiveness

- Staff turnover was identified as a barrier to CMAM Surge implementation due to loss of knowledge and capacity to implement the approach. Whilst cascaded trainings and linked capacity strengthening initiatives such as on the job mentoring, supportive supervision, review meetings as well as refresher trainings are already addressing this issue, a more explicit targeting of new staff should further mitigate this perennial problem. The use of platforms such as the newly formed *Telegram online group* for refresher training could also be explored.
- Surge actions should consider the day-to-day health system challenges and local actions taken to mitigate them as experienced in each health facility. One possible option is by ensuring that day-to-day challenges and innovations are systematically examined, adapted and integrated into the Surge approach.
- Of particular importance for a shock responsive health system is the question of health staff absence and turnover. Health staff in Bati feel that there is no need to monitor this issue because they already have day-to-day strategies to deal with this issue. However, these actions are not always timely and are mostly informal. Integration and formalization of these actions in the surge approach may make the actions more timely and sustainable in the future.
- To promote ownership of the CMAM Surge approach, the process of adapting thresholds and surge actions should be more explicitly health facility led.
- The surge approach should consider testing increasing the frequency of monitoring the thresholds from monthly to weekly. Given the centrality of health workers in implementation of this approach, their perspectives, experiences as well as needs should inform this discussion.
- Training and refresher training activities should focus on using the action planning part of the wall chart as a planning tool rather than reporting tool. i.e. fill in the actions to be taken for the coming month not for the past month.
- Addition of a diarrhoea surge approach is recommended. In Bati increases in diarrhoea admissions are frequent, of a relatively high magnitude and are linked to increases in malnutrition. It is not recommended to do the same for pneumonia and malaria. If SFP partners can be integrated into the use of the surge approach then MAM thresholds could also be used.

6. Impact

Criteria	Rating					Rationale
	1	2	3	4	5	
Impact		X				The available data are not enough to draw major conclusions with regards to impact. Indeed, they only cover one year for the pilot year, so it is difficult to draw any firm conclusions. There is no significant evidence for positive or negative impacts of the surge pilot on the quality of CMAM services. However, there is evidence that human resource issues result in larger caseloads and workloads in other centres. It is likely that this type of stress on the health system results in a reduced coverage and quality of the kebele and woreda health system. Most interviewees at the higher management level expressed interest in CMAM surge. Indeed, the staff from the comparison Woreda were also interested. In addition, as only 1 coverage survey was implemented in the middle of the pilot study, it was not possible to conclusively determine the impact. Therefore, this section has been ranked as fair (2).

Q1. Are key CMAM indicators (cured, died, defaulter) better in the Surge approach than in the traditional model (particularly during caseload increases)?

As mentioned above, CMAM data from Dewa Chefa are limited (April 18 – April 19) hence the evaluation team chose to principally compare Bati Woreda performance pre Surge (July 17 – June 18, 12 month comparison) and during implementation of the pilot study (July 18 – June 19, 12 month pilot). The surge training and threshold setting was completed between April and May 2018. All health facilities started the pilot in May 18. July 18 was chosen as the start date for analysis of the actual field pilot of the surge approach. July also corresponds to the structure of the CMAM surge and WoHO OTP databases used to record data for the comparison and pilot years. Most facilities in both woreda had not experienced spikes in SAM caseloads, challenging the feasibility of comparing health facility performance during a surge period in the intervention versus the traditional response model.

The following is an analysis of the OTP database which is managed by the WoHo with support from Concern. This database is organised as a classic OTP monitoring database. Concern also kept a Surge dashboard which records only the SAM admissions and is used to monitor admissions against the thresholds. Concern collects the dashboard data from the Health Centre at the centre of each cluster, collates it and shares it with the WoHO. There are some discrepancies in the recorded data between the CMAM surge database and the OTP database. For this section the data quoted is sourced from the OTP database unless otherwise stated.

During the comparison period (July 17 – June 18) 816 SAM children were admitted and during the pilot period (July 18 – June 19) 792 SAM children were admitted. Thus average monthly comparison and pilot year SAM admissions were 68 and 66 children respectively. 96% and 97% of those admitted were discharged cured in the comparison and pilot year respectively (using Total Discharge figures). Defaulters were 3% and 3% in the comparison and pilot year respectively. Using All Total Discharge figures the second most common recorded reason for discharge in both years was “Transfer to Outpatient” followed by “defaulters” in both years. Defaulters were not recorded for the whole of the comparison year.

Table 5: Bati Woreda Total Discharge - Comparison Year (July 2017 - June 2018)

Discharge Criteria	Month												Year
	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	
Cured	87%	96%	97%	95%	96%	93%	98%	96%	93%	100%	97%	100%	96%
Death	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Defaulter	11%	4%	3%	5%	4%	7%	0%	0%	5%	0%	0%	0%	3%
Non responder Rate	2%	0%	0%	0%	0%	0%	2%	4%	2%	0%	3%	0%	1%
Total Discharge	45	54	64	57	57	61	57	54	56	56	60	82	703

Table 6: Bati Woreda All Total Discharge - Comparison Year (July 2017 - June 2018)

Discharge Criteria	Month												Year
	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	
Cured	83%	87%	87%	84%	89%	81%	89%	88%	90%	97%	88%	100%	89%
Death	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Defaulter	11%	3%	3%	5%	3%	6%	0%	0%	5%	0%	0%	0%	3%
Non responder Rate	2%	0%	0%	0%	0%	0%	2%	3%	2%	0%	3%	0%	1%
Unknown	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%	0%
Medical Transfer	0%	2%	0%	3%	2%	4%	0%	2%	0%	0%	2%	0%	1%
Transfer Out to Out-patient	4%	8%	10%	8%	5%	9%	6%	5%	3%	3%	6%	0%	6%
Transfer out to in-patient	0%	0%	0%	0%	2%	0%	2%	0%	0%	0%	2%	0%	0%
Total Discharge	47	60	71	64	62	70	63	59	58	58	66	82	760

Table 7: Bati Woreda Total Discharge - Pilot year (July 2018- June 2019)

Discharge Criteria	Month												Year
	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	
Cured	98%	97%	100%	95%	92%	91%	92%	98%	100%	100%	98%	100%	97%
Death	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Defaulter	3%	3%	0%	5%	8%	7%	8%	0%	0%	0%	2%	0%	3%
Non Responder Rate	0%	0%	0%	0%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Total Discharge	40	37	52	41	79	46	51	44	42	75	55	104	666

Table 8: Bati Woreda All Total Discharge - Pilot year (July 2018- June 2019)

Discharge Criteria	Month												Year
	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	
Cured	89%	97%	100%	75%	91%	70%	84%	90%	95%	100%	98%	98%	91%
Death	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Defaulter	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	1%
Non Responder Rate	2%	3%	0%	4%	8%	5%	7%	0%	0%	0%	2%	0%	3%
Unknown	0%	0%	0%	0%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Medical Transfer	5%	0%	0%	0%	0%	3%	0%	0%	2%	0%	0%	1%	1%
Transfer Out to Out-patient	5%	0%	0%	19%	0%	5%	9%	8%	2%	0%	0%	0%	4%
Transfer Out to In-patient	0%	0%	0%	2%	1%	7%	0%	0%	0%	0%	0%	1%	1%
Total Discharge	44	37	52	52	80	60	56	48	44	75	55	106	709

Table 9: Dawa Chefa Total Discharge - Pilot year (April 2018- April 2019)

Discharge Criteria	Month												Year	
	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	
Cured	99%	100%	100%	96%	100%	100%	99%	99%	100%	100%	100%	100%	100%	99.4%
Death	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Defaulter	1%	0%	0%	4%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0.5%
Non Responder Rate	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0.1%
Total Discharge	81	67	57	93	94	106	110	108	138	71	125	84	57	1191

Table 10: Dawa Chefa All Total Discharge - Pilot year (April 2018- April 2019)

Discharge Criteria	Month												Year	
	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	
Cured	98%	100%	100%	96%	99%	100%	99%	95%	100%	100%	100%	98%	100%	99%
Death	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Defaulter	1%	0%	0%	4%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Non Responder Rate	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Unknown	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Medical Transfer	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	1%	0%	0%
Transfer Out to Out-patient	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	1%	0%	0%
Transfer Out to In-patient	1%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%
Total Discharge	82	67	57	93	95	106	110	113	138	71	125	86	57	1200

In contrast in Dawa Chefa (April 18 – April 19) 1,100 SAM children were admitted, nearly twice that in Bati for either the comparison or the pilot year. Thus average monthly SAM admissions was 92. 99% of those admitted were discharged cured (using Total Discharge figures). Defaulters were 0.5%. It should be noted that for 9/12 months (Total Discharge) were recorded as 100% cured possibly indicating issues with quality of reporting.

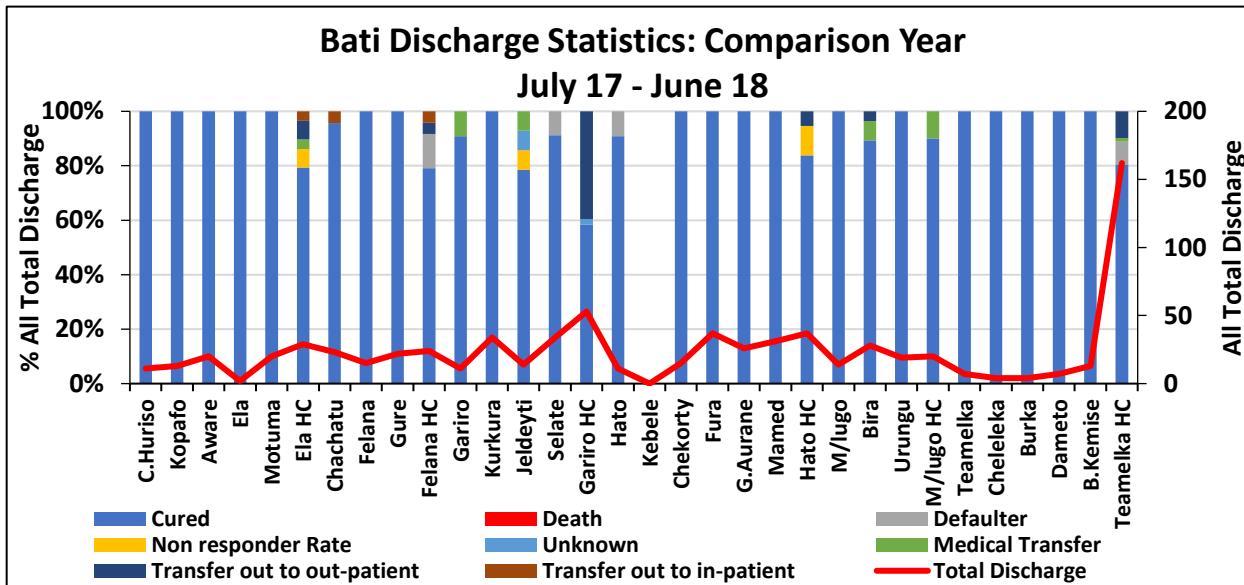
Bati SAM discharge statistics from the comparison and pilot period are shown in Figure 15 and 16. Several things can be noted. There are many health facilities (18/31)²⁵, that have had 100% cure rates for an entire year prior to the start of the Surge Pilot year with its associated attention on strengthening the system's capacity through training and supportive supervision. After the capacity strengthening activities undertaken during the pilot year 16/30²⁶ had 100% cure rates, Figure 16. However, it appears that capacity strengthening efforts in the pilot year have had a neutral or no effect on this indicator of programme and reporting quality. Equally the

²⁵ Kebele HP did not report during the comparison year

²⁶ Teamelka HP and Cheleleka HP did not report during the pilot year

implementation of the surge approach does not appear to have worsened the reported quality of the OTP service.

Figure 15: Bati SAM All Total Discharge for the Comparison Year (July 2017 - June 2018)



Whilst the actual numbers are small, it is unlikely that cure rates can remain 100% for a whole year. There is a possibility that if the children in charge live close by defaulters are less likely. For the centres with very low numbers of admissions it is also possible that they had 100% cured.

Figure 16: Bati SAM All Total Discharge for the Pilot Year (July 2018 - June 2019)

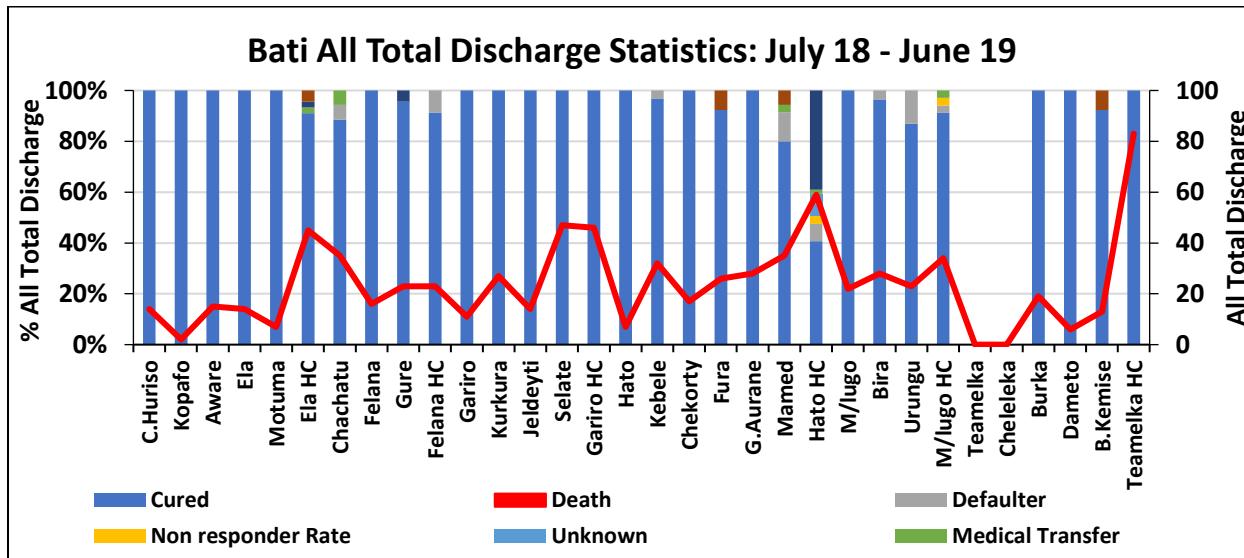
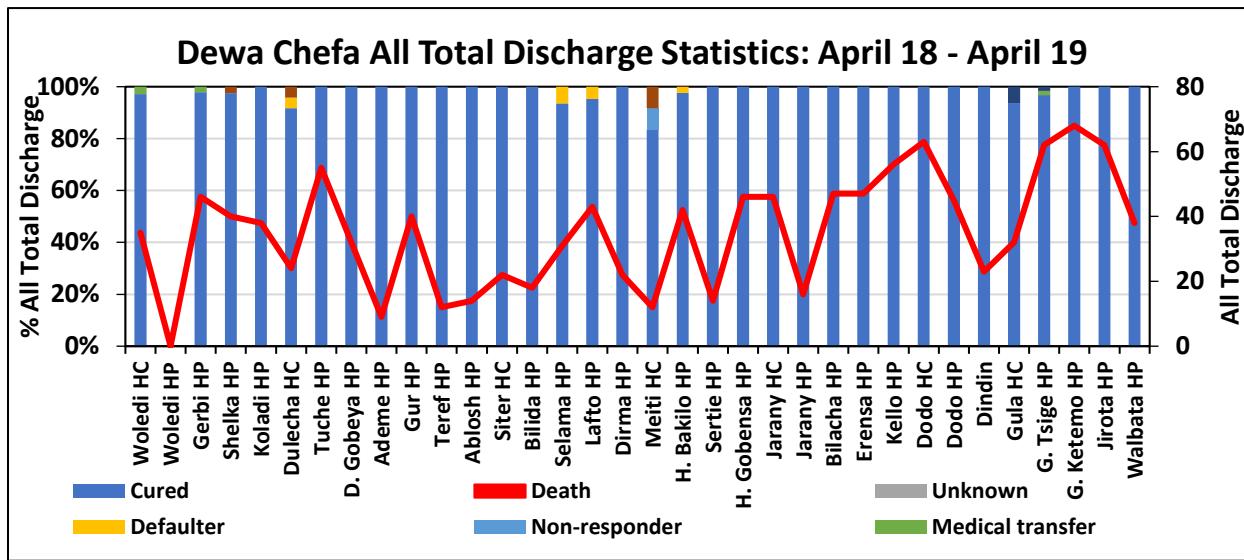


Figure 17: Dowa Chefa SAM All Total Discharge (April 2018 - April 2019)



In contrast Dowa Chefa has fewer other reasons for discharge²⁷. 23/31 or 74% of HF reported 100% cured over the whole year. In comparison the Bati woreda comparison and pilot year both have many more types of recorded discharge possibly indicating a better managed reporting system in Bati.

In the comparison and pilot year a few centres stand-out in this analysis. For instance, in Hato HC during the pilot year, the HC reported 28% cured and 49% discharge to outpatient care. On discussing with field staff, the explanation is that the children are presented at the health centre and are then quickly discharged to the nearby HP. Whilst a clear reporting of these types of issues is a good sign in terms of the accuracy of reporting, this approach of admission and quick discharge to a nearby health post makes it difficult to monitor the data and has a negative impact on monitoring of surge thresholds at a health facility level.

In the comparison and pilot year, Teamelka Health Centre has the highest total admissions of 162 and 61 respectively. Teamelka Health Cluster includes Teamelka Health Centre, Teamelka HP, Cheleleka HP, Dameto HP and Burka HP. The cluster is the most remote of all the Health Clusters in Bati, it is also often affected by insecurity. Consequently, it is very challenging for the WoHo to allocate staff to the most difficult posting health facilities in the Woreda. Staff who do go often leave as soon as an opportunity arises, such as further training or a post in another Woreda, presents itself. If one, two or, as is most often the case, all of the Health Posts are closed then the catchment area population go to the HC, if they are able. Hence the highest admissions in this HC. The pilot year had less months of closed health facilities within the Health Cluster than the comparison year, hence the reduction from 162 to 61 cases. It should be noted that despite these issues the HC reported a 100% cured rate in the pilot year and 80% cured and 9% defaulters in the comparison year. 100% cured in such difficult circumstances with relatively high admissions

²⁷ Woledi HP did not report for the whole year

is unlikely and points to a neutral or lack of impact but no negative impact of the pilot project on data quality issues.

Whilst this example concerns a small number of facilities in one Woreda, Concern Staff reported that it is a common issue in other vulnerable Woreda. The characteristics of the population covered by the Teamelka health cluster suggest that the underlying health and nutrition status is vulnerable and that a shock might disproportionately affect this population when compared to health clusters closer to good roads, better security, with greater access to infrastructure such as health, water and markets. Arguably this remote and vulnerable context are the health facilities and populations for which the Surge approach is designed. Shocks in these areas will increase demand for poorly staffed nutrition and health services at the same time as they will decrease supply of services through breaks in supply pipelines and increased incentives for staff to take time off, leave their post or reduce quality of their work. The WoHo is responsible for the staffing of such health clusters and for other issues that affect the response to a shock e.g. the resupply of items such as RUTF. The Surge Pilot in Ethiopia has addressed HR and supply capacity issues through training and ad hoc support to transporting people and supplies. There is a need for the next phase of testing the Surge Approach in Ethiopia to decide how the surge approach will engage with these fundamental issues that have the greatest negative impact on the provision of services particularly during a shock.

Further examination of the data suffers from the small numbers of children discharged for other reasons. The second most common discharge criteria in the control year is transfer out to outpatient, the biggest example of this type of discharge is Hato Health centre, discussed above. The pilot year has the same pattern for the second most common discharge criteria. There are 3% recorded defaulters in the comparison year and 3% in the pilot year. 3% defaulters could be an indication of poor reporting or low coverage of SAM cases whose families have the highest opportunity costs of regularly attending the OTP. For instance, they tend to live furthest away in poorest population with most demands on mother's time. Given the topography of Bati and coverage issues discussed elsewhere in this report it is more likely that the low defaulter rates are a result of coverage and reporting issues.

The Surge approach monitors factors such as women's workload to anticipate periods of the year when undernutrition might peak theoretically caused by a reduction in the quality of child care. Household workload peaks may also affect defaulter and non-responder type discharges. However in Figures 18 and 19 below, there does not appear to be any seasonal patterns in discharge criteria, but small numbers are involved. This is the same for Dewa Chefa.

Figure 18: Bati SAM Discharge Statistics for the Comparison Year (July 2017 - June 2018)

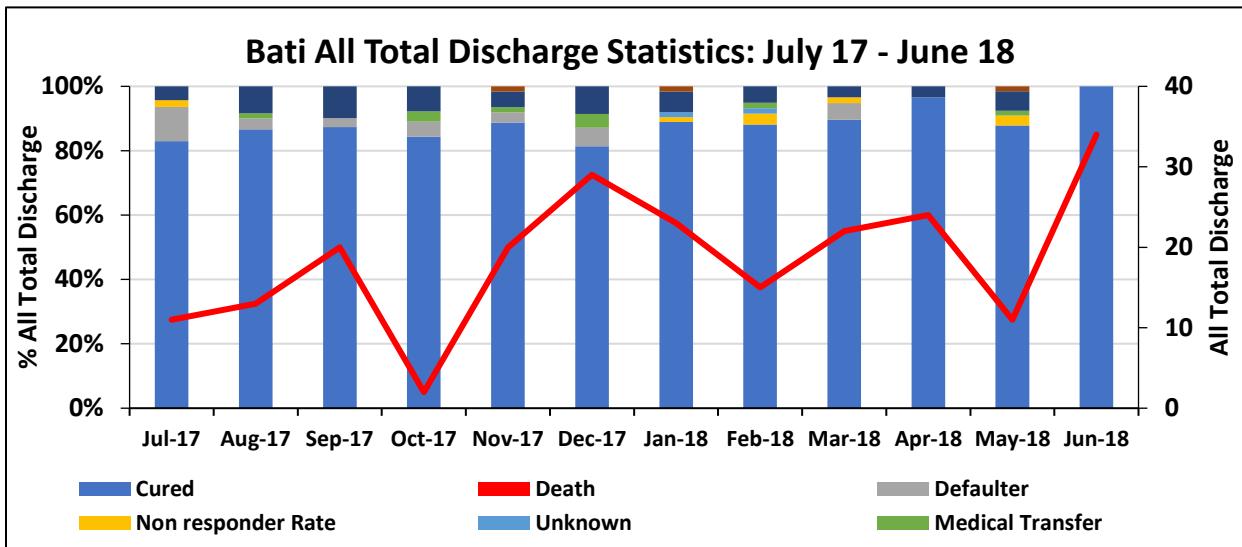
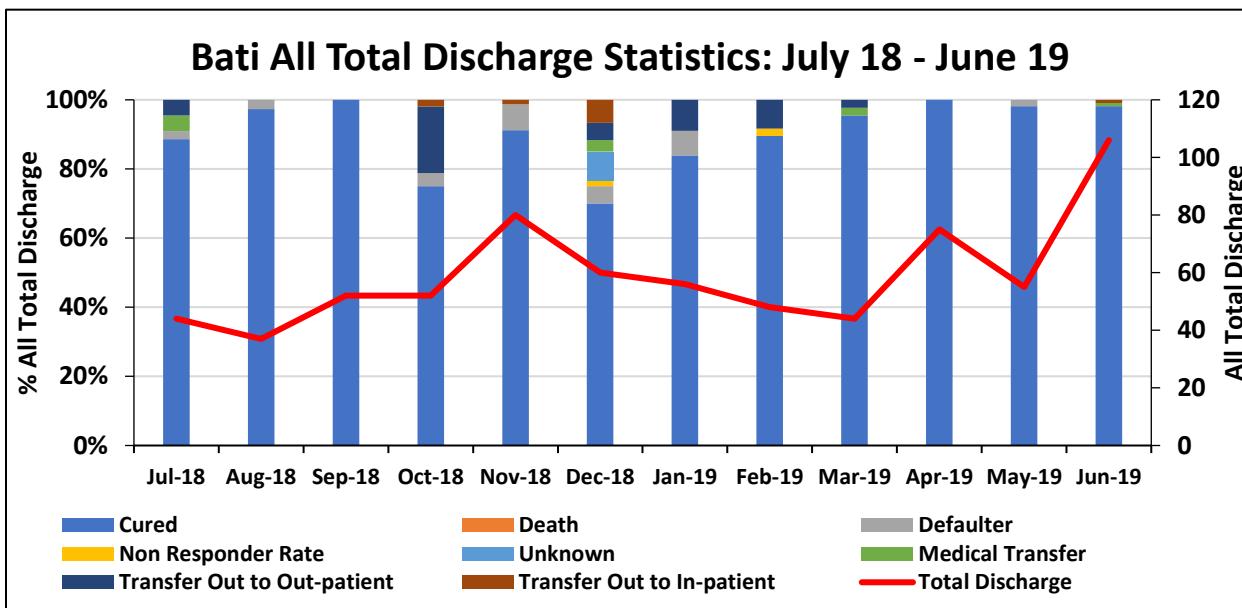


Figure 19: Bati SAM Discharge Statistics for the Pilot Year (July 2018 - June 2019)



Q2. Is coverage affected by the approach?

Coverage surveys using SQUEAC survey methodology were conducted in September 2014 and November 2018, in Bati Woreda. The aim was to identify the CMAM services uptake, boosters and barriers and to estimate the Woreda coverage rate. Both surveys found that the CMAM coverage was below the SPHERE standard for a rural setting: 41.5% and 42.1%, respectively. These were attributed to weak community mobilization activities which are central to effective implementation of Community Health Strategy (CHS). In addition, the low coverage was also linked to supply stock outs as well as frequent closure of health facilities due to staff turnover.

Although, no coverage survey was conducted post CMAM surge pilot to determine impact, all the HEWs and HDATLs interviewed insisted that there were no malnourished cases at the community level who had not sought treatment. This was further corroborated by caretakers of OTP beneficiaries who mentioned that to their knowledge, all the children with symptoms similar to their own, had either been treated or were being treated at the health facility. In contrast, one of the HEWs interviewed felt that the community volunteers including HDAs were not able to conduct extensive home visits due to challenges in topography.

“We don’t think that mothers with a problem or health problem of their child do not remain at home, they bring them ... for those mothers who do not bring them ... it’s because they were left for some time from that village...” HDATLs- Bati HP

“We didn’t not know someone who was sick there and didn’t come here” OTP Caretakers – Bati HP

“Not all HDATLs support me for screening... they are seven but amongst the seven only two regularly support me...” HEW- Bati HP *“...it takes about 3 hours for some of them to walk to the health facility, 6 hours in total...it is really far!”* HEW- Bati HP

On further probing, the HDATLs and OTP caretakers appeared conversant with what a malnourished child looks like. Indeed, the 2018 coverage survey noted that most of the community level informants including mothers of under-five children were able to differentiate malnutrition from other diseases and there had been an increase in awareness of CMAM at the community level.

CMAM Surge is not designed to improve coverage of the health facilities. However, coverage is known to be negatively affected by the quality of the service and is probably affected by the season. For example, breaks in the RUTF pipeline, overworked or absent staff are all thought to reduce the utilization of health and nutrition services. Seasons also result in changes in workload and ease of travel from communities to the health facility. The available data presented above suggests a neutral impact of the more intensive capacity strengthening during the pilot period, through training and supportive supervision and ad hoc support to fill pipeline breaks and human resource continuity. Assuming that there are indeed seasonal spikes in incidence of SAM the lack of significant seasonal spikes in admissions suggests that some of the factors that cause poor coverage e.g. opportunity costs of regular attendance at health and nutrition services are also seasonal. Consequently, any CHS related activities aimed at improving coverage should be adapted to take into account seasonal factors particularly seasonal spikes of SAM.

The two previous coverage surveys highlighted the coverage barriers related to service quality as being supply stock outs as well as frequent closure of health facilities due to staff turnover. However, the lack of seasonal spikes in admissions and the very similar monthly admissions rates between the comparison year (Coverage measured at 42.1%) and the pilot year suggest that capacity strengthening activities at the health facility level, of the type used in the Surge Approach, have a neutral but not negative impact on coverage.

Q3. Has the Surge approach generated interest or changes at “higher” levels of the system?

Overall, it was observed that CMAM surge has generated interest at higher levels of the health system. Joint Supportive Supervision minutes conducted by FMoH, PHEM and OFDA from the national level, recommend that the WoHO should consider setting and monitoring thresholds on human resource capacity as part of their daily routines. Although the WoHO felt that this was a positive idea, they had not implemented it at the time of writing this report. As discussed elsewhere in this report, the WoHO and Health Facility staff are in regular contact and are very aware of the day-to-day human resource issues. They expressed frustrations with the chronic nature of human resource issues. As previously reported, the Health staff across the woreda use informal short-term strategies to ‘plug the gaps’ of staff absence quite often at their own expense. Consequently, they feel that systematic monitoring for this part of the health system is not a priority. A question remains on whether systematic monitoring with thresholds can be used to formalise these day to day strategies and reduce the out of pocket costs by better budgeting Woreda budgets to cover transport costs. Would formal monitoring help the WoHO to advocate for further support at the zonal level?

The national PHEM representative had expressed how the Surge approach was closely linked to their mandate, hence, were closely monitoring the study. Unfortunately, it was not possible to interview national level PHEM representatives during the data collection as they were conducting their annual review. However, during interviews with health facility staff and the WoHO the linkages to PHEM activities were mentioned and opportunities to link the surge and PHEM approaches were discussed.

During the feedback event conducted at the end of the evaluation fieldwork phase the WoHO team from Dawa Chefa, expressed their interest in applying the CMAM surge approach based on the discussions with their counterparts from Bati. The health teams from the Zonal level also shared their positive perspectives on CMAM surge.

Indeed, most of them were part of the Telegram Online platforms which, as mentioned above, not only shared learning on CMAM but also on other aspects of health system. Notably, this platform was set up by the Concern team in collaboration with Bati WoHO.

“This is practical approach, everyone from top to down, needs to have their own roles and responsibilities based on that they are expected to execute their tasks, and should be integrated” Health Official – Zonal office

“I understand from my colleagues in Bati that the CMAM surge approach help them plan and prepare using their data. It will be nice if in Dawa Chefa we can be guided, we have our annual plan but...CMAM surge is for routine, done at health facility. Will be good”
 WoHO- Dawa Chefa Woreda.

Conclusions & Recommendations: Impact

- There is a question about to what extent the use of the information generated by the surge approach by the woreda can, with support from Concern, prioritise finding solutions to human resource stresses such as those found in the Teamelka cluster and shocks experienced when staff are absent during increases in caseloads. Some argue that this is not the role of the surge approach. Others argue that through strengthening the use of data and promoting the use of local solutions for local problems within the health system the surge approach might act as a catalyst to find solutions to the most significant issues within a health system rather than only being focused on the impact of climatic shocks.
- There is evidence that human resource issues result in larger caseloads and workloads in other centres. It is likely that this type of stress on the health system results in a reduced coverage and quality of the kebele and woreda health system.
- Based on the positive feedback on the surge pilot from the national and zonal level, these should be followed up to ensure uptake is promoted and strengthened. This provides a platform to explore opportunities to link CMAM surge approach with other national, regional and zonal initiatives. Of particular importance is the exploration of the link with PHEM from community to national level.
- It is clear that coverage is an issue in Bati and by extension the functioning of the Community Health System (CHS) is an issue. There are systemic issues with the strength of the CHS and its linkages to the health system. The pilot has also started to suggest that seasonal factors may also negatively affect these systemic issues. Future work on a surge approach in Ethiopia should consider extending elements of the surge approach to the community health system.
- A solution should be found to avoid the potential double reporting of HC admitting SAM cases and then transferring to OTPs in the cluster HPs, specifically for the surge dashboard.
- Further exploration of the use of apps like Telegram for improving communications within health system teams is warranted based on the positive lesson learnt in Bati.

7. Efficiency

Criteria	Rating					Rationale
	1	2	3	4	5	
Efficiency					X	According to the CEA findings, the Ethiopia CMAM Surge programme as implemented in Bati woreda appeared to be a very cost-effective strategy. Although the costs in Bati were higher than in Dawa Chefa, the cost-effectiveness of the CMAM services, including CMAM Surge within the 32 OTP and 2 SC sites in Bati is acceptable in relation to global benchmarks/standards and in comparison, to CMAM programs without CMAM Surge. For this reason, efficiency has been ranked as 5.

Q1. *What is the cost difference between a response to surge thresholds versus a traditional CMAM program?*

The cost-effectiveness of the CMAM intervention model has been proven and documented by a number of studies^{28,29,30}. The CEA aims to answer the critical question of whether the Surge approach offers similar levels of cost-effectiveness as other models for delivering CMAM services. The study compares the cost-effectiveness of the CMAM Surge approach in Ethiopia to the more traditional CMAM response often implemented by NGOs, and to international standards and CEA results from a variety of CMAM programmes in other countries that did not use the Surge approach.

A CEA of the CMAM Surge Approach was conducted by an external evaluator to compare the following two programme delivery models:

28 Rogers E, Martínez K, Alvarez Morán JL et al. 2018. Cost-effectiveness of the treatment of uncomplicated severe acute malnutrition by community health workers compared to treatment provided at an outpatient facility in rural Mali. *Human Resources for Health* 16:12

29 Puett C, Sadler K, Alderman et al. 2013. Cost-effectiveness of the community-based management of severe acute malnutrition by community health workers in southern Bangladesh. *Health Policy and Planning* 28:386–399

30 Frankel S, Roland M, Makinen M. 2015. Costs, Cost-Effectiveness, and Financial Sustainability of Community-based Management of Acute Malnutrition in Northern Nigeria. *Results for Development Institute*

1. Delivery of services for SAM via the government health system with the integration of the CMAM Surge approach from the outset to support better planning and response to periodic caseload surges (the ‘intervention Woreda’ or CMAM Surge arm: Bati woreda);
2. Delivery of services for SAM via the government health system with standard CMAM service support provided by Concern (‘the comparison Woreda’ or traditional CMAM arm: Dawa Chefa woreda).

Concern’s CMAM Surge Approach Value for Money framework³¹ guided the development of the study protocol and tools. An approach to costing that encompasses both the institutional costs (staff time, training, monitoring and supervisory/monitoring visit and supply chain expenses); and societal costs such as (caregivers’ time, travel costs to/from OTP sites, time spent on CMAM activities, out-of-pocket costs at SC) was applied. Data collection was carried out in both study arms over a period of 12 months. Annex 7 shows the type of costs and sources of data collected. A separate full CEA report is also available. Following are extracts from the report.

The total cost of the CMAM programme with Surge components in the 32 OTPs and two SC sites as detailed in Table 11, is estimated at 277,905.20 USD.

Table 11: CMAM Programme Total Cost

Cost type	Cost (Lowest, Middle, Highest)					
	Bati (Intervention woreda)		Dewa Chefa (Comparison woreda)			
Institutional costs						
MOH - Facilities	\$28,896.40	\$32,107.11	\$35,317.82	\$19,827.69	\$22,030.77	\$24,233.85
MOH – Woreda	\$5,024.70	\$5,583.00	\$6,141.30	\$11,526.86	\$12,807.63	\$14,088.39
Concern	\$119,656.70	\$119,656.70	\$119,656.70	\$31,587.38	\$31,587.38	\$31,587.38
UNICEF	\$40,650.86	\$40650.86	\$40,650.86	\$72,172.15	\$72,172.15	\$72,172.15
Total	\$194,228.60	\$197,997.60	\$201,766.70	\$135,114.10	\$138,597.90	\$142,081.80
Societal Costs						
OTP Beneficiaries	\$1,976.07	\$2,484.37	\$3,041.67	\$1,956.60	\$2,543.59	\$3,205.94
SC Beneficiaries	\$688.05	\$883.29	\$1,078.52	\$252.73	\$418.67	\$584.62
CBVs	\$17,901.85	\$26,539.85	\$35,177.86	\$12,618.97	\$18,948.05	\$25,277.13
Total Societal Costs	\$20,565.97	\$29,907.51	\$39,298.05	\$14,828.30	\$21,910.31	\$29,067.69
Total Costs	\$214,794.60	\$227,905.20	\$241,064.70	\$149,942.40	\$160,508.20	\$171,149.50

Note: Numbers presented are fuzzy triangular numbers

³¹ Concern Worldwide. 2016. CMAM Surge Approach Value for Money framework. Available from :

https://admin.concern.net/sites/default/files/media/migrated/cmam_surge_value_for_money_framework.pdf

The CEA found the following effectiveness outcomes. Table 12.

Table 12: CEA Effectiveness Outcomes

Outcome	(Lowest, Middle, Highest)		
	Bati (Intervention woreda)	Dewa Chefa (Comparison woreda)	
Number of children treated	891		1,286
Number of children cured	(626 652 678)		(1,165 1,184 1,203)
Number of deaths averted	(102 148 217)		(135 209 290)
Number of DALYs averted	(8,038 10,559 14,541)		(10,754 14,934 19,539)

Note: Numbers presented are fuzzy triangular numbers

Cost effectiveness outcomes are shown in Table 13.

Table 13: Cost Effectiveness Results

	Cost (Lowest, Middle, Highest)	
	Bati (Intervention woreda)	Dewa Chefa (Comparison woreda)
Cost per child cured		
Point estimate	\$349.55	\$135.56
95% Confidence interval	[\$324.28 \$377.30]	[\$127.11 \$144.40]
Cost per death averted		
Point estimate	\$1,539.90	\$767.98
95% Confidence interval	[\$1,127.27 \$2,195.22]	[\$585.67 \$1,170.92]
Cost per DALY averted		
Point estimate	\$21.58	\$10.75
95% Confidence interval	[\$16.38 \$28.20]	[\$8.47 \$14.88]

Cost-effectiveness estimates are usually interpreted by comparison with other programs and/or against commonly used standard or threshold values³². Table 14 shows the cost per child cured, cost per death averted and cost per DALY averted for the current program and five other CMAM

³² WHO. 2013. WHO methods and data sources for global burden of disease estimates 2000-2011, Department of Health Statistics and Information Systems, World Health Organisation, Geneva, Switzerland, 2013

programs. Typically, CEA concentrates on the cost per DALY averted metric since this allows comparisons to be made across a wide range of interventions.

Simple comparisons are not straightforward as results are influenced by both methods (e.g. the disability weights used, whether age-weighting and discounting were used, which life-expectancy (LE) was used, and the extent of the costs-base used) and by settings (e.g. local life-expectancy, MUAC at admission, program cure rates, and miscellaneous program factors)³³.

Table 14. Cost-effectiveness results from other studies

Study	Country	Cost per child cured	Cost per death averted	Cost per DALY averted
Current study, 2019	Ethiopia – Bati ^a	\$349.55	\$1,539.90	\$21.58
	Ethiopia- Dewa Chefa ^b	\$135.56	\$767.98	\$10.75
CEA CMAM study, 2018	Niger	\$165	\$1,567	\$26
Rogers et al., 2018	Mali	\$214	Not available	
Frankel et al., 2015	Nigeria	\$219	\$1,117	\$30
Puett et al., 2012	Bangladesh	\$180	\$869	\$26
Wilford et al., 2011	Malawi	\$185	\$1,365	\$42
Bachmann, 2009	Zambia	\$203	\$1,760	\$53

^a Intervention woreda

^b Control woreda

CEA studies tend to use the US dollar as a benchmark currency. The value of a US\$ changes over time. It is possible to account for inflation using local consumer price index (CPI). This adjustment does not, however, account for place to place variation in the purchasing power of US dollars. A crude measure of relative wealth is gross domestic product (GDP) per-capita. It is possible to present results as the proportion of GDP per capita needed to avert a DALY. The World Bank publishes GDP time series and these enable the use the local (i.e. in time and space) GDP per capita to calculate the proportion of GDP per capita needed to avert one DALY. The adjusted outcomes are presented in Table 15.

33 Kaufmann A, Gupta MN. 1985. Introduction to fuzzy arithmetic: Theory and applications, Van Nostrand Reinhold Co., New York, USA.

Table 15. Adjusted cost per DALY averted from other studies

Country	Study year	GDP per capita (year) ^a	Adjusted cost per DALY averted ^b	Proportion of GDP per capita required to avert one DALY
Ethiopia	2019	\$772 (2018)	\$21.58	0.0280
			\$10.75	0.0139
Niger	2018	\$378 (2017)	\$26	0.0694
Nigeria	2014	\$3222 (2014)	\$15	0.0047
Bangladesh	2009	\$681 (2009)	\$13	0.0191
Malawi	2007	\$320 (2007)	\$22	0.0688
Zambia	2008	\$1369 (2008)	\$29	0.0212

^a World Bank data for ‘GDP per capita (current US\$)’

^b Adjusted for DALY calculation model and to standardize the costs-base

It is common to use standard (threshold) values. Two standards are commonly used:

- A single fixed standard for cost per DALY averted:** Interventions achieving a cost per DALY averted of less than US\$100 at the time of analysis are classified as being very cost-effective [i]. The cost per DALY averted achieved by the current CMAM/ Surge program was US\$21.58. This program would, therefore, be classified as being very cost-effective.
- Variable standard per DALY averted:** The most commonly-used standard in the public health nutrition field is one proposed by the WHO [ii]. This compares the cost per DALY averted by an intervention with the per capita GDP of the country in which the intervention is implemented:
 - Highly cost-effective interventions avert a DALY for less than a country’s GDP per capita.
 - Cost-effective interventions avert a DALY for between one and three times a country’s GDP per capita.

- Intervention that are not cost-effective avert a DALY for more than three times a country's GDP per capita.

The proportion of GDP required to avert one DALY by the current Surge program is 0.0280 (i.e. 2.80% of GDP). **The Bati woreda CMAM Surge program can, therefore, be considered to be highly cost-effective.**

The Bati woreda pilot (21.58 USD per DALY averted) was less cost effective than the comparison Dawa Chefa programme (10.75 USD per DALY averted). Differences in the costs were partially due to the inclusion of the CMAM Surge Pilot setup and planning activities costs between August 2017 and March 2018. These costs represented 13.2% of all the institutional costs in the surge pilot woreda. These initial extra costs are likely to be lower later in the project cycle and in other programmes as experience in implementing the surge approach in Ethiopia increases. Concern costs for local staff, transport and training were significantly higher in the pilot woreda than in the comparison woreda.

The report concludes that 'The Ethiopia CMAM Surge program as implemented in Bati woreda appears to be a **very cost effective strategy**. The cost-effectiveness of the CMAM service, including CMAM Surge within the 32 OTP and 2 SC sites is still **acceptable in relation to global benchmarks/standards and in comparison to CMAM programs without CMAM Surge.**'

**Q2. *What is the difference in waiting time between a surge and non-surge context?
Where are the bottlenecks in delivering care quickly?***

As mentioned above, all the health facilities surveyed did not report crossing SAM thresholds, hence the evaluation team was not able to compare efficiency in CMAM service provision in surge and non-surge contexts. Nevertheless, the baseline survey found that most of the health facilities in both Bati and Dawa Chefa had experienced stocks outs of the four essential child drugs (vitamin A, deworming medication, antibiotics and anti-malarial). Indeed, only 17% (n=4) health facilities in Bati reported having no stock outs in the three months preceding the survey. In contrast, most of the health facilities interviewed during the mid-term and final evaluation expressed that they had not experienced any stock outs. Similar findings were also noted in the endline survey which noted that there was considerable improvement from baseline in both Bati and Dawa Chefa with regards to continuous supply of RUTF and essential drugs. The percent of health facilities that had experienced no RUTF stock out during the previous three months increased by 43% in Bati (27% at baseline to 62% at end line) and by 20% in Dawa Chefa (42% to 62% at end line). Notably, Dawa Chefa saw a greater improvement in the continuous supply of four essential child drugs, with 47% (15% to 62%) of facilities having no stock outs the previous three months versus 31% in Bati (17% to 48%).

The improvement in Bati could be attributed to the SAM refresher trainings as well as CMAM surge preparedness and monitoring activities. Indeed, some interviewees reported that following

the implementation of CMAM surge, they were now more intentional in ensuring that they ordered the supplies they needed in good time and right quantity. However, given that considerable improvements were also observed in Dewa Chefa irrespective of CMAM surge, it is possible that other wider health system improvements such as capacity strengthening of supply chain management might have had an effect.

“In regard to the supplies I am more alert than before about having more or having reserve of supplies for those [clients] who need medicine, those who need plumpy nuts [RUTF] and others...” HEW – Bati HP

“This surge approach helps us to perform different tasks timely. It also informs us how we can mobilize different logistics and other drugs ...” HEW – Bati HP

With regards to the average waiting times for SAM services, the baseline survey found that 73% (n=22) of SAM clients in Bati Woreda, spent less than an hour at the health facility level. These findings seem to agree with the findings from the final evaluation where OTP caretakers interviewed expressed that they did not have to wait for longer than an hour to be served. However, these findings contrast with those from endline survey, where it was established that some caretakers reported waiting for more than an hour: 30% (n=21) and 3% (n=2) waited for 1 – to 3 hours and more than 3 hours, respectively. Notably, the number of SAM clients who responded during the endline survey were double those from baseline survey: 70 and 31 respectively. Therefore, these findings may not be comparable. Furthermore, given that all the health facilities visited had remained within the normal phase throughout the study period, difference in waiting times to receive SAM services in surge and non-surge periods could not be established.

“Many times, most of the days will not have many kids here so the service is fast...30 mins to 1 hour” Caretaker of two OTP beneficiaries in Bati HP.

According to the endline survey, 27% (n=19) of SAM clients in Bati reported having experienced clinic closures in the 3 months preceding the survey. Similarly, the endline survey found that the functionality of health posts in Bati woreda remained problematic with only 73% of the 26 health posts functioning at baseline and end line. The reason, in most cases, was that the HEW had not yet been assigned or had quit or was on annual leave or maternity leave (all of the HEWs are women). Although HDATLs interviewed during the final evaluation acknowledged that some HPs had been closed at some point during the pilot study period, they felt that due to the good communication channels with HEWs, they were mostly aware and would be able to pass the message to various households. On probing how feasible this was, most of the HDATLs interviewed seemed to think it was not an issue as they met all the time at water points, during coffee ceremonies as well as in their scheduled meetings with the HEW. These suggest that interactions at the community level were quite dynamic. It is noteworthy that these perspectives were expressed by HDATLs from health facilities that were relatively accessible. Therefore, the situation and experiences of those with difficult topography and further away from the health facilities may be different.

"When the health facility has to close in emergency, for HEW to go for training...she [HEW] informs us by phone...if not we are neighbours and we use the same water point!"
HDATL – Bati HP

"If one of the mothers have coffee ceremony many people around that home will come and we chat and drink coffee together.... In those ceremonies there is different points we [HDATLs] discuss together with the mothers" HDATL – Bati HP

"Every fifteen days we have meeting... our program [meeting with HEW] is every fifteen days ... because it is scheduled, everybody [HEW & HDATLs] knows it is scheduled"
HDATL – Bati HP

OTP caretakers interviewed during the final evaluation seemed knowledgeable of what SAM treatment was about. Most mentioned that the HEW had explained to them what the treatment was about and how to utilize RUTF. Indeed, the CMAM coverage survey conducted highlighted there was increased awareness among community members on malnutrition, causes and management. This was attributed to the CMAM programme as well as other nutrition – related programmes on the ground.

"Whenever we think that the children are being hurt or the child is getting thinner and thinner, we know that we should bring them here and get measurement" OTP caretaker – Bati HP

"Most of the time the health development army give us some lesson as to what we should do... so sometimes the health extension worker or Woreda officials come to our village and teach us" OTP Caretaker – Bati HP

Conclusions & Recommendations: Efficiency

- The surge pilot has had a positive impact on reducing the number of stock outs in the HF. Yet there is still work to be done. More work could be done in reinforcing and formalizing the action taken to reduce the risk of stock-outs. This might include more refresher training for HP and HC staff in how to order supplies with particular attention to calculation of contingency stocks. Formalize the day-to day actions taken to plug supply gaps through the inclusion of a budgeted plan for emergency transport of supplies.
- More exploration of the reasons for longer waiting times should be conducted in an effort to reduce waiting times further.
- Although the CEA indicates that the costs in Bati were higher than in Dewa Chefa, the cost-effectiveness of the CMAM services, including CMAM Surge within the 32 OTP and 2 SC sites in Bati is acceptable in relation to global benchmarks/standards and in comparison, to CMAM programs without CMAM Surge.

8. Acceptance/Relevance

Criteria	Rating					Rationale
	1	2	3	4	5	
Acceptance/Relevance					X	The Surge approach is valued by both the health workers and management team. Overall, it is perceived as a practical approach that could be integrated and applied within the wider health system. Indeed, it aligns with PHEM guidelines. The fact that it encourages use of evidence generated was appreciated. Promoting this at the community level should be included in the next steps. Therefore, this section has been ranked as high (5).

- Q1.** *Is the approach acceptable to all relevant stakeholders? AND*
- Q2.** *How do the relevant stakeholders perceive the approach in terms of its ability to ensure preparedness and to protect quality services?*

Caretakers

According to both the baseline and endline surveys, 97% (n=29) and 96% (n=68) of the caretakers of SAM children interviewed rated the quality of SAM services on day of interviews as 'good' or 'very good'. A similar proportion mentioned that they would recommend the service to a family member or friend. Despite the difference in the total sample between baseline and endline surveys, these findings were consistent suggesting that the quality of SAM services was highly appreciated even prior to implementation of CMAM surge pilot. Similarly, OTP caretakers interviewed during the final evaluation expressed that they were satisfied with the way the health workers served them. However, only six OTP caretakers were interviewed because the evaluation KIIs were held at the facility every day even though OTP services were not provided on all of those days. In addition, it is recognised that clients of health services in a resource poor setting with few alternatives are likely to give positive feedback. Nevertheless, the perspectives of OTP caretakers were also corroborated by the HDATLs who reported that community members give them feedback on the services they received at the health facility.

"My child is better he is increasing weight, they [HEWs] have had good type of training it seems... like them" Caretaker of OTP beneficiaries – Bati HP

"The health services provided are satisfactory...it is okay its fine, I like that she [the HEW] will tell us exactly what the problem is... for example, my child does not increase weight..."
Caretaker of OTP beneficiary – Bati HP

"We are happy with the way this facility is functioning. Whoever we send here [Health facility]... everyone seems to get proper service from this facility... We Know because as soon as the patients return back to the village they come to us to tell us what happened, treatment they got at the health facility" HDATL – Bati HP

Health Workers and Woreda Health Officials

Similar to the mid-term review findings, most of the health workers and WoHO interviewed during the final evaluation expressed their satisfaction with the CMAM surge approach. Specifically, they felt that it had provided them with an opportunity to examine their data in relation to their context and to use this analysis to plan not only for "emergency" but also "normal" phases. This process was described as empowering. Notably, this observation was made across the different levels of implementation: from health facilities to the WoHO.

"CMAM surge has helped me understand and monitor the events in the community affect the number of SAM cases coming here (HP). I also monitor diarrhoea cases...knowing the events of this specific department helps us to prepare beforehand like securing... resources. For example, this is a rainy season, with a lot of rain...it is common to have more diarrhoea, so this CMAM Surge will help us prepare for diarrhoea beforehand" HEW- Bati HP

"You know by only sitting here and having this dashboard, I can... you know explain and tell you what is happening where.... For example when I see this dashboard, I understand what happened in Selate HP now and in the previous months..., this dashboard tells me so that I can... you know report to the line manager, you know advise on different accordingly" Health Centre Information Officer - Bati Health Centre

"This approach [CMAM surge] has helped build my confidence as confidence in treating this OTP and other cases, that way... I am more organized than before" HEW- Bati HP.

CMAM surge was also appreciated due to its relevance to the daily routines in that it was practical and could be utilized across different health services. Indeed, most of the participants felt that this approach was not an additional activity to their daily routines, but rather a means to effective implementation of their day to day activities. The data from CMAM surge have also been used for advocacy activities. For instance, based on the analysis from the dashboard, the WoHO teams had contacted their Zonal Health Management Teams requesting for nutrition sensitive interventions.

"The CMAM Surge approach is using the existing system ... it does not spoil what is happening within the Woreda so this has to be continued because it can be integrated with the current health care primary services" Bati WoHO

"As I try to explain ...this approach is very important not only to certain disease entities but also to strengthen the overall the health systems" HC Staff – Bati Woreda

"CMAM Surge dashboard have helped identify cases...we have disclosed this to the higher level, so that they can come up with agriculture-nutrition intervention" Bati WoHO

However, health workers in two of the health facilities visited felt that there was no need for CMAM surge. Indeed, one felt that their annual work plans were sufficient, hence, no need for development of threshold and action plans. The other expressed that she had been working as a HEW for several years and understood her context quite well. Notably, the latter was based in a centrally located HP hence, could contact the health cluster management team easily. Their reluctance to implement CMAM surge was evident in the incomplete charts as shown in Figure 14 above.

"I did not update the surge actions as I have existing plans... the plan come from woreda and has no special surge ...it works so I don't feel just like other plans". HEW – Bati HP

Notably, the WoHO and HC staff from Dewa Chefa (comparison Woreda) highlighted that although the annual work plans were detailed and involved several data from the Woreda as well as the population indicators, they were not constantly updated and reviewed compared to CMAM surge.

"The plan is being given from the region, to the woreda, and is based on conversion factors, they set the overall threshold for us...this is done annually during the planning period" WoHO- Dewa Chefa

Conclusions and Recommendations: Acceptability

- Being able to see and use their own data has empowered health workers in the HP and HC. Much of the day-to-day resilience of the health system in the woreda depends on communications between health workers and with the WoHO and the use of small local actions to maintain the functioning of the system.
- CMAM surge has largely been accepted at the health facility and management level, next steps should include engagement with community volunteers in the set up and monitoring processes of the surge approach
- Future use of the surge approach should explore further how to engage the WoHO and zonal level, particularly the PHEM component of the health system. Examples include introduction of the use of thresholds into the PHEM for notification of increase in SAM and other morbidities such as diarrhoea, integration of the surge approach into the community based element of PHEM, inclusion of surge budgets into WoHO annual budgeting processes and introduction of the Surge dashboards to the WoHo, PHEM and zonal level monitoring systems.

9. Sustainability

Criteria	Rating					Rationale
	1	2	3	4	5	
Sustainability			X			The pilot study has been implemented in close collaboration with the WoHO and PHEM team. However, the PHEM/ Surge linkages seems to be more at the federal level with poor to no Surge/PHEM linkage at the WoHO, health facility and community level. Although many participants have been trained, it is not evident how the expertise will be sustained given the high rates of staff turnover. Nevertheless, the participants said that despite Concern leaving, they will be able to implement some of the aspects of Surge. Notably, there are many opportunities to ensure continuity, for instance through exploring how the approach can be linked to PHEM at the local level as well as the community. As some of these strategies are yet to be defined, this section has been rated moderate (3)

Q1. Has a sustainability approach been taken?

Links with PHEM:

As observed during the mid-term review, PHEM objectives are similar to those of the CMAM surge approach. Indeed, the PHEM guideline states that its two priorities are epidemics due to communicable disease and nutritional emergencies. Furthermore, the PHEM approach is shifting from 'reactive approaches that are fire fighting for an already significant problem' to one of being 'well prepared to effectively manage risk in a manner to reduce the peak burden on health care services' and ultimately to 'diminish the overall caseload and health impacts'. It is clear that these objectives are very similar to those of the CMAM surge.

PHEM teams had been consulted during the signing of the initial agreements for the pilot study. The PHEM teams had also participated in the JSS as well as mid-term review where they expressed their interest in the learning experiences from the study. However, it seems that only the PHEM teams based at the federal and zonal level have been involved. Indeed, it was established that the PHEM teams based in the health facility level had not been consistently

involved. This is a missed opportunity to explore opportunities for synergies at the local level. Some participants reported that there were PHEM committees at the community level. Unfortunately, this finding could not be investigated as the evaluation team was not able to interview the PHEM teams who were involved in their annual review during the data collection period.

Although there are similarities in the data collected for CMAM surge and PHEM, the frequency, the use of thresholds, reporting formats and focal persons involved vary. In addition, there was the lack of an explicit link between the CMAM Surge dashboard and the emergency data collected by PHEM.

Links with other HSS Functions

Generally, most of the health facilities visited were monitoring the SAM and SAM-related child morbidities caseloads as well as other HSS functions such as supplies. Notably, the health workers had been trained on supply management as part of the standard CMAM training package following the initiation of the pilot study. Indeed, most were able to produce their updated stock cards on request. In addition, all the HCs visited were able to explain what their CMAM surge dashboard entailed. Although most participants expressed satisfaction with their dashboard, it was evident that this had not been formally linked to existing records systems including woreda reports and DHIS2 database which is currently utilized in Ethiopia. For instance, and as shown in Figure 13 above, there were discrepancies between health facility SAM records and the woreda reports.

It was not appropriate for a pilot study in one woreda to fully investigate the utility of the surge approach at Woreda and zonal level, however during the wrap up meeting the Dewa Chefa and Bati woreda officials, as well as the zonal officials present expressed their strong interest in exploring integrating the surge approach into their system of planning, monitoring and responding to urgent needs in the health facilities.

As mentioned elsewhere above, more could be done to explore the incorporation of local health systems day-to-day solutions used to address routine system challenges into CMAM surge actions. Indeed, this is a missed opportunity to ensure that local innovations, which are central to CMAM surge sustainability, are considered and supported.

Community Linkages

Communities are integral to the success of CMAM and by extension the CMAM Surge approach as well as the health system. Based on the CMAM surge reports, it was noted that HDATLs had received a one-day orientation training with the aim of strengthening community mobilization and referral system for malnourished cases. However, all the HDATLs interviewed were not conversant with CMAM surge. Indeed, on being shown the situation analysis charts, they mentioned that they had not seen these graphs before. The midterm review also highlighted that the involvement of community volunteers in the pilot study was limited. Notably, CMAM surge

guidelines recommends involving the community in analysis and development of surge actions. The role played by HDATLs in supporting HEWs cannot be underestimated. One of the HEW based in the furthest HP expressed that she relied more on the HDATLs than the health cluster and WoHO. The HDATLs are also trusted by the community hence an opportunity for building supportive relationship with the health facilities.

"I am far from everyone...there are no woreda or cluster, as far as this health facility is concerned, I get more support from the HDATL" HEW- Bati HP

"We feel that we (HDATLs) have some respect from the community..... So we have good relationship almost with everybody. May be that is one of the reason the people have respect for us and for what we advise." HDATL – Bati HP

Will CMAM surge continue post the pilot study?

Overall, most participants interviewed felt that some aspects of CMAM surge in Bati woreda might continue following Concern's exit. This, they explained was because CMAM surge was perceived as useful and practical. Interestingly, others felt that it was not a surprise that Concern was leaving emphasizing that they were ready for the transition. This questions the assumption that end users tend to be dependent of aid.

"This project ...is good for us... it improves our strengths and our commitment to do work and we can able to make it sustainable, even if Concern is leaving" Bati WoHO

"Okay... we know we don't have marriage certificate with Concern, they will leave and since we find all this to be useful, we will continue doing it and even more as we already have some the information" HEW, Bati WoHO

"...because it's our routine activity whether Concern is here or not will work out our activity even if there is any no one... we will encourage community" HEW – Bati HP

With regards to surge aspects that might not be implemented, most felt that the key challenges were in transportation of supplies, support supervision, outreaches, as well as training and on the job mentoring. These were said to be resource intensive and hence may not be adequately sustained. In addition, a high rate of staff turnover was cited as another possible challenge. Many of the key informants stated that they would continue plotting the surge data and monitoring thresholds. However, given the high turnover of staff in the most vulnerable health facilities there is a risk that without the WoHO having the ability to provide refresher training, supportive supervision and on the job mentoring the use of the surge thresholds etc will not be sustainable. A basic truth about the use of data is that a key motivation to collect and analyse data is that there is a response to the data. Hence there is a risk of the WoHO not being able to respond with supplies, staff transfer or use of outreaches and that this will negatively affect the motivation of health facility staff to collect and analyse the data threatening the sustainability of the surge approach in Bati.

“Transportation of supplies, supervision and on the job, training may not continue, they require resources” Bati, WoHO

Notably, for some, continuity was contingent on support and oversight from management teams at the cluster and WoHO level. However, this would only be possible if the management teams with expertise in CMAM surge are not transferred. This suggests the need to ensure that a CMAM surge training database is collated for ease of reference. In addition, the training strategy should be adapted to ensure continuous mentoring and coaching for sustained expertise. Notably, during interviews and the final workshop some of the WoHO had come up with local initiatives such as linking CMAM surge with existing review systems such as the monthly health facility in charge meetings with the aim of promoting sustainability through motivation of health staff. Further developing, supporting and monitoring of these initiatives to strengthen uptake is therefore vital.

“This is not something that we should let for someone else, it is you know our task or our responsibility to maintain this CMAM Surge so we will integrate it with our regular meeting by setting agendas of CMAM Surge” Bati - WoHO

“You know most projects will fail to continue because they will not be supported from the higher level, from the zonal and above ... at woreda we have committed to continue this project, but still we need higher level attention and ... if there is no one asking about CMAM Surge from the zonal or regional, or bureau or departments, we might go back to the regular system, the key thing is attention by higher officials” Bati WoHO

Q2. How can the role of the NGO and the international donor be phased out?

As this project was a first step pilot project the surge approach is not yet mature enough to consider the phase out of international support. Nevertheless, in future trials of the surge approach the issue of sustainability could be much more central in the design, and implementation of the surge approach. In depth discussions above suggest that several key sustainability related issues should be considered in the future, including

- Stronger integration within the PHEM system,
- Development of a community based surge approach linked to the HPs,
- Integration of the surge tools into the regular tools of the WoHo and zonal office including the Surge dashboard and thresholds, the surge plan of action, inclusion of budgeted surge actions in the WoHo and zonal office emergency, contingency and regular budgets.

Q3. How is the approach linked to other DRR and/or emergency response efforts at district and community level?

The PHEM system is the principal related DRR and emergency response system that the evaluation team identified as being key to the future of the surge approach in Ethiopia. In depth discussion above make suggestions on how the surge approach can be linked to the PHEM system.

Recommendations: Sustainability

- Opportunities for ensuring stronger synergies with PHEM at the Woreda, and HF level as well as the community and the wider health system exist. These should be explored and optimized.
- A database of all the participants who have been trained and implemented CMAM surge should be collated. This will be a useful resource in the next steps if the decision to scale up CMAM surge approach in Ethiopia is taken.
- CMAM surge dashboard was lauded as interactive and useful especially by the health cluster and WoHO managers. The learning experiences in utilizing this dashboard should be shared widely. In addition, discussions on how this could be linked with PHEM and DHIS2 data should also be initiated.
- It is evident that most participants were positive that most aspects of CMAM surge will be implemented beyond the pilot study. This provides a good opportunity to explore with the health teams what would be needed to ensure that this is sustained. A further visit to Bati in one years' time would be warranted to review the strong and weak elements for the sustainability of the surge approach.

10. Conclusions

As discussed above, the principal evaluation question was aimed at establishing if the

“CMAM Surge approach can build the capacity of the health system to better manage periodic increases in caseloads of acute malnutrition and other child illnesses while maintaining service quality in a manner that is sustainable and acceptable to users and service providers”.

Given that all the health facilities surveyed had not passed SAM thresholds, it was not possible to compare experiences pre, during and post surge situations. Indeed, the scale-up and scale-down of CMAM surge actions which is a critical step of this approach and reflects the *“periodic increases in caseloads”* section of the principal question was not evaluated. For this reason, the evaluation team observes that the evaluation question has been partially answered. Therefore, based on the findings from the pilot study, the team concludes that the CMAM surge approach has helped in building the capacity of the health system **to intentionally prepare (pre-surge/normal phase)** for periodic increases in caseloads of SAM cases and other childhood illnesses while maintaining service quality in a manner that is sustainable and acceptable to users and service providers.

The evaluation established that the CMAM surge approach was widely accepted by both the frontline and management health staff in Bati. Some of the strengths as described by the interviewees include: **practical**; hence easy to integrate within the daily routines by most health workers; **encouraged analysis and use of routine health facility data** at different levels (HP, HC, Woreda, Zonal); **empowering** as health facility staff were not only aware of their context but could also describe it in confidence when requested; prompted health workers to make **evidenced based decisions** e.g. ordering for more supplies based on the situational analysis; as well as **improved communication** through innovative platforms such as the *Telegram online platform* which brought together health staff from both implementation and management levels.

With regards to sustainability, most interviewees from both the management and frontline teams felt that due to its practicality and the fact that the pilot was implemented in close collaboration with the health teams, several aspects of surge approach will continue to be implemented with the exit of Concern. Notably, this is contingent with continued support from CMAM surge-trained management teams.

However, it was not feasible to draw firm conclusions on how the CMAM surge approach had impacted the performance of CMAM programmes. The evaluation of programme quality indicators make it clear that the low numbers of admissions and relatively short duration of the pilot make it difficult to conclude if there has been an improvement attributable to the CMAM surge approach. It is unclear to what extent the relatively low numbers of SAM admissions and the limited evidence for season related increases in admissions is a reality as opposed to being an artefact of weaknesses in programme coverage.

Although improvements in continuous availability of RUTF and essential drugs observed during the end-line survey might have been influenced by CMAM surge interventions, similar observations were also made in Dawa Chefa suggesting that other health systems improvements could have contributed to this positive change. Indeed, the evaluation found that internal health system shocks such as changes in leadership are related to changes in quality and coverage of the health system.

Overall, the evaluation provides a favourable view of the Surge approach in Ethiopia with an average score of **3.6 out of 5**, as can be seen in Table 16 below.

Table 16: Summary of Evaluation Ranking

Criteria	Rating				
	1	2	3	4	5
Effectiveness			X		
Impact		X			
Efficiency					X
Acceptance/Relevance					X
Sustainability			X		
AVERAGE			X		

While specific recommendations have been provided under each section, a summary of next steps aimed at building on learning from the pilot study are provided below.

Recommendations: for Concern and FMoH to move the CMAM Surge approach to the next steps within Ethiopia

- Further analysis of how season affects opportunity costs of regular attendance at clinics in health facilities should be included in the set-up and real time monitoring steps of CMAM surge. This will allow the programme to adapt to mitigate the negative impacts of season on demand for services.
- There is evidence that internal health system shocks such as changes in leadership are related to changes in quality and coverage of the health system. These internal health system shocks produce at least as large impacts on workload and other stresses on the health system as season related shocks do. Exploring what these internal health systems shocks are, their frequency in occurrence and local solutions for mitigating their negative impacts is recommended.
- Future use of the surge approach should explore further how to engage the WoHO and zonal level, particularly the PHEM component of the health system. Examples include introduction of the use of thresholds into the PHEM for notification of increases in SAM and other morbidities such as diarrhoea, integration of the surge approach into the community-based element of PHEM, inclusion of surge budgets into WoHO annual budgeting processes and introduction of the Surge dashboards to the WoHO, PHEM and zonal level monitoring systems.
- A database of all the participants who have been trained and implemented CMAM surge should be collated. This will be a useful resource in the next steps if the decision to scale up CMAM surge approach in Ethiopia is taken.
- The CMAM surge dashboard was lauded as interactive and useful especially by the health cluster and WoHO managers. The learning experiences in utilizing this dashboard should be shared widely. In addition, discussions on how this could be linked with PHEM and DHIS2 data should also be initiated.
- The surge pilot has had a positive impact on reducing the number of stock outs in the HF. Yet there is still work to be done. More work could be done in reinforcing and formalizing the action taken to reduce the risk of stock-outs. This might include more refresher training for HP and HC staff in how to order supplies with particular attention to calculation of contingency stocks. Formalize the day-to day actions taken to plug supply gaps through the inclusion of a budgeted plan for emergency transport of supplies.

Annexes

Annex 1: SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks

SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks							
SERVICE DELIVERY	COMMUNITY	HEALTH WORKFORCE	LOGISTICS & SUPPLIES	HEALTH INFORMATION	LEADERSHIP & GOVERNANCE	HEALTH FINANCING	
NORMAL PHASE							
- Address all target groups for nutritional screening on monthly basis	- Give orientation for HDAs how to mobilize the community members on health service utilization	- Use the working hours properly based on prepared schedule	- Request supplies before becoming stock out	- Use and monitoring of dash board data from each HPs and give feedback immediately	- Strengthen information sharing that will be used for decision making	- Allocate budget for transporting of supplies from woreda to Hc and then to HP	
- Link the identified SAM cases for outpatient department timely	- Conduct discussion with HDAs at HP level on monthly basis	- Share roles and responsibilities	- Record on bin card what you received and issued timely	- Ensure information sharing to key actors on timely basis	- Follow the predetermined agreed thresholds and make revision based on the manpower we have	- Allocate budget for tea ceremonies during HDAs monthly meeting session	
- Receive and give quality of SAM care and support based on the national protocols	- Support HDAs to give orientation for their members at each village level	- Strengthen the team work approaches strengthen OJT for HEWs and /or HDAs	- Request Supplies and logistics based on seasonal events and monthly morbidity data	- Provide OJT on documentation and recording	- Arrange periodic meeting with staffs and share the information for all staffs what they should do for the next month	- Arrange training for HDAs and / or HEWs based on the identified gaps	
- Provide RUTF on by transferring key messages for care takers	- Make sure that all target groups under the HDAs have got 100% nutritional screening service on monthly basis	- Arrange short term training based on identified gaps at cluster or woreda level	- Communicate with cluster Hc when the HP have overstocked supplies to transfer it to another HP before the expiry date reached	- Revise the thresholds based on the capacity of the HFs	- Discuss with kebele level taskforce members to strengthen the community level interventions to be implemented through HDAs in collaboration with HEWs		
- Give follow up care and services on weekly basis without service interruption	- Each HDAs should participate on defaulter tracing activities	- Plan annual leave based on seasonal events		- Communicate with the HEWs to prepare surge actions and implement it at community level when the threshold passed in the reporting month			
- Strengthen defaulter tracing through HDAs involvement							

SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks							
SERVICE DELIVERY	COMMUNITY	HEALTH WORKFORCE	LOGISTICS & SUPPLIES	HEALTH INFORMATION	LEADERSHIP & GOVERNANCE	HEALTH FINANCING	
ALERT PHASE							
- Address all target groups for nutritional screening on monthly basis	- Conduct meeting with HDAs at HP level every 15 days and identify community level problems then give immediate response for it	- Extend working hours beyond the normal time frame - Share roles and responsibilities - Strengthen the team work approaches - strengthen OJT for HEWs and /or HDAs - Arrange short term training based on identified gaps at cluster or woreda level	- Request supplies by adding contingency ones before becoming stock out - Record on bin card what you received and issued timely - Request Supplies and logistics based on seasonal events and monthly morbidity data - Communicate with cluster Hc when the HP have overstocked supplies to transfer it to another HP before the expiry date reached - Follow the supply consumption at each service provision unit using proper follow up formats - Evaluate proper utilization of supplies at each point of service provision units	- Use and monitoring of dash board data from each HPs and give feedback immediately - Ensure information sharing to key actors on timely basis - Provide OJT on documentation and recording - Revise the thresholds based on the capacity of the HFs - Communicate with the HEWs to prepare surge actions and implement it at community level when the threshold passed in the reporting month - Strengthen weekly reporting - Provide enough formats for recording and reporting	- Strengthen information sharing that will be used for decision making - Follow the predetermined agreed thresholds and make revision based on the manpower we have - Arrange weekly or biweekly meeting with staffs and share the information for all staffs what they should do for the next month - Discuss with kebele level actors to participate on community interventions for the prevention of malnutrition. - Assign additional HWs to the HP from the HC	- Allocate budget for transporting of supplies from woreda to Hc and then to HP - Allocate budget for tea ceremonies during HDAs monthly meeting session - Arrange training for HDAs and / or HEWs based on the identified gaps	
- Increase the required amount of logistics and supplies	- Support HDAs to give orientation for their members at each village level on optimal child care and feeding practices						
- Receive and give quality of SAM care and support based on the national protocols							
- Provide RUTF on by transferring key messages for care takers	- Make sure that all target groups under the HDAs have got 100% nutritional screening service on monthly basis	- Postponed annual leave until the problem become controlled					
- Give quality of services in collaboration with cluster HC staffs	- Strengthen referral linkages						
- Strengthen community level health committee	- Give recognition for actively involving HDAs						
- strengthen surge actions at community level	- Replace inactive HDAs with other volunteer.						

SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks							
SERVICE DELIVERY	COMMUNITY	HEALTH WORKFORCE	LOGISTICS & SUPPLIES	HEALTH INFORMATION	LEADERSHIP & GOVERNANCE	HEALTH FINANCING	
Serious PHASE							
- Address all target groups for nutritional screening on monthly basis	- Conduct meeting with HDAs at HP level every week and identify community level problems then give immediate response for it	- Extend working hours beyond the normal time frame - Give training for 1:5 leaders at village level	- Request supplies by adding contingency ones before becoming stock out - Record on bin card what you received and issued timely	- Use and monitoring of dash board data from each HPs and give feedback immediately - Ensure information sharing to key actors on timely basis - Print out and distribute leaflets to the community members - Revise the thresholds based on the capacity of the HFs	- Strengthen information sharing that will be used for decision making - Follow the predetermined agreed thresholds and make revision based on the manpower we have - Arrange weekly or biweekly meeting with staffs and share the information for all staffs what they should do for the next month - Discuss with kebele level actors to participate on community interventions for the prevention of malnutrition.	- Allocate budget for transporting of supplies from woreda to Hc and then to HP	- Allocate budget for tea ceremonies during HDAs monthly meeting session
- Open additional service provision points for increasing coverage (extend screening sites and OTP sites to the nearby the community)	- Support HDAs to give orientation for their members at each village level on optimal child care and feeding practices	- Strengthen the team work approaches - strengthen OJT for HEWs and /or HDAs - Assign additional HWs temporarily from other Hc or HPs until the problem become under control	- Increase the required amount of logistics and supplies - Arrange supply and logistics storage area - Follow the supply consumption at each service provision unit using proper follow up formats	- Communicate with the HEWs to prepare surge actions and implement it at community level when the threshold passed in the reporting month - Strengthen weekly reporting - Provide enough formats for recording and reporting	- Assign additional HWs to the HP from the HC - Request woreda health office to support the cluster HCs	- Arrange training for HDAs and / or HEWs based on the identified gaps	- Request additional budget from woreda health office to cover the cost of Perdiem for temporarily assigned HWs and for rewarding those participating on community interventions from the local community members
- Receive and give quality of SAM care and support based on the national protocols	- Make sure that all target groups under the HDAs have got 100% nutritional screening service on monthly basis	- Postponed annual leave until the problem become controlled	- Evaluate proper utilization of supplies at each point of service provision units				
- Provide RUTF on by transferring key messages for care takers	- Strengthen referral linkages	- Strengthen OJT	- Mobilize logistics and supplies transportation based on local context				
- Give immediate response based on surge action packages	- Give recognition for actively involving HDAs						
- Strengthen community level health committee	- Replace inactive HDAs with other volunteer.						
- strengthen referral linkages							

SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks							
Service Delivery	Community	Health Workforce	Logistics & Supplies	Health Information	Leadership & Governance	Health Financing	
EMERGENCY PHASE							
- Address all target groups for nutritional screening on monthly basis - Open additional service provision points for increasing coverage (extend screening sites and OTP sites to the nearby the community) - Receive and give quality of SAM care and support based on the national protocols - Strengthen the reporting frame on daily basis - Give immediate response based on surge action packages - Strengthen community level health committee strengthen referral linkages	- Conduct meeting with HDAs at HP level every week and identify community level problems then give immediate response for it - Support HDAs to give orientation for their members at each village level on optimal child care and feeding practices - Make sure that all target groups under the HDAs have got 100% nutritional screening service on monthly basis - Strengthen referral linkages - Give recognition for actively involving HDAs - Replace inactive HDAs with other volunteer. - Work closely with local & IGOs at community level	- Extend working hours beyond the normal time frame - Give training for 1:5 leaders at village level - Strengthen the team work approaches - strengthen OJT for HEWs and /or HDAs - Assign additional HWs temporarily from other Hc or HPs until the problem become under control - Postponed annual leave until the problem become controlled - Provide incentives for those participating on community interventions - Request manpower from zonal and stakeholders working in the area - Invite volunteers who want to work with us	- Request supplies by adding contingency ones before becoming stock out - Record on bin card what you received and issued timely - Increase the required amount of logistics and supplies - Arrange supply and logistics storage area - Follow the supply consumption at each service provision unit using proper follow up formats - Evaluate proper utilization of supplies at each point of service provision units - Mobilize logistics and supplies transportation based on local context - Invite stakeholders to support supplies and logistics	- Use and monitoring of dash board data from each HPs and give feedback immediately - Ensure information sharing to key actors on timely basis - Print out and distribute leaflets to the community members - Communicate with the HEWs to prepare surge actions and implement it at community level when the threshold passed in the reporting month - Strengthen weekly reporting - Provide enough formats for recording and reporting - Use fastest communication channels like phone communication with concerned body	- Strengthen information sharing that will be used for decision making - Follow the predetermined agreed thresholds and make revision based on the manpower we have - Arrange weekly or biweekly meeting with staffs and share the information for all staffs what they should do for the next month - Discuss with kebele level actors to participate on community interventions for the prevention of malnutrition. - Assign additional HWs to the HP from the HC - Request woreda health office to support the cluster HCs	- Allocate budget for transporting of supplies from woreda to Hc and then to HP - Allocate budget for tea ceremonies during HDAs monthly meeting session - Arrange training for HDAs and / or HEWs based on the identified gaps - Request additional budget from woreda health office to cover the cost of Perdiem for temporarily assigned HWs and for rewarding those participating on community interventions from the local community members - Request to get contingency budget for the implementation of surge actions at community level	

Annex 2: SAM Surge Actions for Bati Woreda Health Office based on WHO Health System Building Blocks

SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks							
Service Delivery	Community	Health Workforce	Logistics & Supplies	Health Information	Leadership & Governance	Health Financing	
NORMAL PHASE							
- Address all target groups for nutritional screening on monthly basis (>=90%)	- Give orientation for HDAs how to mobilize the community members on health service utilization	- Use the working hours properly based on prepared schedule - Share roles and responsibilities - Strengthen the team work approaches strengthen OJT for HEWs and /or HDAs	- Request supplies before becoming stock out - Record on bin card what you received and issued timely - Request Supplies and logistics based on seasonal events and monthly morbidity data - Communicate with cluster Hc when the HP have overstocked supplies to transfer it to another HP before the expiry date reached	- Use and monitoring of dash board data from each HPs and give feedback immediately - Ensure information sharing to key actors on timely basis - Provide OJT on documentation and recording - Revise the thresholds based on the capacity of the HFs - Communicate with the HEWs to prepare surge actions and implement it at community level when the threshold passed in the reporting month	- Strengthen information sharing that will be used for decision making - Follow the predetermined agreed thresholds and make revision based on the manpower we have - Arrange periodic meeting with staffs and share the information for all staffs what they should do for the next month - Discuss with kebele level taskforce members to strengthen the community level interventions to be implemented through HDAs in collaboration with HEWs	- Allocate budget for transporting of supplies from woreda to Hc and then to HP - Allocate budget for tea ceremonies during HDAs monthly meeting session - Arrange training for HDAs and / or HEWs based on the identified gaps	
- Link the identified SAM cases for outpatient department timely	- Conduct discussion with HDAs at HP level on monthly basis						
- Receive and give quality of SAM care and support based on the national protocols	- Support HDAs to give orientation for their members at each village level	- Arrange short term training based on identified gaps at cluster or woreda level					
- Provide RUTF on by transferring key messages for care takers	- Make sure that all target groups under the HDAs have got 100% nutritional screening service on monthly basis	- Plan annual leave based on seasonal events					
- Give follow up care and services on weekly basis without service interruption							
- Strengthen defaulter tracing through HDAs involvement	- Each HDAs should participate on defaulter tracing activities						

SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks						
Service Delivery	Community	Health Workforce	Logistics & Supplies	Health Information	Leadership & Governance	Health Financing
ALERT PHASE						
<ul style="list-style-type: none"> - Address all target groups for nutritional screening on monthly basis - Increase the required amount of logistics and supplies - Receive and give quality of SAM care and support based on the national protocols - Provide RUTF on by transferring key messages for care takers - Give quality of services in collaboration with cluster HC staffs - Strengthen community level health committee - strengthen surge actions at community level 	<ul style="list-style-type: none"> - Conduct meeting with HDAs at HP level every 15 days and identify community level problems then give immediate response for it - Support HDAs to give orientation for their members at each village level on optimal child care and feeding practices - Make sure that all target groups under the HDAs have got 100% nutritional screening service on monthly basis - Strengthen referral linkages - Give recognition for actively involving HDAs - Replace inactive HDAs with other volunteer. 	<ul style="list-style-type: none"> - Extend working hours beyond the normal time frame - Share roles and responsibilities - Strengthen the team work approaches - strengthen OJT for HEWs and /or HDAs - Arrange short term training based on identified gaps at cluster or woreda level - Postponed annual leave until the problem become controlled 	<ul style="list-style-type: none"> - Request supplies by adding contingency ones before becoming stock out - Record on bin card what you received and issued timely - Request Supplies and logistics based on seasonal events and monthly morbidity data - Communicate with cluster Hc when the HP have overstocked supplies to transfer it to another HP before the expiry date reached - Follow the supply consumption at each service provision unit using proper follow up formats - Evaluate proper utilization of supplies at each point of service provision units 	<ul style="list-style-type: none"> - Use and monitoring of dash board data from each HPs and give feedback immediately - Ensure information sharing to key actors on timely basis - Provide OJT on documentation and recording - Revise the thresholds based on the capacity of the HFs - Communicate with the HEWs to prepare surge actions and implement it at community level when the threshold passed in the reporting month - Strengthen weekly reporting - Provide enough formats for recording and reporting 	<ul style="list-style-type: none"> - Strengthen information sharing that will be used for decision making - Follow the predetermined agreed thresholds and make revision based on the manpower we have - Arrange weekly or biweekly meeting with staffs and share the information for all staffs what they should do for the next month - Discuss with kebele level actors to participate on community interventions for the prevention of malnutrition. - Assign additional HWs to the HP from the HC 	<ul style="list-style-type: none"> - Allocate budget for transporting of supplies from woreda to Hc and then to HP - Allocate budget for tea ceremonies during HDAs monthly meeting session - Arrange training for HDAs and / or HEWs based on the identified gaps

SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks						
SERVICE DELIVERY	COMMUNITY	HEALTH WORKFORCE	LOGISTICS & SUPPLIES	HEALTH INFORMATION	LEADERSHIP & GOVERNANCE	HEALTH FINANCING
Serious PHASE						
<ul style="list-style-type: none"> - Address all target groups for nutritional screening on monthly basis - Open additional service provision points for increasing coverage (extend screening sites and OTP sites to the nearby the community) - Receive and give quality of SAM care and support based on the national protocols - Provide RUTF on by transferring key messages for care takers - Give immediate response based on surge action packages - Strengthen community level health committee strengthen referral linkages 	<ul style="list-style-type: none"> - Conduct meeting with HDAs at HP level every week and identify community level problems then give immediate response for it - Support HDAs to give orientation for their members at each village level on optimal child care and feeding practices - Make sure that all target groups under the HDAs have got 100% nutritional screening service on monthly basis - Strengthen referral linkages - Give recognition for actively involving HDAs - Replace inactive HDAs with other volunteer. 	<ul style="list-style-type: none"> - Extend working hours beyond the normal time frame - Give training for 1:5 leaders at village level - Strengthen the team work approaches - strengthen OJT for HEWs and /or HDAs - Assign additional HWs temporarily from other Hc or HPs until the problem become under control - Postponed annual leave until the problem become controlled - Strengthen OJT - Provide incentives for those participating on community interventions 	<ul style="list-style-type: none"> - Request supplies by adding contingency ones before becoming stock out - Record on bin card what you received and issued timely - Increase the required amount of logistics and supplies - Arrange supply and logistics storage area - Follow the supply consumption at each service provision unit using proper follow up formats - Evaluate proper utilization of supplies at each point of service provision units - Mobilize logistics and supplies transportation based on local context 	<ul style="list-style-type: none"> - Use and monitoring of dash board data from each HPs and give feedback immediately - Ensure information sharing to key actors on timely basis - Print out and distribute leaflets to the community members - Revise the thresholds based on the capacity of the HF - Communicate with the HEWs to prepare surge actions and implement it at community level when the threshold passed in the reporting month - Strengthen weekly reporting - Provide enough formats for recording and reporting 	<ul style="list-style-type: none"> - Strengthen information sharing that will be used for decision making - Follow the predetermined agreed thresholds and make revision based on the manpower we have - Arrange weekly or biweekly meeting with staffs and share the information for all staffs what they should do for the next month - Discuss with kebele level actors to participate on community interventions for the prevention of malnutrition. - Assign additional HWs to the HP from the HC - Request woreda health office to support the cluster HCs 	<ul style="list-style-type: none"> - Allocate budget for transporting of supplies from woreda to Hc and then to HP - Allocate budget for tea ceremonies during HDAs monthly meeting session - Arrange training for HDAs and / or HEWs based on the identified gaps - Request additional budget from woreda health office to cover the cost of Perdiem for temporarily assigned HWs and for rewarding those participating on community interventions

SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks						
Service Delivery	Community	Health Workforce	Logistics & Supplies	Health Information	Leadership & Governance	Health Financing
EMERGENCY PHASE						
<ul style="list-style-type: none"> - Address all target groups for nutritional screening on monthly basis - Open additional service provision points for increasing coverage (extend screening sites and OTP sites to the nearby the community) - Receive and give quality of SAM care and support based on the national protocols - Strengthen the reporting frame on daily basis - Give immediate response based on surge action packages - Strengthen community level health committee strengthen referral linkages 	<ul style="list-style-type: none"> - Conduct meeting with HDAs at HP level every week and identify community level problems then give immediate response for it - Support HDAs to give orientation for their members at each village level on optimal child care and feeding practices - Make sure that all target groups under the HDAs have got 100% nutritional screening service on monthly basis - Strengthen referral linkages - Give recognition for actively involving HDAs - Replace inactive HDAs with other volunteer. - Work closely with local & INGOs at community level 	<ul style="list-style-type: none"> - Extend working hours beyond the normal time frame - Give training for 1:5 leaders at village level - Strengthen the team work approaches - strengthen OJT for HEWs and /or HDAs - Assign additional HWs temporarily from other Hc or HPs until the problem become under control - Postponed annual leave until the problem become controlled - Provide incentives for those participating on community interventions - Request manpower from zonal and stakeholders working in the area - Invite volunteers who want to work with us 	<ul style="list-style-type: none"> - Request supplies by adding contingency ones before becoming stock out - Record on bin card what you received and issued timely - Increase the required amount of logistics and supplies - Arrange supply and logistics storage area - Follow the supply consumption at each service provision unit using proper follow up formats - Evaluate proper utilization of supplies at each point of service provision units - Mobilize logistics and supplies transportation based on local context - Invite stakeholders to support supplies and logistics 	<ul style="list-style-type: none"> - Use and monitoring of dash board data from each HPs and give feedback immediately - Ensure information sharing to key actors on timely basis - Print out and distribute leaflets to the community members - Communicate with the HEWs to prepare surge actions and implement it at community level when the threshold passed in the reporting month - Strengthen weekly reporting - Provide enough formats for recording and reporting - Use fastest communication channels like phone communication with concerned body 	<ul style="list-style-type: none"> - Strengthen information sharing that will be used for decision making - Follow the predetermined agreed thresholds and make revision based on the manpower we have - Arrange weekly or biweekly meeting with staffs and share the information for all staffs what they should do for the next month - Discuss with kebele level actors to participate on community interventions for the prevention of malnutrition. - Assign additional HWs to the HP from the HC - Request woreda health office to support the cluster HCs 	<ul style="list-style-type: none"> - Allocate budget for transporting of supplies from woreda to Hc and then to HP - Allocate budget for tea ceremonies during HDAs monthly meeting session - Arrange training for HDAs and / or HEWs based on the identified gaps - Request additional budget from woreda health office to cover the cost of Perdiem for temporarily assigned HWs and for rewarding those participating on community interventions from the local community members - Request to get contingency budget for the implementation of surge actions at community level

Annex 3: List of Documents Reviewed

List of Documents Reviewed	
No	Title
1	Bati CMAM coverage survey Report, October 2018
2	CMAM Surge Major updates, PPT for Learning Event – July 2019
3	CMAM Surge Midterm Review, Learning Brief – September 2018
4	Dewa Chefa CMAM Coverage Survey Report, October 2018
5	Ethiopia Demographic and Health Survey, 2016
6	Joint Support Supervision Report, August 2018
7	SAM Surge Actions for Bati Woreda Health Facilities based on WHO Health System Building Blocks
8	Suggested New Design Framework for CMAM Programming. Field Exchange 39, September 2010 by Peter Hailey & Daniel Tewoldeberha
9	Global CMAM Surge approach
10	The CMAM Surge Approach Summary Brief. Concern Worldwide. June 2019.
11	Ethiopia Health Sector Transformation Plan
12	FEWSNET: A climate trend analysis of Ethiopia, 2012
13	An Atlas of Ethiopian Livelihoods : The Livelihoods Integration Unit
14	Ethiopia Livelihood Baseline: Amhara Region. South Wollo and Oromia Eastern Lowland Sorghum & Cattle Livelihood Profile. June 2016
15	Food Security Outlook Update: Extreme levels of acute food insecurity to persist in southeastern pastoral areas. August 2017
16	Food Security Outlook Update: Previous drought and recent conflict maintain Crisis outcomes in the south. August 2018
17	Food Security Outlook Update: Poor October to December seasonal rainfall and sustained ethnic clashes continue. December 2018

Annex 4: Analytical Framework

Criteria	Overarching research questions	Indicators	Data source/method	Responsible	Timeline
Effectiveness	<ul style="list-style-type: none"> - Are clinics able to set realistic threshold levels based on sound analysis? - Are key CMAM indicators meeting SPHERE standards at all stages of the model (all threshold levels)? - Are set thresholds being respected and is support being requested in a timely manner? - Does the woreda HMT respond to support requests in a timely and adequate manner? 	<ul style="list-style-type: none"> - 96.4% Cured (2019) Bati - 3.2 % Default (Bati 2019) - 0% Dead (Bati 2019) - 94.4% Cured (2019 Dewachefa) - 0.56 % Default (2019 Dewachefa) - 0% Dead (2019 Dewachefa) 	<ul style="list-style-type: none"> - Woreda and Concern reports 	Concern	Monthly or quarterly
		<ul style="list-style-type: none"> - % of health facilities adequately (at least 75%) monitoring caseloads against CMAM Surge thresholds - % health facilities with agreed pre-surge preparedness actions in place - % health facilities implementing at least 75% pre-surge actions identified - % health facilities that passed threshold where threshold passed was reported to DHO within 1 week - % health facilities that passed threshold where surge support actions are appropriately (>74%) identified, agreed and delivered 	<ul style="list-style-type: none"> - Health Facility Preparedness and Response Tool (collected by Concern on Digital Data Gathering devices at all health facilities in both woredas) 	Concern	Annually
		<ul style="list-style-type: none"> - Is the setting of thresholds realistic and based on good analysis? - Is the woreda HMT responding to requests of support in a timely and adequate manner? 	Key information interviews	CHC	Twice during evaluation period
		<ul style="list-style-type: none"> - Impressions of planning process, including the setting and monitoring of thresholds - Any issues occurring with delineated support actions - Impression of woreda HMT responses 	Key informant interviews and observations with health facility staff and woreda health officials	CHC	Twice during evaluation period

Criteria	Overarching research questions	Indicators	Data source/method	Responsible	Timeline
Impact	<ul style="list-style-type: none"> - Are key CMAM indicators (cured, died, defaulter) better in the Surge approach than in the traditional model (particularly during caseload increases)? - Is coverage affected by the model? - During a surge were other activities at the clinic impacted? Was quality maintained? - Are there unintended consequences of the approach? - Has the Surge approach generated interest or changes at “higher” levels of the system? 	<ul style="list-style-type: none"> - % Cured, % Default, % Dead - Trends in children being treated for other illnesses (e.g. diarrhoea, malaria) - Impressions of how clinic activities were impacted during a surge. What worked? What did not work? Were there any unintended consequences? - Impressions, interest, and understanding of the Surge approach at different levels of the health administration system 	Woreda and Concern reports (Surge vs. comparison) Health post/facility and District reports (Surge vs. comparison) Key informant interviews, and focus group discussions with health post/facility staff and beneficiaries Key informant interviews with regional or national stakeholders	Concern HMIS CHC CHC	Monthly or quarterly Monthly or quarterly Twice during evaluation period Twice during evaluation period

Criteria	Overarching research questions	Indicators	Data source/method	Responsible	Timeline
Efficiency	<ul style="list-style-type: none"> - What is the cost difference between a response to surge thresholds versus a traditional emergency response? - Were the projected costs to the DHMT realistic based on actual costs of responding to the thresholds being exceeded? - What is the difference in waiting time between a surge and non-surge context? Where are the bottlenecks in delivering care quickly? 	<ul style="list-style-type: none"> - Cost difference between a response to surge thresholds versus a traditional emergency response - Were the projected costs for a surge response realistic based on actual costs of responding when thresholds were exceeded? 	CMAM Surge Approach Cost Effective Analysis	Concern consultancy	Once during the evaluation period
		<ul style="list-style-type: none"> - Are there significant differences in wait times during surge and non-surge? - How can the bottlenecks be reduced? 	Key informant interviews and focus group discussions with health post/facility staff and beneficiaries	CHC	Twice during evaluation period
		<ul style="list-style-type: none"> - Average waiting time for SAM services. - % of SAM cases that are appropriately treated (at least 75% of tasks completed according to protocol) 	Client Observation Tool (Surge vs Control)	Concern	Minimum of once in each stage (pre, during and post-surge)
		<ul style="list-style-type: none"> - % of caretakers reporting they waited one hour or less to complete the SAM service for their child - % caretakers who found the clinic closed and/or RUTF out of stock and/or medicines out of stock - % of caretakers reporting they received and understood RUTF- and HC seeking-related information 	Client Exit Interview Tool (Surge vs Control)	Concern	Minimum of once in each stage (pre, during and post-surge)
		<ul style="list-style-type: none"> - % of s with no RUTF stock out last three months. - % s with no stock out of essential medications in last three months - % of s having all assigned relevant staff present on the day of the visit 	RUTF and Essential Medicines Stick Monitoring Form (Surge vs Control)	Concern	Minimum of once in each stage (pre, during and post-surge)

Criteria	Overarching research questions	Indicators	Data source/method	Responsible	Timeline
Acceptance/ Relevance	<p>Is the approach acceptable to all relevant stakeholders?</p> <p>How do the relevant stakeholders perceive the Approach in terms of its ability to ensure preparedness and to protect quality services?</p> <p>How has the approach affected health worker satisfaction?</p> <p>Is coverage sufficient enough (at least 50%) so we know the Surge model is relevant?</p>	<ul style="list-style-type: none"> - % of caretakers who rated the quality of SAM services on day of interview as 'good' or 'very good' - % of caretakers who would recommend the service to a family member or friend. - Average score on client satisfaction scale (tangibles, reliability, responsiveness, assurance, empathy) 	Client Exit Interview Tool (Surge vs comparison)	Concern	Minimum of once in each stage (pre, during and post-surge)
		<ul style="list-style-type: none"> - What affect has the Surge Approach had on health worker's job – is it easier? Harder? Same? More connected? Etc. - What coverage does the programme have? 	Health worker satisfaction questionnaire and key informant interview	CHC	Twice during evaluation period
		<ul style="list-style-type: none"> - Exploring the views of different stakeholders on acceptability and perception to protect quality and ensure preparedness 	Key informant interviews and focus group discussions with health post/facility staff, beneficiaries, and woreda health officials	CHC	Twice during evaluation period
Sustainability	<ul style="list-style-type: none"> - Has a sustainability approach been taken? - How can the role of the NGO and the international donor be phased out? - How is the Approach linked to other DRR and/or emergency response efforts at district and community level, particularly PHEM? 	<ul style="list-style-type: none"> - This element will be evaluated by examining how the Approach is linked to other ongoing HSS, DRR and emergency responses. In addition, it will look at how it is being supported and imbedded in standard health system processes 	Key informant interviews and focus group discussions with health post/facility staff, beneficiaries, and woreda health officials, donors and other stakeholders	CHC	Twice during evaluation period

Annex 5: List of Participants and Health Facilities visited during the Mid-term review

Level	Location	Number of interviewees
Bati Woreda	Garero HC	1
	Melkalugo HC	2
	Felana HC	1
	Hato HC	2
	Selate HP	1
	Chachatu HP	1
	Melkalugo HP	1
	Felana HP	1
	Hato HP	1
	Woreda Health Office	5
DawaChefa Woreda	Woreda Health Office	3
	Kello HP	1
Addis Ababa	PHEM Office	1

Annex 6: Profile of Interviewees for the Final Evaluation

*Interviews of more than >1 interviewee were conducted using FGD data collection method

Health Facility/ Health office	Location of Health Facility/ Health Office	Profile of Interviewees	Number of Interviewees	Data Collection Method
Bati WoHO	Bati Woreda	FGD	3	FGD
Biira HP	Bati Woreda	HEW	1	KII
Burka HP	Bati Woreda	HEW	1	KII
Concern	Bati & Dowa Chefa Woreda	Surge Program Officers	2	FGD
Concern	Addis Ababa	Surge Program Coordinator	1	KII
Dowa Chefa WoHO	Dowa Chefa Woreda	WoHO	2	FGD
Fura HP - HEW	Bati Woreda	HEW	1	KII
Garero HC	Bati Woreda	Nutrition Focal Point, Health Centre Incharge, Health Information focal point	3	FGD
Hato HC	Bati Woreda	Health Centre Incharge, Health Centre staff	2	FGD
Kabele HP - HEW	Bati Woreda	HEW	1	KII
Mamed HP	Bati Woreda	HEW	1	KII
Mamed HP	Bati Woreda	HDATLs	4	KII
Mamed HP	Bati Woreda	Caretakers of OTP beneficiaries	3	KII
Learning Event	Bati & Dowa Chefa Woreda	WoHO, Zonal health officers, health centre	20	Learning Event
Melkalugo HC	Bati Woreda	Health Centre Incharge, Health Centre staff	2	FGD
Melkalugo HP	Bati Woreda	HDATLs	6	FGD
Melkalugo HP	Bati Woreda	HEW	2	FGD
Ourungu HP	Bati Woreda	HDATLs and caretakers of OTP beneficiaries	4	FGD
Ourungu HP	Bati Woreda	HEW	1	KII
Woledi HC	Dowa Chefa Woreda	HIV & Outpatient staff	2	FGD

Annex 7: Type of Costs and Data Sources for CEA

Type of cost	Data source / methods
1. Institutional costs	
MOH – OTP sites	Structured interviews with nutrition focal points at OTPs – Data collected from Feb. 27, 2018 to Sept. 3, 2018: 31 sites (7 HCs and 24 HPs) in Bati; 29 sites (6 HCs and 23 HPs) in Dewa Chefa (See Tool #1 in Annex A).
MOH – Woredas	Structured interviews with nutrition focal points at SCs – Data collected twice in each woreda office: March 6 and Nov. 23 in Bati; March 12 and Nov. 23 in Dewa Chefa (See Tool #2 in Annex A).
Concern	Concern's accounting records for April 2018 to March 2019 covering all NGO costs associated with the delivering of the CMAM Surge program. Surge setup and planning costs between August 2017 and March 2018 for Bato woreda are also included.
UNICEF	UNICEF's accounting records for the 12-month period April 2018 to March 2019 covering all UNICEF logistics costs associated with the delivering of CMAM to each of the two woredas.
2. Societal costs	
Caregivers at OTP	Structured interviews with caregivers at OTPs - Data collected from Feb. 27, 2018 to Aug. 25, 2018: 81 caregivers from 4 HCs and 26 HPs in Bati; 71 caregivers from 6 HCs and 23 health in Dewa Chefa (See Tools #4a in Annex A).
Caregivers at SC	Structured interviews with caregivers at SCs - Data collected from March 8, 2018 to Oct. 7, 2018: 3 caregivers from 2 HCs in Bati; 3 caregivers from 3 HCs in Dewa Chefa (See Tools #4b in Annex A)
Community volunteers	Structured interviews with community-based volunteers (CBVs) - Data collected from Feb. 27, 2018 to Aug. 25, 2018: 83 CBVs attached to 27 HPs in Bati; 74 CBVs attached to 2 HCs and 23 HPs in Dewa Chefa (See Tool #3 in Annex A).



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