Enhanced Responses to Nutrition Emergencies

JUNE 2020 – MAY 2023

CONCERN worldwide

PILOT PROGRAMMATIC PARTNERSHIP

Funded by the European Union

BUILDING MORE RESILIENT HEALTH SYSTEMS IN FRAGILE CONTEXTS

Learning from Concern's Enhanced Responses to Nutrition Emergencies (ERNE) programme

JUNE 2023

Martha Tesfaye (L) measures the upper arm circumference (MUAC) of Nebil Yimam Kassau as her mother Amint Mohammed Yesuf looks on in Abasokotu mobile health clinic, Amhara Region, Ethiopia. Photo: Eugene Ikua/Concern Worldwide

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Executive Summary

This learning paper outlines key results and learning from Concern's Enhanced Responses to Nutrition Emergencies (ERNE) programme, which was implemented in the Democratic Republic of Congo (DRC), Ethiopia, Niger, South Sudan and Sudan from June 2020 – May 2023, with funding from ECHO. Programme learning and recommendations are presented and structured around five enduring challenges to health and nutrition service delivery in fragile and conflict-affected contexts (FCAC). Recommendations are targeted to health and nutrition practitioners, but policy makers and donors may also find them relevant. While the wider ERNE programme also promoted positive nutrition and health practices at community level and delivered early and rapid response (mostly cash) to local emergencies (described in other programme briefs), this paper focuses on the programmes work to strengthen health systems.

The principle objective of the ERNE programme was to reduce malnutrition, morbidity and mortality among children under-five by improving capacity of the health system and communities to prevent, prepare for and respond to nutrition emergencies. Health systems in FCAC face enormous challenges to service delivery stemming from limited funding; gaps in the health workforce; recurring disease outbreaks and food insecurity; and service disruptions related to conflict and natural disasters. Supporting government health teams and communities to deliver quality health and nutrition services building resilience to health system shocks was a core programme strategy. Building health systems resilience requires sustained investments to strengthen not only the basic building blocks but its capacity to adapt to rapidly changing realities - a lesson many Northern governments learned during the COVID-19 pandemic but people working in FCAC have always been acutely aware of.

Overall, the programme reached and estimated 1.2 million people, mostly children under-five and their mothers who accessed essential health and nutrition services supported by the programme. More than 75,000 children were treated for severe acute malnutrition with high recovery rates. A further 100,000 children under five and 60,000 pregnant and breastfeeding women with moderate wasting received supplementary foods and roughly 800,000 visits by children under-five for curative care visits were supported at target health facilities. Recovery rates and coverage of services for severe acute malnutrition were well within Sphere standards, with the exception of one programme area in Ethiopia which had lower coverage.

The capacity to deliver essential health and nutrition services among the more than 250 health facilities supported by the ERNE programme also improved over the three years. The average capacity score covering 14 domains of health service delivery improved markedly in from baseline to endline in DRC (26% to 52%), Niger (36 to 56%), South Sudan (21% to 28%) and Sudan (28% to 39%) but, unfortunately, remained the same in Ethiopia (28%) due to a number of challenges related to the conflict in Tigray Region and extreme drought in Somali Region. This translates to 75% of target health facilities improving their capacity. To measure health facility capacity, the programme developed a practical assessment tool and scoring system based on an existing WHO framework.

A summary of the core learning from the ERNE programme's efforts to support government health systems to deliver health and nutrition services in five fragile contexts is presented below.

Tackling five challenges to health and nutrition service delivery in fragile contexts

Practical recommendations from the ERNE programme

Challenge 1: Ensuring access to services:

1.1 Plan for mobility of health and nutrition services where displacement is likely.

1.2 Mobile health and nutrition teams are critical during mass displacement or when health facilities are damaged, but they require a clear scale down strategy.

1.3 Understand seasonal peaks and pressures on health services and consider integrating the Surge Approach (formerly the CMAM Surge Approach) to help health workers better manage services during these periods.

Challenge 2: Ensuring qualified health workers are in place and have the skills to deliver essential services:

2.1 If providing NGO top-ups to health worker salaries is unavoidable, ensure amounts are aligned across Ministry of Health (MoH) and NGO partners and their real value is monitored against inflation.

2.2 Consider striking a compromise to support existing mechanisms to fund health worker incentives while maintaining free health care for the most vulnerable.

2.3 Explore new ways to fund additional health staff – communities may be able to mobilise support for short term solutions.

2.4 Use MoH materials and trainers wherever possible and find efficient ways to provide on-the-job training.

Challenge 3: Ensuring availability of essential nutrition and medical supplies:

3.1 Map and understand the medical and nutrition supply chains in each context before taking action – they are often complex in humanitarian settings.

3.2 Explore alternative transport modalities and technology.

3.3 Clarify roles and responsibilities for nutrition commodity management among MoH, UN agencies and supporting NGOs to promote efficiency.

3.4 Invest in simple systems to better monitor RUTF & RUSF stock levels versus needs at health facilities in 'real-time.'

3.5 Strengthen nutrition supply chains at all levels, particularly those for the management of moderate wasting.

Challenge 4: Ensuring basic WASH infrastructure and services in health facilities:

4.1 Budget adequately for WASH in health facilities, but be ready to prioritise because budgets are often insufficient.

4.2 Consider using the Water and Sanitation for Health Facility Improvement Tool (WASH FIT)

Challenge 5: Functionally integrating nutrition services into health systems:

5.1 Develop a simple integration action plan to bring nutrition and health staff closer together.

5.2 Map health system actors and how each is likely to interface with nutrition services.

1. Introduction

Purpose of the paper

This paper presents key results and learning from Concern's Enhanced Responses to Nutrition Emergencies (ERNE) programme, which aimed to build more resilient health systems to deliver essential services in five fragile and conflict-affected countries – the Democratic Republic of Congo (DRC), Ethiopia, Niger, South Sudan and Sudan. The five programme contexts and key results are presented, followed by the main programme learning, which is structured around five enduring challenges to health and nutrition service delivery in fragile contexts, providing examples of approaches tried and recommendations for similar programmes. The paper reflects learning discussed at an event hosted by Concern on Health and Nutrition Responses in Fragile Contexts in May 2023.[1]

The Enhanced Responses to Nutrition Emergencies (ERNE) programme

The ERNE programme was implemented for three years (June 2020 to May 2023) in five fragile and conflict-affected contexts (FCAC): DRC, Ethiopia, Niger, South Sudan and Sudan. The principal objective was to reduce malnutrition, morbidity and mortality among children under-five by improving capacity to prevent, prepare for and respond to nutrition emergencies. The programme targeted nutritionally vulnerable women and children in some of the poorest and most fragile areas of these five countries. Supporting government health teams and communities to deliver quality health and nutrition services, particularly for children under-five and women of reproductive age, has been a core programme strategy. The programme also supported interventions to promote positive health, nutrition and hygiene practices and to deliver early and rapid response to more localised emergencies, which are described in other programme briefs.[2]

Mortality, morbidity and malnutrition in fragile contexts

Children under-five continue to die of preventable and treatable diseases, including malaria, diarrhoea and pneumonia. Undernutrition and poor breastfeeding practices are responsible for nearly half of the under-five death burden globally and contribute to lasting disability.[3] Despite significant progress made in recent decades – including a 60% drop in under-five mortality rates since the 1990s – improvements have not been equitable.[4] In fragile and conflict affected contexts (FCAC),[5] the risk and burden of poor health, malnutrition and mortality are often highest.[6] The rates of under-five mortality in FCAC are three times higher than in all other countries, and Sub-Saharan Africa accounted for more than half of global under-five deaths in 2021.[7] Wasting is estimated to affect more than 1 in 10 children across most of sub-Saharan Africa.[8]

1. *Health and Nutrition Response in Fragile Contexts*, an on-line learning event. May 2023
2. For more on the ERNE programme as a whole see *ERNE Programme Brief* and visit *the ERNE knowledge hub*
3. Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, et al. *Maternal and child undernutrition and overweight in low-income and middle-income countries*. Lancet. 2013
4. Landry, M.D., Giebel, C. & Cryer, T.L. *Health system strengthening in fragile and conflict-affected states: a call to action*. BMC Health Serv Res 21, 726 (2021).
5. Concern uses the term fragile and conflict affected contexts (FCAC), which is equivalent to the term fragile and conflict affected situations (FCAS) used by the World Bank to classify countries affected by high levels of institutional and social fragility or violent conflict (see *The World Bank website*). The WHO also uses the slightly broader term fragile, conflict-affected and vulnerable (FCV) settings to describe a range of situations including humanitarian crises, protracted emergencies and armed conflict. (see *Quality of care in FCV settings: tools and resources compendium, WHO 2021*).
6. *Fragile and conflict-affected states Health and WHO.* WHO. 2017
7. United Nations Inter-agency Group for Child Mortality Estimation, *Levels & Trends in Child Mortality Report.* New York, 2023.
8. *Levels and trends in child malnutrition: Key findings of the 2023 edition*. UNICEF, WHO, World Bank. New York. 2023.

Building health system resilience

Strong and resilient health systems are fundamental to making significant and sustainable improvements in the health and nutrition of women and children. Health systems in FCAC, however, face enormous challenges to deliver basic services due to limited investment; gaps in the health workforce; recurring disease outbreaks, including the COVID-19 pandemic; and service disruptions due to conflict, natural disasters and migration.

Health systems in FCAC, therefore, require sustained investments to not only strengthen the basic building blocks that support service delivery but to build capacity within the system to adapt to rapidly changing needs and realities. In short, concerted efforts are needed to build health system resilience, which the WHO defines as:

> *'The ability of all actors and functions related to health to collectively mitigate, prepare [for], respond [to] and recover from disruptive events with public health implications, while maintaining the provision of essential functions and services and using experiences to adapt and transform the system for improvement.'*[9]

The six WHO health system building blocks provide an essential framework for understanding and strengthening a health system. They are: service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership/governance.[10] Community-based health activities and resources are often considered a seventh building block or an integral element of the original six, but some have suggested a more explicit reference to community is needed.[11]

The concept of health system resilience has gained greater global attention since the COVID-19 pandemic, and many definitions and frameworks similar to the one above have emerged as a result.[12] Health resilience, however, has long been relevant to FCAC, where governments and supporting partners must continuously adapt and find ways to 'do more with less' to deliver even the basic health service package in each country.

One of the primary aims of the ERNE programme was therefore to strengthen capacity within the five fragile health systems to better prevent and respond to nutritional emergencies during and beyond the programme. While three years is a relatively short time frame to truly build health resilience, signs of improved preparedness and shock-responsiveness were evident in the health services in the ERNE programme areas.

9. See *WHO Health Systems Resilience Toolkit (2022)*
10. *National Health Planning Tools - Health System Building Blocks.* WHO (2010)
11. Sacks E, Morrow M, Story WT, et al *Beyond the building blocks: integrating community roles into health systems frameworks to achieve health for all* BMJ Global Health 2019
12. Definitions exist from the *Organisation for Economic Cooperation and Development (OECD)* and a range of academic literature, for a summary, see Saulnier DD, et al *Health systems resilience research agenda: moving from concept to practice.* BMJ Global Health (2021)

2. The ERNE programme areas

The ERNE programme supported more than 273 health facilities across 22 health districts in eight regions of DRC, Ethiopia, Niger, South Sudan and Sudan.[13] A map of the programme areas is provided below (Figure 1). The eight target regions/ provinces/ states were identified using a range of vulnerability indicators, in line with the ECHO Humanitarian Implementation Plans (HIP) for each country. Within those areas, target health districts were identified by Concern in coordination with government health authorities based on a high vulnerability to malnutrition (using prevalence data and other info where available), significant pressure on existing health services (considering caseload versus capacity), and where no or few other NGO partners were supporting.

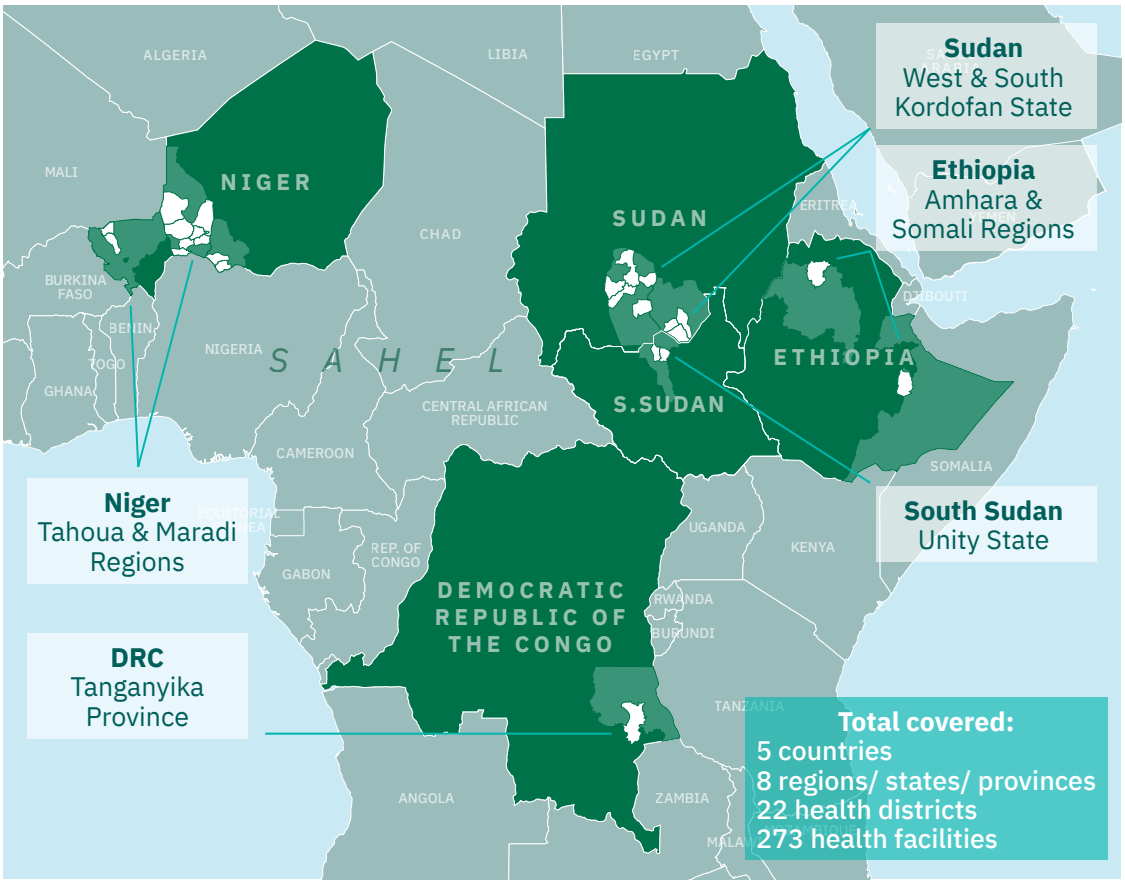


Figure 1. *Map of ERNE Programme Areas*

The number of districts and facilities covered differed by country, with the majority of target health facilities falling in Ethiopia and Niger, where the government health system was somewhat stronger and Concern had a wider and more established presence in the target regions. A breakdown of the regions, districts and facilities covered by country is provided below (Table 1). Concern had been present in roughly half of the 22 target districts before commencing the ERNE programme, while in DRC, Concern was restarting health and nutrition programming in the country after a ten-year hiatus from the sector.

The programme was implemented for three years in all countries except DRC, where the programme closed after two years (in August 2023). In Ethiopia, two districts were added in year 2 of the programme (June 2021 – May 2022), and in Niger, two districts were added in year 3 (June 2022 – May 2023), meaning they benefited from a shorter period of support.

13. An additional six districts were also covered in Niger with health and nutrition support by COOPI and ACF, Concern's ERNE consortium partners.

Table 1. *Breakdown of regions, health districts and total health facilities targeted in ERNE programme*

LEVEL	DRC	ETHIOPIA		NIGER[14]		SOUTH SUDAN	SUDAN	
Region/ Province/ State (8 total)	**Tanganyika Province**	**Somali Region**	**Amhara Region**	**Tahoua Region**	**Maradi Region**	**Unity State**	**West Kordofan State**	**South Kordofan State**
Health Zone/ Woreda/ District/ County/ Locality (22 total)	Kiambi Health Zone (Y1+2 only)	Lagahida Woreda	Beyeda Woreda	Tahoua Departmental Health District	Guidan Roumji Health District (Y3 only)	Guit County	Abuzabad Locality	Elleri West Locality
		Salahad Woreda	Janamoura Woreda	Tahoua Communal Health District	Madaroufa Health District (Y3 only)	Rubkona County	Elnhoud Locality	Talodi Locality
			Debark Woreda (Y2+3 only)	Illela Health District			Elodaya Locality	Gadeer Locality
				Birnin-Konni Health District			Ghebayish Locality	
							Lagawa Locality	
Health facilities supported (273 total)	18	22	111	94	10	3 (+3 nutrition outreach sites)	11	4

14 In addition to the four regions covered by Concern, the ERNE project supported health and nutrition programming in collaboration COOPI in Tahoua Region (Keita, Bouza and Abalak Districts), Tillaberi Region (Tillaberi and Ayerou Districts) and via ACF in Maradi Region (Mayahi District in year 1 only)

3. Key programme achievements

The ERNE programme has reached more than 1.2 million people, including 1 million via Concern-supported health and nutrition services. A breakdown of the children under five and women reached with wasting treatment and primary health care services by country is outlined below (Table 2). More than 75,000 children were treated for severe acute malnutrition (SAM).[15] A further 100,000 moderaely wasted children under five and 60,000 women who were pregnant or breastfeeding and infant under six months and suffering from wasting received supplementary foods. In addition, roughly 800,000 visits by children under-five for curative care were supported at target health facilities. The figures below were tallied largely MoH reporting systems with regular quality checks. To estimate the number of ERNE supported curative visits for under-fives, each country team determined their level of effort in supporting those services (25%, 50% or 75%) and multiplied this effort factor by the total number of under-five curative visits recorded at target facilities.[16]

Table 2. *Children under-five and pregnant and breastfeeding women reached with ERNE-supported health and nutrition services*

PROGRAMME PARTICIPANT	NIGER	ETHIOPIA	SUDAN	SOUTH SUDAN	DRC	TOTAL
Children treated for severe acute malnutrition	54,540	11,524	7,824	2,125	3,025	**79,038**
Children who received supplementary feeding for moderate acute malnutrition	No MAM supported	82,288	12,303	8,014	2,016	**104,621**
Pregnant & breastfeeding women who received supplementary feeding for wasting		55,216	1,920	4,006	No MAM for PBW supported	**61,142**
Health facility visits for under-five curative services supported by ERNE	522,844	194,400	60,634	21,038	29,162	**828,078**

The programme achieved almost all of its targets for the health and nutrition service delivery indicators. A summary of achievements against those key indicators is provided below (Table 3, green indicates the target was achieved). Sphere standards were reached for SAM recovery rates reaching (at least 75% of exits recover) as well as coverage of SAM treatment services (at least 50% for rural areas) based on semi-qualitative evaluation of access and coverage (SQUEAC) surveys.[17] The programme also aimed to improve the capacity of at least half of the target health facilities to deliver essential services, as measured using a health facility assessment tool developed by Concern for the ERNE programme (see Section 3. Assessing Health Facility Capacity, below). Finally, the programme aimed to expand the CMAM Surge Approach from 40 health facilities at baseline (all of which were in Niger) to a total of 194 health facilities in four of the programme countries.

15. The terms wasting and acute malnutrition are used somewhat interchangeably throughout this paper. While there has been a recent shift towards using the term wasting (and nutritional oedema) or 'wasting' for short, severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) are the terms used most often at country level and by health workers to refer to the condition of a child with a low weight-for-height ratio and/or low mid-upper arm circumference (MUAC) and/or nutritional oedema. This is in line with the latest WHO Guidelines on the Prevention and Management of Wasting and Nutritional Oedema (acute malnutrition) in infants and children under five years (2023).
16. While some of the 800,000 visits for curative services may have been made by the same child, there should be very minimal overlap between the SAM and MAM figures and the curative visits for under-fives as they generally come from different registers within health facilities.
17. For more on the SQUEAC survey method, see *the Coverage Monitoring Network website.*

The only health and nutrition service indicator that was not achieved was coverage of SAM services in Beyeda Woreda in Ethiopia, which based on a SQUEAC survey was 34% (shaded in orange below) due to access challenges related to the difficult terrain and the conflict in the neighbouring Tigray Region.

Table 3. *Key achievements against core health and nutrition service indicators*

INDICATOR	TARGET	DRC	ETHIOPIA	NIGER	SOUTH SUDAN	SUDAN	OVERALL
Severe wasting recovery rate	75% (Sphere standard)	97%	91%	97%	84%	87%	**91%**
Severe wasting treatment coverage	50% (Sphere standard)	50%	34%	51%	77%	54%	**53%**
Percent of health facilities increased capacity from baseline	At least 50%	100% (17/17)	51% (34/67)	85% (85/90)	100% (2/2)	77% (10/13)	**75%**
# of health facilities supported with CMAM Surge	196	N/A	91	94[18]	1 pilot facility	11	**196**

18 CMAM Surge was supported at an additional 79 facilities via partners COOPI and ACF

4. Assessing health facility capacity

An initial assessment of health facility capacity was undertaken in the first year of the programme (2020/ 2021) followed by an endline assessment in year three (2023) (and in year two for DRC). The assessment covered 70% of the facilities targeted for ERNE support across the five countries (189 out of total 273).[19] The assessment used the Concern health facility assessment (HFA) tool, which was developed specifically for the ERNE programme. The tool assesses 14 health service domains linked to five of the six health system building blocks (finance is not covered), as outlined below (Table 4).[20] The tool was largely based on the WHO Service Availability and Readiness Assessment (SARA) tool, with the addition of a module for nutrition and COVID-19. Concern also developed a scoring system that allowed measurement of capacity changes at individual facilities, which the original SARA tool did not.[21]

Table 4. *Health service domains included in the health facility assessment tool*

HEALTH SERVICE DOMAIN	WHO HEALTH SYSTEM BUILDING BLOCK
1. Staffing	Health workforce
2. Health information management system	Health information
3. Management and supervision	Leadership & governance
4. General infrastructure	Service delivery
5. Water infrastructure	
6. Sanitation infrastructure	
7. Hand hygiene infrastructure	
8. Environmental cleaning	
9. Standard precautions for infection prevention	
10. Child health service availability & readiness	Service delivery + Access to essential medicines
11. Immunisation service availability & readiness	
12. Nutrition service availability & readiness	
13. Antenatal care service availability & readiness	
14. COVID-19 preparedness & response capacity	

While the improvements seen below cannot be attributed solely to the ERNE programme, Concern was the only NGO partner supporting the MoH to deliver health and nutrition services in most of the target facilities. It should also be noted that the 'baselines' actually took place after support activities had been undertaken for several months in all locations, suggesting any improvements seen at endline may have been greater.

19. The 80 Concern-supported facilities not assessed were those that were not accessible at the baseline and/or endline assessment (27) or were added in year 2 or 3 of the programme in Niger (Guidan Roumji and Madaroufa Districts) and Ethiopia (Debark Woreda) (53)
20. For more on the HFA tool please see *Assessing Health Facility Capacity in Fragile Contexts*, Concern Worldwide (May 2022), and country *baseline reports*.
21. *The WHO SARA tool (2015)*, which has been updated and superseded by the *Harmonised Health Facility Assessment (2021)*, which Concern has used together with learning from ERNE to update the HFA tool for future use.

Key findings from the health facility assessments

The overall health facility capacity score improved in DRC, Niger, South Sudan and Sudan. The average score across all 14 health service domains for the facilities surveyed is presented below (Figure 2). Ethiopia, unfortunately, remained at the same level at baseline and endline, and this was seen across both the Amhara and Somali Region. While small gains were made across most domains in Ethiopia (between 1 and 8 percentage points), significant losses were seen in some of the WASH modules (see below).

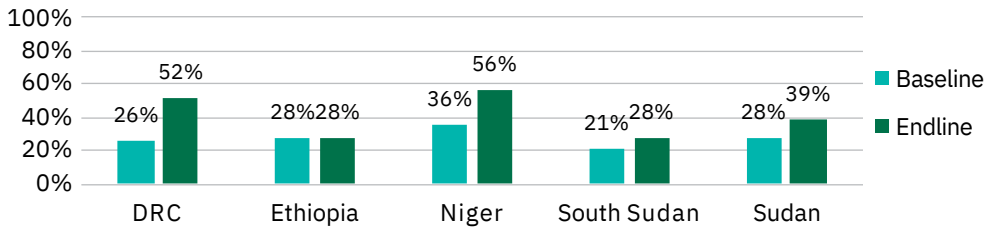


Figure 2. *Overall health facility capacity score at target facilities across all 14 service domains (baseline & endline)*

The five WASH modules consistently scored the lowest at baseline across the five countries (Figures 3 – 7). Across the five WASH modules DRC and Niger improved most steadily (with the exception of water infrastructure for DRC). Improvements were least pronounced in Ethiopia and South Sudan and modest in Sudan. Given the enormous gaps in WASH infrastructure and limited resources to address them (see Section 4: What We've Learned, Challenge 4), dramatic improvements were not expected. Water infrastructure further declined in four countries but improved in Niger (Figure 3). Water systems often required more complex support and were reliant on water availability, which was extremely limited during the dry season in Ethiopia (Somali Region) and Sudan when the endline was conducted. Resources were generally prioritised to rehabilitate Sanitation Infrastructure in most countries, which is reflected in the improved scores across four countries (Figure 4). The lack of water at endline had a knock-on effect on Hygiene (Handwashing) Infrastructure scores (Figure 5), particularly in Ethiopia (score decreased from 21% to 7%). Environmental Cleaning (Figure 6) and Standard Precautions (Figure 7) for infection prevention and control improved in all countries but Ethiopia (stagnating at 10% and decreasing from 33% to 19%, respectively), which it seems is due in part to the decline in resources provided for the COVID-19 response between baseline and endline.

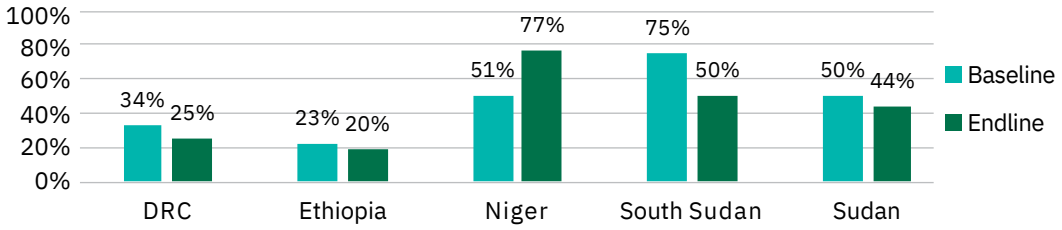


Figure 3. *Water infrastructure domain: average score for target facilities (baseline & endline)*

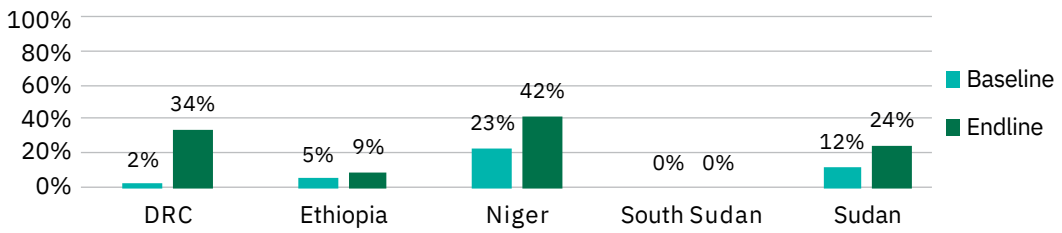


Figure 4. *Sanitation infrastructure domain: average score for target facilities (baseline & endline)*

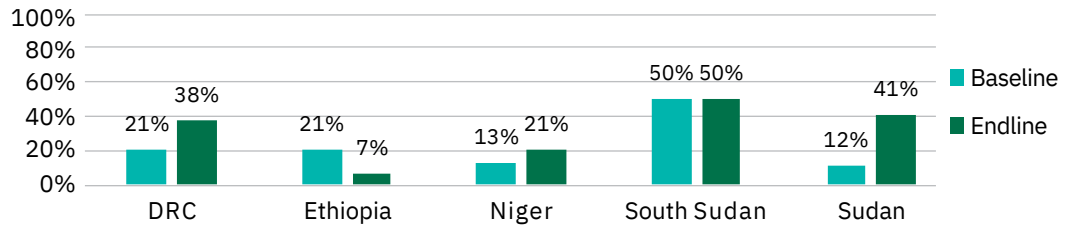


Figure 5. *Hygiene infrastructure domain: average score for target facilities (baseline & endline)*

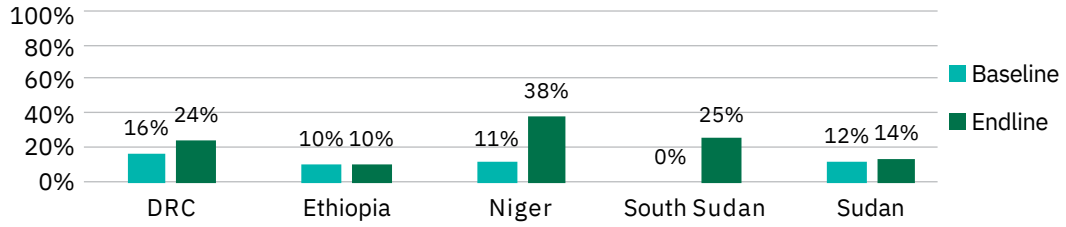


Figure 6. *Environmental cleaning domain: average score for target facilities (baseline & endline)*

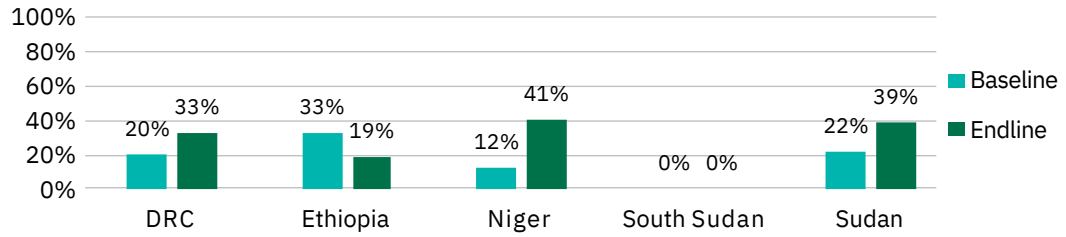


Figure 7. *Standard precautions for infection control domain: average score for target facilities (baseline & endline)*

Child health service capacity improved in all five countries (Figure 8). The most gains were made in the sub-domains related to having at least one staff trained on IMCI and having IMCI guidelines available in the service area, while there was only modest improvement in the presence of essential equipment or essential child medicines by endline.

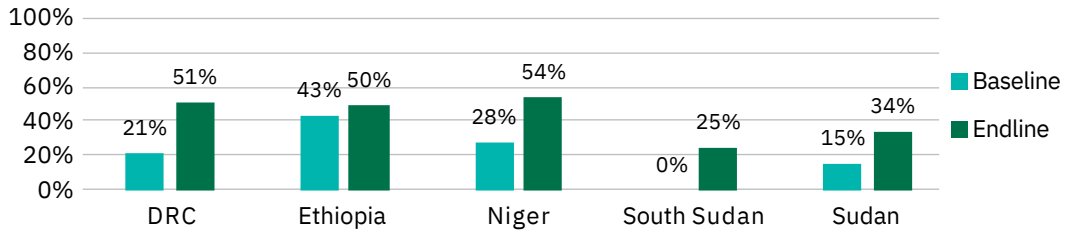


Figure 8. *Child health services domain: average score for target facilities (baseline & endline)*

Nutrition service capacity improved markedly in DRC, Niger, South Sudan and Sudan and remained steady in Ethiopia (Figure 9). These improvements are not surprising given the programme's strong focus on treatment of wasting. Improvements were seen across all four sub-domains: at least one staff trained on wasting treatment, presence of wasting treatment guidelines, presence of essential nutrition equipment, and presence of RUTF.

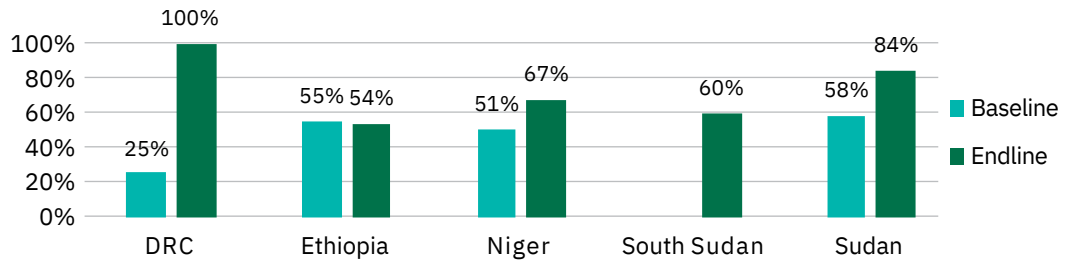


Figure 9. *Nutrition services domain: average score for target facilities (baseline & endline)*

General improvements were seen in the remaining seven domains with only a few exceptions. Average scores for these domains: Staffing, HMIS, Management and Supervision, General Infrastructure, Child Immunisation, Antenatal Care and COVID-19 preparedness and response capacity are presented by country in Annex 1.

Priority actions were identified by each country programme to focus support based on HFA baseline findings. These included:

- Formal training on IMCI, CMAM, immunisation, antenatal care and HMIS at facilities where a trained staff was not found during the assessment
- Focused supervision on any areas identified as weak
- Provision of essential guidelines at facilities where they were absent
- An initial list of WASH infrastructure rehabilitation priorities to be confirmed following further assessments.
- Provision of essential cleaning supplies, personal protective equipment and bins for safe disposal of infectious waste and sharps
- Provision of buffer stocks of essential child medicines
- Advocacy to the MOH and other stakeholders to address the identified gaps

5. What we've learned: tackling five challenges to service delivery in fragile health systems

These achievements have required working with government partners and communities to tackle a number of challenges. The challenges are not unique to ERNE and are likely to persist and impede progress against health and nutrition outcomes beyond the ERNE programme. Below, are highlights of Concern's learning while supporting government health partners to overcome five significant challenges. Practical recommendations (a total of 15) are presented below each challenge aimed at practitioners working to deliver health and nutrition services in FCAC.

Challenge 1: Ensuring access to essential health and nutrition services

Access to health services is often characterised as having four dimensions: availability, geographic accessibility, affordability and acceptability.[22] Availability of and geographic access to government health services was poor in much of the ERNE districts at programme start up. While government health facilities were distributed somewhat evenly across districts, many communities remained far from their nearest facility, and the full suite of services was often not available due to lack of trained staff, supplies and/ or equipment. Accurate maps of health facility locations were also difficult to obtain, and limited network coverage restricted the potential for digital mapping of remote facilities. Affordability was an issue in DRC and Ethiopia, where government policy requires patients pay for most medicines – even those for under-fives (in Ethiopia, only malaria treatment is free). In Niger, South Sudan and Sudan, national policy states that under-five medicines are free of charge; however, due to frequent stock outs, patients must often purchase medicines from private (largely unregulated) vendors. The acceptability of service delivery for different users was not extensively assessed at programme start, but complaints response mechanisms were in place throughout the programme.

Three points of learning on improving access to health and nutrition services have emerged:

1.1. *Plan for mobility of health and nutrition services where displacement is likely.*

In South Sudan, the ERNE programme has had to adapt in dramatic ways to keep pace with its target communities, most of whom fled for their lives as massive flooding commenced shortly after the project started in mid-2020. The floods, which reached catastrophic levels by October 2021, affected close to a million people and submerged an estimated two-thirds of the country in water. While the programme initially planned to support health and nutrition services in two primary health care centres (PHCCs) and nutrition services at three outreach sites in Guit and Rubkona counties, Concern and government health teams had to swiftly adjust their approach to adapt to the rapidly changing circumstances. This included coordinating closely with communities, the County Health Department (CHD) and other actors to anticipate where the population was moving to and to find ways to move staff and essential supplies to those locations (Box 1). ECHO's flexibility and close collaboration with ECHO counterparts in country allowed Concern to rapidly shift budgets, locations and activities for a more effective response. Despite these efforts, however, breaks in health and nutrition services did occur, and their impact – though difficult to quantify – should not be underestimated.

22. McLaughlin CG, Wyszewianski L. Access to care: remembering old lessons. Health Serv Res. 2002 Dec;37(6):1441-3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1464050/ .

Box 1: Moving with flood-displaced communities in Unity State, South Sudan

The ERNE programme area in Unity State was always prone to seasonal flooding, but in March 2021 unprecedented volumes of water from further up the Nile River flooded into the area. Over previous years, outlets for drainage had gradually reduced, meaning the terrain had become increasingly unable to absorb rainfall even during the 'normal' rainy season (usually April to August), let alone during such periods of exceptional rainfall.

By March 2021, water levels were waist-high across much of the ERNE programme area and access to the two ERNE-supported health facilities - Chotyiel Primary Health Care Centre (PHCC) (in Guit County) and Tongedol PHCC (in Rubkona County) - were cut off. Health staff continued services as best they could for the patients who could reach them, but the waters continued to rise. In August 2021, Tongedol PHCC, which had just opened after considerable rehabilitation and investment by Concern, the County Health Department and communities, was completely washed away. More importantly, most of the PHCC's target community were fleeing to higher ground in neighbouring Dhorbor Payam.

Concern responded by shifting its focus to Dhorbor, setting up a temporary health clinic and supporting the MoH staff that had been assigned to Tongedol PHCC – most of whom were now displaced themselves - to provide essential health services. The health clinic complemented the nutrition services provided by CARE, including active cross referrals. Concern invested in canoes and motorboats to transport staff and essential medical supplies to the new locations. However, as the floods continued, people began to move again to the safety of higher ground.

Through discussion with communities, the CHD and other partners, it became clear that Rotriak Payam - roughly 58 km north of the destroyed Tongedol PHCC – should be the new focus. By March 2022, Concern had moved its support for health services to the abandoned structure of Rotriak PHCC, and many of the personnel from Dhorbor/ Tongedol moved as well, with Concern continuing to pay incentives at MOH rates. Finally, the CHD and community members constructed a new, more centrally-located building for the Rotriak PHCC, and Concern has shifted its support there to serve the large population of IDPs.

By early 2023, waters had begun to partially recede as the UN, government, and private actors built dykes and repaired roads. As a result, some people have tentatively returned to the original ERNE areas but anticipate future floods and displacement with limited resources to prepare for that eventuality.

Figure 10. *Photo: Joseph Charlot, Concern Project Officer Nutrition, traveling in a canoe with nutrition supplies, April 2022. Concern Worldwide*

Future health and nutrition responses should plan for mobility, but this must entail better preparedness planning including:

- *Stronger agreement on the standard package for mobile health and nutrition services and resource requirements across all partners.* Particularly important will be how nutrition services should be integrated into mobile health services, given the weak integration even at facility level (see Challenge 5 on Integration below).
- *Investment in boat transport infrastructure and flood-resilient storage strategies*
- *Using weather and climate data to better predict the timing, location and likely impact of flooding and inform health and nutrition service planning.* This would include mapping potential locations for mobile health and nutrition services based on different flooding and displacement scenarios.

1.2. *Mobile health and nutrition teams are critical during mass displacement or when health facilities are damaged, but they require a clear scale down strategy.*

In Ethiopia, the Federal MOH has been supporting mobile health and nutrition teams (MHNTs) to meet the needs of hard-to-reach populations for nearly two decades, starting in Somali Region in 2004. In recent years, MHNTs have been scaled up significantly to improve access for drought-affected pastoralist communities in lowland areas and to serve those impacted by conflict and other disasters. As of April 2023, the government and partners were supporting MHNTs in 104 woredas in Amhara Region (41) and Tigray Region (63).[23]

The Mobile Health Team Services Implementation Guideline (2022) developed by the Federal MoH of Ethiopia provides an excellent overview of the essential services, equipment and staffing of MHNTs as well as guidance on leadership, coordination and monitoring (Box 2). Detailed guidance on how to scale down in different scenarios, however, is somewhat lacking.

Box 2. Snapshot of mobile health and nutrition teams per the Ethiopia MOH guidelines

The Mobile Health Team Services Implementation Guideline from the Federal MoH (May 2022) outline the following key aspects of MHNTs, while in practice the actual components often depend on available budget.

Services delivered: All promotive, preventative, curative and rehabilitative services per the Ethiopia Essential Health Services Package (2019) normally delivered at health centres and organised into seven core packages: Maternal Health; Newborn & Child Health; Nutrition; Community Mobilisation; Hygiene and Sanitation; Disease Surveillance, Emergency Preparedness and Response; Referral Linkages.

Staff: Physician/ Health Officer/ BSc Nurse (1), Nurse (2), Midwife (1), Health Extension Worker (2), Social mobiliser (1) and Driver (1)

Referrals: Emergency cases beyond capacity of team are referred to the nearest health centre/ hospital.

Fees: Services are free of charge (in contrast to routine services via health facilities).

Location: various locations near displaced populations and hard to reach areas, but often inside the damaged health facility.

Box 3: Supporting Mobile Health and Nutrition Teams in Amhara Region, Ethiopia

Concern supported the Dessie Zuria Woreda Health Office to launch two MHNTs in early 2022 following destruction and looting of health facilities and intense displacement related to the Tigray conflict. Until then, Dessie Zuria had been hosting a large number of people displaced from Tigray since late 2020, but the situation rapidly deteriorated in October 2021 as active conflict spread into the woreda. Two MHNTs were deployed to serve the catchment population of 13 health facilities that had been damaged or looted and/or that were struggling to meet the needs of large concentrations of internally displaced people.

The MHNTs have been highly valued by the Woreda Health Office and community members, particularly those who benefited from the more than 63,000 consultations for preventative and curative services provided in 2022 alone. As of May 2023, all damaged health posts and health centres had been restored in Dessie Zuria, and Concern was working on a gradual scale down plan with the Woreda Health Office. Ensuring a smooth transition back to standard services at health centres and health posts will be challenging, however, services at static facilities are generally under-resourced and require payment for some services, while MHNT services have been free.

23. Per the April 2023 Ethiopia Health Cluster dashboard

Since 2021, Concern has supported the MoH to deploy MHNTs in the Tigray Region in four woredas (Hawzen, Tsaeda Emba, Saharti and Samre) and Amhara Region in one woreda (Dessie Zuria), largely in response to the Tigray conflict (Box 3).[24] [25]

While MHNTs have proved an important strategy in Ethiopia to address acute breaks in health service access, particularly during conflict and related displacement,[26] two significant challenges have been noted by the MOH, Concern and other partners:

- First, MHNTs are costly and promoting them as a stop gap measure risks detracting from longer term investments in health system strengthening.
- Second, more detailed guidance is needed regarding how and when MHNTs should be scaled down post-crisis.

More detailed strategies and guidance on MHNTs are therefore needed, which outline:

- *Agreed criteria for scaling down* (e.g. active conflict ceased or static facilities accessible to population), recognising that the criteria must realistically reflect what the services were like before the crisis occurred
- *The process for transitioning back to normal facility-based services*, including for example how resources may be shifted from MHNTs to outreach services at key locations that are fully managed by health centre/ health post teams. The transition might also include a period of free services/ medicines at facilities as free MHNT care is phased out.
- *The importance of actively repair static facility infrastructure and restore static health centres and health posts alongside MHNT services* as well as the resources required to do so to ensure a swift and efficient return to normal services as soon as possible.

1.3. Understand seasonal peaks and pressures on health services and consider integrating the Surge Approach (formerly the CMAM Surge Approach) to help health workers better manage services during these periods.

In Sahelian contexts such as Sudan and Niger, caseloads of acute malnutrition and other child illnesses often peak during certain months of the year, putting seasonal pressure on health facility teams to meet increased demand for services. The Surge Approach is the updated, more holistic version of the CMAM Surge approach, which was developed to help health workers better anticipate, prepare for and respond to seasonal peaks in the number of children seeking treatment for acute malnutrition. The broader Surge Approach has evolved over the course of the ERNE programme to do the same. However, the Surge Approaches is focused on managing services for children not only acute malnutrition but also those with common illnesses, such as malaria and diarrhoea, which also tend increase during certain times of the year.

The Surge Approach is an eight-step process and set of tools designed to support health facility staff use their own data and experience to plan for and prepare for those peaks in service demand with the support of the District Health Management Team and partners (Figure 11).[27] At the outset, health facility teams are supported to analyse trends in monthly child wasting admissions and child illness consultations against seasonal calendars to identify when peaks in service demand happen (Step 1). Health workers then assess their own capacity to manage the peaks without compromising quality (Step 2). Based on that capacity assessment, facility and district health staff jointly define 'thresholds', which mark

24. Dessie Zuria woreda in Amhara Region and in Tigray Region. In addition, Concern provided only incentives for MoH staff while the WoHO managed the remaining activities and costs – both with support from UNICEF.
25. Concern-supported MHNTs have been funded largely by ECHO, BHA and UNICEF. They were not directly supported under the ERNE project, but are planned with further ECHO funding in the future
26. Wolka S, Alemu MD, Gobana M, Bati GT, Gerawork H, Abebaw Z. *Mobile Health and Nutrition Team Service Implementation in Somali and Afar Regions of Ethiopia: A Qualitative Implementation Science Study*. J Multidiscip Healthc. 2022.
27. See the updated *Surge Approach Operational Guidance. Concern Worldwide. June 2023.*

the maximum number of monthly child wasting admissions and illness consultations the team can manage without needing to adapt routine activities or trigger external support (Step 3). The specific surge actions – both internal adaptations within the facility or specific external support – are then defined (Step 4) and commitment by the District Health Management Team and/or partners to deliver that support is formalised (Step 5). Health staff then monitor child wasting admissions and illness consultations against agreed thresholds (Step 6) and trigger action when thresholds are crossed (Step 7). Finally, health staff and other stakeholders reflect on the whole process and revise thresholds and surge action plans as needed to improve for the next peak period (Step 8).[28]

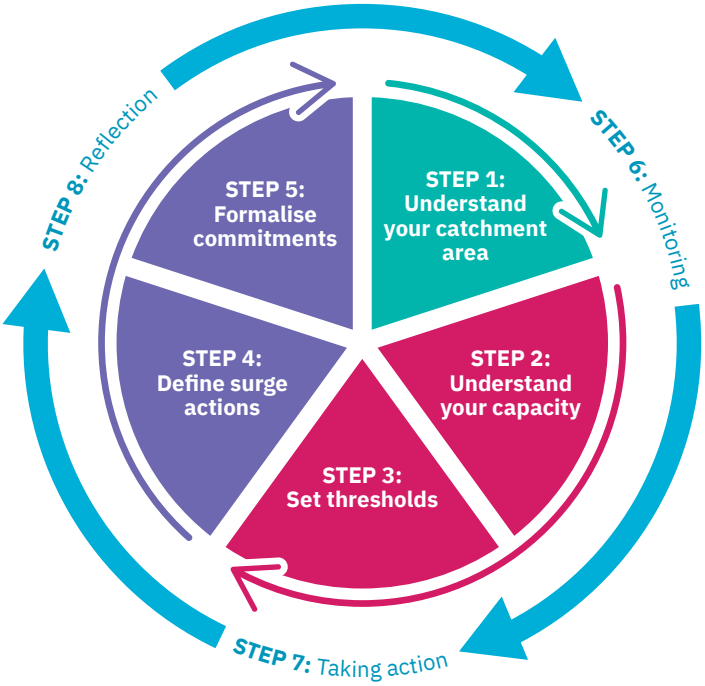


Figure 11. *Eight Steps of the Surge Approach (Orientation Guide, 2023)*

The ERNE programme supported the expansion of the CMAM Surge Approach in Ethiopia, Niger and Sudan (and in one facility in South Sudan) and synthesis of learning across practitioners in more than ten countries.[29] In Niger, the Direction of Nutrition, supported by Concern, established a CMAM Surge National Taskforce, and in 2022, a number of aspects of the approach were integrated into the national protocol for the management of acute malnutrition, which is due for validation in 2023.

The evolution of the approach from the original CMAM Surge to the more holistic Surge Approach and the development of the Surge Approach Orientation Guide (June 2023) were important outcomes of the ERNE programme. This shift to the broader Surge Approach and the Orientation Guide (an update to the previous CMAM Surge Operational Guidance, 2016) built on learning from a formal pilot of the broader Surge Approach (initially referred to as the 'Health Surge' approach)[30] in Niger (Box 4) and Kenya (under different funding) as well as experience and learning from practitioners across more than ten countries since 2016. Much of this learning is documented on Concern's Surge Learning Hub.

28. For more on the CMAM Surge eight steps see *Helping health systems more effectively deliver services for children with acute malnutrition: Overview'* at the CMAM Surge Knowledge Hub *https://www.concern.net/knowledge-hub/cmam-surge*
29. See CMAM Surge Learning Hub for a range of learning papers. *https://www.concern.net/knowledge-hub/cmam-surge*.
30. For more on the evolution of the approach from CMAM Surge to Health Surge to the Surge Approach, see *Health Surge Learning Paper #1: An Introduction*.

Box 4. Trialling a more holistic Surge Approach for child wasting & illness in Niger

Concern had identified the development and testing of the 'Health Surge' approach whereby the same eight-steps of the CMAM Surge Approach are applied to services for child illnesses such as malaria and diarrhoea, alongside child wasting, as a key area for learning under the ERNE programme. Many practitioners had been experimenting with expanding CMAM Surge to child illnesses, particularly malaria, across West Africa, with learning shared through the West African Surge Task Force led by Concern. In Niger, where Concern had been supporting CMAM Surge since 2014, the ERNE programme team decided to pilot the 'Health Surge' approach (eventually to be renamed the Surge Approach).

With strong engagement from the MoH, the Health Surge pilot was initiated in 12 facilities in Tahoua Region focused on managing seasonal peaks in malaria and acute malnutrition, which were identified as a major contributor to staff workload burden, especially from August to October. The pilot ran for twelve months and a participatory review, including a workshop with health workers and managers was conducted in March 2022 (see the review report, Rapport Atelier de capitalisation sur l'approche Health Surge on the Surge Learning Hub). The review concluded that the approach was highly relevant, responded to the needs of health workers by helping them better manage their workload, and was preferable to the simple CMAM Surge approach, which only focused on malnutrition. In coordination with the MoH, the more holistic 'Health Surge' approach was subsequently expanded to 69 additional facilities in the remaining year of the ERNE programme.

Similar findings emerged from parallel pilot of the Health Surge approach in Kenya in 2021/2022 with USAID funding, and the Kenyan MoH are currently weighing up the possibility of shifting to the more holistic Surge Approach from the current CMAM Surge Approach (known as IMAM Surge), which is part of the national strategy to manage acute malnutrition in high-burden counties.

Figure 12. *Fatiha Omar, Health Extension Worker, Somali Region, Ethiopia*

Challenge 2: Ensuring qualified health workers are in place and have the skills to deliver essential services

Government health staff are the backbone of a functioning health system. The commitment and ingenuity of frontline health workers save lives and relieve suffering every day in difficult circumstances with little recognition. Unfortunately, they are often overstretched, underpaid and in short supply in most FCAC. More remote facilities, where patient needs may be highest, are often hit hardest due to difficult living conditions. Ensuring skilled health workers are available in sufficient numbers; are fairly distributed; and are sufficiently valued, supported, protected and paid requires government commitment, institutional resources and effective governance at state and local level.

If and when qualified staff are in place, key strategies for building and retaining skills include formal (i.e., classroom) training, on-the-job training and mentoring, and more formal supervision visits. Capacity strengthening should focus on both technical and health service management topics. All of these strategies were employed in the ERNE programme in coordination with district health managers. Staff shortages and a high level of staff turnover, however, were the norm. Transport and time constraints often limit the frequency of supervision among District health managers, and distance and insecurity often means that some facilities – often those most in need - were visited the least.

Four points of learning on ensuring qualified and skilled health workers are in place emerged:

2.1. *If providing NGO top-ups to health worker salaries is unavoidable, ensure amounts are aligned across MoH and partners and their real value are monitored against inflation.*

Inconsistent and incomplete payment of health worker salaries by the government was an issue across all the ERNE countries at different times. Addressing this issue, similar to the fundamental lack of qualified health workers, requires careful advocacy and high-level system strengthening, which went beyond the scope of the ERNE programme. However, as an interim measure, Concern elected to provide monthly incentives to frontline health workers in Sudan and South Sudan (and in DRC via lump sum payments to health facilities, see below). This was deemed essential to stabilise a living wage for front line health works and ensure the continuation of essential services. When doing so, however, agencies must be careful to agree and align amounts with the practice of the MOH and other partners and monitor the real value of the top-up.

Box 5. Ensuring a living wage via top-up incentives in West/ South Kordofan, Sudan

In Sudan, the real value of health worker salaries was further eroded by hyper-inflation following the 2019 coup and continued political and economic insecurity throughout the programme period. The programme estimated, for example, that the purchasing power of a nurse paid in Sudanese Dinar had fallen by almost eight-fold in just four months in 2021(February to June). Before setting top-up rates, Concern coordinated with the MoH, the UN and other NGOs via the health and nutrition clusters to agree a transparent and standardised amount. State health authorities drew up a list of key staff with their salaries, and the top-up for each was estimated as a percent of their salary. Concern periodically adjusted the top-ups to keep pace with inflation. While far from ideal, this inflation-resistant incentive was critical to keeping health workers delivering critical services. Although the top-ups represented a relatively small proportion of the overall programme costs, it was likely one of the most important investments made as the functionality of the wider Sudan health system continued to decline.

2.2. *A compromise may be needed to support existing mechanisms to fund health worker incentives while maintaining free health care for the most vulnerable.*

Box 6. Negotiating free health services for all with a lump sum to health facilities in Kiambi Health Zone, DRC

In DRC, the facilities in the ERNE programme area utilised a cost recovery scheme, whereby user fees were levied on medicines and specific services to partially fund recurrent costs, including incentives for health workers (while treatment for under-fives for malaria, diarrhoea and respiratory infections are, in principle, free). Such a fee-based system, however, risks compromising access to basic health services among poorer and more vulnerable households who cannot afford to pay. Some argue health user fees violates humanitarian principles, and they are in violation of ECHO policy as outlined in their Humanitarian Implementation Plans for the Great Lakes Region since at least 2020.

To address this, the ERNE programme in DRC struck a compromise that allowed the existing fee-based system to be partially supported while removing cost barriers for users: each health facility was reimbursed with a monthly sum of 200 USD (150 USD for the incentives and 50 USD for the running costs) in exchange for service fees being waived for patients. This, in addition to the coaching and provision of essential medical supplies by Concern, contributed to increasing health worker motivation while leaving some of the original financial mechanism in place for the future, post-ERNE.

Humanitarian programming aims to provide free services for all who need them, but this may be difficult to sustain after humanitarian funding and support ends. In protracted crises, it may be may necessary to strike a balance that allows some aspects of the existing mechanism to cover running costs of health facilities, including staff incentives, while ensuring vulnerable individuals who may not have the resources to pay for service fees or medicines, can still access care. Ensuring free health care for all during acute emergencies is, in fact, an explicit policy of ECHO. There are many ways to ensure financial barriers do not affect access to health services during emergency responses while minimising the erosion of longer-term systems to cover health facility costs. The approach taken depends on the set up in each health system, but the main experience in ERNE comes from DRC (Box 6).

2.3. *Explore new ways to fund additional health staff – communities may be able to mobilise support for short term solutions.*

Government, the UN and NGOs are not the only potential sources of funding to cover critical staffing gaps. Community members and existing platform, including community health committees as well as development or administrative bodies often have capacity to raise funds for needs prioritised by communities, including additional health staff. In Niger, the ERNE programme worked with Commune authorities to do exactly this. Although it was supported through the Surge Approach process, the potential for communities to work with facility staff and district health managers to help fill critical staffing gaps should not be overlooked.

Box 7. Communities funding short term health staff during peak periods in Tahoua District, Niger.

In Niger, additional staff are often needed during peak periods, particularly to manage malaria and malnutrition cases or even during non-peak periods when a key staff leaves their post. An additional, short-term nurse is often one of the first needs identified for inclusion in the support package under the Surge approach. The Health District, however, is often not able to provide all the additional staff required, as the need often falls at multiple facilities during the same critical months of the year. Several health facility teams in Tahoua District engaged the Commune authorities and community actors to review the list of Surge Support Actions they had identified via the Surge Approach as being critical for them to cope with demand for services during peak periods of malnutrition and malaria. An additional health worker was often at the top of the list, and the Commune authorities and community members successfully financed the salaries of several staff to support during peak periods. This included mobilising funds from the Nigerien diaspora outside of Niger. Health workers reported that the Surge Approach helped facilitate this efficient response by focusing the specific 'ask' to a short term staff contract during the short period when monthly caseloads for malaria or malnutrition had exceeded the pre-agreed threshold. In some communes, communities were resourcing up to 70% of the actions prioritised in their Surge action/ support plans.

2.4. *Use MoH materials and trainers wherever possible and find efficient ways to provide on-the-job training.*

In all ERNE programmes, the Concern team agreed priority training needs with District Health counterparts early in the programme and used existing government training modules with some supplementation of materials as appropriate. MoH certified trainers, where available, were supported by the programme (e.g. with per diems at standard MoH rate) to deliver the training in all five countries, and Concern staff supported or stood in for MoH trainers where required. The main trainings delivered focused on CMAM, IMCI, IYCF, pharmaceutical management, infection prevention and control (including COVID-19 prevention) and CMAM Surge.

Figure 13. *Roufai Mohamed, CMAM Surge Officer, Concern Worldwide delivers a coaching session on CMAM Surge in Koweit Health Facility, Tahoua, May 2021. Photo: Apsatou Bagaya/Concern Worldwide*

Mentoring staff on-the-job, rather than in a classroom, has been an important approach, especially in Niger. Details of the mentoring approach used can be found in a dedicated ERNE learning paper[31], and a summary is provided below (Box 8).

Box 8: On-the-job mentoring (or 'tutoriat') for CMAM Surge at health facilities in Niger

Despite regular training on CMAM Surge at a portion of health facilities before ERNE commenced, the ERNE baseline assessment found gaps in knowledge and practice, which was clearly linked to high staff turnover. To address the issue, the Health District management team in Keita District with support from ACF (an ERNE implementing partner in Niger during Year 1), adopted an on-the-job 'mentoring' approach referred to as 'tutorat' in French. The mentoring is done in-situ at health facilities, with the district trainers spending two days reviewing and supporting the health workers to understand their own data, review Surge thresholds, and set practical action plans. Health facilities that were found to have gaps in CMAM Surge implementation during supervision visits were prioritised for the two-day mentoring visits.

The approach allowed more staff to engage with the process than the usual single participant at a central classroom training and resulted in a more thorough understanding of the approach and practical actions that were relevant to the context of the health facility. It also reduced the amount of time health workers spent away from the health facility, minimising disruption to the continuity of services.

31. *Best Practice: CMAM Surge - Mentoring* in English and *Bonne Pratique: Tutorat - CMAM Surge* on the ERNE Learning Hub.

Challenge 3: Ensuring availability of essential nutrition and medical supplies

While the ERNE programme facilitated the delivery of essential nutrition supplies in all target areas, stock outs, unfortunately, remained a continuous challenge throughout the programme. Pipeline breaks at country or sub-national level were experience for up to six months in 2022 for targeted supplementary feeding commodities (for MAM children and for malnourished pregnant and breastfeeding women) in Sudan (Jan – Jun) and Ethiopia (Jan – Jul). Similar system-wide shortages were experienced for RUTF but shorter periods, including Sudan (Aug/ Sep 2021) and Ethiopia (Jan 2023). The reasons for these macro-level shortages were never fully understood but are likely due to global-level production shortages, logistic constraints and possibly importation issues.

Last mile delivery from district warehouses to health facilities was also hampered at times by unclear roles and responsibilities, inadequate buffer stocks in the face of pipeline breaks, transport and fuel shortages, impassable roads, and weak systems for forecasting and communicating stock levels at health facilities in real time. Supply chains for essential medicines[32] were similarly disrupted with regular stock outs of essential medicines via MOH pipelines, even when supported and supplemented by WHO and other institutions.

Five points of learning on ensuring the continuity of nutrition and medical supplies have emerged:

3.1. *Map and understand the medical and nutrition supply chains in each context before taking action.*

Given the variety of actors involved in humanitarian response, in-country arrangements for medical and nutrition supplies are often fragmented and complex and vary between contexts. Supply chain arrangements therefore require careful analysis and coordination from programme start. A simple mapping exercise conducted by the ERNE team in South Sudan, for example, showed that eight different actors and supply pathways were involved to deliver essential nutrition commodities and routine medicines to treat SAM. It is important that programme teams keep in mind some of the basic best practices to support nutrition and medical supply chains, which in Concern's experience include the below (Box 9).

Box 9. Best practice for supporting nutrition and medical supply chains

- Undertake a rapid assessment and mapping of the national medical and nutrition supply chains.
- Become familiar with in-country MOH pharmaceutical policies, regulations and monitoring tools.
- Map out the different flows of funding (national and external).
- Agree a standard list of essential medical supplies for primary health care among stakeholders (e.g. NGOs) who may elect to procure buffer stocks, taking into consideration the priority morbidities and in-country protocols **and essential medicines lists**.
- Ensure competencies, skills and adequate support are available at all levels.
- Establish a robust system for monitoring stocks, monthly consumption, morbidity and admissions data.
- Develop contingency plans for procurement, transport and storage in the event of floods, insecurity or other events.
- Engage closely and continuously with MoH as well as Health, Nutrition and Logistics Clusters because arrangements often change as funding and contexts change.

32. While RUTF is considered a medical supply by Concern, ECHO and according to the latest *WHO Model List of Essential Medicines (January 2023)*, Ready to Use Supplementary Foods are not, hence use of the term 'nutrition and medical supply chains'.

3.2. *Explore alternative transport modalities and technology.*

Limited transport capacity to move essential supplies (and people) to District warehouses and onto health facilities continues to be an enormous barrier to quality health and nutrition services. Challenges include vehicle procurement and maintenance, access to fuel, and difficult terrain which often make roads impassable and cause severe wear and tear to vehicles. More innovative transport solutions are needed, including solar powered and other fuel-efficient technologies and vehicle maintenance schemes. Given the significant technical advances in the transportation sector more globally over the past five years, it is clear that much, much more could be done to introduce simple solutions to these rudimentary transport challenges.

Box 10: Providing 'tuk-tuks' to Locality Health Authority teams in Sudan

In Sudan, all the challenges related to transport apply. In addition, motorbikes are not allowed by government authorities in West and South Kordofan due to security risks as they are often used by rebel groups. To address this, Concern elected to donate eight three-wheeled vehicles ('tuk-tuks') to the Locality Health Authorities. The tuk-tuks cost roughly 19,000 USD but have been an excellent solution to providing health managers with the means to deliver essential supplies to health facilities as well as enable supervision visits and for immunisation outreach campaigns.

Figure 14. *Three-wheeled 'tuk-tuk' donated to a Locality Health Authority team in Sudan*

3.3. *Clarify roles and responsibilities for nutrition commodity management among MoH, WFP, UNICEF and supporting NGOs to promote efficiency*

Across all ERNE countries, there was considerable diversity in the arrangements for managing RUTF, RUSF and other nutrition commodities such as therapeutic milks and routine medications for inpatient management. In DRC and South Sudan, UNICEF provided RUTF directly to NGO partners (via a programme cooperation agreement), while in Ethiopia, Niger and Sudan, UNICEF provided RUTF directly to the government – usually down to the District warehouse for the District Health Office to deliver onwards to health facilities. RUSF distribution, meanwhile, was the responsibility of the government only in Ethiopia (and only in two of the target woredas).[33]

33. Concern received RUSF directly from WFP in the remaining three woredas in Ethiopia, all target areas in Sudan and South Sudan. In DRC, Concern had to procure its own RUSF because they were not a formal WFP partner and in Niger the programme did not support SFP.

Figure 15. *Fatiha Omar, Health Extension Worker, Somali Region, Ethiopia*

Distribution of nutrition commodities via government logistics channels is by far the most sustainable and preferred option. However, the capacity of District Health Offices to ensure timely delivery to health facilities is often insufficient. Thus Concern (and other NGOs) very often provide ad hoc logistical support to the District Health Office where we are operational. This ad hoc support, however, is often not as efficient as it could be due to a lack clear roles and responsibilities across the MoH, UN partners and NGOs. This lack of clarity combined with an unreliable commodity pipeline, means that logistic support tends to be highly reactive, which often leads to facility level stock outs. As partners move towards a more MoH-led system for nutrition supply management, defining the roles, responsibilities and operating procedures (including monitoring tools, see next recommendation) of all actors is critical to improving efficiency, building capacity where required and supporting this transition.

3.4. *Invest in simple systems to better monitor RUTF & RUSF stock levels versus needs at health facilities in 'real-time'*

In all five ERNE country programmes, there was no standard system for joined-up stock management between District and facility level across key partners, namely MoH, Concern, UNICEF and WFP. Stock levels at health facilities were largely communicated via phone calls and text messages using paper-based stock cards, and systematic forecasting of caseloads and communication of needs was weak. The lack of clear roles and responsibilities among actors (outlined above) often contributed to this lack coordinated monitoring. Despite these limitations and the many advances in logistics and stock management globally, no unified digital solutions to manage nutrition stock across partners have been presented e.g. by UN partners in the ERNE programme areas. While network coverage is a barrier to instant information uploads in some areas, even remote facilities manage to use text messages and Whatsapp for regular communication using mobile phone data, signifying significant potential for improved digital systems.

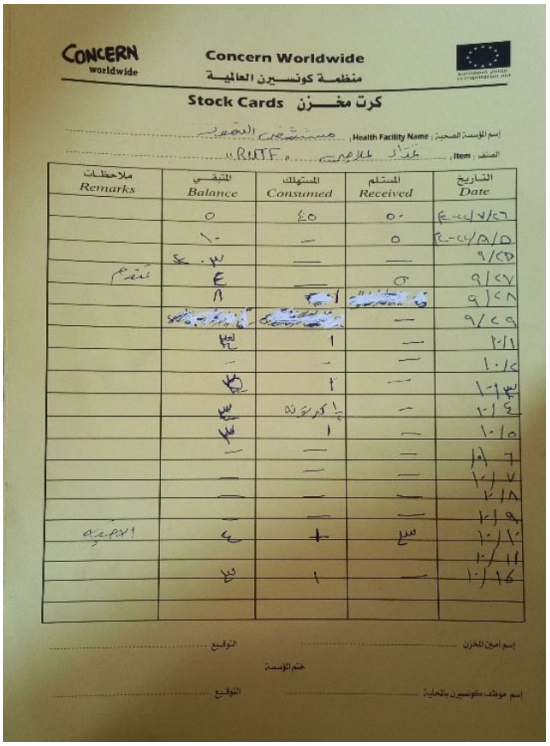


Figure 16. *RUTF Stock card from Innahood Hospital, West Kordofan, Sudan*

The key learning from ERNE (and other Concern programmes) is that investments are needed to develop simple digital tools for real time nutrition commodity management and promote their use across the MoH and partners at district and facility level. Such a system could greatly improve continuity of supply of RUTF, RUSF and other nutrition commodities at health facility level. It would also provide a better means of monitoring the functionality of supply chains and the impact on the system where efforts are being made to improve them. It will, however, require MoH, UNICEF and NGO partners to work more closely together to harness technical expertise and practical experience and be sure they are well integrated into existing MoH systems.

3.5. *Strengthen nutrition supply chains at all levels, particularly those for the management of moderate wasting*

The significant investments in global RUTF production made by USAID/ UNICEF in 2022 were beginning to bear fruit towards the end of the ERNE programme, with staff from several countries reporting RUTF stockouts were occurring less frequently by the second quarter of 2023. USAID has estimated that the additional 200 million USD that USAID provided to UNICEF in 2022 will allow an additional 2.5 million severely wasted children to be treated in

2023.[34] While this marks significant progress, the increased supply (an estimated doubling of RUTF procurement in 2023 compared to 2022) will only make a small contribution to cover the estimated 75% of wasted children that still do not have access to treatment.

To ensure essential supplies to manage wasting are available when and where they are needed, intensive investments are needed to not only increase production capacity but to further strengthen as aspects of the supply chains for RUTF. Intense investments are also needed to ensure supplementary foods to manage moderate wasting are available. Movement towards a single product (RUTF) for children with SAM and MAM (or a portion of the MAM caseload) holds huge potential to streamline supply chains. The new WHO guidelines on the prevention and management of wasting and nutritional oedema to be rolled out in 2023 may prompt changes to how severe and moderate cases along the continuum of acute malnutrition are managed, with implications for the management of nutrition commodities. Regardless of the outcome, investments to strengthen, simplify and integrate commodity management into existing government systems are sorely needed.

Challenge 4: Ensuring basic WASH infrastructure and services in health facilities

Functional WASH infrastructure and services are critical to the provision of quality health care. This is widely recognised, including by donors such as ECHO.[35] At health facilities in fragile contexts, the need for rehabilitation of water, sanitation and hygiene infrastructure and support for WASH systems is often intense and beyond the typical budget of an emergency health and nutrition programme. As seen from the health facility assessment baseline, WASH needs were extensive across health facilities in all five of the ERNE countries. In some cases, rehabilitation was not an option because the infrastructure was simply not there to rehabilitate. ECHO, however, does not allow funds for construction (only rehabilitation). In these cases, such as in South Sudan and DRC, Concern sourced non-ECHO funds to build basic structures. Water service issues were compounded by severe drought conditions in the Somali Region of Ethiopia and long dry seasons in Sudan and Niger. Unfortunately, the resources to address these WASH needs in all health facilities was insufficient.

Two points of learning on ensuring basic WASH infrastructure and services at health facilities have emerged:

4.1. *Budget adequately for WASH in health facilities and be ready to prioritise because budgets are often insufficient*

The components of functioning WASH services within a health facility are highly interdependent: access to water is required not only for handwashing but to regularly clean latrine blocks; functioning latrines reduce the burden of solid waste management, etc. A key policy principle for all WASH work at the health facility level, therefore, is to avoid 'sprinkling' light inputs across too many facilities. Given this interdependence, a minimum investment is required to make a health facility's basic WASH components functional. For example, changing one tap per health facility will not impact the quality of care for very long. This principle, however, often clashes with the pressure to extend geographic coverage and continuously do more with less. Thus, a compromise must almost always be found.

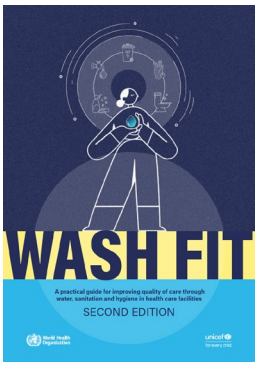
Figure 17. *Handwashing facility, Abuzabad Hospital, West Kordofan Sudan, 2022*

34. *Press release from USAID on the US-Ireland, a partnership for combating Global Hunger and Supporting Shared International Development Priorities. April 2023. USAID*.
35. The *ECHO 2022 Management Plan* (p.10), for example, states that: *Since the provision of WASH services is a fundamental requirement for quality care, special attention will also be given to integrating WASH components into humanitarian health activities and programming, as key for improved health outcomes.*

Based on experience, Concern has estimated the average cost to bring WASH infrastructure and systems up to a functioning level in a typical, poorly resourced health centre is between 10,000 and 15,000 USD. Despite its recognised importance, the budget for WASH in health facilities was necessarily limited in the ERNE project. The compromise in many of the programmes was to focus on a smaller number of health facilities for more comprehensive rehabilitation while planning lesser support to the remaining facilities. Examples of the rehabilitation work undertaken in Niger and Ethiopia and the average cost are provided below.

Table 5. *Example WASH support in health facilities and costs*

	TOTAL HEALTH FACILITIES REHABILITATED	MAIN TYPE OF WORKS	AVERAGE COST PER FACILITY REHABILITATED
Ethiopia	12 (of 133)	Rainwater harvesting and storage tanks, some pipe extensions	$2,223
Niger	4 (of 94)	Latrine blocks, incinerators and water tanks	$7,831



4.2. *Consider using the Water and Sanitation for Health Facility Improvement Tool (WASH FIT)*

The WASH FIT is a risk-based management tool for health care facilities, covering key aspects of water, sanitation and hygiene.[36] It is adapted for small primary health care facilities in lower-resource settings such as those targeted for the ERNE programme.

One of the main advantages of the WASH FIT is that it relies on a participative methodology that facilitates the involvement of all staff in a targeted facility. Its aims to put in place a virtuous circle of continuous improvement for the management of WASH services in the facility. It is also supported by UNICEF and officially adopted by a growing number of governments.

Box 11: Using WASH FIT in Tahoua District, Niger

In Niger, piloting the WASH FIT tool helped facilitate the ownership of the assessment process and resulting action plans among the health staff at targeted facilities, stimulated the engagement of communities and the diaspora in supporting maintenance of WASH infrastructure and contributed to the development of local water and hygiene plans for the Commune (the local administrative unit), with precise and detailed data on WASH needs. The WASH FIT tool is now used by Concern in Niger for all assessments of WASH in health facilities.

Challenge 5: Functionally integrating nutrition services into health systems

Since the community-based management of acute malnutrition (CMAM, initially known as Community-based Therapeutic Care) was developed more than two decades ago, governments, supported by UN and NGO partners, have been working to integrate services for acute malnutrition into government health systems. Most MOHs in countries with a high burden of wasting have embraced the community-based management of acute malnutrition, formally adding wasting treatment to the essential primary health care service package. Working out the details to actually, functionally integrate nutrition services into routine health service delivery and supporting systems, however, has often lagged behind these policy changes.

Within the ERNE countries, integration of wasting treatment services was arguably most advanced in Ethiopia, where, for example, the assessment and managmeent of acute malnutrition is well integrated into the protocol for the integrated management of childhood

36. See *WASH FIT, a Practical guide for improving quality of care through WASH in health care facilities, Second Edition.* World Health Organisation, 2022.

illness (IMCI) and related job aids for health staff.[37] Integration is least advanced in South Sudan, where nutrition services are still commonly delivered at nutrition centres rather than in primary health care centres. Common barriers to integration across the five countries have included the cost and bulkiness of RUTF; lack of resources and leadership to integrate wasting data into existing health information systems and to including wasting topics into national training curricula for general health staff. Furthermore, integrating the management of moderate wasting into fragile health systems is often daunting given the sheer size of the caseload, which could affect delivery of other life-saving services.

Two points of learning on integrating nutrition services into health systems have emerged:

5.1. *A simple integration action plan can bring nutrition and health staff closer together*

Promoting integration of health and nutrition services requires action at national and even international level, including advocacy to change relevant policies, strategies and protocols and funding mechanisms. However, much can also be accomplished by starting at the ground level. Identifying simple adjustments at the health facility or community level to integrate efforts and improve how health workers and community members work together to identify and manage both sick and malnourished can have an immediate effect. Experience from the ERNE programme in South Sudan is summarised below (Box 12) and further details can be found in the case study available on the ERNE website.[38]

Box 12: Promoting basic integration at Chotyiel PHCC, Unity State, South Sudan

In South Sudan, many barriers to the integration of health and nutrition services exist. The legacy of a largely UN/ NGO led response to the decades-long nutrition crisis, has reinforced the divide between health and nutrition services and parallel funding streams. Nutrition Units are often separate from primary health care centres, as was the case in the ERNE programme area, where Concern supported both the nutrition unit and the PHCC. A key aim of the programme was to overcome the siloed approach and promote more integrated and efficient service delivery.

A practical integration plan was drawn up by the CHD, Concern team and the PHCC and nutrition unit staff, including a simple matrix of small doable actions and key milestones. A first step was to remove the fence between the two structures and enclose it as a single compound. The team also initiated joint training and regular meetings of the nutrition and health staff. Cross referrals between the different services were encouraged and a simple system to track those cross referrals was put in place to understand where they could be strengthened and show how referrals can easily become a habit. These initiatives at ground level will hopefully be sustained among the health facility staff. However, more meaningful integration to improve the cost-effectiveness of the whole systems will require further time, analysis and advocacy at district and national level.

5.2. *Map health system actors and how nutrition services interface with each*

Understanding all the components and key actors of the health system and how they fit together is critical to ensuring functional integration of nutrition services. Mapping the broader health system is a critical first step, especially for actors that have been focused largely on supporting nutrition services. Understanding how the wider health system works can help shed light on blockages to integration as well opportunities to more efficiently deliver wasting treatment alongside other services and manage resources. The ERNE programme team in Niger carried out a joint mapping of the health system to ensure all to ensure all relevant actors were involved in the shift from CMAM Surge to a more holistic Health Surge approach. The example below (Figure 18) is provided (without the key/ legend)

37. *Integrating Early Detection and Treatment of Children with Wasting into Routine Primary Health Care Services in Ethiopia: Experience and Next Steps*. MoH and Results for Development website/ presentation.
38. *Steps towards integration of nutrition, health and WASH in South Sudan: a case study from Unity State.* , April 2023. Concern Worldwide

to show the complexity of intersecting health and nutrition components and actors and emphasise the importance of understanding these connections to promote integration.

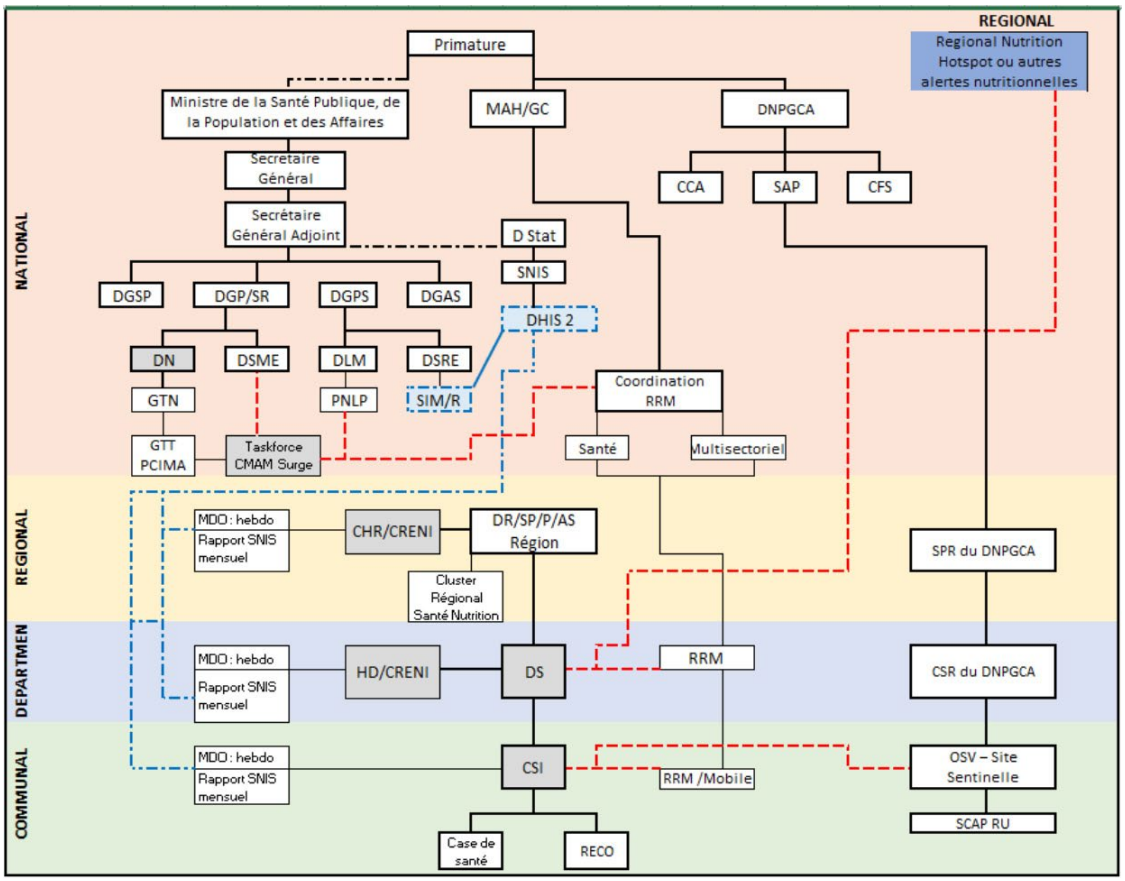


Figure 18. *Example of mapping the health system in Niger to inform ERNE programming in Tahoua Region*

6. Conclusion

The Enhanced Responses to Nutrition Emergencies programme reached more than 1.2 million people – largely via support to essential health and nutrition services at 273 health facilities in 22 health districts across five fragile and conflict affected contexts in DRC, Ethiopia, Niger, South Sudan and Sudan. The programme was designed to help government and community health systems better prevent, prepare for and respond to nutritional emergencies. Programme results have been positive: more than 75,000 children with SAM were treated, with recovery rates and SAM service coverage well within Sphere standards. A further 100,000 moderately wasted children under-five and 60,000 malnourished pregnant and breastfeeding women received supplementary feeding, and 800,000 curative visits for under-fives were supported as part of the programmes health system strengthening efforts. The capacity of health facilities improved markedly – more than 75% of those targeted for ERNE support improved their average score across 14 health service domains, according to Concern's comprehensive health facility assessment tool, which was developed for the ERNE programme.

This paper offers 15 recommendations structured around five enduring challenges to delivering essential health and nutrition services in fragile contexts, related to ensuring: 1) access to services; 2) sufficient health staff with the right skills; 3) availability of essential nutrition and medical supplies 4) basic WASH infrastructure and systems in health facilities; and 5) functional integration of nutrition services into health systems. It shares reflections on what Concern would have done more of or done differently over the course of the three-year ERNE programme. Some of the specific recommendations could be considered innovative, while some, unfortunately, reinforce recommendations and best practice that have been echoed for decades with little uptake.

While the programme has undoubtedly contributed to strengthening the local health systems in the five programme areas during the life of the programme, only time will tell if those systems are indeed more resilient to the effects of ongoing and future conflict, population displacement, disease outbreaks, flooding, food insecurity, eroding infrastructure and overstretched front line health staff. Government health workers were our partners and allies throughout this endeavour to build more resilient health systems, most of whom work tirelessly in under-resourced facilities for little pay, trying to deliver 'more with less'. As practitioners and decision makers from NGOs, governments, donors, and the UN, our aim must be to increase and coordinate investments and technical support to address the systemic challenges facing frontline health workers in fragile contexts so they can deliver critical services as efficiently and completely as possible to those most in need.

Annexes

Annex 1. Health facility assessment results for additional domains

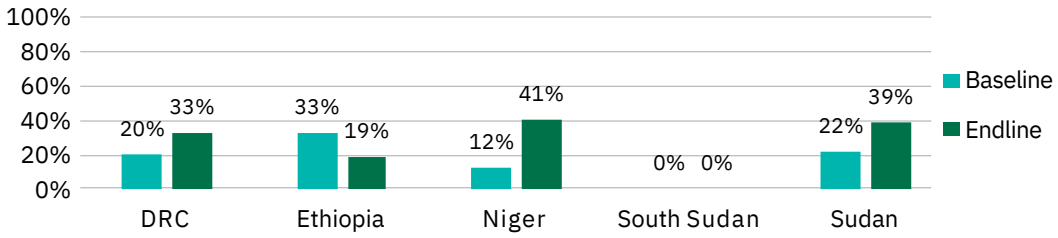


Figure 19. *Staffing domain: average score for target facilities (baseline & endline)*

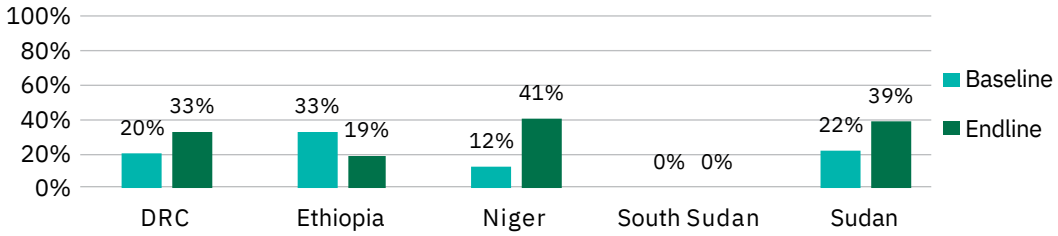


Figure 20. *HMIS domain: average score for target facilities (baseline & endline)*

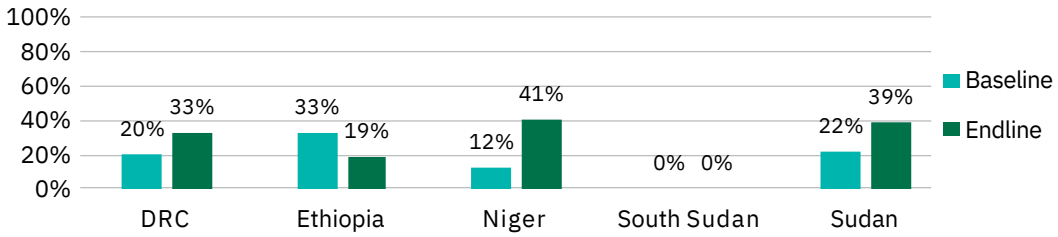


Figure 21. *Management and supervision domain: average score for target facilities (baseline & endline)*

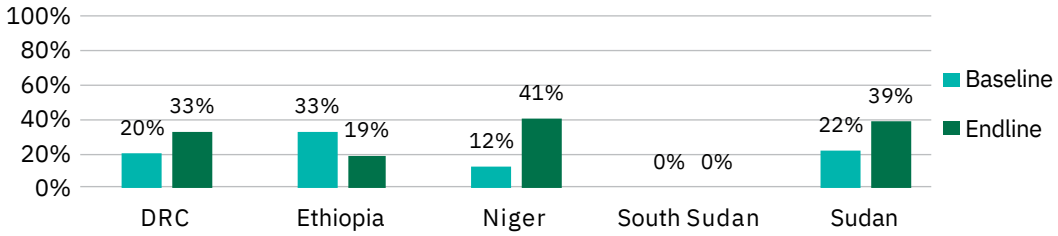


Figure 22. *General infrastructure domain: average score for target facilities (baseline & endline)*

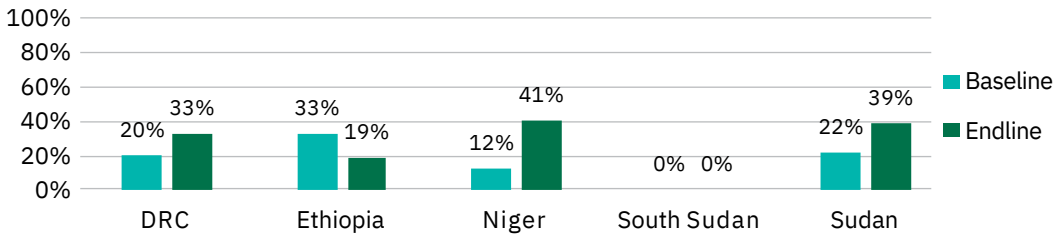


Figure 23. *Child immunisation domain: average score for target facilities (baseline & endline)*

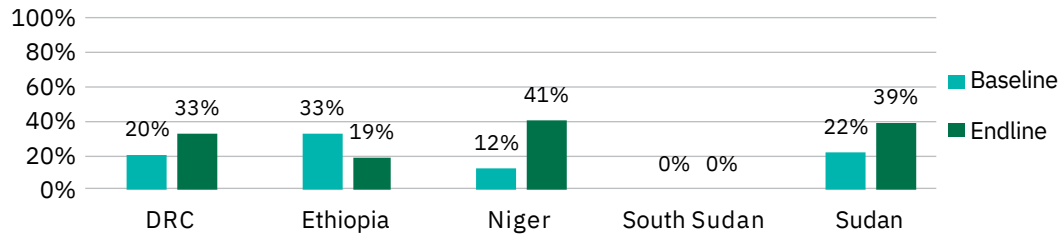


Figure 24. *Antenatal services domain: average score for target facilities (baseline & endline)*

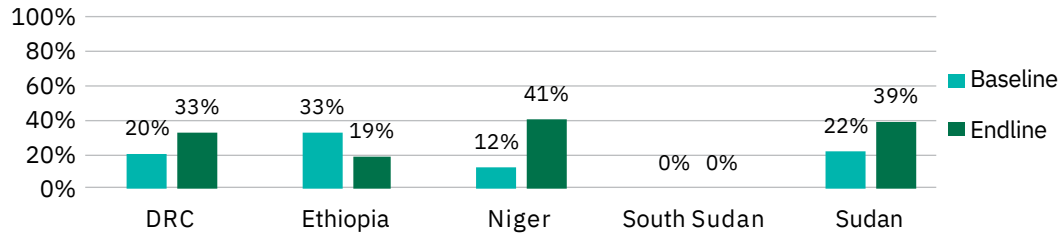


Figure 25. *COVID-19 preparedness and response capacity domain: average score for target facilities (baseline & endline)*

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