Ebola Community Care Centers: Lessons Learned from UNICEF 2014-2015 Experience in Sierra Leone


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Ebola Community Care Centers

Lessons Learned from UNICEF’s 2014-2015 Experience in Sierra Leone

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Acronyms

CCC: COMMUNITY CARE CENTER FOR EBOLA
DERC: DISTRICT EBOLA RESPONSE COORDINATION
DHMT: DISTRICT HEALTH MANAGEMENT TEAM
DMO: DISTRICT MEDICAL OFFICER
ETU: EBOLA TREATMENT UNIT
EBOLA: EBOLA VIRUS DISEASE
HCW: HEALTHCARE WORKER
IP: IMPLEMENTING PARTNER
IPC: INFECTION PREVENTION AND CONTROL
MCH: MATERNAL AND CHILD HEALTH
MoHS: SIERRA LEONE MINISTRY OF HEALTH AND SANITATION
NERC: NATIONAL EBOLA RESPONSE COORDINATION
PHU: PERIPHERAL HEALTH UNIT
PIH: PARTNERS IN HEALTH
SOP: STANDARD OPERATING PROCEDURES
UNICEF: UNITED NATIONS CHILDREN’S FUND
UNMEER: UN MISSION FOR EBOLA EMERGENCY RESPONSE
WHO: WORLD HEALTH ORGANIZATION
Executive Summary

Background:

Community Care Centers (CCCs) are a novel approach to infectious disease control first implemented during the West African Ebola Virus Disease (Ebola) epidemic of 2014-2015. The CCC model was designed to bring disease prevention and control capabilities to the community-level to complement larger and more centralized Ebola Treatment Units (ETUs) that provided patient care and treatment.

The World Health Organization (WHO) and partners developed the CCC concept in September and October 2014, as existing health care facilities were overwhelmed by patient demand. In response to the growing crisis and shortage of beds, UNICEF and the MoHS decided to implement CCCs in mid-October and began construction in November 2014. CCC facilities in Bombali district were the first to be constructed, followed by Tonkolili, Kambia, and Kono. Following the programmatic intent to offer a temporary solution to the Ebola epidemic, CCC facilities were decommissioned in phases, beginning in March 2015 and ending in December 2015 after Sierra Leone was declared Ebola-free.

Objectives and Methods:

The objective of this report is to document lessons learned from the MoHS-UNICEF experience implementing CCCs as strategy for epidemic containment and control from the perspective of district and community-level stakeholders. Qualitative data are used to make assessments; key informant interviews and focus group discussions were held with key stakeholders in 11 purposively selected CCC locations in Bombali, Tonkolili, Kambia and Kono Districts from March –July 2015. Content analysis was used for data analysis, followed by thematic coding using QSR NVIVO software.

Key Findings:

Big Tent Approach: CCCs were an effective community-based mechanism to screen for Ebola, triage persons exhibiting signs of illness, and isolate Ebola suspects. They were able to perform this function because communities accepted them and felt ownership over them. This study supports modelling and evaluation studies that find that CCCs are an effective strategy for responding to epidemics in low resource contexts.1,2,3

Basic Package of Services: Patients felt CCC care was of high quality and they particularly appreciated that care was accessible and free. Stakeholders noted the importance of establishing systems to keep family members informed, including when transfers were made and lab test results. Community members felt that this was not always managed well, while staff noted that lab test results were held to specific turnaround time and reporting standards.

Managing Patient Needs: Social mobilization efforts could have done more to prepare patients for the experience of receiving care in the CCC. Many patients were mistrustful and did not understand the rationale for certain procedures. Community access to the CCC and family members’ access to patients at the CCC was a key factor in the success of the CCC model.

Site Location, Transportation, Construction and Maintenance: Community leaders were satisfied with their involvement in the process of CCC site selection. CCC facilities were constructed for temporary use by design. Issues emerged around how some of the temporary structural aspects of facilities impacted staff safety (cleaning “wet areas” with gravel floors) and patient comfort (cold, heat, exposure to the elements).

Staffing, Training, Monitoring and Quality Assurance: During initial operations, the employment of local residents at CCCs made CCCs more acceptable because local residents proved that CCCs could be safe. CCC
staff believed the training and supervision they received prepared them to do their jobs and kept them safe. Provision of regular meals and hazard pay kept staff motivated.

Community Engagement through Focal Persons and Community Leaders: CCCs changed communities’ perception of Ebola care and treatment, making it more acceptable. By making Ebola care available at the community-level, fear was reduced and communities were more likely to seek care. Community engagement was effective in raising awareness of CCCs and decreasing fear. Over time, communities embraced CCCs as “theirs.”

CCC Program Coordination & District-wide Integration: Coordination challenges related to integrating additional nodes of patient care into district operations were managed well despite the speed of implementation. DERCs, supported by DHMTs, functioned well as a common platform for CCC coordination and problem-solving. Through the introduction of CCCs, districts expanded the reach of the Ebola response into areas previously marginally integrated.

Peripheral Health Units and CCCs: CCCs were established to isolate CCC operations from PHU operations, restore confidence in PHUs, and encourage patient utilization of PHUs for general health conditions. Initially, PHUs were not well integrated into the CCC plan, nor were systems of PHU/CCC reporting and referral implemented routinely. CCC staff and PHU staff reported tensions over pay, training and resource allocation issues. When CCC decommissioning occurred, many respondents indicated that in the future, CCC capacities should be established at PHUs in order to strengthen the PHU system.

Supply Chain Management: Gaps in the provision of supplies from UNICEF and IPs were reported as challenges. CCC staff reported that irregularity of supply negatively affected staff motivation.

Salary Disbursement: Uncertainty about bureaucratic reporting requirements and delays in staff salary payments from DHMT occurred regularly.

Decommissioning, Health Systems Strengthening and Resilience: Communities did not approve of the first wave of decommissioning, given continuing fears about the threat of new Ebola cases. Though they believed they had ownership of CCCs, this decision was out of their hands and caused upset.

Local Perspectives on CCC Impact: Community leaders, former patients, staff, IPs, and DERs agreed that CCCs played a very important role in ending the Ebola epidemic in their districts. Many also believed that CCC encouraged healthcare utilization through the provision of free services (former patients, leaders) and by re-establishing trust in PHU facilities (IPs, DERs).

Pregnant Women, Children under 5, and Lactating Mothers: In Kambia, several key stakeholders were confused about how CCCs were supposed to engage with pregnant and lactating women and children under 5. Some evidence indicates that CCC staff, IPs, community leaders, social mobilizers, and DERs were referring these subpopulations away from CCCs.

Staff living conditions: Staff faced several challenges working at CCCs such as stigmatization, difficulties with their families, and inadequate sleeping arrangements. Communities did not always provide sleeping quarters for CCC staff. As a result, many staff slept at the CCC, but the CCC was not equipped to provide shelter for staff.

Social Mobilization: Social mobilizers played a key role in advocating for CCC utilization, addressing local residents’ and community leaders’ fears about the CCCs, and encouraging early case detection and reporting. Loudspeaker campaigns were not seen as effective, but grassroots campaigns using social mobilization meetings, dramas, and community education were regarded as effective. Community leaders used political and social networks to advocate for CCC utilization and support social mobilizers. Clergy could have been
better engaged in some areas. Social mobilization depended heavily upon the provision of transportation, communication, and incentives to local workers.

**Former Patient/Survivor Issues:** Reception of patients in their communities following CCCs was typically warm, but some did experience rejection and stigma. Patients reported economic hardship resulting from their time in care or quarantine, and unmet need for support. Survivors reported continuing health needs that were not always met.

**Recommendations:**

**The use of CCCs for epidemic response:**

1. CCCs can be a functional and effective component of a holistic approach to epidemic response. A strong epidemic response requires a multi-faceted approach linking high-level medical facilities such as ETUs with decentralized local healthcare facilities such as CCCs, and robust social mobilization.
2. High-level political debates about CCC use and implementation could impact the programme’s success. Discussion about the deployment of CCCs should be carried out during periods of stability and in conversation with health systems strengthening discussions. Political buy-in of senior-level stakeholders must be secured and communicated in order to avoid local level conflict.
3. Changing notions of “appropriate utilization” of CCCs demonstrates that national and donor-level policy shifts occur frequently under emergency conditions and should be tracked carefully to ensure that they do not lead to unanticipated challenges that affect CCC use at the local level.
4. CCCs functioned as local health units with an explicit mandate to respond to Ebola. In some ways, this placed CCCs in direct competition with PHUs, which have a broader mandate for primary health care. In order to facilitate coordination and avert conflict, communities, stakeholders, and agencies should define the intended relationship between PHUs and CCCs and actively engage PHUs in CCC administration. In contexts where PHU structures could be optimized to isolate Ebola patients and facilitate rapid transfer to higher-level ETUs within close proximity, this could be explored as an alternative arrangement.

**Improving the performance of CCCs:**

5. When selecting CCC sites, consideration should be given to how the presence of a CCC will impact land use and road access during CCC operations and after decommissioning.
6. Initial planning activities should account for the medical and residential requirements of CCC staff. While adequate salary support and meals were provided, staff lacked appropriate physical conditions for rest, recovering from illnesses, and sleep.
7. The credibility of the CCC model is necessary for its success. In order to enhance CCC credibility, greater clarity and transparency is needed with regards to (1) the role of implementing partners (IPs) and the differentiation of roles and responsibilities between district health management teams (DHMT) and IPs, (2) local oversight and access to CCCs, and (3) key implementation decision making.
8. All CCC-related trainings should integrate CCC management and oversight into initial planning. Labour and resources should be added to the standard CCC “kit” to offset the burden of labour associated with meeting administrative functions such as stock management and salary disbursement.
9. Plans for distribution of durable goods and high value resources during decommissioning should be made clear at the outset of CCC programmes as not to create false expectations in communities.
10. CCCs support for Ebola survivors requires better definition and integration into support systems.
11. CCCs are likely to be needed for longer timeframes than this experience anticipated. This implies reconsideration of CCC construction and maintenance plans.


Ensuring active community engagement and robust social mobilization:

12. When planning the introduction of CCCs, consultation with community leaders and local government officials should take into account the impact of CCCs on local economic, transportation, and social conditions. Further research should be conducted to evaluate if the community engagement aspects of this CCC experience expanded the capacity (including reach and accuracy) for CCCs to play a role in ‘active surveillance’ in geographically isolated regions.

13. Current WHO guidance for social mobilization requires updating to better capture grassroots social mobilization requirements and demands. Further research is needed on the interaction between CCC Focal Persons, Social Mobilization networks, local cultural conditions, and overall epidemic response in order to assess the social epidemiological implications of CCC-community engagements during epidemic response.¹

14. Social mobilization capabilities depend heavily upon the provision of transportation, communication, and incentives to local workers. With these resources, social mobilizers function as “network intermediaries” between local informal networks and national surveillance networks.

15. CCC staff faced numerous challenges providing patient care within the CCCs due to misinformed patient beliefs. With improved training and information dissemination, social mobilizers can mitigate conflicts when patients receive care at the CCCs by providing information prior to arrival.

16. Social mobilization capacities may be able to link expanded surveillance capabilities during epidemics with post-epidemic health systems resilience investments. Sustained low-level investments in social mobilization capabilities can therefore be seen as a meaningful investment in local health surveillance systems. These capabilities should be fully integrated into national planning for Community Based Surveillance models.
Introduction

BACKGROUND
From 2014 to 2015, Sierra Leone experienced a devastating Ebola Virus Disease epidemic (hereafter referred to as Ebola). The first confirmed case of Ebola was identified in May 2014 in the eastern part of the country, bordering Guinea and Liberia. Over the course of the next several months, Ebola spread to all districts and overwhelmed the public health system. Demand for safe isolation quickly outpaced the supply of available treatment beds in Ebola Treatment Units (ETUs) and more ad hoc structures called holding centers which were used to isolate patients before they could be transferred to ETUs. An urgent need for enhanced bed supply was particularly apparent in Sierra Leone following a house-to-house campaign in October, which surfaced many Ebola cases. A national toll-free line was used as the official mechanism for reporting cases. Given high levels of fear and general mistrust of the health system, the number of Ebola cases, particularly early on in the epidemic, was considered to be significantly under reported.

After months of insufficient international attention, WHO declared Ebola a “public health emergency of international concern” in early August 2014. By mid-September, the UN Security Council adopted Resolution 2177 declaring Ebola a threat to international peace and security and announced a UN Mission for Ebola Emergency Response (UNMEER). Towards the end of September, the U.S. Centers for Disease Control released modelled estimates of potential future cases of Ebola, projecting up to 1.4 million Ebola cases in Sierra Leone and Liberia by the end of January 2015, assuming no scale-up of interventions and an under-reporting factor of 2.5. Around this time, the U.S. detected its first case of Ebola in a traveller from Liberia, signalling the potential global threat posed by the epidemic. Panic mounted and the international response began cranked into gear.

Amid accelerating Ebola transmission, the WHO and partners released a new, previously untested Ebola Community Care Center (CCC) concept. CCCs were conceived as a novel approach to bringing disease prevention and control capabilities to the community-level to complement larger and more centralized ETUs. Specifically, the strategy intended to help break the chain of Ebola transmission by facilitating more rapid isolation of cases, by making Ebola isolation and care facilities more accessible and acceptable to communities. Key components of the CCC model outlined in WHO guidance include community engagement, site selection, construction, basic services, staffing and training and monitoring and quality assurance.

INTERVENTION
In mid-October 2014, UNICEF decided to operationalize the CCC concept in Sierra Leone in partnership with the Ministry of Health and Sanitation (MoHS). From mid-November 2014 to mid-January 2015, UNICEF built and opened 46 CCCs (404 beds) in 5 districts. In each district, the CCC concept was introduced and discussed with District Health Management Teams (DHMTs), District Ebola Response Centers (DERCs), local politicians, Ebola response partners, paramount chiefs and communities. At the invitation of paramount chiefs, UNICEF and DHMTs held consultations with communities to discuss Ebola, introduce the CCC concept and seek permission and site locations for CCC establishment. All CCCs were officially welcomed by communities and district and traditional leaders ceremoniously opened CCCs. At least one CCC was erected in each chiefdom in Bombali, Tonkolili and Kambia districts. Four CCCs were constructed in Kono district and 2 larger peri-urban CCCs were constructed in Western Area Rural at the urging of the government.
UNICEF contracted local NGOs and companies to construct temporary CCC structures according to defined plans. All CCC medicines, personal protective equipment (PPE), supplies and materials were procured and supplied directly by UNICEF. The World Food Programme (WFP) provided monthly food rations. DHMTs hired and paid CCC staff, identifying junior clinical staff and nurses-in-training, not already absorbed by the health system. Hygiene staff were selected by communities but paid by the DHMT. DHMTs also identified and paid mobile lab technicians to take and transport specimen from CCCs to labs to test for Ebola. NGOs active in health in each district were hired to work with DHMTs to provide regular supervision and quality assurance at CCCs; manage social mobilization and child protection around CCCs; and work with communities to manage water supply and ensure the availability of regular meals for patients and staff. In each district, UNICEF had a CCC coordinator on the ground, working with assigned DHMT CCC focal persons and NGO partners to provide oversight and trouble shoot.

Eight-bed CCCs were staffed by an average of eight clinical staff, eight hygienists (also rotated into security roles), two cooks and two water porters. One clinical staff served as the CCC manager, and the community nominated a volunteer CCC liaison—called a “focal point”—to facilitate communication between CCC staff and the community. Clinical and hygiene staff received three days of classroom and practical training in infection prevention and control (IPC) and use of PPE. Clinical staff were also trained in CCC management. After this, CCC staff received onsite training prior to site opening and two-weeks of intensive 24-hour senior onsite mentorship following opening. CCCs were then monitored by rotating supervision teams at least three times a week. NGO partners hired local social mobilizers and child protection focal points (at least 1 per CCC). Social mobilizers circulated in surrounding communities raising awareness of CCCs, addressing misconceptions, and
referring the sick. A common message that was circulated by social mobilizers was: “CCC is where you and your loved ones who are sick with Ebola symptoms can receive safe care closer to your home and community.”

CCC operations were governed by standard operating procedures (SOPs). Staff were trained to triage and admit patients who met a case definition for Ebola. If a patient did not meet the case definition but had fever, staff were instructed to administer malaria treatment and ask the patient to return if fever did not subside in 48 hours. Staff were instructed to refer patients to the nearest peripheral health unit (PHU) if they did not meet the case definition for Ebola and did not have fever. Pregnant women and children under five with suspected Ebola were considered high risk cases that should be immediately referred for higher level care. All admitted patients were provided with basic supportive care which included presumptive treatment of malaria, antibiotics for opportunistic infections, ORS, paracetamol, and three meals a day. Additionally, Intravenous (IV) fluids were provided at CCCs in Western Area and in Kono that were staffed by higher level medical personnel. Admitted patients with dry and wet symptoms were segregated to reduce the chance of nosocomial infection. In each district, efforts were made to ensure that CCCs were part of district Ebola response systems coordinated by DERCs. CCCs reported admitted patients to the DERC call-in alert system, which triggered case investigation and contact tracing; lab technician dispatch; ambulance transfer to ETUs for confirmed Ebola cases and suspected cases that were high risk or exhibiting severe symptoms and burial team dispatch, when necessary.

CCC operations were decommissioned in phases following decisions and guidelines issued by the National Ebola Response Center (NERC), the national governing body for the Ebola response. The first set of CCCs were decommissioned in February and March 2015; the second phase took place in April and May 2015 and the final phase occurred in November and December 2015. CCCs in Bombali and Tonkolili ceased providing services in July 2015 and were retained as stand-by facilities. CCCs in Tonkolili were eventually fully decommissioned and those in Bombali were decontaminated and handed over to the government to use as stand-by facilities in November 2015. UNICEF and DHMTs led CCC decommissioning, which involved district-level planning; community engagement and social mobilization; decontamination and repurposing of relevant supplies and demolition. Social mobilization typically took place over a four-week period beginning two weeks before site demolition.

PURPOSE OF THE ASSESSMENT
The purpose of this assessment was to determine key lessons learned from the experience of implementing UNICEF/MOHs-supported CCCs during the 2014-2015 Ebola epidemic in Sierra Leone from the perspective of key stakeholders operating at district and community-levels. Qualitative data are used to expand upon an understanding of CCC performance based on quantitative data summarizing CCC utilization and effect to better investigate the relevance and function of CCCs.

This review was designed to complement Pronyk et al.’s (2016) review of MoHS-UNICEF CCCs in Sierra Leone. In that study, quantitative data collected during CCC implementation was used to assess CCC utilization and estimate the effect of CCCs on Ebola transmission in districts where they were located. The Pronyk et al (2016) review highlights that over the first 13 epidemic weeks of operation, CCCs triaged 6,129 patients, 719 (12%) of whom met the case definition for Ebola. Isolation of EVD suspects with 4 days of symptom onset was higher in CCCs compared to other facilities (OR 6.0, 95%CI 4.0-9.1). In two districts assessed from mid-November to mid-January, 30% of EVD+ cases detected from the district were identified in CCCs. Pronyk et al. (2016) argue that this contributed to an estimated 13-32% reduction in the Ebola reproduction number in these districts.³

SPECIFIC OBJECTIVES
There were four specific objectives of this assessment:

1. To document the process and experience of initiating, operating, and decommissioning CCCs
2. To analyse district and community stakeholders’ perspectives in order to appraise the relevance of the CCCs to the district Ebola response.

3. To attain insights regarding the effectiveness of aspects of the CCC Model: Community Engagement, Monitoring and Quality Assurance, Site Selection, Staffing and Training, Construction, and Basic Package of Services delivered.

4. To generate recommendations regarding the implementation and operation of the CCC model from an experiential perspective, in order to inform UNICEF’s response to future epidemic events.

Figure 2 summarizes key areas of inquiry and cross-cutting themes explored through this assessment.

**Figure 2: Key areas of assessment inquiry and cross-cutting themes**

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<td>• Stakeholders’ critiques</td>
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<td>A. Integration with key services</td>
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<td>B. Integration with local structures</td>
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<td>C. Stakeholders’ roles</td>
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<td>D. Stakeholders’ critiques</td>
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Research Methods

RESEARCH DESIGN

Following Elo et al.’s systematic literature review on content analysis and trustworthiness of qualitative data, five components are necessary for qualitative data to be deemed trustworthy: credibility, dependability, conformability/objectivity, transferability, and authenticity. It was decided that a qualitative investigation of key stakeholders’ experiences implementing the CCC model would generate valuable information to illustrate the strengths and weaknesses of the CCC model, and to identify aspects of the CCC implementation process in selected districts that could provide insight into the utility of the CCC model. Focus group discussions (FGD) and key informant interviews (KII) with key stakeholders were employed to generate both broadly indicative qualitative data and specific contextual detail that would generate key process insights and contribute to overall evaluation efforts. UNICEF staff identified the priorities for qualitative research, established a process for obtaining informed consent, designed FGD and KII scripts and questionnaires, and trained data collectors to effectively facilitate FGDs and to engage in note-taking, recording, and documentation, as well as post-hoc analysis. KIIs with district stakeholders were facilitated by UNICEF staff based outside of the districts in which interviews were held. FGD and KII scripts were translated into Krio and back-translated for accuracy.

Sites for research were selected from four districts: Bombali, Kambia, Kono, and Tonkolili on the basis of specific selection criteria established before data collection that included rural/urban profiles (CCC proximity to ETUs and urban centers), comparable representation of CCCs across four rural districts, varied experiences with caseloads of positive cases at CCCs, varied experiences with Ebola presence in surrounding communities, positive and negative community responses to the CCC program, and experiences with CCC decommissioning (Appendix 2). Due to the distinctly urban profile of UNICEF’s CCCs Western Area that rendered the CCC experience clinically, socially, and logistically distinct, UNICEF’s Western Area CCC experience was excluded from data collection.

Focus groups discussions (FGDs) were conducted from March-April 2015, with specific categories of stakeholders, in order to gain a deeper understanding of the CCC experience (see Appendix 3, Table 3.1). CCC staff discussions focused on the adequacy of staff training and supervision, the sufficiency of resources to manage patient care and triage processes, and staff perceptions of CCCs as relevant, effective, and appropriately implemented response to the Ebola epidemic in their districts. Former CCC patients, regardless of Ebola status, focused on motives for using CCCs, pathways to seeking healthcare at the CCCs, experiences receiving care at the CCCs, Ebola survivors’ post-care experiences; and their perception of CCCs’ impact on the overall Ebola response locally. Community leaders focused on the relevance and effectiveness of the CCC model in managing Ebola at the community level, perspectives on CCC site selection, construction, operation, social mobilization and decommissioning (see Appendix 6.1-6.3).

KIIs were conducted from June-July 2015. They were structured to address a range of actors from UNICEF district coordinators, District Medical Officers (DMOs) and the DHMT, DERC, NGO implementing partners (IPs), and local social mobilizers involved in the implementation and management of the CCC program, and local, district, and national Ebola coordination. The goal of KIIs were to appraise key informants’ roles and responsibilities, organizational involvement in the CCC project, project design, key activities, and successes and failures in CCC approach and strategy. Particular attention was paid to the accomplishments and challenges of the CCC project as a whole, and as integrated into wider coordination platforms. Interviews with DFID and

[1] The 2 CCCs in Western Rural district were different in character from other CCCs. They were larger 24-bed facilities; managed by the government on a day-to-day basis (there was no UNICEF coordinator); supported by higher level medical staff and provided IV to severely dehydrated patients; they employed a more active case finding approach in surrounding communities and were referral points for nearby checkpoints.
DERC focused on organizational and individual roles and responsibilities, referral networks, alert systems, lab systems, and asked respondents to assess the added value of CCCs to the overall response. Interviews with UNICEF staff inquired about the experience establishing and opening CCCs, and provoked reflections on the interaction between community engagement, social mobilization, and rapid localized response to Ebola epidemic outbreaks (see Appendix 6.4-6.6).

PARTICIPANTS AND RECRUITMENT

Prior to participating in focus groups and interviews, all informants gave verbal or written informed consent. Focus group participants were recruited from sub-communities with notably different occupational, age, and gender profiles. Community leaders tended to be older, with a mean age of 53, with nearly four times more men participating. CCC staff, tended to consist of younger adults (mean age of 30) with a relatively even balance of gender. Former CCC patients reflected the age distribution of the population as a whole, with an age range of 7-89, and median age of 30, but the gender distribution of the group is heavily feminized. Focus groups were conducted in local languages (Mende, Krio, Temne) with 262 CCC staff, former patients, and local community leaders (Appendix 4 Figure B), which included between 3-15 people. All participants reported a wide range of vocations, community engagements, and roles within the CCC program (Appendix 4 Figure C). The duration of FGDs were 45-75 minutes, and FGDs were led by one moderator, assisted by two note-takers, who followed a script designed to elicit qualitative information about key themes (Appendix 5).

KIIIs were conducted in English with district medical officers (DMO), staff working for UNICEF’s implementing partner agencies (IP) in each district, members of the District Ebola Response Centre (DERC), members of the District Health Management Team (DHMT), and social mobilizers. Eight additional key informant interviews were conducted with members of UNICEF staff who played leading roles in CCC planning, operation, and decommissioning. Each KII took approximately 25-60 minutes, and were conducted in individuals’ workplaces, or via phone and Skype. All KIIIs were recorded and transcribed for data analysis purposes.

DATA COLLECTION, TRANSCRIPTION AND TRANSLATION

The use of digital recordings for a large set of semi-structured interviews is well-established in African health-related research. However, the challenges of efficient transcribing are significant; a single one-hour interview can yield 20 or more pages of transcription or notes. All FGDs were conducted in the spoken local language (Krio, Mende, or Temne) and were translated to English by the note-takers. In two out of the four districts, audio recordings were taken in addition to the transcripts from note-takers. Recordings in Krio, Mende, and Temne and were transcribed and translated into English in Microsoft Word documents by a team of in-country translators, which were then returned to the data analysis team via Dropbox™.

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ii It is worth noting that the demographic profiles of CCC staff, CCC patients, and CCC community leaders do not neatly overlap. CCC staff tend to be younger, with an even gender split. Patient populations tend to be older, and more female. Community leaders tend to be much older, and more male. This has implications for CCC implementation in that the viewpoints of any single CCC stakeholder group – like community leaders- may not fully represent the viewpoints of other stakeholder groups, like patients or staff.
DATA ANALYSIS APPROACH
Content analysis was selected as the preferential method for analysing the qualitative data obtained through KIs and FGDs. The six-seven trigger questions (and associated probes) used by interviewers yielded a rich array of demographic, behavioural, and attitudinal data. To conduct the analysis, a process of first-cycle coding was implemented through hand-coding. The text was coded, or broken down into manageable units (i.e., words, phrases, themes). A secondary validation process took place through a Sierra Leone-based process of presenting preliminary findings for comment and feedback to district stakeholders. This led to a secondary process of thematic coding using QSR NVIVO software to extract important themes as they emerged. Content analysis was linked to thematic analysis using grounded theory.

ETHICAL CONSIDERATIONS
UNICEF has initiated processes to seek a retroactive human subjects research review exemption. This process is ongoing.

Findings

The first results section of this report, entitled Targeted Findings, addresses prioritized areas for investigation during this study. A second results section of this report, entitled Emergent Findings, describes important, inductively derived lessons that emerged during the course of data analysis.

A note on presentation of quotations: All quotes have been slightly modified for spelling, syntax, and grammar to facilitate ease of reading. Direct attributions have been withheld to maintain informants’ confidentiality, as guaranteed during the data collection process.

TARGETED FINDINGS
The WHO CCC model called for six key aspects for the implementation and operation of CCCs: Community Engagement, Construction, Site Selection Criteria, Monitoring & Quality Assurance, Staffing & Training, and provision of a Basic Package of Health Services. This study yielded key lessons about each of these areas. Lessons learned for these domains are presented first; more expansive considerations about how CCCs were integrated into the overall Ebola response at local, district, and national levels follow. This section concludes with a brief discussion of CCCs vis-a-vis broader health systems strengthening and resilience issues, especially with regards to decommissioning processes and the strengthening of Peripheral Health Units (PHUs), DHMTs, and district-level health priorities.

A “BIG TENT” APPROACH
The CCC strategy was intended to facilitate a “big tent” approach to community-based infectious disease control and prevention by capturing a broad swath of local morbidity through the provision of a limited range of free healthcare solutions to low-income rural populations. Evidence suggests that this goal was achieved. Stakeholders reported that they believed that CCCs helped to control the Ebola epidemic in communities by empowering the local management of Ebola, referring patients appropriately to secondary care facilities as needed, and linking local identification processes to district and national-level surveillance. CCCs also had the

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ii An inductive content analysis was implemented to: 1) understand contextual factors; 2) explore interrelationships; 3) relate societal processes and public opinions; 4) reveal issues of access, hierarchy, and authority; 5) reveal cohesion and conflict; 6) identify intention, 7) and identify attitudinal and behavioral responses to communications. Coding was followed by a validation process in order to catch irregularities, identify and confirm key variables, and cross-check and compare notes.
ancillary benefit of stimulating local economies through the provision of short-term employment opportunities, providing free basic healthcare, and transportation cost-savings. Proximity, in turn, inspired a strong sense of local ownership, borne in part by UNICEF’s commitments and promises. By the end of the CCC experience, local stakeholders strongly identified the CCC as “theirs” and regularly reported that they “loved the CCC,” and that it was “for them”. As one Tonkolili CCC staff member indicated,

“The CCC helped greatly in preventing the outbreak here. The first patients that started coming to the center were telling us that they were afraid to come to the center for services, but with our presence and [the] education they were getting from people about the center, they were now confident to come. They told us that they were washing corpses but the sensitization they got from us and focal persons have helped allay that fear. They stated that they will bring every sick person to the center and that even if someone was to fall from a tree, they will bring that person to the center to be tested for Ebola and if the person was Ebola, they will want us to transfer them to Magburaka. They were coming voluntarily to the center, and by His Divine Grace, none certified criteria of Ebola, and as a result, we were treating and following up on them together with Contact Tracers. These were the things that helped us not to record an Ebola case here.”—CCC Staff, Tonkolili

PACKAGE OF HEALTH SERVICES

CCCs met the core objective of supporting the need for increased bed capacity in Sierra Leone at the height of the epidemic, although evidence elsewhere suggests that CCC beds came online too late to impact the peak of the epidemic.13, 17 CCCs were regarded by all stakeholders as providing high-quality, free medical treatment for Ebola with substantial supportive care. Patient experiences of care reported during focus groups were overwhelmingly positive. Statements typical of patient experiences included, “I was encouraged and treated with respect. I was satisfied, they feed me, they give me medicine at night, my blood was taken, and the next day my results came.” Patients were particularly grateful for free medicine, free food (three meals/day), the solicitousness of nurses and CCC staff, and CCC’s local and accessible location.

Former patients’ negative reports touched on their experiences of sickness (“I was unable to eat” [due to symptoms]), fear of disease, fear of PPEs, and fear of chlorine and the intrusiveness of chlorine sprayers. (“Everywhere I stepped, they sprayed. I didn’t like that.”)

Laboratory testing and reporting was a key focus of discontent from patients and family members. They reported that chains of communication to report test results between ETUs, CCCs, and communities was inconsistent. One relative complained that she was never informed of the Ebola status of a family member who had died at an ETU; another patient complained that the CCC itself was not receiving test results quickly enough to make CCC isolation procedures effective. There were no reports on whether or not these test result gaps had implications to CCC care. Staff, in contrast, felt that test results were delivered quickly.

While stakeholders were satisfied with Ebola-related care received, some expressed a desire for CCCs to provide a broader range of care, in effect playing the role of a PHU. One community leader noted,

“Now it is good that they have brought the CCC; but we also want them to bring us more medicines. I’m also suggesting that let the treatment center not only be for Ebola but for general treatment wherein people will go and get treatment when they are not feeling well. Because there have been instances wherein people have become sick and have been rejected because they said they are only treating Ebola patients and no other sicknesses. You have to have a case definition before they could treat you otherwise they won’t.”

This desire may be reflective of a broader disappointment with the quality and cost of care at PHUs and a feeling that health sector funding should not prioritize one health condition or disease over other population health needs.
MANAGING PATIENT NEEDS, CONCERNS, AND DEMANDS

According to all stakeholders, CCCs met international standards for nutritional care, IPC, and palliative care. With increased CCC utilization came new challenges with managing patient demands, expectations, and fears. Social mobilization efforts did little to prepare patients for the experience of being at a CCC, or for the kinds of conditions and interventions they would receive. As a result, nurses complained that when patients arrived, they were highly distrustful of nearly every aspect of CCC triage, testing and service delivery (see Figure 5). These challenges created personal stress for CCC staff, and logistical strains on CCC management. As one nurse noted, if she had to don PPE to go into a wet area to encourage a patient to take medication, she could not easily manage other aspects of patient care or CCC management.

Figure 5: CCC Staff Challenges with Patients

- Patient distrusted the triage process, and at times accused triage nurses of favouritism or unfair exclusion from expected healthcare.
  - “Nurses work by sentiment.”
- Patients challenged positive Ebola test results and accused the nurses of forgery or fabrication.
- Patients were afraid to allow blood samples to be taken for fear that blood samples would be used for rituals, or for other purposes.
  - “Some patients cried, some denied, and some even fight when the laboratory technician comes to take their blood sample. They say their blood will be used for other purposes and that it is also a way to get Ebola.”
- Patients refused to take standard medications, and some believed that pills were given to infect patients with Ebola.
  - “While in the PPE to administer treatment to patients, some of them refer to me as a devil, some are even afraid of me and does not even want to take the medicine or come close to me. Patients run out of the hospital thinking we are devils.”
- Patient expectations for the range of care available at CCCs was too broad.
- Patients demanded excessive access to CCC facilities and supplies.
- Patients suspected that cleaners who used chlorine spray to clean the facility were trying to infect them with Ebola and kill them.

The maintenance of CCC facilities could cause challenges with patients. Patients suspected that cleaners who used chlorine spray to disinfect the facility were trying to infect them with Ebola and kill them. One cleaner remarked, “When I am in the CCC and even in my village, people accuse me of spraying them with chlorine. They fear that the chlorine will kill them.”

SITE LOCATION, TRANSPORTATION, CONSTRUCTION AND MAINTENANCE

CCC structures were built in accordance with WHO recommendations. Stakeholders regarded CCC sites as having been well-selected, highly accessible, and highly visible in most communities. Community leaders felt pleased to have played key roles in selecting sites, construction, and public ceremonies or rituals for opening and decommissioning the CCCs. However, minor problems did emerge with site selection. Community leaders in Bombali complained that in one site, “they encroached on the use our chiefdom field, so we are unable to use it for our activities.” Two sites in Kambia were relocated due to their proximity to public-use areas like schools. One site in Tonkolili was regarded as too close to a cemetery. Interviews conducted during decommissioning suggest that site selection at the height of the epidemic did not adequately take into account how CCCs would impact local social geographies during and after the end of CCC operations. For example, in some communities, the current or previous presence of CCCs in some areas impacted locals’ willingness to use
nearby roads and gathering areas. After decommissioning, communities had unanswered concerns about the safety of CCC sites.

CCC facilities were intended to be short-term facilities that used locally available or temporary materials, and UNICEF staff reported that more durable CCC construction would have required more time than was possible in the context of the Ebola emergency\(^1\). CCC staff in every district described the strengths and weaknesses of CCC facilities in great detail. Figure 6 provides a summary of key concerns across districts. CCC staff appreciated how CCCs were designed to facilitate patient flow, establish wet and dry areas, secure stockrooms, and manage waste. However, where there were problems with CCC structures, they were serious and negatively impacted staff effectiveness and patient comfort.

Figure 6: CCC Strengths and Weaknesses, Cross-District

<table>
<thead>
<tr>
<th>CCC Facility Strengths</th>
<th>CCC Facility Weaknesses</th>
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<tr>
<td>Beds were convenient to move</td>
<td>Tarpaulins are hot during the dry season, cold and leaking during rainy season</td>
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<tr>
<td>Structural design kept staff safe</td>
<td>Tarpaulins degrade with chlorine use</td>
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<tr>
<td>Location was close to communities</td>
<td>Generators used fuel too quickly/insufficient fuel supply</td>
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<tr>
<td>Sanitation was excellent</td>
<td>Snakes entered the facilities</td>
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<tr>
<td>Food, water, and stocks were good</td>
<td>Gravel in triage areas were difficult to clean after wet cases passed through</td>
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<tr>
<td></td>
<td>Insufficient furniture for staff breaks and sleep</td>
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<td></td>
<td>Latrine pit filled too quickly</td>
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The use of tarpaulin tents, limited water supply, and insufficient security were most frequently cited as CCC structural problems. During the dry season, tents became worn, and were hot to work in during the afternoon. During the rainy season, they leaked, and were unable to protect people inside from the cold. At several CCCs, water supply was inconsistent and several community leaders identified the local provision of daily water supply from community water sources as both a burden and a necessity for the maintenance of the CCCs. One community leader’s statement was indicative: “The CCC should be built closer to water, or a well should be constructed.”

While CCCs provided access to Ebola care and treatment in 46 communities across five districts, large populations in remote areas were still unable to use the CCCs as a resource due to transportation and access issues. Weak road systems, poor public transportation to remote areas, the high cost of transportation, insufficient numbers of ambulances, and a heavy rainy season were cited as factors that limited patient access.

\(^1\) This assumption should be revisited, as previous research on CCCs in Liberia indicates that the construction of temporary CCC facilities using tarpaulins in Sierra Leone and more durable CCC facilities in Liberia took approximately equal time periods of construction.\(^1\)
STAFFING, TRAINING, MONITORING AND QUALITY ASSURANCE

The regular provision of food, generous hazard payments, training, verbal encouragement and mentorship from CCC supervisors kept CCC staff healthy, safe and motivated. CCC staff reported widespread support and acceptance of the training and supervision support provided by the DHMT and the IP, and believed that the high frequency and regularity of trainings facilitated their personal safety and the success of the CCCs. Staff were confident that if they followed the training, they would not become infected. Weekly trainings enhanced their skills (“The training helped me to do my work effectively”); made them feel confident about their safety (“I learned how to wear PPE, I learn how to wear Wellingtons;” “Without the training, we would have been infected”); provided much needed encouragement and support (“Training gives me courage to do my work”). Trainings were never identified as onerous or excessive, and some staff requested additional ‘weekly rehearsals’ to sustain knowledge about IPC. They were seen as a valuable mechanism for professional mentoring, and were regarded as having promoted teamwork.

The employment of local residents at CCCs had an important influence on local acceptance of CCCs in selected communities and gave local communities a strong sense of ownership over the CCCs. Community leaders were given an important role in nominating local residents for CCC staff positions. However, stakeholders expressed concerns about the speed and selection process involved in staff hiring. One IP noted that IPs should have more control over hiring processes. This informant believed that community-based selection of CCC staff did not yield personnel with a high standard of professionalism, skills, and ability.

In contrast, CCC staff agreed that they were held to a very high standard of clinical effectiveness, safety, competency, and professionalism. They regarded staff training, supervision, and support as highly effective at keeping staff safe, preparing them to manage IPC practices, and preventing the spread of infection among patients and between patients and staff. Implementing partners and the DHMT provided regular supervision which enabled CCC staff to troubleshoot new or emergent problems. Visual resources such as posters were helpful reminders about appropriate protocols when supervisors were unavailable. Role-playing exercises prepared staff to anticipate and prepare for different scenarios and case presentations. CCC staff also reported that the continued provision of meals and hazard payments encouraged them to continue to work under difficult conditions.

Certain staffing issues were resolved over time and as the CCC implementation process matured. In Tonkolili, for example, some community leaders reported that they would have liked to have seen more community members hired in local construction and low-skilled jobs (e.g. water carriers and cleaners). As more CCCs were built and opened in Tonkolili and other districts, this recommendation was adopted.

COMMUNITY ENGAGEMENT

CCCs had several important effects on local populations’ perception of Ebola triage, testing, and treatment. Prior to the establishment of CCCs, patients suspected or confirmed to have Ebola were transported or believed that they would be transported to hospitals, holding centers and ETUs in distant places like Kono, Makeni, Bo, and Freetown. Many family members were afraid to allow their loved ones to travel long distances when seriously ill or they could not afford long and difficult journeys. As news increased of Ebola’s high mortality rate, people feared that ETUs and hospitals were associated with certain death, and healthcare provision related to Ebola was associated with perceptions that western health workers were killing patients. Poor reporting and communication regarding patient status, and the unwillingness of family members to bring patients to healthcare facilities also influenced local opinions negatively. Local communities were suspicious of efforts to test, treat, and isolate patients with Ebola symptoms and engaged in practices of hiding sick family members, running away from local communities, or attempting to manage the course of Ebola within local households and communities.
THE ROLE OF COMMUNITY FOCAL PERSONS

Community Focal Persons were appointed from within local communities to liaise between CCCs and communities. These individuals played a pivotal role in managing expectations, negotiating relationships, and supporting social mobilization and CCC activities. In the words of one social mobilization lead, “In our engagement a focal person was selected by the community. He is a liaison between them, giving them the information, educating them. So, that structure was there, of course like the cooks, were from the community.”

Focal Persons attended community meetings, and they were regarded as important personnel in CCC operations. Although it is not possible to empirically appraise the contribution that Focal Persons made to the success of the CCC program, there is some evidence to suggest how Focal Persons played a role in facilitating CCC work. One community leader/focal person in Tonkolili commented, “with myself here as the focal person, [I] began to round communities and sensitize them about the importance of the center before they could fully understand its purpose.” Focal Persons understood their role as follows, “As a focal person, I do go round and do supervision; supervise the staff, go to the community; talk with the community people. It makes me to know most of the Paramount Chiefs in the districts, and it also makes me to know most of the community leaders. So, as a focal person I enjoy my work in the CCC.” Focal persons also played a role in managing conflict between CCC staff and district-level coordinators over staff resources, as this Focal Person describes in a conflict over delayed delivery of staff food supplies, “DHMT and [IP]--the collaboration was good. Although there are some lapses in terms of feeding the CCC staff... Because I am the focal person, I am receiving calls here and there that this is the second or third week without being fed. So, unless I have to call...come and go to IP and eventually they would supply them the food.”

Social mobilizers identified focal points as a substantial community resource along with other resources contributed by communities to encourage community engagement and support (see Social Mobilization section for more on Focal Points).

The establishment of CCCs in local communities went far towards overcoming logistical and psychological barriers to testing, triage, and treatment. Focus group discussions demonstrate that the decentralization of Ebola-related services had the effect of overcoming significant community fears and making Ebola-related clinical care more transparent and subject to community oversight and ownership. When community members were able to visit patients at CCCs, obtain reports about patients, and see patients emerge from CCCs in good health, key concerns and fears about healthcare utilization were overcome and communities felt encouraged to utilize Ebola services. Relatedly, the decision to employ local community members to work in CCC facilities successfully encouraged local communities to trust their healthcare to CCC workers, and provided demonstrable evidence that one could enter into an Ebola-related facility without being infected with Ebola, disappearing, or dying—all very real concerns to local residents.

ENGAGEMENT WITH COMMUNITY LEADERS

The first point of engagement with local communities took place between the DERC, UNICEF, and local community leaders around issues of site selection. Community leaders felt that they had an impact over site selection and social mobilization processes at the beginning of the CCC process (see Figure 7 for direct quotes). During initial discussions, community leaders were assured that the CCCs belonged to local communities, and that CCC assets would transfer to local communities as was medically appropriate after the end of the epidemic. Community leaders, in turn, worked actively to mobilize local support and awareness about the CCCs using both coercive and persuasive strategies. They played initial roles in identifying laborers in local communities to work for the CCCs. They established rules (“[The] task force was set by the authorities to support the CCC and enforced the chiefdom by law.”) to mandate that individuals with Ebola-like symptoms in their communities go directly to the CCCs for testing. They deployed local communications networks to raise awareness about Ebola; made land, transportation, and local food and water resources available; and cooperated intensively with social mobilizers and CCC Focal Points to expand awareness and utilization.
Some community leaders supported the establishment of CCCs against locals’ preferences (“The community people, especially my youths, accuse me of receiving government [financial payments] to bring Ebola in this Chiefdom”). Among community leaders, support for the CCCs continued throughout the program; and community leaders agreed that CCCs provided a meaningful free service to their community that helped prevent the spread of Ebola and support overall population health. As CCC operations advanced, and later—when decommissioning processes were instantiated—some community leaders indicated that they had less authority over CCCs than they had initially anticipated.

Some community leaders critiqued the CCC implementation process by noting that CCC operations, allocations of resources, hiring practices, and other activities needed to be more transparent to local leadership, and subject to their influence. A community leader from Bombali illustrated this sentiment thus,

“Like the CCC, the management and everything is only based with the [CCC] staff only. It is the CCC [Community Care Center]. The community should know what is happening in the CCC, even supplies and everything else. The community supposed to know, but the community does not know what is coming in and going out. That is a very big problem to the community because if the used the word Community Care Center then what is the community like?... With the CCC, now anything they bring, nobody will understand what they brought.”—Bombali Community Leader

Overall, some community leaders complained that CCC facilities needed to be more accessible to community members. At the same time, community leaders were vocal in their appeals for the permanent establishment
COMMUNITY ACCEPTANCE

Community engagement strategies undertaken at the outset of the CCC program were effective in educating communities about CCCs, gaining community approval for the opening of CCCs, advising community members that they should visit the CCCs if they had Ebola-like symptoms and decreasing fear about CCCs. In most cases, CCC acceptance came about gradually, as communities observed that individuals working at the CCCs or visiting CCCs returned from CCCs without having been infected with Ebola. Soon after most CCCs opened—within several weeks or 1-2 months—communities began to adopt local CCCs as ‘theirs,’ and claimed ownership over and responsibility for the CCC. For example, one community leader narrated the arrival of the CCC as follows,

“When we received the information that they were coming here to construct the CCC, we welcome the idea. We were also getting information that other chiefdoms rejected the idea. We all contributed and we asked some people to come help with the construction. Everyone was happy to contribute, after they had explained to us the purpose of the center. After the construction of the CCC, it was handed over to us. As authorities, we called all the villages to a meeting to educate them about the center and to date, everything is going on fine.” —Tonkolili Community Leader

One Tonkolili-based community leader explained that CCCs were made acceptable to local communities through the community-based hiring of CCC staff.

“They were saying that the stakeholders had brought Ebola to their community. Some people did not want to touch or talk to staff working at the CCC. We took some time to go to the villages and talk to people. The thing that encouraged them was when they saw their children recruited as staff of the CCC and they did not see them fall ill after a month. It was not easy at the start because they were saying that they had given us money and that the entire thing was an enterprise. Over a period and several workshops held, their perceptions were changed. But it was not easy at first.” —Tonkolili Community Leader

Prior to the introduction of CCCs in the communities, community leaders and community members knew of other options for seeking healthcare if they might have Ebola (they specifically referenced going to districts like Kailahun, Bo, and district capitals like Makeni), but many indicated that they would not have pursued those options because they would have been too sick to travel, or the locations were too far for walking. Several discussed fears that their sick relatives would ‘disappear’ if they were transported via ambulance to ETUs and holding centers outside of their communities.

CCC PROGRAM COORDINATION & INTEGRATION INTO THE DISTRICT EBOLA RESPONSE

Although introduced late, the CCC model supported the overall Ebola response, expanded key Ebola response activities within districts, including case identification, contact tracing, social mobilization, and testing capabilities. With this expansion of public health capabilities into local communities, the CCC model can be regarded as having temporarily expanded and extended national and district-level coordination capabilities into urban, peri-urban, rural, and remote rural areas that had previously been marginally integrated into the response.

In the three districts where key informant interviews were conducted with district-level stakeholders (Bombali, Kambia, and Tonkolili), stakeholders felt that coordination challenges were managed well despite the speed
with which CCCs were established, the lack of precedent for the CCC model, the need to rapidly establish new coordination systems, and the heightened state of crisis in several districts then fighting Ebola outbreaks. In addition to believing that CCCs were well integrated into national and district level coordination systems, key informants and focus group participants felt that CCCs empowered communities to manage Ebola.

Conflicts arose between IPs and DHMTs over the appropriate distribution of responsibility of managerial, supervisory, fiscal and supply chain issues. DHMT members believed that they should have been granted more direct authority over all aspects of CCC management, including supply and disbursement issues; and that the assignment of such responsibilities to NGO IPs implied a gap between UNICEF and the DHMT.

**Peripheral Health Units and Community Care Centers**

Early on, a determination was made that CCCs should be built at a distance from PHUs to minimize the possibility of cross-infection and to protect PHUs from the stigma associated with an Ebola center. However, greater resources were invested into the management of emergency CCCs than PHU strengthening during the Ebola response, prompting rivalries between CCC and PHU staff over training and experience, salaries, hazard pay, staffing ratios, material supply, and facility support. CCCs’ need for extra staff capacity and resources was not in dispute, but the physical, material, and salary separation between CCC and PHU health care workers may have yielded both harmful and positive results.

In principle (and in practice in many communities), coordinators intended for PHUs and CCCs to facilitate patient referrals between the two systems. However, balancing the relationship between PHUs and CCCs proved to be a recurring point of contention during CCC operations. PHUs—state-run primary healthcare clinics that offered fee-for-service treatment for adults—were unprepared for managing possible Ebola cases when the CCC program started. PHUs lacked the necessary infrastructure and supplies to maintain the strict levels of infection prevention and control needed to manage Ebola. CCCs, in contrast, were popular because they offered free limited services for triaging and managing suspected Ebola cases.

The following narrative, shared during an interview with a clinical coordinator based in an IP, illustrates the evolution of PHU and CCC collaboration from animosity to an effective collaboration:

> “The relationship between the PHUs and the CCC was good in terms of clinical treatment. There was a time [when] the PHU was claiming that ... initially when we started, that they were not brought in to be part of the CCC; in the other districts they [PHU staff] were not even going there, they were not having anything to do with them. So when we were going on supervision and having all these complaints, we were talking to a lot of [PHU staff]. They [had heard] that in some district[s] it was the PHU In-Charge [supervisor]...and they are paid. So I told them ... if you are working at the PHU, then you want to work at the CCC, how are you going to man those two areas? There will be lapses in some areas. ... We are all partners, you have your own areas to corner and I have mine too so let just work together because we are here to help you people. If the CCC is not here at all, those people are going to come back directly to you. Then you are at high risk...We have to work together.” –Bombali IP

Differing hazard incentive pay to CCC and PHU health care workers was a chief point of conflict. The Sierra Leonean government set a standard “hazard allowance” for different cadre of health care workers according to expected levels of risk. PHU health care workers’ risk allowances were lower than CCC and ETU workers.

Though PHUs did receive training and materials for infection prevention and control to facilitate Ebola-related triage and referral, local stakeholders repeatedly posed questions that questioned why the resources dedicated to the CCC model were not directed to strengthening local PHUs. Arguments in favour of allocating resources to PHUs highlighted the need to strengthen overall healthcare capacity. As one UNICEF staff member noted, the thinking on this topic evolved over time: “At the time that the CCCs were constructed, no
one would have wanted to manage Ebola in PHUs. At the time the interviews were conducted, perceptions had changed because districts and MOH were looking at health systems strengthening."

This conflict was particularly notable in Tonkolili, where the DERC expressed a strong preference for directing resources to improve PHU facilities, build isolation capacity at PHUs, and provide training and salary support to trained nurses rather than short-term CCC workers (MCH aides and nurse trainees). The Tonkolili DERC’s hardline stance may have contributed to local tensions between PHU staff and CCC staff, which may have further impeded community mobilization. There were reports that PHU staff in some communities refused to treat patients referred from CCCs; while PHU staff complained that they were not provided with sufficient IPC materials like rubber gloves, PPE, cleaning supplies, and chlorine.

Patients, staff, and community leaders, were aware of the different responsibilities of PHUs and CCCs and preferred the CCC model to Ebola management at PHUs. The main difference between CCCs and PHUs that these stakeholders identified was that healthcare was “free, absolutely free,” at CCCs, while various transportation, medication, and nurse fees were imposed at PHUs. PHUs and hospitals are permanent entities built by the state, while CCCs were temporary, and received significant external support from international actors. CCCs were specifically for Ebola, while PHUs were responsible for attending to the total burden of health requirements of the local populations. It was observed that while CCCs may not have directed resources away from PHUs, they contributed to a bifurcation of care. CCCs provided testing for Ebola and isolation of suspected and confirmed cases, while PHUs provided testing for malaria and HIV.

SUPPLY CHAIN MANAGEMENT
Both the DHMT and IPs were responsible for oversight, management, supervision and quality assurance of CCCs. DHMTs were responsible for staff payment. UNICEF managed the procurement and regular supply of consumables, and IPs were provided ancillary budgets to provide ad hoc supply needs.

CCC supply and delivery was variable. Interviews with UNICEF staff suggest that during the period of planning and construction, extraordinary measures were undertaken to deliver CCC goods and materials from foreign vendors to local CCCs in time for facilities to open. When CCCs opened, there were often initial gaps. While CCC staff noted that in general, food supply and IPC supply were good and consistent, CCC staff—especially cleaners—complained that they lacked access to needed supplies (thick rubber gloves for cleaning, rubber shovels, disposable towels, mops). A roving UNICEF logistician facilitated the delivery of supplies to the districts. Often, IPs then delivered supplies to individual CCCs. This was often challenging due to the distances to the CCCs and the transportation demands on IPs. Furthermore, the tools to be used for accountability and documentation by IPs and CCCs were not clearly understood by CCC staff.

There was a lack of clarity about the total burden of the logistical and bureaucratic requirements required to manage CCC facilities’. Although DHMTs and IPs were tasked with ensuring that staff were mentored and supervised and facilities remained well-stocked, CCC nurses reported that a rigorous set of accounting mechanisms were applied to CCC staff. According to IPs, and DHMTs, CCC staff lacked the training to manage these new requirements, and this resulted in recurring delays of some medications, PPE, cleaning supplies, and salaries. As one Tonkolili-based respondent described, these delays could be frequent:

"UNICEF’s data validation process suggested that the bureaucratic requirements reported during FGDs and key informant interviews were overstated. UNICEF’s district level offices believed that there wasn’t much administrative overhead for CCC staff. “They sign forms when supplies were delivered or leave the store room and text their M&E data once a day. The burden on IPs was high and minimal for DHMT.”"
“The strains for fuel a lot of the times, that is really quite normal. There might be no fuel at fuel stations for three days. We did have a stock of fuel here but it would only last for so long. That was like emergency fuel. The other thing was payments to...not the staff here, not the staff that Concern were paying which were the cooks and the local focal people and the child protection and obviously all the supervisors. The challenge was the DHMT not paying their CCC staff that were employed by DHMT which led to huge amount of frustration.” --Tonkolili IP

IPS and DHMTs disputed CCC staff and community leaders’ contentions that there were stock shortages. They also noted that the continued supply of PPE was one of the CCCs’ largest budgetary expenditures, followed by hazard payments to HCWs.

**SALARY DISBURSEMENT**

CCC staff received hazard pay per guidelines issued by the NERC. Hazard pay was transferred on a monthly basis from UNICEF to DHMT, upon each DHMT’s submission of a payment request for the month. The process was long and involved several steps sometimes leading to the delay of hazard pay for CCC staff. Furthermore, the NERC introduced adjustments to the hazard pay amount in April 2015, which dissatisfied CCC staff.

UNICEF, DHMT and IPs played crucial roles in ensuring the timely delivery of supplies and hazard pay. Growing pains experienced at the start of the project were improved over time as concrete systems and processes were put in place and lessons were learnt. However, the timing of decommissioning activities and the processes and schedules that had to be followed to request and deliver hazard pay meant that staff sometimes received their hazard pay a week or two after decommissioning.

**DECOMMISSIONING**

During the establishment of CCCs, UNICEF went to great lengths to emphasize to community leaders that CCCs “belonged to the community.” Patients, staff, and community leaders repeated in focus groups that UNICEF had assured them that “The CCC is yours. It’s for you.” Therefore, when decommissioning processes were initiated and high-value materials like generators, motorbikes and medications were returned to DFID (the donor), communities protested.

UNICEF staff believed that communities misunderstood how resources were supposed to be allocated at decommissioning. All reusable materials like motorbikes, and generators were not intended to stay in local communities; and surplus materials like medicines were intended to be returned to the DHMT for reallocation within districts. They did, however, acknowledge that DFID reversed course on transferring some CCC materials to DHMTs during the process of decommissioning, and that this engendered some conflict with both DHMTs and local communities.

Local stakeholders, like community leaders, also saw the process of decommissioning as flawed. At the district level, stakeholders reported dissent concerning the timing of decommissioning, with key partners objecting that CCCs were being decommissioned while chiefdoms were still vulnerable to reinfection. One chief remarked, “We don’t want the CCC to be demolished because Ebola is still around. And for the matter of fact we can’t tell when secondary school and primary school are going to open [leading to increased traffic in and out of the area]. But if the CCC is still here, we will have confidence.” Communities believed that the re-opening of schools would increase Ebola transmission. Threats of cross-border infection from Guinea, and intra- and inter-district infection also remained concerns.

When asked how they felt about decommissioning, all community stakeholders were staunchly opposed to a full decommissioning of CCCs without investments in parallel health resources. Patients, community leaders, and staff all expressed preference for the physical expansion of CCCs in existing sites, the strengthening or making permanent of CCC structures with durable construction materials, and the expansion of testing, surgical, and treatment capacities. To a lesser extent, patients sought the transfer of CCC capacities to local
PHUs, but they stipulated that this transfer must include the continued provision of free healthcare at PHUs. District area officials in the Ebola response, too, believed that CCCs should be converted to PHUs. One DERC official stated, “Generally, I also want this CCC to be converted as a PHU center because most of the death case we are having; though they are not coming from the CCC, but they are not related to Ebola, especially malaria, and other disease. So yet still these CCCs they supposed to be there and they will help us to contain another disease that you know for [Lassa] fever, and other disease that is disturbing people within those local areas.”

After decommissioning, community leaders had unanswered concerns about the safety and utility of CCC sites. People were concerned about the economic impact of CCCs on subsequent property usage and valuation in the area. In Bombali, for example, community leaders noted that if they had the chance to do site selection again, they would have, “remove[d] it from the town and put it in an isolated area because the land surrounding the CCC has been bought by people.” In the same community, other community leader noted that “The CCC is near the main land and it will hinder development.” Overwhelmingly, however, community leaders agreed that the CCCs had been built in safe, accessible, and useful locations that were well-suited for long-term health structures, and would rebuild CCC sites there again.
Emerging Findings

THE ‘BIG TENT APPROACH’ OR OPTIMAL UTILIZATION? A SHIFT IN STRATEGY
Midway through the CCC programme, concerns arose about very high rates of utilization in Kambia District. High rates of CCC utilization led to intense scrutiny by UNICEF, the Kambia DERC, and DFID. An investigation was carried out to assess if CCCs were being used appropriately to triage and refer patients, or if it had become a “para-PHU” for local communities who sought a broad range of free primary health care services. Some UNICEF staff expressed concerns that patients did not understand the purpose of the CCC, or were using it to treat other kinds of diseases.

This evaluation suggests the concern over CCC utilization in Kambia may have been inappropriate. Focus group data about CCC utilization messaging suggested that across all districts with CCCs, nearly all former patient, community leader, and staff focus groups concurred that CCCs were described to local communities as the first place they should go to for seeking healthcare for any illness that had general symptoms in line with Ebola. Initially, when introducing the CCC concept to local communities, and then engaging in social mobilization to encourage local utilization, CCCs were marketed as “free clinics”. The goal of this message was to drive up CCC utilization by inviting all patients with symptoms of Ebola to present at the CCC for triage and testing; and thereby capture new Ebola cases in early stages, and before widespread local transmission. This was “the big tent approach.” In the sites selected for this study, Tonkolili and Bombali districts had similarly low rates of utilization, while the sites selected in Kono and Kambia had similarly high rates of utilization.

The concern about high utilization in Kambia due to the misuse of CCC services and resources seems to have led to a process that resulted in a shift in messaging that impacted utilization. Evidence suggests that in remote border districts like Kono and Kambia, inclusive messaging worked well and CCC utilization approached rates that far exceeded rates of utilization in districts closer to the interior. As a result, CCC demand for medications, staff, transportation, lab tests, cleaning supplies, and PPE accelerated more rapidly than anticipated. As costs and demand increased in active CCCs, and the total number of cases in Sierra Leone declined, there was a subtle policy shift to refocus the objective of the CCCs from “a big tent approach” to an approach that prioritized optimal utilization of resources through stricter enforcement of SOPs. “The big tent approach” was designed to find the Ebola ‘needle in the haystack’ among general population maladies while establishing a local base for centralizing case identification. The “optimal utilization approach,” in contrast, sought to ensure that the pool of possible cases being managed by the CCCs was smaller, and was comprised of patients that were more likely to be Ebola suspected cases. This shift sought to minimize CCCs’ unintended role as an alternative primary healthcare facility and prioritize CCCs’ role as a center for Ebola-related triage, testing, and isolation for a narrower subset of cases in a receding epidemic.

In the shift from ‘the big tent approach’ to ‘optimal utilization,’ CCC supervisors emphasized that social mobilizers clarify to communities that CCCs were for triaging suspected cases of Ebola, and they began to impose a higher level of scrutiny over resources and messaging. This had both positive and negative consequences. Two positive consequences were the establishment of improved referral systems between CCCs and PHUs, and the allocation of additional resources to the PHU system. Negative consequences included the rapid decline of patient utilization of CCCs in Kambia; and patient resistance to CCC referrals to PHUs. (Staff found it difficult to refer patients to PHUs when they had provided basic medication, such as anti-malarials and paracetamol, to out-patients for several months). Communities had become accustomed to going to the CCC. IPs and DHMTs regarded the shift as helpful, as it reduced ambiguity and confusion among new CCC cases; but CCC staff regarded the shift as resulting in a decline in CCC patients.
LOCAL PERSPECTIVES ON CCC IMPACT ON LOCAL HEALTH CONDITIONS

One Kono staffer commented, “The CCC have helped a lot in controlling the spread of other sicknesses apart from Ebola with have similar signs and symptoms as Ebola.” Relatedly, a Kambia CCC staffer reported that the “CCC helped to control all our minor health issues.” These statements are indicative of many others, and suggest that the increased health communications and surveillance, and testing access offered by the CCCs had a wider impact on healthcare utilization and infectious disease management in poor, rural, remote communities. For example, while the provision of free and accessible healthcare to rural populations primarily increased healthcare utilization, it secondarily encouraged compliance with regional and national systems of surveillance and detection.

PREGNANT WOMEN, CHILDREN UNDER FIVE, AND LACTATING MOTHERS IN KAMBIA

One unanticipated finding from this research involved stakeholder reports of low utilization and confusion concerning the use of CCCs by pregnant women, children under five, and lactating mothers in Kambia. SOPs called for screening pregnant women, children under five, and lactating mothers and to admit them if they fit Ebola case definitions, but to quickly transfer them to the nearest ETU. However, several different sources in Kambia reported the perception that pregnant women, children under the age of five, nursing mothers were not permitted to utilize the CCCs, or that the services they could receive there were limited (see Figure 8). It was unclear if these subpopulations did not come to the CCCs for screening, or if they came to CCCs for screening, but were not admitted, were referred elsewhere or were turned away. Given the centrality of these stakeholders in mobilizing utilization, it is possible that this may have impacted utilization among key vulnerable populations. UNICEF staff report that pregnant and lactating women and children under-five years of age were considered high risk populations in need of a higher standard of care. They were to be immediately referred from CCCs to ETUs. Interviews with the DHMT in Kambia suggest that it was presumed that pregnant women, lactating mothers, and children under 5 were receiving free services from CCCs like all other patients.

Figure 8: Pregnant Women, Lactating Mothers, and Children Under 5 in Kambia

- Because there was no, there is no midwife I think that was one of the reasons why we are not admitting you know pregnant women meeting case definition and then maybe lactating mothers and under-fives. –IP, Kambia
- [If] you are pregnant woman even if you are triage they will not admit you. –IP, Kambia
- Hmm... so to me what is not working with the CCC is like what we heard from the former clinical lead... the procedures. Let's say for we... because we've been restricted from admitting under fives, pregnant women, lactating women, some of these people I'm sure maybe for the future should be included because we might be losing them. And like no one knows they are all human beings they might be positive or whatever or might be suspect cases. And so at the end of the day if they are catered for because like some of this information even go before. They even like they share this information within themselves in the community. [If] you are a lactating even if you go there they will not admit you so people will not show up because they know at the end of the day they will not be admitted. –IP, Kambia
- Even you can see pregnant women going to the CCC; They will say no we are not going to tolerate pregnant women or under five children here. –Social Mobilizer FGD, Kambia
- Child protection takes care of under five children, and we have no admission for pregnant women and children under five. –CCC Staff, Kambia

Staff Living Conditions

High salaries, access to medications and meals, and regular supervision all contributed to the maintenance of a healthy workforce within the CCCs. However, there were some logistical challenges such as recurring
irregularities in food supply, water supply, electricity, and inadequate sleeping accommodation that compromised staff safety and well-being. CCC staff were well protected from contracting Ebola, and during the entire course of the CCC program, not one staff person became infected with Ebola. When staff were sick, they were encouraged to remain at home to prevent spreading illness, or they self-medicated or sought healthcare at local PHUs. However, non-Ebola related staff health concerns were cited several times as a concern. For example, one staff member noted, “Our health is a concern and [there is] no provision for us as health workers.”

Social mobilizers, child protection advocates, and others who worked closely with the CCCs on Ebola-related issues reported that because they worked on Ebola or were affiliated with the CCC, they were regarded as posing a higher infection threat to the general community, and were unable to seek primary healthcare for their own illnesses and injuries at community health facilities like PHUs. In Kambia, a team of social mobilizers requested the establishment of a CCC-workplace health insurance mechanism. Staff would utilize PHU resources, and CCC District coordination would agree to sign off on healthcare utilization costs, “Advocate for us to the PHUs. This staff, we have two staff, a child protection [officer] and [a] social mobilizer. If they get sick from the CCC, when they come to the PHU, make sure you give them medicine. Then they will sign. At the end of the month maybe the office will say; how many staff did this staff come to this center?” Maintaining a healthy and well-trained CCC workforce, both CCC-based staff and social mobilizers, is a priority for the effective management of the CCCs, but it seems that some CCC staff found themselves in a healthcare loophole. In several districts, CCC staff explicitly requested the provision of medications and doctors to see to their own illnesses.

In addition to the already-noted recurring delays in hazard payments, employment at the CCCs was a hardship for CCC staff that should be anticipated in future epidemic responses. Many CCC staff were also unable to live at home and commute to their jobs at the CCCs. Family members barred them from sleeping in the household or required that they remove their clothing; and in one case, a CCC staff member in Bombali reported, “My husband left me because I was working at the CCC.” Communities had committed to providing adequate housing for CCC staff but did not always deliver. UNICEF staff further noted that “Some communities deliberately chose not to provide housing because the CCC staff were from other chiefdoms. They objected to people from elsewhere being employed in their chiefdom/community.” As a result, the CCC became the default dormitory for many CCC staff in all districts, with or without supervisors’ consent, and without supportive capacity as defined by WHO guidelines (WHO 2014). One staff member reported, “We don’t have enough beds to lie on.” Staff repeatedly emphasized the need for beds and improved staff sleeping quarters at the CCCs in order to prevent touching, infection, and transmission of Ebola and other diseases. Another said, “We are talking about no touch policy but we ourselves lie two per bed. This is also risky. So more beds should be provided for staff.” With many CCC staff essentially residing at the CCC facility, recurring irregularities in food supply, water supply, electricity, and sleeping facilities posed threats to staff safety and well-being. Community leaders, in turn, disapproved of poor working conditions for staff and the community had to cater to many of their needs.

SOCIAL MOBILIZATION

As another qualitative study of CCCs in Sierra Leone demonstrated, local communities and broader social, political, and geographic networks had greater capacity to respond to the Ebola outbreak than was perceived by government actors and international agencies. This capacity was often expressed through social mobilization. Social mobilizers played a key role in advocating for CCC utilization, addressing local residents’ and community leaders’ fears about the CCCs, and encouraging early case detection and reporting. As one social mobilizer reported, “We are serving in many pillars [ie thematic coordination structures for the Ebola response]. We serve as contact tracers, response teams, and social mobilizers. We go the extra mile just to help save the lives of our people.” Social mobilizers worked with local community leaders and CCC Focal Persons within communities to identify and pre-empt conflicts, spread information, and support CCC utilization. Both
community focal points and social mobilizers were involved in CCC coordination, as indicated by a social mobilization lead: “[Mobilizers attend] the weekly and monthly meeting with CCC at management meeting level...and also the focal person is also in the community and links with the mobilizers, that is the good thing.”

Specific social mobilization efforts were subject to debate. In FGDs, community leaders reported that loudspeaker campaigns were not seen as effective, but grassroots campaigns using social mobilization meetings, dramas, and community education were regarded as effective. Local social mobilizers were more trusted and more effective than the “outsiders” used at the beginning of CCC social mobilization campaigns. Imams, pastors, and other religious actors were integrated widely into social mobilization activities, although a few focus group respondents mentioned that religious leaders were not used enough. Others called for CCC nurses, specifically, to hold meetings in villages to describe the CCCs.

The reach of social mobilization was extensive. Accessibility in regions with poor roads were well known, but one social mobilizer characterized their experience as follows, “We have hard to reach areas in our communities and only we can be able to reach to extreme communities which are very difficult to reach. Some time we reach to a bridge where vehicles and motorbikes can’t reach. You pack them and walk by foot to go to the people and do sensitization. Only [community-] based social mobilizers can do that.” Community leaders reported that villages not affected by Ebola were not aware of the existence or the intent of the CCCs. Social mobilization efforts were mostly focused on affected communities which explains this gap in information coverage. Social mobilization capabilities depend heavily upon the provision of transportation, communication, and incentives to local workers.

Although the spirit of the WHO Guidelines for social mobilization were respected by social mobilizers and community leaders and were integrated into social mobilization trainings, findings suggest that community members resorted to considerable improvisation and innovation to achieve community sensitization goals. Both CCC Focal Points and social mobilizers effectively functioned as the medium of communication between district and community level Ebola coordination, CCCs, and community leaders, forming what one might imagine as a reciprocating circuit.

“So much interaction, and communication in prevention, and response issues have been ongoing. With conflict resolution, I know all mobilizers have been doing it and where it is difficult the community leaders/elders are involved, because the [social] mobilizers were elected by their community elders with the involvement of the paramount chiefs, so the paramount chiefs so depend on them...They had [bikes] so they can move to many communities and they can respond quickly to issues, paramount chiefs, and sit down and tell them that there is an alert, and he/she need to respond by calling [the social mobilization lead’s] phone too. I call the DERC or I call one of the supervisors to go and inform DERC that people have called, so that they can get back. Because you have to get the information direct, because the desk asked a lot of questions and if you are not on the spot to answer all this information it is difficult. So we encourage them to call even when you go to tell them, to call back the person so that he gives all the information because he is right there at the spot, they will ask operations like, age, gender, where--the village location etc.” – Bombali Social Mobilization Lead

When national networks of case identification and contact tracing overlapped with district-based and chiefdom networks of social mobilization capabilities, the specificity and sensitivity of local case surveillance,
detection and contact tracing measures not only improved, they appear to have experienced a multiplier effect of improved reach and accuracy—or so believed social mobilizers, themselves. In Figure 9: The Narrative of a Social Mobilizer, one social mobilizer’s narrative demonstrates how social mobilizers deployed local informant networks, collaborated with other networks of social mobilizers, and integrated their responsibilities with case tracking and identification.
Interviewer: What is the typical day of a social mobilizer?

Respondent: Social mobilization is [an] everyday process, it is 24 hours.... At times, in the night, you got a call, you see --like me, the last time, on December 6, that the day that I will never forget... We had somebody that was sick in R------, he came to that village and as soon as they understand that there is a sick person in that particular village, they called me [at] 1:00 am in the morning. I took my bike to go there, it about 7 miles. I went there, I saw those who contacted the man, and later we refer [red] him to the PHU because it was the nearest place, and [he] was there for the rest of the night. In the morning we called an alert....They took him and went with him to K---- Hospital and later sent news that the test is positive. Before the result came, I have already isolated the people, I called on the chief, and other people that, these people must stay here for some time, until the result comes. As soon as the result came, it was positive and the DHMT sent another team to quarantine them. From that time, we did not have any positive cases, and that day [was] a very hard day for me, because to find those who [he] had contact[ed] was very difficult. I live with the people in the community, [I have] good communication[s].

Interviewer: How do you do it?

Respondent: I usually have a group of people as mobilizers and I call them village mobilizers. They give us information, as soon as they see a sick person they call on me. [They will not call [say] the name [of the sick person]. As soon as I get the message, I go directly to that house.... [Typically], for a social mobilizer, the first thing when you wake up you need to call your information, because most of us have informants, you know. [We] make sure we try to contact them to see what is happening in their community. The next thing we do, we try to go to the bad bush areas where there is no way you can contact them on phone, you try to at least go there, or at least look for other partners, because in this response there were other partners... We were well fortified, well equipped and well train[ed] by WHO, UNICEF and DHMT to network with other mobilizers trained by other people, so we try to call them to at least get contact to some of them so that they too will give an update as to what is happening in their own areas, then from there you strategize [how] we are going to gather information and forward it to the necessary authority, so that’s the way we used to work.

Interviewer: What are your challenges?

Respondent: One day... one of my task force members called that a motorbike bulldozed the checkpoint at night, and that they had captured it. It was under their custody-I should report it. I took my motorbike and went straight to the point. [There were] two overloaded bikes trying to bypass the checkpoint to escape. I interrogated them--Where are they coming from? They said they had come from K----. I saw two of the passengers who are very close relative of mine... it was a bitter moment for me. I saw my family members flouted the orders, I had no alternative but to report them...I told the task force members that these people must be isolated, because we don’t know why they have decided to board a loaded bike at such time of the night, so the best thing is, don’t touch them, let’s maintain the Ebola protocol. We sat there for about 8 hours... I called M----, who was a member of the surveillance team. I asked him if anything has happened in K----, because I have arrested two over loaded bikes trying to pull out at midnight. He went to the office, he checked, and said oh Mr. S----, somebody died in K----. His family escaped with him and he has died. I asked the name, he told me the name... the guys were escaping quarantine because they know that their dead relative died of Ebola. Somebody had given them a tip that their dead father was Ebola positive, so they wanted to escape to go to Freetown and Makeni. I called on the police, we called on DERC. When I went there, I informed the mobilizers before the team came— [and then we assembled contact lists].
A social mobilizer reported that through their multiple roles as advocate for medical services, case-tracker, and response team, they could bridge the gap between rural communities and PHUs after Ebola. “We don’t have enough PHUs in this country so if social mobilization is sustained we will reach the extreme corner of our area and bring the sick people to the PHUs so that the people will reduce the sick and death.” Another reported, “As far as the CCC has being decommissioned, social mobilization will still motivate people to use the PHUs right because as I said we have other contagious diseases, like cholera, measles and will be treated when you go to the PHU we will motivate our people at local level to go to the PHUs and get treatment there.”

The empirical impact of social mobilization requires further empirical investigation using anthropological and social mobilization data. However, the above narrative does suggest that the resources provided to “social mobilizers”—salaries, motorbikes, cell phones—enabled social mobilizers to function as credible intermediary networks between organized national response networks and local organic social networks that extended well beyond social mobilizers’ primary connections. A chief in Kambia, for example, reported “The chiefs, the neighbourhood watch are also acting as mobilisers.” This intermediary function is further supported by a social mobilizer in Tonkolili, “People were saying that, my husband, my child, he or she is working at the Community Care Centre so whatever messages that these people are coming to give us, there is need at least for us to accept it and send it to remote villages and continue educating our people and at the end of the day we were able to achieve whatever we want to do.”

Former patients expressed a willingness to become informal social mobilizers themselves. Among those who had sought care at a CCC, all were unanimous in advocating with their peers to use CCCs as needed. Patients

**Figure 10: Patients as Social Mobilizers**

**Former Patients’ Messages to the Communities about CCCs:**

“I will use myself as an example to tell people to go the CCC.”

“I will advise them to call #117.”

“I would encourage people to go, but do not touch them or go near them.”

“I would tell them ‘do not touch sick people or wash dead bodies.”

“Tell them that in the CCC, they give you food and encourage you.”

“I like the idea of getting information from us. This shows that the government wants to help us like how they help us to be well.”

had appropriate recommendations for encouraging individuals to go to the CCC if sick. Emphasis was on personal encouragement, role-modelling, quality of care. However, former patients also noted that their ability to act effectively as community-based liaisons with the CCC was hampered by public perceptions that they were being paid by NGOs to spread the word about CCCs, or that they had monetarily benefited from Ebola survivorship.

**FORMER PATIENT/SURVIVOR’S ISSUES**

Former CCC patients provided insights into patients’ experiences before coming to the CCC, during their stay at the CCC, and after their return to their communities from a CCC (if they were Ebola-negative) or an ETU (if Ebola-positive). In addition to patients’ experiences at the CCCs reported above, this data provides insights into the post-CCC experience, and the experience of community reintegration by Ebola survivors. Many former
CCC patients reported that they had been warmly welcomed back to their communities\textsuperscript{viii} (see Figure 11). As reported elsewhere, Ebola survivors complained of eyesight problems and body pains, and requested palliative care and medications from the CCC that the CCC was unable to provide.

Survivors also reported significant economic hardships caused by their experiences with Ebola. During quarantines and periods in Ebola case management facilities, patients lost control over their property; their belongings were destroyed or stolen and their homes were often destroyed. The death of family members devastated household economies and livelihoods by destroying labour and capital, and undermining agricultural production and market trade. The impact on agriculture is exemplified by this quote from a Bombali former patient, “My rice was ripe at the swamp but I lost my husband and I didn’t have anybody to harvest it for me. I took 42 days in the ETU after I was discharged, all I left behind was stolen by the community people.” Several children reported having lost family members who were paying their school fees, and were unable to return to school as a result.

Figure 11: Former Patients/Ebola Survivor Community Reintegration Issues

<table>
<thead>
<tr>
<th>Before Using the CCCs</th>
<th>When I was sick, my brother piled pressure on other family members before they could bring me to the CCC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Post-CCC Experiences</td>
<td>“They treated me well.” “Nobody said bad things against me.”</td>
</tr>
<tr>
<td></td>
<td>“They accepted me and I called a meeting telling them about the good news.”</td>
</tr>
<tr>
<td></td>
<td>“They held me well. All members of my family and community were very happy seeing me returning home Ebola free.”</td>
</tr>
<tr>
<td>Negative Post-CCC Experiences</td>
<td>“I was stigmatized. I was told not to launder my clothes in the stream after I came from the CCC. I did not return home again. This is because my husband has died and my child had died of Ebola so I have no reason to go there.”</td>
</tr>
<tr>
<td>Survivor Support</td>
<td>Issues with NGO-follow through providing survivor documentation and support packages.</td>
</tr>
</tbody>
</table>

Ebola survivors also complained of a range of problems like difficulty obtaining survivor care packages from NGOs, difficulty obtaining documentation that proved their survivor status, and community rejection and stigma.

\textsuperscript{viii} It should be noted that there is likely to be reporting bias around these issues. Patients may well have gone to the CCC because of positive social support, and it is consistent that they would have returned to a climate of positive support. Conversely, we are not likely to capture appropriate individuals who were discouraged from using the CCC when sick because they were less likely to have used CCC services.
Discussion

COMMUNITY CARE CENTERS AS AN EPIDEMIC RESPONSE STRATEGY

When one UNICEF staff was asked “What would you have done differently with the CCCs? Do you have any regrets?” the response was, “I have no regrets, absolutely no regrets. My only regret is, we waited too damned long.” Although resources were available to assess key health systems vulnerabilities prior to their occurrence, major weaknesses in Guinea, Liberia, and Sierra Leone’s health systems and a dearth of international engagement prevented an effective and early response to the 2014 Ebola epidemic. In all post-hoc analyses, a common thread of agreement emerges:

“Several health-system functions that are generally considered essential were not performing well and this hampered the development of a suitable and timely response to the outbreak. There were inadequate numbers of qualified health workers. Infrastructure, logistics, health information, surveillance, governance and drug supply systems were weak. The organization and management of health services was sub-optimal. Government health expenditure was low whereas private expenditure – mostly in the form of direct out-of-pocket payments for health services – was relatively high.”

Further health systems limitations include a poor integration of local, national, and international response capabilities and political and economic barriers to effective and timely governmental response.

CCCs are a new model of decentralized epidemic control and prevention first tested in the 2014-2015 West Africa Ebola epidemic. It is crucial to situate the findings of this report in the context of broader health systems failures, and to consider precisely how the CCC initiative did, or did not, address broader systemic failures and contribute to long-term health systems resilience.

What were CCCs able and unable to do? Let’s start with the successes. Once implemented, CCCs filled many of the critical functional and systemic gaps described in the quote above. The program used innovative means of healthcare worker recruitment to expand the healthcare workforce, provided high-quality, intensive and rapid training to new healthcare workers, integrated functions into local communities, chiefdom leadership, and district administration. It built and funded an extraordinary parallel capacity for infrastructure, funding, logistics, and testing that intersected with Sierra Leone’s national and district health sector administration at key junctures that sustained national ownership and control. New capacities for surveillance and reporting were devised and integrated into the CCC infrastructure and intensive integration of social mobilization capacities, community liaisons, healthcare workers, and district and NGO administration occurred. Importantly, the CCC program was hugely popular among local populations for its provision of free Ebola-related medications, food, clothing, and a perceived high standard of care. CCCs were, for the most part, geographically, economically, politically, and socially accessible to local families and it was accountable to local communities and chiefdom and community leaders. CCCs were the right response to an escalating epidemic in a weak health systems context.

Despite the impressive successes of the CCC program, its limitations must be acknowledged. First, CCCs were a stopgap measure with a limited timespan that could ultimately have little impact on the overall strength of the Sierra Leonean health system. Second, CCCs’ late arrival highlighted the systemic weaknesses that existed before they came. CCCs required extensive, complex, and costly resources, wide geographic reach, and a massive mobilization of global expertise and networks in order to establish, maintain, and transition the programme. And ultimately, their impact was temporary and targeted towards a single disease outbreak.

CCCs were the subject of intense debate prior to implementation and critique after implementation. At the heart of the CCC debate lies fundamental questions about when and how international, national, and local
communities should invest in durable local capacities for emergency and epidemic response at the local level. During the Ebola epidemic, debates over CCCs involved experts who doubted local communities’ capacity to prevent the spread of Ebola in local centers. UNICEF-based informants suggest that at the outset of the Ebola outbreak, CCCs were considered to be risky. Some key partners discredited CCCs on the grounds that CCCs would not be feasible, acceptable, or effective. Several experienced partners considered the model unacceptable. They favoured larger centralized centers with highly skilled staff and feared that CCCs would incubate rather than control the spread of Ebola.

Others argued for the need for household and community-based response capabilities to complement ETUs. Fearing a centralized response contributed to infections by creating an environment of fear and distrust about the relocation of patients out of communities and burdened local transportation and healthcare resources with undue exposure to infection. Experts have argued that the need for CCCs was itself an indication of a much wider systemic failure to respond at the right time.

While both sides of the debate had credible arguments, the CCC experience in northern Sierra Leone suggests that the establishment of a local capacity for emergency response can be effective for social, structural, and political reasons, and it should be considered again in similar situations. However, arguments about the delayed timing of the introduction of CCCs, and the high cost of introducing CCCs into local terrains impacted by epidemics also suggests that these debates should not be taking place in the midst of an escalating epidemic in a region known to have weak healthcare and governance capacities, as delays in local response contribute to the escalation of the epidemic and may have augmented difficulties for establishing local CCC facilities. Olu et al. 2015, in particular, argues that “Further definition for its use, guidelines for its roll out, management, supervision, monitoring, and evaluation are required.” Oosterhoff and Wilkinson (2015) identify complex issues like stigma, political favouritism, community distrust, and healthcare resource competition as having intersected with the establishment of CCCs.

Other reviews of CCCs assert that CCCs were an acceptable model of epidemic control that expanded the reach of the existing Ebola response infrastructure in Sierra Leone and encouraged communities to seek health care when sick. They played a protective role for local clinics and hospitals by effectively creating a parallel network of Ebola-specific clinics (CCCs) and hospitals (ETUs) that allowed for the retraining, resupply, and return of healthcare workers to local healthcare facilities. These studies also suggest that CCCs were able to support ‘native’ emergency resilience capacities in local communities by empowering local networks to engage with the response and overlapping with indigenous capacities for social mobilization and political and social leadership engagement.

**KEY LESSONS FROM UNICEF’s SIERRA LEONE COMMUNITY CARE CENTERS**

Evidence from this review supports recent recommendations for “Building Back Better” post-Ebola most recently published in the Lancet. In the aftermath of epidemics, during CCC decommissioning, robust plans should be implemented to 1) support primary health systems; 2) make essential medicines and health commodities free to local populations; 3) reintroduce preventive and promotive health measures rapidly; 4) integrate health surveillance systems into general health systems; and 5) strengthen systems for management and implementation. This report goes beyond these recommendations to advise that at district and community levels in countries like Sierra Leone, for these measures to be locally desired and supported, they must be inclusive of all demographics, and the must complement local social and cultural systems and practices in order to ensure adoption and continuous engagement.

Communities demonstrated that they could be encouraged to re-engage with community-based healthcare facilities by (1) engaging in robust social mobilization with the support of community-based leadership, (2) removing cost and transportation access barriers to healthcare, (3) facilitating family access to patients by localizing healthcare options, and (4) ensuring (with other partners) that local healthcare facilities have visible, demonstrable measures in place to prevent the spread of infection.
CCCs empowered communities to manage Ebola locally, overcome local residents’ fears about seeking care for Ebola in distant facilities, and, “gave people the courage to bring sick people out of their homes.” Local communities were able to rapidly adapt to new recommendations and new ways of engaging with epidemic-related triage and testing facilities with appropriate incentives and oversight. Each of the above mentioned attributes was part of the WHO CCC model, which according to this review proved acceptable and feasible in an epidemic context in rural Sierra Leone and can be considered factors that improve health system resilience.

Most stakeholders interviewed believed that CCCs cut down the spread of Ebola disease by providing accessible, decentralized services. These qualitative findings supported modelled findings of CCCs’ effect on Ebola transmission using quantitative data from the same districts. CCCs empowered communities to manage Ebola locally. CCCs helped overcome local residents’ fears about seeking care for Ebola in distant facilities, and as one respondent noted, CCCs “gave people the courage to bring sick people out of their homes.” Through proximity, CCCs overcame the financial and logistical hurdles involved in transporting sick family members across long distances.

CCCs community focal persons and social mobilization networks substantially expanded the prevention and case detection capacity for CCCs in geographically isolated regions. Testimonies from social mobilizers like those provided in Figure 8 suggest that social mobilizers played a major role integrating local social mobilization networks into the national surveillance network. It appears that resources provided to social mobilizers—salaries, transportation, cell phones—enabled social mobilizers to function as credible intermediaries between organized national response networks and local organic social networks. Through these mechanisms, it is plausible that the specificity and sensitivity of local case detection and contact tracing measures expanded their reach and accuracy. Further analysis of these assumptions, which integrate anthropological and social mobilization programme data, area needed.
Recommendations

The use of CCCs for epidemic response:

1. CCCs can be a functional and effective component of a holistic approach to epidemic response. A strong epidemic response requires a multi-faceted approach linking high-level medical facilities such as ETUs with decentralized local healthcare facilities such as CCCs, and robust social mobilization investments and activities.

2. High-level political debates about CCC use and implementation could impact the programme’s success. Discussion about the deployment of CCCs should be carried out during periods of stability and in conversation with health systems strengthening discussions. Political buy-in of senior-level stakeholders must be secured and communicated in order to avoid local level conflict.

3. Changing notions of “appropriate utilization” of CCCs demonstrates that national and donor-level policy shifts occur frequently under emergency conditions and should be tracked carefully to ensure that they do not lead to unanticipated coordination or communication challenges that affect CCC use at the local level.

4. CCCs functioned as local health units with an explicit mandate to respond to Ebola. In some ways, this placed CCCs in direct competition with PHUs, which have a broader mandate for primary health care at the local level. In order to facilitate coordination and avert conflict, communities, stakeholders, and agencies should define the intended relationship between PHUs and CCCs, and actively engage PHUs in CCC administration. In contexts where PHU structures could be optimized to isolate Ebola patients and facilitate rapid transfer to higher-level ETUs within close proximity, this could be explored as an alternative arrangement.

Improving the performance of CCCs:

5. When selecting CCC sites, consideration should be given to how the presence of a CCC facility will impact land use and road access during CCC operations and after decommissioning.

6. Initial planning activities should account for the medical and residential requirements of CCC staff. While adequate salary support and meals were provided, staff lacked appropriate physical conditions for rest, recovering from illnesses, and sleep.

7. The credibility of the CCC model is necessary for its success in implementation. In order to enhance CCC credibility, greater clarity and transparency is needed with regards to (1) the role of implementing partners (IPs) and the differentiation of roles and responsibilities between district health management teams (DHMT) and IPs, (2) local oversight and access to CCCs, and (3) key decisions made with regards to implementation.

8. All CCC-related trainings should integrate CCC management and oversight expectations and responsibilities into initial planning. Labour and resources should be added to the standard CCC “kit” to offset the burden of labour associated with meeting administrative expectations such as stock management; and to prevent delays in funding, salaries, and supply gaps.

9. Plans for distribution of durable goods and high value resources during decommissioning should be made clear at the outset of CCC programmes as not to create false expectations in communities.

10. CCCs support for Ebola survivors requires better definition and wider integration into survivor health and economic support systems.

11. CCCs are likely to be needed for longer timeframes than this experience anticipated. In Sierra Leone, CCCs were intended to be utilized for 4-5 months, but many were maintained for up to 12 months to
prevent unanticipated outbreaks during the return of post-epidemic routine conditions. This implies reconsideration of CCC construction and maintenance plans.

**Ensuring active community engagement and robust social mobilization:**

12. When planning the introduction of CCCs, consultation with community leaders and local government officials should take into account the impact of CCCs on local economic, transportation, and social conditions. Further research should be conducted to evaluate if the community engagement aspects of this CCC experience (CCC Focal Persons and social mobilization) expanded the capacity for CCCs to play a role in ‘active surveillance’ in geographically isolated regions; and to examine how social mobilization interacts with local case detection and contact tracing measures to improve reach and accuracy of case detection.

13. Current WHO guidance (World Health Organization 2014C) for social mobilization requires updating to better capture grassroots social mobilization requirements and demands. Further research is needed on the interaction between CCC Focal Persons, Social Mobilization networks, local cultural conditions, and overall epidemic response in order to assess the social epidemiological implications of CCC-community engagements during epidemic response.

14. Social mobilization capabilities depend heavily upon the provision of transportation, communication, and incentives to local workers. With these resources, social mobilizers function as “network intermediaries” between local informal networks and national surveillance networks.

15. CCC staff faced numerous challenges providing patient care within the CCCs due to misinformed patient beliefs. With improved training and information dissemination, social mobilizers can mitigate conflicts when patients receive care at the CCCs by providing information and counselling prior to arrival.

16. Social mobilization capacities may be able to link expanded surveillance capabilities during epidemics with post-epidemic health systems resilience investments. Sustained low-level investments in social mobilization capabilities can therefore be seen as a meaningful investment in local health surveillance systems. These capabilities should be fully integrated into national planning for Community Based Surveillance models.
Limitations

STUDY STRENGTHS
The strengths of this study include the timeliness of the research, the possibility of inter-district comparability, the multi-level qualitative engagement of a variety of community, leader, patient, and staff views that allow for a meaningful discussion of CCC relevance, grounded in context, historical conditions, and individual participants’ subjective observations. The data are original, the topic is impressively important for current and future public health deliberation, and the range of comparable studies available is limited.

STUDY LIMITATIONS
There were several field-based methodological limitations\(^a\) that may suggest institutional bias (representation of findings as more favourable than they might have been), participant bias (hesitation to speak frankly, to critique the project, etc.), and challenge the empirical reliability and validity of the data.

1. Study design and implementation was led by UNICEF staff, rather than independent researchers. Data collectors conducting KIls were known UNICEF staff, involved in data collection for the purposes of program evaluation. Data collection may have involved some conflicts of interest on the part of both interviewers and respondents. To redress this issue, steps were taken to ensure internal validity of findings, including the triangulation of data sources by interviewing multiple stakeholders and the maintenance of a high standard of data integrity (including both recording and handwritten notes by multiple research assistants). In order to introduce a high standard of external validity, UNICEF recruited an independent social scientist with regional and topical expertise to analyse the data collected.

2. There were inconsistencies in data collection. As noted earlier, FGD data was collected in Kono, but KIl and FGD data were collected in all other districts. Additionally, some recorded data from Kono was lost. As a result, there were limitations on researchers’ abilities to draw inter-district comparisons. Field-based constraints prevented key informant interviews across comparable roles at the DHMT, DERC, and IP levels. Due to field-based conditions, discussions were held with social mobilizers in Bombali, Kambia, and Tonkolili districts, but not in Kono.

3. There were inconsistencies in data quality. UNICEF was unable to obtain audio recording files in some districts, like Kono and Kambia. There was no hand-written or audio record of key informant interviews in Kono District.

4. There was a lack of clarity at the study’s inception about whether or not this study was intended for the purpose of research, or for program evaluation purposes. As a result, this study was not submitted for review by UNICEF to the Sierra Leone Institutional Review Board for the Protection of Human Subjects. However, this study meets standard criteria for human subject research protection in qualitative data collection, including informed consent and ensuring the confidentiality of respondents. At the time of writing, retroactive review is being pursued with the Sierra Leone Ministry of Health.

5. A district-based data validation process was conducted in the course of report drafting and revision. The data validation process, however, was incomplete, and principally included DHMT, IP, and UNICEF

\(^a\) In order to identify methodological limitations that have wide-ranging implications for analysis, Abramowitz conducted “research into the process of research” in order to inventory roles in data collection and analysis, build an inventory of data collection activities conducted by UNICEF staff, and consider the overall scope of the methodological engagements. Specifically, Abramowitz directly consulted with UNICEF staff members to document specific data collection activities, analytic priorities at the time of data collection, and appraise community acceptance and participation.
staff. Data validation was not conducted with community-based groups, resulting in some divergence in descriptions of events and trends.

6. Data collection, while timely, was for many key themes conducted retrospectively, which may contribute to some recall bias.

Steps were taken to redress each limitation. Efforts were made to minimize bias in data collection by using staff not working in the district to conduct the data collection. To redress data collection problems in Kono, the analysis refrains from making any comparative inferences about Kono district policies, processes, or outcomes. To address the lack of equivalence in KII s, inter-comparability between districts has been kept to a minimum. To redress the issue of missing or absent recordings, we used note-takers’ hand-written notes.
Works Cited


6. World Health Organization. “Key Considerations for the Implementation of an Ebola Care Unit (ECU) or Community Care Centre (CCC) at the Community Level.” Second Version-October 2014.


16. Abramowitz, SA., Bardosh, K., & Heaner, GK. 2015. “It was like we prepared for a battle that never came!” *Evaluation of Save the Children’s Community Care Centers in Dolo Town and Worhn, Margibi County, Liberia*. 

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Appendix

APPENDIX 1: THE CCC MODEL

Figure 11: CCC Model
APPENDIX 2: MAP OF SELECTED DISTRICTS AND CCC SITES

Figure 12: Sierra Leone districts with CCC districts highlighted

Figure 13: Bombali District CCC sites with selected sites for this assessment highlighted
Figure 14: Kono and Kambia districts CCC sites with selected sites for this assessment highlighted
Figure 15: Tonkolili District CCC sites with selected sites for this assessment highlighted.
## APPENDIX 3: CCC STUDY SELECTION CRITERIA

### Figure 16: CCC selection summary

<table>
<thead>
<tr>
<th>District</th>
<th>Total CCCs/ Beds</th>
<th>CCCs Operational (2014-2015)</th>
<th>CCCs in Study</th>
<th># of CCCs open during research period</th>
<th>Data Collection Period (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombali</td>
<td>15/120</td>
<td>Nov 17-Dec 1</td>
<td>3</td>
<td>9</td>
<td>March 24-26</td>
</tr>
<tr>
<td>Tonkolili</td>
<td>13/104</td>
<td>Dec 9 – Dec 20</td>
<td>3</td>
<td>7</td>
<td>March 31 – April 1</td>
</tr>
<tr>
<td>Western Rural</td>
<td>2/48</td>
<td>Dec 27 – Jan 1</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Kambia</td>
<td>12/96</td>
<td>Dec 31 – Jan 15</td>
<td>3</td>
<td>12</td>
<td>April 8 – 10</td>
</tr>
<tr>
<td>Kono</td>
<td>4/36</td>
<td>Jan 3 - Jan 13</td>
<td>2</td>
<td>2</td>
<td>April 21</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td></td>
<td>11</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

### Figure 17: Selected CCC descriptive details

<table>
<thead>
<tr>
<th>District</th>
<th>CCC</th>
<th>Time to district capital</th>
<th>Total Triaged</th>
<th># of Ebola positive cases</th>
<th>Open Dates</th>
<th>Other characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombali</td>
<td>Binkolo</td>
<td>1 hour</td>
<td>22 (86% complete)</td>
<td>7</td>
<td>Nov 17-Apr 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mapaki</td>
<td>1 hour</td>
<td>258</td>
<td>0</td>
<td>Nov 17-Apr 4</td>
<td>34% of patients within 48 hours symptom onset</td>
</tr>
<tr>
<td></td>
<td>Panlap</td>
<td>&lt;1 hour</td>
<td>250</td>
<td>33</td>
<td>Nov 17-Apr 4</td>
<td>High Ebola+ caseload after opening</td>
</tr>
<tr>
<td>Tonkolili</td>
<td>Robis</td>
<td>45 min</td>
<td>190</td>
<td>3</td>
<td>Dec 9–Apr 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bumbuna</td>
<td>2-3 hours</td>
<td>191</td>
<td>0</td>
<td>Dec 10-Apr 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Misingbi</td>
<td>3+ hours</td>
<td>763</td>
<td>3</td>
<td>Dec 13-14 July</td>
<td></td>
</tr>
<tr>
<td>Kambia</td>
<td>Mambolo</td>
<td>1 hour</td>
<td>1993</td>
<td>1</td>
<td>Dec 31-present</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kabaya</td>
<td>2 hours</td>
<td>1926</td>
<td>1</td>
<td>Jan 4-present</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mafaray</td>
<td>1-1.5 hours</td>
<td>1857</td>
<td>1</td>
<td>Jan 15-present</td>
<td></td>
</tr>
<tr>
<td>Kono</td>
<td>Fiama</td>
<td>2 hours (road network really bad)</td>
<td>1294</td>
<td>0</td>
<td>Jan 9-present</td>
<td>1.83 days mean time from symptom onset to admission</td>
</tr>
<tr>
<td></td>
<td>Ngandorhun/ Gabane</td>
<td>2.5-3 hours (road network really bad)</td>
<td>1493</td>
<td>0</td>
<td>Jan 13-present</td>
<td>2.62 days mean time from symptom onset to admission</td>
</tr>
</tbody>
</table>
APPENDIX 4: SUMMARY OF QUALITATIVE DATA

Figure 18: Focus group discussion and key informant interview priorities for investigation and relevant stakeholders

<table>
<thead>
<tr>
<th>CCC COMPONENT</th>
<th>STAKEHOLDERS FOR INTERVIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Selection</td>
<td>District Medical Officer (DMO), District Ebola Response Coordination (DERC), Chiefs/local leaders</td>
</tr>
<tr>
<td>Community Engagement &amp; Social Mobilization</td>
<td>Chiefs/local leaders, CCC community liaisons, Implementing Partner (IP) Social Mobilization Staff, CCC staff, CCC former patients</td>
</tr>
<tr>
<td>Construction and Decommissioning Staffing/training</td>
<td>UNICEF construction and WASH staff, IPs, CCC staff, Chiefs, DERCs.</td>
</tr>
<tr>
<td>Package of Services: Case Management, Child Protection, Social Mobilization</td>
<td>District Health Medical Team (DHMT) focal points, IP staff (coordinator and supervisors), CCC staff, DERC stakeholders, Laboratory staff, former CCC admitted patients</td>
</tr>
<tr>
<td>Monitoring &amp; Quality Assurance</td>
<td>DHMT, IP staff, CCC staff</td>
</tr>
</tbody>
</table>

Figure 19: Distribution of focus group discussion participants by group and location

<table>
<thead>
<tr>
<th>CCC Location/Chiefdom</th>
<th>District</th>
<th># Leaders</th>
<th># Patients</th>
<th># CCC Staff</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binkolo</td>
<td>Bombali</td>
<td>7</td>
<td>5</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Mapaki</td>
<td>Bombali</td>
<td>6</td>
<td>10</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Panlap</td>
<td>Bombali</td>
<td>5</td>
<td>11</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Robis</td>
<td>Tonkolili</td>
<td>5</td>
<td>11</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>Bembuna</td>
<td>Tonkolili</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>Masingbi</td>
<td>Tonkolili</td>
<td>7</td>
<td>2</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>Mafaray</td>
<td>Kambia</td>
<td>12</td>
<td>3</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>Mambolo</td>
<td>Kambia</td>
<td>4</td>
<td>10</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Kabaya</td>
<td>Kambia</td>
<td>10</td>
<td>1</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>Gbane</td>
<td>Kono</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Fiama</td>
<td>Kono</td>
<td>8</td>
<td>3</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>78</td>
<td>69</td>
<td>115</td>
<td>262</td>
</tr>
</tbody>
</table>
**Figure 20: Characteristics of focus group discussion participants**

<table>
<thead>
<tr>
<th>Employment</th>
<th>Community Leaders (includes Assistants, Deputies, and Acting)</th>
<th>Patient Participants (includes two former-patient accompanying minors)</th>
<th>CCC Staff</th>
</tr>
</thead>
</table>
|            | Bararray leaders  
Chairman  
Section leader  
Women's leader  
Mammy queen  
Youth leader  
Town chief  
Counselor  
Speaker  
Community health worker  
Farmer  
Religious leader  
Focal person  
Bike rider  
Imam  
Ceremonial head  
Ward member  
Child protection  
Clerk  
Pastor | Survivor  
Admitted  
Guardian/Parent  
Student  
Caretaker  
Farmer  
Teacher  
Housewife  
Elderly  
Teacher  
Business  
Carpenter  
Construction worker | Supervising Nurse  
Nurse  
Security  
Cleaner  
Sprayer/Chlorinator  
Laborer  
CHW  
Social mobilizer/Communicator  
Focal Person/Liaison  
Officer  
Child advocate |

| Age: Mean | 53 | 37 | 30 |
| Median (range) | 51 (18-89) | 30 (7-89) | 29 (18-55) |
| Gender (M/F) | 55/14 | 26/38 | 64/47 |

*Incomplete data*
**Figure 21: Characteristics of key informant interviewees and special focus groups of social mobilizers**

<table>
<thead>
<tr>
<th>District</th>
<th>Key Informant Interviewees and Special Focus Groups of Social Mobilizers</th>
</tr>
</thead>
</table>
| Bombali  | DMO  
Social Mobilization Lead  
DHMT Social Mobilization Lead  
DHMT Supervision Team  
IP – Supervisor  
IP – Social Mobilization Lead  
DERC District Coordinator  
Social Mobilization FGD |
| Tonkolili| DHMT  
DHMT Supervision Team  
IP – Health Advisor  
IP – Social Mobilizers  
DERC  
Social Mobilization FGD |
| Kambia  | DMO  
IP – Supervisor  
IP – Supervision Team  
DERC – District Coordinator  
DHMT – Nurse Supervisor  
DHMT – Nurse Supervision Team  
Social Mobilization FGD |
| Kono     | None |
APPENDIX 5: INFORMED CONSENT AND INFORMED PARTICIPATION SCRIPTS

Figure 22: Focus group discussion informed consent language
You have been asked to participate in a focus group discussion to help document lessons learned from the operationalization of Community Care Centers for Ebola (CCC’S) in Sierra Leone.

The purpose of the focus group is to better understand your perspectives on how the ccc contributed to the district Ebola response, what worked well, and what challenges were encountered.

This information will be used to inform UNICEF’S documentation of the ccc experience in Sierra Leone. Your personal information and what you specifically say will not be attributed to you or even to this specific ccc. It will remain anonymous.

You do not need to participate in this discussion if you do not want to.

You can choose to stop at any time.

Your participation is voluntary.

You will not be compensated for your participation.

I understand this information and agree to participate

(signature/thumbprint) date

Figure 23: Sample opening script for a focus group discussion
- Thank you for meeting with us today.
- My name is ______________ and my colleagues are ___________ and ____________.
- We are in the process of talking to many people who have been working on the CCCs in ________ district to get people’s input on the CCCs.
- We would like to talk to you for about 45 minutes to an hour to understand what has worked well with the CCCs and what you think should be improved. We would also like to know how you feel CCCs have or have not contributed to controlling Ebola in this area.
- Nothing that you say in this discussion will be attributed to you or even to this CCC.
- But your thoughts and recommendation will help inform how CCCs are used if they are ever needed to respond to a disease outbreak here in Sierra Leone or somewhere else in the future.
- If you don’t want to participate in this conversation, that is OK. And if you don’t want to answer any of the questions we ask, that is also OK. Your participation is voluntary.
- Do you have any questions about why we would like to talk to you today?
- I am going to ask some questions and ______________ and ______________ are going to take notes so that we can remember what you have said after the interview is over.
- We would also like to record the interview in case we want to listen to it again to make sure we remember what you said. The recording will be confidential and will not be shared with anyone in the community, at the Ministry of Health or with ___ (NGO partner) __________. Is it OK with you if we record our discussion?
APPENDIX 6: INTERVIEW AND DISCUSSION GUIDES

Figure 24. Focus group discussion guide: former admitted patients

Question 1: How did you find out about the CCC?
   a. Who told you about it?
   b. What did you hear about it before you arrived?

Question 2: Why did you decide to come to the CCC?
   a. Did your friends and family support your decision to come to the CCC?
   b. Did you know of other places that you could for Ebola treatment?
   c. Why did you select the CCC?
   d. How are CCCs different from other places people can go to for treatment?

Question 3: Can you explain what happened when you came to the CCC?
   a. Did the CCC provide good care for you? In what ways did it provide good care?
   b. Was there anything that you did not like about the CCC or the way you were treated at the CCC?

Question 4: How was your experience returning home after you left the CCC? Could you tell me what happened after you left the CCC?
   a. How did your family and community react when you returned from the CCC?
   b. Is there anything the CCC staff could do to make your transition home easier?

Question 5: What ideas do you have to encourage people to seek treatment for Ebola or Ebola symptoms?
   a. Do you think there are some things that could be done to make people in the community know more about the CCC?
   b. Do you think there are some things that could be done to make people feel like the CCC will help them if they are sick?

Question 6: How do you think people in your community will feel when the CCC is no longer here?

Question 7: Is there anything else you would like to tell me about the CCC?

Figure 25: Focus Group Discussion Guide: Community Leaders
(PARAMOUNT CHIEFS, CCC LIAISON/FOCAL PERSON, LOCAL LEADERS)

Question 1: Have there been any benefits having a CCC in your chiefdom? What are they?
   a. Can you explain more or give an example?

Question 2: Have there been any challenges to having a CCC in your chiefdom? What are they?
   a. Can you explain more or give an example?

Question 3: If you had to decide again, would you put the CCC in the same place?

Question 4: How is the community involved in supporting the CCC?
   a. What do the community do to support the CCC, can you give some examples?
b. Do you have any ideas about how the community could be more involved in the work of the CCC?

Question 5: Do you think everyone in the community understands the purpose of the CCC? What do they think the main purposes are?

a. Do you think some people in the community do not understand the purpose of the CCC? If so, what do you think the misunderstandings are?

b. Have people in the community felt comfortable going to the CCC if they feel ill? Have you heard of people in the community who were sick, but did not want to go to the CCC? Why do you think that is?

c. Do you think the social mobilization activities about CCC in your community have been good? Did they help your community? In what ways?

d. Did some social mobilization activities not work well? Can you tell me why? What else could have been done/done differently?

Question 6: If you had to start the CCC process again from the beginning, is there anything that you would like to be done differently and why?

Question 7: Is there anything else about the CCC that you would like to tell me?

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**Figure 26: Focus group discussion guide: CCC staff**
(Nurses, Hygienists, Security, Community Liaison)

**Question 1:** Could you please describe your role at the CCC?

a. What makes it challenging to fulfill your role?

b. What makes it possible for you to fulfill your role?

**Question 2:** Do you think that the training and supervision support that you received while you were working for the CCCs helped you do your job well?

a. What did you think of the classroom training and onsite mentorship training that you received?

b. In what ways did UNICEF, DHMT, the NGO partner help you perform your role well?

c. In what ways can they improve?

**Question 3:** Did you have any concerns about your own safety while working at CCCs?

a. What do you think could be done to make you feel more safe?

**Question 4:** Do you think that the systems in place at the CCCs (posters, registers, tools) allowed you to provide good patient care for people who came to the CCCs?

a. What worked well with triage and patient care?

b. What was challenging about triage and patient care?

c. Are there things that you think should be done differently in the future?

**Question 5:** How did you work with community liaisons, social mobilization and child protection workers working in or near the CCCs?

a. Are there any ways that you think you could work better with community representatives (like community liaisons/focal points, chiefs)?

b. Are there ways that you think you could work better with social mobilizers?
c. Are there ways that you think you could work better with child protection workers?

Question 6: Do you think the CCCs have made a difference in helping to control Ebola in this community?
   a. In what ways have the CCCs helped?
   b. Is there anything that the CCCs could have done differently to better contribute to the fight against Ebola?

Question 7: Is there anything else important that you would like to share about your experience working at CCCs?

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Figure 27: UNICEF key informant interview frame

Question 1: Could you start by explaining your role or roles in the UNICEF Sierra Leone CCC initiative?
   a. When did you start working on the CCC initiative and what was the status of the CCC initiative when you first became engaged?
   b. Could you describe what was happening with the CCCs when you became involved?

Question 2: I would like to understand your perspective on how the CCC strategy contributed to or, perhaps in some ways detracted from the SL Ebola response. How did the CCCs fit within the overall Ebola response in Sierra Leone?
   a. How successfully were the CCCs integrated into the national/district Ebola response?
   b. How do you think the CCCs added value to the response? Can you give some examples?
   c. Were there any ways in which the CCCs may have detracted from the response or perhaps did not added value? Can you give some examples?
   d. What have been the most significant critiques of the CCC model or operations that you encountered from key partners or stakeholders? What is your perspective on these critiques?

Question 3: I want to go a bit more in-depth on the operationalization of the CCCs in the/your district(s):
   a. Are there specific things about how the CCCs were operationalized and managed that you thought worked particularly well? (probe: during start up, case management, decommissioning)
   b. What would you say did not work so well and how could that have been better tackled or perhaps changed? (probe: during start up, case management, decommissioning)
   c. How could the challenges you mentioned be addressed if you were to start over with the benefit of hindsight?

Question 4: Now that Ebola is winding down and the country is working towards health systems recovery and strengthening, I would like to understand how you think CCCs may or may not have supported this transition:
   a. How has the CCC decommissioning work fit within broader work on health systems strengthening (at the national or district-level).
   b. How are communities reacting to the decommissioning of CCCs and what lessons may this have for the health system?

Question 5: Are there any other key points about CCC initiative that are important to share?
1. Please describe your role in the CCC project. *Can also ask about organization’s role.*
   a. Key responsibilities
   b. What makes it challenging to fulfill your role?
   c. What makes it possible for you to fulfill your role?
2. How is it that your organization got involved in the CCC project?
   a. What motivators were there?
3. Please tell me what you think of the CCC project as a whole.
   a. In what ways is the project design a representation of what a good Ebola response program would conduct?
   b. In what ways is the project design lacking?
4. Please describe how you conducted key activities.
   a. What worked with your approach/strategy?
   b. What did not work?
   c. Key activities may include: WASH, social mobilization, logistics, site supervision visits, staff mentoring, budgeting and finance, overall project administration, relationship building with DERC and other organizations on Ebola related work, IPC training, CCC initiation and decommissioning etc.
5. Please tell me what you think are the CCC project’s successes
   a. Activities (social mobilization, C4D, WASH, logistics, labs, staff training etc.)
   b. Management
   c. Leadership
   d. Operations and planning
   e. Logistics
   f. Funding/finances
   g. Monitoring and evaluation (data availability/feedback, registers and record keeping etc.)
6. What would you identify as an accomplishment CCCs should be proud of?
   a. What innovations or contextually appropriate ways of doing things come to mind?
7. What do you think has been particularly challenging about the CCC project?
   a. What solutions do you propose for these challenges?
   b. What areas would you identify as areas for improvement?
8. How would you like to see the CCC concept changed if something similar has to be implemented in the future (in Sierra Leone or somewhere else)?
   a. If you were to do this over again, what information or knowledge do you wish you would have had?
   b. If someone gave you a CCC manual, what do you think would be good to include as guidance or templates?
9. What else would you like to tell me about your impressions and experience with the CCC project?

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**Figure 29: DFID and DERC interview frame**

1. Please describe your role in the CCC project. *Can also ask about organization’s role.*
   a. Key responsibilities
   b. What makes it challenging to fulfill your role?
   c. What makes it possible for you to fulfill your role?
2. How did CCCs fit with the overall district Ebola response?
   a. How did CCCs fit with the alert system at the DERC?
   b. How did they fit with case investigation systems?
c. How did they fit with lab systems?
d. How did referral networks work between CCCs and other case management facilities?
e. How did they fit with burial services?

3. How do you feel about the locations that were selected for the placement of the CCCs? If we had to start again, would you have made different choices?
   a. If yes, can you explain why the rationale for any changes.
   b. If no, can you explain why the rationale for the location selection was sound?

4. Do you think that CCCs added value to the District Ebola Response? If so, how did they add value?
   a. What would you identify as an accomplishment CCCs should be proud of?
   b. Do you think they made a difference to Ebola control in the district?
   c. How did community engagement around CCCs support the response?

5. Have there been any key challenges with the CCCs in your district? Can you explain what they are?

6. If we were to start from scratch, what do you think should be done differently about CCC roll out and implementation? Can you give some examples?

7. Is there anything else you would like to tell me about your impressions and experience with the CCC project that we have not covered?
APPENDIX 7: THEMATIC INDEX

Figure 30: Thematic index of key words

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