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FINAL EVALUATION OF 'AL PIKIN FO LIV'-EVERY CHILD SHOULD LIVE CHILD SURVIVAL PROJECT:

A REVIEW OF A SIX YEAR PROJECT IMPLEMENTED ACROSS TEN URBAN COMMUNITIES IN FREETOWN, SIERRA LEONE BETWEEN 2011-2017 WITH AN IN-DEPTH ANALYSIS OF THE COMMUNITY HEALTH WORKER INTERVENTION

November, 2017

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government. This publication was prepared independently by Dr. Sally E. Findley, Professor of Population and Family Health, Mailman School of Public Health, Columbia University.

Final Evaluation of Sierra Leone Al Pikin Fo Liv AID-OAA-A-11-00054

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ACRONYMS

ANC	<i>Antenatal Care</i>
BCC	<i>Behavior Change Communication</i>
CBHIS	<i>Community Based Health Information System</i>
CDO	<i>Community Development Officer</i>
CHC	<i>Community Health Center</i>
CHO	<i>Community Health Officer</i>
CHP	<i>Community Health Post</i>
CHDR	<i>Community Health Data Review</i>
CHEW	<i>Community Health Extension Worker</i>
CHW	<i>Community Health Worker</i>
CSP	<i>Child Survival Project</i>
CU5	<i>Children Under Five Years of Age</i>
DHMT	<i>District Health Management Team</i>
DIP	<i>Detailed Implementation Plan</i>
DMO	<i>District Medical Officer</i>
EVD	<i>Ebola Virus Disease</i>
FCC	<i>Freetown City Council</i>
GHI	<i>Global Health Initiative</i>
GoSL	<i>Government of the Republic of Sierra Leone</i>
HFA	<i>Health Facility Assessment</i>
HICAP	<i>Health Institutional Capacity Assessment Process</i>
HMC	<i>Health Management Committee</i>
HMIS	<i>Health Management Information System</i>
HP	<i>Health Promoter</i>
iCCM	<i>Integrated Community Case Management</i>
IEC	<i>Information, Education and Communication</i>
IMNCI	<i>Integrated Management of Neonatal and Childhood Illnesses</i>
iNGO	<i>International Non Governmental Organization</i>
IPC	<i>Infection Protection and Control</i>
KPC	<i>Knowledge, Practice, and Coverage</i>
MCH	<i>Maternal and Child Health</i>
MCHP	<i>Maternal and Child Health Post</i>
MNC	<i>Maternal and Newborn Care</i>
MNCH	<i>Maternal Newborn and Child Health</i>
MoHS	<i>Ministry of Health and Sanitation</i>

OBAT	<i>Organizational Behavior Assessment Tool</i>
OR	<i>Operations Research</i>
ORS	<i>Oral Rehydration Solution</i>
ORT	<i>Oral Rehydration Therapy</i>
P-CBHIS	<i>Participatory Community-based Health Information System</i>
PHA	<i>Public Health Advisor</i>
PHU	<i>Peripheral Health Unit</i>
PS	<i>Peer Supervisor</i>
ToT	<i>Training of Trainers</i>
TWG	<i>Technical Working Group</i>
USAID	<i>United States Agency for International Development</i>
WASH	<i>Water and Sanitation, Hygiene</i>
WDC	<i>Ward Development Committee</i>
WRA	<i>Women of Reproductive Age</i>



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Final Evaluation of 'Al Pikin fo Liv' - Executive Summary

This project was funded by the U.S. Agency for International Development through the Child Survival and Health Grants Program.

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Evaluation, Purpose, and Evaluation Questions

This final evaluation is intended to contribute to findings at the community, national and international levels on operationalizing a national Community Health Worker (CHW) policy in an urban environment and to share learnings from an approach to health systems strengthening in an urban setting. The assessment also includes a project performance evaluation. Evaluation findings are relevant not only to Concern Worldwide, its donors, and international non-governmental organizations (iNGOs), but also to various in-country stakeholders, including the Ministry of Health-Sierra Leone, the Western Area Urban District Health Management Team (DHMT) and civil society to advance policy dialogues and best practices in country.

Project Background

In order to assist Sierra Leone's Ministry of Health and Sanitation (MoHS) in its efforts to improve maternal, newborn and child health (MNCH), Concern Worldwide (Concern) implemented a USAID and Irish Aid-funded Child Survival Project (CSP), in ten urban slums of Freetown, Western Area Urban District. The project was originally intended to be a five-year initiative; however a no-cost extension was granted by USAID for an additional nine months, making this a nearly six-year project, with implementation running from October 2011 through June 2017.

One of the distinguishing features of this project was its focus on the densely populated and most vulnerable neighborhoods of Freetown. Rural migrants escaping the violence during and after the ten-year civil war created large slums characterized by unplanned urbanization, over-crowding, low-quality housing, and limited access to clean water and safe sanitation. The project adopted a bottom-up strategy which focused on empowering community residents to become more involved in making their neighborhoods healthy for residents and families.

The project aimed to reduce maternal, infant and child morbidity and



HMC Chairman, Abu Turay, was alerted by a CHW to the home birth of twins in his community. He climbed the mountain in Dwarzak Community to find the family and bring them to the health facility for care.

Key Findings:

- **1,306 CHWs and PS were trained and conducted 226,228 home visits and provided 54,088 referrals to the health facility**
- **Appropriate treatment for sick the health facility improved from 44% to 67%**
- **Of the 20 MNCH behaviors promoted by CHWs, 13 showed statically significant improvements, 7 did not change**
- **Capacity of local community stakeholders increased by 22%; HMC and WDC members reported being empowered, better recognized by their community and more prepared to respond to the health needs in their community**



Mary, a high performing CHW in Dwarzak community, discusses birth preparations with a pregnant woman in her community. Mary has been making routine visits to meet with her and advise this new mother throughout her pregnancy.

November 2017

mortality in the project sites by employing key strategies at the community, district and national levels. These strategies were designed to strengthen the quality of care provided at the health facility level; to improve household level knowledge and practices; to strengthen and expand the community health system to promote sustained behavior change; to build community capacity to plan, implement, and monitor community health initiatives; and to contribute to improvements in health policy at the national level.

The project conducted operations research (OR) in partnership with Johns Hopkins University Bloomberg School of Public Health. Using a cluster-randomized control design, the research sought to determine the effect of a participatory community-based health information system (PCBHIS) on population level health outcomes related to MNCH.

In order to achieve the greatest impact on reducing the leading causes of maternal, infant and child morbidity and mortality in Sierra Leone, the following five technical interventions and respective level of effort served as the cornerstone for the project: maternal and newborn health (30%), malaria (25%), diarrhea (15%), pneumonia (15%), and nutrition (15%). The main project implementing partners included the Western Area Urban DHMT, Freetown City Council (FCC), and the Health Management Committees (HMCs), and Ward Development Committees (WDCs) in each of the ten project sites.

Project activities at the community level included intensive behavior change communication initiatives and data collection for serious morbidity and mortality at the household level. This was carried out by working with the MoHS to operationalize the national Community Health Worker Policy. The project also supported community structures, specifically HMCs and WDCs in taking greater ownership of health activities. Additionally, there was a focus on building the capacity of these structures to collect and analyze community health data to make informed decisions that would improve health outcomes. At the district level, the project worked with health facility staff to improve quality of care through trainings, application of clinical protocols, and on-the-job supervision and mentorship, which took place in addition to promoting linkages between the facility and the community. In an effort to contribute to health policies and disseminate lessons learned, the project also made strong efforts to engage in technical working groups and policy discussions at the national level. This was one by sharing project learning and evidence through the establishment of a steering committee with national and international representation overseeing and contributing to the OR.

Evaluation Questions, Design, Methods, and Limitations

The evaluation used both quantitative and qualitative data. Quantitative data were obtained from the CSP annual reports, routine monitoring and evaluation data, and five specialized baseline and endline surveys including Knowledge, Practice and Coverage (KPCs) surveys and health facility assessments (HFA). The qualitative data were assembled

from 48 focus groups and key informant interviews involving 270 participants. These interviews were conducted with the CHWs and all related community groups in each of the 10 communities participating in the CSP. In order to learn more about what worked and what did not work for the CHWs, both high-performing and low-performing CHWs were interviewed, as well as community beneficiaries who had received CHW visits and those who had not. Representatives from each of the HMCs and WDCs with which the project engaged were also interviewed. Concern Community Development Officers and stakeholders from MoHS, FCC and the DHMT also were interviewed. The evaluation addressed the following questions, group into three thematic areas that address different aspects of the project:

I. The quality of, extent to which, and process through which interventions achieved the intended results and how this approach impacted beneficiaries and contributed to the health system.

- A. *Implementation fidelity:* To what extent was the project implemented according to its original design and work plan?
- B. *Effectiveness:* To what extent did CSP increase access to quality MNCH services and strengthen capacity of local structures and health facilities?
- C. *Impact:* What was the impact of the CSP on health outcomes and policy?

II. The process of operationalizing a CHW program in an urban setting and the contributions to the health system.

- A. *Operationalizing urban CHW programs:* What are the factors that contribute to CHW programs being effective and efficient in urban environments? What aspects should be considered when planning and implementing urban CHW programs?
- B. *Sustainability:* Which components of the CHW program and overall project are likely to be sustained? How likely is it that the gains achieved under this project will be sustained and what resources are required to foster an environment that will promote sustaining these achievements?

III. Documenting the CHW experience.

- A. *Challenges to and successes in operating an urban CHW program:* What are the challenges to and success of operationalizing an urban CHW program? What are the specific factors that motivate CHWs in urban areas?
- B. *Factors creating a suitable environment:* What are the factors that foster a suitable environment for an effective urban CHW?

Findings and Conclusions

Implementation Fidelity

Despite the adjustments to the project's original timeline following the cholera outbreak of 2012 and the Ebola Virus Disease (EVD) outbreak of 2014-15, the CSP was implemented with a fairly high degree of fidelity to its original work plan. During the EVD outbreak, planned CHW home visits and outreach activities were partially suspended due to the banning of group meetings and the "No Touch" policy. Only in mid-2015 was the project able to resume normal activities. Accordingly, Concern received a nine-month no-cost extension to the project, shifting the end of the project from September 2016 to June 2017.

Project Effectiveness and Impact

The project used its inputs wisely to support activities which generated the improvements desired by the project. Despite the enormous challenges of the cholera and EVD outbreaks, CSP largely or partially accomplished its

objectives. The project's strongest contributions were in the improvement of household MNCH knowledge and practice, whereby 10 of the 13 key MNCH practice indicators showed increases in prevalence from baseline to endline. The project also strengthened community capacity to plan, implement and monitor health activities, whereby both organizational assessments- the Health Institutional Capacity Assessment Process (HICAP) and the Organizational Behavior Assessment Tool (OBAT) showed increases in awareness of HMC and WDC responsibilities and abilities to perform them. A major factor behind the improvements to indicators for these objectives was the community-based approach CSP used to engage the community in supporting and driving the work towards achieving the objectives. The CHWs were the bridges between the community and the health system, but they were effective in promoting change only because of the strengthened capacity of the community organizations.

In contrast, achievement of the other two objectives required greater collaboration and partnership with the health system, which had constraints on implementation. There were improvements for 66% of the quality of care indicators, but this was largely due to a change in operational strategy. When it became clear that the DHMT was not going to be able to provide timely supportive supervision for the Peripheral Health Unit (PHU) clinical staff, Concern hired two Public Health Advisors (PHAs) for this work- one more than originally planned. Constraints on achieving all quality of care indicators in part related to the inability of the DHMT to maintain routine supervision, supplies, and other supports to the PHUs. To a certain extent, the contributions of Concern to the district and national policy discussions also were limited by constraints outside their control. As articulated by the MoHS and DHMT leadership, the country wanted to move towards a uniform CHW policy, and therefore the leadership was reluctant to introduce an urban variation. Thus, several of Concern's recommendations were not adopted.

Operationalization and Sustainability of CHWs in the Urban Setting

Concern introduced several adaptations and tools to the CHW training in order to better equip CHWs for work in Freetown's urban slums. These included: additional training on communications, adaptation of behavior change communication (BCC) materials specifically for Freetown, and CHW referral tickets to the neighborhood's PHU. A total of 1,306 CHWs were recruited and trained. Between 2014 and 2017, the CHWs performed 226,228 home visits and provided 54,088 referrals, most of which were for sick children. The total monthly visits per reporting CHW increased from 9.0 in 2014 to 16.9 in 2016. Retention was an issue, with only 42% of those originally trained still active at the end of the project.

Both quantitative and qualitative data support the conclusion that CHWs contributed substantially to achieving the CSP objectives. 1) Quality of care: CHW activities were key to strengthening trust between the community and the facility, especially after the EVD outbreak. Their referrals formed the backbone of the community referral network. 2) Behavior Change: CHWs were the implementers of the BCC strategy, using one-on-one counseling contributing to behavior change. 3) Strengthened linkages to the community: The CHWs were anchored and supported by a structured community network of the Peer Supervisor, HMC, and WDC, and together they had regular and supportive interactions with the PHU.

Sustainability of the CSP and its CHW Model

All groups and individuals interviewed for this evaluation were confident that they could sustain the program, based on the capacities that they had developed through their partnership with Concern. Most agreed that three modifications would be needed to help the CHWs sustain their efforts: a small monetary incentive, an official ID card, and coordination with the CHWs hired under the new national program. This latter condition poses a possible challenge, as the CSP model is anchored in the community, not the PHU. If this community-based leadership and supervision does not continue, then the interconnections between the CHWs, Peer Supervisors (PSs), HMC, WDC, and PHC may be weakened or lost, which in turn would destabilize the complex supports which make it possible for the CSP model to succeed.

Another limiting factor on the sustainability of the CSP is the degree to which the DHMT takes on the role played by the PHA in providing supportive supervision and routine monitoring of supply/drug stocks to prevent stock-outs. The quality of care had not improved as much as had been hoped, so in addition to maintaining the current gains in quality of care, the DHMT still needs to provide the inputs and establish processes which will enable further improvements in quality of care.

Recommendations for Urban CHWs

Based on this evaluation, these are the key recommendations for CHWs in Freetown or other global cities:

- ◆ Recruited the right CHW: Recruit men and women to be CHWs in the neighborhoods where they will be working for a fixed period of six months to two years. Replacement procedures should be established and followed.
- ◆ Develop a thorough scope of Work: The scope of work should include home visits to promote key MNCH behaviors, referrals for antenatal care (ANC), deliveries and sick child care, partnership with the HMC and PHU on clinical follow-ups, and participation in national mobilizations. Integrated Community Case Management (iCCM) is not needed, but healthy living messages would be a useful add-on to support prevention of chronic diseases, which is a growing problem in urban slum areas.
- ◆ Train CHWs: The training should be a mix of didactic and practical content, with refreshers within three months. CHWs should be co-trained with PS, HMC, WDC and the PHU for some modules to promote collaboration.
- ◆ Tailor CHW tools to urban contexts: The BCC tools should use pictures of people living in a city. BCC materials and tracking tools should also include digital options.
- ◆ Promote linkages to the PHU: An official ID card is essential to allow the CHWs to introduce themselves and show their affiliation with a specific community and its health facility.
- ◆ Use tablets and digital record-keeping: The CHWs should have tablets or smart phones with phone credits. Record keeping should be integrated into the electronic Health Management Information System (HMIS).
- ◆ Provide more incentives: Financial incentives, perhaps the equivalent of one-day's work per week, are necessary. Other performance bonuses could also be used.
- ◆ Use flexible CHW models: Possibilities for a flexible CHW model might include pairing CHWs to cover their households together; assigning part-time/volunteer "Health Promoters (HPs)" to support full-time CHWs; establishing "work-study" partnerships or internships with local colleges or health professions schools; or establishing partnerships with local employers to enable young staff to serve as CHWs.
- ◆ Utilize alternative funding models: Funding alternatives might allow additional contributions from the FCC, businesses or international partners to cover not only financial incentives but also school fees, medical expenses/ insurance, prizes, internships or work/study programs with local colleges.
- ◆ Establish a team supervision model for the CHW: The Peer Supervisor Model works well, as the PS also knows the community. Group meetings should involve PHU staff and HMC, so that the CHWs, PS, HMC, and PHU staff working together as a team.
- ◆ Plan for households moving and/or changing status: There should be a defined process for adding or removing families to the CHW visit lists. This is necessary when eligible migrant families arrive in an area, when eligible families depart an area, or when eligibility changes and families graduate from the project intervention.

CONCLUSIONS AND RECOMMENDATIONS

The CSP strategy integrated CHWs into a wider set of community-based activities, which enhanced community ownership and support for CHW activities. The CSP contributed to improvements in MNCH in the ten communities in which the project worked, overcoming severe challenges related to the cholera and EVD outbreaks. It is unlikely that these results could have been achieved without the CHWs and their supportive, community-based networks.

While the CSP contributed to significant improvements in all four objectives, there were areas where the project did not accomplish as much as it had envisioned. The following are recommendations to address areas of shortfall:

- Improved access to quality of care: Supportive supervision and a more functional system of supply/stock-out red flags are needed to make further progress towards achieving quality of care improvements. Communication skills training for staff could also improve both their assessment and counseling skill levels. Finally, the HMC could play a larger role in helping the staff improve their counseling skills, whether through observations or role-plays.
- Improved MNCH knowledge and practices: The tailored BCC materials were much liked and effective in promoting behavioral change. For this reason, they should also be made available to the PHU staff for their counseling, an area in which the staff did not reach high competency. Additional BCC methods can be developed for other key MNCH behaviors or, indeed, for other behaviors such as chronic disease or injury prevention.
- Strengthened community capacity: The HICAP process needs to be regularized, with support from the FCC for WDC engagement and the PHU for HMC involvement. A recurrent HICAP would sustain capacity strengthening even as members come and go. Steps should be taken to include PHU leadership and the PS's so that all the major actors for community health are engaged. The OR findings were affected by a shorter than anticipated implementation timeframe as a result of EVD. Further exploration is needed into what worked and what did not work and the impact of the intervention on health outcomes. There is a great need to integrate community-based health information systems with the formal health system information system for proactive disease surveillance and decision making.
- Input to the national CHW policy: There are many lessons learned from the Concern CHW experience. They should be shared nationally and a dialogue commenced about piloting alternative CHW models as recommended in this report.

The *Al Pikin fo Liv* in ten urban slums of Freetown, Sierra Leone was supported by the American people through the United States Agency for International Development (USAID) through its Child Survival and Health Grants Program. The *Al Pikin fo Liv* was managed by Concern Worldwide U.S. under Cooperative Agreement No. AID-OAA-A-11-00054. The views expressed in this material do not necessarily reflect the views of USAID or the United States Government.

For more information about Al Pikin fo Liv, visit: www.concernusa.org

EVALUATION PURPOSE, METHODOLOGY AND EVALUATION QUESTIONS

EVALUATION PURPOSE

This evaluation had a dual purpose: to evaluate the overall project achievements against the project objectives; and to determine how the CHWs contributed to the project, and what are the lessons learned from this CHW program to advance national and international conversations on urban CHW policies. The aim of this assessment is to contribute to dialogue at the local, national and international levels. This evaluation report will also serve to contribute evidence and learning for policy decisions, especially regarding the implementation of the new CHW policy in Freetown, as well as other urban settings, and to inform future community-based, health system strengthening work in urban areas. Preliminary results were shared in June 2017 during a one-day national level meeting whereby stakeholders at all levels attended. The evaluation report will be made available to all audiences and disseminated widely in-country.

Findings from the OR are mostly separate from this evaluation. The project team in collaboration with national stakeholders and support from the Principle Investigator, Dr. Henry Perry, are preparing documentation with the aim to publish on the evidence from this research.

The evaluator was hired by Concern Worldwide to conduct an independent evaluation which was paid for using project funds. A scope of work was shared with all implementing partners and USAID for approval as well as the evaluator's curriculum vitae. Concern Worldwide reviewed the final evaluation report and made formatting and grammar changes to enhance the quality of the final deliverable and to be compliant with USAID branding and marking guidelines before this was submitted to USAID. The evaluator's opinions and results of the evaluation were maintained throughout this process and no modifications were made to the evaluation findings, results, conclusions, or recommendations.

EVALUATION METHODS AND LIMITATIONS

This was a participatory evaluation, with the CSP staff assisting in conducting focus groups and key informant interviews in the community. They also provided the quantitative data used for this evaluation. Quantitative data were assembled from surveys conducted by Concern as well as the evaluator's review of reports, as described in Table I. Data were analyzed by assessing the change in indicators from the baseline to endline assessments.

Table I: Quantitative Data Sources for the Final Evaluation

Data Source	Type of Data	Periodicity and Data Details
Annual Reports, especially the Detailed	Narrative (Word doc)	Annual reports submitted to USAID Formative evaluation research reports on

Implementation Plan		Barrier Analysis, and behavioral change.
MoHS National CHW policy and health strategy framework documents	Text (PDF)	Ad hoc or every 5 years, issued by the MoHS.
CHW monthly registers and referral records by program site	Excel spreadsheet, by CHW	Annual summaries of monthly registers of visits and referrals by reporting CHWs
PS Monthly supervision reports by program site	Excel spreadsheet by PS	Annual summaries of monthly reports from 107 CHW peer supervisors
CHW training database	Excel spreadsheet by training	Project lifetime records of training participation and pre-post performance assessments
Rapid Health Facility Assessment (HFA)	Excel spreadsheet by PHU	Observations on adherence to MoHS guidelines and supply stocks, conducted by Concern's PHA at 2012 Baseline-2017 Endline at the 10 PHUs participating in the project
Organizational and Behavioral Assessment Tool (OBAT)	Excel spreadsheet by community, assessing capacity to collect and use health data	Individual level responses rating own organizational and leadership skills (n=150 per survey), Baseline-Endline on three basic indicators
Health Institutional Capacity Assessment Program (HICAP)	Excel spreadsheet by community, assessing ability to lead community in using health data	Group self-assessment by participants in the HICAP process in each community, Baseline-Endline on 6 indicators of capacity, about 20-30 participants per PHU
Operations Research (OR) database	Excel spreadsheet of monthly PHU consultations, OR reports of meetings and reviews	2013 - 2017 indicators of PHU consultations by type, using DHMT register data
Knowledge, Practice and Coverage (KPC) Surveys	Excel spreadsheet giving summary results by indicator, based on household survey data	2-stage random sample of women pregnant, lactating or with children <23 mo. included questions on key MNCH behaviors and interactions with CHWs: Baseline 2012 (n=300); Endline 2017 (n=792),

Focus groups and in-depth interviews were conducted with participants from each of the 10 project communities. Communities were grouped into contiguous pairs based on geography and similar demographic features. Five field sites were identified and consisted of the contiguous, paired project communities. The evaluation team spent a full day with each of the five groups conducting interviews in the community. Participants were grouped and interviewed by their respective responsibilities or functions and included CHWs, PS, community groups-(HMCs and WDC), and health workers at the PHUs -all of whom participated in the CSP.

In order to learn more about what worked and what did not work so well for the CHWs, both high-performing and low-performing CHWs were interviewed. High-performing CHWs were defined as those in the top 25% percentile based on number of months reporting and cumulative home visits, while the under-performers were ranked in the lowest 25% percentile on these same indicators. Focus group discussions were also conducted with members of the community who had received CHW visits (beneficiaries) and those who had not (non-beneficiaries). As shown in Table 2, 48 in-depth interviews and focus groups with 270 participants were conducted over a period of 10 days.

Table 2: Qualitative Interview Participants by Type of Interview, Final Evaluation June 2017

Type of Interview	Number of Interviews conducted	Male participants	Female Participants
CHW FGD- High-performers	4	20	23
CHW FGD- Under-performers	5	20	19
CHW In-depth- High-performer	5	3	2
CHW In-depth- Under-performer	3	1	2
PS FGD	5	25	20
In-Charge or Community Health Officer (CHO) of the PHU	4	0	4
HMC focus group	5	30	16
WDC focus group	4	16	11
Community Beneficiaries (received CHW visits)	3	1	22
Community Non-Beneficiaries (did not receive CHW visits)	3	3	19
Concern Community Development Officer (CDO) focus group	1	4	3
Stakeholders (MoHS, FCC, and DHMT leadership)	6	4	2
Total	48	127	143

Complete details of the final evaluation scope of work, design, methods, and limitations are provided in Annexes VI and VII. Copies of the data collection instruments used for the evaluation are in Annex VIII. A complete list of the reports and other information sources consulted is in Annex IX.

EVALUATION QUESTIONS

I. The quality of, extent to which, and process through which interventions achieved the intended results and how this approach impacted beneficiaries and contributed to the health system.

A. Implementation fidelity: To what extent was the project implemented according to its original design and work plan?

- B. Effectiveness:** To what extent did CSP increase access to quality MNCH services and strengthen capacity of local structures and health facilities?
- C. Impact:** What was the impact of the CSP on health outcomes and policy?

II. The process of operationalizing a CHW program in an urban setting and the contributions to the health system.

- A. Operationalizing urban CHW programs:** What are the factors that contribute to CHW programs being effective and efficient in urban environments? What aspects should be considered when planning and implementing urban CHW programs?
- B. Sustainability:** Which components of the CHW program and overall project are likely to be sustained? How likely is it that the gains achieved under this project will be sustained and what resources are required to foster an environment that will promote sustaining these achievements?

III. Documenting the CHW experience. Challenges and successes to operating an urban CHW program, particularly factors that motivate CHWs in urban areas:

- A.** What are the factors that foster a suitable environment for an effective urban community health worker?
- B.** The sustainability questions specific to the CHWs are included in Section II. Details of the Evaluation Scope of Work are provided in Annex VI.

PROJECT BACKGROUND

In order to assist Sierra Leone's MoHS in its efforts to improve MNCH, Concern Worldwide (Concern) implemented a CSP, "Al Pikin fo Liv" (Life for Children). With financial support from USAID and Irish Aid, CSP operated in the Western Area Urban District-Freetown, from September 2011 to June 2017 including a nine-month extension.

The project aimed to reduce maternal, infant, and child morbidity and mortality in the project sites by employing key strategies at the community, district, and national levels. These strategies were the cornerstone of the project and designed to strengthen the quality of care provided at the health facility level; to improve household level knowledge and practices; to build community capacity to plan, implement, and monitor community health initiatives; and to contribute to improvements in health policy at the national level. To address the leading causes of maternal, infant, and child morbidity and mortality in the urban slum communities of Sierra Leone, the following five technical interventions and respective level of effort were the focal areas for this project: maternal and newborn health (30%), malaria (25%), diarrhea (15%), pneumonia (15%), and nutrition (15%).

In addition, the project conducted operational research in partnership with Johns Hopkins University Bloomberg School of Public Health. Using a cluster-randomized control design, the

research sought to determine the effect of a PCBHIS on population level health outcomes related to MNCH.

One of the distinguishing features of this CSP was its focus on the densely populated and most vulnerable neighborhoods of Freetown. Rural migrants escaping the violence during and after the ten-year civil war created large slums characterized by unplanned urbanization, overcrowding, low-quality housing, and limited access to clean water and safe sanitation. The ten communities selected also were subject to flooding or mudslide risk during the rainy season.

The CSP adopted a bottom-up strategy which focused on empowering community residents to become more involved in making their neighborhoods healthy for the families living there. The national CHW model needed to be adapted for work in the urban slums, where different challenges were faced than in rural settings, including a lower likelihood that CHWs will be known by their neighbors, busy lifestyles of residents, greater health care options in the city, and higher degree of mobility of residents. Consistent with but in advance of the finalization of the 2012 national CHW policy, Concern adapted the national CHW roles and responsibilities, training and health education materials to support their role of promoting behavior change across an integrated series of maternal, newborn, and child health practices. Finally, Concern introduced community-based supervision and coordination of the CHWs, empowering the HMCs and WDCs to work together to support the CHWs. This strengthened the bridges between the health system and community, enhancing accountability at the community level.

There is much to be learned from the CSP about implementing a CHW model in Freetown. Therefore, this final evaluation includes additional elements focusing explicitly on the CHWs and the recommendations pertinent to the national CHW policy.

PROJECT OVERVIEW

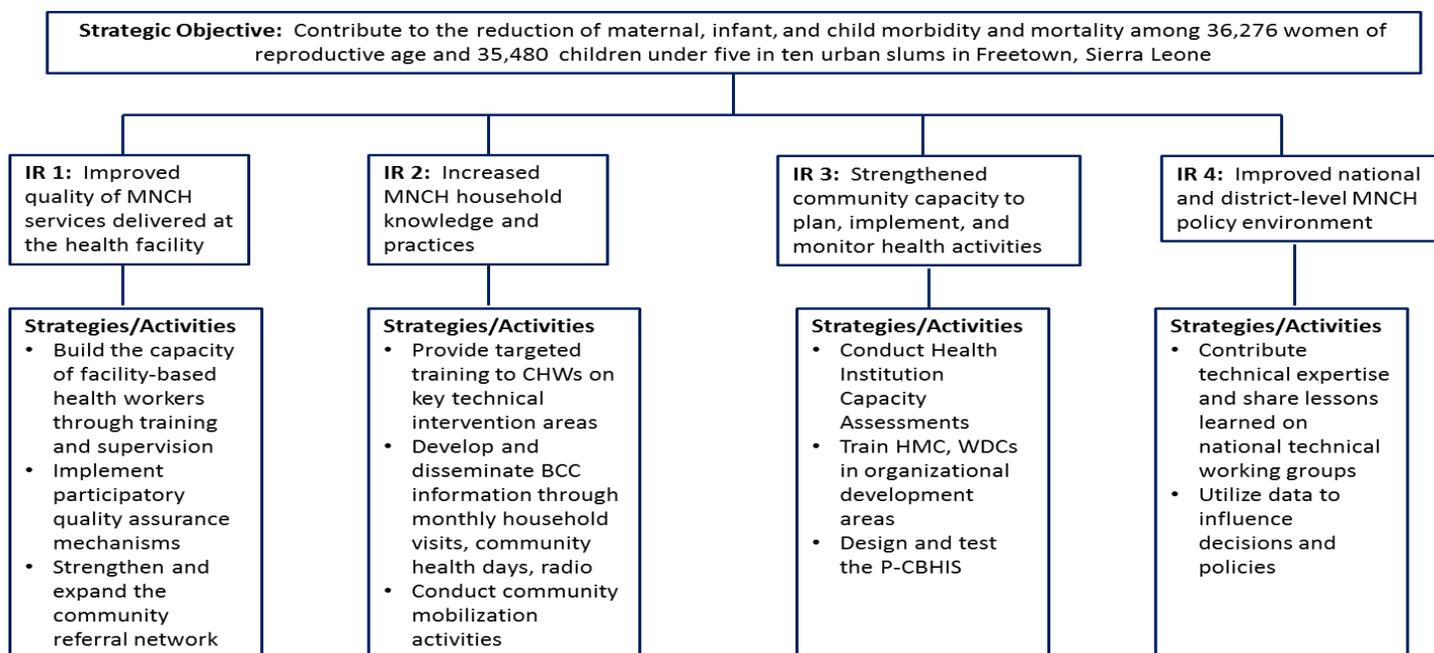
Ten communities were purposively selected to participate in the CSP; these included different types of geographic settings within Freetown - both urban and peri-urban slums as well as seaside and mountainous slums. Efforts were made to avoid overlap with communities participating in other maternal and child survival program initiatives led by other iNGOs. These ten communities in 2012 had an estimated total population of 167,812, about 15% of the total district population (See Table 3).

Table 3: Population of Project Area and Available Health Infrastructure¹

	Community	Health Facility Community Health Center (CHC) Community Health Post (CHP) Maternal Child Health Post (MCHP)	Total Population	Children < 5 (CU5)	Children <12 months	Children 12-23 months	Children 24-59 months	Women of Reproductive Age 15-49 (WRA)	Total Target Population
1	Allentown	Allentown CHC	22,180	4,813	1,020	842	2,950	4,924	9,737
2	Dwarzac	George Brooke CHC	23,274	5,072	1,075	888	3,109	5,189	10,261
3	Grey Bush	Grey Bush CHC	12,526	2,718	576	476	1,666	2,781	5,499
4	Kingtom	Kingtom Police Hospital	3,268	709	150	124	435	725	1,434
5	Kuntorloh	Approved School CHC	15,503	3,364	713	689	2,062	3,422	6,786
6	Lumley	Lumley Hospital	23,854	5,176	1,079	906	3,173	5,296	10,472
7	Mallama	Mallama MCHP	9,519	2,064	438	361	1,265	2,094	4,158
8	Mabella	Mabella CHC	32,465	7,046	1,494	1,233	4,319	7,207	14,253
9	New England	Expanded Program on Immunization CHP	9,371	2,034	431	356	1,247	2,080	4,114
10	Susan's Bay	Susan's Bay MCHP	15,852	3,440	729	602	2,109	3,519	6,959
TOTAL		10	167,812	36,436	7,724	6,376	22,335	37,237	73,673

In consultation with USAID's Global Health Initiative (GHI) and the Government of Sierra Leone (GoSL), Concern's CSP was designed to directly contribute to the goals and priority areas laid out in Sierra Leone's National Health Sector Strategic Plan 2010-2015. Figure 1 shows the CSP Results Framework, with the overall project goal and four sub-objectives or intermediate results.

¹ 2012 population estimated by forward projection from 2004 Census using a 2.2% annual growth rate per year; MICS 2010 population estimates <12m = 21.2%; 12-23m =17.5%, 24-59m =61.3%.

Figure 1: Results Framework

PARTNERSHIPS AND COLLABORATION

The main project implementing partners included the Western Area Urban DHMT, FCC, and the HMCs and WDCs in each of the ten project sites. During the life of the project, the MoHS launched a CHW Hub, which is the focal point for CHW policy and issues. The DHMT is responsible for the CHWs in its district, along with oversight of their PHUs. There are over 100 PHUs in Freetown's Western Area Urban District; of these, Concern collaborates with 10 PHUs. The FCC is responsible for supporting the delivery and financing of community health services and provides oversight to the devolved local councils, the WDCs. Each WDC chair is a counselor on the FCC. Additionally, one member of the WDC is a health focal person. The CSP collaborated closely with Freetown's Urban Water, Sanitation and Hygiene (WASH) Consortium by developing messages supporting WASH and collaborating in promoting sanitation during the disease outbreaks. Finally, the CSP participated in the CHW Technical Working Group which supported and worked with the MoHS Primary Health Care Division in developing the national CHW policy and policy iterations over time.

The CSP was implemented by a team at Concern, in the communities and at the PHUs, with the DHMT and FCC. Table 4 provides details on the people trained to implement the CSP at the 10 selected PHUs and this is also articulated in Annex V. Community Health Worker Training Matrix.

Table 4. People trained under the auspices of the CSP

Community Level n= 1,614	Concern Staff n= 17	Facility & District Level: PHUs, DHMT, MoHS or FCC n= 65
<ul style="list-style-type: none"> • 1306 CHWs • 96 PS • 112 HMC members • 100 WDC members 	<ul style="list-style-type: none"> • Health Advisor (U.S. based) • National Health Coordinator • Program Manager • Field Operations Manager • 5 CDOs • 1 CDO Team Leader • 2 Public Health Advisors • 1 BCC Officer • 1 Monitoring and Evaluation (M&E) Officer • 1 OR Advisor • 1 Verbal Autopsy Officer • 1 Training Officer 	<ul style="list-style-type: none"> 10 PHU In-Charge or CHO 33 PHU clinical staff 20 DHMT staff supporting PHUs 1 FCC Community Health coordinator 1 District Medical Officer (DMO), DHMT

The field supervision structure was decentralized to the community, with the HMC and WDC playing a leading role in the supervision and coordination of the PSs, who in turn supervised the CHWs associated with the PHU. The HMC coordinated with the PHU In-Charge, and the WDC supported the HMC in mobilizing the community to solve problems. Coordination was facilitated by the fact that many HMC and WDC were themselves CHWs or PS with Concern.

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

I. ASSESSMENT OF OVERALL PROJECT: QUALITY OF, EXTENT TO WHICH, AND PROCESS THROUGH WHICH INTERVENTIONS ACHIEVED THE INTENDED RESULTS AND HOW THIS APPROACH IMPACTED BENEFICIARIES AND CONTRIBUTED TO THE HEALTH SYSTEM

A. Implementation Fidelity

I. Impact as a result of public health emergencies

Despite the adjustments to the project timeline following the cholera outbreak of 2012 and the EVD outbreak of 2014-15, the CSP was implemented with a fairly high degree of fidelity to the original work plan (see Annex II Work Plan Table). During the EVD outbreak, planned CHW home visits and outreach activities were partially suspended due to the banning of group meetings and the “No Touch” Policy. Throughout this period, the project focused on promotion of sanitation and infection prevention control, as well as surveillance and referral of suspected cases to the PHUs. Ebola claimed the lives of 11 CHWs, 1 HMC member, and 3 nurses at project PHUs. Only in mid-year 2015 did the project begin to resume normal activities. Concern received a nine month no-cost extension to its program, shifting the end of the project from September 2016 to June 2017. Figure 2 illustrates the project timeline, including significant activities and major events which impacted the project.

Figure 2: Timeline of CSP activities showing the Cholera and EVD Outbreaks

2011	2012	2013	2014	2015	2016	2017
Oct-Dec						Jan-June
Project launch	Cholera outbreak		Ebola outbreak			Project Ends
	Baseline surveys Household Census National CHW policy 2012		CHWs trained CHW policy launched HICAPs start	BCC materials completed OR baseline	CHW refresher National CHW policy 2016	Endline Surveys CHW policy launched

Based on the annual reports and the focus group discussions, there were several notable impacts of these outbreaks on program implementation:

- **CHW involvement:** The HMCs, WDCs, and CHWs worked together to contain the outbreak, and this built their solidarity and sense of responsibility as part of a team, as noted by this WDC member from Lumley:

“Everyone was confused and worried because there was no understanding. No one could tell them the right thing to do. Concern gave us support to send people out to tell the community that ebola is real. People believed the WDC, because we are

always around them and we listen to them. People believe us more. We made house- to- house visits. If we hadn't done that almost everyone would be dead in Kanego [my neighborhood].” – WDC, Lumley Community

Dr. Kandeh, Director of the MoHS Primary Health Care Division, was aware of and appreciated the work of the Concern CHWs:

“The CHWs were very helpful during the Ebola period. They were involved in all areas except case management. In fact, some of our health workers were saved because of the CHW. If a community member wanted to go to the health center, the CHW alerted the health worker of that possible case, so they could protect themselves. This did save some health worker lives.” – Dr. Kandeh, Director of Primary Health Care

- **CHW disengagement:** Only about 30% of the trained CHWs were deployed to work with specific households before the EVD outbreak. For those not yet deployed (in five communities), this long hiatus between training and deployment appears to have been associated with dropping out of the program, according to focus group discussions participants with HMC members and low-performing CHWs. In addition, many CHWs trained by Concern were hired and paid by other NGOs during the outbreak, and they never returned to their volunteer work for Concern.
 - **Changes in how people viewed the PHUs:** The PHUs from the communities of Dwarzac, Mabella, and Lumley were quarantined and closed. Attendance at these PHUs declined from an average of 485 monthly ANC and CU5 consultations in 2013 to 290 in 2015. The CHWs, HMC and WDC members assisted with public information campaigns, contact tracing and referrals and well as community monitoring via checkpoints for visitors entering their community. The impact of the CHWs was noted by the community beneficiaries up to the level of the DMO for the Western Urban Area, Dr. Thomas Samba, who said:

“Concern helped to introduce hand washing. CHWs went door-to-door speaking with people to encourage suspected cases to be treated. Their visits changed the way that people think about going to the clinic, and especially after ebola, there was a need for trust to be rebuilt.” - Dr. T.T. Samba, DMO Western Area Urban
 - **Unavailability of the MoHS DHMT staff and materials:** Staff and key stakeholders were absorbed by activities related to EVD containment and nearly all health system resources were diverted from primary health services to the emergency health response. Perhaps linked to this burden, the MoHS DHMT staff declined to participate in joint mentoring or supportive supervision activities without being paid per diems,
-

despite this originally being part of their expected contribution. MNCH guidelines were expected to be distributed to the PHUs, but were not. The lesson learned from this experience was that the terms of reference for the partnership with DHMT should have been more clearly articulated at the start of the project, including any payments (or lack of compensation), so that all partners are clear on what is expected.

Unrelated to the EVD outbreak were additional challenges posed by a weaker health infrastructure than had been originally anticipated. The baseline KPC survey showed that on average 80% of the mothers took their sick children to be treated at the health facility, yet the HFA at baseline showed that health care providers provided appropriate treatment for only 44% of the sick child visits. PHU staff needed clinical training on MNCH care protocols, supplies and equipment to offer quality care, and routine supervision and ongoing mentorship. Concern devoted more time, energy, and human resources to supporting human capacity building at the facility, as well as more to equip the clinics so that they could provide a higher standard of care.

Finally, there were changes to the Detailed Implementation Plan (DIP) regarding the responsibilities of the CHWs working in the urban slums. Over the course of the project, there were various policy iterations and delays in finalizing these policies, which also led to delays in finalizing tools and training the CHWs. While the project remained nimble and to the extent possible adapted to these policies to implement in line with the MoHS, the national policies did not take into account the urban context. iCCM for childhood illness was removed from the training and the project focused CHW responsibilities on health promotion, referrals and data collection at the household level. The 2012 national CHW BCC materials had been based on materials adapted from the primarily rural, Ugandan CHW program, and they needed to be adapted for use in the urban Freetown setting. Concern planned to revise the materials based on the results of the baseline KPC and Barrier Analysis surveys, and 13 behaviors were selected because of their low performance, per these survey data. However, BCC material finalization was delayed due to the restriction on meetings during the EVD outbreak. A refresher training for CHWs and PS was conducted in 2016 once larger community gatherings were permitted, and included use of the revised BCC counseling cards, as well as the CHW and PS reporting and referral forms. (For details on changes to the Work Plan, see Annex II.)

2. Adaptations of the CSP to enhance effectiveness in the urban slum context

The communities and PHUs varied widely, with greater heterogeneity in size and populations than might be found in rural areas. As noted above, these communities had a great deal of in-migration in the previous decade, and efforts were needed to ensure that people knew about the PHU, felt connected to it, and had confidence that the care they received there would be high quality. The inputs to improve the quality of care at the PHUs aimed to address concerns about the quality of care, but the community had to hear about the changes. This is where the HMCs, WDCs, and CHWs played a role, informing and encouraging families to go to the PHUs. Table 5 illustrates how Concern adapted its program to function well in the urban slums.

Table 5: Adaptations to make the CSP effective in urban slums

Challenge of CHWs promoting child survival in the urban slum context	Innovations
Enhanced quality of care at the PHU	<ul style="list-style-type: none"> • Collaborate with DHMT to improve supportive supervision and maintain supplies, based on HFA assessment of specific needs at each PHU, including training and distribution of MNCH care guidelines • PHAs conduct repeated assessments of quality of care and provide feedback to health workers on steps needed to improve their adherence to recommended protocols for Integrated Management of Newborn and Childhood Illness (IMNCI) and ANC visits • Provide additional supplies during and after the cholera and EVD outbreaks to strengthen infection protection and control
Referrals and linkages between the community and the PHU	<ul style="list-style-type: none"> • PHU In-Charge meets with CHWs and HMC, and can ask them to assist with follow-up • CHW referral tickets link residents to specific PHUs • HMC and WDC trained to support health awareness and PHU use • OR project promotes using data to inform community health actions
CHW model tailored for the urban context	<ul style="list-style-type: none"> • CHWs concentrate on promotion of MNCH behaviors and referral to the PHUs; no treatment responsibilities • CHW nominated by community members (HMC, WDC, not just PHU staff) and assigned to their own neighborhood after successful completion of training • CHWs embedded within a network of community supervision and support including the HMC and WDC, known to the community
BCC materials appropriate for the urban slum context	<ul style="list-style-type: none"> • BCC materials developed by and for Freetown residents, focusing on 13 key MNCH messages identified follow the baseline KPC as behaviors needing extra promotion • BCC designed to be delivered based on the participants' actual needs; no prescribed order • BCC materials include pictures of people living in Freetown with messages based on the Freetown situation • CHWs trained to interactively engage the residents in learning about recommended behaviors • BCC appropriate for men and women

3. Appropriateness of CSP Theory of Change for promoting behavior change in urban slums

Reducing maternal and child mortality involves changes in caregiving behaviors at home as well as seeking care at the clinic.^{8,9} Some of the selected messages described care giving or prevention behaviors to be undertaken at home, while others showed people seeking appropriate care at the PHU. The Theory of Behavior Change or Designing for Behavior Change Framework used by Concern informs the participant about the positive and negative consequences of each of the targeted behaviors, along with implementation of the enablers or “bridges” that make it possible for the participant to learn about the practice, build their self-

efficacy for adopting the behavior, and then support adoption of the recommended behavior. The details of the behavior change theory were based on data from the Barrier Analysis surveys. (See Annex XIII-C. for Concern's Theory of Behavior Change, "Designing for Behavior Change")

The overall theme for the BCC materials was "You are the Mother, Do What's Best," and included 13 key MNCH messages identified as low-performance practices at baseline.

1. Breastfeed the newborn within one hour of delivery
2. Feed only breastmilk for the first 6 months
3. Breastfeed and introduce complimentary food after 6 months
4. Treat drinking water effectively
5. Wash your hands with soap and clean water
6. Use a bed net for your child
7. Give Oral Rehydration Salt/Solution (ORS) if your child has diarrhea
8. Store water properly
9. Go to a health center if your child is sick
10. Wait between pregnancies
11. Sleep under a bed net if you're pregnant
12. Use modern methods of contraception
13. Prepare for childbirth

Each of the 13 recommended MNCH behaviors were accompanied by readily understandable images of Freetown residents demonstrating the behavior, showing that people like themselves could do the behavior. The behavior change counseling tips provided to CHWs were informed by the barrier analysis surveys and messages directly address the enabling factors and barriers to adopting the ideal behavior, with realistic steps participants could take to make the change.

B. Effectiveness

1. Logic Model for the CSP

Part of assessing the effectiveness of the CSP was assessing the validity of the logic model showing how program inputs would be translated into the desired health outcomes. As shown in Figure 3, this logic model portrays each objective as if it is independent of the other activities and outcomes, but it also shows how outcomes depend on the integrated impact of all four sets of activities and outcomes. However, the model fails to capture the critical interactions between the outcomes at the household level and the clinical levels. The CHWs and their supporting structures (PSs, HMCs, and WDCs) aim to change MNCH behaviors at the household level, but they also promote use of the PHU health services for antenatal care, deliveries, and care of sick children. Thus, even if the quality of services improve at the PHUs, if CHWs are not effective at promoting use of these services, the desired impact will not be achieved.

Figure 3: CSP Logic Model

INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACT
<ul style="list-style-type: none"> Endorsement and support of DHMT Essential MNCH drugs and supplies MOHS policy documents and guidelines PHU staff 	<ul style="list-style-type: none"> Support DHMT to conduct supportive and on-the-job supervision Trainings for PHU staff on MNCH guidelines and protocols Implement quality of care checklist Strengthen and expand referral network 	<ul style="list-style-type: none"> # supervision visits conducted # number of PHU staff trained in MNCH guidelines and protocols # quality care checklists implemented # referrals made to health facility 	Improved quality of MNCH services delivered at the health facility <ul style="list-style-type: none"> % key MNCH assessment tasks performed % PHUs with MNCH drugs supplies in stock % mothers who received adequate ANC counselling 	Contribute to the reduction of maternal, infant and child morbidity and mortality among 6,276 women of reproductive age and 35,480 child under 5 in 10 urban slums in Freetown, Sierra Leone
<ul style="list-style-type: none"> Community-elected CHWs BCC counseling cards HMC and WDC members Completed Barrier Analysis and DBC Framework 	<ul style="list-style-type: none"> Train CHWs to conduct home visits Develop and disseminate BCC messages through home visits, community health days, radio Conduct community mobilization events 	<ul style="list-style-type: none"> # CHWs trained in MNCH topics # home visits conducted # radio shows hosted # community mobilization events conducted 	Increased household MNCH knowledge and practices <ul style="list-style-type: none"> % children who slept under an ITN % households that treat water effectively % mothers that made birth preparations 	
<ul style="list-style-type: none"> Community-elected CHWs HMC and WDC members OR steering committee 	<ul style="list-style-type: none"> Conduct HICAPs Train HMC, WDCs in organizational development areas Design and test P-CBHIS 	<ul style="list-style-type: none"> # HICAPs conducted # HMC, WDCs trained in organizational development areas # CHWs, HMC, and WDC members implementing P-CBHIS 	Strengthened community capacity to plan, implement, and monitor health activities <ul style="list-style-type: none"> % HMCs, WDCs with action plan Average HMC, WDC HICAP score 	
<ul style="list-style-type: none"> Documentation and dissemination of promising practices and lessons learned 	<ul style="list-style-type: none"> Participate in national level health meetings, policy development forums, working groups Advocate for full realization of HC in district, national levels 	<ul style="list-style-type: none"> # working groups and policy forms with representation by project staff # learning briefs on the project produced 	Improved national and district-level MNCH policy environment	

2. Changes in delivery of quality MNCH services

From baseline to endline there were increases or no change in 19 of the 27 quality of care indicators. Table 6 summarizes the changes for clusters of quality of care indicators. Training, supervision, community coordination, and drug logistics indicators rose to 100%, and service availability rose to 90%. From baseline to endline, the percentage of health workers who accurately treated sick children or pregnant women rose from 38% to 62%, but their assessment and counseling skills did not increase proportionately. Less than half of the facilities had the national guidelines on hand. The indicators for drugs and supplies improved modestly, with less than half of the facilities having the recommended amounts on hand on the day of assessment. Despite the experience of the EVD and cholera outbreaks, only half the facilities had appropriate infection control and supplies. (Additional details on the changes in MNCH services from baseline to endline can be found in Annex XIII-A. HFA)

In sum, access to drugs and supplies remained a problem throughout the project period and was frequently noted as a difficulty by community members as well as the members of the HMC and WCDs. While nursing staff had improved their treatment skills, overall quality of care was limited by inadequate supplies and drugs.

Table 6: Baseline to Endline Changes in Quality of Care Indicators

Quality of Care Indicator Groups	Baseline April 2012	Endline May 2017
Access: Service availability (average for Child, ANC, and Delivery)	86%	90%
Inputs: Staffing and infrastructure (average)	50%	35%
Inputs: Supplies (Average for Child, ANC, Delivery)	23%	33%
Inputs: Drugs (Average for Child, ANC, Delivery)	31%	51%
Inputs: Infection control supplies and equipment	50%	50%
Inputs: National guidelines available	56%	44%
Processes: Drug logistics	60%	100%
Processes: Training (Average for Child and Maternal/Newborn)	75%	100%
Processes: Supervision	90%	100%
Processes: Community coordination	100%	100%
Processes: Community referrals from CHWs	80%	50%
HW Performance: Assessments (Child only)	11%	22%
HW Performance: Treatment (Child and ANC average)	38%	62%
HW Performance: Counseling (Child and ANC average)	22%	33%

3. Strengthened capacity for the community structures to ensure quality of care

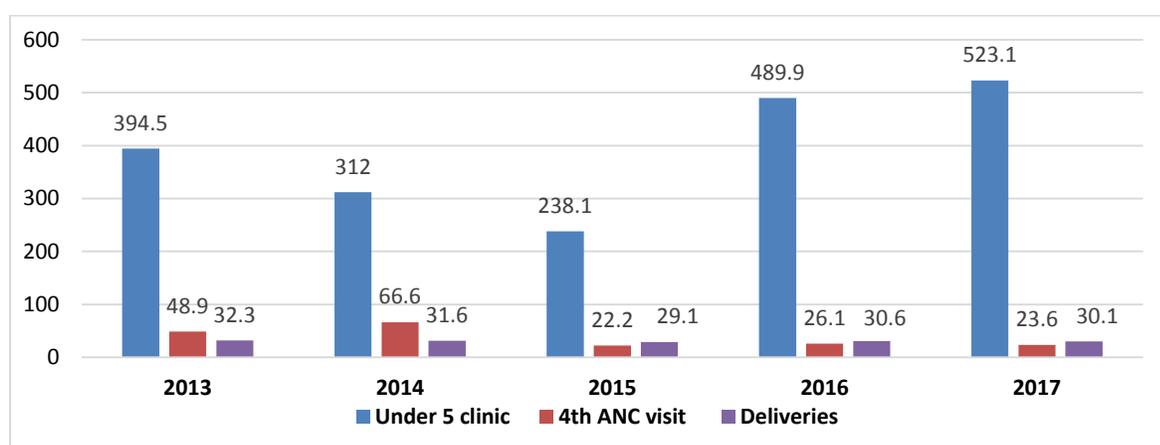
The HMCs, WDCs, and CHWs collaborated in ensuring that the PHUs addressed quality of care issues coming from feedback from the community, while at the same time communicating to the community any changes and improvements in quality of care at the PHU. HMCs served as the “watch dog” for this integrated response, and they were expected to collaborate with the WDC in addressing any issues. At the project end, interviews with the HMCs and PHU In-Charges showed that this oversight was working. From not being functional at the start of the project, the HMC and WDC felt they were working together much better. They attributed this to:

- Solidarity and working together through the EVD outbreak: This experience forced the HMC and WDC members to recognize the critical role they played in protecting the health of their communities.
- HICAP: HICAP involved HMC and WDC members in discussions about the different aspects of their roles and how they could better perform them. The HICAP process spurred members to identify specific steps they could take to fulfill their mandate to promote the health of their community.
- P-CBHS: The P-CBHS was part of the OR experiment testing whether the use of health information generated by the CHWs could improve health outcomes. It simultaneously validated information they collected and showed how the HMC and WDC could make decisions to improve health outcomes.

4. Increases in Health Facility Consultations

Consultations at the PHUs declined during the EVD outbreak, and then increased again afterward (see Figure 4). Consultations remained the largest component of MNCH service use, ranging from a low of 238 consultations per month during the EVD outbreak to a high of 523 consultations per month in the first half of 2017. Monthly deliveries remained constant at around 30, while monthly fourth ANC visits also remained constant around 23 from 2015-2017.

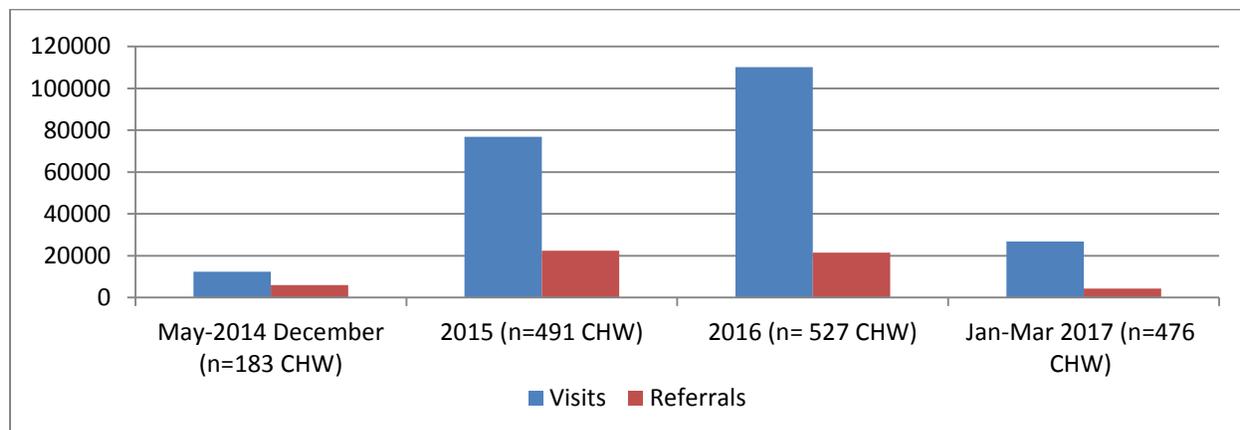
Figure 4: Average Monthly PHU Consultations for ANC, Clinic for Children Under Five Years Old and Deliveries, 2013-2017



5. CSP contributions to the increase in consultations

There is evidence that the CHWs contributed directly and indirectly to the increase in consultations. Each CHW was assigned 25 families to be visited monthly, and they made referrals during these visits. As shown in Figure 5, between 2014 and 2017, the CHWs made 226,228 home visits and gave 54,088 referrals. Most referrals were for sick children. In 2016, almost half (47.5%) of all referrals were for fever or possible malaria, 38.8% for cough and possible pneumonia, and 13.6% for diarrhea. The families did not necessarily go to the PHU with which the CHW was affiliated, but many were likely to go to their closest PHU, particularly if the CHW escorted them to the clinic, as was described by several of the CHWs in the focus groups. The CHWs and/or their PS also followed up after referrals, and they reported underscoring the importance of going to the clinic if they had not yet gone. In the urban setting, there are various PHUs which women and families access regardless of their catchment area. Therefore it was difficult to track referrals made by the CHWs and fully correlate changes in PHU consultations or attendance with this project as there are many facility options, apart from the 10 PHUs the project worked directly with, that are accessible to these communities.

Figure 5: Total Household Visits and Referrals made by the CHWs, 2014-2017



In addition to specific referrals, the CHWs promoted going to the PHU as part of their BCC messages. The KPC endline survey asked randomly selected women eligible for a CHW visit if they had received a visit in the prior year, and then to give feedback on that visit. Two-thirds (66.7%) had received a visit from a CHW, and 75.8% of those receiving a visit had been given a referral to the health facility.

While they were expected to visit all families every month, they prioritized visits to the families where they knew there was a woman in late stages of pregnancy or with a newborn, as well as with a sick child. The average number of MNCH visits made each month per CHW increased from 9.4 in 2014 to 13.4 in 2015, 16.9 in 2016, and 18.8 in 2017. The CHWs tracked what they did on each visit, and as shown in Figure 6, the largest number of home visits pertained to assessing and referring sick children for care. On average, the CHWs made 3.8 sick child referrals per month, and when the CHW followed-up on a subsequent visit, they noted that most of these children had recovered, averaging 3.13 children recovered per month per CHW. The sick child referrals were highest during 2014-2015 during the EVD outbreak, but recoveries then were also high. The comments made during the focus groups about saving lives are borne out by a decline in the number of children under the age of five years who died, per the CHW report, from 0.25 in 2014 to 0.03 deaths per month per CHW reporting.

Figure 6: Average Monthly Visits and Referrals per CHW, May 2014- May 2016

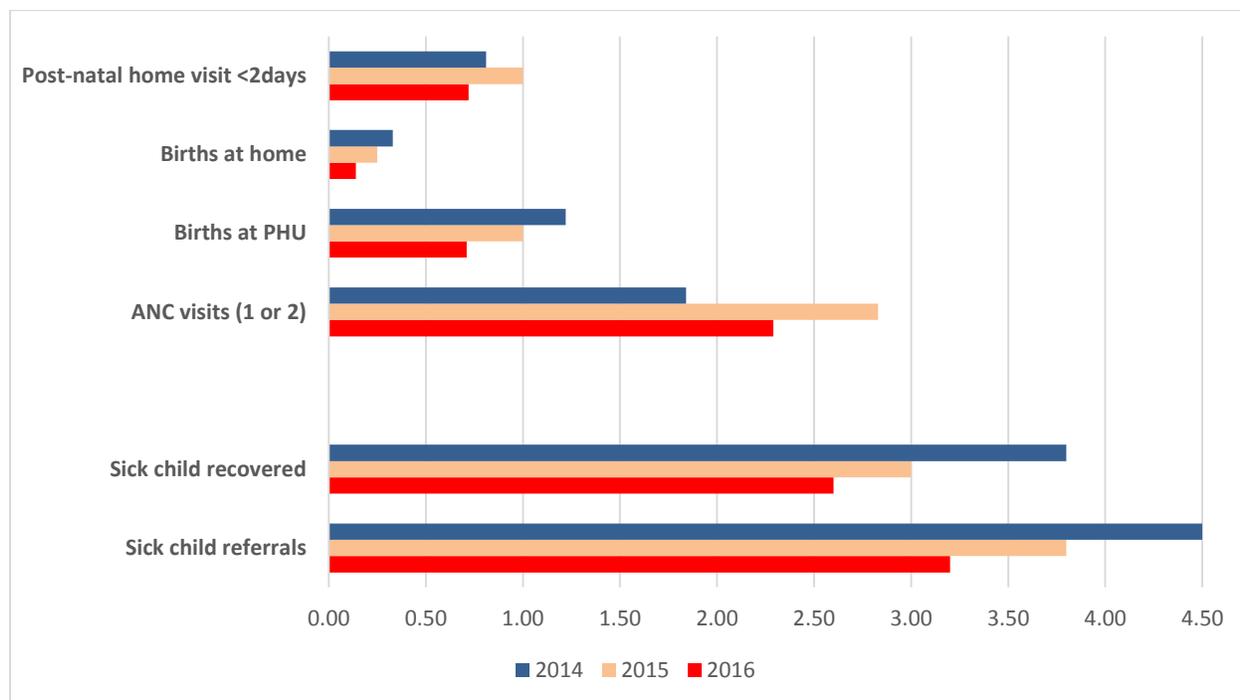


Figure 6 also shows that from 2014-2016 the CHWs increased the number of antenatal care visits made, from 1.84 to 2.83 to 2.29 per CHW per month. They recorded where women gave birth. Home births declined, but so did births at the PHU. This could reflect a reduction in observations of all birth or of births at hospitals, or a decline in birth rates. As discussed elsewhere in this report, the CHWs encouraged use of contraceptives to space births, and the KPC showed contraceptive use increasing during this time period. Along with a decline in births, the post-natal home visits within two days of birth also went down during this period, but the CHWs covered a larger share of the births, up to 85% from 52%.

6. Perceptions of the CHW impact on increasing PHU consultations

All focus groups and in-depth interviewees were asked about the contributions of CSP to improving consultations at the PHU, and there was a consensus that the CSP had played a large role in increasing consultations.

The In-Charges or CHOs at the PHUs first highlighted the contributions of CSP to helping staff learn best practices: IMNCI for the diagnosis and care of sick children, Infection Protection and Control (IPC), Basic Emergency Obstetric Care (BEMOC), and Maternal and Newborn Care.

“They trained us on IMNCI. Staff before did not know the rules and regulations on the Under 5 treatment, but with the IMNCI we now know how to treat and do this here. We now know the main symptoms for sick children. We can check for the danger signs. Before whenever a child went to the clinic, we never checked the child’s respirations. Now if a child comes to the clinic, we ask for how long they have been coughing and we count their respirations. That helps us determine if they have pneumonia. Then we can give antibiotics to the children who have pneumonia, not just if they have a cough. This cuts down on the use of antibiotics at the facility. Now, we also counsel mothers not to give hot water to the children with cough and only do exclusive breastfeeding. One of the goals for us is that all children must live. And the IMNCI has helped us. Now we have not had any children dying.” – CHO in Kuntorloh

After the EVD outbreak, the CSP also helped the PHUs incentivize families to come to the PHU by distributing baby blankets for women who deliver at the facility. In the five months preceding the distribution (December 2015 – April 2016), 1,257 births took place at PHUs compared to 1,459 in the five months after (May – September 2016). While probably not fully reported, CHW reports of home births went down from 258 births to 132 following the distribution. The PHUs continued the monthly “Best Mother, Best Father” competition, whereby Concern provided baby blankets that the PHU distributed to the mother and father who demonstrated the best care for their child during that month. The CHOs commented that these two incentives helped greatly to bring people back after the EVD outbreak.

Uniformly, CHOs, HMC and WDC members attributed changes in health facility use to CHWs.

“We [PHU staff] work hand in hand with the CHWs as we can’t be in the community at the same time we are in the facility. Also, most of us [PHU staff] are not from this community, but the CHWs live in the community so they know the people and what is going on. The CHWs bring the patients, like the child with diarrhea a CHW brought recently. The CHWs can ask questions and interact with the community on health issues. So, the CHWs provide information and bring cases to the PHU.” - CHO in Mabella

Across all the focus groups, the CHWs were singled out for their contribution to changing people’s attitudes about visiting the PHU.

“Prior to the coming of the CHW, I did not feel OK about going to the facility. It was not easy.... It was a waste of time. When you went to the clinic, the nurses would not treat you well and wouldn’t give you the treatment you desire. So, we did not go to the clinic. I didn’t know what to do or what not to do. We would just go to the market to the pharmacy to buy some medicines. We were not being advised. With the CHW they say go immediately to the clinic. Now when we go to the clinic it is easier to talk to the clinic. The nurses are aware of the CHW, so when you go to the hospital for pregnancy or sick child, the nurses know about you. They will know to refer you to the hospital you need better treatment if you

can't get it from the clinic.” - community beneficiary in Susan's Bay community

Thus, even though there were other NGOs working in the community at the same time as the CSP, there was a consensus that Concern's program had made the difference.

7. Effectiveness in improving MNCH knowledge and behavior at the household level

The Freetown-specific counseling cards were much welcomed and became a core resource for the CHWs. The CHWs immediately began using them in 2016 after their training on the BCC materials, and community members really liked the booklet of counseling cards. Across multiple focus groups, CHWs commented that women liked the booklets so much that they wanted to keep them for themselves.

“It makes the work of CHW very easy. Even the illiterate were able to identify the images in the booklets. People understood because of the pictures. Seeing the pictures, they were quick to do it. Now, even if I come without the pictures, they will still listen, because I have used the pictures first.... Some of the community did not believe the messages without seeing the booklet.” -CHW

There were several features of the BCC materials and the CHW training that made their use likely to lead to the recommended behavior change, including:

- *Images of people like themselves:* The use of high-quality color photographs of people in Freetown made it easy for the participants to identify with the image and envision doing the behavior themselves.
- *Small steps:* Each behavior was fairly uncomplicated and readily adopted, without incurring costs and taking a great deal of time. The pictures showed what to do.
- *Participatory method of promoting change:* The CHWs were trained to use the booklet using participatory techniques, giving the beneficiary the choice of message to discuss and following his/her lead in discussing what would be involved in making the change. This method follows the well-accepted practice of engaging people in articulating the change and then describing the specific steps that they will take to make that change.
- *Persistence:* The CHWs made repeat visits to families, so it was possible to repeat discussion of a message. Several CHW described making follow-up visits to further encourage or facilitate adoption of the recommendation.
- *Important message:* Though simple, the behaviors were life-saving, and the CHWs and families who had lived through the cholera and EVD outbreaks readily appreciated the importance of the hand-washing messages.

8. Effectiveness in building community structures

The CSP focused on strengthening the capacity of community structures to collect and use health information for problem solving, along with activities to enhance their overall organizational skills. As part of the OR study, in half of the communities Concern staff met regularly for a community health data review (CHDR) with about individuals from each community including WDC members, HMC members, PHU staff, CHWs and PSs, and

occasionally DHMT representatives. They reviewed CHW data and identified problems or events needing follow-up, such as low-reporting by CHWs, data quality, home deliveries, cases of serious morbidity such as measles, and deaths. At the same time, in all communities Concern was leading the HICAP with HMC and WDC members. They met semi-annually to work on building their basic organizational and leadership skills, such as planning, fundraising, supervision, monitoring community activities, and conducting group meetings among various other indicators. The HICAP process also strengthened linkages to the PHUs, so that community stakeholders- HMC and WDC members and PHU staff could improve their coordination and communications. The changes in skills related to data collection and use were assessed using the MEASURE Evaluation Tool, OBAT, implemented with a mixed group of about 300 organizational representatives at baseline (2013) and endline (2017). Some but not all of these individuals had participated in HICAP or the OR study. The HICAP assessment process used a group self-assessment process, and was done every six months, starting in 2014 and ending in late 2016.

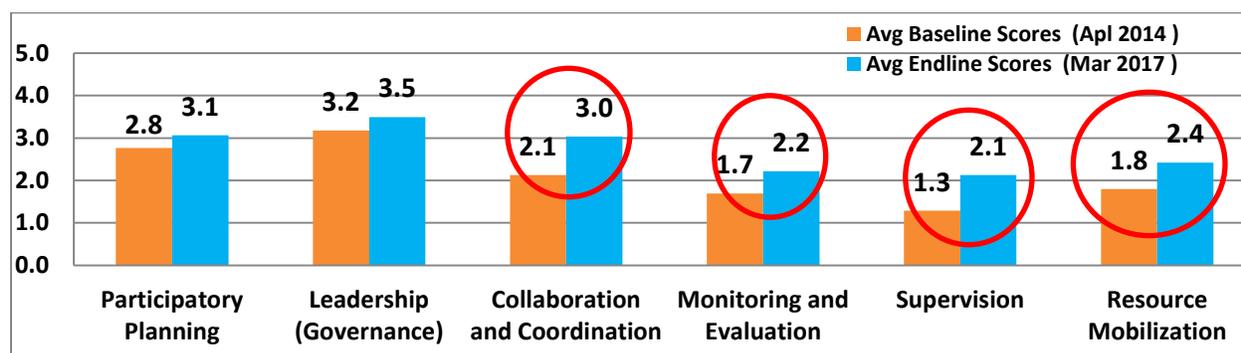
Between 2013 and 2017, the OBAT showed that the organizations' mean self-efficacy for data collection and use rose slightly from 62% to 67%, while the mean motivation for data collection and use score dropped slightly from 78% to 75%. The mean culture of information score also declined, from 83% to 77%. These scores suggest that overall the CSP was only moderately effective at making further improvements to how organizations view collection and use of data for decision-making. Lack of improvement as measured by the OBAT may reflect the fact that about half the participants in the OBAT survey did not participate in the P-CBHIS OR intervention and not all participants in the survey had been engaged in the HICAP. The lack of further improvement also could be related to the varying quality of data in the CHW registers. On average, only 55% of the CHWs reported each month, and the participants in the CHDRs noted that they found it difficult to make decisions with incomplete information. In addition, the CHDR were expected to include more surveillance and verbal autopsy data, but the verbal autopsy data were delayed, which limited the kinds of discussion possible.

Despite these limitations, the P-CBHIS had an impact on how the PHUs and DHMT viewed the collection of data, both the CHW data and their own monthly registers and vital registration statistics. There was a much greater appreciation of the importance of data. Concern joined others in advocating for maternal death reviews by the District Surveillance Officer, and the community health data reviews were welcomed by the DHMT.

“The P-CBHIS program was an excellent example of how the program built the capacity of the HMC to use information and resolve problems, so that they could see how resolving that problem would make survival “bar” go up. ... The community surveillance system has now been set up in the community. We want to keep doing the P-CBHIS in a way that complements the vital registration system. Data is best managed where it is collected. They should be able to look at the data and use it for making management decisions. We still need to harmonize how we use data at the clinic and community.” - District Dr. T.T. Samba, DMO, Western Area Urban

The HICAP assessments provide a more comprehensive assessment of the organizational empowerment facilitated by Concern. From 2014 to 2016, the average HICAP score across all self-assessed indicators (on a scale of 1 to 5) rose by 22%, from 2.3 to 2.8. As shown in Figure 7, the HMC and WDC committee members rated themselves most highly on leadership (average score was 3.5 at endline), followed by scores of 3 and above for participatory planning and collaboration and coordination. Both groups improved their resource mobilization and management skills. Gains of 33% or more were shown for monitoring and evaluation, supervision, and resource mobilization. (See Annex XIII D. HICAP Matrix for more information).

Figure 7: Change in Health Institutional Capacity from 2014 to 2016



The feedback from the HMC and WDC members on the HICAP process was unanimously positive. There was consensus that the process had been valuable, orienting them to their roles and responsibilities and then supporting them as they began applying these skills to their work for their community's health.

“After the HICAP training, the relations between the HMC, CHW, PS, and WDC and the community completely changed. Before, the parents viewed the WDC members as enemies. They would ask for the money to go if you [WDC member] said they should go. But with the true sensitization now they do not see us as enemies. We should not be police but are partners in development with the PHUs. Before there was conflict, now our relationship is 100% good. From the HICAP, the HMC, WDC and CHWs began meeting together. All coming together and holding joint meetings was a major change. It created understanding between the HMC and WDC through regular meetings. It really helped us to know our strengths and weaknesses and where to apply more effort. ... Coordination of CHWs is now our role. Prior to this time, we [WDC] couldn't reach certain areas. We didn't understand how CHWs and PSs worked in the field or that it was our role to supervise. Now, we know what they do, where they go, which homes they target. The PHUs say that more people use them now. We cross check with PHUs and homes and we know more people are going to the PHU now.” –WDC member

The following comment from an HMC member sums up the overall impact of the HICAP training: “We are now empowered. Through this work we are known in the community, and it will continue. Concern has made me to be known in the community”.

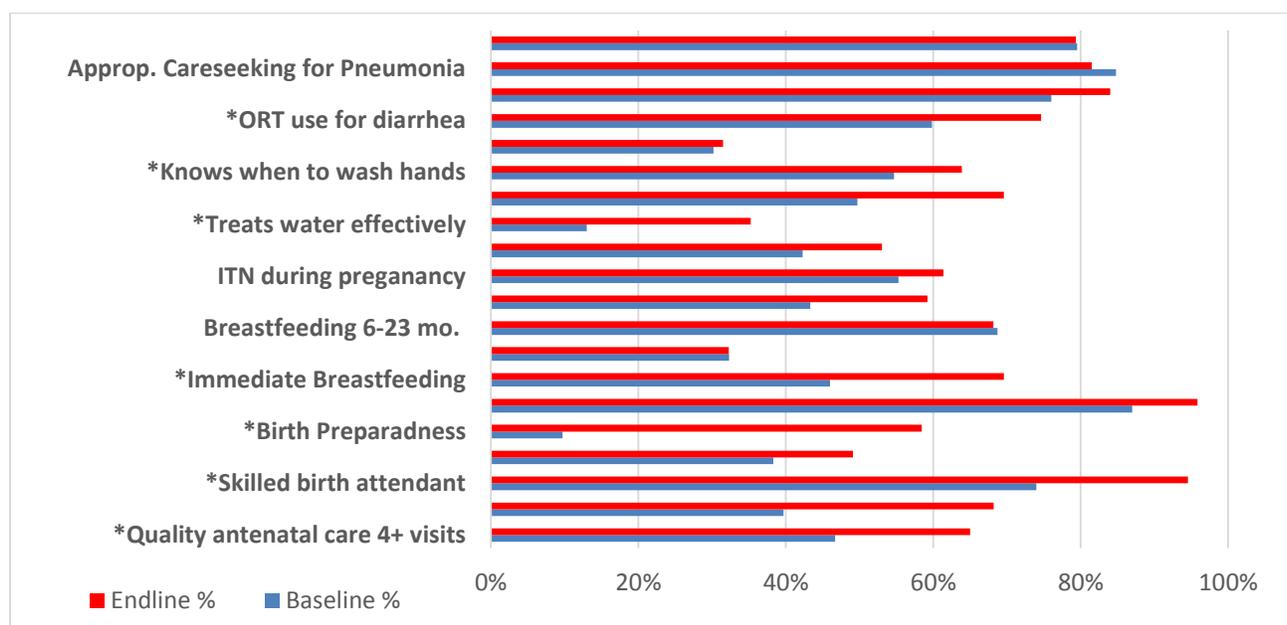
C. Impact on health outcomes and policies

I. Impact of the CSP on Key MNCH Practices

The baseline and endline KPC surveys allowed assessment of the changes in knowledge or practices recommended by the CHWs using the BCC counseling cards. Figure 8 shows that all but three of the indicators for these practices increased from baseline to endline, and thirteen of these increases were statistically significant at the .05 level. The largest increases in adoption of MNCH practices were for use of oral rehydration therapy (ORT) for diarrhea (60% to 75%), appropriate hand washing techniques (50% to 70%), water treatment (14% to 35%), use of bed net for children under two (42% to 53%), knew importance of birth spacing (43% to 59%), use of contraceptives (38% to 49%), breastfed immediately after birth (46% to 70%), made birth preparations (10% to 59%), used a bed net during pregnancy (40% to 68%), had a skilled birth attendant (74% to 95%), and had four or more ANC visits with a quality provider (47% to 65%).

While there were other factors and NGOs influencing what families do, the observed associations between the BCC messages delivered by the CHWs and increases in practice suggest that the CHWs may have contributed to these changes, particularly since it is known that they are most effective at promoting change during one-on-one conversations during home visits.^{4,10} The lack of change in behaviors including exclusive breastfeeding and giving appropriate foods to infants and young children may reflect the difficulties that women face in maintaining exclusive breastfeeding or assuring specific foods are given to their children when others are caring for them when they are not at home; a problem often cited by other urban women attempting exclusive breastfeeding. (Additional details on changes in MNCH knowledge and practices are found in the Annex IV, containing the Final KPC report.)

Figure 8: Changes in MNCH practices promoted by CHWs with BCC messages, Baseline to Endline (% among mothers with 0-23 month olds)* (Endline is significantly greater with 95% confidence)



2. Evidence of Program Success in Achieving its Objectives

As with any community project, all observed changes cannot be attributed to the CSP alone, as there were other initiatives under the direction of other non-governmental and governmental authorities. However, the quantitative and qualitative data provide sufficient evidence to give the CSP credit for many of the observed changes.

Objective 1: Improved quality of MNCH quality of care: Despite the additional challenges noted above in terms of the EVD outbreak and reduced DHMT collaboration, the strong contributions of the Concern PHAs in training and mentoring the PHU staff yielded improvements in the quality of care with regard to treatment of sick children and during ANC visits. Increases in quality of care were observed in ten areas. The absence of essential supplies, copies of the treatment protocols and some drugs likely undercut the achievement of further increases in health worker performance. Limitations in the gains in quality of care also could be due to the reduced amount of supportive supervision and decline in staffing and essential infrastructure at the PHUs during this period. The PHU staff, HMC, WDC and community beneficiaries all described the limitations of their work due to stock-outs of medications and supplies.

Objective 2: Increased MNCH household knowledge and practices: Concern's strategy for increasing MNCH household knowledge and practices relied on the decentralized network of CHWs in each project community. They visited pregnant or lactating mothers or those with children under age five years to share selected messages and tips on how to take better care of themselves and their children. All but three of the practices covered by the CHWs BCC booklet increased significantly from baseline to endline, and the three which did not increase stayed constant. The failure to increase exclusive breastfeeding and appropriate infant and child

feeding practices may reflect the difficulties of managing these in the urban environment where women may leave their infants with caregivers when they go out.

Objective 3: Strengthened ownership of the PHU and health by the community: Concern's strategy built community ownership for community health, component by component. At the core of the CSP were the CHWs, nominated by and accountable to their own community. They felt connected to the people with whom they were working. They were further supported by the community-based supervisory structures Concern established for the CHWs and the whole CSP. CHWs were at the core of this strategy, and a strength of the Concern model was organizing them in groups of 10 or so CHWs who were supervised or mentored by a PS, a fellow CHW with leadership and advanced CHW skills. The PSs accompanied CHWs during selected home visits, reinforcing the message that the CHW was a link to the larger health system. The PSs were in turn jointly supported by the HMC and WDC. Each of these groups supported each other and shared a common goal of linking the community members to health services at the community's PHU. While the CHWs served as the major bridge between the community and the PHU, the others served as pillars supporting the referrals and links to the PHU provided by the CHW. Instead of the health system driving health promotion in the community, it was the community itself which drove the action, through the coordinated work of the CHWs, PSs, HMCs, and WDCs.

The OBAT established baseline and endline scores for assessing the culture of information, and motivation and capacity to use data while the HICAP and P-CBHIS were participatory capacity building processes used to improve communities' institutional "culture" and capacity to use data. Instead of working with each group in isolation the Concern model engaged all the community health structures together (HMC, WDC, PHU), so that they changed together. They understood more clearly the roles and responsibilities for each group. Integrated into activities to build organizational and leadership capacity of each group, the HICAP provided the glue needed to mesh everyone together in the ongoing change process. Instead of the PHU being left as the sole group responsible for community health, the HICAP forged a team where all worked together and took pride in the collective results of their work. The OR activities strengthened understanding of the importance of using data collected by the CHWs, which reinforced the goal of the project to strengthen community ownership of and capacity for health decision making. While neither the OR project nor HICAP achieved improvement in all domains of organizational capacity, the impact of these activities, particularly HICAP, is likely to be one of the most lasting impacts on the ways that these communities address health problems.

Objective 4: Improved national and district-level MNCH policy environment: Apart from the contribution of the CSP to the national CHW policy (to be discussed below), the CSP contributed to the DHMT and MNCH policies through their ongoing participation in meetings with the MoHS and DHMT. First, CSP worked closely with the DHMT to strengthen IPC during the cholera and EVD outbreaks, and the DMO credited the CSP with its contribution to instilling infection control into DHMT procedures. Second, CSP collaborated with the DHMT to ensure that PHU staff had refresher trainings and related guidelines for key MNCH care and treatment standards. The PHU staff indicated that these refreshers had been extremely

valuable, and the CSP modeled how to follow-up the training with mentoring and supportive supervision to maintain skills. This model now exists and can be taken up by the DHMT. Third, the HICAP process serves as a model for empowering the HMC to be more effective in working with the PHU and CHWs. Concern's PS model is at least partially incorporated into the 2016 National CHW model. According to Dr. Kandeh, Director of the MoHS Primary Care Division, a modified version of Concern's approach for PSs has been implemented with the 2017 roll-out of the national CHW program. Finally, the biggest contribution was in strengthening data collection and use. Dr. Samba, DMO for the district, indicated that the P-CBHIS was one of the strongest contributions of the CSP and this approach has been retained throughout the district with the surveillance activities of the CHWs.

Concern undertook a number of initiatives to help the MoHS specify an urban adaptation in the national CHW policy. Concern and CSP staff actively participated in a CHW advocacy group along with other NGOs. Concern developed a briefing paper on distinguishing features of an urban CHW, which they proposed for inclusion in the 2016 revision to the national CHW policy. When the revised National CHW policy was issued in 2016, it did include an adjustment in the definition of hard-to-reach (>3 km in urban areas, versus >5km in rural areas) for Freetown. Other recommendations from the CHW working group regarding tailored scope of work for urban CHWs were not included in the 2016 revision, but still may be included in subsequent revisions.

3. Community perception of the CSP impact

As noted above, across all the focus groups there was widespread appreciation for the CSP and its contributions to saving lives in the community.

"In our community, people were not in the habit of going to the clinic. People were also likely to refuse medication. And so, our children were dying, pregnant women and nursing mothers also were dying. So, that is why we became CHWs. We discovered how to make it better. When I became a CHW I saved so many pregnant women and fewer children are dying now." --- CHW from Dwarzac

"We call the CSP project an eye opener, because even after the Ebola finished CSP also took the lead in bringing CHWs together to start building the confidence of pregnant women, mothers of under-five children to seek treatment in the health center." –HMC member from Mabella

"We learned so many things. They taught us how to take care of our children. The cleaning of our environment.... Before the visits of CHWs there were so many cases of fever, but since their visits there are fewer cases. And diarrhea has reduced drastically. Because we now know what to do to prevent diarrhea."- community beneficiary

II. OPERATIONALIZING THE NATIONAL CHW PROGRAM FOR THE URBAN SETTING AND ITS CONTRIBUTIONS TO THE HEALTH SYSTEM

A. Adapting the CHW model for urban slums

1. Adaptations

The GoSL's national CHW model was developed primarily for the rural context, where the CHW works within a village setting to bring basic primary health care messages and some essential services to families living distant from the health clinic. CHWs working in the urban slums face different challenges in reaching and connecting people to health care services, including:

- Not always being known by the families they serve
- Higher level of distrust of strangers in general
- Communication materials based on rural lifestyle not suited to the urban context
- Crowded living conditions and poor sanitation
- Difficulties of integrating CHW work into busy lives
- Multiple health care service providers available
- Immigrant and a generally more mobile population; potential for language barriers
- Precarious access up steep hillsides and narrow pathways
- Higher degree of monetization of the economy and need to earn money

Table 7 summarizes the adaptations Concern introduced to overcome these challenges.

Table 7: Adaptations of the CHW model for the Urban Context

<i>Enhancing acceptance and trust of the CHW</i>	<p>CHW nominated by HMC, WDC, PHU and other community leaders</p> <p>CHWs assigned to work in their own neighborhoods, supervised by a peer from the neighborhood</p> <p>Concern T-shirts and materials</p> <p>Community introduction when activities launched</p> <p>Peer supervisor introduce the CHW to the families</p> <p>Training on gaining trust with families</p> <p>CHWs involved in helping families during EVD outbreak</p>
<i>Communication materials tailored for Freetown slums</i>	<p>BCC materials developed by and for use in Freetown</p> <p>Menu of 13 different behaviors from which to choose</p> <p>Behavior change counseling based on input from Freetown residents per Barrier Analysis</p> <p>CHWs trained to use the materials in a participatory, engaging way tailored to the specific situation of the beneficiary</p>

<i>Crowded living conditions and poor sanitation</i>	BCC materials include messages on sanitation, water sources, hand washing CHWs practiced implementing infection protection and control methods to help families overcome the contamination risks
<i>Participant-friendly timing of visits</i>	Focus on health promotion for only 30 families per CHW aims to keep the workload small and manageable around other work responsibilities CHWs encouraged to schedule visits when people were home, evenings and weekends
<i>Strong linkage to the community's PHU</i>	CHW linked to the local PHU for supervision and referrals CHW provided information about the health care providers at the PHU and helped to assure the participants they will get the best care there. CHW provided information about benefits of care at the PHU, discouraged care from pharmacy or local healers DHMT and local community policies introduced to penalize home births
Ensuring continuity of CHWs when people move	Informal system whereby the PS was alerted to new arrivals of eligible families, who were then assigned to CHWs who had families departing CHWs who moved away or stopped working submitted their HH's to the PS for re-assignment (in principle)
Ensuring safety of the CHW and community members	PS on call to CHWs PS and Concern CDOs worked together with the CHW, showing public support
Precarious access	CHWs offer to escort families to the PHU, helping to navigate the paths and crossings
Incentives to offset the demand on time	PHUs offer baby blankets and prizes for clinic attendance Stressed the value to the community of the CHW contributions to saving lives Make clear to the community that the CHWs are volunteers and do not receive any payment

However, some needed adaptations were not made and continued to be an issue for the program, as follows:

- CHWs were never given identification cards, and this made it difficult to convince people of their legitimacy. Concern had planned to provide identification cards, but consensus was not reached at the national level to refer to this cadre as CHWs. Even after a suggested name change to "Health Promoters" by Concern, there was disagreement about issuing ID cards. This was mostly centered on the fact the new CHW policy was set to be released with specific guidelines in the coming months.
- CHWs had little preparation for handling verbal abuse from participants, yet in the focus groups this was described as a frequent occurrence.

-
- The issue of motivation came up repeatedly. Whereas in-kind thanks have often provided motivation to rural CHWs, voluntarism is more difficult in the urban context, where the CHWs are under pressure to earn money to support themselves and their families. Though they had worked as volunteers, they would have liked some kind of monetary recognition for the value of their work. In the words of one CHW:

“A little stipend would help so that we take it serious. If no stipend, it is not taken seriously. A small token would be enough to change views of our work.”
-CHW

This was reported as one reason many had dropped out or were working at a lower intensity than expected. Even the community beneficiaries thought that the CHWs should receive some kind of financial motivation.

- Many CHWs requested boots and rain coats for the rainy season, but they only received umbrellas.

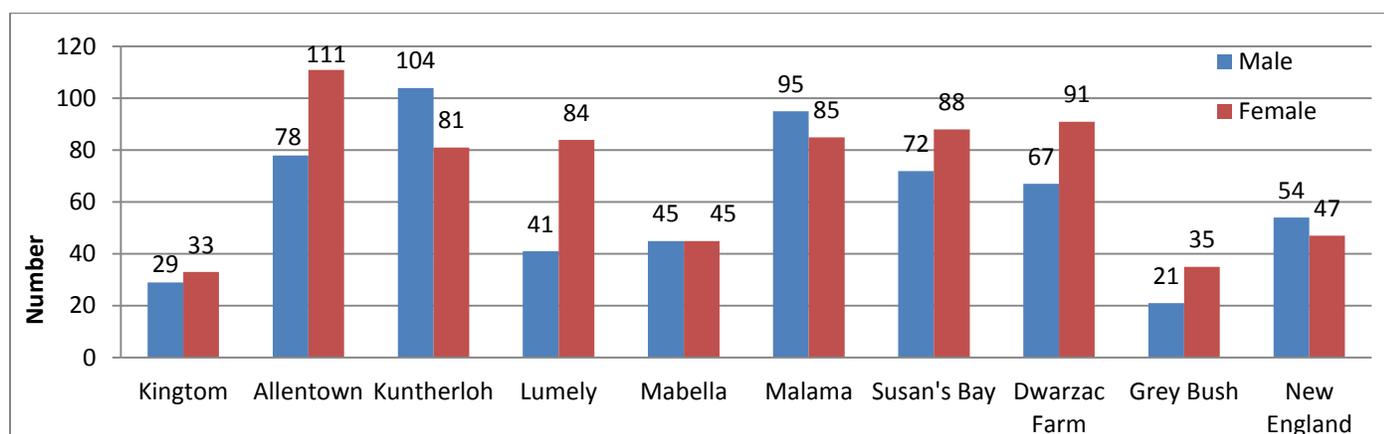
Next, while the CDOs described a process for the PS to allocate newly arrived residents to CHWs, the PS did not appear to use this as a regular procedure for allocating new households, and even a less regular process for those moving out. According to some CHWs, they just added arriving families to their visits, but this appeared to be an ad hoc process, which some CHWs followed and others did not. There also was no formal system for re-assigning families to other CHWs when a CHW stopped working. This could reflect the fact that CHWs may have stopped making visits without formally withdrawing from the program, so that the PSs could not confirm their departure. Some PSs described a process by which they re-assigned households from these departing CHWs to other CHWs, but this was not a consistent practice across all sites. The net result was that at the end of the program some CHWs reported having 50 or more households to visit. In addition, there were no procedures for recruiting and training replacement CHWs for those who left.

Last, while the CHW training modules included a module on gender-based violence, there was no module for CHWs on dealing with potentially difficult or abusive situations they encountered during their home visits. Many CHWs reported encountering verbally abusive individuals in the community, but their only recourse was to ask their PS to come to calm the community member.

2. Training and Deployment of the CHWs and PSs

A total of 1,306 CHWs were trained. The number of CHWs trained per site varied with the size of the target population, as shown in the Figure 9.

Figure 9: CHWs trained by site and gender



Information collected at the time of their training shows that the overall gender distribution was 46% male and 54% female, and most were under age 35 (40% aged 15-24 and 32% 25-34). Most had completed secondary school (59%) or at least some higher level training (26%). Only 5% were illiterate. The majority (88%) of the CHWs trained by Concern had been trained on promoting at least one aspect of MNCH in the years prior to the CSP by Save the Children or GOAL, which are also active in Freetown.

The CHWs interviewed were unanimous in their passion to help their fellow community members stay healthy and be spared death. The following quotes from the focus groups reflect the motivations shared by both the high-performing and under-performing CHWs:

“There is a philosophy: Health is wealth. Prior to the coming of Concern, we were having so many deaths of young children, but when Concern came, we saw it as a way to stop these child deaths. I wanted to join together to do this.”

“I don’t believe humans can pay others, only God can do that, that’s why we are volunteers. We hope that the payment will come from God in some way, as a blessing. ... As the saying goes, do for your neighbor as you would for yourself. That was why we are willing to go, because we want our children alive. Our children should be free from sickness and not die”.

3. Effectiveness of the Training

Concern worked with the MoHS to adapt the 2012 National CHW training for the CSP, adding more elements on communication and removing the modules related to providing care or treatment, tasks not included in the list expected for the Concern volunteer CHWs. Training was provided over the course of seven days in five units covering communication and how to perform the CHW tasks, along with information about the MNCH topics the CHWs would be discussing with community members. The training was participatory, involving group activities, role plays, and practice with tools. Training materials and tools assumed a fairly high level of literacy, particularly for properly completing the household register and the community profile. The original job aids were a black-and-white set of drawings and messages that the MoHS had

adapted from the largely rural Ugandan CHW program. CHWs found the job aids difficult to use due to the format of small black and white images surrounded by a great deal of English text, and mixed instructions to the CHW on messages for the community.

During the training, the CHWs' average gain in knowledge of MNCH issues rose from 63.5% at pre-test to 75.1% at post-test, a gain of 11.6 points. Those who showed leadership, interest and particular passion along with a higher level of performance on the CHW basic skills were invited to become PS, and they received additional training on supervision.

4. Feedback on the training from the CHWs

The feedback on the training was very positive. The CHWs said that they learned a great deal but that if anything, they thought the training was too short:

“For Concern, at the training we learned how to do all the things, and we were able to do everything we were supposed to do after the training. The training was very helpful, we learned so many things. People now ask me if I am a nurse.” -CHW

“After the training when we began to work, I had the zest to go house to house to do the work. Whenever I went out, I was happy to wear the [CHW] T-shirt. People praised me and that prompted me to do more work. We are doing the work out of love.” -CHW

The CHWs identified the following skills from the training as the most useful and important for their success as CHWs:

Establishing rapport: How to approach households and build trust, how to deal with people who do not want to participate, how to make friends with those they visit.

Communication skills: Knowing how to talk to mothers at home, how to be polite, how to calm people down, how to be persistent and get people talking.

Behavior Change Communication skills: How to communicate to both husbands and wives, to praise people for doing behaviors correctly, and to demonstrate recommended behaviors.

Knowledge: How to articulate the importance of prevention and of prompt treatment of childhood illnesses and how to support mothers in having a healthy pregnancy and delivery.

The CHWs had several suggestions for how the training could have been improved:

- Clarify the purpose of the original job aid, as either a manual or as BCC materials;
- Provide ID cards to legitimize the CHW role and link them with the health system;
- Provide more training on filling out the reporting forms;
- Provide training on how to deal with security risks in the community;
- Instruct on how to follow-up to help people with medication adherence;
- Include more training on water treatment and sanitation;

- Provide training for treatment of minor childhood illnesses;
- Provide training on the promotion of birth control among teens.

5. Retention of the CHWs

While 1,306 CHWs and PSs were trained in 2014, not all of them continued to visit families throughout the remaining project period. CHWs were deployed in only half the communities prior to the EVD outbreak, so the numbers reporting during 2014-2015 were less than half of those trained. During the EVD outbreak, one-third (29%) of the CHWs dropped out and only 921 participated in the 2016 refresher training. After this refresher, the numbers reporting per month in 2016 rose to an average of 527 (57% of those at the refresher) and then leveled off at 476 per month in 2017. In 2016-2017, only 42% of the originally recruited CHWs were still reporting monthly. As will be discussed below in the section on CHW experience, there were many factors behind this relatively low level of retention, including the long gap between training and deployment after the refresher, lack of financial incentives, and other difficulties associated with fulfilling the CHW responsibilities while also meeting their personal obligations.

B. Sustainability of the CSP

All groups and individuals interviewed for this evaluation were confident that they could sustain the program, based on the capacities that they had built up together in their partnership with Concern. CHWs wanted to sustain the program, and about half of those participating in the discussions expressed their willingness to continue the work without support from Concern. They felt they were still valuable to the community, as they had the training, tools, and experience to continue to do outreach in the community.

“I will still continue to work to save lives in the community. No matter what. This is my community. If there were any other organization to continue it, we would continue to embrace it.” -CHW

“Even the community people welcome this.” -CHW

“We will rely on the structures that already exist in the community, WDC and HMC. These are the structures that who will be there to support us. Any questions we have about health matters we will go to the HMC or the PHU, while the WDC is for political issues. HMC and WDC are ours, so we go to them if we have any problems.” -CHW

But, other CHWs were dubious that they would continue the work. Several expressed their disappointment at not being chosen to be a part of the new national CHW program. These were some of the things that the CHWs felt would be needed if they were to continue without support from Concern:

- ID cards with official recognition from the PHU/DHMT/HMC/WDC giving them authority to do the work;
- Weekly phone credits;
- Some small motivation (not a salary but some incentive);

- More public recognition of their work;
- Participation in the national mobilization campaigns;
- Digital rather than paper forms as the monthly reporting forms are too time consuming and cumbersome to use;
- Rain boots and rain coats.

Peer Supervisors echoed the same themes as the CHWs but they also felt that the CHWs needed to be recognized as CHWs and given a small motivation in thanks for their work.

“So that the supervisor’s work will continue, we need to create a fund to provide motivation for the CHWs. To stop home delivery was not easy. Because we have chiefs who are part of the CHW team, this helped. To go up the hillside was not easy. But we are trained and so we have to convince the CHWs to continue to do the work. But it will stop if there is no stipend.” -PS

One PS group suggested creating a networked telephone system between CHWs, so that they can easily connect to each other for more effective work and prompt follow up.

The HMC members expressed much more confidence that they could continue their work with the CHWs and the PHUs, in part because they perceived a role for themselves linking CHWs to the PHU under the new policy. But, they did not feel that their new role was carefully articulated and some HMCs did not believe they had a role. For sustainability, the HMC role needs to be recognized and supported for its work linking the community to the PHU, providing oversight to PHU and to the CHWs, and ensuring coordination with the WDC. In addition, they were upset by the very small numbers of CHWs chosen to participate in the new policy, and how this de-motivated those not selected.

“The new CHWs are under the umbrella of the HMC. According to the training if they have difficulties with the PHU they should report directly to the HMC so that we can help them. They were having 25 households each, now the new ones have 100 each. They [CSP CHWs] were complaining that their workload is too high, so we are still advocating on their behalf to add to the CHW numbers.” –HMC member

The HMCs proposed working with international NGOs to support the Concern CHWs not selected for the new program. They felt that with an umbrella of authority and support, they could find a way to have the volunteer CHWs working alongside the ones with government stipends.

The WDC members were most confident about the sustainability of their contributions and their efforts to support CHWs. They gave examples of how they were working together and saw no reason why they could not continue their partnership after Concern ceased its involvement, barring any election loss which would put them out of office.

“I will support it for the welfare of the people. If I sit back and allow anything bad to happen, people will ask. I will support the new CHW program

because if anything goes wrong in my community I will not be happy. It is all about my community. The CHW and the PS will always work with us, because we can solve the problems. We as the WDC advocate for the CHW to get stipends and to get certificates. We want the same pattern to be continued.” –WDC member

The PHU In-Charge/CHO’s were somewhat confident about the sustainability of the changes they had achieved at the clinic. In addition to having greater competence in using the MNCH guidelines for care, they felt that the entire linkage process with the HMCs and CHWs would continue, and that attendance at the “Under-5” clinics or for deliveries would continue. They were counting on the continued volunteer support of the CHWs.

“The attendance will be sustained. People are coming to use the facility and facility births and attendance at under-five clinic will be sustained. Drugs are the limiting factor and we also do not have a lab. DHMT and NGOs have a role to play in improving the drug supply.” -PHU

As noted in several of the focus groups, a problem the PHUs face is the maintenance of their drugs and supplies, which was an issue throughout the CSP program period. The CHOs also had suggestions for helping the CHW deliver relevant messages: continuing to use the same system of peer supervision with the HMC for the CHW, adding pictures of the danger signs in pregnancy and of sick infants so they are better able to counsel on danger signs, and using specific messages instructing families not to use unregulated and traditional medicines.

In sum, the CSP health achievements can be sustained. Because of the interlocking support and community linkages which have resulted in greater cohesion and a functioning support system for the CHW, they will continue to promote MNCH at the community and household level. However, achievements are not likely to be sustained without minimum changes to the CHWs working conditions, namely an ID card and some financial recognition of the value of the CHWs contributions. Under the new CHW Policy and for future programs, CHWs work must be recognized and acknowledgment for this particular frontline health cadre should be integrated into the health system. Also, there was broad agreement that the number of CHWs needed to sustain the current level of achievement would need to be greater than the number newly recruited in Western Area Urban by the DHMT following the new national CHW Policy.

The CSP model is anchored in the community, not the PHU. If this community-based leadership and supervision does not continue, then the interconnections between the CHWs, PSs, HMC, WDC, and PHC may be weakened or lost, which in turn would destabilize the complex supports which make it possible for the CSP model to succeed.

Finally, another major limiting factor on the sustainability of the CSP is the degree to which the DHMT takes on the role played by the PHAs in providing supportive supervision and routine monitoring of supply/drug stocks. The quality of care did not improve as much as was planned; so in addition to maintaining the current gains in quality of care, the DHMT needs to provide the inputs and lead the processes which will enable further improvements in quality of care.

III. DOCUMENTING THE CHW EXPERIENCE AND RECOMMENDATIONS FOR AN URBAN CHW MODEL

A. Feedback on the Experience of Being a CHW

All CHWs were proud of their work. In particular, they were proud of their Concern t-shirts, which publicly declared their role. Most felt welcome from their first visit.

“It is my community so they are used to me. On my first visit, I met a woman nursing her child, and we already knew each other from before. The child was sick when I came, and they were preparing to take the child to the herbalist. But immediately, I said that instead let us go to the clinic. The child was diagnosed with malaria and treated. Now the child is well. Since then any visit I make to them I am always welcome.” – A CHW in Kuntorloh.

However, not everyone felt welcome at first, and their response to the challenges encountered in establishing relationships with community members is evidence that the CHWs were trained on how to engage people and overcome objections. Being too busy was a common consideration, and the CHW usually rescheduled for a more convenient time. A young woman described how on her first visit she broke the ice with a hesitant woman:

“On the first day I went for the visits, immediately I started talking with a woman, and she said I should not talk with her. I tried to explain about how the program was good for her and she continued to deny me. So, I helped her with her work. Upon completion of her work, she said OK to talk, but still she said I had to wait. Only when she came back then I could talk. After getting advice from me, she responded that she had heard me. Now, she is my friend, and I visit her on a regular basis.” -CHW

They developed strategies for putting people at ease by chatting with them, and above all being patient.

“We were taught to have patience. If they don’t permit you it might be because of many reasons. Don’t force the issue, accept the situation as it is and make an agreement to visit another time. If you force the message it won’t go through. You’ve got to use lots of strategies.” -CHW

The biggest challenge raised in every focus group was resistance to a visit, because the community members assumed CHWs were paid, which would imply that they were doing the work for money, not because they really cared. At first the CHWs were angered by the refusal and resistance, but they learned how to cope with it by being persistent, returning after each rejection until they finally convinced the family that they were serious about wanting to help them.

“On my first visits, I was not used to visiting the slums. Some people were very reluctant. Some were not my neighbors and they did not know me. I went there one time, and they refused, but I kept at it and went again. For the second time, they still did not want to listen. I kept going until finally they accepted me.” -CHW

“The first time we [PS group] met after starting, some CHWs were very angry about refusal. But we were told to keep repeating the message that we are doing this for the community, not for the government. So, every CHW went back and kept trying. Eventually all the doors opened.” -PS

The CHWs encountered some resistance from individuals who did not want to go to the PHU, as families were used to consulting the pharmacist or local healer. These objections appeared to have surfaced mainly at the beginning of their visits to families, and the CHWs described how they overcame this resistance by explaining the high quality of care they would receive at the PHU and often escorting the family to the PHU. Either the CHW or the PS often followed up to make sure that the family used the referral to go to the PHU.

1. Lessons learned from the High-performing versus Under-performing CHWs

As shown in Table 8, there were some interesting differences between the high-performing and under-performing CHWs. While they all shared the same motivation to help the community and save lives, compared to the high-performing CHWs, the under-performing CHWs expected money and per diems from national campaigns, and they learned the “content” about the health practices but not communications and other skills. (Differences are highlighted in bold and marked with the arrow bullet point opposed to the round bullet point.) Under-performing CHWs emphasized the difficulties in making visits and having to deal with angry people, and were themselves upset by delays. Those identified as under-performers agreed with the high-performing CHWs on monetary motivations for the CHWs and the reasons provided including the need to work or study by those who had dropped out.

Table 8: Differences between the Under-performing and High-Performing CHWs (bold and arrow bullet point distinguish differences between the two groups)

Qualities/concerns	Under-performers	High-performers
Motivation to be a CHW	<ul style="list-style-type: none"> • Help community, save lives 	<ul style="list-style-type: none"> • Help community, save lives
Expectations about incentives	<ul style="list-style-type: none"> ➤ Expected money, link to national campaigns w. per diems 	<ul style="list-style-type: none"> • No monetary or material expectations
What learned from the training	<ul style="list-style-type: none"> ➤ Emphasis in health content, about the illnesses and health practices 	<ul style="list-style-type: none"> • Learned content, but also learned communication skills, how to promote behavior change • How to be polite and “have good

		character”
<i>What needed but did not get from the training</i>	<ul style="list-style-type: none"> • ID cards • Risks of thieves when escorting women to hospital ➤ Should not allow non-literate to participate 	<ul style="list-style-type: none"> • ID cards • How to deal with lack of security • More refresher training • A way to help people with malaria
<i>Feedback on home visits</i>	<ul style="list-style-type: none"> ➤ Emphasis on difficulties in making visits to people who did not want to talk with them or were angry. • Did not like the original booklet and much preferred the second w. pictures 	<ul style="list-style-type: none"> • Comfortable from the start with home visits • The second booklet with pictures was much better • Developed strategies to engage people • Had to be patient and deal with anger
<i>Reporting and using the registers</i>	<ul style="list-style-type: none"> ➤ Could use the register, but the illiterate had to get help ➤ People not at home so delayed to complete ➤ People deny their illness and are not consistent 	<ul style="list-style-type: none"> • Made mistakes at first, but PS or CDO helped them learn how to fill out the registers and forms • Easy to use • Received feedback from the PHU on referrals • Used and exercise booklet to pre-record and then complete at home
<i>Most challenging part of visits</i>	<ul style="list-style-type: none"> • People think they are paid • Felt abused and unwelcome ➤ “People don’t respond to us [CHWs].” ➤ “People tell us [CHWs] lies, like saying they don’t have a bed net so we [CHWs] will bring one.” ➤ “The more well-off ignore us[CHWs].” 	<ul style="list-style-type: none"> • People think they are paid but are not • People expected them to give bed nets • People are too busy to talk • Cannot do as many visits as expected because we are busy, too. Had to learn to balance CHW work and personal work
<i>Why some dropped out (for high performers, responses are their perceptions of why CHWs dropped out)</i>	<ul style="list-style-type: none"> • Not paid, need to feed their family • Wanted transport allowance • People get jobs and do not have time ➤ Thought it was a waste of time ➤ They are not hard working 	<ul style="list-style-type: none"> • They thought they would be paid, and left when they learned they would not be paid • They got busy with studies or work. • They really needed paid work and could not volunteer anymore • Their expectations for what they would get were high, so they left. • Some died during Ebola outbreak,

	<ul style="list-style-type: none"> ➤ Not invited to participate in campaigns ➤ Poor communication between CHWs and the PS about reporting timeline ➤ Tired of being blamed for things the CHWs did not have (e.g., drugs) 	<p>and others left for family reasons</p> <ul style="list-style-type: none"> • They moved away
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If Concern or any other NGO wanted to insure that the CHWs have a higher retention rate, they need to address the expectations for monetary incentives. Equally important, would be to review training methodologies to ensure that all CHWs, regardless of literacy status, are more fully engaged with participatory modules especially as it relates to communication skills and the application of these skills when communicating with beneficiaries during household visits. When it comes to being a CHW, it is not what you know but how you use your knowledge which makes the difference. It appears that differences between the high and under-performing CHWs may have emerged at the time of their training, with their different uptake of skills, which in turn affected how they performed as CHWs. Having more flexible scheduling of CHW responsibilities would be beneficial to all CHWs as they balance work against their commitment to help the community, but for the would-be under-performers this could also help them to stay on.

B. Potential for Sustainability within the New National CHW model

The DHMT, FCC, and MoHS partners all recognize the contributions of Concern's CSP to the health of the communities, and the new national CHW model being implemented incorporates many elements developed by the CSP: CHWs being recruited from within the neighborhoods, supervised by PSs, supported by the HMCs, and linked to the PHUs. However, the CHW workload has been substantially increased in the new policy as follows:

- Households allocated per CHW increased to 100 from 25-30.
- Expansion in the number and specificity of visits: CHWs are expected to make four antenatal home visits, possibly escort pregnant women to the clinic for delivery, and then three post-natal visits, along with five additional visits to mothers with newborns with repeated visits throughout the first year of life to ensure child's healthy development.
- Community-based service delivery, including: provision of contraceptive pills, iCCM for children with malaria, acute respiratory infections, and diarrhea, and referrals for anyone with danger signs
- Community sensitization about HIVs and AIDS and Tuberculosis.

According to the new policy, all CHWs have the same scope of work, regardless of their location in rural versus urban areas. They should be compensated with Le100,000 (\$13 USD),

while the PS are to receive Le 150,000 (\$20 USD) per month, with additional monthly sums to cover transport and phones, with a higher rate for CHWs serving hard-to-reach areas. In Freetown, hard-to-reach was defined as >3km instead of >5 km from the PHU.

This model addresses the desires of the CHWs for a financial incentive and to have their transport and phone costs covered, but it also imposes a very heavy burden of home visits on the CHWs. Each DMO had flexibility in specifying the number of CHWs per PHU. Despite recommendations from Concern and other groups for more CHWs, due to financial limitations, the Freetown DMO selected a ratio of only 10 CHWs per PHU, with only one PS.

“We have learned that the CHW is very effective for delivering health into the community. Carefully selected CHWs can reach almost everyone. However, when designing a project you need to consider what resources you have, and what are you required to address: Required, Available, Gap (RAG) is what we think of here. In principle, the 10 CHWs per PHU will work. And, we cannot try more, because this is a resource scarce context. ... I want to start in Freetown with 10 per PHU, and retain them through the financial incentives of their monthly stipend and per diem for training and meetings. When you use 10, it reduces the number of families they reach, but 10 is a good start up platform. If we want to increase the number, we can do so gradually. We can always add on, but we can't reduce if we start too high.” - Dr. T.T. Samba, DMO Western Area Urban District

The new national CHW model and its cadre will reach perhaps only one-tenth of the households reached in the CSP, which is likely to reduce the positive impact of the CHWs. In addition, without the Concern BCC materials, it is not likely that the visits will have the same impact on changing community knowledge and practices.

C. Alternative Strategies for Integrating the CSP CHW model into the 2016 CHW program

Despite the reluctance of the DMO to consider expanding the number of CHWs per PHU at this time, he expressed interest in piloting an “add-on” model to the basic CHW model which would improve its functionality in his district. While the details of such an add-on are yet to be fully worked out, it could resemble the model currently used in Ethiopia where the volunteer CHWs provide outreach and health promotion to many families while the more clinically-oriented Community Health Extension Worker (CHEW) focuses on service-delivery visits.

I. Addition of a Health Promoter (HP)

The proposal is to convert the CSP CHWs to HPs, which is consistent with the role they actually played with the CSP. They would share some of the visits expected of the stipend CHW, and receive a small honorarium in recognition for their work.

- Costs of the current national model: Based on the experience of the Concern CHWs, it is likely to expect that the CHWs will make a maximum of three visits per day, three days/week, implying a realistic annual caseload of 45 women and 110 children under the age of five years per year, allowing their “panel” of 30 pregnant and lactating women to rotate

every nine months. Given the monthly stipend of \$13), this costs \$1 per individual supported by the CHW.

- **Alternative cost model with HP “extenders:”** If six HP were added per CHW, as in the Ethiopian model, the HPs could take over three of the ANC visits and five of the routine child health visits, leaving the CHW free to spend more time on the time-consuming visits involved in assessing and treating young children, following up with newborns, the ANC visits of the last trimester, and the post-partum follow-up visits. The HPs also would take over updating the surveillance of births, deaths, and population movements in and out of the zone. As both male and female HP’s would be recruited, the HPs would also spend time with spouses, facilitating their involvement in promoting the health of their spouse and children. Thus, the stipend CHW could take on more families, but the average cost per family would go down. If the HPs worked one-and-a-half days a week, making five visits/week, they could provide support to 20 individuals per month, or 240 individuals per year, focusing on the BCC messages per the recommendations above for tailoring to the urban milieu. If they received a small motivational amount of \$5 USD per month, the cost for supporting these 240 individuals per year would be \$0.26 per individual supported, one-fourth the amount required if the CHW does all visits.
- **Gains in families supported with CHW+HP model:** With the HP freeing up his or her time, the CHW could expand the number of families receiving the more service-intense visits, increasing the number of families the stipend CHW could visit by about 10-15 per year. With this allocation, the CHW+HP would be able to cover 55-70 pregnant and lactating mothers plus about 350 visits to children under the age of five years. The total cost would be \$0.53 per individual supported, instead of the \$1 required if the CHW lacks the HP extender support. Thus, in this pilot, the PHUs would be supporting more families but at lower cost.

Table 9 Difference in visits and costs with each model

(Note: \$1USD = 7664 SLL)

Per PHU	CHW	Annual Stipends	Cost / Individual
Standard model	45 PLW + 110 Under5	\$157	\$1
CHW + 6 HP	60 PLW + 350 Under5	\$219	\$0.53

This is just an illustration of possible configurations of CHW and HP incentives and workloads, and these could be modified or adapted to be context relevant and specific. Even with fixed resources, by sharing the responsibilities of the more clinically-oriented CHW with the community-oriented HP, more families could be visited at lower or equal cost.

This alternative model for CHW-HP teams addresses some of the major concerns expressed by the CHWs, in terms of having a clear linkage to the PHU and receiving some incentive for their work. It would allow each member of the team to use their skills to the maximum, the

CHW for case management and management of the last trimester of pregnancy and post-partum and newborn care, while the HPs would spend time with the families focusing on behavior change. Both would continue to be supervised within the existing structures, with the CHW supervising the HPs, the PS supervising the CHW-HP teams, and the PHU and HMC supervising the PS, and everyone meeting with the PHU to discuss ways to improve health outcomes. It is recommended that two or three versions of the CHW-HP extender model are piloted, so that a few options can be reviewed before making a decision about going to scale.

2. Expansion of funding models for the CHWs:

Another unique way to expand the CHW workforce in cities is to develop an internship or work/study partnership with the local colleges and university.

- Internship/practicum: In most health training programs, there are required internships or practicum during which the students spend six months applying some of the skills they have learned. The proposal is to add a six-month internship as a CHW to selected health training schools in Freetown. As part of their required studies, the student would work in or near his/her own community for six months assigned to the PHU. They would receive the same training and materials, but because they would be doing this as part of their clinical training, they would not be health system employees. They would be supervised by the PS and PHU In-Charge, reporting back to both the DHMT and their respective school. They would receive the requisite credits for their successful participation in the internship/practicum. The CHW positions would serve as excellent community experience for students in Schools of Medicine, Nursing, Midwifery, Health Technology, Public Health or Pharmacy.
- Work/study: Some CHWs spoke of their attempts to combine their work as a CHW with pursuit of studies, and they observed that many who dropped out did so because they could not continue to do both at the same time. Establishing a work/study partnership with the Department of Education and local colleges or the university would provide a structure whereby CHWs could continue to pursue their studies. The work/study students would work for a period of six months or a year. Their scope of work might be closer to the HP model described above, and they could be reimbursed at a lower rate than the DHMT CHWs. The work/study option gives more flexibility for how much to pay and through what mechanism: payments from MoHS to the school to defray a portion of tuition and fees for the work/study students; seeking outside funding for the work/study program as a workforce development option (e.g. as a pre-training for students interested in a health sciences career); and/or part of a national service requirement.

D. Overall Recommendations for an urban CHW

Based on the feedback received from the CHWs and PS, the following are key recommendations for increasing retention and engagement of CHWs in urban settings, Freetown, or other global cities.

- Recruit the right CHW: Recruit CHWs in the neighborhoods where they will be working. They can self-nominate, but the selections should be made by the HMC and/or

the WDC. They should be both male and female, and preferably literate. The recruitment should be for a fixed period, six months up to two years, with a clear replacement or re-election process.

- Develop a thorough scope of Work: The scope of work should include participation in national mobilizations including during any health emergencies, home visits to promote key MNCH behaviors, referrals for ANC and sick child care, and partnership with the HMC and PHU in following up as needed with patients. With the proximity to health facilities, iCCM does not need to be included in their scope of work, but healthy living messages would be a useful add-on supporting prevention of chronic diseases, which is a growing problem in urban slum areas.
 - Develop appropriate training content and include participatory, practical methodologies: The training should be a mix of didactic and practical content, with ample time for the CHWs to go out in the neighborhood and be mentored on making home visits, using the BCC tools, and using the tools for referrals and tracking visits. Training should include sessions at the PHUs with the PHU staff and the HMC so that they can get to know the CHWs. Together, they can learn about the integrated tracking systems linking CHW and PHU data. The nurses show how the CHWs can help women learn the danger signs. Refreshers should be planned within three months, with the refresher integrating opportunities for the CHWs to demonstrate their skills as well as to learn new ones.
 - Tailor CHW tools to urban contexts: The BCC tools that Concern developed for the program helped the CHWs connect with the community and motivate change because the pictures were of people just like themselves, citizens of Freetown. Using pictures of real people makes all the difference. In urban areas with better and widespread access to telephone networks, more use should be made of digital tools, both for BCC (e.g., showing a small YouTube video) and for tracking/registers. There are many models for mHealth developed for CHWs.
 - Promote linkages to the PHU: In the dense urban neighborhoods where people do not all know one another, an official ID card is essential to allow the CHW to introduce themselves to families. In addition, the affiliation with a specific health facility gives the CHW and the community member a fixed reference point for clinic referrals. Urban residents have multiple health care choices, and it is important for the CHW to be a part of the health service team at their neighborhood health facility. There will still be instances where people may choose to go to a hospital, but the strength of the CHW linkage is that it is personalized between the CHW and their colleagues at the health facility.
 - Use tablets and digital record-keeping: Paper registers are cumbersome and inefficient. PS and PHU staff only learn about the CHW activities once a month and a paper based system is not effective for community based surveillance and using data in real-time. The CHWs should have tablets and use an electronic records system, similar to the system in Ghana. This will save time and increase responsiveness of the health system by
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allowing stakeholders to use real-time surveillance data for decision making. This will also help to build health system resiliency. In addition it will improve the ability of the CHWs to keep track of how families are doing and facilitate the data linkage back to the PHU, allowing the PHU staff to see referrals made in real time. As the health information system is digitized, CHW registers should be included.

- Provide more incentives: Financial incentives are necessary for the long term. These incentives do not have to be a monthly salary, but could be the equivalent of one-day's work per week. The exact sum should be specified at the time of recruitment. The urban environment offers a wider range of potential incentive mechanisms, including contributions to school fees for the CHW or her/his family, coverage of medical expenses/ insurance, a monthly bonus or prize. Volunteer CHWs should also be given priority for participation in ad hoc campaigns, e.g., vaccination promotion, distribution of bed nets, as these activities often include a per diem.
- Flexible CHW models: The program structure in the urban areas needs to offer options for how the CHWs can fit being a CHW into their other obligations. Possibilities might be pairing CHWs to work together covering their households, establishing "work-study" partnerships with a local college or university, where the students get credit for spending one to two days per week as a CHW as part of their internship or practicum requirements for a health worker certificate program, or establishing a partnership with a local employer who frees up CHWs for one day per week. Another possibility is to consider a CHW team, with the CHW/PS linked to 8 to 10 part-time CHWs or HPs who only volunteer for one day per week.
- Alternative funding models: In the urban environment, funding for the CHWs could come from a variety of sources, public and private. In addition to funding from the city government or national health ministry, the business community has an interest in maintaining a healthy labor force, and schools can provide an incentive to students volunteering as a form of community service.
- Establish a team supervision model for the CHW: The Peer Supervisor model works well in the urban context, as the PS knows the neighborhood easily reached. The PS serves as a mentor, providing direct one-on-one supervision. The PS convenes meetings, which maintain solidarity, motivation, and maximize opportunities for group learning. Additionally, these group meetings should involve PHU staff and HMC, so that the CHWs, PS, HMC, and PHU staff work together as a team.
- Plan for households moving and/or changing status: In the urban context, there should be a defined process for adding or removing families to the CHW caseload. This is necessary when eligible migrant families arrive in an area, or when the eligibility of existing families changes.

CONCLUSIONS AND RECOMMENDATIONS

The key inputs, activities, and outputs of the CSP are summarized in Table 10.

Table 10: Summary Table of Inputs, Activities, and Outputs That Contributed to Key Outcomes

Project Objective No. 1: Improved quality of MNCH services delivered at health facility level			
Project Inputs	Activities	Outputs	Outcome
<p><i>Logistical and human resource support.</i></p> <p><i>Training materials for the DHMT</i></p> <p><i>Funds for the purchase of supplies</i></p>	<ul style="list-style-type: none"> • Support on-the-job training and refresher trainings for PHU personnel to improve their clinical competencies and support quality of care improvements • Develop and print MNCH job aids • Conduct quarterly joint supportive supervision visits with the DHMT • Provide medical supplies and rehabilitate PHUs as needed 	<ul style="list-style-type: none"> • Senior Public Health Advisors & DHMT staff trained and conducted baseline & endline rapid health facility assessments • Training conducted with 25 clinical staff from 9 PHUs on IMNCI and 15 from 10 PHUs on high-impact MNCH interventions • MoHS policies, guidelines and job aids for IMNCI and maternal care distributed to 10 PHUs • Monthly supportive supervision visits w. on-the-job training and coaching conducted in all 10 PHUs. • Medical supplies delivered to 8 PHUs, hygiene promotion kits, 10,000 ORS units to 10 PHUs and rehabilitation conducted at 2 PHUs 	<ul style="list-style-type: none"> • Increases or stability in 19 of the 27 quality of care indicators. • 90% of the PHUs had MNCH service availability, 62% of MNCH consultations received appropriate treatment, 51% had drugs on hand for MNCH treatment • Staffing, infrastructure, and supplies adequate at 35% or fewer PHUs • Sick child consultations increased by 33%
Project Objective No. 2: Improved household MNCH knowledge and practices			
Project Inputs	Activities	Outputs	Outcome
<p><i>Logistical, human resource support and commitment from MoHS and FCC senior management to collaborate and supervise at field level</i></p> <p><i>Human resources (DHMT, HMC and CHW) for training and financial compensation</i></p>	<ul style="list-style-type: none"> • Conduct household surveys (KPC) to assess MNCH knowledge and practices and Barrier Analysis surveys to identify factors to adopting MNCH behaviors • Develop BCC materials relevant to Freetown urban context in partnership with MoHS and representatives of Freetown communities • Support to MoHS to finalise National CHW scope of work, training and reporting forms for use by the Concern CHWs • Train CHWs to visit households to promote MNCH practices using the BCC materials and to make 	<ul style="list-style-type: none"> • DHMT, CSP and FCC trained and conducted community based surveys, baseline and endline surveys in the 10 communities • 11 CSP staff trained and conducted Barrier Analysis Survey on key MNCH topics, then used the Barrier Analysis survey findings to develop the DBC Framework and BCC materials • 1306 CHW trained and then used BCC materials to promote high-impact but low prevalence MNCH and hygiene practices. • CHWs made 226,228 home visits and 54,088 referrals to the PHU, primarily for sick children under age 5. • 96 Peer Supervisors were trained and met monthly with the 10 CHWs on their team to monitor, mentor, and support them. • Refresher training for 98 PS and 821 CHWs • 109 HMC and 84 WDC members were trained and provided monthly and as needed 	<ul style="list-style-type: none"> • 55% of CHWs reported monthly but only 42% were still reporting 2015-2017. • 67% of women had received a visit from a CHW, and 76% of them had received referrals to the PHU. • Prevalence rates for 10 MNCH messages targeted by the CHWs had increased, most significantly. • 95% had a skilled birth attendant at last birth, 75% used ORT, 70% washed hands appropriately, 70% breastfed immediately,

	<p>referrals for ANC, deliveries, and sick child care at the PHUs.</p> <ul style="list-style-type: none"> Establish a community-based supervision structure for the CHWs with Peer Supervisors, HMCs and WDCs 	<p>supervision and support to the PSs.</p> <ul style="list-style-type: none"> 433 CHWs and 38 Zone Leaders trained and deployed during the cholera outbreak and EVD outbreaks to promote hygiene and provide referrals to PHUs. 	<p>68% used a bed net during pregnancy, 65% had 4+ ANC consultations w. quality provider, 59% made birth preparations, and 49% were using contraceptives</p>
Project Objective No. 3 Strengthened community capacity to plan, implement and monitor health activities			
Project Inputs	Activities	Outputs	Outcome
<p><i>Logistical and human resource support, and material for trainings and activities with community members</i></p> <p><i>Information dissemination support for public events</i></p>	<ul style="list-style-type: none"> Finalization of community census Monthly home visits by CHWs to collect data in ten communities Monthly meetings with CHW Peer Supervisors and HMC Chairperson to review data quality Orient and train WDCs and HMCs on roles and responsibilities, strengthen linkages to PHUs and CHWs Implement semi-annual Health Institution Capacity Assessment Process (HICAP) meetings to strengthen DHMT, FCC, WDC, HMC Conduct bimonthly community health data review meetings with CHWs, PS, HMC, WDC, and PHU staff Conduct verbal autopsies to determine causes of death for children under 5 	<ul style="list-style-type: none"> Household census conducted in 10 communities to identified 28,602 eligible households with 28,513 women of reproductive age and 34,403 children under age 5. Approximately 200 members of 10 HMCs and 10 WDCs participated in multiple activities to assess their organizational skills capacity, engage them in the HICAP process to improve their understanding and competencies for leadership and organizational management, and particularly for mobilizing the community around environmental and MNCH issues. 89 WDC members participated in an FCC-sponsored training on roles and responsibilities of the WDC to supervise CHWs and mobilise communities for environmental health Monthly CHW supervision meetings and 17 CHDR meetings were held with CHWs, PS, HMC, WDC, and PHU staff to review and take action based on CBHIS data 100 verbal autopsies conducted for deaths to children under 5, identifying patterns associated with care seeking related to these deaths 	<ul style="list-style-type: none"> Average HICAP score Increased by 22%, with scores >3 (above average) for leadership, participatory planning, collaboration and coordination. M&E, supervision and resource mobilization scores increased by 33% or more. Organizational mean self-efficacy for data collection and use rose from 62% to 67%, but other data collection and use indicators did not increase or decreased. Verbal autopsies were delayed but the CHDR still managed to elicit awareness of the importance of promptly seeking treatment.

Project Objective No. 4 Improved national and district level MNCH policy environment			
Project Inputs	Activities	Outputs	Outcome
Staff representation and information sharing at various fora	<ul style="list-style-type: none"> Participate in district and national level health and MNCH committees Document program learning and share findings from OR at national and international levels 	<ul style="list-style-type: none"> Participated in national CHW Taskforce , CHW Hub meetings and other technical working groups Attended 4 invitation-only technical sessions led by Primary Health Care Directorate to revise the National Community Health Program. Representation at new District Health Coordinating Committee structures Participated in workshops developing health system strengthening and post-Ebola health recovery plans Presented at the International Conference on Urban Health x2 (2014 and 2016) Presented at CORE meetings Presented at the Health System Research Symposium (2016) 	<ul style="list-style-type: none"> Highlighted the importance of modifications to the national CHW policy for urban areas Contributed to development of national training, monitoring, and information, education and communication materials. Brought international attention to the CSP urban CHW model at 3 international meetings

This table shows that CSP used its inputs wisely to support activities which generated the improvements they were seeking with the program. Despite the enormous challenges of the cholera and EVD outbreaks, there is ample evidence that the CSP accomplished many of their targets. Improvements were seen in the outcomes for all four objectives. The strongest contributions were in the improvement of household MNCH knowledge and practice, where 10 of the 13 key MNCH practices showed increases in prevalence from baseline to endline. There was also strengthened community capacity to plan, implement and monitor health activities, where HICAP and organizational assessments both showed increases in awareness of HMC and WDC responsibilities and abilities to perform them. A major factor behind the improvements to indicators for these objectives was the community-based approach CSP used to engage the community in supporting and driving the work towards achieving the objectives. This was a program led not by outsiders but by the community residents themselves. For every Concern staff member, there were 100 community residents working towards the CSP objectives. Concern invested in creating a cadre of CHWs, nominated by and residing in the community. The educational materials and communication strategies used by the CHWs were developed with input from the community, which increased their appropriateness and applicability for the families they were visiting. CHWs were supervised and supported by members of their own community. If the CHWs were not achieving their targeted visits, their PS and HMC members helped them resolve problems and get back on track. Instead of a hierarchical model leading up the chain of command in the health system, the community engagement and behavior change promotion rested in the hands of a network of community support, with the CHWs, PSs, HMCs, and WDCs all working together on behalf of the community's health. The CHWs were the bridges between the community and the health system, but they were effective in promoting change only because of the strengthened capacity of the community organizations.

In contrast, achievement of the other two objectives required greater collaboration and partnership with the health system, which had constraints on implementation and generally a lower level of flexibility to accommodate change than was found in Concern or its community partners. The project did achieve improvements for two-thirds of the quality of care indicators, but this was largely due to a change in operational strategy. When it became clear that the DHMT was not going to be able to provide timely supportive supervision for the PHU clinical staff, Concern hired two public health advisors for this work. Constraints on achieving all quality of care indicators in part related to the inability of the DHMT to maintain routine supervision, supplies, and other supports to the PHUs. To a certain extent, the contributions of Concern to the district and national policy discussions also were limited by constraints outside their control. Despite sharing a wealth of valuable experience on making CHWs effective in the urban slums, not all of Concern's suggestions were not adopted. As articulated by the MoHS and DHMT leadership, the country wanted to move towards a uniform CHW policy. It appears that they viewed an urban variation on CHWs as a special case which could be seen as setting precedent for exceptions to that uniformity. Ironically, the implementation of the national CHW policy in the urban area of Freetown moves the health system away from flexibility and resilience to greater rigidity and less ability to target CHWs to areas and people in need. Where a broader and more varied CHW network appears to be better suited to the diverse needs of Freetown residents, the limited number and highly structured expectations for the CHWs gives them less ability to adapt and respond to people's actual circumstances.

The CSP strategy integrated CHWs into a wider set of community-based activities which enhanced community ownership and support for their activities. The CSP contributed to improvements in MNCH in the ten communities in which the CHWs worked, overcoming severe challenges related to the cholera and EVD outbreaks. It is unlikely that they could have achieved these results without the CHWs and their supportive, community based network.

RECOMMENDATIONS

While the CSP contributed to significant improvements for all objectives, there were areas where the project did not accomplish as much as it had envisioned. The following are opportunities for improvement:

- *Improved access to quality of care:* Supportive supervision and a more functional system of supply chain management and monitoring of stock-outs are needed to make further progress towards achieving quality of care improvements. The CHOs all indicated that they wanted to continue to make improvements, but they are hard to make if there is not regular supportive supervision, particularly in light of staff turnover. Communication skills training for staff could also improve both their assessment and counseling skill levels. Finally, the HMC could play a larger role in helping the staff improve their counseling skills, whether through observations or role-play.
- *Improved MNCH knowledge and practices:* It is clear that the tailored BCC materials were much liked and effective in promoting behavioral change. These should also be made available to the PHU staff, who can use them in counseling patients on these very same behaviors. Additional BCC methods can be developed for other key MNCH behaviors or,

indeed, for other behaviors such as injury prevention. CHWs might also explore convening small groups to discuss the messages, which would put more social support into the promotion of behavior changes.

- *Strengthened community capacity:* The HICAP process needs to be regularized, with support from the FCC for WDC engagement and the PHU for HMC involvement. Committee members come and go and a recurrent HICAP would sustain additional improvements among continuing members while bringing newer members into the capacity building process. The HICAP links the HMC and WDC, but there is scope for including PHU leadership and the PS's so that all the major actors for community health are engaged. The OR project was less effective than had been hoped, and it seems that further exploration is needed into what worked and what did not work. Certainly the delays of the verbal autopsy reports undercut their potential value, but it is likely that other factors contributed. There is a great need to integrated community-based health information systems with the formal health system information system. Such integration would engage the PHU staff more fully and provide a more complete perspective on the locations and nature of persistent health problems.
- *Input to the national CHW policy:* There are many lessons learned from the Concern CHW experience. They should be shared nationally and a dialogue commenced about piloting alternative CHW models as recommended in this report.

These recommendations are summarized on the following page as shown in Table 11:

Table II. Recommendations

Finding	Conclusion	Recommendation	Action	Responsible person
Lower levels of support from DHMT to ensure the provision of supplies and materials needed to implement the MNCH guidelines	Concern was not able to achieve for quality of care objectives due to insufficient supplies	Continue to work with the DHMT to further develop the supply stock-out warnings and a more consistent system for assuring basic supplies.	Continue to participate in DHMT and MoHS task forces	National Health Coordinator
Inability to compare the clinical performance indicators of the Concern sites against comparable sites in Freetown where Concern was not operating	No comparison statistics for the entire district, before, during and after the ebola outbreak. CBHIS not incorporated into the DHMT HMIS	Work with the HMIS system of the DHMT to obtain comparison statistics and link PCBHIS to HMIS. At the same time, seek existing death registration data, to put into context observations about declining deaths.	Continue to collaborate with the DHMT HMIS system to promote sharing of PHU consultation and vital registration data for the period 2013-2017	National Health Coordinator
BCC counseling cards used successfully by Concern CHWs, but shared and in use elsewhere	Develop a strategy to promote use of the Concern BCC materials by other Freetown CHWs	Explore with DHMT how to share the BCC cards so that other CHWs can use them. Explore development of other MNCH messages using the same method.	Pursue sharing of BCC counseling cards with Freetown CHWs	National Health Coordinator and Health Advisor
Need to continue adapting of the national CHW policy for urban settings	Concern's model and lessons learned need to be more fully incorporated in DHMT CHW activities in Freetown	Continue to participate on the CHW task group, sharing the findings of this evaluation	Continue to participate in the CHW Task Force; reviewing the data evaluating the roll-out of the national CHW program	National Health Coordinator and Health Advisor
No place for volunteer CHWs or Health Promoters; lack of clarity on the roles of the HMC and WDC in the national policy	Need to explore alternative CHW roles for urban Freetown, HMC and WDC unsure of their role.	Pursue piloting of alternative CHW models, both the financing but also the types of CHW-community partnership	Discuss with DMO possible pilot studies to test alternative strategies	National Health Coordinator, Health Advisor; USAID, Irish Aid, and other donors