



Grand Cape Mount Child Survival Program  
Improved Child Health in a Transitional State through IMCI  
October 2006 - September 2010  
Final Evaluation Report

Child Survival and Health Grants Program (CSHGP)  
Cooperative Agreement No. GHS-A-00-06-00019

Medical Teams International in partnership with  
Grand Cape Mount County Health Team and Christian Health Association of Liberia

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## Table of Contents

	Page
A. Executive Summary	1
B. Project Overview	4
C. Data Quality: Strengths and Limitations	6
D. Presentation of Project Results	9
E. Discussion of Project Results	9
F. Discussion of Potential for Sustained Outcomes, Contribution to Scale, Equity, Community Health Worker Models, and Global Learning	20
G. Conclusions and Recommendations	26
H. Changes in Grantee Organizational Capacity	29

### **Annexes:**

Annex 1:	Project Data Form
Annex 2:	Results Highlight
Annex 3:	Workplan Activity Status Table
Annex 4:	Project Matrix Indicators
Annex 5:	Rapid CATCH Table
Annex 6:	Final KPC Report
Annex 7:	Final R-HFA Report
Annex 8:	Community Health Committee Self-Assessment
Annex 9:	MTI, CHAL, and GCM CHT Technical Assistance Plans for Institutional Capacity Building
Annex 10 :	CHW Training Matrix
Annex 11:	Integrated Care Group Structure
Annex 12:	Progress Made In Addressing Midterm Evaluation Recommendations
Annex 13:	Lives Saved Tool Calculation
Annex 14:	Grantee Plans to Address Final Evaluation Findings
Annex 15:	Project Management Evaluation
Annex 16:	Evaluation Team Members and their Titles
Annex 17:	Evaluation Assessment Methodology
Annex 18:	List of Persons Interviewed and Contacted during Final Evaluation

## Acronyms and Abbreviations:

ACT	Artemisinin-Combination Therapy
AHA	Africa Humanitarian Action
CCM	Community Case Management (Pneumonia, Malaria and Diarrhea)
CERF	Central Emergency Response Fund
CG	Care Groups
CHAL	Christian Health Association of Liberia
CHC	Community Health Committees
CHDC	Community Health and Development Committees
CHP	Community Health Promoters
CHT	County Health Team
C-IMCI	Community-based Integrated Management of Childhood Illness
CM	Certified Midwife
COPE	Client Oriented, Provider Efficient
CS	Child Survival
CSP	Child Survival Project
CSHGP	Child Survival and Health Grants Program
CSSA	Child Survival Sustainability Assessment
CSTS+	Child Survival Technical Support Plus Project
DIP	Detailed Implementation Plan
EBF	Exclusive Breastfeeding
FGD	Focus Group Discussions
gCHVs	General Community Health Volunteers
GCMC	Grand Cape Mount County
HF	Health Facility
HHP	Household Health Promoters
HMIS	Health Management Information System
IMC	International Medical Corps
IMCI	Integrated Management of Childhood Illness
INGO	International Nongovernmental Organization
IPTp	Intermittent Presumptive Treatment (of malaria) during pregnancy
IR	Intermediate Result
ITN	Insecticide Treated Net
IYCF	Infant and Young Child Feeding
JSI	John Snow, Inc.
KPC	Knowledge Practice Coverage
LLIN	Long Lasting Insecticide-treated Net
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring & Evaluation
MIS	Malaria Indicator Survey
MoHSW	Ministry of Health and Social Welfare
MTE	Mid-Term Evaluation
MTI	Medical Teams International (formerly known as Northwest Medical Teams)
NGO	Nongovernmental Organization
PA	Physician's Assistant

PMI	President's Malaria Initiative
POU	Point-of-Use Water Treatment
PVO	Private Voluntary Organization
QIVC	Quality Improvement Verification Checklist
RBHS	Rebuilding Basic Health Services
R-HFSA	Rapid Health Facility Assessment
SO	Strategic Objective
SP	Sulphadoxine-Pyrimethamine
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
U5	Under Five

## A. Executive Summary

The Medical Teams International (MTI) Grand Cape Mount Child Survival Project (GCM CSP) served a population of 127,076 in rural northwestern Liberia and was implemented in the immediate post-conflict environment from October 1, 2006 until September 30, 2010. This was the first Child Survival and Health Grants Program (CSHGP) grant that MTI received and was followed with a successful application for a Malaria Communities Program grant and a second CSHGP grant both in Uganda. MTI is now applying many of the programmatic and technical lessons learned from participating in the CSHGP to their health programs around the world.

The goal of the four year project was to reduce morbidity and mortality of children under five and improve the health of women of reproductive age within Grand Cape Mount County (GCMC). The strategic objective of the project was improved health outcomes through appropriate household practices and use of quality health services within a supportive sustainable environment by 2011. The four project Intermediate Results included:

- 1) Communities assume responsibility for their own health with strengthened community structures, linkages with health facility staff, and enhanced human resource capacity
- 2) Improved health behaviors and actions at the household level
- 3) Improved quality of care in health facilities through implementation of Integrated Management of Childhood Illnesses (IMCI) and capacity-building of the health staff in complementary activities
- 4) Strengthened institutional capacity of MTI and partners to implement effective CS activities

Community mobilization and social and behavior change for key household practices implemented in partnership with the Christian Health Association of Liberia (CHAL) were delivered through the Care Group Model that has successfully increased coverage of multiple high-impact child survival indicators in other countries but had not been applied in Liberia. The community component was complimented with capacity building in IMCI at the health facilities managed by the County Health Team (CHT). The GCM CSP was also remarkable as the target population has the highest percentage of Muslims which are a minority group in Liberia.

The GCM CSP was implemented during a time of significant change in Liberian society as well as the health care system. From 2006 until 2008, many international nongovernmental organizations (NGOs) were providing direct health services using short term emergency funding. Sustainability and community capacity building were not major components of those programs. In 2009 many of these INGOs closed or transitioned their programs into the USAID funded Rebuilding Basic Health Services (RBHS) project.

Quantitative measurements at baseline, midterm (2008) and final (2010) evaluations confirmed that the MTI CSP achieved significant increases in almost all project impact indicators and significantly exceeded project targets in many cases<sup>1</sup>. Annual Lot Quality Assurance Sampling (LQAS) measurements as well as qualitative triangulation during evaluations confirmed obvious changes in key child survival and maternal health behaviors, decreased morbidity levels and perceived reductions in child and maternal mortality.

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<sup>1</sup> The Rapid Catch Indicator Table and the full KPC report Annexes 5 and 6, respectively of this report.

MTI has shown that it was up to the challenges and steep learning curves of designing and implementing a very effective community-based child survival project in a rapidly changing and challenging environment. This required MTI to add staff at MTI headquarters and shift their programming orientation from the emergency assistance projects implemented during and just after the war to the sustainable development programs implemented with local partners. MTI is applying the organizational technical strengthening obtained through participation in the CSHGP in all of their programs worldwide.

Table 1: Summary of Major Project Accomplishments			
Intermediate Result 1: Communities assume responsibility for their own health with strengthened community structures, linkages with Health Facility staff, and enhanced human resource capacity			
Project Inputs	Activities	Outputs	Outcome
<ul style="list-style-type: none"> <li>➤ Social and Behavior Change Strategy</li> <li>➤ Support and mentoring for Community Health Committees and Care Groups</li> <li>➤ Pictorial referral cards</li> </ul>	<ul style="list-style-type: none"> <li>➤ 4 project Supervisors and 20 Community Health Promoters trained in Care Group approach</li> <li>➤ 132 Community Health Committees trained in Participatory Learning and Action, development of emergency transport plans, and conflict prevention</li> </ul>	<ul style="list-style-type: none"> <li>➤ 59 Care Groups established and meeting regularly</li> <li>➤ Structured referral system between communities and local health facilities established and functioning</li> <li>➤ 82% Community Health Committees meet regularly</li> </ul>	<ul style="list-style-type: none"> <li>➤ 59 Care Groups promoting appropriate health services utilization and facilitating prevention activities in their communities</li> <li>➤ 87% of Community Health Committees have emergency transport systems</li> <li>➤ 87% Community Health Committees report applying skills in learned in conflict prevention</li> <li>➤ 507 Household Health Promoters provide early identification of sick U5 children and referral services</li> </ul>
Intermediate Result 2: Improved health behaviors and actions at the household level.			
<ul style="list-style-type: none"> <li>➤ Social and Behavior Change Strategy</li> <li>➤ C-IMCI curriculum</li> <li>➤ C-IMCI flip charts</li> <li>➤ Support and mentoring for Household Health Promoters</li> <li>➤ Monitoring and evaluation tools</li> <li>➤ Provided non monetary incentives to HHPs</li> </ul>	<ul style="list-style-type: none"> <li>➤ 520 Household Health Promoters trained in C-IMCI</li> <li>➤ Monthly supervision and support visits provided for HHPs</li> <li>➤ Monthly Care Group sessions held</li> </ul>	<p>507 Household Health Promoters providing home visits and referrals</p>	<p>Household health behaviors improved as reflected in final evaluation KPC results</p>



<b>Intermediate Result 3: Improved quality of care in health facilities through the implementation of IMCI and capacity building in complementary areas.</b>			
<ul style="list-style-type: none"> <li>➤ Support to Ministry of Health and Social Welfare and Grand Cape Mount County Health Team to pilot IMCI</li> <li>➤ Consultancy in facilitative supervision</li> <li>➤ Monitoring and evaluation tools</li> <li>➤ Matching funds for essential drugs</li> <li>➤ Logistics support</li> <li>➤ Provision of medical equipment needed for maternal and newborn care services based on health facilities needs</li> </ul>	<ul style="list-style-type: none"> <li>➤ 86 physicians, registered nurses and certified midwives trained in IMCI and 132 health facility support staff provided with orientation to the components of IMCI relevant to their roles</li> <li>➤ Supportive supervision and on-the-job mentoring provided for health facility staff</li> <li>➤ Procurement and distribution of medical equipment for MNC services</li> </ul>	<ul style="list-style-type: none"> <li>➤ 32 health facilities delivering IMCI services</li> <li>➤ 32 health facilities have adequate medical equipment for maternal and newborn care services.</li> <li>➤ Capacity of health facilities enhanced to deliver MNC services</li> </ul>	<ul style="list-style-type: none"> <li>➤ 83% of health facility clinical encounters result in treatment appropriate to diagnosis for malaria, pneumonia and diarrhea</li> <li>➤ Caretaker whose child was prescribed antibiotic, anti-malarial or ORS can correctly describe how to administer all prescribed drugs during 72% of health facility clinical encounters</li> <li>➤ 94% of health facilities received external supervision at least once in the last three months</li> </ul>
<b>Intermediate Result 4: Strengthened institutional capacity of MTI and partners to implement effective CS activities</b>			
<ul style="list-style-type: none"> <li>➤ Capacity-building plan for MTI and project partners</li> <li>➤ Sustainability strategy</li> <li>➤ Regular meetings with partners</li> </ul>	<ul style="list-style-type: none"> <li>➤ Sustainability workshop during DIP development process</li> <li>➤ Capacity building workshops for MTI, CHAL and CHT staff in project cycle management, M&amp;E, facilitation skills, facilitative supervision for quality improvement, conflict prevention, social and behavior change, and other direct CS areas of intervention including essential nutrition actions, IMNCI, C-IMCI and maternal health</li> <li>➤ 8 MTI and CHAL staff trained in supply chain management</li> </ul>	<ul style="list-style-type: none"> <li>➤ MTI/CHAL/CHT joint planning, training, implementation and evaluation of project activities</li> <li>➤ Annual review of sustainability strategy</li> <li>➤ Organizational capacity of MTI, CHAL and CHT enhanced</li> </ul>	<ul style="list-style-type: none"> <li>➤ 18 of 19 indicators for capacity building have been met</li> <li>➤ 7 out of 8 sustainability indicators met</li> <li>➤</li> </ul>

## B. Overview of the Project:

The goal of the four year CSP in GCMC, Liberia was to reduce morbidity and mortality of children under five and improve the health of women of reproductive age within GCMC. The strategic objective of the project was improved health outcomes through appropriate household practices and use of quality health services within a supportive sustainable environment by 2011. The four IRs were:

- 1) Communities assume responsibility for their own health with strengthened community structures, linkages with health facility staff, and enhanced human resource capacity
- 2) Improved health behaviors and actions at the household level
- 3) Improved quality of care in health facilities through implementation of IMCI and capacity-building of the health staff in complementary activities
- 4) Strengthened institutional capacity of MTI and partners to implement effective CS activities

MTI's used four primary strategies in order to reach the Strategic Objective of the project:

- 1) **Targeted behavior change** at the household level. Key family practices, and subsequently health status, will be improved at the household level using the Care Group model based on the experience of other NGOs by developing a network of volunteers implementing Community IMCI and improved social and behavior change methodologies.
- 2) **Community mobilization through capacity building of community organizations and leaders** including planning and evaluation, development of emergency transport systems, and activities for sustainable positive health outcomes. Activities were implemented in 131 communities.
- 3) **Quality of care and access at the clinic level** was to be improved by implementing IMCI through training, mentoring, supportive supervision, the use of the Client Oriented, Provider Efficient (COPE) quality assurance methodology, provision of drugs and supplies, and strengthening of referral and logistics systems.
- 4) **Institutional capacity building for MTI and partners** focusing on improved program quality and technical skills, strengthened project monitoring and evaluation, and institutionalization and dissemination of lessons learned.

The project was guided by an evidence-based approach to community mobilization that has been proven effective and includes continuous collection and use of information for decision making at all levels. A comprehensive monitoring and evaluation plan allowed for the efficient collection of qualitative and quantitative information throughout the funding cycle and beyond. This system was revised and streamlined when the original database was found to be too cumbersome to be practical. Project indicators were measured using a variety of tools including: Knowledge, Practice and Coverage (KPC) surveys, LQAS monitoring, health facility assessments, organizational capacity surveys, and a community-based health management information system (HMIS) linked with the health care system. All Rapid CATCH indicators were also collected. No operations research was included in the project design as MTI was a new partner and operations

research would likely have been overly ambitious for a first CSHGP project. MTI has disseminated lessons learned and best practices through its International Program Manual, national and international presentations, MTI’s web site, and annual conferences as well as post-final evaluation debriefings. The multi-year Detailed Implementation Plan (DIP) for the GCM CSP was prepared through a participatory approach that engaged all partners and input from beneficiary communities.

Acknowledging that population estimates in post-conflict environments can be unreliable, the project used the best-available estimates in their proposal and at midterm updated them according to the 2008 census total county population of 127,076. Interestingly, the census showed a significant gender imbalance in Grand Cape Mount County of 107.7 men for every 100 women<sup>2</sup>.

<b>Population Estimates For Grand Cape Mount County, Liberia</b> <b>2008 National Population And Housing Census</b>		
<i>Beneficiary</i>	<i>Population</i>	<i>Percentage of total population</i>
Infants: 0-11 months	3,920	3.08%
Children: 12-23 months	3,026	2.38%
Children: 24-59 months	14,483	11.40%
Children 0-59 months	21,429	16.86%
Women 15-49 years (WRA)	29,941	23.56%
<i>Total Population</i>	127,076	

The project reached most of the rural communities in GCMC, missing only some remote and sparsely populated communities in the northeast of the county that were very difficult to access.

Major activities of the project included building the capacity of the County Health Team and health staff in 30 Health Clinics and one centrally-located Health Center which is slated to be upgraded to a hospital. The county’s only referral hospital, in Robertsport, is difficult to access by the majority of the population.

The project was strongly based on an evidence-based, successful social and behavior change and community mobilization approach, the “Care Group model”. The Care Group approach involves household to household visits by female volunteers linked through Community Health Committees (CHCs) to Community Health Development Committees (CHDCs) at health facilities. All activities included continuous collection of information for decision making at each level, making it possible to assess morbidity and mortality in the project catchment area. Coverage estimate increases were inserted into the Lives Saved Calculator to estimate the number of children who would have died if the interventions had not been in place.

The intervention mix was: Immunization 10%, control of Diarrheal Disease 20%, Pneumonia Case Management 20%, Nutrition 30% and Malaria 20%.

<sup>2</sup> MTI CSP Midterm Evaluation Report, 2008.

The project supported the Ministry of Health and Social Welfare (MoHSW) to pilot IMCI in GCMC and establish joint supervision and mentoring. In 2008 the MoHSW adopted the more comprehensive Integrated Management of Neonatal and Childhood Illnesses (IMNCI). The project also provided technical support to the national NGO partner, Christian Health Association of Liberia (CHAL), to develop their capacity for intensive community mobilization and health education for behavior change using the Care Group model. Household Health Promoters (HHPs) serve similar functions to “Care Group Mothers” or “Care Group Volunteers” in projects implemented by other USAID grantee Private Voluntary Organization (PVOs). These volunteer women are linked to local health facilities through a well-developed and effective community referral system to Community Health Committees (CHCs) at the community level and to Community Health and Development Committees (CHDCs) at the district/health facility level for decision-making and community feedback. As Liberia had no policy to support community based treatment, HHPs function was solely to promote preventive household behaviors and prompt referral in case of illness or pregnancy. They provided no treatment or medications.

MTI’s collaboration with the USAID Liberia Mission expanded when MTI was awarded a contract in July 2009 through the RBHS grant funded by USAID and implemented through John Snow, Inc (JSI) to support implementation of Liberia’s National Health Policy and Plan. The RBHS project has the goal of increasing access to basic health services and strengthening decentralized management of the health system. MTI is supporting RBHS implementation of the national Basic Package of Health Services at 25 health facilities, including 22 health facilities in Grand Cape Mount County, two clinics in Bomi County, and one health center in Montserrado County.

While the RBHS project provides several opportunities to strengthen and extend many of the activities that were implemented through the GCM CSP beyond September 2010, the departure of several direct-service INGOs has decreased the 24 hour-7 day access to health providers.<sup>3</sup> This has limited the extent to which MTI’s CSP could increase utilization of health services such as skilled delivery and treatment for childhood illness within 24 hours.

The Work Plan Activity Status Table is included as Annex 3. All but two of the 27 planned activities were completed. CHDCs were established or revitalized at only 23 of 30 health facilities. MTI offered assistance to the CHT to establish CHCDs at the remaining seven facilities, though the CHT has not taken the initiative to do so. The plan to provide zinc supplementation was not rolled out during the project lifetime due to unavailability of zinc through the National Drug Service. In October 2010, however, the MoHSW made zinc available and the RBHS project is currently supporting community distribution.

### **C. Data Quality: Strengths and Limitations**

At the beginning of the program, the national HMIS was very fragmented and ineffective, and MTI’s responsibility in health services was limited to supporting five health facilities. All health facility strengthening efforts, including the facility HMIS, are now the responsibility of the

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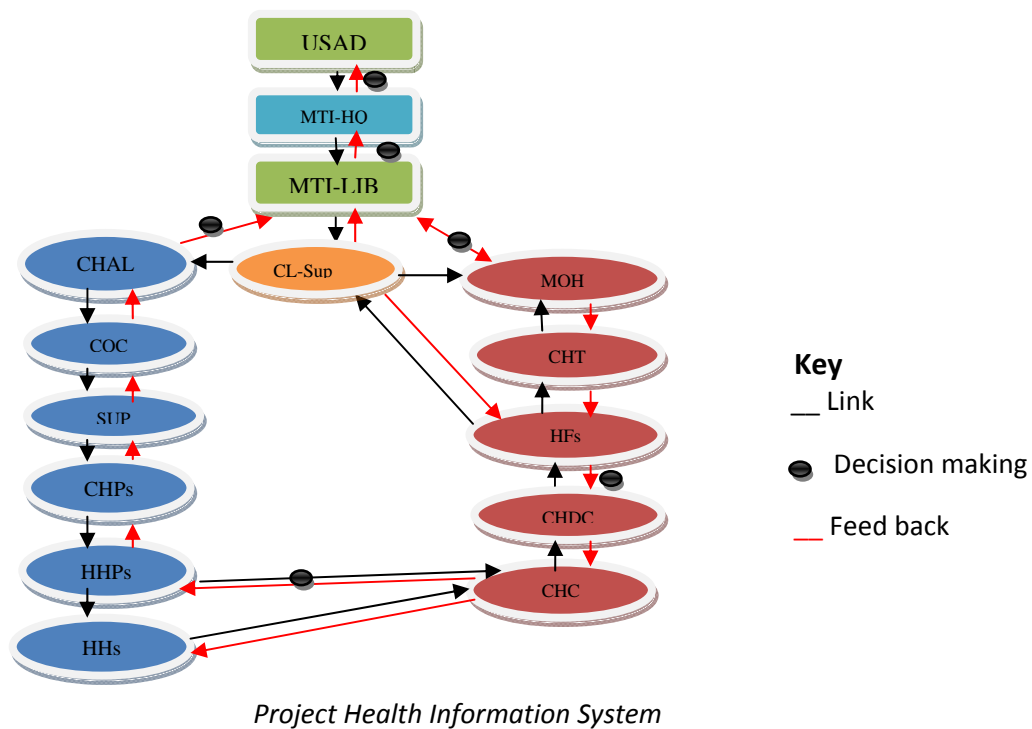
<sup>3</sup> MTI CSP Health Facility Assessment August 2010.

RBHS project. The CSP was able to use the 2007 Demographic and Health Survey (DHS) for planning and analysis purposes. However, since data was reported by region and not down to the county level, and the survey was conducted just as the program was starting, it was not useful for measuring project progress. MTI revised population estimates after the 2008 census was completed. Final malaria indicators were compared to the 2009 Malaria Indicator Survey (MIS) findings which were also reported at the regional and not the county level.

The multi-level data reporting and analysis included information collected and reported by female HHPs, the majority of whom could not read. The information was entered into project database for the first two years of project implementation, but timely retrieval of information proved to be time consuming and difficult to analyze. The new Project Manager, hired in April 2009 re-organized the HMIS to aggregate data by month, quarter, year and supervision area. LQAS surveys were conducted in years 2 and 3 and provided the quantitative measurements used for the midterm evaluation (MTE). For the first two years of the project, data collected by HHPs was sent to the project, and feedback was channeled back to the community through CHCs. For sustainability, however, HHPs started sharing data directly with communities during the last two years of the project.

MTI also used a variety of qualitative methods for planning, implementing and evaluating the project. This included a workshop with Muslim and Christian religious leaders, focus group discussions (FGDs) with both men and women community members, and interviews with health facility staff. FGDs and doer/non-doer surveys were utilized to identify barriers and facilitators for adopting key maternal and child health practices. The findings were used to update the social and behavior change framework and adapt training materials and methods. Based on information gathered by project staff during the DIP development, malaria was added as a fifth project intervention and the Care Group model was included as a project strategy for improved community coverage. During the MTE, the COPE methodology for assessing health facility quality of care was dropped in favor of using the Child Survival Technical Support Plus Project (CSTS+) Rapid Health Facility Assessment (R-HFA) tool, specifically designed for PVO child survival projects.

Annual LQAS assessments allowed the project to determine if the project was maintaining positive trends towards end of project targets. The project's elaborate system of data collection, feedback, reporting and return feedback was impressive. Equally impressive was the ease with which MTI and CHAL field staff could explain the HMIS system and how it was used. These are skills that many global health monitoring and evaluation professionals often do not have. During final evaluation workshops, project staff and partners were able to diagram the entire information reporting system in a short time and clearly explain the flow of information to an audience largely unfamiliar with information systems in health programs. The diagram below illustrates the data flow and information feedback system used in the project. This demonstrates exceptional local health system capacity building by MTI and is a significant contribution to sustainable Liberian health capacity. MTI would be wise to continue efforts to integrate these skills into future programs working with the CHT in GCMC as well as sharing how this system was developed with partners at the national level. The system is easy to understand and effectively links community-level information with the national health system.



Time limits did not allow for extensive analysis of the rich information stored in the community HMIS database still retained by the CSP project manager who will remain employed by MTI Liberia. More work could be done to mine the rich information for additional lessons learned and possible publication from the CSP.

At the time of the MTE in 2008, quantitative and qualitative findings revealed that key project infant and young child feeding (IYCF) messages, primarily related to complementary feeding, were not well understood or acted upon by beneficiary mothers. The MTE qualitative assessments explored this further. MTI acted upon these findings and devoted additional project efforts to understand the barriers to appropriate practices and adjusted social and behavior change activities accordingly. Quantitative and qualitative findings at the end of the project indicate significant improvements in the targeted behaviors that were weak at midterm. In spite of significantly increased coverage of key child feeding behaviors, the question arose why this was not reflected in a statistically significant drop in weight for age malnutrition by the end of the project. There are many possible explanations, but this would require further analysis of the data, including whether the sample size in the age group affected was large enough to measure change.

During the final evaluation, baseline, midterm and final KPC and HFA findings were reviewed and used to develop focus group questionnaires to triangulate and understand the factors that led the final results.

The R-HFA tool was used at project start up and midterm and final evaluations. The CSP was not designed to impact all of the indicators in the R-HFA that needed improvement, but provided valuable contextual information about health services provided to project communities. A few selected indicators measured CSP capacity-building impact in specific areas at health facilities. These were largely related to quality of IMNCI clinical performance.

## D. Presentation of Project Results

The Project Monitoring and Evaluation Matrix, Rapid Catch Table and FE KPC and R-HFA reports can be found as Annexes 4, 5, 6 and 7.

## E. Discussion of the Results

Critical design change decisions made by MTI after the baseline studies and first version of the DIP, and again after the MTE, significantly contributed to the successful increases in the behavior change and health system improvements achieved by the project. Addition of a malaria intervention was an essential response to address the epidemiologic patterns revealed in the baseline assessments as well as feedback from the DIP reviewers. A staffing change was made when MTI assumed responsibility for hiring and mentoring the Community Outreach Coordinator that was originally under CHAL’s supervision.

*IR 1: Communities assume responsibility for their own health with strengthened community structures, linkages with Health Facility staff, and enhanced human resource capacity*

<b>Intermediate Result 1:</b> Communities assume responsibility for their own health with strengthened community structures, linkages with Health Facility staff, and enhanced human resource capacity			
<b>Indicator</b>	<b>Baseline Value</b>	<b>Final Value</b>	<b>Final Target</b>
<i>% of HHPs referring patients to clinic</i>	<i>0%</i>	<i>100%</i>	<i>75%</i>
<i>% of HHPs who received a supervisory visit during the last three months</i>	<i>0%</i>	<i>100%</i>	<i>75%</i>
<i>% of communities using information from community HIS for decision making</i>	<i>0%</i>	<i>63%</i>	<i>40%</i>
<i>% of CHCs with one or more women participating on the committee.</i>	<i>0%</i>	<i>75%</i>	<i>65%</i>
<i>% of health facilities with active CHDCs who have met in the last three months</i>	<i>0%</i>	<i>77%</i>	<i>80%</i>
<i>% of communities with an economic plan for emergency health needs</i>	<i>0%</i>	<i>89% with 52% reporting it is working well</i>	<i>60%</i>
<i>% of communities with an emergency transport plan</i>	<i>0%</i>	<i>87%</i>	<i>65%</i>

Six of the seven project indicators for strengthening community capacity were met. The community referral system was working well and CHCs had been revitalized and implementing emergency transport systems and economic plans. The indicator “% of health facilities with active CHDCs who have met in the last three months” was not met as CHDCs were established or revitalized at only 23 of 30 health facilities. MTI offered assistance to the CHT to establish CHCDs at the remaining seven facilities, though the CHT has not taken the initiative to do so.

The DIP process that led to adopting the Care Group approach after the beginning of the program is a lesson in sustainable capacity building. MTI contracted as a consultant and trainer an experienced Liberian nurse midwife who was familiar with community-based MCH programs

and Care Groups and who also had years of experience working with both the MoHSW and NGO programs. The project was able to introduce Care Groups in GCMC in a culturally-sensitive and practical way. The approach makes it possible to reach every woman in the target population on a regular basis without overwhelming community volunteers and has proven feasible and effective in increasing child survival intervention coverage in case after case in multiple community contexts in Africa and beyond. Although not yet thoroughly studied, there are anecdotal reports from the MTI CSP, and other similarly designed projects being involved as a Care Group volunteer enhances women volunteers' self-esteem, and increases respect from their families and community members. There are also reports of greater recognition and appreciations of "what women are capable of" from influential members of the community.

*IR 2: Improved health behaviors and actions at the household level.*

<b>Intermediate Result 2:</b> Improved health behaviors and actions at the household level.				
<b>CSHGP Intervention Area</b>	<b>Indicator</b>	<b>Baseline Value</b>	<b>Final Value</b>	<b>Final Target</b>
<b>Nutrition</b>	<i>Immediate and exclusive breastfeeding of newborns: Percent of newborns who were put to the breast within one hour of delivery and did not receive prelactal feeds</i>	33.7% (28.3%-39.3%)	87.0% (82.7%-90.6%)	50% raised to 60% at MTE
	<i>Introduction of complimentary foods: % infants 6-9m receiving breastmilk and complementary foods</i>	37.5% (22.7%-54.2%)	76.3% (65.2%-85.3%)	65%
	<i>Vitamin A Supplementation in the last 6 months: Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months (Mother's recall).</i>	76.2% (67.8%-83.3%)	91.4% (86.5%-94.9%)	85%
<b>Immunization</b>	<i>Health System Performance regarding Immunization services: Percentage of children 12-23 months who received DPT3 before they reached 12 months by the time of the interview, card verified.</i>	30.6% (22.2%-40.1%)	71.1% (61.0%-79.9%)	50%
	<i>EPI Coverage: Percentage of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age, card verified</i>	18.9% (12.1%-27.5%)	52.6% (42.2%-62.8%)	40% raised to 55% at MTE

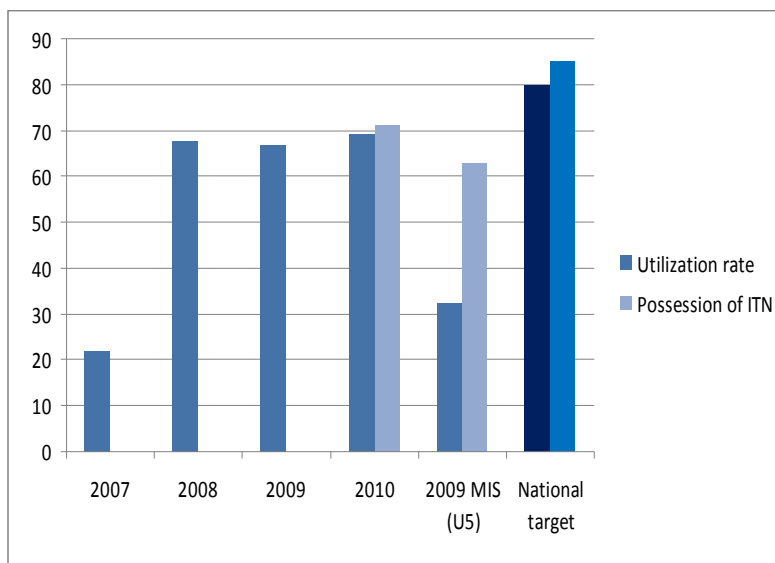


	<u>Maternal TT Vaccination:</u> Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.)	61.3% (55.6%-66.9%)	94.7% (91.5%-96.9%)	80%
Control of Diarrhea	<u>ORT use:</u> Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration solution (ORS) and/or recommended home fluids.	74.2% (63.8%-82.9%)	84.1% (69.9%-93.4%)	85%
	<u>Increased fluid intake during diarrheal episode:</u> Percentage of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness	51.7% (40.8%-62.4%)	88.6% (75.4%-96.2%)	70%
	<u>Point of Use (POU):</u> Percentage of households of children 0-23 months that treat water effectively.	21.7% (17.1%-26.8%)	18.7% (14.4%-23.5%)	40%
	<u>Appropriate Hand washing Practices:</u> Percentage of mothers of children 0-23 months who live in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period.	19.0% (14.7%-23.9%)	87.7% (83.4%-91.2%)	40% raised to 70% at MTI
ARI/Pneumonia	<u>Appropriate Care Seeking for Pneumonia:</u> Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider.	43.2% (35.3%-51.4%)	90.8% (83.3%-95.7%)	65% raised to 85% at MTE
Malaria	<u>Child sleeps under an insecticide-treated bed net:</u> Percentage of children 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night.	17.7% (13.5%-22.5%)	69.3% (63.8%-74.5%)	35% raised to 70% at MTE
	<u>Child with fever receives appropriate antimalarial treatment:</u> Percentage of children	3.6% (1.0%-8.9%)	32.5% (24.3%-40.7%)	65%

	<i>0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.</i>			
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Among the 13 KPC indicators in the project M and E Matrix for IR 2, the final KPC survey found the project to have met or exceeded 11 of the 13 indicators (85%). The indicators for point of use water treatment and timely treatment of suspected malaria were not met.

Coverage of several health practices indicators was also significantly higher in comparison to regional or national levels. For example, insecticide treated net (ITN) utilization rates were much higher in the project KPC (under 2 years) than the NW region in the 2009 MIS.



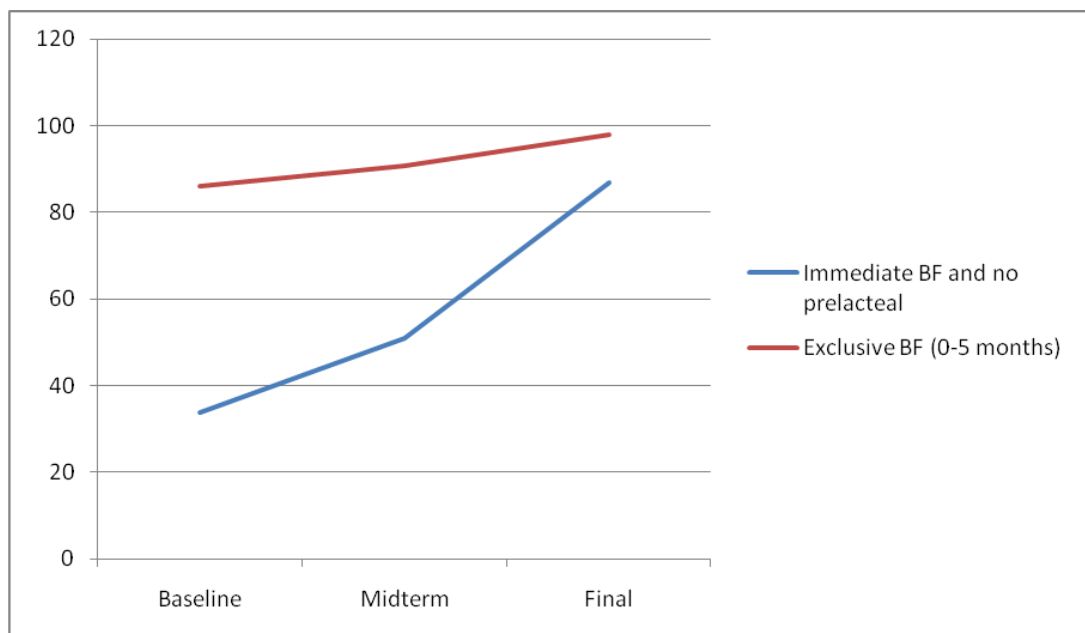
The 2009 MIS (U5) figures in the graph represent only the Northwest Region in 2009.

For some indicators, increases should clearly be attributed to the MTI-CHT-CHAL partnership, and also highlighted significant contributions from the CHT with support from the MoHSW. Examples include immunizations and vitamin A outreach which extended community access for preventative services to communities beyond the reach of health facilities. The National Malaria Control Program (NMCP), with support the President’s Malaria Initiative (PMI) and the Global fund was largely responsible for ITN supply. Although the RBHS project is now operating in GCMC, activities only started in health facilities during the last year of the CSP, but significant positive trends in health worker behavior, especially in areas targeted for CSP capacity building, were evident before that time. The 2008 MTE R-HFSA assessment was already able to measure improvements in supervision visits in the past three months (<5% to 56%), performing all required clinical assessments (9% to 28%), and correct diagnosis and treatment of childhood illness (46% to 89%) from the beginning of the program.<sup>4</sup>

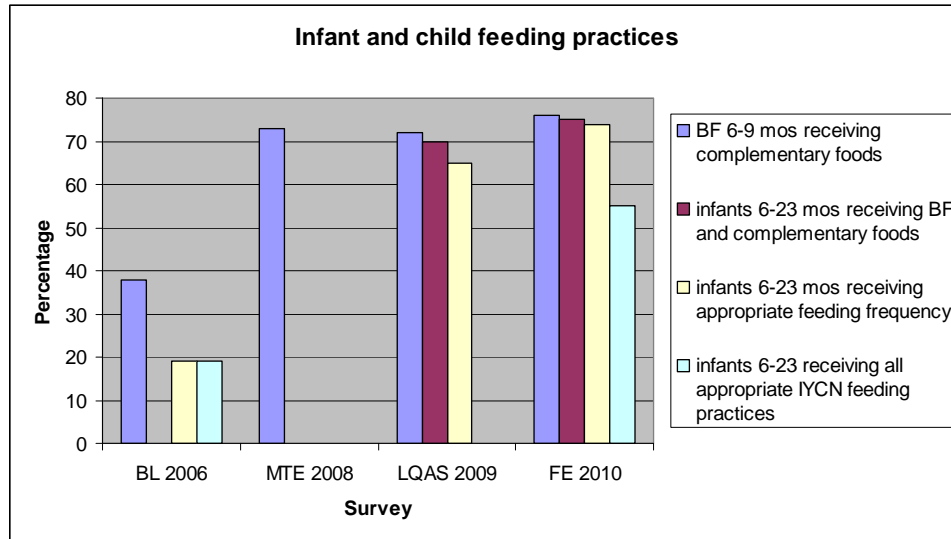
<sup>4</sup> Jennings, J., Grand Cape Mount Child Survival Project (MTI) Midterm Evaluation Report, October 2008.

Attribution directly to effect of the CSP is much stronger for improvements in household practices, including infant feeding, hand washing, basic hygiene and care-seeking for illness. When CHT health workers were asked why they felt their clinical performance and reporting had improved since the beginning of the project, they gave most of the credit to training, mentoring and supervision they had received through the CSP. Supportive supervision and mentoring was done jointly with CHT managers.

MTI devoted significantly more attention to IYCF interventions than most recent CSHGP programs. This was confirmed by “digging deeper” into the project data and probing into infant feeding practices during FGDs. Late initiation of breastfeeding and use of prelacteals was assessed and compared to the standard the EBF (last 24 hours) indicator.



Baseline investigations determined that the main reasons for the high rates of moderate and severe child malnutrition in the project infant and young child population were related to the fact that only 20% of mothers with children aged 6-23 months who were still breastfeeding and 17% of mothers who were not breastfeeding fed their child the recommended number of feedings of solid foods per day. The graph below depicts how the MTI CSP was able to significantly increase important child survival nutrition practices.



A small increase was seen in non-breastfeeding mothers, but the number of those mothers is too low to detect a significant difference using the KPC.<sup>5</sup> Continuation of breastfeeding from 6-23 months was not measured in the baseline KPC, only in the 2009 LQAS and 2010 KPC. These impressive increases in infant feeding practices are particularly important in preventing chronic malnutrition as measured by height for age (stunting) which was close to 40% in Northwest Region, and approached 50% nationally in children 24-35 months in the 2007 DHS.<sup>6</sup>

Late introduction and inadequate frequency of complementary feeding were given specific, intensified, and detailed attention in social and behavior efforts at various levels of the program. Although the entire project area is considered to be economically poor, feeding practices and not overall household food availability was determined to be most important contributing factor to poor complementary feeding practices. Intensive qualitative assessments conducted at the MTE pinpointed some of the barriers to changing these key behaviors and they were used to revise the project social and behavior change strategy.

There was no significant change in household point of use (POU) water treatment from baseline to the final evaluation. Analysis of the KPC findings, as well as discussion of the final evaluation results indicated low perceived risk of illness by the community due to the “improved water sources” (primarily covered wells) as well as a much lower diarrhea prevalence rate than the national levels. The prevalence of diarrhea (30%) at baseline would not be considered low, but fell to less than 15% by the final evaluation survey. Most of the covered wells, along with periodic chlorination, were provided by the NGOs and donors during the emergency period of the war. At the time of the final evaluation, it was observed that some of the water pumps were beginning to fail and were possibly contaminated which raised concerns about the sustainability of the clean water sources. This indicates that contamination of household water sources may become a greater concern to communities in GCMC in the future and demand for POU water treatment might increase.

<sup>5</sup> Final KPC report, 2010.

<sup>6</sup> Liberia DHS 2007

*IR 3: Improved quality of care in health facilities through the implementation of IMCI and capacity building in complementary areas*

<b>Indicator</b>	<b>Baseline Value</b>	<b>Final Value</b>	<b>Final Target</b>
<i>% of HF that offer growth monitoring (at least 30 days per month per R-HFSA)</i>	0%	94%	85%
<i>% of HF's clinical encounters in which all assessment tasks are made by the HW for sick child (check ability to drink or breastfeed, vomits everything, convulsions, presence of cough or fast/difficult breathing, diarrhea, fever, assess nutritional status, feeding practices, check vaccination status)</i>	9%	67%	85%
<i>% of HF clinical encounters in which treatment is appropriate to diagnosis for malaria, pneumonia and diarrhea. (Record review)</i>	46%	83%	85%
<i>% of HF clinical encounters in which the caretaker whose child was prescribed antibiotic, anti-malarial or ORS can correctly describe how to administer all prescribed drugs</i>	49%	72%	75%
<i>% of HF that received external supervision at least once in the last THREE months (2 or more: deliver supplies, check records/ reports, observe work, provide feedback)</i>	5%	94%	75%
<i>% of HF utilizing information from the HMIS for decision making</i>	NA	100%	75%

Liberia first began implementing IMCI in 2002. The program and services were interrupted in 2003 due to the civil war. The GCM CSP facilitated the first reactivation of IMCI national training post-conflict. Since first piloting IMCI, the MoHSW has included IMCI in the National Basic Package of Health Services. The RBHS project includes IMCI as a key component. MNCI has now been scaled up in all 15 counties of Liberia.

A future challenge for the National IMNCI program will be establishing a strong monitoring and supervision component. At present, Grand Cape Mount is the only county with a decentralized supervision and support system. Supervision in other counties is provided by MoHSW supervisors from Monrovia. After training, the Grand Cape Mount Child Survival IMNCI Coordinator and Mentor conducted follow-up supportive supervision visits to health facility staff to mentor them in the application of their new skills, visiting each facility at least once a quarter. A Quality Improvement Verification Checklist form similar to the World Health Organization *Supervisory Checklist for Monitoring/Supervision of IMCI Activities* was used during IMCI mentoring visits. Findings are reviewed with the health facility staff themselves and CHT leadership.

At the recommendation of the MTE consultant, MTI replaced the COPE health facility quality of care assessment tool included in the project proposal and DIP with the R-HFA developed by the CSTS+ project. The R-HFA, which was designed to identify child health-specific services that must be in place and of sufficient quality to complement community/household and care-seeking

behavior changes promoted in the community component of the program, provides a more relevant assessment of IMNCI components at the health facility level than the COPE tool. Several R-HFA indicators were used to provide information about quality of care in referral facilities and a few indicators measured impact of project health worker capacity building effectiveness. Although the R-HFA question 10 that measures “% of HF where key assessment tasks are routinely performed (check presence of general danger signs, assess feeding practices, assess nutritional status, check vaccination status” fell somewhat short of the (very ambitious) 85% target, the increase in quality of performance from 9% to 67% was dramatic and significant.

Most PVOs experience challenges in facility-level IMCI performance targets. This is primarily due to factors over which they have little control such as routine rotation of health facility staff, staff migration to cities, limited training budgets that prohibit training the majority of health workers, and national requirements to contract certified (and expensive) IMCI trainers for any training conducted. Although some of these factors were present in GCMC, MTI is credited with major improvements with health worker performance in several key IMNCI services. During the final evaluation, health facility staff reported that the training and support they received to implement IMNCI helped them deliver more effective services. Feedback from community FGDs also indicated their perception that the quality of MCH services at health facilities has improved. When mothers of children under 2 years were asked about their most recent visits to health facilities, they said they were treated well and that their children were given medicines that made their child better. An example of effective treatment and counseling presented itself during FGDs with mothers. One woman explained how she had inappropriately demanded to be given more drugs for malaria than the health worker prescribed. The health worker explained to her that the new drugs were more effective and convinced her to try them and return if her child did not improve. The child recovered and she was satisfied.

For some indicators the upper limits of possible improvements that MTI could achieve were limited by factors outside of their control. Examples include ITN supply which impacts the ITN usage in last 24 hours indicator and the significant decrease to 6% of HFs providing 24/7 services since 2006 which impacts the ability to increase skilled delivery, postnatal checkups and sick child treatment within 24 hrs. Most health facilities in GCMC are open five days per week and several are only open four and a half days per week. The HFA indicator of “open 30 days per month” cannot be met in these facilities. These limitations are outside the control of the MTI CSP, but point the way for increased advocacy at the county and national levels for policy or human resources changes necessary to increase availability of 24 hour care.

MTI’s involvement in implementing the RBHS project provides a way to monitor whether access to health services increases over time. For example, the network of CHC/CHDCs developed by the CSP could be used for periodic surveys to see if emergency transport systems they have developed are used as well as whether families are able to find services available when they seek care, especially on weekends. Community Case Management (CCM) could partially address the gap, but only if the government of Liberia ensures a reliable supply of antibiotics for treating pneumonia at the community level as well as including newborn care in the service package community health workers provide. Distances are too large to realistically expect families to consistently travel to the health center in Sinje to seek a safe delivery or emergency care for life-threatening maternal and child conditions. Through the RBHS project, MTI is

currently supporting the roll out of CCM for diarrhea in Garwula district and will support CCM for pneumonia and malaria when a reliable source of commodities is available.

IR 4: Strengthened institutional capacity of MTI and partners to implement effective CS activities.

<b>Intermediate Result 4:</b> Strengthened institutional capacity of MTI and partners to implement effective CS activities.			
<b>Indicator</b>	<b>Baseline Value</b>	<b>Final Value</b>	<b>Final Target</b>
% of organizations with a functional financial management system	<i>This indicator was dropped as not relevant. Partners have functional financial management systems.</i>		
% organizations (CDHCs) using information from HMIS for decision making	0%	79%	100%
% of organizations and health facilities meeting approved Standard Health Plan.	0%	<i>An accreditation assessment of all 32 Grand Cape Mount health facilities in January 2010 resulted in an average score of 73%.</i>	50%
% of indicators for capacity building are achieved	0%	<i>Action has been taken to improve approximately 94% of indicators for all three partner agencies: MTI Liberia, CHAL, and GCM CHT.</i>	80%
Use of CSSA is institutionalized (annual reviews are being conducted)	No	Yes	Yes
Lessons learned and best practices are disseminated utilizing at least three different media (program manual, presentations, conferences, web site, articles, etc.)	No	<p><i>Internal presentations of MTE results and discussions of lessons learned have been held at MTI headquarters and field offices and MTE results posted on the MTI website.</i></p> <p><i>Lessons learned from the Liberia Child Survival Project have been disseminated and used in MTI community health programs in Africa and Asia.</i></p> <p><i>GCM CSP project strategies are being scaled up in other counties. IMNCI has been scaled up in all the 15 counties of Liberia. The project Social behavior change and community mobilization strategy based on the Care Group approach has been scaled up in Gparpolu County by a UNICEF funded child survival project.</i></p> <p><i>In June 2010 MTI hosted Curamericas for a cross visit to learn about the Grand Cape</i></p>	Yes

<b>Intermediate Result 4:</b> Strengthened institutional capacity of MTI and partners to implement effective CS activities.			
Indicator	Baseline Value	Final Value	Final Target
		<p><i>Mount Child Survival Project Care Group and C-IMCI strategies. Since the cross visit, Curamericas has used the MTI C-IMCI modules and training methodology.</i></p> <p><i>During year 3, project staff shared experience during workshops to develop the national Child Survival Strategy for Community Health Volunteers.</i></p>	
<i>% of annual national budget dedicated to health</i>	<i>This indicator was dropped as the project has limited ability to influence and measure influence the annual national budget.</i>		

MTI Liberia and headquarters staff provided support to CHAL and the GCM CHT to put in place administrative and financial systems needed to ensure appropriate management of the sub-grant. Problems encountered in the implementation as planned by project partners during Years 1 and 2 were resolved with the replacement of the CHAL Community Outreach Coordinator and three of the four Supervisors, and through intervention by County Health Team leadership regarding the health facility use of motorcycles which were donated by MTI during a previous Central Emergency Response Fund (CERF) grant.

MTI has shown their capability to introduce state of the art child survival strategies to Liberia and is now adopting similar strategies in their programs in other countries. Although much of the focus has been on the Care Group volunteer in the effectiveness of the methodology, it is actually the “whole package” of the Care Group approach, including capacity building of the CHC/CHDCs to organize themselves and fully contribute to community changes and support the HHPs, that is considered essential to achieve program impact. Quantitative self-assessment of CHC/CHDC capacity was conducted in August 2009 and repeated in March 2010. A report of the CHC/CHDC self assessments is included as Annex 8. Large improvements were found in frequency of meetings, documented meeting minutes, processes to ensure equal participation, prioritizing community needs, using Care Group data for planning which more than doubled, providing guidance for using clinic resources, developing workplans, emergency funds, and transport systems and conflict prevention (palava). “Active support for HHPs by providing material support” did not improve, and remained low at 16%. The project would have benefited from using this tool before the second half of the project, but since MTI will continue working in GCMC, there remain opportunities to strengthen the HHP support component which is essential for sustainability of project achievements over time. HHP support need not require a lot of money, but CHCs will need additional encouragement to perform this critical role in linking households to the health system as part of C-IMCI.

The conflict prevention training provided to the CHCs by the project is particularly interesting. Over two thirds of the 129 CHD members were trained in conflict prevention and of those 88% said they had “used skills learned during the training to prevent or settle conflict or “palava.” In community interviews, FGD participants from several sectors of community members and



multiple locations reported that the conflict prevention skills learned in the CSP have led to decreases in domestic violence and violence against women specifically. The final evaluation team was not able to pinpoint the exact elements of the program that might have contributed to these observations but similar reports have come from other Care Group programs in other countries. How much the combination of Care Group community mobilization coupled with conflict prevention training has actually decreased the high levels of violence in post-conflict GCMC cannot be determined from project data, but is worthy of additional investigation for multiple reasons.

Annex 9 outlines progress made in reaching MTI, CHAL and GCM CHT Technical Assistance Plans for Institutional Capacity Building.

*Lives Saved Estimates:*

A summary Lives Saved estimates is included as Annex 13. An analysis of program results using the Lives Saved Tool showed that an estimated 4,424 lives of U5 children were saved by this project and the total estimated reduction in U5 mortality was 25%. The table below summarizes the interventions in the GCM CSP that are suggested to have most significantly contributed to preventing deaths in children aged 0-60 months of age. Breastfeeding promotion, case management of pneumonia with oral antibiotics, and ORS were the three interventions which are estimated to have had the most impact.

<b>Additional Deaths Prevented in Children Under 5 by Intervention relative to Impact Year</b>	<b>Total Estimated Lives Saved By Intervention</b>
Tetanus toxoid	68
Delivery services and emergency obstetric care	251
Breastfeeding promotion	799
Preventive after birth	
Insecticide treated materials(Insecticide treated bed nets) or indoor residual spraying	365
Vitamin A for prevention	107
Vaccines	
Measles vaccine	83
ORS	631
Case management of pneumonia (oral antibiotics)	630
Antimalarials	473

### Role of Key Partners

CHAL: CHAL was subcontracted to implement the community component of the project and was responsible for hiring and supervising the field staff. CHAL is a membership organization that consists of a variety of Christian organizations of different denominations working in health throughout Liberia. Before partnering with the MTI CSP, CHAL traditionally served as a clearing house for technical training and support for their members and was not involved in providing direct services as an organization. In 2006 CHAL also began directly implementing HIV/AIDS services. Normally, partnership with CHAL would be through a member organization located in the project area. GCMC is predominantly Muslim. Even though there are a few CHAL member organizations in the county, none were considered strong enough to fulfill the local partner NGO role needed for the CSP. CHAL as an organization has had mixed experiences partnering with other INGOs. “Sometimes they promise a lot if they get the grant, then we never hear or receive anything after that.” CHAL said this was not the case in their partnership with MTI and they received a lot of support and capacity building from MTI. CHAL was responsible to directly hire and supervise the majority of the field staff. MTI provided managerial and upper level supervisory support. Even though official employment ended for CHAL staff with the end of the grant, several CHAL staff already found other jobs. Others were optimistic about finding employment in other community health projects.

CHT: As the management authority for all government health facilities and workers in the county, MTI’s collaboration, coordination and capacity building with the CHT was intended to improve the quality of maternal and child health care services provided in the system and decrease the severity of disease and disability through preventive behaviors and early care-seeking. MTI trained, mentored, and provided joint supportive supervision to develop child health care skills through IMNCI training at health facilities. MTI also developed and implemented a highly effective pictorial referral form used by HHPs and CHCs to refer sick children and mothers to health facilities.

## **F. Discussion of Potential for Sustained Outcomes, Contribution to Scale, Equity, Community Health Worker Models, and Global Learning**

### *1. Progress Toward Sustained Outcomes*

During the DIP process, 11 Child Survival Sustainability Assessment (CSSA) indicators were established. At midterm these were better defined and reduced to eight indicators covering three dimensions. Progress made in reaching sustainability indicators is outlined below:

#### **Dimension I: Health Outcomes and Services**

<b>Indicator</b>	<b>Targets at final</b>	<b>Progress as of September 2008</b>	<b>Progress as of September 2010</b>
<b>Ia.</b> Improvement in indicators for health behaviors at community level and at health facility level	See M and E table,	See M and E table	See M and E table

<b>Ib.</b> % of communities using a HMIS for decision making	40% of communities using a HMIS for decision making	0 CHCs using HMIS for decision making	63% CHCs discuss Care Group data and use for it planning
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Both indicators for health outcomes and services were met by the end of the project based on KPC and HMIS results.

### **Dimension II: Organizational Capacity and Viability**

<b>Indicator</b>	<b>Targets at final</b>	<b>Progress as of September 2008</b>	<b>Progress as of September 2010</b>
<b>IIa.</b> % of organizations using the HMIS to make decisions	75% Health facilities and CHDCs using HMIS for decision making	44% health facilities using HMIS for decision making  0% CHDCs using HMIS for decision making	100% of health facilities using HMIS for decision making to follow disease trends, monitor coverage of EPI.  79% of CHDCs using HMIS for decision making
<b>IIb.</b> % of community structures and health facilities coordinating and implementing activities based on an approved Standard Health Plan	50% of health facilities meet accreditation standards for the BPHS by December 2008 and 70% by the December 2009.	The pre-accreditation assessment of 15 Grand Cape Mount health facilities in June 2008 resulted in an average score of 75%.	An accreditation assessment of all 32 Grand Cape Mount health facilities in January 2010 resulted in an average score of 73%.

Both indicators for organizational capacity and viability were also met. By March 2010, all health facilities and 79% of CHDCs used HMIS for decision-making. An accreditation assessment of all 32 Grand Cape Mount health facilities in January 2010 resulted in an average score of 73%.

### **Dimension III: Community Competence and Political Environment**

<b>Indicator</b>	<b>Targets at final</b>	<b>Progress as of September 2008</b>	<b>Progress as of September 2010</b>
<b>IIIa.</b> # of CHP and HHPs providing homes visits and referrals	At least 266 HHPs (51%, ~2 per each of 132 communities) providing home visits and referrals.	20 CHPs, 520 HHPs providing home visits and referrals	20 CHPs and 507 HHPs providing home visits and referrals

<b>IIIb.</b> # of communities with CHCs and health facilities with CHDC who have met in last 3 months.	132 communities have CHCs who have met within the past 3 months  At least 24 (80% of 30) health facilities have CHDCs who have met in the last 3 months	126/132 (95.5%) of communities have CHCs who have met within the past 3 months  16 of 30 (53%) health facilities have CHDCs who have met in the last 3 months	89% of communities have CHCs who have met within the past 3 months  23 (77% of 30) of health facilities have CHDCs who have met in the last 3 months
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Community competence and political environment were assessed by tracking HHP services and CHC and CHDC meetings. Indicators for percent of communities with at least two HHPs providing home visits and referrals and regularity of CHC meetings were both met. The 23 CHDCs which have been revitalized are also meeting on a regular basis.

HHPs, CHCs and CHDCs have all been included for continuation in the RBHS project activities. The integration of Care Groups into the CHT/RBHS structure is depicted in Annex 11. There will not, however, be as many field staff with regular contact with the communities as was the case during the CSP. CHT district health officers will assume many of the support and supervisory functions that MTI and CHAL staff had done during the project. The volunteer dropout rate has been very low in spite of very limited material support from the project. Behavior change messages delivered house to house by these volunteers has changed cultural norms that have proven to be sustained after other similar projects have ended. This was measured in Mozambique where volunteer activity and household behavior changes remained at high levels without additional outside support for at least two years after the project ended.<sup>7</sup> Penetration of child survival and household behavior change into the community at large was verified during FGDs that were conducted with grandmothers and fathers of children under two years who were not directly targeted by the project, but who nevertheless were able answer household and community behavior change questions accurately. In addition, emergency transport plans and community emergency funds have moved beyond the planning stage and are being implemented.

The sustainability measurements of the CSSA are useful in targeting key changes to sustain child health, but child survival projects rarely have control of all of the factors in each dimension. Hence, health system-dependent indicators are largely outside of the project's total control. The project did not address financial sustainability of health services, but the Care Group model is largely volunteer based and can continue as long as volunteers and support structures are motivated and supported by their communities.

The community structure of the project is a wonderful foundation for other activities that can be supported through other programs. If MTI were to build on this foundation with other activities, for example community based distribution for family planning, Global Fund community activities for malaria or HIV/AIDS, these projects would provide additional support for volunteers to remain active.

<sup>7</sup> World Relief Vurunga project, Gaza Province Mozambique.

## 2. Contribution to Scale up

GCM CSP project strategies are being scaled up in other counties. IMNCI has been scaled up in all the 15 counties of Liberia. The project Social behavior change and community mobilization strategy based on the Care Group approach has been scaled up in Gparpolu County by a UNICEF funded child survival project.

In June 2010 MTI hosted Curamericas for a cross visit to learn about the Grand Cape Mount Child Survival Project Care Group and C-IMCI strategies. Since the cross visit, Curamericas has used the MTI C-IMCI modules and training methodology.

## 3. Equity

FGDs with husbands and influential male community leaders indicated that the women HHPs had shown them how much positive impact women who cannot read can have in their households and communities. In many cases wives of community leaders were active HHPs. Focus group participants perceived that the overall quality of life improved for everyone and fewer children in their community became ill or died. Since HHPs were all female, women were an essential component of the program. They were well represented in the CHAL field supervisors and community health promoters.

The CHC self-assessments conducted by the project in August 2009 and March 2010 measured several indicators of participation. Over 78% of members stated that there was good participation from both men and women, as well as youth and adults in meetings. The utilization of processes such as voting to ensure equal participation increased from 31% to 51%. Just over one-third of CHC leaders were trained in group facilitation, indicating a capacity area that could be further developed and lead to increases in other indicators.

The CHC self-assessment tool is valuable for pinpointing capacity building opportunities to address inequity, justice and problem-solving in many areas. It was introduced during the second half of the project. The project probably would have benefited if the tool had been conducted when the committees were first formed and more time had elapsed between assessments. Nevertheless, the tool was able to show improvements in several areas where MTI specifically worked to increase capacity and should prove useful for further development work with CHCs in the future.

The selection of GCM for this CSP promoted equity in Liberia. GCM contains a high percentage of under-represented and vulnerable populations. Nationwide, Liberia has a religious affiliation of 82% Christians and 16% Muslim. GCM has the highest concentration of Muslims in the country-- 90% Muslim and 9% Christian. GCM is 69% Vai, a group which is only represented by 5.6% of the population nationally. MTI is the only major health development NGO remaining with a long-term commitment to the county. Purposefully targeting an area where there are the minorities is a positive effort to achieve equity. Understanding family structures, such as polygamous households within their communities facilitated adaptation of the Care Group model to those families.

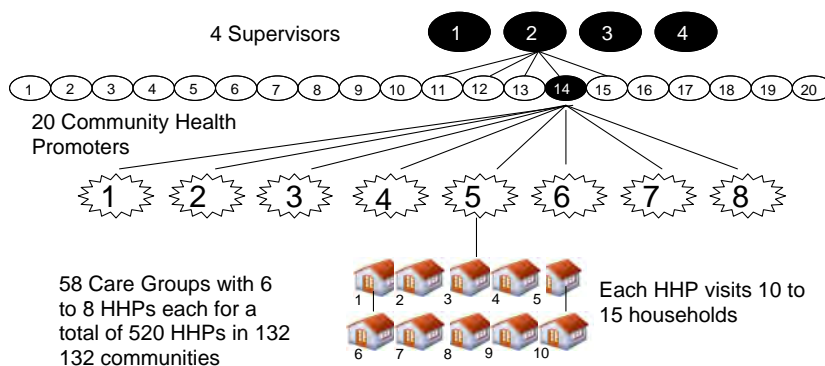
See “Other Issues Identified by the Team” for unreached populations that were not intended to be served by the MTI CSP.

#### 4. Role of Community Health Workers

CHWs were included in the Liberian primary health care system in the 1980s but were not supported during the war and became inactive. General Community Health Volunteers (gCHVs) are now included as part of the revitalization of the Liberian health system. Several HHPs and CHC members involved in CSP activities in GCMC were identified as potential gCHVs for this new cadre of volunteer and will be trained by the RBHS project. As reading is an MoHSW requirement for gCHVs, only HHPs who could read have been absorbed into the program. The role of the gCHV is similar to that of the CSP Community Health Promoter and the HHPs will work with gCHVs as community health supporters.

Utilizing the Care Group approach ensured good household coverage as depicted in the diagram below. HHPs’ ability to reach every household as well as the community for targeted and effective social and behavior change messages are largely the reason health practices changed. Their ability to have input into the health system through the CHCs also provided an important “feedback loop” to health workers about their work.

*Structure of Care Groups*



HHPs worked solely on a voluntary basis and received supportive supervision from CSP field staff. When interviewed, HHPs reported that the training they received, the positive changes in community health behaviors, and the recognition they received for their contributions to their communities were the factors that motivated them to continue their work. They reported that they felt that their workload as volunteers was manageable. Organizing and supporting volunteers through Care Groups has helped to address concerns about after-training support and supervision that arose in earlier CSPs. In the past, high household/volunteer ratios and lack of supervision led to high volunteer drop-out rates and inconsistent volunteer performance quality.

As noted in the data quality and results sections, further increases in important MCH indicators such as timely treatment with medications for malaria and pneumonia as well as skilled delivery and essential newborn services are dependent on increased health systems strengthening and

access to health services. HHPs and CHCs can and do mobilize communities to access essential MCH services, such as immunization campaigns and ITN distributions (when available), but do not provide the services nor commodities themselves. Connecting communities to the formal health system through the CHCs and empowered community members is also an important venue for advocating effective health services. MTI has retained the Community Outreach Coordinator from the CSP to continue to strengthen the health system-community connections in their RBHS grant. In that sense, the Care Group structure developed in the CSP will now be a part of the formal, health system in GCMC.

Using a broad definition that includes HHPs in the definition of CHW, a CHW Training Matrix is included in Annex 10.

#### *4 Contribution to Global Learning*

MTI appropriately targeted malnutrition for high level of effort in the project as it contributes to between 30-50% of child deaths in high mortality settings. MTI devoted significant effort to understanding what was needed to change poor child feeding practices, especially during the critical newborn and weaning periods of the child's life. CSHGP projects are often challenged to implement quality nutrition interventions and other PVOs can learn a lot from what MTI has done. As a learning organization, MTI was open and responsive to MTE findings and took the actions necessary to impact IYCF indicators. An update on progress addressing midterm evaluation recommendations is summarized in Annex 12. The CSP demonstrated that focused attention to designing interventions as well as monitoring and evaluation methodologies directed toward individual IYCN practices is very important and targeted IYCN behavior change activities can achieve significant improvements in child feeding practices.

MTI demonstrated that the Care Group model was feasible, acceptable and appropriate in the immediate post-conflict environment while the Liberian government and health system were undergoing tremendous change as external emergency health programs implemented by INGOs ended and emphasis changed to developing a sustainable system. As the first CSHGP project in Liberia, MTI introduced both the Care Group approach and IMCI.

Although MTI and CHAL are faith-based Christian organizations, the program and approach was highly acceptable to communities in a predominantly Muslim area of the country. This adds another example of how the approach is appropriate for community mobilization in a wide variety of ethnic and religious communities in multiple countries.

Even though there was turnover of key staff members in the program and the CSP has now ended, MTI made significant contributions to Liberian health care capacity building as trained personnel have gone on to important jobs in Liberia. The physician hired as project manager for the first two years of the project is now Director of Family Health Services at the national level. The MTI IMCI Mentor will head clinical services for the GCMC CHT and the Community Outreach Coordinator from the program will continue working with communities as part of MTI's RBHS program in GCMC.

Maximum performance in CSHGP-supported PVO programs is achieved when the grantee (US PVO) avails itself of the multiple technical and managerial strengthening opportunities provided

from USAID Washington's technical partners in the program, including the former CSTS+ program, the new MCHIP program and the CORE group. MTI hired experienced technical backstops at the US HQ, including a designated M&E specialist. This demonstrated MTI's commitment to long term quality technical performance in all of their programs. As a CSHGP New Partner, MTI had to blend in with multiple PVOs that already had many years of technical capacity building and experience in the program. Participation in CORE meetings and working groups and consultation with USAID's technical partners benefitted MTI as an organization and ultimately the impact on project beneficiaries and their communities.

MTI's introduction of the Care Group approach, along with a linked system of data flow, analysis, and feedback from the community-based information system has proven that this approach is feasible and acceptable in GCMC and probably could be effective in other high-need rural areas of Liberia. The high level of collaboration, participation and trust between the partners certainly led to achieving high coverage as well as satisfaction with the program overall.

### **G. Conclusions and Recommendations**

MTI CSP met, and in many cases, significantly exceeded targets in their quantitative impact child survival indicators. Only point of use water treatment made no progress possible due to low diarrhea prevalence and perceived access to clean water in communities. High commitment to learning and improving technical performance at every level from HQ to the household certainly contributed to these achievements. Lessons learned in developing and administering effective and cost-effective community based MCH programs can benefit other areas of Liberia and provide the basis for additional programs in reproductive health and MCH programs there and in other places.

#### Recommendation:

MTI share their experiences in addressing IYCN within a CSHGP-supported program, specifically the specific social and behavior change assessments and strategies they used, including Care Groups. Even though MTI is not a Title II implementing organization, they should offer to share these accomplishments with organizations working on preventing chronic malnutrition in those programs.

The CSP included health system (CHT) capacity building in IMNCI and supportive supervision. CHT members specifically mentioned this training as an important factor in their improved performance in MCH services. The addition of newborns to the IMCI (now IMNCI) algorithm was also important. Emphasis on early initiation of breastfeeding behaviors and maternal TT in the project will be important contributions to decreasing newborn mortality. More infants and mothers now receive post-natal checkups, largely due to increased facility deliveries.

#### Recommendation:

MTI should share their experiences with improving health worker performance, including successes in using quality assurance tools and checklists as well as challenges they encountered in achieving optimum outcomes, with RBHS and other partners working on health systems strengthening.



The CSP strategy to meet the community and household ownership for increased hygiene, and significantly better preventative and curative MCH behaviors was successful. The Care Group model, including the community structures (CHC) were cited as major reason for community and household behavior changes. The Government of Liberia is searching for successful and realistic community health care models.

#### Recommendation:

MTI should proactively seek opportunities to contribute to developing standards and approaches for community health care services in Liberia by sharing their strategies and results (including objective quantitative data) with appropriate MoHSW and partner organizations such as USAID's RBHS partners at the national level. In child survival forums such as CORE Group meetings, MTI should collaborate with other organizations that have experienced similar challenges in building health worker capacity in MCH services, including IMCI and skilled delivery. Specific experience MTI has had in improving complementary feeding practices should especially be shared.

Lessons Learned as expressed during workshop with final evaluation team and stakeholders

- Care Group programs result in positive changes in perceptions of women's capabilities and in their own self-esteem, even if they are not able to read.
- Baseline data for demonstrating impact is essential.
- Community HMIS and referral processes show that Liberian women who cannot read can be a vital part of improving family health outcomes. These methodologies provide valuable lessons learned for community health programs throughout Liberia.
- Give positive and constructive feedback at every level: community, health facility, CHT, and national.
- Tell volunteers about the positive things they are doing. They are motivated when they see the impact of what they do.
- The workload expected of each volunteer need to be manageable.
- Participatory planning improves accountability and capacity and results in a more realistic program.
- Midterm evaluations allow identification of strengths and weakness in time to correct weaknesses and build on strengths.
- LQAS provides annual quantitative data for decision-making and program planning.
- Be sure to include men, grandparents and community and religious leaders in social and behavior change strategies and solicit their feedback.
- Keep in mind national health targets in setting project objectives.

#### **Other Issues Identified by the Team**

These observations are no reflection on the performance of MTI's child survival project, but emerged during the fieldwork and stakeholder discussion conducted during the project's final evaluation. They are presented here for both MTI and USAID's considerations for future programs in GCMC.

- Reproductive health services, including STI and family planning programs are desperately needed in the project area. There is a high level of untreated STDs in the community. The road from Monrovia to Freetown which runs through GCMC is used by commercial truckers and promotes a high level of commercial sex trade. This indicates high risk of HIV/AIDS transmission. Knowledge of prevention measures remains low so prevention services are needed.
- There is need for more attention to maintaining the clean water supply provided to the area by NGOs during and shortly after the war. Point of use water treatment may become a more pressing need in the future.
- There are absolutely no mental health services available in the county. The CHT has urgent need for basic mental health services. Even the basic sedatives that are needed to transport psychotic safely patients to Monrovia are not available. There is a need for basic mental health training for CHT and health facility staff and the establishment of a referral system for serious cases.
- Services for disabled children are needed and are beyond current CHT capacity.
- Women's literacy programs are needed in the county.

Although neonatal mortality represents 25% or more of child mortality in Liberia, efforts to save their lives receives little focused attention from either health facilities or the community. Most deliveries still occur in the home. As U5 mortality rates decrease from increased immunization coverage and better control of diarrhea, pneumonia and malaria, the percentage of child deaths attributable to neonatal mortality will increase. More needs to be done in the area to meet the needs of newborns who largely remain in the home during the time when they are at most risk of dying. At current mortality levels, most newborns die within the first week of life (MIS4, 2009). Saving Newborn Lives (SNL) and USAID's previous ACCESS project addressed many of the challenges of reducing neonatal mortality and morbidity in other countries. Similar programs are needed in Liberia

### **Applying MTI's CSP Experience in the Future**

MTI has made a long term commitment to facilitate health development in Liberia. They are already a USAID RBHS partner. MTI is an active member of the CORE group and will continue to collaborate with other child survival PVOs for technical strengthening for their programs.

#### Recommendation:

MTI should consider submitting proposals for additional programs in Liberia (they have already started doing this), including those supported by CSHGP and PMI in Liberia, as well as seek additional opportunities to partner with USAID Liberia and other programs such as the Global Fund. Another CSHGP grant in Liberia would be appropriate. This would probably require an expanded program area, or perhaps entry into other parts of Liberia.

MTI's plans to address final evaluation recommendations are outlined in Annex 14.

### **H. Changes in Grantee Organization Capacity**

MTI availed itself of several of the multiple technical and managerial strengthening opportunities provided from USAID's CHSGPP technical partners including the former CSTS+ program, the new MCHIP program and membership in the CORE group working groups. As a learning organization, MTI was open and responsive to MTE findings and took the actions necessary to impact IYCF and other indicators and use regular monitoring to assess progress towards end of project targets in other interventions. The CSP demonstrated that using technical skills provided in the CSHGP helped MTI to focus attention on designing interventions with a social and behavior change approach as well as develop monitoring and evaluation methodologies. MTI hired experienced technical backstops at the US HQ that included a designated M&E specialist. This demonstrated MTI's commitment to long term quality technical performance in all of their programs. MTI enjoys an excellent reputation among many Liberian public health professionals and their former Project Manager is now Head of Family Health of the Liberian MoHSW.

As a CSHGP New Partner, MTI had to blend in with multiple PVOs that already had many years of technical capacity building and experience in the program. Collaboration with colleagues and other organizations that were implementing similar programs benefitted MTI as an organization and ultimately had a positive impact on project beneficiaries and their communities.

The high level of collaboration, participation and trust between the partners certainly contributed to achieving high coverage in CSP indicators as well as satisfaction with the program overall. MTI has was invited by MCHIP to share their experiences implementing a community-based health project using Care Groups during the December 2010 Care Group Technical Advisory Group meeting.

MTI's collaboration with the USAID Liberia Mission while implementing the CSP was expanded when MTI was awarded a contract in July 2009 through the RBHS grant funded by USAID and implemented through JSI. The RBHS objective is to support implementation of Liberia's National Health Policy and Plan. John Snow, Inc (JSI) conducted an assessment of NGO capacity for performance-based contracting in Liberia and found that MTI has sufficient financial management systems in place and experience in following USAID financial rules and reporting requirements, to qualify to manage funds for a sub-grant from RBHS. MTI shared the results of the CSP with the USAID mission and RBHS technical manager and is exploring collaboration with other USAID partners to implement additional community-based health programs.

An evaluation of project management is included in Annex 15.

# Child Survival and Health Grants Program Project Summary

Oct-08-2010

## Medical Teams International (Liberia)

### General Project Information

**Cooperative Agreement Number:** GHS-A-00-06-00019  
**MTI Headquarters Technical Backstop:** Mary Helen Carruth  
**MTI Headquarters Technical Backstop Backup:** Mary Helen Carruth  
**Field Program Manager:** Shiferaw Demissie  
**Midterm Evaluator:** Joan Jennings  
**Final Evaluator:** Jean Capps  
**Headquarter Financial Contact:** Mary Helen Carruth  
**Project Dates:** 10/1/2006 - 9/30/2010 (FY06)  
**Project Type:** New Partner  
**USAID Mission Contact:** Chris McDermott  
**Project Web Site:** <http://www.medicalteams.org>

### Field Program Manager

**Name:** Shiferaw Demissie (Child Survival Project Manager)  
**Address:** Airfield Short Cut, Sinkor  
PO Box 1559  
Monrovia Liberia  
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**E-mail:** [sdechasa@medicalteams.org](mailto:sdechasa@medicalteams.org)  
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### Alternate Field Contact

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Monrovia Liberia  
**Phone:** +231-550-0661  
**Fax:**  
**E-mail:** [gkezele@medicalteams.org](mailto:gkezele@medicalteams.org)  
**Skype Name:**

### Grant Funding Information

**USAID Funding:** \$1,249,881      **PVO Match:** \$1,441,509

## General Project Description

Project Goal: To reduce morbidity and mortality of children under five and improve the health of women of reproductive age within the Grand Cape Mount County of Liberia  
Interventions: - Nutrition - Pneumonia case management - Control of diarrheal disease - Malaria - Immunizations  
Strategies: 1. Targeted behavior change at the household level 2. Community mobilization through capacity building of community organizations and leaders including planning and evaluation, development of emergency transport systems and activities for sustainable health outcomes. 3. Quality of care and access at the clinic level will be improved by implementing IMCI through training, mentoring, supportive supervision, and the use of a quality assurance methodology (COPE), provision of drugs and supplies, and strengthening of referral and logistics systems. 4. Institutional capacity building for Medical Teams International and partners focusing on improved program quality and technical skills, strengthened project monitoring and evaluation, and institutionalization and dissemination of lessons learned.

## Project Location

<b>Latitude:</b> 6.70	<b>Longitude:</b> -11.30
<b>Project Location Types:</b>	Rural
<b>Levels of Intervention:</b>	Health Center Health Post Level Community
<b>Province(s):</b>	--
<b>District(s):</b>	Five districts in the Grand Cape Mount County in Liberia
<b>Sub-District(s):</b>	--

## Operations Research Information

There is no Operations Research (OR) component for this Project.

## Partners

<b>Christian Health Association of Liberia</b> (Subgrantee)	\$501,401
<b>Grand Cape County Health Team</b> (Collaborating Partner)	\$0
<b>Project Communities</b> (Collaborating Partner)	\$0

## Strategies

### Social and Behavioral Change Strategies:

Community Mobilization  
Group interventions  
Interpersonal Communication

### Health Services Access Strategies:

Emergency Transport Planning/Financing

### Health Systems Strengthening:

Supportive Supervision  
Monitoring health facility worker adherence with evidence-based guidelines  
Providing feedback on health worker performance  
Review of clinical records (for quality assessment/feedback)  
Coordinating existing HMIS with community level data

### Strategies for Enabling Environment:

Advocacy for policy change or resource mobilization

### Tools/Methodologies:

BEHAVE Framework  
Sustainability Framework (CSSA)  
Rapid Health Facility Assessment  
LQAS  
Participatory Rapid/Rural Appraisal

## Capacity Building

### Local Partners:

Local Non-Government Organization (NGO)  
National Ministry of Health (MOH)  
Dist. Health System  
Health Facility Staff

## Interventions & Components

### Immunizations (10%)

- Classic 6 Vaccines
- Vitamin A
- Mobilization

IMCI Integration

CHW Training  
HF Training

### Nutrition (30%)

- ENA
- Complementary Feeding from 6 months
- Continuous BF up to 24 months
- Maternal Nutrition

IMCI Integration

CHW Training  
HF Training

### Pneumonia Case Management (20%)

- Case Management Counseling
- Recognition of Pneumonia Danger Signs

IMCI Integration

CHW Training  
HF Training

### Control of Diarrheal Diseases (20%)

- Hand Washing
- ORS/Home Fluids
- Feeding/Breastfeeding
- Care Seeking
- Case Management/Counseling

IMCI Integration

CHW Training  
HF Training

### Malaria (20%)

- Training in Malaria CM
- Adequate Supply of Malarial Drug
- Access to providers and drugs
- Care Seeking, Recog., Compliance
- IPT
- ACT

IMCI Integration

CHW Training  
HF Training

## Operational Plan Indicators

<b>Number of People Trained in Maternal/Newborn Health</b>
There is no data for this project for this operational plan indicator.
<b>Number of People Trained in Child Health &amp; Nutrition</b>
There is no data for this project for this operational plan indicator.
<b>Number of People Trained in Malaria Treatment or Prevention</b>
There is no data for this project for this operational plan indicator.

## Locations & Sub-Areas

**Total Population:** 127,076

## Target Beneficiaries

	<b>Liberia - MTI - FY06</b>
<b>Children 0-59 months</b>	21,429
<b>Women 15-49 years</b>	29,941
<b>Beneficiaries Total</b>	55,290

**Rapid Catch Indicators: DIP Submission**

Sample Type: 30 Cluster				
Indicator	Numerator	Denominator	Percentage	Confidence Interval
Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child.	127	167	76.0%	14.7
Percentage of mothers with children age 0-23 months who received at least two Tetanus toxoid vaccinations before the birth of their youngest child	184	300	61.3%	10.4
Percentage of children age 0-23 months whose births were attended by skilled personnel	64	300	21.3%	7.0
Percentage of children age 0-23 months who received a post-natal visit from an appropriately trained health worker within three days after birth	21	300	7.0%	4.2
Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours	101	300	33.7%	8.5
Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months: card verified or mother's recall	96	126	76.2%	17.0
Percentage of children age 12-23 months who received a measles vaccination	73	111	65.8%	17.5
Percentage of children age 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey	52	111	46.8%	15.8
Percentage of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey	34	111	30.6%	13.4
Percentage of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began	4	121	3.3%	4.5
Percentage of children age 0-23 months with diarrhea in the last two weeks who received oral rehydration solution (ORS) and/or recommended home fluids	66	89	74.2%	20.1
Percentage of children age 0-23 months with chest-related cough and fast and/or difficult breathing in the last two weeks who were taken to an appropriate health provider	67	155	43.2%	13.0
Percentage of households of children age 0-23 months that treat water effectively	65	300	21.7%	7.0
Percentage of mothers of children age 0-23 months who live in households with soap at the place for hand washing	57	300	19.0%	6.6
Percentage of children age 0-23 months who slept under an insecticide-treated bednet (in malaria risk areas, where bednet use is effective) the previous night	53	300	17.7%	6.4
Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to the WHO/NCHS reference population)	79	291	27.1%	7.9
Percentage of infants and young children age 6-23 months fed according to a minimum of appropriate feeding practices	33	175	18.9%	8.7



## Rapid Catch Indicators: Mid-term

Sample Type: LQAS				
Indicator	Numerator	Denominator	Percentage	Confidence Interval
Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child.	0	0	0.0%	0.0
Percentage of mothers with children age 0-23 months who received at least two Tetanus toxoid vaccinations before the birth of their youngest child	64	96	66.7%	9.4
Percentage of children age 0-23 months whose births were attended by skilled personnel	23	96	24.0%	8.5
Percentage of children age 0-23 months who received a post-natal visit from an appropriately trained health worker within three days after birth	27	96	28.1%	9.0
Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours	0	0	0.0%	0.0
Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months: card verified or mother's recall	82	96	85.4%	7.1
Percentage of children age 12-23 months who received a measles vaccination	48	96	50.0%	10.0
Percentage of children age 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey	83	96	86.5%	6.8
Percentage of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey	58	96	60.4%	9.8
Percentage of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began	47	96	49.0%	10.0
Percentage of children age 0-23 months with diarrhea in the last two weeks who received oral rehydration solution (ORS) and/or recommended home fluids	76	96	79.2%	8.1
Percentage of children age 0-23 months with chest-related cough and fast and/or difficult breathing in the last two weeks who were taken to an appropriate health provider	80	96	83.3%	7.5
Percentage of households of children age 0-23 months that treat water effectively	7	96	7.3%	5.2
Percentage of mothers of children age 0-23 months who live in households with soap at the place for hand washing	42	96	43.8%	9.9
Percentage of children age 0-23 months who slept under an insecticide-treated bednet (in malaria risk areas, where bednet use is effective) the previous night	65	96	67.7%	9.4
Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to the WHO/NCHS reference population)	20	96	20.8%	8.1
Percentage of infants and young children age 6-23 months fed according to a minimum of appropriate feeding practices	0	0	0.0%	0.0

## Rapid Catch Indicators: Final Evaluation

Sample Type: 30 Cluster				
Indicator	Numerator	Denominator	Percentage	Confidence Interval
Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child.	214	300	71.3%	10.8
Percentage of mothers with children age 0-23 months who received at least two Tetanus toxoid vaccinations before the birth of their youngest child	284	300	94.7%	11.3
Percentage of children age 0-23 months whose births were attended by skilled personnel	104	300	34.7%	8.6
Percentage of children age 0-23 months who received a post-natal visit from an appropriately trained health worker within three days after birth	118	300	39.3%	9.0
Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours	99	101	98.0%	19.5
Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months: card verified or mother's recall	180	197	91.4%	13.9
Percentage of children age 12-23 months who received a measles vaccination	73	97	75.3%	19.3
Percentage of children age 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey	90	97	92.8%	19.8
Percentage of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey	85	97	87.6%	19.7
Percentage of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began	41	126	32.5%	12.9
Percentage of children age 0-23 months with diarrhea in the last two weeks who received oral rehydration solution (ORS) and/or recommended home fluids	37	44	84.1%	29.2
Percentage of children age 0-23 months with chest-related cough and fast and/or difficult breathing in the last two weeks who were taken to an appropriate health provider	89	98	90.8%	19.7
Percentage of households of children age 0-23 months that treat water effectively	56	300	18.7%	6.6
Percentage of mothers of children age 0-23 months who live in households with soap at the place for hand washing	295	300	98.3%	11.3
Percentage of children age 0-23 months who slept under an insecticide-treated bednet (in malaria risk areas, where bednet use is effective) the previous night	208	300	69.3%	10.8
Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to the WHO/NCHS reference population)	71	299	23.7%	7.3
Percentage of infants and young children age 6-23 months fed according to a minimum of appropriate feeding practices	109	197	55.3%	12.5

## Rapid Catch Indicator Comments

## **Annex 2: Results Highlight:**

### **Community Health Committee Transportation System Saves a Mother's Life—Twice!**

Care Groups require community and health system structures to support their social and behavior change activities at the household level. The MTI CSP created, trained and provided supportive supervision to Community Health Committees (CHC) and measured changes using a CHC health assessment. The final evaluation team was able to document how systems put in place by the CSP through the CHCs saved at least one woman's life.

One key activity to reduce maternal deaths is reducing the delay for the mother to get skilled care when she experiences complications related to child birth. MTI built CHC capacity to respond to obstetrical emergencies by helping them to develop Emergency Health Funds and Transportation Plans. By the end of the project, 88% of 129 CHC members reported that they had an emergency transport system that was working well. In the same survey, 52% of CHC members said they had established an Emergency Health Fund, but about one-quarter of them said that it wasn't working very well.

The emergency transport system in one CSP community was directly responsible for saving one mother's life twice. During the final evaluation fieldwork, the team visited one community to conduct focus group discussions (FGDs) to assess the strengths and challenges of the project in all of the focus interventions. They were introduced to a woman who said she has been pregnant seven times and has only four living children. Two of her pregnancies ended with severe bleeding that required a C-section followed by the birth of a stillborn baby. For the first child, she was nine months pregnant with an uneventful pregnancy when she started bleeding. She doesn't remember what happened next because she lost consciousness, but her mother was there and told her that she first had pain and the traditional midwife was called. She started bleeding and then lost consciousness. After the traditional midwife examined her, the family was told that she needed to go to the hospital (Dealing with another "delay" recognizing the need to seek treatment). The CHC emergency transport was activated and community members used the hammock to carry her to the Sinje Health Center. From there she was transported to Monrovia where she delivered a stillborn baby by C-section. She lost a lot of blood. All her husband was told afterward was "to let her rest" for one year, without any information about contraception or what was meant by "rest".

She became pregnant again three months later. This pregnancy also resulted in severe bleeding, followed with emergency transportation using the CHC hammock and referral to Monrovia for a second emergency C-section delivery of a stillborn baby. The husband requested permanent contraception from the Monrovia at that time, but was told that it would cost \$300—well beyond the family's ability to pay. Although tubal ligations and vasectomies are available at a lower cost at the Bomi hospital in the neighboring county, he was not told about it. In the meantime, the husband has taken another wife who also now has a small child. The husband said, "I have trouble feeding the children that I have now, we don't want to have any more children but we don't know how to get contraception to help us prevent these pregnancies. I am concerned that my wife will die if she becomes pregnant again. I also know other men in this area who feel the same way."

The GCMC IMNCI Coordinator, who will become the CHT Clinical Supervisor after the CSP ends, understood that another pregnancy could easily kill the woman. He took the husband and wife to Sinje Health Center the next day where she received a full physical examination and started on Depo-Provera injections. She will use this form of contraception until arrangements and funding can be made for a tubal ligation.



**Annex 3:**  
**Work Plan Activity Status Table**  
**Medical Teams International in Liberia**

<b>IR 1:</b> Communities assume responsibility for their own health with strengthened community structures, linkages with Health Facility staff, and enhanced human resource capacity		
<b>Related Key Activities</b>	<b>Status of Activities (Completed, On target, Not yet on target)</b>	<b>Comments</b>
C-IMCI curriculum developed and appropriately implemented	Completed	Curriculum development completed during 1 <sup>st</sup> year of the project. It has been appropriately implemented since then.
Supervisors and CHPs trained in behavior change, community mobilization and C-IMCI	Completed	Project Coordinators, Supervisors and CHPs provided with training in C-IMCI and behavior change during year 1 with refresher training during year 3. Training on community mobilization was provided during year 2.
Community based referral system established and functioning	Completed	<p>507 HHPs have actively been providing referrals to health facilities. During year 3 2,046 sick children were referred to nearest health facilities due to fever, cough and difficult breathing, diarrheal episodes, seizure and signs of malnutrition.</p> <p>During year 4, 1250 children were referred for curative services while 2,422 children were referred for preventive services such as immunization and Vitamin A supplementation.</p> <p>During the same period, 3,521 women of child bearing age were also referred to health facilities by HHPs for preventive health services such as prenatal care, family planning, institutional delivery, TT/IPT and postnatal care. Ninety four (94) mothers were also referred to health facilities due to obstructed labor.</p>
Supportive supervision system established and functioning	Completed	<p>Project Manager, Coordinators and Supervisors provided with training in Engenderhealth Facilitative Supervision methodology during year 3.</p> <p>Project Manager, Coordinators and Supervisors use QIVCs during training and supervision visits to provide feedback to supervisors, CHPs, HHPs, and health facility staff</p>
Community HMIS functioning	Completed	HMIS functioning and data provided to Child Survival Project, CHT, and communities.
CHCs develop economic plans for emergency health care	Completed	78% of the CHCs have emergency health fund system in place with 52% reporting they are working effectively. Final Target is 60%
CHCs develop emergency transport plan	Completed	88 % of the CHCs have effective emergency transport system in place. Final target is 65%

<b>IR 2: Improved health behaviors and actions at the household level</b>		
<b>Activities</b>	<b>Status of Activities (Completed, On target, Not yet on target)</b>	<b>Comments</b>
CHPs and HHPs use traditional communication channels and radio to disseminate health messages	Completed	Traditional ways of learning (song, story telling, drama, case studies) integrated into C-IMCI curriculum and CHPs and HHPs are using traditional communication channels in education sessions.  Midterm evaluation consultant advised against developing radio spots as these can be costly or ineffective in remote rural areas.
Behavior change messages disseminated in communities and health facilities	Completed	507 HHPs are providing home visits and community education sessions. During year 4, HHPs conducted 60,241 home visits to provide health education on a one to one basis and to make referrals for families with children U5. 1185 community education sessions were also conducted by the HHPs.
	Completed	Health messages are disseminated during Friday prayers by Muslim religious leaders and during Christian church services on Sundays.
	Completed	Counseling and health education provided at health facilities
	Completed	Political and traditional leaders involved through CHDC activities.
Network of Care Groups functioning	Completed	A network of 132 Care Groups with 507 Household Health Promoters (HHPs) covers 132 communities.
System for monitoring behavior change functioning	Completed	KPC surveys conducted at baseline and final. LQAS surveys conducted during years 2 and 3 conducted.
	Completed	Community Profile established at baseline and updated at midterm
	Completed	Supervision checklist used to monitor behaviors at HHP, CHP and health facility levels.
	Completed	R-HFSA used to evaluate behaviors at health facilities at baseline, MTE and final evaluation.
Strategy developed for mitigating harmful effects of black baggers.	Completed	During September 2009, the Project provided training for CHCs on mitigating harmful effects of black baggers. During the first quarter of year 4, the CHCs cascaded this training to their communities.

<b>IR 3: Improved quality of care in health facilities through the implementation of IMCI and capacity building in complementary areas.</b>		
<b>Activities</b>	<b>Status of Activities (Completed, On target, Not yet on target)</b>	<b>Comments</b>
Tools for monitoring implementation of clinical IMCI developed and utilized	Completed	The Project uses a checklist adapted from the WHO Supervisory Checklist for Monitoring /Supervision of IMCI Activities.
CSP and health facility staff trained in IMCI	Completed	86 Physician assistants, registered and licensed practical nurses and certified midwives and 5 CSP staff members trained in IMCI and 132 health facility support staff provided with orientation to the components of IMCI relevant to their roles.
IMCI services provided at 25 clinics and 1 health center.	Completed	IMCI services provided at all the 32 health facilities.
Health facility staff are provided with monitoring and mentoring	Completed	Monitoring and mentoring visits provided in all the 32 facilities every 2 -3 months.
GIK supplied to health facility as needed	Completed	<p>From July 2007 to March 2009, MTI regularly supplied the 5 MTI-supported clinics with essential IMCI drugs (except for TB or malaria, which are supplied by the MOHSW) and medical supplies.</p> <p>From September 2008 to June 2009 GIK MTI provided one shipment of GIK medical supplies included gloves, syringes, needles, maternity pads, and sutures. Drugs or supplies not available in Liberia were purchased through the National Drug Service.</p> <p>Since July 2009, MTI has been providing essential drugs to 21 health facilities in GCM through the RBHS project.</p> <p>During the first quarter of year 4, the Child Survival project provided 9 clinics with equipment used in the maternal and child health rooms including examination beds, delivery beds and bed linen, clean delivery kits and cord ties, mucus extractors, fetal stethoscope, blood pressure cuffs and stethoscope, baby scales, and suturing.</p>
ORT corners established and functioning in each facility trained in IMCI	Completed	All 32 health facilities implement IMNCI and have ORT corners established and functioning.
Field Supervisors provided with training in principles of supportive supervision	Completed	All the Child Survival project staff were provided with training in Facilitative Supervision for Quality Improvement during the third quarter of year 3.

<b>IR 3: Improved quality of care in health facilities through the implementation of IMCI and capacity building in complementary areas.</b>		
<b>Activities</b>	<b>Status of Activities (Completed, On target, Not yet on target)</b>	<b>Comments</b>
Joint monitoring visits conducted at health facilities and communities involving partners (CHT Supervisors, IMCI Mentor & Coordinator, M&E Coordinators and CHAL Supervisors)	Completed	The CSP and RBHS projects have conducted joint monitoring visits with the CHT to the health facilities.
30 CHDCs revitalized and supporting clinic management	Not yet on target	23 CHDCs have been established. MTI offerd assistance to the County Health Team to establish CHDCs at the remaining 7 facilities. The CHT has not taken intiatvie to do so.
Zinc supplementation strategy developed and implemented	n/a	Although the government policy for the Basic Package of Health Services recommends the use of zinc during episodes of diarrhea and national IMCI training protocols include orientation to use of zinc, zinc is not readily available in Grand Cape Mount County. MTI will contribute to capacity building of health staff in this improved protocol when zinc becomes available.

<b>IR 4: Strengthened institutional capacity of MTI and their partners to implement effective and efficient child survival activities</b>		
<b>Activities</b>	<b>Status of Activities (Completed, On target, Not yet on target)</b>	<b>Comments</b>
Action plan with indicators for capacity building developed based on baseline Institutional Capacity Assessments	Completed	Technical Assistance Plan for Institutional Capacity Building was developed during the DIP development process and updated at midterm.



<b>IR 4: Strengthened institutional capacity of MTI and their partners to implement effective and efficient child survival activities</b>		
<b>Activities</b>	<b>Status of Activities (Completed, On target, Not yet on target)</b>	<b>Comments</b>
Capacity building plans are carried out, monitored and reported.	Completed	<p>Trainings provided include:</p> <ol style="list-style-type: none"> <li>1) Community mobilization, November 2006</li> <li>2) Participatory adult Learning methodologies, May 2007</li> <li>3) Project Cycle management, July 2007</li> <li>4) Monitoring and evaluation, July 2007</li> <li>5) IMCI, September, 2007, December 2008, and May 2010</li> <li>6) Health management information systems, March 2008</li> <li>7) Facilitative supervision, July 2009</li> <li>8) Conflict prevention and resolution, September 2009.</li> <li>9) Supply chain management, February 2010.</li> </ol>
System for information sharing among MTI and stakeholders developed (quarterly meetings, annual evaluation/planning meeting)	Completed	<p>During years 3 and 4, Child Survival Project partner coordination meetings were held on a quarterly and if needed monthly basis.</p> <p>Meetings were held with community groups to share Care Group data and with partners to discuss on the follow up needed for the midterm evaluation recommendations.</p> <p>A system for information sharing among HHPs and CHCs was created. A CHC self assessment conducted in March 2010 showed that 83% of the CHCs discuss the information obtained from HHPs while 63% of CHCs use it for planning purposes.</p>
Input contributed to process of development of Standard Health Plan for the county	Completed	MTI participated in the development of the Grand Cape Mount county health plan in 2007. During 2008 and 2009 the Grand Cape Mount County Health Team did not invite MTI or other NGOs working in the county to their health planning meeting. The CHT, however, provided a draft health plan and MTI provided input.
CSSA focus utilized with partners as part of the DIP development process	Completed	The CSSA was utilized during DIP process to develop sustainability plan and indicators. The CSSA was updated at midterm, at the end of year 3 and during the final evaluation.

## Annex 4:

### Project Matrix Indicators

<b>Intermediate Result 1:</b> Communities assume responsibility for their own health with strengthened community structures, linkages with Health Facility staff, and enhanced human resource capacity				
Indicator	Method	Baseline Value	Final Value	Final Target
<i>% of HHPs referring patients to clinic</i>	HHP Supervision	0%	100%	75%
<i>% of HHPs who received a supervisory visit during the last three months</i>	HHP Supervision	0%	100%	75%
<i>% of communities using information from community HIS for decision making</i>	Community Profile	0%	63%	40%
<i>% of CHCs with one or more women participating on the committee.</i>	CHT information	0%	75%	65%
<i>% of health facilities with active CHDCs who have met in the last three months</i>	Community Profile	0%	77%	80%
<i>% of communities with an economic plan for emergency health needs</i>	Community Profile	0%	89% with 52% reporting it is working well	60%
<i>% of communities with an emergency transport plan</i>	Community Profile	0%	87%	65%

<b>Intermediate Result 2:</b> Improved health behaviors and actions at the household level.				
CSHGP Intervention Area	Indicator	Baseline Value	Final Value	Final Target
Nutrition	<i>Immediate and exclusive breastfeeding of newborns: Percent of newborns who were put to the breast within one hour of delivery and did not receive prelactal feeds</i>	33.7% (28.3%-39.3%)	87.0% (82.7%-90.6%)	50% raised to 60% at MTE
	<i>Introduction of complimentary foods:% infants 6-9m receiving breastmilk and complementary foods</i>	37.5% (22.7%-54.2%)	76.3% (65.2%-85.3%)	65%
	<i>Vitamin A Supplementation in the last 6 months: Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months (Mother's recall)</i>	76.2% (67.8%-83.3%)	91.4% (86.5%-94.9%)	85%

Immunization	<i>Health System Performance regarding Immunization services: Percentage of children 12-23 months who received DPT3 before they reached 12 months by the time of the interview, card verified</i>	30.6% (22.2%-40.1%)	71.1% (61.0%-79.9%)	50%
	<i>EPI Coverage: Percentage of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age, card verified</i>	18.9% (12.1%-27.5%)	52.6% (42.2%-62.8%)	40% raised to 55% at MTE
	<i>Maternal TT Vaccination: Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.)</i>	61.3% (55.6%-66.9%)	94.7% (91.5%-96.9%)	80%
Control of Diarrhea	<i>ORT use: Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration solution (ORS) and/or recommended home fluids</i>	74.2% (63.8%-82.9%)	84.1% (69.9%-93.4%)	85%
	<i>Increased fluid intake during diarrheal episode: Percentage of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness</i>	51.7% (40.8%-62.4%)	88.6% (75.4%-96.2%)	70%
	<i>Point of Use (POU): Percentage of households of children 0-23 months that treat water effectively</i>	21.7% (17.1%-26.8%)	18.7% (14.4%-23.5%)	40%
	<i>Appropriate Hand washing Practices: Percentage of mothers of children 0-23 months who live in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period</i>	19.0% (14.7%-23.9%)	87.7% (83.4%-91.2%)	40% raised to 70% at MTI
ARI/Pneumonia	<i>Appropriate Care Seeking for Pneumonia: Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider</i>	43.2% (35.3%-51.4%)	90.8% (83.3%-95.7%)	65% raised to 85% at MTE
Malaria	<i>Child sleeps under an insecticide-treated bednet: Percentage of children 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night</i>	17.7% (13.5%-22.5%)	69.3% (63.8%-74.5%)	35% raised to 70% at MTE
	<i>Child with fever receives appropriate antimalarial treatment: Percentage of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began</i>	3.6% (1.0%-8.9%)	32.5% (24.3%-40.7%)	65%

<b>Intermediate Result 3:</b> Improved quality of care in health facilities through the implementation of IMCI and capacity building in complementary areas.				
<b>Indicator</b>	<b>Method</b>	<b>Baseline Value</b>	<b>Final Value</b>	<b>Final Target</b>
<i>% of HF that offer growth monitoring (at least 30 days per month per R-HFSA)</i>	R-HSPA BL & FE	0%	94%	85%
<i>% of HF's clinical encounters in which all assessment tasks are made by the HW for sick child (check ability to drink or breastfeed, vomits everything, convulsions, presence of cough or fast/difficult breathing, diarrhea, fever, assess nutritional status, feeding practices, check vaccination status)</i>	R-HSPA BL & FE	9%	67%	85%
<i>% of HF clinical encounters in which treatment is appropriate to diagnosis for malaria, pneumonia and diarrhea. (Record review)</i>	R-HSPA BL & FE	46%	83%	85%
<i>% of HF clinical encounters in which the caretaker whose child was prescribed antibiotic, anti-malarial or ORS can correctly describe how to administer all prescribed drugs</i>	R-HSPA BL & FE	49%	72%	75%
<i>% of HF that received external supervision at least once in the last THREE months (2 or more: deliver supplies, check records/ reports, observe work, provide feedback)</i>	R-HSPA BL & FE	5%	94%	75%
<i>% of HF utilizing information from the HMIS for decision making</i>	R-HSPA BL & FE	NA	79%	75%

<b>Intermediate Result 4:</b> Strengthened institutional capacity of MTI and partners to implement effective CS activities.				
<b>Indicator</b>	<b>Method</b>	<b>Baseline Value</b>	<b>Status at Final Evaluation</b>	<b>Final Target</b>
<i>% of organizations with a functional financial management system</i>	<i>This indicator was dropped as not relevant. Partners have functional financial management systems.</i>			
<i>% organizations (CDHCs) using information from HMIS for decision making</i>	IA BL & FE **	0%	79%	100%
<i>% of organizations and health facilities meeting approved Standard Health Plan.</i>	CHT report	0%	<i>An accreditation assessment of all 32 Grand Cape Mount health facilities in January 2010 resulted in an average score of 73%.</i>	50%
<i>% of indicators for capacity building are achieved</i>	IA BL & FE	0%	<i>Action has been taken to improve approximately 94% of indicators for all three partner agencies: MTI Liberia, CHAL, and GCM CHT.</i>	80%
<i>Use of CSSA is institutionalized (annual reviews are being conducted)</i>	Annual Report	No	<i>Review at midterm, Year 3, and final evaluation conducted.</i>	Yes

<p><i>Lessons learned and best practices are disseminated utilizing at least three different media (program manual, presentations, conferences, web site, articles, etc.)</i></p>	<p>Final Evaluation</p>	<p>No</p>	<p><i>Internal presentations of MTE results and discussions of lessons learned have been held at MTI headquarters and field offices and MTE results posted on the MTI website.</i></p> <p><i>Lessons learned from the Liberia Child Survival Project have been disseminated and used in MTI community health programs in Africa and Asia.</i></p> <p><i>GCM CSP project strategies are being scaled up in other counties. IMNCI has been scaled up in all the 15 counties of Liberia. The project Social behavior change and community mobilization strategy based on the Care Group approach has been scaled up in Gparpolu County by a UNICEF funded child survival project.</i></p> <p><i>In June 2010 MTI hosted Curamericas for a cross visit to learn about the Grand Cape Mount Child Survival Project Care Group and C-IMCI strategies. Since the cross visit, Curamericas has used the MTI C-IMCI modules and training methodology.</i></p> <p><i>During year 3, project staff shared experience during workshops to develop the national Child Survival Strategy for Community Health Volunteers.</i></p>	<p>Yes</p>
<p><i>% of annual national budget dedicated to health</i></p>	<p><i>This indicator was dropped as the project has limited ability to influence and measure influence the annual national budget.</i></p>			

**Annex 5: Rapid CATCH indicators 2008**  
**Liberia CSP August 2010**

<b>CSHGP Intervention Area</b>	<b>Rapid CATCH Indicator</b>	<b>Baseline Estimate</b>	<b>Midterm Estimate</b>	<b>Final Estimate</b>
<b>Maternal Newborn Care</b>	(1) <u>Antenatal Care</u> : Percentage of mothers of children age 0-23 months who had four or more antenatal visits when they were pregnant with the youngest child	NA (4 visits was not part of the Rapid CATCH in 2006)	NA	71.3% (65.9%-76.4%)
	(2) <u>Maternal TT Vaccination</u> : Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.)	61.3% (55.6%-66.9%)	66.67% (57.24%-76.1%)	94.7% (91.5%-96.9%)
	(3) <u>Skilled Delivery Assistance</u> : Percentage of children age 0-23 months whose births were attended by skilled personnel	21.3% (16.8%-26.4%)	23.96% (15.42%, 32.5%)	33.7% (29.3%-40.3%)
	(4) <u>Post Partum visit to check on mother within the first 3 days after birth</u> : Percent of mothers of children 0-23 months who received a post-partum visit by an appropriate trained health worker within three days after the birth of the youngest child.	6.0% (3.6%-9.3%)	28.13% (19.14%, -37.12%)	39.3% (33.8%-45.1%)
	(5) <u>Modern Contraception</u> : Percentage of mothers of children age 0-23 months who are using a modern contraceptive method	NA (not part of the Rapid CATCH in 2006)	NA	10.0% (6.8%-14.0%)
<b>Breastfeeding</b>	(6) <u>Exclusive breastfeeding</u> : Percentage of children 0-5 months who were exclusively breastfed during the last 24 hours	86.0% (78.5%-91.6%)	NA	98.0% (93.0%-99.8%)
	(7) <u>IYCF</u> : Percent of children age 6-23 months fed according to a minimum of appropriate feeding practices	18.9% (13.1%-24.7%)	NA	55.3% (48.1%-62.4%)
<b>Vitamin A Supplementation</b>	(8) <u>Vitamin A Supplementation in the last 6 months</u> : Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months (Mother's recall).	76.2% (67.8%-83.3%)	85.42% (78.36%-92.48%)	91.4% (86.5%-94.9%)
<b>Immunization</b>	(9) <u>Access to immunization services</u> : Percent of children aged 12-23 months who received DTP1 according to the vaccination card or mother's recall	82.9% (74.6%-89.4%)	86.46% (79.62% - 93.3%)	92.8% (85.7%-97.9%)

	(10) <u>Health System Performance regarding Immunization services</u> : Percent of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey	52.3% (42.6%-61.8%)	60.42% (50.64 - 70.2%)	87.6% (79.4%-93.4%)
	(11) <u>Measles vaccination</u> : Percent of children aged 12-23 months who received measles vaccine according to the vaccination card or mother's recall by the time of the survey	65.8% (56.2%-74.5%)	50.00% (40.00% - 60.00%)	75.3% (65.5%-83.5%)
<b>Malaria</b>	(12) <u>Child sleeps under an insecticide-treated bednet</u> : Percentage of children 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night.	17.7% (13.5%-22.5%)	67.71% (58.36% - 77.06%)	69.3% (63.8%-74.5%)
	(13) <u>Child with fever receives appropriate antimalarial treatment</u> : Percentage of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.	3.6% (1.0%-8.9%)	48.96% (38.96% - 58.96%)	32.5% (24.3%- 40.7%)
<b>Control of Diarrhea</b>	(14) <u>ORT use</u> : Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration Solution (ORS) and/or recommended home fluids.	74.2% (63.8%-82.9%)	79.17% (71.22% - 88.72%)	84.1% (69.9%-93.4%)
<b>ARI/Pneumonia</b>	(15) <u>Appropriate Care Seeking for Pneumonia</u> : Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider.	43.2% (35.3%-51.4%)	83.33% (75.87% - 90.79%)	90.8% (83.3%-95.7%)
<b>Water and Sanitation</b>	(16) <u>Point of Use (POU)</u> : Percentage of households of children 0-23 months that treat water effectively.	21.7% (17.1%-26.8%)	7.29% (2.09% - 12.49%)	18.7% (14.4%-23.5%)
	(17) <u>Soap at the Place for washing</u> : Percentage of mothers of children age 0-23 months who live in a household with soap at the place for hand washing	*39.7% (34.1%-45.4%)	43.75% (33.83% - 53.67%)	98.3% (96.2%- 99.5%)
<b>Anthropometry</b>	(18) <u>Underweight</u> : Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to WHO/HCHS reference population)	27.1% ( 22.1%-32.6%)	20.83% (12.71% - 28.95%)	23.7% (19.0%-27.0%)

- In 2006 the indicator was more stringent-there had to be a designated hand washing facility as well as soap present, which is why this indicator is lower.



**Annex 6**

**Grand Cape Mount Child Survival Project  
Improved Child Health in a Transitional State through IMCI**

**Grand Cape Mount County, Liberia  
October 2006 – September 2010**

**FINAL EVALUATION  
Knowledge, Practice, and Coverage Baseline Survey  
Grand Cape Mount County  
Liberia**

**August/September 2010**



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## Table of Contents

	Acknowledgements	2
	Table of Contents	3
	Acronyms	5
	 Executive Summary	 6
Chapter 1	Background, Process and Partnership Building, and Methods	10
	1.1 Background	10
	1.2 Process and Partnership Building	19
	1.3 Methods	19
Chapter 2	General Information on Respondents and Children	26
	2.1 Information Regarding Respondents	26
	2.2 Information on Children Aged 0-23 Months	27
Chapter 3	Child Health, Nutrition, and Breastfeeding	30
	3.1 Anthropometry-Nutritional Status of Children aged 0-23 months	30
	3.2 Nutrition	34
Chapter 4	Immunization	43
Chapter 5	Control of diarrhea	54
	5.1 The Prevalence of Diarrhea	55
	5.2 Knowledge of Mothers Regarding the Management of Diarrhea	55
	5.3 Hygiene, Hand Washing Practices, and Water Treatment	58
Chapter 6	Pneumonia Case Management	60
	6.1 The Prevalence of ARI and Pneumonia	60
	6.2 Practices of Mothers of Children with ARI	61
Chapter 7	Malaria and the Management of Febrile Illness	63
	7.1 Prevention of Malaria	63
	7.2 The Prevalence of Febrile Illness	64
	7.3 Practices of Mothers of Children with Febrile Illness	64
	7.4 Mothers Knowledge about the cause of Malaria	65
Chapter 8	Maternal and Newborn Care	66
Chapter 9	HIV/AIDS	68

	9.1 Knowledge about HIV/AIDS	68
Chapter 10	Water and Sanitation	69
	11.1 Drinking Water and Latrine Practices	69
Chapter 11	Summary	70
	References	75

Attachments:

- A. Project Matrix Indicators
- B. Rapid CATCH Indicators
- C. All Study Indicators Listed by Intervention Area
- D. Indicators Followed throughout the Project Including Yearly LQAS
- E. KPC Survey Questionnaire

## ACRONYMS

<b>AHA</b>	Africa Humanitarian Action
<b>ANC</b>	Antenatal Care
<b>ANM</b>	Auxiliary Nurse Midwife
<b>ARI</b>	Acute Respiratory Infection
<b>BCC</b>	Behavior Change Communication
<b>BL</b>	Baseline Assessment
<b>CATCH</b>	Core Assessment Tool on Child Health
<b>CCF</b>	Christian Children's Fund
<b>CDC</b>	Community Development Council
<b>CDD</b>	Control of Diarrheal Diseases
<b>CHAL</b>	Christian Health Association of Liberia
<b>CHC</b>	Community Health Committee
<b>CHT</b>	County Health Team
<b>CHO</b>	County Health Officer
<b>CHW</b>	Community Health Workers
<b>C-IMCI</b>	Community IMCI
<b>CI</b>	Confidence Interval
<b>CL</b>	Confidence Limits
<b>CMR</b>	Crude Mortality Rate
<b>CS</b>	Child Survival
<b>CORE</b>	Collaborations and Resources Group
<b>CRS</b>	Catholic Relief Services
<b>CSHGP</b>	Child Survival and Health Grant Program
<b>CSP</b>	Child Survival Project
<b>CSTS</b>	Child Survival Technical Support
<b>D</b>	Precision
<b>DHS</b>	Liberia Demographic and Health Survey 1999/2000
<b>EBF</b>	Exclusive Breastfeeding
<b>EPI</b>	Expanded Program of Immunizations
<b>GCM</b>	Grand Cape Mount County
<b>GCMCS</b>	GCM Child Survival Project
<b>GOL</b>	Government of Liberia
<b>HF</b>	Health Facility
<b>HIV/AIDS</b>	Human Immune Deficiency Virus/ Acquired Immune Deficiency Syndrome
<b>HQ</b>	Headquarters of MTI located in Portland, Oregon
<b>IDP</b>	Internally Displaced Person
<b>IMCI</b>	Integrated Management of Childhood Illnesses
<b>KPC</b>	Knowledge, Practice, and Coverage Survey
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MCH</b>	Maternal and Child Health
<b>MICS</b>	Multiple Indicator Cluster Survey
<b>MOHSW</b>	Liberia Ministry of Health and Social Welfare
<b>N</b>	Sample size
<b>NANUS</b>	National Nutrition Survey 1999-2000
<b>NDS</b>	National Drug Service
<b>NGO</b>	Non-Governmental Organization
<b>MTI</b>	Medical Teams International
<b>MTI Liberia</b>	Medical Teams International/Liberia
<b>OFDA</b>	Office of Foreign Disaster Assistance
<b>ORS</b>	Oral Rehydration Salts
<b>P</b>	Proportion
<b>PCM</b>	Pneumonia Case Management
<b>PHC</b>	Primary Health Care
<b>Rapid CATCH</b>	Core Assessment Tool on Child Health
<b>SO</b>	Strategic Objective
<b>TBA</b>	Traditional Birth Attendant
<b>TP</b>	Traditional Practitioner
<b>U5MR</b>	Under 5 Mortality Rate
<b>UN</b>	United Nations
<b>UNICEF</b>	United Nations International Children's Fund
<b>USAID</b>	United States Agency for International Development
<b>WFA</b>	Weight for Age
<b>WHO</b>	World Health Organization
<b>WV</b>	World Vision

## **Executive Summary**

Medical Teams International has completed the implementation of a four year Child Survival Project (October 2006 – September 2010) in Grand Cape Mount County (GCM), Liberia. The goal of the project was to sustainably reduce morbidity and mortality in children under five and women of reproductive age within Grand Cape Mount County, Liberia. The project was implemented in partnership with the Family Health Division of the Ministry of Health and Social Welfare (MOH) at the central and County Health Team (CHT) level. The Grand Cape Mount County Child Survival Project (GCMCSP) was implemented in the five districts of GCM and benefited the entire population of GCM (138,138 people), including direct benefits to 23,484 children under five (5,166 from 0-11 months, 4,932 from 12-23 months, 13,386 from 24-59 months) and 34,535 women of reproductive age.

The Grand Cape Mount Child Survival Project supported the introduction of Integrated Management of Childhood Illness (IMCI) as an approach to addressing the leading causes of child morbidity and mortality in Grand Cape Mount County. Specifically, the project devoted 30% of effort to nutrition (including breastfeeding, maternal nutrition and micronutrients), 20% of effort to Pneumonia Case Management, 20% of effort to Control of Diarrheal Disease, 20% of effort to Control of Malaria and 10% of effort for Immunizations.

This Final Evaluation Knowledge, Practices, and Coverage (KPC) survey was performed in August and September of 2010. The overall objective of this final survey was to estimate the current level of chosen indicators as per the monitoring and evaluation (M&E) Matrix of specific objectives and intervention logic in the areas of nutrition, immunization, pneumonia case management, and control of diarrheal disease, along with the indicators of the Rapid Core Assessment Tool on Child Health (CATCH). These estimates of the final level of chosen indicators are compared to the estimates collected at baseline to determine if statistically significant changes occurred in each indicator over the life of the project. The KPC final survey was designed utilizing participatory principles of evaluation in the spirit of partnership and capacity building.<sup>1</sup> A 30-cluster stratified sampling design was utilized to select the mothers of children aged 0-23 months. A total of thirty clusters were sampled in GCM County, with ten households from each cluster being selected for interviews. Ten of the twelve Project Matrix Indicators, which are indicators the project indicated would be addressed by the project, that were collected in this household survey were significantly improved due to this project. These 12 indicators are indicated in red, below, and a Table of the Project Indicators is found in Appendix A. The main findings in the areas of nutrition, immunization, pneumonia case management, and control of diarrheal disease are as follows:

## Nutrition

Feeding behaviors improved dramatically over the life of the project, with all of the following indicators showing statistically significant Improvement:

- Exclusive breastfeeding was significantly raised from a baseline of 33.7% to 87.0%.
- Prelactal feeding of newborns during the first 3 days of life was significantly reduced from 26.8% to 5.7%.
- The exclusive breastfeeding of children aged 0-5 months, which was already high at 86.0%, was still significantly raised to 98.0%.
- Mother's knowledge of the need for exclusive breastfeeding rose significantly, from 53.7% to 97.0%.
- Complimentary feeding of children aged 6-9 months rose significantly from 37.5% to 76.3%.
- Continued breastfeeding of children aged 18-23 months was also raised significantly from 62.8% to 74.3%.
- Children receiving Vitamin A in the last six months rose significantly from 76.0% to 91.0%.

Due to the project's nutrition interventions important nutritional behaviors were increased, and at final it was found that 77.1% of breastfed and 18.2% of non-breastfed children aged 6-23 months receive the minimum suggested number of complimentary feedings in the 24 hours preceding the survey. Added to this is the fact that 66.3% of breastfed and 50.0% of non-breastfed children are eating the minimum number of essential food groups to meet the recommended dietary diversity standards. This culminates in the fact that at final, children aged 6-23 months are now meeting the IYCF standard for appropriate complementary feeding practices at a rate of 55.3%, significantly improved from the baseline of 16.3%. Also, the percentage of children aged 0-23 months receiving supplemental Vitamin A in the last 6 months rose from a rate of 76.2% at baseline to a rate of 91.4% at final. At baseline, only 44.1% of children had received deworming medicine in the previous 6 months. This was increase by final to a rate of 60.7%.

However, these improvements did not culminate in a lower rate of undernutrition, which was 27.1% at baseline and 23.7% at final. Further breakdown of the age group within the sample revealed that the 0-6m age group did significantly better than the rest of the age groups, both at baseline and final. Also, at baseline only, the 18-23m age group did significantly worse than the other age groups. By final the 18-23m age group did not perform significantly worse than the 6-9m, 6-11m, and 12-17m age groups. Due to the fact that all feeding behaviors surveyed were significantly increased, the fact that undernutrition did not significantly improve in the groups comprising older children, may be due to other factors, such as increased activity, such as walking long distances with their mothers to the fields if their mother is carrying wood, supplies to market, or another child. It also indicates the need to encourage mothers and other caregivers to provide snacks for this age group and to increase the caloric density of the complementary foods they prepare.

## **Immunization**

Immunization rates were low in GCM County at the start of the project, with full EPI coverage by 12 months of age at only 18.9% in children aged 12-23 months. **The project was able to increase full EPI coverage by 12 months of age to 52.6%.** EPI Access, measured by card verified rates of DPT1 vaccination by 12 months of age, was only 46.8% at baseline, but was significantly improved to 82.5%. **Health system performance, measured by the rate of DPT3 immunization by 12 months of age, card verified, was only 30.6% at baseline, and by final was raised to 71.1%.** There was a high drop-out rate (DPT1-DPT3 measured by card verification or mothers recall) of 30.6% at baseline which was significantly lowered to only 6.2% at final. **Additionally, at baseline maternal TT vaccination was relatively low at 61.3%. This was significantly raised to 94.7% at final.**

## **Diarrhea**

While diarrhea is a major cause of morbidity in Liberia, it was found to be relatively low at baseline in Grand Cape Mount County, with a rate of 30.1%. The project was able to lower this rate significantly, to a level of only 14.8%, by the end of the project. While at baseline 74.2% of mothers treated their child's diarrhea with Oral Rehydration Solution and/or a recommended home fluid, only 51.7% of mothers offered their child more breast milk or fluid and only 18.2% of mothers offered their child more or the same amount of food when their child had diarrhea. **By final, the use of Oral Rehydration Solution and/or a recommended home fluid was 84.1%, but this was not significantly higher than the baseline, due to the fact that the baseline was quite high as well. However, 84% is a very high percentage. There was a significant increase in the percentage of mothers who offered their child more breast milk or fluid, with a rate of 88.6%, and also a significant increase in the percentage of mothers who offered their child more or the same amount of food when their child had diarrhea, at a rate of 57.5%.** In addition, at baseline only 28.1% of mothers sought appropriate outside advice or treatment for their child with diarrhea. This was also significantly increased to 72.7%. At baseline the percentage of mothers of children 0-23 months who lived in households with soap at the place for hand washing and who reported washing their hands with soap at least 2 of the appropriate times during a 24 hour recall period was only 19.0%. The project was able to significantly raise the percentage of mothers who used soap and washed their hands appropriately from 19% at baseline to 87.7% at final. In addition, the percentage of households in GCM County that have access to an improved water source was significantly increased from 72.0% at baseline to 92.7% at final. **However, the percentage of households that treat water effectively was not significantly changed from baseline (21.7%) to final (18.7%). The main reason for this was the fact that 92.7% of households were provided with improved water sources and the diarrhea rate is very low at 14.8%.** It was therefore very difficult to motivate households to spend the time and expense to treat water when they were not overly concerned with the diarrhea rate in comparison to the other health problems they were encountering.

## **ARI**

The prevalence of ARI (children with a chest related cough and fast/difficult breathing) in children aged 0-23 months in GCM County was 51.7% at baseline. This rate was

significantly lower by the final evaluation, at 32.7%. At baseline, children with ARI were treated by seeking advice or treatment at a qualified health facility at a rate of only 43.2%. Also, children with ARI were treated by either seeking advice/treatment at a qualified health facility or treated with an antibiotic at a rate of only 49.7%, which reveals that most mothers did not routinely seek help when their child was sick, and did not understand the importance of seeking timely medical advice or seeking proper antibiotic treatment for their children who become ill with cough and respiratory infection. **By final these health seeking behaviors were significantly improved, and children with ARI were treated by seeking advice or treatment at a qualified health facility at a rate of 90.8%.** Also, children with ARI were treated by either seeking advice/treatment at a qualified health facility or treated with an antibiotic at a rate of 93.9%.

### **Malaria**

The prevalence of fever in children aged 0-23 months in GCM County was found to be quite high at baseline, with a rate of 70%. Part of the reason for this was explained by the fact that only 17.7% of children less than 24 months slept under an insecticide treated bed net at the start of the project. MTI was able to significantly increase this percentage to 69.3% through community education regarding the control and treatment of malaria. Of the children who had a fever that had ended in the 2 weeks prior to the baseline survey, only 3.6% of mothers treated their child with an effective anti-malarial drug within 24 hours after the fever began **The project was able to significantly impact the prompt and effective treatment of malaria, and at final 32.5% of children aged 0-23 months were treated with an effective anti-malarial drug within 24 hours after the fever began.** Also, while at baseline only 43% of mothers interviewed understood the cause of malaria due to extensive community education initiatives the percentage of mothers who knew the cause of malaria was significantly raised to 80.0%.



# **CHAPTER 1**

## **BACKGROUND, PROCESS AND PARTNERSHIP BUILDING, AND METHODS**

### **1.1 Background**

#### **Project Location and Liberia Overview**

Liberia, meaning “Land of the Free”, is a nation of approximately 3.3 million located along the West coast of Africa, bordered by Sierra Leone, Guinea, and Côte d'Ivoire. Liberia was immersed in a violent civil war for fourteen years, from 1989 to 2003. The war resulted from unequal patterns of growth and development and declining livelihood opportunities for a large proportion of the population, combined with a period of poor governance. The civil war is the single most influential factor in the current state of government administration, civil infrastructure (including the health system) and general stability and security in Liberia. Although the war has been officially ceased since 2003, Liberia continues to recover from the widespread devastation of infrastructure at all levels, internal displacement of the population on a massive scale and minimal capital input for restoration since the end of the war in the fall of 2003.<sup>2</sup> Death estimates are unreliable, but between 5 – 10% of the population of 3 million people was killed during the civil war. In addition, hundreds of thousands of people fled the fighting and became displaced in Monrovia and other urban centers within Liberia. Many people have returned to their home villages, but a considerable number of IDPs have stayed in urban areas. In all, over a million people were displaced, some as many as five times.<sup>3</sup> GCM is an area of high return of refugees and IDPs but is relatively stable.

Over 80% of the Liberian people depend on subsistence farming (rice, corn, cassava) and the modest production of cash crops such as coffee, cocoa, and palm oil.<sup>4</sup> In 2003, 76% of the population lived on less than \$1 per day and 52% lived on less than 50 cents a day.<sup>5</sup> The Human Development Index (HDI) for Liberia in 1999 was .276, meaning that of the 175 countries where the HDI is calculated, Liberia ranked 174, with only Sierra Leone ranking lower.<sup>6</sup>

Medical Teams International has implemented the CSP in Grand Cape Mount County (GCM) of northwestern Liberia. A map showing the location of the county, along with its demographic information, is included in Attachment A. GCM is one of 15 counties in Liberia and is located west of Monrovia along its border with Sierra Leone. It is divided into five districts; Garwula, Tewor, Golah Konneh, Porka, and Commonwealth.

At the start of the project, the health and social conditions of GCM were relatively worse than the rest of the country. GCM suffered greatly during the protracted Civil War from 1989 to 2003, losing not only health infrastructure but also the majority of its health personnel. Since the majority of the conflict ended in 1993, less than half of the health

facilities previously present in GCM had been re-opened. This greatly limited the population's access to health care. Quality of care was also affected by lack of medicines and supplies, inadequate supervision, and low motivation of health personnel. Most health personnel had not received any training for fifteen years.

<b>Current Health Status</b>
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The effects of the war on the health care system were devastating. The infrastructure and drug supply chain were destroyed. Trained health staff fleeing the rural areas (and in many cases, Liberia itself) limited the government's ability to provide basic services. In a report from February 2004, 242 out of 293 public health facilities (HF) were looted or damaged and forced to close due to lack of staff or supplies. A large portion of private HFs had also been damaged or destroyed. A 2005 report found that two thirds of the HFs had been rehabilitated but at least a third were still not functioning.<sup>7</sup>

According to the 1999 DHS, the Infant Mortality Rate declined from 144 deaths per 1,000 in 1986 to 117, and the Under 5 Mortality Rate declined from 220 in 1986 to 194. More recently, UNICEF estimated the IMR at 157 and Under 5 mortality at 235 (UNICEF, United Nations (UN) Population Division and UN Statistics Division 2003). While there is a lack of reliable recent data on causes of mortality and morbidity, it is generally agreed that the major causes of death are malaria, pneumonia, and diarrhea.<sup>8</sup> The same conditions are the major causes of morbidity with the addition of eye and skin infections. MOH surveillance also notes a number of cases of neonatal tetanus and measles.

The DHS showed the following pattern of morbidity and care seeking for the country and for GCM:

Symptoms (DHS 1999)	Symptoms last 4 wks		Taken to clinic	
	Liberia	<b>GCM</b>	Liberia	<b>GCM</b>
Cough, difficult breathing	39%	<b>45%</b>	70%	<b>75%</b>
Fever	57%	<b>63%</b>	71%	<b>75%</b>
Diarrhea	34%	<b>32%</b>	72%	<b>77%</b>

Symptoms (DHS 2007)	Symptoms last 2 wks		Taken to clinic	
	Liberia	<b>NW Region</b>	Liberia	<b>NW Region</b>
Cough, difficult breathing	8.6%	<b>7.0%</b>	62%	<b>62%</b>
Fever	30.7%	<b>31.7%</b>	56.7%	<b>53%</b>
Diarrhea	19.8%	<b>9.8%</b>	49.9%	<b>61.2%</b>

Malnutrition was a serious problem at the outset of the project, exacerbating both morbidity and mortality. The 1999 DHS showed under 5 stunting at 39%, (18% severely stunted), wasting at 5.9% and underweight at 26.4%. A World Vision (WV) survey conducted in 2002 showed even higher levels in GCM: among children 6-59m, stunting at 44%, underweight at 27.5%, and wasting at 8% in 6-29 month old children.<sup>9</sup> The Comprehensive Food Security & Nutrition Survey conducted in Mar - Apr 2006 had a similar finding of 21.2% of children under 5 years of age underweight. MTI's baseline KPC Survey in October of 2006 had a finding of 27.1% of children under 2 years of age underweight. The UNICEF National Nutrition Survey (NANUS) 1999-2000 showed that 87% of children 6-35 months of age had anemia and 53% had sub-clinical Vitamin A deficiency. This same source cited prevalence in pregnant women of 62% for anemia and 12% of Vitamin A deficiency. Only 28% of children 12-59 months had received supplemental Vitamin A within 6 months prior to the survey, but in GCM only 8% had received a supplement.<sup>10</sup> The daily food expenditure is two thirds of household income, making Liberia one of the most food insecure countries in the region.

Breastfeeding was almost universal in Liberia (97%) at the outset of the project, but only 68% of newborns in Liberia were breastfed within the first hour of birth.<sup>11</sup> MTI's baseline assessment in October of 2006 showed that only 33.7% of newborns in GCM County were put to the breast within one hour of delivery and did not receive prelactal feeds. The Comprehensive Food Security & Nutrition Survey conducted in Apr 2006 had a similar finding in that only 37.5% of mothers initiated breastfeeding within the first hour of life in GCM County.<sup>12</sup> A WV survey in GCM and Bomi found that 85% of children were breastfed until 12 months, but only 50% until 24 months (NANUS found only 37% 20-23m).<sup>13</sup> MTI's baseline survey in 2006 showed that 98.4% of children were breastfed until 12 months of age, while 62.8% were breastfed until 24 months of age. Supplemental milk is not commonly given as milk is not readily available in GCM County, and therefore mothers typically give boiled water or porridge.<sup>14</sup> WV found that 31% of children in Liberia were given fluid other than breast milk beginning on the 1st day of life.<sup>15</sup> MTI's baseline survey in 2006 found that 26.0% of children in GCM County were given fluid other than breast milk beginning on the 1st day of life. NANUS found that 18% of children under two months of age were fed complementary foods, 37% of children 4-5 months old received food, and 69% of children 6-9 months old received complimentary food (in GCM only 61% of children 6-9 months old got complementary food).<sup>16</sup> However, MTI found in its baseline study in 2006 that only 37.5% of children in GCM County aged 6-9 months received complimentary feeding. According to the NANUS survey, families rarely practiced frequent feeding, and less than 20% of children receive four or more feedings per day. MTI found in its baseline survey in 2006 that only 19.4% of children aged 6-23 months in GCM County received the recommended number of feedings for their breastfeeding status and age.

Vaccination coverage was low in Liberia at the outset of the project, with only 32% children receiving full vaccination coverage verified by a vaccination card, and the 1999 DHS showed that only about one third of mothers had possession of a vaccination card for their child.<sup>17</sup> MTI found in its baseline survey that only 18.9% of children in GCM County were fully immunized within the first year of life, and 46.8% of children received

DPT1 but only 30.6% of these children received DPT3. NANUS found that only 28% of children were fully immunized within the first year of life, and three fourths of children received DPT1 but only 38% of these children received DPT3. Measles coverage was 50%.<sup>18</sup> In June 2005 the University of Liberia carried out an EPI (Expanded Program of Immunizations) Cluster survey for the MOH.<sup>19</sup> This survey showed an even more dismal picture of EPI coverage in Liberia. Only 3.9% of the children surveyed were fully immunized before one year as documented by a vaccination card, compared with 4.3% in GCM. Access to vaccination was high (Children receiving BCG (card or history)) was 72.4%, but dropout rates were also high (DTP1-DTP3) by card or history at 52.4%. The study found that 21.7% of children received invalid measles doses in GCM (due to inappropriate timing).

At the outset of the project, diarrhea was a major cause of childhood morbidity in Liberia. The percentage of diarrhea in children aged 0-59 months in Liberia was 43.75%, with the rate particularly high in children aged 12-23 months, at 54.9%.<sup>20</sup> MTI found that diarrhea was less in GCM County, with the percentage of diarrhea in children aged 0-23 months at 30.1%. Among mothers who treated the diarrhea, the most frequently reported treatment was antibiotics; 44 % of the children who had diarrhea during the four weeks before the survey were given antibiotics. Few mothers relied on Oral Rehydration Therapy (ORT), a relatively cheap and effective means of preventing or treating dehydration. NANUS showed that, of children with diarrhea in the preceding two weeks, two-thirds were treated with drugs and only one-third received Oral Rehydration Therapy. The DHS found that, of children taken to a HF, only 50% received Oral Rehydration Solution (ORS). MTI found that the mothers in GCM County fared better, with 74.2% of mothers OF CHILDREN AGED 0-23 MONTHS treating their children's diarrhea with ORS. NANUS also found that 16% of mothers reduced or stopped breastfeeding and 33% gave considerably less food. MTI found that only 51.7% of mothers offered their child more fluid, and only 18.2% of mothers offered their child more or the same amount of food during diarrheal illness.

The prevalence in Liberia of acute respiratory illness (ARI) in children aged 0-59 months was 39.3% at the outset of the project, with the rate considerably higher in children aged 6-11 months, at 52.5%. MTI found the rate to be 51.7% in children under 24 months in 2006. DHS reports that over 80 percent of the children experiencing cough or difficult breathing received some treatment for the illness, but only 2% received antibiotics.<sup>21</sup> As with diarrhea, mothers were most likely to use a pharmaceutical product in treating respiratory illness. Sixty two percent of the children who had a cough or difficult breathing were given cough syrup and 14 percent were treated with country medicine or herbs, compared with the 2 percent who received antibiotics.<sup>22</sup> At baseline MTI found that 49.7% of children under 24 months with ARI were either taken to a HF or treated with an antibiotic from an alternative source.

Malaria was reported by AHA to be the motive for 36% of admissions to the Sinje Health Center and represents 31% of all morbidity seen in their six clinics.<sup>23</sup> Liberia Malaria Survey found that only 18% of households in Liberia own a mosquito net of any kind and only 3% of children U5 slept under a net.<sup>24</sup> MTI found at baseline that 17.7% of children

under 24 months slept under an ITN. Liberia Malaria Survey found that only 4% of women received the recommended two IPT treatments and only 3% of U5s received ACT treatment according to MOHSW protocol. Approximately 5% of children were treated within 24 hours from the onset of fever. MTI found at baseline that in GCM County only 3.6% of children under 24 months with a febrile episode were treated with an effective anti-malarial drug within 24 hours after the fever began. The Liberia Malaria Survey found that the main source of nets (impregnated or not) was shops or the market (52%) or from NGOs (33%). The main reason for not having a net was the cost (41%) or lack of availability (30%).

The Maternal Mortality rate in 2004 was 2 578 per 100,000, one of the highest in the world.<sup>25</sup> The principal causes of mortality are anemia, postpartum hemorrhage, and sepsis, as well as pregnancy related complications, toxemia and infections related to unsafe abortions. Thirty two percent of deaths occur in pregnancy, 34% during delivery, and 26% postpartum.<sup>26</sup> Maternal morbidity in GCM is caused mainly by malaria and by complications during labor/delivery. (GCM Surveillance 2005)

Women begin their reproductive life at an early age; 29% of women 15-19 have already begun childbearing and this increases to 34% in rural areas. By age 15, 14% of women are married and by 18, 40% are married. Nationally the median age of first marriage in Liberia is 18.9 years for women, in GCM the median age is 17.3, the earliest in the country. Thirty three percent of women and 30% of men in Liberia are in a polygamous marriage and but in GCM this increases to 57% for men.<sup>27</sup>

Prenatal care levels were high in Liberia, with over 90% of births receiving care. Twenty seven percent of prenatal care nationwide was by a doctor, whereas in GCM only 8% of prenatal care was by a doctor, the lowest county according to the DHS. MTI's baseline survey revealed that only 56.3% of mothers of children age 0-23 months received at least one prenatal visit from a skilled HW. This shows the extreme shortage of doctors in the county in 2000, when no physicians working in GCM. The 2005 EPI Cluster survey showed the proportion of women with TT2+ is 20.6% nationally and 13.9% in GCM. (5) MTI's baseline survey revealed that in GCM County 61.3% of women with children aged 0-23 months received TT2. NANUS found that only 12% of women nationwide received Vitamin A postpartum.<sup>28</sup> In Liberia, 63% of births are at home and 46% are attended by a Traditional Birth Attendant (TBA), compared with 82% of home births in GCM with a TBA attending 61% of births. <sup>29</sup>MTI's baseline survey showed that only 21.3% of all childbirths occur under the supervision of a skilled birth attendant, which is defined as a doctor, nurse, physician assistant, or midwife. Additionally, traditional birth attendants (TBA) are present 73.0% of the time, and presently are not skilled in proper cord care or other clean birthing practices.

By regional standards Liberia has substantially lower rates of access to water and sanitation facilities. In Sub-Saharan Africa the level of access to safe water is 57%, while in Liberia access is limited to 32%. However, MTI's baseline study revealed that 72.0% of households in GCM have access to safe water. Also, the Sub-Saharan level of access

to sanitation is 53% while Liberia is 36%, and in the rural areas of Liberia it is only 18%).<sup>30</sup> MTI found the rate to be 32.3% in GCM.

## **Health Care Services**

Most health care is provided through MOH facilities, supported by NGOs, and private (usually church-supported) facilities. The effects of the war on the health care system were devastating. The infrastructure and drug supply were destroyed. Trained health staff fleeing the rural areas limited the government's ability to provide basic services. In a report from February 2004, 242 out of 293 public health facilities (HF) were looted or damaged and forced to close due to lack of staff or supplies and at least a third are still not functioning.<sup>31</sup>In GCM, at the start of the project there were 21 functioning government health facilities out of a potential 31. At final, all 31 facilities were operational.

At the county level, the MOH created County Health Teams as a means of decentralizing management and encouraging good governance. The CHT is comprised of the County Health Officer, Community Director, Administrator, Nursing Director, Medical Director, Financial Officer, and a Logistics Officer

The provision of essential drugs is still problematic. Public HF drugs are supplied through the National Drug Service (NDS). The supply of drugs is not yet stable, but has improved throughout the life of the project.

The cold chain has been partially restored and two polio immunization campaigns were held in 2005 with major support from NGOs and UNICEF. However, after fourteen years of instability, health staff knowledge regarding recent medical advances had not been updated when the project began in 2006. Most health staff had not received sufficient in-service training for a decade prior to the start of the project.

Access to health care was an over-riding issue at the start of the project. Access was constrained by the lack of adequate functional facilities, poor maintenance of facilities, an insufficient number of competent, well trained and motivated professionals, shortage of logistical support, and chronic shortages of drugs and medical supplies. Rural HFs were generally open from 8 a.m. to 4 p.m. On the demand side, utilization was constrained by negative cultural influences including the perception that no medicines are available at the facilities, long distances, and poor public transportation.

## **Program Strategy and Interventions**

### **Goal and Objectives**

The goal of the project was to reduce morbidity and mortality of children under five and women of reproductive age within Grand Cape Mount County, Liberia. The project was implemented in partnership with the Family Health Division of the Ministry of Health

and Social Welfare (MOH) at the central and County Health Team (CHT) levels and the Christian Health Association of Liberia (CHAL), a local NGO with substantial health and community development experience. The Grand Cape Mount County Child Survival Project (GCMCSP) was implemented in all five districts of GCM and benefit the entire population of GCM (127, 076 people), including direct benefits to 21,429 children under five and 29,941 women of reproductive age. The interventions and level of effort for each were: Nutrition 30%, PCM 20%, CDD 20%, Malaria 20%, and EPI 10%. All interventions were implemented within the IMCI framework for Liberia and in accordance with MOH policy.

Project objectives, as listed in the Grant Proposal for the Grand Cape Mount Child Survival Project, were:

1. Communities assume responsibility for their own health with strengthened community structures, linkages with Health Facility staff, and enhanced human resource capacity
2. Improved health behaviors and actions at the household level.
3. Improved quality of care in health facilities through implementation of IMCI and capacity-building of the health staff in complementary activities.
4. Strengthened institutional capacity of MTI and partners to implement effective and efficient child survival activities.

The project used a community-based approach that integrates improving PHC with community development efforts. MTI and its partners emphasized the community's role in planning and implementation, and the mobilization of existing local resources to achieve the desired objectives. MTI accomplished this using the IMCI approach. The intervention areas chosen for this project were all being managed through the IMCI approach. In coordination with the MOH, the project implemented clinical IMCI in all Health Facilities in GCM, and introduced C-IMCI on a phased schedule in the five districts. The MOH fully supported the implementation of IMCI in GCM.<sup>32</sup>

The project implemented the three components of IMCI and C-IMCI:

Component 1: Improving case management skills of the health facility staff.

Component 2: Improving the overall health system.

Component 3: Improving family and community health care practices.

In addition, the project also focused on the following intervention areas through the following activities, as listed in the Grant Proposal for the Grand Cape Mount Child Survival Project:

#### Nutrition

The nutrition components followed the Essential Nutrition Actions and consisted of:

- Breastfeeding: immediate initiation, exclusive, and prolonged; as a natural method of family planning; advantages of breastfeeding for mother and child; and amelioration of cultural constraints to breastfeeding while pregnant. HIV and breastfeeding were approached according to MOH guidelines and included exclusive breastfeeding, care of cracked nipples and other problems; and counseling on HIV prevention.

- Complementary feeding: frequency, density, and hygiene; developmental stages for suckling and appropriate introduction of food, including responsive feeding and avoidance of force feeding.
- Growth monitoring: monitoring of weight for age at HFs to identify and treat malnutrition while educating mothers to recognize the signs of growth faltering using the Road to Health Card. This was coupled with the training of health workers in counseling, using the negotiation for behavior change method.
- Home management of illnesses to lessen their effect on nutritional status i.e., continued breastfeeding and feeding during illness, and catch-up feeding.
- Maternal nutrition was focused on supplementation with iron/folic acid during pregnancy, Vitamin A postpartum, diet during pregnancy and lactation, and deworming.
- Micro-nutrients: recognition, treatment, and prevention of anemia; investigation of local sources of Vitamin A and iron; partnering with other NGOs working in home gardens (CCF, GAA, SP, WV); clarification of Vitamin A protocol e.g. dosage and frequency; assuring distribution through immunization campaigns and regular EPI.

#### Pneumonia Case Management

MTI carried out the activities planned for the improvement of the management of ARI and pneumonia, as outlined in the Grant Proposal for the Grand Cape Mount Child Survival Project:

In addition to IMCI activities, the project also addressed three additional issues:

1. Community level distribution of antibiotics for pneumonia was discussed with a number of key actors (MOH, WHO, other NGOs). The use of CHWs for treatment of pneumonia was not a priority issue at this time. They expressed interest in learning about other experiences and perhaps conducting a pilot study under certain conditions. The priority was getting clinics reopened and staff retrained after the war. Community distribution of antibiotics will be pursued through the JSI/USAID supported Rebuilding Basic Health Services Project.
2. Because respiratory rate has proven to be a good measure of respiratory problems, counting the respiratory rate of infants and young children using a watch became the cornerstone of the PCM approach.
3. Cough with difficult breathing or rapid breathing and chest in-drawing were used as the danger signs emphasized for recognition of pneumonia. Chest in-drawing is locally understood and recognized as well, so this was also used. .

#### Control of Diarrheal Disease

In order to improve the control and management of Diarrheal disease MTI promoted key home practices at the household level, as described in the Grant Proposal for the Grand Cape Mount Child Survival Project:

- Washing hands with soap after defecation, after handling children's feces, before preparing food, and before feeding children or eating
- Sanitary disposal of human feces, including feces of young children
- Protection of drinking water from contamination
- Treatment of water in the household, e.g., with chlorine solution, filtration, or boiling
- Safe food handling and storage to prevent food-borne illnesses



- The early use of available home fluids, including rice water, coconut water, and ORS
- Continued breastfeeding, frequent feeding of small amounts of food, and catch-up feeding
- Recognition of danger signs of diarrhea that require immediate care from an appropriate provider (dehydration, dysentery, and persistent diarrhea)

#### Malaria and the Management of Febrile Illness

Project activities for malaria focused on the prevention of malaria with community education on, use of Insecticide Treated Nets (ITNs), Intermittent Preventative Treatment (IPT) for pregnant women, and adherence to treatment protocols. ITNs were distributed through the HFs. Malaria assessment, classification and treatment were included in clinical IMCI training and follow-up. Artemisinin-based combination therapies (ACTs) are the most effective drugs currently available for treating malaria. The project worked with the Ministry of Health and Social Welfare (MOHSW), National Drug Service (NDS) and GIK sources to ensure adequate pharmaceutical availability, and worked with the MOHSW to ensure that health care workers were trained in their use.

#### EPI

In addition to the IMCI activities previously mentioned, the project is also focused on immunization through the following activities outlined in the Grant Proposal for the Grand Cape Mount Child Survival Project:

- Created demand for EPI services by supporting HHPs in mobilizing the community and include a message about bringing sick children for immunizations
- Provided logistical support during National Immunization Days (vehicle, fuel)
- Advocated for the implementation of routine (continuous) EPI services
- The project identified gaps in training to effectively use and maintain the cold chain.
- Strengthened the logistics system by training HF staff in inventory management and drug forecasting
- Reduced missed opportunities for updating immunizations through IMCI
- HHPs were trained to track immunizations and identify defaulters and share this information with community leaders for follow-up

#### Objectives of the KPC Survey

The Final KPC survey was conducted in August of 2010. The objectives of the KPC survey were as follows:

- Appropriately collect data on the major areas of child and maternal health in order to compare the results with the baseline, including: maternal care, delivery and newborn care, breastfeeding, nutrition, and infant and young child feeding (IYCF), anthropometry, immunization coverage, the integrated management of childhood illness (IMCI), diarrhea, acute respiratory infection (ARI), fever and malaria, HIV/AIDS knowledge, water and sanitation, and hygiene. The survey collected the appropriate data by interviewing 300 mothers of children aged 0-23 months using a 30 cluster-sampling frame in the 407 villages included in the survey sampling frame.

This data was compared with baseline to determine successes and areas of continued challenges to inform Lessons Learned.

- Promote capacity building: staff members were re-trained in the use of survey training methodology in order to facilitate future independent monitoring and evaluation.
- Re-train staff members in data analysis through the use of hand tabulation and Epi Info training sessions following data collection to facilitate future independent data usage.

Partnership building: The survey utilized the concept of partnership building in all phases of training, data collection, and data analysis by involving all key stakeholders in all phases of the survey process.

## **1.2 Process and Partnership Building**

MTI partnered throughout the project with the County Health Team (CHT). The CHT is the local representative of the MOH, and thus is critical to the long-term strengthening of county health services. An inclusive process was followed to involve all stakeholders in the design, training, implementation, and analysis of the KPC survey. The CHT, the MOH, and USAID were all invited to participate in all aspects of the survey via personal contact that outlined the exact process and dates of the training and survey. The CHT was extremely interested and helpful in all phases of the survey, including verifying the villages chosen for the survey, getting the word out to all villages via radio and personal visits, and participating in the data collection. Permission to conduct the survey was obtained from the Department of Planning & Research at the MOH&SW. The survey team was comprised to be as inclusive as possible in order to foster partnership. The Core Team consisted of members of MTI and the CHT. Six supervisors were chosen from members of MTI and the CHT. Twenty four enumerators were chosen from members of MTI, the CHT, and the communities of GCM County.

## **1.3 Methods**

The overall objective of this baseline survey was to estimate the current level of chosen indicators as per the M&E Matrix of specific objectives and intervention logic in the areas of nutrition, immunization, pneumonia case management, and control of diarrheal disease, along with the indicators of the Rapid CATCH. The KPC baseline survey was designed utilizing participatory principles of evaluation in the spirit of partnership and capacity building.<sup>33</sup> The Core Team consisted of the Child Survival Project Manager, members of MTI, and the CHO. The survey team was comprised of 6 supervisors, who were also members of MTI and the CHT. The enumerators were devised of members of MTI, the CHT, and local survey takers (enumerators) chosen from GCM county. Selection of the team members was based on their skills and their future role in the GCM County and thus provided ownership of the survey and the project results. The Child Survival Project Manager, MTII country office staff, and members of the CHT were involved in the evaluation planning process, including the development of the questionnaires and the recruitment of various team members. The trainings for the KPC

Survey, data entry, and data analysis were directed by the Child Survival Project Manager. Initial data analysis was performed both by hand tabulation in a workshop and by Epi Info in the MTI Liberia country office by the Senior Advisor in M&E HQ and the Child Survival Project Manager so that the results could be shared with the country staff and then the communities of GCM County. The final data analysis was performed in several stages, some from outside of the region in MTI headquarters.

#### **a. Development of the Questionnaire**

At baseline the evaluation team reviewed the project documents including the detailed M&E Matrix with the program's goal, objectives, and activities, and key indicators were then chosen based on these parameters in conjunction with the newly revised Rapid CATCH and KPC 2000+ modules.<sup>34</sup> The M&E Specialist discussed the newly revised portions of the Rapid CATCH and KPC 2000+ modules in detail with Jennifer Winestock Luna of CSTS prior to their inclusion in the survey. Together, adjustments were made to some of the questions and indicators in the revised Rapid CATCH, and it was agreed upon that this would be the first field test of the new Rapid CATCH for the CORE Group and CSTS. This final KPC survey included these indicators so that they could be compared to baseline, and added some indicators of interest to the project and some indicators that have been added to the Rapid CATCH since the time of the baseline survey. The initial draft questionnaire was developed and shared with CSGHP for comments. Local and regional translators then translated the finalized version of the questionnaire into Liberian English. Separate translators then translated the questionnaires back into English to ensure that the wording of the questions and answer choices were accurate. Any changes necessary were made at that time. Additional changes important to the local context would be made throughout the training, and the final questionnaire was completed following the fourth day of the training which included a field test of the questionnaire.

The final questionnaire consisted of 94 questions (available in English in Appendix D and in Pigeon English in Appendix E) and covered the following general areas:

1. General information including child spacing and maternal care
2. Nutrition, anthropometrics, breastfeeding, and Infant and Young Child Feeding
3. Integrated management of childhood illness, including immunization coverage
4. Diarrhea case control and management
5. ARI case control and management
6. Malaria case control and management
7. Knowledge about HIV/AIDS
8. Water and sanitation, including hygiene and access to clean water and hygienic sanitation facilities

In addition to the questionnaire, anthropometric measurements consisting of age, gender, and weight of the eligible children aged 0-23 months were taken at the time of the survey. Salter hanging scales were used for the weight measurement, which were calibrated prior

to each weighing to ensure accuracy. The measurements were taken in order to calculate the child's weight for age and corresponding Z-scores.

### **b. Sampling design**

A 30-cluster stratified sampling design was utilized to select the mothers of children aged 0-23 months. A total of thirty clusters were sampled in Grand Cape Mount County, with ten households from each cluster being selected for interviews. The overall sample size of 300 households was derived from modifying the simple random sampling design. In a simple random sampling design, a sample size (n) of 96 is derived based on the formula:

$$n = z^2 (pq) / d^2$$

With a desired precision of  $d = 0.05$ :

The estimated proportion  $p = 0.5$  (chosen as it requires the largest sample size, thus ensuring that an adequate sample size is chosen), and  $q = 1 - p$ .

The desired Confidence Interval = 95% leads to a  $z^2 = 1.96$

The required sample size (n) = 96.

A cluster sample introduces bias in the form of the design effect into the sampling frame, meaning that households in close proximity have more in common than households that are from different areas of the same community, which decreases their possible variation. Therefore, the number of households should be doubled to at least 192. Taking into account that KPC surveys are used to estimate coverage for many different interventions at the same time, which requires looking at sub-samples (such as children less than 6 months old in order to estimate rates of exclusive breastfeeding), it is recommended that the sample size be increased even further, and therefore a sample size of 300 was chosen. Consequently, a 30-cluster stratified sampling design was adapted for the catchment area, with ten households interviewed in each cluster. The true estimate of the survey results include a margin of error as derived using the formula of 95% confidence limits:  $P = p \pm z \sqrt{(pq/n)}$

**P** = the actual rate or proportion

p = the survey estimate

**p** = prevalence

**q** = 1 - p

**z** = the confidence level (1.96 for a confidence level of 95%)

**n** = sample size

Choosing 30 clusters of 10 mothers, for a total sample size of 300, was done to ensure that the 95% confidence interval of each estimate would be narrow enough to distinguish differences in indicators over time in a meaningful way.

### **c. The Selection Process:**

The MTI Child Survival Project Manager and MTI country office staff met with the CHT and various local leaders and community personnel to determine the respective populations of each of the villages included in the survey sampling frame. Population figures obtained from MOH Grand Cape Mount County statistics for 2009 were used in conjunction with mapping techniques and visualization of the areas by MTI Liberia staff. Each village was listed randomly, with its population beside it. When the list was complete, the cumulative population of each village was determined by summing the total population of that village with the combined population of all the preceding villages on the list. The total cumulative population of the villages in the catchment area was then divided by 30 to obtain the sampling interval for that region. A random number was then chosen, with the stipulation being that the number had to be less than or equal to the sampling interval. The cumulative population of each village was then consulted, and the village containing the random number (the village whose cumulative population is equal to or larger than the random number, and whose preceding village had a cumulative population less than the random number) was chosen as cluster number 1. The second cluster was then identified by adding the sampling interval to the random number. The village whose cumulative population contained this number was chosen as the location of cluster number 2. The remaining clusters were then identified by continuing to add the sampling interval to the number that identified the previous cluster. In this way, each cluster was randomly chosen, with proper weight assigned to each village based on its population size. The larger the size of a population of a village, the greater the chance of having one or more clusters assigned to it.

The center of each cluster was determined by allowing the supervisors and enumerators local to these villages enlist the help of the Village Chief to determine the spot they felt was surrounded by an equal number of households on each side. The survey team then chose a random starting direction by spinning a bottle in the physical center of the cluster. The team would then walk in the direction the bottle pointed, and count the number of households in that direction until they reached the end of the households in that cluster. The survey team would return to the center and then choose a random number from a random number table, with the requirement that it had to be less than the number of homes in that direction. They then counted the doorways in the direction the bottle was pointing until they reached the doorway that corresponded to the random number chosen. This was deemed the first house. A protocol was established and written during the training sessions, prior to the survey, that determined which households, children, and thus mothers would be eligible for the survey. If the chosen household contained a child aged 0-23 months that was present and sleeps in the house at night, and a mother that was present and sleeps in the house at night, the survey would be taken at this household. If there was no child under two present, or the mother was not available for the interview, the survey team would move to the household that had the closest door relative to the

doorway of the household just eliminated. This procedure was then repeated until ten successful interviews with eligible mothers were conducted in that cluster.

#### **d. Training of Supervisors and Enumerators**

The refresher training of supervisors and enumerators required 3 days in total, because the team had all participated in household surveys throughout the project. The training curriculum was adapted from the CORE Group's Knowledge, Practice, and Coverage (KPC) Survey Training Curriculum. The training curriculum was shared with the Core team prior to the transferred, and the Core team was fully involved with all aspects of the training in order to strengthen the local capacity to conduct future small-sample surveys

Six supervisors were chosen for the baseline survey from MTI Liberia staff, CHAL, and the CHT. The training regimen of the supervisors included: the objective of the evaluation, the sampling process of a 30-cluster sampling frame, proper selection of the clusters, households, children, and mothers, accepted technique and protocol regarding data collection, and an in-depth review of the questionnaires to be used. Measurement of weight was first demonstrated, and then performed, to ensure proper technique. Training methods used included several days of mini lecture followed by discussions, demonstrations, role-play, group work, and pre-testing of the questionnaire. Their responsibilities included supervising twenty-four local enumerators, taking part in every aspect of the data collection, and taking the lead in choosing the cluster's center, the household chosen, the eligible infant, and then the eligible mother. The training of the enumerators took place with the training of the supervisors and consisted of a several day process that was similar in nature to the training regimen of the supervisors. It included the same several days of mini lecture followed by discussions, demonstrations, role-play, and group work including the measurement of weight, using several children under two for practice. Repeated practice administering the questionnaire was performed on local volunteer mothers who were not eligible for inclusion in the actual survey. The survey teams then performed a field test of the questionnaire in nearby GCM county villages that had not been randomly selected for the survey, under the watchful eyes of the Core team. Following the field test the training concluded with a meeting to discuss any issues that arose during the field test and make final changes or adjustments of the questionnaire so that it would be as accurate and context appropriate as possible for the survey. These changes were then made to the questionnaire prior to making copies for the survey.

#### **e. Data Collection**

Each supervisor was assigned four enumerators for a total of six groups, each consisting of four enumerators and one supervisor. A supervisor went to the first chosen house, with two of the enumerators in his/her team, to determine the eligibility of that household, choose the eligible child aged 0-23 months, choose the eligible mother, and weigh the child chosen, using the protocol developed previously. As the 2 enumerators conducted the rest of the interview, the supervisor would then take the other two enumerators in the team to the next eligible household and repeat this process, and would therefore alternate between the two groups of two enumerators. This allowed the

supervisor to take the lead role in determining the eligibility of the household, the weighing process, and immediately checking and correcting any problems with each finished questionnaire while the mother was still available. In addition, each supervisor completed a Quality Improvement Verification Checklist on each interview team for which they were responsible during each day of data collection. Each evening the supervisors and Core team met and discussed any issues that arose during the day in order to ensure consistency in the data collection process. The data collection process required 5 days in total, with an average length of interview of approximately 35 minutes.

## **f. Data Analysis**

A preliminary analysis of the data was performed at the MTI Liberia office with the MTI Liberia staff. Several indicators were chosen for preliminary hand tabulation in order to refresh the staff's understanding of indicators and their formulation. Frequency distributions of major indicators were prepared from the initial analysis using the Epi-info 3.3.2 database, so that all involved were familiar with the use of this software, and had some immediate results to guide programming decisions. These results were then used in discussing the Project design in detail with the MTI Liberia staff in order to increase their capacity in developing project designs and formulating monitoring plans from the objectives, outputs, activities, and indicators chosen.

The final analysis was then performed using the Epi-info 3.5.1 database. All Rapid CATCH indicators, all indicators from the M&E Matrix, and several indicators chosen from the KPC 2000+ modules were presented in the analysis. A 95% confidence interval and a precision of 0.5 were used for each indicator, and 95% confidence limits were calculated for each.

## **g. Results and Discussion**

A table containing the Project indicators including the definition of each indicator is located in Appendix A.

A table containing a complete listing of the Revised Rapid CATCH indicators including the definition of each indicator is located in Appendix B.

A table containing a complete listing of ALL indicators measured in this baseline KPC Survey including the definition, numerator and denominator of each indicator is located in Appendix C.

The results are organized into sections that represent each area of the different study indicators. The first section (Chapter 2) contains general information on the respondents and children. The following four chapters represent the program intervention areas, as per the M&E Matrix. The box located at the beginning of each section specifies the M&E Matrix indicators, their definitions, and the rates for those indicators. The first portion of each section contains a summary of Rapid CATCH indicators given in separate tables, followed by a more in-depth analysis using the indicators from selected KPC

2000+ modules. The tables containing the M&E Matrix indicators are highlighted in red. The results and discussions regarding each indicator are integrated in the same section for ease of reading.



## CHAPTER 2

### GENERAL INFORMATION ON RESPONDENTS AND CHILDREN

**Note:** throughout the results section in the discussion of each group of indicators, when the terms significant difference or statistically significant difference are used it signifies that the 95% confidence limits do not overlap. The 95% confidence limits may be found in the table above each discussion point if it is not in the discussion point itself.

All indicators that were statistically significantly improved from baseline to final are highlighted in green for ease of reading.

All Project Matrix indicators are in Red Font.

\*table numbers are indicated in blue.

#### **2.1 Information Regarding Respondents**

##### **1. Age of the respondents chosen for the questionnaire.**

<b>MotherUnder20</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	40/297	13.5%	13.5%	
<b>Final</b>	42/300	14.0%	14.0%	

##### **95% Conf Limits**

Baseline 9.8% 17.9%



Final 10.3% 18.4%

<b>mother20to25</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	126/297	42.4%	42.4%	
<b>Final</b>	89/300	29.7%	29.7%	

##### **95% Conf Limits**

Baseline 36.7% 48.3%

Final 24.6% 35.2%

<b>motherabove25</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	120/297	40.4%	40.4%	
<b>Final</b>	138/300	46.0%	46.0%	



#### **95% Conf Limits**

Baseline 34.8% 46.2%

Final 40.3% 51.8%

A respondent is defined as the mother of the child aged 0-23 months chosen for the survey by the accepted protocol. The majority of respondents were from the older age group, with 46.0% of mothers at baseline and 40.4% of mothers at final being greater than 25 years of age (see confidence intervals above). At baseline only 13.5% and at final only 14.0% of the respondents were under the age of 20. The prevalence of older respondents indicates that most mothers have larger family sizes as they continue to have children later in life.

### **2. Number of mothers with more than one child under five years of age in the household.**

<b>Biological child more than one</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	217/297	73.1%	73.1%	
<b>Final</b>	240/300	80.0%	80.0%	

#### **95% Conf Limits**



Baseline 67.6% 78.0%

Final 75.0% 84.4%

There was no significant difference between the percentage of mothers with more than one child at baseline (73.1%) and final (80.0%). This is considered a high fertility rate, and is indicative of overtly large family sizes.

## **2.2 Information on children aged 0-23 Months**

### **3. Sex of children aged 0-23 months.**

<b>Sex of youngest child</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline-Male</b>	150/297	50.5%	50.5%	
<b>Final-Male</b>	162/300	54.0%	54.0%	

#### **95% Conf Limits**

Baseline 44.7% 56.3%

Final 48.2% 59.7%

Sex of youngest child	Frequency	Percent	Cum Percent	
Baseline-Female	147/297	49.5%	100.0%	
Final-Female	138/300	46.0%	100.0%	

**95% Conf Limits**

Baseline 44.7% 56.3%

Final 40.3% 51.8%

**Age Breakdown of Children less than two years of age:**

**4. Children aged 0-5 months.**

Under six months	Frequency	Percent	Cum Percent	
Baseline	121/300	40.3%	40.3%	
Final	101/300	33.7%	33.7%	

**95% Conf Limits**

Baseline 34.7% 46.1%

Final 28.3% 39.3%

**5. Children aged 6-11 months.**

Six to eleven months	Frequency	Percent	Cum Percent	
Yes	84	28.0%	28.0%	
Yes	100	33.3%	33.3%	

**95% Conf Limits**

Baseline 23.0% 33.4%

Final 28.0% 39.0%

**6. Children aged 12-23 months.**

Twelve to twenty three	Frequency	Percent	Cum Percent	
Yes	111	37.0%	37.0%	
Yes	97	32.3%	32.3%	

**95% Conf Limits**

Baseline 31.5% 42.7%

Final 27.1% 37.9%

At baseline there was a statistically significant drop in the percentage of children aged 0-5 months (40.3% (34.7%, 46.1%)) compared to children aged 6-11 months (28.0% (23.0%, 33.4%)), which may have signified a deterioration of the living conditions within the villages surveyed, causing a change in the fertility rates, child spacing behaviors, or higher neonatal mortality rates. At final this drop no longer exists, with these age groups now almost identical (33.3% vs. 32.3%). At final, as well as baseline, there is no statistically significant difference between the rates of male versus female children in any age group. This holds true when stratified by the subgroups of under six months, six to eleven months, and 12-23 months as well.

## CHAPTER 3

### NUTRITION, BREASTFEEDING, AND CHILD HEALTH

	<b><u>Indicators from the M&amp;E Matrix:</u></b>	<b>BASELINE</b>	<b>FINAL</b>
<b>Nutrition</b>	Table 19: Immediate and exclusive breastfeeding of newborns: Percent of newborns who were put to the breast within one hour of delivery and did not receive prelactal feeds	33.7% (28.3%-39.3%)	87.0% (82.7%-90.6%)
	Table 23. Introduction of complimentary foods:% infants 6-9m receiving breast milk and complementary foods	37.5% (22.7%-54.2%)	76.3% (65.2%-85.3%)
	Table 27. Vitamin A Supplementation in the last 6 months: Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months (Mother's recall)	76.2% (67.8%-83.3%)	91.4% (86.5%-94.9%)

### 3.1 Anthropometry-Nutritional status of children aged 0-23 months

Malnutrition and under-nutrition are major determinants in the increased vulnerability of children to many infectious diseases, including diarrhea, ARI, and febrile illness. Inversely, many infectious diseases may be the cause under-nutrition in children. In addition, the nutritional status of children indirectly reflects the health and nutrition status of mothers. Therefore, the nutritional status of children aged 0-23 months is an important indicator in relation to child survival and community health programs.

In this survey, assessment of nutritional status was done through the anthropometric measurement of weight-for-age in children aged 0-23 months. The weight of each child was taken and combined with the age and gender of the child to calculate the weight-for-age indicator. The indicator is expressed in standard deviations (Z-score) from the median values of weight-for-age of the CDC reference population from the year 2000.

#### **Moderate Malnutrition**

##### **7. Percentage distribution of moderately underweight children (-3< Z-score >-2)**



MINUS2TOMINUS3	Frequency	Percent	Cum Percent	
<b>Baseline</b>	41/291	14.1%	14.1%	■
<b>Final</b>	36/299	12.0%	12.0%	■

#### **95% Conf Limits**

Baseline 10.3% 18.6%

Final 8.6% 16.3%

**8. Percentage distribution of moderately underweight female children (-3 < Z-score > -2)**



<b>MINUS2TOMINUS3</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	13/146	8.9%	8.9%	
<b>Final</b>	13/137	9.5%	9.5%	

**95% Conf Limits**

Baseline 4.8% 14.7%

Final 5.1% 15.7%

**9. Percentage distribution of moderately underweight male children (-3 < Z-score > -2)**

<b>MINUS2TOMINUS3</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	28/145	19.3%	19.3%	
<b>Final</b>	23/162	14.2%	14.2%	



**95% Conf Limits**

Baseline 13.2% 26.7%

Final 9.2% 20.5%

**Severe malnutrition**

**10. Percentage distribution of severely underweight children (Z-score < -3)**



<b>LESSTHANMINUS3</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	38/291	13.1%	13.1%	
<b>Final</b>	35/299	11.7%	11.7%	

**95% Conf Limits**

Baseline 9.4% 17.5%

Final 8.3% 15.9%

**11. Percentage distribution of severely underweight female children (Z-score < -3)**

<b>LESSTHANMINUS3</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	24/146	16.4%	16.4%	
<b>Final</b>	10/137	7.3%	7.3%	

**95% Conf Limits**

Baseline 10.8% 23.5%

Final 3.6% 13.0%

**12. Percentage distribution of severely underweight male children (Z-score <-3)**

LESSTHANMINUS3	Frequency	Percent	Cum Percent	
Baseline	14/145	9.7%	9.7%	■
Final	25/162	15.4%	15.4%	■

**95% Conf Limits**

Baseline 5.4% 15.7%

Final 10.2% 21.9%

**Underweight children**

**13. Table N-2. Percentage of children classified as being Underweight (Z-score <-2) by Weight for Age Z score.**

UNDERNUTRITION	Frequency	Percent	Cum Percent	
Baseline	79/291	27.1%	27.1%	■
Final	71/299	23.7%	23.7%	■

**95% Conf Limits**

Baseline 22.1% 32.6%

Final 19.0% 29.0%

**14. Table N-2. Percentage of female children classified as being Underweight (Z-score <-2) by Weight for Age Z score.**

UNDERNUTRITION	Frequency	Percent	Cum Percent	
Baseline	37/146	25.3%	25.3%	■
Final	23	16.8%	16.8%	■

**95% Conf Limits**

Baseline 18.5% 33.2%

Final 11.0% 24.1%

**15. Table N-2. Percentage of male children classified as being Underweight (Z-score <-2) by Weight for Age Z score.**

UNDERNUTRITION	Frequency	Percent	Cum Percent	
Baseline	42/145	29.0%	29.0%	■
Final	48/162	29.6%	29.6%	■

**95% Conf Limits**

Baseline 21.7% 37.1%

Final 22.7% 37.3%

It should be noted that the sample size (N) was reduced from 300 to 291 at baseline and 300 to 299 at final because some mothers declined to have their children weighed due to safety concerns, most commonly in very young infants under the age of 1 month. Weight for age is sensitive of both acute and chronic malnutrition when used in proper growth monitoring, which involves weighing the child often, usually monthly, from the age of 0-60 months. The overall rate of children who were underweight was 27.1% (22.1%, 32.6%) at baseline and 23.7% (19.0%, 29.0%) at final. This included 14.1% (10.3%, 18.6%) moderately underweight at baseline and 12% (8.6%, 16.3%) at final, and 13.1% (9.4%, 17.5%) severely underweight at baseline and 11.7% (8.3%, 15.9%) at final. Further breakdown of the age groups within the sample (table 16) revealed that the 0-6m age group had significantly less malnutrition than the rest of the age groups, both at baseline and final. Also, at baseline only, the 18-23m age group had a significantly higher rate of undernutrition than the other age groups. By final the 18-23m age group no longer had a significantly higher rate of undernutrition than the 6-9m, 6-11m, and 12-17m age groups. Due to the fact that all feeding behaviors surveyed were significantly increased, the fact that undernutrition did not significantly improve, particularly in the groups comprising older children, may be due to other factors, such as increased activity as they become older, such as walking long distances with their mothers to the fields if their mother is carrying wood, supplies to market, or another child. It also indicates the need to encourage mothers and other caregivers to provide snacks for this age group and increase the caloric density of the complementary foods they prepare.

#### 16. Nutrition Broken Down by Age

MODERATE MALNUTRITION	BASELINE	FINAL
0-23mo	14.1% (10.3%-18.6%)	12.0% (8.6%-16.3%)
U6mo	2.6% (0.5%-7.4%)	5.9% (2.2%-12.5%)
sixto9mo	15.0% (5.7%-29.8%)	13.2% (6.5%-22.9%)
sixto11mo	21.9% (12.5%-34.0%)	14.0% (7.9%-22.4%)
twelveto23mo	21.6% (14.4%-30.4%)	16.5% (9.7%-25.4%)

SEVERE MALNUTRITION	BASELINE	FINAL
0-23mo	12.7% (9.1%-17.1%)	11.7% (8.3%-15.9%)
U6mo	0.9% (0.0%-4.7%)	2.0% (0.2%-7.0%)
sixto9mo	15.0% (5.7%-29.8%)	11.8% (5.6%-21.3%)
sixto11mo	14.1% (6.6%-25.0%)	14.0% (7.9%-22.4%)
twelveto23mo	24.3% (16.7%-33.4%)	18.6% (11.4%-27.7%)

UNDERNUTRITION	BASELINE	FINAL
0-23mo	26.8% (21.8%-32.3%)	23.7% (19.0%-29.0%)
U6mo	3.4% (0.9%-8.6%)	7.9% (3.5%-15.0%)
sixto9mo	30.0% (16.6%-46.5%)	25.0% (15.8%-36.3%)
sixto11mo	35.9% (24.3%-48.9%)	28.0% (19.5%-37.9%)
twelveto23mo	45.9% (36.4%-55.7%)	35.1% (25.6%-45.4%)

\*Yellow highlight indicates that there is a statistically significant difference between this age group and the entire group (0-23m) for this specific type of malnutrition.



### 3.2 Nutrition

Health promotion and education regarding nutrition and breastfeeding was one of the interventions of MTI/Liberia. The project aimed to improve the nutritional status of children through the promotion of correct breastfeeding and complimentary feeding practices, including immediate breastfeeding following childbirth, exclusive breastfeeding of children under 6 months of age, and the introduction of digestible and nutritional complimentary foods in children 6 months and greater.

#### 17. Prenatal Iron coverage

Did mother receive Iron tablets or syrup?	Frequency	Percent	Cum Percent	
Baseline	244/299	81.6%	81.6%	
Final	297/300	99.0%	99.0%	

#### 95% Conf Limits

Baseline 76.7% 85.8%

Final 97.1% 99.8%

It is important to note that at baseline 81.6% (76.7%, 85.8%) of mothers, and at final 99.0% (97.1% 99.8%) of mothers reported receiving or buying iron tablets during the pregnancy with their youngest child. This is a significant increase despite the high rate at baseline.

#### 18. Children who were breastfed.

Did mother breastfeed infant?	Frequency	Percent	Cum Percent	
Baseline	296 /299	99.0%	99.0%	
Final	298 /300	99.3%	99.3%	

#### 95% Conf Limits

Baseline 97.1% 99.8%

Final 97.6% 99.9%

#### 19. Percent of mothers practicing immediate and exclusive breastfeeding of newborns

Breastfeeding immediately And exclusively	Frequency	Percent	Cum Percent	
Baseline	101/300	33.7%	33.7%	
Final	261/300	87.0%	87.0%	

#### 95% Conf Limits

Baseline 28.3% 39.3%

Final 82.7% 90.6%

**20. Percentage of mothers who gave their child anything else to eat or drink prior to breastfeeding during the first 3 days after delivery.**

During the first 3 days did mother give baby anything else before breastfeeding?	Frequency	Percent	Cum Percent	
Baseline-Yes	78	26.8%	26.8%	
Baseline-No	213	73.2%	100.0%	
Final-Yes	17	5.7%	5.7%	
Final-No	281	93.7%	99.3%	

**95% Conf Limits**

Baseline-Yes 21.8% 32.3%

Baseline-No 67.7% 78.2%

Final-Yes 3.3% 8.9%

Final-No 90.3% 96.1%

The high rate of breastfeeding in GCM County is expected as it is the cultural norm in these areas. However, only 33.7% of mothers practiced immediate and exclusive breastfeeding of newborns at baseline, in this study defined as newborns who were put to the breast within one hour of delivery and who did not receive prelactal feeds. The project was able to significantly increase the percentage of mothers in GCM County who immediately and exclusively breastfeed their newborns, one of the objectives of the project. At final, 87.0% of mothers put their infant to the breast within 1 hour of birth and did not provide prelactal feeds. This is a very important child survival initiative, as it provides the newborn with nutrition in a digestible form, provides increased resistance to infection, promotes earlier development of the immune system, and provides warming of the infant as the infant is held to the mother's breast. Also, at baseline 26.8% of mothers gave their child other items (fluids, formula, or food) prior to breastfeeding them, which decreases the amount of healthy colostrum and breast milk the infant is able to consume, while at final only 5.7% (3.3%, 8.9%) of mothers provided prelactal feeds .

**21. Exclusive Breastfeeding of children under 6 months of age.**



Exclusive breastfeeding	Frequency	Percent	Cum Percent	
Baseline	104/121	86.0%	86.0%	
Final	99/101	98.0%	98.0%	

**95% Conf Limits**

Baseline 78.5% 91.6%

Final 93.0% 99.8%

**22. Mothers knowledge that child under 6 months of age should be exclusively breastfed.**



Knowledge Of Exclusive BF	Frequency	Percent	Cum Percent	
Baseline	161 /300	53.7%	53.7%	
Final	291 /300	97.0%	97.0%	

**95% Conf Limits**

Baseline 47.8% 59.4%

Final 94.4% 98.6%

**23. Percentage of infants aged 6-9 months receiving breast milk and complementary foods.**

Breastfed and Complimentary foods	Frequency	Percent	Cum Percent	
Baseline	15/40	37.5%	37.5%	
Final	58/76	76.3%	76.3%	



**95% Conf Limits**

Baseline 22.7% 54.2%

Final 65.2% 85.3%

Educational interventions were provided to mothers, explaining the need for exclusive breastfeeding in order to improve the health of their infants through both the dense nutritional content and immunity provided by breast milk, and the introduction of complimentary foods at six months to increase mothers' knowledge of infant and young child nutrition. At final there is a statistically significant increase in the percentage of mothers in the project area who know that children under 6 months should be exclusively breastfed. The frequency rose from 53.7% (47.8%, 58.4%) at baseline to 97.0% (94.4%, 98.6%) at final. This translated into a significant increase in both the percentage of mothers who exclusively breastfed their child aged 0-5 months, from 86.0% (78.5%, 91.6%) at baseline to 98.0% (93.0, 99.8%) at final. Also, while only 37.5% (22.7%, 54.2%) of infants aged 6-9 months received both continued breastfeeding and complimentary foods at baseline, this frequency was significantly increased to 76.3% (65.2%, 85.3%) at final.

**24. Percent of mothers who continue to breastfeed their child aged 6-11 months**

Currently breastfeeding child aged 6-11 months	Frequency	Percent	Cum Percent	
Baseline	62/63	98.4%	98.4%	
Final	95/100	95.0%	95.0%	

**95% Conf Limits**

Baseline 91.5% 100.0%

Final 88.7% 98.4%

**25. Percent of mothers who continue to breastfeed their child aged 12-17 months**

Currently breastfeeding child aged 12-17 months	Frequency	Percent	Cum Percent	
Baseline	61 /66	92.4%	92.4%	
Final	54 /62	87.1%	87.1%	

**95% Conf Limits**

Baseline 83.2% 97.5%

Final 76.1% 94.3%

**26. Percent of mothers who continue to breastfeed their child aged 18-23 months**

Currently breastfeeding child aged 18-23 months	Frequency	Percent	Cum Percent	
Baseline	27/43	62.8%	62.8%	
Final	26	74.3%	74.3%	

**95% Conf Limits**

Baseline 46.7% 77.0%

Final 56.7% 87.5%

Mothers in GCM County continue to breastfeed their infants until 2 years of age at a healthy rate. There was no statistically significant change in the very high percentage of children aged 6-11 months that continue to receive breast milk (98.4% at baseline and 95.0% at final), and children aged 12-17 months that continue to breastfeed (92.4% at baseline and 87.1% at final). However, the statistically significant drop-off of breastfeeding that existed at baseline with children aged 18-23 months was no longer a significant drop off at final at 74.3% (56.7%, 87.5%). This signifies an increase in the number of mothers who are continuing to breastfeed their children until they reach 24 months of age.

**27. Percent of children aged 6-23 months receiving vitamin A supplementation in 6 months preceding survey**

Children aged 6-23 months who received Vitamin A in the last 6 months?	Frequency	Percent	Cum Percent	
Baseline	96/126	76.2%	76.2%	
Final	180/197	91.4%	91.4%	

**95% Conf Limits**

Baseline 67.8% 83.3%

Final 86.5% 94.9%

At baseline a high percentage of children received vitamin A supplementation in GCM County at baseline with 76.2% (67.8%, 83.3%) of children aged 6-23 months receiving vitamin A supplementation in the last 6 months, yet the project was still able to significantly increase this percentage to 91.4% (86.5%, 94.9%).

**Food group diversity**

**28. Percent of children aged 6-23 months who ate vitamin A-rich foods in 24 hours preceding survey**

Children aged 6-23 months who Received Vitamin A rich foods in The last 24 hours	Frequency	Percent	Cum Percent	
Baseline	106/175	60.6%	60.6%	
Final	132/197	67.0%	67.0%	

**95% Conf Limits**

Yes 52.9% 67.9%

Yes 60.0% 73.5%

**29. Percent of children aged 6-23 months who ate iron-rich foods in 24 hours preceding survey**

Children aged 6-23 months who Received iron rich foods in The last 24 hours	Frequency	Percent	Cum Percent	
Baseline	76/175	43.4%	43.4%	
Final	128/197	65.0%	65.0%	

**95% Conf Limits**

Baseline 36.0% 51.1%

Final 57.9% 71.6%

**30. Percent of children aged 6-23 months who ate fortified food in 24 hours preceding survey**

Children aged 6-23 months who Received fortified foods in The last 24 hours	Frequency	Percent	Cum Percent	
Baseline	17/175	9.7%	9.7%	
Final	8 /197	4.1%	4.1%	

**95% Conf Limits**

Baseline 5.8% 15.1%

Final 1.8% 7.8%

**Animal source foods:**

**Animal source flesh food:** Percent of children aged 6-23 months who ate beef, game, poultry, fish, shellfish, or organ meat in 24 hours preceding survey

Animal source flesh food	Frequency	Percent	Cum Percent	
Baseline	68/175	38.9%	38.9%	
Final	118/197	59.9%	59.9%	

**95% Conf Limits**

**Baseline** 31.6% 46.5%

**Final** 52.7% 66.8%

**31. Percent of children aged 6-23 months who ate eggs in 24 hours preceding survey**

Eggs yesterday	Frequency	Percent	Cum Percent	
Baseline	39/175	22.3%	22.3%	
Final	66/197	33.5%	33.5%	

**95% Conf Limits**

**Baseline** 16.4% 29.2%

**Final** 27.0% 40.6%

**32. Percent of children aged 6-23 months who had dairy in 24 hours preceding survey**

Dairy yesterday	Frequency	Percent	Cum Percent	
Baseline	35/175	20.0%	20.0%	
Final	26 /197	13.2%	13.2%	

**95% Conf Limits**

**Baseline** 14.3% 26.7%

**Final** 8.8% 18.7%

**33. Any animal source food: Percent of children aged 6-23 months who ate any animal source food in 24 hours preceding survey**

Any animal source food	Frequency	Percent	Cum Percent	
Baseline	83/175	47.4%	47.4%	
Final	139/197	70.6%	70.6%	

**95% Conf Limits**

**Baseline** 39.8% 55.1%

**Final** 63.7% 76.8%

**Vitamin A-rich plant foods:**

**34. Percent of children aged 6-23 months who ate vitamin A-rich yellow/orange vegetables in 24 hours preceding survey**

vitamin A rich vegetables yesterday	Frequency	Percent	Cum Percent	
Baseline	26	14.9%	14.9%	
Final	44	22.3%	22.3%	

**95% Conf Limits**

**Baseline** 9.9% 21.0%

**Final** 16.7% 28.8%

**35. Percent of children aged 6-23 months who ate dark green leafy vegetables in 24 hours preceding survey**

Dark green leafy vegetables/potato greens/cassava leaf yesterday	Frequency	Percent	Cum Percent	
<b>Baseline</b>	65 /175	37.1%	37.1%	
<b>Final</b>	88 /197	44.7%	44.7%	

**95% Conf Limits**

**Baseline** 30.0% 44.8%

**Final** 37.6% 51.9%

**36. Percent of children aged 6-23 months who ate vitamin A-rich fruit in 24 hours preceding survey**

Vitamin A rich fruits	Frequency	Percent	Cum Percent	
<b>Baseline</b>	24 /175	13.7%	13.7%	
<b>Final</b>	9 /197	4.6%	4.6%	

**95% Conf Limits**

**Baseline** 9.0% 19.7%

**Final** 2.1% 8.5%

**37. Percent of children aged 6-23 months who ate any vitamin A-rich plant food in 24 hours preceding survey**

Vitamin A-rich plant food	Frequency	Percent	Cum Percent	
<b>Baseline</b>	99 /175	56.6%	56.6%	
<b>Final</b>	97 /197	49.2%	49.2%	

**95% Conf Limits**

**Baseline** 48.9% 64.0%

**Final** 42.1% 56.4%

**38. Percent of children aged 6-23 months who ate foods made from grains, roots, and tubers in 24 hours preceding survey**

Grains	Frequency	Percent	Cum Percent	
<b>Baseline</b>	106/175	60.6%	60.6%	
<b>Final</b>	170 /197	86.3%	86.3%	

**95% Conf Limits**

**Baseline** 52.9% 67.9%  
**Final** 80.7% 90.8%

Tabulation plan for the summary IYCF indicator for breastfed and non-breastfed children:

**39. Percent of children aged 6-23 months who are still breastfeeding**

Breast milk	Frequency	Percent	Cum Percent	
Baseline	151/175	86.3%	86.3%	
Final	175 /197	88.8%	88.8%	

**95% Conf Limits**

**Baseline** 80.3% 91.0%

**Final** 83.6% 92.9%

**40. Percent of non-breastfed children aged 6-23 months who were fed milk, dairy products, or infant formula in 24 hours preceding survey**

NotBfMilk	Frequency	Percent	Cum Percent	
Baseline	8/24	33.3%	33.3%	
Final	3 /22	13.6%	13.6%	

**95% Conf Limits**

**Baseline** 15.6% 55.3%

**Final** 2.9% 34.9%

**41. Minimum frequency of feeding for breastfed children 6-23 months:  
 Percent of breastfed children aged 6-23 months who ate solid or semi-solid foods at least the minimum recommended number of times in 24 hours preceding survey**

RecFeed	Frequency	Percent	Cum Percent	
Baseline	30 /151	19.9%	19.9%	
Final	135 /175	77.1%	77.1%	

**95% Conf Limits**

**Baseline** 13.8% 27.1%

**Final** 70.2% 83.1%

**42. Minimum frequency of feeding for non-breastfed children 6-23 months:  
 Percent of non-breastfed children aged 6-23 months who ate solid or semi-solid foods at least the minimum recommended number of times in 24 hours preceding survey**

pf623	Frequency	Percent	Cum Percent	
Baseline	4 /24	16.7%	16.7%	
Final	4 /22	18.2%	18.2%	



**95% Conf Limits**

Yes 4.7% 37.4%

No 62.6% 95.3%

**43. Minimum dietary (food group) diversity for breastfed children 6-23 months:  
Percent of breastfed children aged 6-23 months who received minimum dietary (food group)  
diversity in 24 hours preceding survey**

Breast fed minimum food group diversity met	Frequency	Percent	Cum Percent	
Baseline	33/151	21.9%	21.9%	
Final	116/175	66.3%	66.3%	

**95% Conf Limits**

Baseline 15.0% 28.8%

Final 58.8% 73.2%

**44. Minimum dietary (food group) diversity for non-breastfed children 6-23 months:  
Percent of non-breastfed children aged 6-23 months who received minimum dietary (food group)  
diversity in 24 hours preceding survey**

Minimum frequency of feeding for Non-breastfed children 6-23 months	Frequency	Percent	Cum Percent	
Baseline	3 /24	12.5%	12.5%	
Final	11 /22	50.0%	50.0%	

**95% Conf Limits**

Baseline 1.3% 23.7%

Final 75.2% 99.8%

**45. IYCF: Percent of children age 6-23 months fed according to a minimum of appropriate feeding practices**

IYCF children 6-23 months	Frequency	Percent	Cum Percent	
Baseline	33/175	16.9%	16.9%	
Final	109/197	55.3%	55.3%	

**95% Conf Limits**

Baseline 48.1% 62.4%

Final 11.1% 22.7%

In GCM County, the reason for the high rates of moderate and severe malnutrition at baseline became more evident when one considered that only 19.9% of mothers feed their infants aged 6-23 who have continued breastfeeding the recommended number of feedings per day, and only 16.7% of mothers feed their infants

aged 6-23 who have not continued breastfeeding the recommended number of feedings per day. The criteria for providing the recommended number of feedings are as follows:

- A currently breastfed child aged 6-8 months that ate solid or semi-solid foods 2-3 times yesterday.
- A currently breastfed child aged 9-23 months that ate solid or semi-solid foods 3-4 times yesterday.
- A non-breastfed child aged 6-23 months that ate solid or semi-solid foods at least 4 times yesterday.

The project was able to significantly impact these behaviors, and at final 77.1% of mothers feed their infants aged 6-23 who have continued breastfeeding the recommended number of feedings per day. Also, 18.2% of mothers feed their infants aged 6-23 who have not continued breastfeeding the recommended number of feedings per day. This percentage was not significantly increased because the number of children not breastfeeding is so low that the confidence intervals are large.

In addition, at baseline only 21.9% of breastfed children aged 6-23 months and 12.5% of non-breastfed children aged 6-23 months were fed the appropriate number of different food groups (food group diversity) per day. The criterion for providing the recommended number of food groups is 3 for children who are breastfed and 4 for children who are no longer breastfed. By final, both of these rates were significantly increased, with 66.3% of breastfed children aged 6-23 months and 50.0% of non-breastfed children aged 6-23 months were fed the appropriate number of different food groups (food group diversity) per day.

This culminates in the IYCF Indicator, which measures the percentage of children aged 6-23m who received both the proper number of feedings and the proper number of food groups for their age and breastfeeding status. At baseline this rate was very low, at 16.9% very low, at 16.9%. The project was able to significantly increase this rate to 55.3%.

Due to the fact that all feeding behaviors measured were significantly improved, the fact that undernutrition did not significantly improve, particularly in the groups comprising older children, may be due to other factors, such as increased activity as they become older, such as walking long distances with their mothers to the fields if their mother is carrying wood, supplies to market, or another child.

## CHAPTER 4

### IMMUNIZATION

	<b>Indicators from the M&amp;E Matrix:</b>	<b>BASELINE</b>	<b>FINAL</b>
<b>Immunization</b>	Table 55. Health System Performance (by 12 months) regarding Immunization services: Percentage of children 12-23 months who received DPT3 before they reached 12 months by the time of the interview as verified by a vaccination card.	30.6% (22.2%-40.1%)	71.1% (61.0%-79.9%)
	Table 48. EPI Coverage (by 12 months): Percentage of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age	18.9% (12.1%-27.5%)	52.6% (42.2%-62.8%)
	Table 45. Maternal TT Vaccination: Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.)	61.3% (55.6%-66.9%)	94.7% (91.5%-96.9%)

Vaccination (EPI) coverage in GCM county and Liberia as a whole was quite low at baseline, with only 18.9% children receiving full vaccination coverage verified by a vaccination card. This was improved dramatically by final due to interventions aimed at improving IMCI, EPI, cold chain, EPI Outreach, and availability of immunization agents. At final, 52.5% of children aged 12-23 months received full vaccination by their first birthday. In this survey Health System Performance, measured by the number of children aged 12-23 months who received a DPT3 vaccination before the age of 12 months as verified by a vaccination card, was also significantly improved from a baseline of 30.6% to a final of 71.1%. Additionally, Maternal TT vaccination was significantly improved from a baseline of 61.3% to 94.7% at final. This was due, in large part, to an increase in antenatal coverage due to our projects interventions.

#### 46. Maternal Tetanus toxoid coverage

Tetanus 2 or more	Frequency	Percent	Cum Percent	
Baseline	184 /300	61.3%	61.3%	
Final	284 /300	94.7%	94.7%	

#### 95% Conf Limits

Baseline	55.6%	66.9%
Final	91.5%	96.9%

Effective Tetanus toxoid coverage entails the mother receiving at least two immunizations before the birth of her youngest child. The percentage of mothers receiving at least two immunizations in GCM County at baseline was only 61.3%. At final this rate was increased to 94.7%, indicating a significant increase in the utilization of antenatal care services, and a significant increase in the amount of tetanus immunizations being performed by antenatal health care staff and TT immunization outreach by the CHT. A rate of 90% or above signifies universal coverage, so with a rate of 94.7% (91.5%-96.9%), universal coverage has been obtained.

**47. Percent of mothers of children 0-23 months who were ever given a vaccination card or health book for their youngest child 0-23 months**

Ever given a card	Frequency	Percent	Cum Percent	
Baseline	232/300	77.3%	77.3%	
Final	290/300	96.7%	96.7%	

**95% Conf Limits**

Baseline 72.2% 81.9%

Final 94.0% 98.4%

**48. Percent of children 0-23 months that currently have a vaccination card of health book.**

Yes, card seen by interviewer	Frequency	Percent	Cum Percent	
Yes	186 /300	62.0%	62.0%	
Yes	273 /300	91.0%	91.0%	

**95% Conf Limits**

Baseline 56.2% 67.5%

Final 87.2% 94.0%

**49. EPI Coverage: Percent of children aged 12-23 months who received BCG, DPT3, OPV3, and measles vaccines by 12 months of age**

fullimmcvrgbyDATE	Frequency	Percent	Cum Percent	
Baseline	21 /111	18.9%	18.9%	
Final	51 /97	52.6%	52.6%	

**95% Conf Limits**

Baseline 12.1% 27.5%

Final 42.2% 62.8%

In GCM County, the percentage of mothers who had a vaccination card for their child at the time of interview significantly increased from 62.0% at baseline to 91.0% at final, and the percentage of mothers who reported that they had a vaccination card for their child at some time significantly rose from a baseline of 77.3% to a final of 96.7%. Most importantly, however, is the fact that the percentage of children who received full immunization coverage by their first birthday significantly increased from a baseline of only 18.9% to a final of 52.6%. Full immunization coverage (EPI Coverage) is defined as: children aged 12-23 months who have received, before their first birthday, complete polio and DPT vaccination, as well as a measles vaccination, as verified by an immunization card. This increased rate implies that the project has been successful in training the health staff in all aspects of EPI, including EPI clinical services, IMCI, and EPI outreach. Health facilities in GCM are now providing consistent preventative-based services that include immunization services, and have eliminated or greatly reduced gaps in present immunization service delivery within the present health facilities (including equipment, the use of equipment, and the quality of activities).

**Antigen and dose specific coverage:**

**Card verified by 12 months:**

**50. Percent of children aged 12-23 months that received a BCG vaccine, as verified by a vaccination card, by 12 months of age.**

BCG done by 12 months	Frequency	Percent	Cum Percent	
Baseline	54 /111	48.6%	48.6%	
Final	84/97	86.6%	86.6%	

**95% Conf Limits**

**Baseline** 39.0% 58.3%

**Final** 78.2% 92.7%

**51. Percent of children aged 12-23 months that received a Polio1 vaccine, as verified by a vaccination card, by 12 months of age.**

polio1 done by 12 months	Frequency	Percent	Cum Percent	
Baseline	53/111	47.7%	47.7%	
Final	83 /97	85.6%	85.6%	

**95% Conf Limits**

**Baseline** 38.2% 57.4%

**Final** 77.0% 91.9%

**52. Percent of children aged 12-23 months that received a Polio2 vaccine, as verified by a vaccination card, by 12 months of age.**

polio2 done by 12 months	Frequency	Percent	Cum Percent	
Baseline	44/111	39.6%	39.6%	
Final	81 /97	83.5%	83.5%	

**95% Conf Limits**

**Baseline** 30.5% 49.4%

**Final** 74.6% 90.3%

**53. Percent of children aged 12-23 months that received a Polio3 vaccine, as verified by a vaccination card, by 12 months of age.**

polio3 done by 12 months	Frequency	Percent	Cum Percent	
Baseline	40/111	36.0%	36.0%	
Final	74 /97	76.3%	76.3%	

**95% Conf Limits**

Baseline 27.1% 45.7%

Final 66.6% 84.3%

**54. EPI Access: Percent of children aged 12-23 months that received a DPT1 vaccine, as verified by a vaccination card, by 12 months of age.**

dpt1 done by 12 months	Frequency	Percent	Cum Percent	
Baseline	52/111	46.8%	46.8%	
Final	80 /97	82.5%	82.5%	

**95% Conf Limits**

Baseline 37.3% 56.6%

Final 73.4% 89.4%

**55. Percent of children aged 12-23 months that received a DPT2 vaccine, as verified by a vaccination card, by 12 months of age.**

dpt2 done by 12 months	Frequency	Percent	Cum Percent	
Baseline	43/111	38.7%	38.7%	
Final	79/97	81.4%	81.4%	

**95% Conf Limits**

Baseline 29.6% 48.5%

Final 72.3% 88.6%

**56. Health System Performance regarding immunization services: Percent of children aged 12-23 months that received a DPT3 vaccine, as verified by a vaccination card, by 12 months of age.**

dpt3 done by 12 months	Frequency	Percent	Cum Percent	
Baseline	34 /111	30.6%	30.6%	
Final	69 /97	71.1%	71.1%	

**95% Conf Limits**

Baseline 22.2% 40.1%

Final 61.0% 79.9%

**57. Percent of children aged 12-23 months that received a measles vaccine, as verified by a vaccination card, by 12 months of age.**

Measles done by 12 months	Frequency	Percent	Cum Percent	
Baseline	28/111	25.2%	25.2%	
Final	53 /97	54.6%	54.6%	

**95% Conf Limits**

Baseline 17.5% 34.4%

Final 44.2% 64.8%

Antigen and dose specific coverage:

Card verified by the time of the survey:

**58. Percent of children aged 12-23 months that received a BCG vaccine as verified by a vaccination card.**

BCG by card	Frequency	Percent	Cum Percent	
Baseline	60 /111	54.1%	54.1%	
Final	86/97	88.7%	88.7%	

**95% Conf Limits**

Baseline 44.3% 63.6%

Final 80.6% 94.2%

**59. Percent of children aged 12-23 months that received a Polio 1 vaccine as verified by a vaccination card.**

polio1bycard	Frequency	Percent	Cum Percent	
Baseline	59 /111	53.2%	53.2%	
Final	84 /97	86.6%	86.6%	

**95% Conf Limits**

Baseline 43.4% 62.7%

Final 78.2% 92.7%

**60. Percent of children aged 12-23 months that received a Polio 2 vaccine as verified by a vaccination card.**

Polio 2 by card	Frequency	Percent	Cum Percent	
Baseline	53 /111	47.7%	47.7%	
Final	84 /97	86.6%	86.6%	

**95% Conf Limits**

Baseline	38.2%	57.4%
Final	78.2%	92.7%

**61. Percent of children aged 12-23 months that received a Polio 3 vaccine as verified by a vaccination card.**

Polio 3 by card	Frequency	Percent	Cum Percent	
Baseline	52/111	46.8%	46.8%	
Final	79 /97	81.4%	81.4%	

**95% Conf Limits**

Baseline	37.3%	56.6%
Final	72.3%	88.6%

**62. Percent of children aged 12-23 months that received a DPT1 vaccine as verified by a vaccination card.**

DPT 1 by card	Frequency	Percent	Cum Percent	
Baseline	59 /111	53.2%	53.2%	
Final	82 /97	84.5%	84.5%	

**95% Conf Limits**

Baseline	43.4%	62.7%
Final	75.8%	91.1%

**63. Percent of children aged 12-23 months that received a DPT2 vaccine as verified by a vaccination card.**

DPT 2 by card	Frequency	Percent	Cum Percent	
Baseline	51/111	45.9%	45.9%	
Final	81 /97	83.5%	83.5%	

**95% Conf Limits**

Baseline	36.4%	55.7%
Final	74.6%	90.3%



**64. Percent of children aged 12-23 months that received a DPT3 vaccine as verified by a vaccination card.**

DPT 3 by card	Frequency	Percent	Cum Percent	
Baseline	46 /111	41.4%	41.4%	
Final	76 /97	78.4%	78.4%	

**95% Conf Limits**

Baseline	32.2%	51.2%
Final	68.8%	86.1%

**65. Percent of children aged 12-23 months that received a measles vaccine as verified by a vaccination card.**

Measles by card	Frequency	Percent	Cum Percent	
Baseline	47/111	42.3%	42.3%	
Final	67/97	69.1%	69.1%	

**95% Conf Limits**

Baseline	33.0%	52.1%
Final	58.9%	78.1%

**Antigen and dose specific coverage:**

**Card verified or by mothers recall by the time of the survey:**

**66. Percent of children aged 12-23 months that received a BCG vaccine as verified by a vaccination card or by mothers recall.**

BCG by card or mom	Frequency	Percent	Cum Percent	
Baseline	98/111	88.3%	88.3%	
Final	92 /97	94.8%	94.8%	

**95% Conf Limits**

Baseline	80.8%	93.6%
Final	88.4%	98.3%

**67. Percent of children aged 12-23 months that received a Polio 1 vaccine as verified by a vaccination card or by mothers recall.**

Polio1 by card or mom	Frequency	Percent	Cum Percent	
Baseline	87	78.4%	78.4%	
Final	92	94.8%	94.8%	

**95% Conf Limits**

Baseline 69.6% 85.6%

Final 88.4% 98.3%

**68. Percent of children aged 12-23 months that received a Polio 2 vaccine as verified by a vaccination card or by mothers recall.**

polio2bycardormom	Frequency	Percent	Cum Percent	
Baseline	73	65.8%	65.8%	
Final	92	94.8%	94.8%	

**95% Conf Limits**

Baseline 56.2% 74.5%

Final 88.4% 98.3%

**69. Percent of children aged 12-23 months that received a Polio 3 vaccine as verified by a vaccination card or by mothers recall.**

polio3bycardormom	Frequency	Percent	Cum Percent	
Baseline	59/111	53.2%	53.2%	
Final	88/97	90.7%	90.7%	

**95% Conf Limits**

Baseline 43.4% 62.7%

Final 83.1% 95.7%

**70. Percent of children aged 12-23 months that received a DPT 1 vaccine as verified by a vaccination card or by mothers recall.**

DPT1 by card or mom	Frequency	Percent	Cum Percent	
Baseline	92/111	82.9%	82.9%	
Final	90/97	92.8%	92.8%	

**95% Conf Limits**

Baseline 74.6% 89.4%

Final 85.7% 97.0%

**71. Percent of children aged 12-23 months that received a DPT 2 vaccine as verified by a vaccination card or by mothers recall.**

DPT 2 by card or mom	Frequency	Percent	Cum Percent	
Baseline	83/111	74.8%	74.8%	
Final	89/97	91.8%	91.8%	

**95% Conf Limits**

Baseline 65.6% 82.5%

Final 84.4% 96.4%

**72. Percent of children aged 12-23 months that received a DPT 3 vaccine as verified by a vaccination card or by mothers recall.**

DPT 3 by card or mom	Frequency	Percent	Cum Percent	
Baseline	58	52.3%	52.3%	
Final	85	87.6%	87.6%	

**95% Conf Limits**

Baseline 42.6% 61.8%

Final 79.4% 93.4%

**73. Percent of children aged 12-23 months that received a measles vaccine as verified by a vaccination card or by mothers recall.**

Measles vaccine by mom or card	Frequency	Percent	Cum Percent	
Baseline	73/111	65.8%	65.8%	
Final	73/97	75.3%	75.3%	

**95% Conf Limits**

Baseline 56.2% 74.5%

Final 65.5% 83.5%

**74. Drop-out Rate (DPT1-DPT3)/DPT1:**

**Percentage of children aged 12-23 months who received DPT1 but did not receive follow up immunization and therefore did not receive DPT3 (by card or mothers recall)**

DPT 1 but not 3	Frequency	Percent	Cum Percent	
Baseline	34 /111	30.6%	30.6%	
Final	6 /97	6.2%	6.2%	

**95% Conf Limits**

Baseline 22.2% 40.1%

Final 2.3% 13.0%

The antigen and dose specific coverage indicators measure the rate of vaccination in children aged 12-23 months for each vaccine that is part of the Liberian national vaccination schedule: BCG, Polio1, Polio2, Polio3, DPT1, DPT2, DPT3, and Measles. Rates of every antigen as verified by vaccination card by 12 months of age have been statistically significantly increased over the life of this project. The percentage of children aged 12-23 months who received BCG vaccination by their first birthday was significantly increased from a baseline of 48.6% to a final of 86.6%. The percentage of children who received DPT3 by 12 months of age rose from 52.3% to 87.6%. Likewise, the percentage of children who received Polio 3 rose significantly from 53.2% to 90.7%. Immunization was a priority in this child survival project as these rates needed to be improved greatly to affect change in child survival rates. This priority is also evidenced by the fact that the Drop-out rate regarding follow-up immunization (children aged 12-23 months who received DPT1 but did not receive follow up immunization and therefore did not receive DPT3) significantly decreased from a baseline of 30.6% to a final of only 6.2%. This low drop-out rate verifies the consistency of EPI services in GCM County at this time, particularly when compared with the findings of the University of Liberia's EPI Survey in 2005 which found the drop-out rate to be 52.4% at that time.<sup>35</sup>

## CHAPTER 5

### CONTROL OF DIARRHEA

	<b><u>Indicators from the M&amp;E Matrix:</u></b>	<b>BASELINE</b>	<b>FINAL</b>
<b>Control of Diarrhea</b>	Table 75. <u>ORT use:</u> Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration solution (ORS) and/or recommended home fluids.	74.2% (63.8%-82.9%)	84.1% (69.9%-93.4%)
	Table 78. <b>Increased fluid intake during diarrheal episode:</b> Percentage of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness	<b>51.7% (40.8%-62.4%)</b>	<b>88.6% (75.4%-96.2%)</b>
	Table 87. <u>Point of Use (POU):</u> Percentage of households of children 0-23 months that treat water effectively.	21.7% (17.1%-26.8%)	18.7% (14.4%-23.5%)
	Table 86. <b>Appropriate Hand Washing Practices:</b> Percentage of mothers of children 0-23 months who live in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period.	<b>19.0% (14.7%-23.9%)</b>	<b>87.7% (83.4%-91.2%)</b>

Diarrhea is a common cause of childhood morbidity and mortality in GCM County and, and Liberia as a whole. The Liberia Demographic Health Survey of 1999/2000 showed that the percentage of diarrhea in children aged 0-59 months was 43.75%, with the rate particularly high in children aged 12-23 months, at 54.9%. It is well proven that diarrhea is one of the major contributors to malnutrition in children. MTI Liberia made a high priority the reduction of childhood diarrhea prevalence and morbidity through preventive and curative measures. This diarrhea management initiative was an intervention aimed at raising the awareness of mothers/caretakers about the necessary steps required to both prevent and treat diarrheal disease. Interventions aimed at the prevention of diarrhea included instruction in the importance of appropriate hand washing behaviors as well as the promotion of the use of sanitary latrines (for more information on hand washing and latrine practices, see Chapters 5.3-Hygiene and Chapter 10-Water and Sanitation). Diarrhea case management at the household level included proper feeding and fluid management during diarrhea episodes, as well as the proper preparation and use of Oral Rehydration Salts (ORS). Integral to this knowledge is the awareness of the signs and symptoms of diarrhea as well as promptly seeking advice from qualified medical personnel. The present evaluation estimates and compares the prevalence of diarrhea among children aged 0-23 months, the mother's knowledge concerning diarrhea, feeding and hydration behaviors in the management of diarrhea, and health seeking behaviors in relation to diarrhea at baseline and final.

## 5.1 Prevalence of Diarrhea

### 75. Percent of mothers of children 0-23 months who report that their child had a diarrhea in the 2 weeks prior to the survey

Has child had diarrhea in the last 2 weeks?	Frequency	Percent	Cum Percent	
<b>Baseline</b>	89/296	30.1%	30.1%	
<b>Final</b>	44/297	14.8%	14.8%	

#### 95% Conf Limits

<b>Baseline</b>	24.9%	35.6%
<b>Final</b>	11.0%	19.4%

The baseline diarrhea rate of 30.1% was high compared to acceptable levels, which vary between 20-30% for children aged 0-23 months depending on seasonal variations, but lower than found in the Liberia Demographic Health Survey of 1999/2000 in which the percentage of diarrhea in children aged 0-59 months was 43.7%, with the rate particularly high in children aged 12-23 months, at 54.9%.<sup>36</sup> However, by final the project was able to significantly lower the prevalence of diarrhea in children of 0-23 months of age to 14.8%. The project was able to do this through multiple interventions, with education acting as the cornerstone, which included the promotion of proper breastfeeding, adequate complementary feeding, use of ORT and treatment seeking at qualified health facilities, proper hygiene and hand washing practices, and safe feces disposal.

## 5.2 Knowledge of Mothers Regarding the Management of Diarrhea with ORS (Oral Rehydration Solution)

### 76. Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration Therapy (ORT) and/or recommended home fluids.

ORT Use	Frequency	Percent	Cum Percent	
<b>Baseline</b>	66/89	74.2%	74.2%	
<b>Final</b>	37 /44	84.1%	84.1%	

#### 95% Conf Limits

<b>Baseline</b>	63.8%	82.9%
<b>Final</b>	69.9%	93.4%

### 77. Percentage of children 0-23 months with diarrhea in the last two weeks who were treated with zinc supplements

Zinc for diarrhea	Frequency	Percent	Cum Percent	
<b>Baseline</b>	0/89	0.0%	0.0%	
<b>Final</b>	1/44	2.3%	2.3%	

#### 95% Conf Limits

<b>Baseline</b>	0.0%	4.1%
<b>Final</b>	0.1%	12%

**78. Percentage of children 0-23 months with diarrhea in the last two weeks who were not treated with antidiarrheals or antibiotics.**

Diarrhea not treated with antidiarrheals or antibiotics	Frequency	Percent	Cum Percent	
Baseline	81/89	91.0%	91.0%	
Final	44/44	100.0%	100.0%	

**95% Conf Limits**

**Baseline** 83.1% 96.0%

**Final** 100.0% 100.0%

It is encouraging that at final 84.1% of children 0-23 months with diarrhea in the last two weeks received Oral Rehydration Solution (ORS) and/or recommended home fluids. While this percentage is not statistically significantly increased from the already high baseline of 74.2%, this result of having 84% of mothers utilize ORS in the management of diarrhea is quite excellent. Mothers do not treat their children with Zinc (0% at baseline and 2.3% at final) because Zinc continues to be unavailable in GCM County. It is encouraging that only 9.0% of mothers at baseline and 0% of mothers at final treated their child with antibiotics or antidiarrheals, but this may be due to the fact that these medications are not readily available.

**79. Percentage of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness (either more fluid, or more breast milk if exclusively breastfeeding)**

Diarrhea More Drink	Frequency	Percent	Cum Percent	
Baseline	46 /89	51.7%	51.7%	
Final	39/44	88.6%	88.6%	

**95% Conf Limits**

**Baseline** 40.8% 62.4%

**Final** 75.4% 96.2%

**80. Percentage of children 0-23 months with diarrhea in the last two weeks who were offered the same amount or more food during the illness**

Diarrhea more or same food	Frequency	Percent	Cum Percent	
Baseline	12 /66	18.2%	18.2%	
Final	23 /40	57.5%	57.5%	

\*n = 66 instead of n = 89, and n=40 instead of 44, because 23 and 4, respectively, of the children who had diarrhea in the past 2 weeks were exclusively breastfeeding and therefore not eligible for this rate.

**95% Conf Limits**

**Baseline** 9.8% 29.6%

**Final** 40.9% 73.0%

**81. Percentage of children aged 0-23 months with diarrhea in the last two weeks who were offered increased fluids and the same amount or more food during the illness.**

Diarrhea more fluids And more or same foods	Frequency	Percent	Cum Percent	
Baseline	8/66	11.2%	11.2%	
Final	21/40	52.5%	52.5%	

**95% Conf Limits****Baseline** 5.5% 19.7%**Final** 36.1% 68.5%**82. Percent of children 0-23 months with diarrhea in the past two weeks whose mothers sought appropriate outside advice or treatment for the illness:**

Appropriate source are: hospitals, health centers, health posts, mobile clinics, field workers, private doctors or nurses. It excludes pharmacy, shop or traditional healer.

Appropriate outside treatment For Diarrhea	Frequency	Percent	Cum Percent	
<b>Baseline</b>	25/89	28.1%	28.1%	
<b>Final</b>	32	72.7%	72.7%	

**95% Conf Limits****Yes** 19.1% 38.6%**Yes** 57.2% 85.0%

It was quite telling that at baseline only 57.7% of children were offered more fluids, and only 18.2% of children were offered the same amount or more food during their last diarrheal episode. This led to a rate of 11.2% of children that were offered both more fluid and the same or more food during their last bout of diarrhea. Additionally, only 28.18% of mothers at baseline sought advice or treatment from qualified personnel for their child who had diarrhea. This revealed that at baseline most mothers did not know how to treat diarrhea at home, and did not routinely seek help when their child was ill with diarrhea, and when they did seek advice the cultural norms in these areas advocated seeking it from traditional sources including traditional healers, community distributors, and family members. It also implied that MoH services at that time were viewed as ineffective and for use only when other care was not possible. MTI Liberia strengthened mothers' knowledge about the home treatment of diarrhea, and strengthened the MoH's ability to provide services through increasing the capacity and availability of personnel at HFs. There was a focus on training HF staff and Care Groups in intervention areas with an emphasis on health promotion/education in order to increase proper home treatment and when necessary the timely health seeking behaviors of mothers for their sick children. Therefore, at final 88.6% of children were offered more fluids, and 57.5% of children were offered the same amount or more food during their last diarrheal episode. This led to a rate of 52.5% of children that were offered both more fluid and the same or more food during their last bout of diarrhea. Additionally, 72.7% of mothers at baseline sought advice or treatment from qualified personnel. Each of these rates is significantly increased from baseline.

**83. Percent of children aged 6-23 months receiving de-worming medicine in 6 months preceding survey**

Has Child had medicine for intestinal Worms in the last 6 months?	Frequency	Percent	Cum Percent	
<b>Baseline</b>	67/152	44.1%	44.1%	
<b>Final</b>	119/196	60.7%	60.7%	

**95% Conf Limits****Baseline** 36.0% 52.4%**Final** 53.5% 67.6%


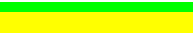


The rate of prophylactic treatment for intestinal worms was significantly raised from 44.1% at baseline to 60.7% at final in GCM County, an area with high morbidity due to intestinal worms. MTI Liberia included proper prophylaxis as well as educational programs in its nutrition sector of project programming in order to effect this improvement.

### 5.3 Hygiene, hand washing practices and water treatment

Proper hygiene and hand washing behaviors are an easily available method to mitigate childhood illness, and educating mothers/caretakers in proper hygiene and hand washing practices is an important component of mitigating these illnesses, particularly diarrhea, ARI, and febrile illnesses. In this study, effective hygiene practices are measured by observing if the household readily available soap present in the washing area and if proper hand washing practices are performed by the mother (appropriate times for hand washing refers to washing after defecation and one of the following times: after cleaning a young child, before preparing food, before eating, and before feeding a child).



#### 84. Percent of households with that has soap at the place for hand washing

Soap Present	Frequency	Percent	Cum Percent	
Baseline	119/300	39.7%	39.7%	
Final	295/300	98.3%	98.3%	

#### 95% Conf Limits

Baseline	34.1%	45.4%
Final	54.6%	65.9%

#### 85. Percentage of mothers of children 0-23 months who live in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period.

Appropriate hand washing And soap present	Frequency	Percent	Cum Percent	
Baseline	57	19.0%	19.0%	
Final	263	87.7%	87.7%	

#### 95% Conf Limits

Yes	14.7%	23.9%
No	76.1%	85.3%

At baseline only 39.7% of households had soap or other cleansing agent present and only 19.0% of mothers reported washing their hands at least at 2 critical times (after defecation and at one of the following: before food preparation, before feeding children, or after attending to a child who has defecated). MTI Liberia trained HHPs and Care Groups in sanitation and hygiene promotion messages, which they extensively disseminated through on-going educational programs and interventions throughout the life of the project. Because of this, at final 98.3% of households had soap or other cleansing agent present, and 87.7% of mothers reported washing their hands at least at 2 critical times during the previous day.

#### 86. Percentage of households of children 0-23 months that treat water effectively.

<b>Effective water treatment</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cum Percent</b>	
<b>Baseline</b>	65/300	21.7%	21.7%	
<b>Final</b>	56/300	18.7%	18.7%	

**95% Conf Limits**

Yes 17.1% 26.8%

No 73.2% 82.9%

Treating water effectively in this context is defined as: treating drinking water between the times it is collected and consumed by boiling, chlorination, solar disinfection, or filtration. There is access to clean water sources in GCM County as 72.0% of households at baseline and 92.7% of households at final had access to either piped or protected water sources. However, only 21.7% of households at baseline and 18.7% at final treated their water effectively. This rate was not improved throughout the life of the project most likely because over 92% of the county has clean water available, with a very low diarrhea rate (14.8% at final). Therefore, despite MTI's interventions and health messaging, it was not a priority of the communities to improve the rate of treating water in the homes.

## CHAPTER 6



### PNEUMONIA CASE MANAGEMENT

	<b>Indicators from the M&amp;E Matrix:</b>	<b>BASELINE</b>	<b>FINAL</b>
<b>ARI/ Pneumonia</b>	Table 92: Appropriate Care Seeking for Pneumonia: Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider.	43.2% (35.3%-1.4%)	90.8% (83.3%-95.7%)

Acute Respiratory Infection is recognized as one of the major public health problems in Liberia. The prevalence of acute respiratory illness (ARI) in children aged 0-59 months is 39.3%, with the rate considerably higher in children aged 6-11 months, at 52.5% according to the 1999 Liberia DHS.<sup>37</sup> Over 80 percent of the children experiencing cough or difficult breathing received some treatment for the illness, but only 2% received antibiotics.<sup>38</sup> Most children were given symptom relieving, not curative, medicines in the form of cough syrups or country medicines. Objectives of the project were to promote the recognition of the danger signs of pneumonia, to improve the access to quality care, and to promote optimal and timely health seeking behavior among mothers/caretakers. The present evaluation estimates the prevalence of ARI among children aged 0-23 months, the mother's knowledge concerning ARI, the mother's management of ARI, and timely health seeking behaviors in relation to ARI.

#### 6.1 Prevalence of ARI and Pneumonia

##### 87. Percent of mothers of children 0-23 months who report that their child had a cough in the 2 weeks prior to the survey


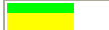
Children with Cough In the past 2 weeks	Frequency	Percent	Cum Percent	
<b>Baseline</b>	233/300	77.7%	77.7%	
<b>Final</b>	121/300	40.7%	40.7%	

##### 95% Conf Limits

Yes 72.5% 82.3%

No 53.4% 64.9%

##### 88. Percent of mothers of children 0-23 months who report that their child had a cough and difficulty breathing/fast breaths in the 2 weeks prior to the survey

Cough and difficulty breathing/fast breaths	Frequency	Percent	Cum Percent	
<b>Baseline</b>	155/300	51.7%	51.7%	
<b>Final</b>	98/300	32.7%	32.7%	

##### 95% Conf Limits

Baseline 45.9% 57.4%

Final 27.4% 38.3%

The prevalence of cough in children aged 0-23 months in GCM County at baseline was 77.7%, with 51.7% of those with cough also experiencing difficulty breathing or breathing with short/fast breaths, a possible symptom of pneumonia. These rates in GCM County were very high, and are comparable to the rates found by the Liberia Demographic Health Survey in 1999/2000 for all of Liberia. The rates during the final evaluation were significantly reduced, with the prevalence of cough in children aged 0-23 months in GCM County at baseline at 40.7%, with 32.7% of those with cough also experiencing difficulty breathing or breathing with short/fast breaths.

## 6.2 Practices of Mothers/Caretakers of Children with Pneumonia

### 89. Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who received antibiotics

Antibiotic treatment For ARI	Frequency	Percent	Cum Percent	
Baseline	25/155	16.1%	16.1%	
Final	57/98	58.2%	58.2%	

#### 95% Conf Limits

Baseline	10.7%	22.9%
Final	47.8%	68.1%

### 90. Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider

HCPC Cough	Frequency	Percent	Cum Percent	
Baseline	67/155	43.2%	43.2%	
Final	89/98	90.8%	90.8%	

#### 95% Conf Limits

Baseline	35.3%	51.4%
Final	83.3%	95.7%

### 91. Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to a health facility or received antibiotics from an alternative source

ARI treated at a health facility or with antibiotics	Frequency	Percent	Cum Percent	
Baseline	77/155	49.7%	49.7%	
Final	92/98	93.9%	93.9%	

#### 95% Conf Limits

Baseline	41.6%	57.8%
Final	87.1%	97.7%

All 3 indicators relating to the treatment of ARI were significantly improved over the life of the project. Children who had both a cough and difficulty breathing/fast breathing were treated by seeking advice/treatment at a qualified health facility at a rate of only 43.2% at baseline, but this rate was doubled to 90.8% at final. The rate at which children who had both a cough and difficulty breathing/fast breathing were treated with an antibiotic tripled from a rate of 16.1% at baseline, to a rate of 58.2% at final. Children who had both a cough and difficulty breathing/fast breathing were treated by either seeking advice/treatment at a qualified health facility or treated with an antibiotic at a rate of 49.7% at baseline. This was significantly improved to 93.9% at final. This reveals that, at baseline, most mothers did not routinely seek help when their child became sick, and did not understand the importance of seeking timely medical advice or seeking proper antibiotic treatment for their children who were ill with cough and respiratory infection. The project focused on training of HF staff, HHPs, and Care Groups in health promotion/education in order to increase timely health seeking behaviors by mothers for their sick children as well as providing health facilities with the needed antibiotics to encourage mothers to utilize these facilities. This effort increased awareness and health seeking behaviors, and through this the project was able to raise adequate treatment to over 93%.

## CHAPTER 7

### MALARIA AND THE MANAGEMENT OF FEBRILE ILLNESS

	<b><u>Indicators from the M&amp;E Matrix:</u></b>	<b>BASELINE</b>	<b>FINAL</b>
<b>Control and Management of Malaria</b>	Table 94: Child sleeps under an insecticide-treated bed net: Percentage of children 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night.	17.7% (13.5%-22.5%)	69.3% (63.8%-74.5%)
	Table 96: Child with fever receives appropriate antimalarial treatment: Percentage of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.	3.6% (1.0%-8.9%)	32.5% (24.3%-40.7%)

GCM County is a malaria endemic area and the incidence of fever in children less than 24 months is quite high in these areas. At baseline the prevalence of malaria was 70.0%. This was significantly reduced by the end of the project to a rate of 55.5%. The present evaluation estimates the prevalence of febrile illness among children aged 0-23 months, the mother's knowledge concerning malaria, feeding and hydration behaviors in the treatment of malaria, and health seeking behaviors in relation to malaria.

#### 7.1 Prevention of Malaria

##### 92. Percentage of children aged 0-23 months that slept under an insecticide treated mosquito net (ITN) the previous night.

child	Frequency	Percent	Cum Percent	
Baseline	53 /300	17.7%	17.7%	<div style="width: 17.7%; height: 10px; background-color: yellow;"></div>
Final	208 /300	69.3%	69.3%	<div style="width: 69.3%; height: 10px; background-color: yellow;"></div>

##### 95% Conf Limits

Baseline	13.5%	22.5%
Final	63.8%	74.5%

At baseline only 17.7% of children less than 24 months slept under an insecticide treated bed net. Bed nets were distributed by PMI in 2008, assisted by the CHPs and HHPs. Interventions targeted at increasing bed net use and promote proper usage were implemented throughout the project, also through the CHPs and HHPs, and have resulted in at rate of bed net usage at final of 69.3%.

## 7.2 The Prevalence of Febrile Illness

Has child been ill with a fever in the last 2 weeks?	Frequency	Percent	Cum Percent	
<b>Baseline</b>	208/297	70.0%	70.0%	
<b>Final</b>	165 /300	55.0%	55.0%	

### 95% Conf Limits

**Baseline** 64.5% 75.2%

**Final** 49.2% 60.7%

The rate of febrile episodes is a proxy for the prevalence of malaria. The extremely high prevalence of fever at baseline (70.0%) was significantly reduced at final (55.0%).

## 7.3 Practices of Mothers of Children with Febrile Illness

### 93. Percentage of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.\*

Fever treated Properly with Antimalarial Medicine	Frequency	Percent	Cum Percent	
<b>Baseline</b>	4/112	3.6%	3.6%	
<b>Final</b>	41/126	32.5%	32.5%	

### 95% Conf Limits

**Yes** 1.0% 8.9%

**No** 24.3% 40.7%

\*In this study, “treated with an effective anti-malarial drug within 24 hours after the fever began” was calculated as children that were taken to an appropriate health facility within 24 hours and given a medication at that facility.

Proper health care seeking behavior for fever was measured in those children included in the survey who had a fever that had ended in the last 2 weeks. Of these children, at baseline only 3.6% of mothers treated their child with proper antimalarial medication within 24 hours of onset of fever. This rate was alarmingly low, and priority was given to increasing the access to proper medication at qualified health facilities. Project personnel, HHPs and Care Groups were trained in health promotion in order to increase timely health seeking behaviors by mothers for their sick children. This resulted in a significantly improved rate at final evaluation of timely health seeking for the treatment of malaria, with 32.5% of mothers treating their child with a proper antimalarial medication within 24 hours of the onset of symptoms.

## 7.4 Mothers knowledge about the cause of Malaria

### 94. Percentage of mothers who know the cause of malaria.

Mothers who know the Cause of malaria	Frequency	Percent	Cum Percent	
Baseline	129/300	43.0%	43.0%	
Final	240/300	80.0%	80.0%	

### 95% Conf Limits

Yes 37.3% 48.8%

No 75.5% 84.5%

At baseline, only 43.0% of mothers understood the cause of malaria. This was an important finding because only when mothers understand the vector of the infection will they understand the appropriate measures to prevent the illness. Project interventions in this area included health messages regarding the cause and prevention of malaria, the promotion of proper ITN usage, and the intermittent preventive treatment (IPT) of pregnant women with prophylactic anti-malarial medication. Due to these interventions, at final 80.0% of women now understand the cause of malaria.



## CHAPTER 8

### MATERNAL AND NEWBORN CARE

#### 95. Skilled prenatal care

Skilled Prenatal Care	Frequency	Percent	Cum Percent	
Baseline	169/300	56.3%	56.3%	<div style="width: 56.3%; height: 10px; background-color: #ffff00;"></div>
Final	258/300	86.0%	86.0%	<div style="width: 86.0%; height: 10px; background-color: #ffff00;"></div>

#### 95% Conf Limits

Baseline	50.5%	62.0%
Final	81.6%	89.7%

#### 96. 4 or more prenatal visits (FINAL EVALUATION ONLY)

Prenatal4	Frequency	Percent	Cum Percent	
Yes	214	71.3%	71.3%	<div style="width: 71.3%; height: 10px; background-color: #ffff00;"></div>
No	86	28.7%	100.0%	<div style="width: 28.7%; height: 10px; background-color: #ffff00;"></div>
Total	300	100.0%	100.0%	<div style="width: 100.0%; height: 10px; background-color: #ff8c00;"></div>

#### 95% Conf Limits

Yes	65.9%	76.4%
No	23.6%	34.1%

Antenatal care service coverage in GCM county was relatively low at baseline, with 56.3% of mothers receiving at least one antenatal visit from skilled health personnel (in this context a doctor, nurse, midwife, physician assistant, or other health staff at a health facility) during their last pregnancy. Interventions carried out by MTI Liberia increased the level of antenatal service coverage and tetanus immunization coverage by increasing the capacity of HF staff in order to impact these important maternal health indicators. Through these interventions MTI was able to raise the percentage of mothers receiving at least one prenatal visit to 86.0%. Additionally, mothers continued to report for their antenatal visits, as is shown by the fact that at final 71.3% of mothers received at least 4 antenatal visits throughout their pregnancy.

#### 97. Presence of a skilled birth attendant at the birth of the youngest child aged 0-23 months.

Skilled birth attendant	Frequency	Percent	Cum Percent	
Baseline	64/300	21.3%	21.3%	<div style="width: 21.3%; height: 10px; background-color: #ffff00;"></div>
Final	104 /300	34.7%	34.7%	<div style="width: 34.7%; height: 10px; background-color: #ffff00;"></div>

#### 95% Conf Limits

Baseline	16.8%	26.4%
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**Final** 29.3% 40.3%

**98. Presence of a traditional birth attendant at the birth of the youngest child aged 0-23 months.**

traditional birth attendant	Frequency	Percent	Cum Percent	
Baseline	219/300	73.0%	73.0%	
Final	192 /300	64.0%	64.0%	

**95% Conf Limits**

**Baseline** 67.6% 77.9%

**Final** 58.3% 69.4%

**99. Frequency of Post Partum visit to check on mother within the first 3 days after birth**

Postpartum Check Mom	Frequency	Percent	Cum Percent	
Baseline	18/300	6.0%	6.0%	
Final	118/300	39.3%	39.3%	

**95% Conf Limits**

**Baseline** 3.6% 9.3%

**Final** 33.8% 45.1%

**100. Frequency of Post Partum visit to check on child within the first 3 days after birth**

Postpartum Check child	Frequency	Percent	Cum Percent	
Baseline	21	7.0%	7.0%	
Final	121	40.3%	40.3%	

**95% Conf Limits**

**Baseline** 4.4% 10.5%

**Final** 34.7% 46.1%

At baseline, only 21.3% of all childbirths occurred under the supervision of a skilled birth attendant, which is defined in this study as a doctor, nurse, physician assistant, or midwife. Additionally, traditional birth attendants (TBA) were present 73.0% of the time, and are not skilled in proper cord care or other clean birthing practices. This was a difficult challenge for the project, as social norms, particularly in the Muslim areas dictated that the mother have the child at home, with a female attendant (TBA) versus going to the HF where they would most likely be attended by a male HW. The project worked through the HFs to welcome TBAs to bring mothers to the facility, where HF staff would deliver the baby. Additionally, trainings were conducted in which health messages were given, including the importance of assuring that both mother and child receive follow up care including a post partum visit with a trained health professional. The project was able to significantly increase the percentage of births under the supervision of skilled birth attendants to 34.7%. Also, at baseline a postpartum visit with a skilled professional occurred at an alarmingly low rate, 6.0% for mothers and 7.0% for newborns. At final the project was able to raise this to 39.3% for mothers and 40.3% for newborns.

## CHAPTER 9

### HIV/AIDS

The prevalence of HIV/AIDS in the general population of Liberia was 8.2% as of 1986, but this was thought to be a low estimate.<sup>39</sup> Liberia has incurred the same increase in exposure to the disease as the rest of Africa. Therefore, it was deemed quite important to increase the knowledge of the community about HIV/AIDS and risk reduction during the life of the project.

#### 9.1 Knowledge about HIV/AIDS

##### 101. Percentage of mothers of children aged 0–23 months who have heard of HIV or AIDS.

Have you heard of AIDS?	Frequency	Percent	Cum Percent	
Baseline	244/298	81.9%	81.9%	<div style="width: 81.9%; height: 10px; background-color: yellow;"></div>
Final	279 /298	93.6%	93.6%	<div style="width: 93.6%; height: 10px; background-color: yellow;"></div>

##### 95% Conf Limits

**Baseline** 77.0% 86.1%

**Final** 90.2% 96.1%

##### 102. Percentage of mothers of children aged 0–23 months who mention at least two correct responses that relate to safer sex or practices involving blood.

Did mother know 2 or more accepted avoidance measures of HIV?	Frequency	Percent	Cum Percent	
Baseline	51/298	19.2%	19.2%	<div style="width: 19.2%; height: 10px; background-color: yellow;"></div>
Final	132 /298	52.0%	52.0%	<div style="width: 52.0%; height: 10px; background-color: yellow;"></div>

##### 95% Conf Limits

**Baseline** 14.6% 24.4%

**Final** 45.6% 58.3%

While a large majority of mothers (81.9% at baseline and 93.6% at final) have heard of HIV or AIDS, at baseline only 19.2% of mothers were able to cite at least two ways to reduce the risk of contracting HIV. Through HIV/AIDS prevention educational sessions and messaging the project was able to raise this level significantly to 52.0%.

# CHAPTER 10

## WATER AND SANITATION

### 11.1 Drinking water and latrine Practices

The access to sanitary waste facilities and the cleanliness of household drinking water are important factors in the mitigation of the spread of organisms causing diarrhea and febrile illnesses. The use of water from unprotected sources that is stored in large open containers with multiple users causes higher rates of diarrhea, febrile disease, and morbidity. Clean water sources and water treatment, in conjunction with proper hygiene and hand washing practices, can drastically reduce the prevalence of childhood diarrhea.

#### 103. Percent of households with an improved source for drinking water (Piped, borehole, protected well, protected spring, rain water collection)

Improved water source	Frequency	Percent	Cum Percent	
Baseline	216/300	72.0%	72.0%	
Final	278 /300	92.7%	92.7%	

#### 95% Conf Limits

Baseline	66.6%	77.0%
Final	89.1%	95.3%

#### 104. Percentage of households with access to a sanitary latrine (a flush-pour toilet, VIP latrine or pit latrine with slab).

sanitation	Frequency	Percent	Cum Percent	
Baseline	97 /300	32.3%	32.3%	
Final	89/300	29.7%	29.7%	

#### 95% Conf Limits

Baseline	27.1%	37.9%
Final	24.6%	35.2%

The percentage of households with access to clean water sources in GCM County significantly increased during the life of the project, from 72.0% of households at baseline to 92.7% of households at final. However, lack of access to sanitation facilities continues to be a challenge for this population, and contributes to the childhood morbidity in this county. The fact that less than one third of families (32.3% at baseline and 29.7% at final) have no access to acceptable sanitation facilities leads to unsanitary conditions that increase the risk of disease throughout all sectors of the population.

## CHAPTER 11

### SUMMARY

The Grand Cape Mount Child Survival Project supported the introduction of Integrated Management of Childhood Illness (IMCI) as an approach to addressing the leading causes of child morbidity and mortality in Grand Cape Mount County. Specifically, the project devoted 30% of effort to nutrition (including breastfeeding, maternal nutrition and micronutrients), 20% of effort to Pneumonia Case Management, 20% of effort to Control of Diarrheal Disease, 20% of effort to Control of Malaria and 10% of effort for Immunizations.

The nutritional status of children aged 0-23 months was of major concern in GCM County at the outset of the project. The overall rate of under-nutrition was found to be 27.1%, with 14.1% moderately underweight and 13.1% severely underweight. This is nearly identical to the results found by a WV study in 2002 which revealed the overall rate of under-nutrition to be 27.5% in GCM County. In addition, mothers were immediately and exclusively breastfeeding their newborns at a rate of only 33.7%, and were providing prelactal feeds (giving the newborn any other liquids) during the first 3 days of the newborns life at a rate of 26.8%. In addition, only 62.8% of mothers continued to breastfeed their children until 23 months of age. Exclusive breastfeeding of children aged 0-5 months was found to be at a higher rate than the NANUS study, with 14.0% of children aged 0-5 months receiving complimentary foods. However, only 53.7% of mothers had the knowledge that children under the age of 6 months should be exclusively breastfed.

Feeding behaviors improved dramatically over the life of the project, with all of the following indicators showing statistically significant improvement:

- Exclusive breastfeeding was significantly raised from a baseline of 33.7% to 87.0%.
- Prelactal feeding of newborns during the first 3 days of life was significantly reduced from 26.8% to 5.7%.
- The exclusive breastfeeding of children aged 0-5 months, which was already high at 86.0%, was still significantly raised to 98.0%.
- Mothers' knowledge of the need for exclusive breastfeeding rose significantly, from 53.7% to 97.0%.
- Complimentary feeding of children aged 6-9 months rose significantly from 37.5% to 76.3%.
- Continued breastfeeding of children aged 18-23 months was also raised significantly from 62.8% to 74.3%.
- Children receiving Vitamin A in the last six months rose significantly from 76.0% to 91.0%.

A major source of the problem of undernutrition was linked to complimentary feeding practices in GCM County. The baseline study found that only 19.9% of breastfed and 16.7% of non-breastfed children aged 6-23 months received the minimum suggested number of complimentary feedings in the 24 hours preceding the survey. Added to this was the fact that only 21.9% of breastfed and 12.5% of non-breastfed children were eating the minimum number of essential food groups to meet the recommended dietary diversity standards. The Child Survival Project promoted the immediate initiation of breastfeeding, exclusive and prolonged breastfeeding, and proper complimentary feeding for children aged 6-23 months in regards to diversity, density, quantity and frequency. Growth monitoring of WFA was utilized to identify and treat malnutrition and to educate mothers on nutrition, which was coupled with the training of health workers in counseling. Through these interventions these important nutritional practices improved, and at final it was found that 77.1% of breastfed and 18.2% of non-breastfed children aged 6-23 months received the minimum suggested number of complimentary feedings in the 24 hours preceding the survey. Added to this is the fact that 66.3% of breastfed and 50.0% of non-breastfed children are eating the minimum number of essential food groups to meet the recommended dietary diversity standards. This culminates in the fact that at final, children aged 6-23 months are now meeting the IYCF standard at a rate of 55.3%, significantly improved from the baseline of 16.3%. However, these improvements did not culminate in a lower rate of undernutrition, which was 27.1% at baseline and 23.7% at final. Further breakdown of the age groups within the sample revealed that the 0-6m age group did significantly better than the rest of the age groups, both at baseline and final. Also, at baseline (not final) the 18-23m age group did significantly worse than the other age groups. By final the 18-23m age group did not perform significantly worse than the 6-9m, 6-11m, and 12-17m age groups. Due to the fact that all feeding behaviors surveyed were significantly increased, the fact that undernutrition did not significantly improve in the groups comprising older children may be due to other factors, such as increased activity, such as walking long distances with their mothers to the fields if their mother is carrying wood, supplies to market, or another child. The percentage of children aged 0-23 months receiving supplemental Vitamin A in the last 6 months rose from a rate of 76.2% at baseline to a rate of 76.2% at final. At baseline, only 44.1% of children had received de-worming medicine in the previous 6 months. This was increase by final to a rate of 60.7%.

Immunization rates were low in GCM County at the start of the project, with full EPI coverage by 12 months of age at only 18.9% in children aged 12-23 months. This compared with the rates found by the Liberia Demographic Health Survey of 1999/2000 which found rates of 32%, and NANUS which found rates of 28%. EPI Access, measured by card verified rates of DPT1 vaccination by 12 months of age, was only 46.8%. Health system performance, measured by the rate of DPT3 immunization by 12 months of age, card verified, was only 30.6%. This also signified that there was a high drop-out rate (DPT1-DPT3) measured by card verification or mothers recall of 30.6%. Additionally, maternal TT vaccination was relatively low at 61.3%. MTI and its partners utilized the IMCI and C-IMCI approach in order to improve vaccination rates and utilization of vaccination services by the community. Demand for EPI services was created through the HHPs including messages to the community about bringing children

in for immunization, and referring children to the HFs. The project provided logistical support for National Immunization days, advocated for the implementation of routine EPI services, supported EPI outreach and reduced missed opportunities for immunizations through IMCI. The project addressed gaps in immunization service delivery, including a lack of training of MoH staff and gaps in the cold chain and other equipment at the HF level. In addition, the MoH in conjunction with MTI Liberia project staff conducted immunization training with HF staff in logistics and drug forecasting, and injection technique and safety. These interventions increased full EPI coverage by 12 months of age to 52.6% in children aged 12-23 months. EPI Access (DPT1) was significantly raised to 82.5%, and Health system performance (DPT3) was significantly raised to 71.1%. Additionally, the drop-out rate (DPT1-DPT3), measured by card verification or mothers recall, was significantly reduced to 6.2%. Likewise, maternal TT vaccination was significantly increased to 94.7%.

The prevalence of ARI (children with a chest related cough and fast/difficult breathing) in children aged 0-23 months in GCM County was 51.7% at baseline.. This rate was similar to the rate found in the Liberia Demographic Health Survey 1999/2000 of 39.3% in children less than 59 months and 52.5% in children aged 6-11 months. This rate was significantly lower by the final evaluation, at 32.7%. At baseline, children with ARI were treated by seeking advice or treatment at a qualified health facility at a rate of only 43.2%. Also, children with ARI were treated by either seeking advice/treatment at a qualified health facility or treated with an antibiotic at a rate of only 49.7%, which reveals that most mothers did not routinely seek help when their child was sick, and did not understand the importance of seeking timely medical advice or seeking proper antibiotic treatment for their children who become ill with cough and respiratory infection. To address these issues, the project trained HF personnel in IMNCI protocol including measuring respiratory rate which is the best measure of respiratory problems in infants and young children. Through Care Groups mothers were educated to recognize the signs of ARI including cough and difficulty/fast breathing and to understand the importance of seeking timely medical treatment for their child with ARI. Ensuring that antibiotics are readily available at the HF level was also a priority of the project. Through social and behavior change and the community referral system, the project was able to significantly increase health seeking behaviors of mothers in GCM County, as can be seen by the fact that at final evaluation children with ARI were treated by seeking advice or treatment at a qualified health facility at a rate of 90.8%. Also, children with ARI were treated by either seeking advice/treatment at a qualified health facility or treated with an antibiotic at a rate of 93.9%.

The Liberia Demographic Health Survey of 1999/2000 showed that the percentage of diarrhea in children aged 0-59 months was 43.75%, with the rate particularly high in children aged 12-23 months, at 54.9%. While diarrhea is a major cause of morbidity in Liberia, it was found to be relatively low at baseline in Grand Cape Mount County, with a rate of 30.1%. The project was able to lower this rate significantly, to a level of only 14.8%, by the end of the project. While at baseline 74.2% of mothers treated their child's diarrhea with Oral Rehydration Solution and/or a recommended home fluid, only 51.7% of mothers offered their child more breast milk or fluid and only 18.2% of mothers

offered their child more or the same amount of food when their child had diarrhea. Therefore, key home care practices that were emphasized by this project included continued breastfeeding and fluids as well as the frequent feeding of small amounts of food, and catch-up feeding. These interventions caused a significant improvement in the care of diarrhea. By final, the percentage of mothers who treated their child's diarrhea with Oral Rehydration Solution and/or a recommended home fluid was not significantly raised but was at the high level of 84.1%. There was a significant increase in the percentage of mothers who offered their child more breast milk or fluid, with a rate of 88.6%, and also a significant increase in the percentage of mothers who offered their child more or the same amount of food when their child had diarrhea, at a rate of 57.5%. In addition, at baseline only 28.1% of mothers sought appropriate outside advice or treatment for their child with diarrhea. This was also significantly increased to 72.7%. Proper hygiene and hand washing behaviors are important components of mitigating childhood illnesses, particularly diarrhea and febrile illnesses. At baseline the percentage of mothers of children 0-23 months who lived in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period was only 19.0%. Proper hygiene practices, including proper hand washing practices, were emphasized along with proper techniques to store and treat water effectively. The project was able to significantly raise the percentage of mothers who used soap and washed their hands appropriately from 19% at baseline to 87.7% at final. In addition, the percentage of households in GCM County that have access to an improved water source was significantly increased from 72.0% at baseline to 92.7% at final. However, the percentage of households that treat water effectively was not significantly changed from baseline (21.7%) to final (18.7%). The main reason for this was the fact that 92.7% of households were provided with improved water sources and the diarrhea rate is very low at 14.8%. It was therefore very difficult to motivate households to spend the time and expense to treat water when they were not overly concerned with the diarrhea rate in comparison to the other health problems they were encountering. Also, the percentage of households that have access to a sanitary latrine was not significantly changed from baseline (32.3%) to final (29.7%).

The prevalence of fever in children aged 0-23 months in GCM County was found to be quite high at baseline, with a rate of 70%. Malaria was reported by AHA to be the motive for 36% of admissions to the Sinje Health Center and represented 31% of all morbidity seen in their six clinics.<sup>40</sup> Part of the reason for this was explained by the fact that only 17.7% of children less than 24 months slept under an insecticide treated bed net at the outset of the project. This finding is almost identical to the finding of Liberia Malaria Survey in 2004/2005 which found that only 18% of households in Liberia owned a mosquito net. MTI was able to significantly increase this percentage to 69.3% through community education regarding the control and treatment of malaria. Of the children who had a fever that had ended in the 2 weeks prior to the baseline survey, only 3.6% of mothers treated their child with an effective anti-malarial drug within 24 hours after the fever began, which is also the finding of Liberia Malaria Survey which showed that only 3% of children under the age of 5 years received Artemisinin-based combination therapies (ACT) treatment. Project activities for malaria focused on the prevention of malaria with community education on use of Insecticide Treated Nets (ITNs),



Intermittent Preventative Treatment (IPT) for pregnant women and adherence to treatment protocols. The project worked with the MOHSW and NDS sources to ensure adequate ACT pharmaceutical availability and training health care workers and community caregivers in their use. The project was able to significantly impact the prompt and effective treatment of malaria, and at final 32.5% of children aged 0-23 months were treated with an effective anti-malarial drug within 24 hours after the fever began. Also, while at baseline only 43% of mothers interviewed understood the cause of malaria, due to extensive community education initiatives the percentage of mothers who knew the cause of malaria was significantly raised to 80.0%.

In conclusion, by working in partnership with the MoH, the CHT, and CHAL, MTI Liberia implemented a CSP that improved the health of village communities in GCM County through strengthening HFs and the MoH's ability to address community health needs. This was accomplished through a combination of enhancing the capacity of the HFs and the HF staff in performing their functions more effectively, and through Care Groups changing the community members' knowledge, attitudes, behaviors, and practices. This included a general focus on training in intervention areas with a health promotion/education emphasis, facilitating consistent preventive-based services, improving job aids, and establishing a system for continuous quality improvement.

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<sup>39</sup> *ibid.*

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## Appendix A: Liberia CSP Project Matrix Indicators

CSHGP Intervention Area	Project Matrix Indicator	Baseline	Final
Nutrition	<u>Immediate and exclusive breastfeeding of newborns:</u> Percent of newborns who were put to the breast within one hour of delivery and did not receive prelactal feeds	33.7% (28.3%-39.3%)	87.0% (82.7%-90.6%)
	<u>Introduction of complimentary foods:</u> % infants 6-9m receiving breastmilk and complementary foods	37.5% (22.7%-54.2%)	76.3% (65.2%-85.3%)
	<u>Vitamin A Supplementation in the last 6 months:</u> Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months (Mother's recall).	76.2% (67.8%-83.3%)	91.4% (86.5%-94.9%)
Immunization	<u>Health System Performance regarding Immunization services:</u> Percentage of children 12-23 months who received DPT3 before they reached 12 months by the time of the interview, card verified.	30.6% (22.2%-40.1%)	71.1% (61.0%-79.9%)
	<u>EPI Coverage:</u> Percentage of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age, card verified	18.9% (12.1%-27.5%)	52.6% (42.2%-62.8%)
	<u>Maternal TT Vaccination:</u> Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.)	61.3% (55.6%-66.9%)	94.7% (91.5%-96.9%)
Control of Diarrhea	<u>ORT use:</u> Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration solution (ORS) and/or recommended home fluids.	74.2% (63.8%-82.9%)	84.1% (69.9%-93.4%)
	<u>Increased fluid intake during diarrheal episode:</u> Percentage of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness	51.7% (40.8%-62.4%)	88.6% (75.4%-96.2%)
	<u>Point of Use (POU):</u> Percentage of households of children 0-23 months that treat water effectively.	21.7% (17.1%-26.8%)	18.7% (14.4%-23.5%)
	<u>Appropriate Hand washing Practices:</u> Percentage of mothers of children 0-23 months who live in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period.	19.0% (14.7%-23.9%)	87.7% (83.4%-91.2%)

<b>ARI/Pneumonia</b>	<u>Appropriate Care Seeking for Pneumonia:</u> Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider.	43.2% (35.3%-51.4%)	90.8% (83.3%-95.7%)
<b>Malaria</b>	<u>Child sleeps under an insecticide-treated bednet:</u> Percentage of children 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night.	17.7% (13.5%-22.5%)	69.3% (63.8%-74.5%)
	<u>Child with fever receives appropriate antimalarial treatment:</u> Percentage of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.	3.6% (1.0%-8.9%)	32.5% (24.3%-40.7%)

**Appendix B: Revised Rapid CATCH indicators 2008  
Liberia CSP August 2010**

<b>CSHGP Intervention Area</b>	<b>Rapid CATCH Indicator</b>	<b>Baseline</b>	<b>Final</b>
<b>Maternal Newborn Care</b>	(1) <u>Antenatal Care</u> : Percentage of mothers of children age 0-23 months who had four or more antenatal visits when they were pregnant with the youngest child	NA (4 visits was not part of the Rapid CATCH in 2006)	71.3% (65.9%-76.4%)
	(2) <u>Maternal TT Vaccination</u> : Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.)	61.3% (55.6%-66.9%)	94.7% (91.5%-96.9%)
	(3) <u>Skilled Delivery Assistance</u> : Percentage of children age 0-23 months whose births were attended by skilled personnel	21.3% (16.8%-26.4%)	33.7% (29.3%-40.3%)
	(4) <u>Post Partum visit to check on mother within the first 3 days after birth</u> : Percent of mothers of children 0-23 months who received a post-partum visit by an appropriate trained health worker within three days after the birth of the youngest child.	6.0% (3.6%-9.3%)	39.3% (33.8%-45.1%)
	(5) <u>Modern Contraception</u> : Percentage of mothers of children age 0-23 months who are using a modern contraceptive method	NA (not part of the Rapid CATCH in 2006)	10.0% (6.8%-14.0%)
<b>Breastfeeding</b>	(6) <u>Exclusive breastfeeding</u> : Percentage of children 0-5 months who were exclusively breastfed during the last 24 hours	86.0% (78.5%-91.6%)	98.0% (93.0%-99.8%)
	(7) <u>IYCF</u> : Percent of children age 6-23 months fed according to a minimum of appropriate feeding practices	18.9% (13.1%-24.7%)	55.3% (48.1%-62.4%)
<b>Vitamin A Supplementation</b>	(8) <u>Vitamin A Supplementation in the last 6 months</u> : Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months (Mother's recall).	76.2% (67.8%-83.3%)	91.4% (86.5%-94.9%)
<b>Immunization</b>	(9) <u>Access to immunization services</u> : Percent of children aged 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey	82.9% (74.6%-89.4%)	92.8% (85.7%-97.9%)
	(10) <u>Health System Performance regarding Immunization services</u> : Percent of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey	52.3% (42.6%-61.8%)	87.6% (79.4%-93.4%)

	(11) <u>Measles vaccination</u> : Percent of children aged 12-23 months who received measles vaccine according to the vaccination card or mother's recall by the time of the survey	65.8% (56.2%-74.5%)	75.3% (65.5%-83.5%)
<b>Malaria</b>	(12) <u>Child sleeps under an insecticide-treated bednet</u> : Percentage of children 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night.	17.7% (13.5%-22.5%)	69.3% (63.8%-74.5%)
	(13) <u>Child with fever receives appropriate antimalarial treatment</u> : Percentage of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.	3.6% (1.0%-8.9%)	32.5% (24.3%-40.7%)
<b>Control of Diarrhea</b>	(14) <u>ORT use</u> : Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration Solution (ORS) and/or recommended home fluids.	74.2% (63.8%-82.9%)	84.1% (69.9%-93.4%)
<b>ARI/Pneumonia</b>	(15) <u>Appropriate Care Seeking for Pneumonia</u> : Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider.	43.2% (35.3%-51.4%)	90.8% (83.3%-95.7%)
<b>Water and Sanitation</b>	(16) <u>Point of Use (POU)</u> : Percentage of households of children 0-23 months that treat water effectively.	21.7% (17.1%-26.8%)	18.7% (14.4%-23.5%)
	(17) <u>Soap at the Place for washing</u> : Percentage of mothers of children age 0-23 months who live in a household with soap at the place for hand washing	*39.7% (34.1%-45.4%)	98.3% (96.2%-99.5%)
<b>Anthropometry</b>	(18) <u>Underweight</u> : Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to WHO/HCHS reference population)	27.1% (22.1%-32.6%)	23.7% (19.0%-27.0%)

- In 2006 the indicator was more stringent-there had to be a designated hand washing facility as well as soap present, which is why this indicator is lower.



## Appendix C

### Study indicators listed by intervention area

A complete listing of the study indicators and their definitions is presented below.

#### 1. Child Spacing

Adequate birth spacing	Percentage of children age 0-23 months that were born at least 24 months after the previous surviving child.	<u>Numerator:</u> Number of children age 0-23 months who were born at least 24 months after the previous surviving child <u>Denominator:</u> Number of children 0-23 months who have an older surviving sibling.
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#### 2. Anthropometry

Percent Underweight	Percent of children aged 0-23 months who are less than 2 standard deviations below the median weight-for-age of the reference population	<u>Numerator:</u> Number of children age 0-23 months who are less than 2 standard deviations below the median weight-for-age of the reference population <u>Denominator:</u> Number of children 0-23 months that were measured.
Percent Severely Underweight	Percent of children aged 0-23 months who are less than 3 standard deviations below the median weight-for-age of the reference population	<u>Numerator:</u> Number of children age 0-23 months who are less than 3 standard deviations below the median weight-for-age of the reference population <u>Denominator:</u> Number of children 0-23 months that were measured.

#### 3. Maternal Newborn Care

Prenatal Care Coverage	Percent of mothers who had at least one prenatal visit prior to the birth of her youngest child less than 24 months of age	<u>Numerator:</u> Number of mothers of children 0-23 months who report having at least one prenatal visit with appropriate trained health worker during their pregnancy with this child. <u>Denominator:</u> Number of mothers of children 0-23 months.
Iron Supplementation: Coverage	Percent of mothers who received/bought iron supplements while pregnant with the youngest child less than 24 months of age	<u>Numerator:</u> Number of mothers of children 0-23 months who report having received/bought iron supplements and report taking them. <u>Denominator:</u> Number of mothers of children 0-23 months.
Maternal TT Vaccination:	Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or	<u>Numerator:</u> Number of mothers of children 0-23 months who report receiving at least two doses of TT (or Td) before the birth of their youngest child. <u>Denominator:</u> Number of mothers of children 0-23 months interviewed

Skilled Delivery Assistance	Td injections.) Percentage of children age 0-23 months whose births were attended by skilled personnel	<u>Numerator:</u> Number of children 0-23 months whose birth was attended by a doctor, nurse or auxiliary nurse with midwifery skills (Key is that all personnel must have midwifery skills) <u>Denominator:</u> Number of children 0-23 months in the survey
Post Partum visit to check on mother within the first 3 days after birth	Percent of mothers of children 0-23 months who received a post-partum visit by an appropriate trained health worker within three days after the birth of the youngest child.	<u>Numerator:</u> Mothers of children 0-23 months who received a post-partum visit by an appropriate trained health worker within three days after the birth of the youngest child. <u>Denominator:</u> Number of mothers of children 0-23 months.
Post Partum visit to check on newborn within the first 3 days after birth	Percent of children 0-23 months who received a post -partum visit by an appropriate trained health worker within three days after birth	<u>Numerator:</u> Children 0-23 months who received a post-partum visit by an appropriate trained health worker within three days after birth. <u>Denominator:</u> Number of children 0-23 months. Appropriate trained health workers includes: skilled birth attendant (SBA) or trained community health worker (CHW) which includes trained traditional birth attendants (TBA).

#### 4. Breastfeeding and Young Child Feeding

Immediate and exclusive breastfeeding of newborns	Percent of newborns who were put to the breast within one hour of delivery and did not receive prelactal feeds	<u>Numerator:</u> Number of children 0-23 months who were put to the breast within one hour of delivery and did not receive prelactal feeds. <u>Denominator:</u> Total number of children 0-23 months in the survey.
Exclusive breastfeeding	Percentage of children 0-5 months who were exclusively breastfed during the last 24 hours	<u>Numerator:</u> Number of children 0-5 months who were given only breastmilk during the last 24 hours <u>Denominator:</u> Total number of children 0-5 months in the survey.
Mothers knowledge of Exclusive breastfeeding	Percent of mothers who know to exclusively breastfeed their child when the child is aged 0-5 months	<u>Numerator:</u> Number of mothers of children 0-23 months who report that you should only feed breastmilk to a child aged 0-5 months. <u>Denominator:</u> Number of mothers of children 0-23 months.
Infant and Young Child Frequency of semi-solid or solid Feeds	Percent of infants and young children aged 6-23 months fed according to a minimum of appropriate feeding practices.	<u>Numerator:</u> Number of infants and young children aged 6-23 months fed according to a minimum of appropriate feeding practices <u>Denominator:</u> Number of children 6-23 months in the survey
Ever breastfed 0-23 months	Percent of children aged 0-23 months ever breastfed	<u>Numerator:</u> Number of children 0-23 months who were ever breastfed. <u>Denominator:</u> Total number of children 0-23 months in the survey.
Continued breastfeeding 6-11 months	Percent of children aged 6-11 months who are still breastfeeding	<u>Numerator:</u> # children aged 6-11 months who are still breastfeeding. <u>Denominator:</u> Total number of children 6-11 months in the survey.

Continued breastfeeding 12-17 months	Percent of children aged 12-17 months who are still breastfeeding	<u>Numerator:</u> # children aged 12-17 months who are still breastfeeding. <u>Denominator:</u> Total number of children 12-17 months in the survey.
Continued breastfeeding 18-23 months	Percent of children aged 6-11 months who are still breastfeeding	<u>Numerator:</u> # children aged 18-23 months who are still breastfeeding. <u>Denominator:</u> Total number of children 18-23 months in the survey.
Vitamin A supplementation 6-23 months	Percent of children aged 6-23 months receiving vitamin A supplementation in 6 months preceding survey	<u>Numerator:</u> : # children aged 6-23 months who received a Vitamin A dose in the last 6 months <u>Denominator:</u> Total number of children 6-23 months in the survey.
Vitamin A-rich food 6-23 months	Percent of children aged 6-23 months who ate vitamin A-rich foods in 24 hours preceding survey	<u>Numerator:</u> # of children aged 6-23 months who ate vitamin A-rich foods in 24 hours preceding survey <u>Denominator:</u> Total number of children 6-23 months in the survey.
Iron-rich food 6-23 months	Percent of children aged 6-23 months who ate iron-rich foods in 24 hours preceding survey	<u>Numerator:</u> # of children aged 6-23 months who ate iron-rich foods in 24 hours preceding survey <u>Denominator:</u> Total number of children 6-23 months in the survey.
Fortified food 6-23 months	Percent of children aged 6-23 months who ate fortified food in 24 hours preceding survey	<u>Numerator:</u> # of children aged 6-23 months who ate fortified foods in 24 hours preceding survey <u>Denominator:</u> Total number of children 6-23 months in the survey.
Animal source flesh food 6-23 months	Percent of children aged 6-23 months who ate beef, game, poultry, fish, shellfish, or organ meat in 24 hours preceding survey	<u>Numerator:</u> # of children aged 6-23 months who ate animal source flesh food in 24 hours preceding survey <u>Denominator:</u> Total number of children 6-23 months in the survey.
Egg 6-23 months	Percent of children aged 6-23 months who ate eggs in 24 hours preceding survey	<u>Numerator:</u> # of children aged 6-23 months who ate egg in 24 hours preceding survey <u>Denominator:</u> Total number of children 6-23 months in the survey.
Dairy 6-23 months	Percent of children aged 6-23 months who had dairy in 24 hours preceding survey	<u>Numerator:</u> # of children aged 6-23 months who had dairy in 24 hours preceding survey <u>Denominator:</u> Total number of children 6-23 months in the survey.
Any animal source food 6-23 months	Percent of children aged 6-23 months who ate any animal source food in 24 hours preceding survey	<u>Numerator:</u> # of children aged 6-23 months who ate animal source food in 24 hours preceding survey <u>Denominator:</u> Total number of children 6-23 months in the survey.
Any vitamin A-rich plant foods (and red palm oil) 6-23 months	Percent of children aged 6-23 months who ate any vitamin A-rich plant food in 24 hours preceding survey	<u>Numerator:</u> # of children aged 6-23 months who ate any vitamin A-rich plant food in 24 hours preceding survey <u>Denominator:</u> Total number of children 6-23 months in the survey.
Continued breastfeeding 6-23 months	Percent of children aged 6-23 months who are still breastfeeding	<u>Numerator:</u> # children aged 6-23 months who are still breastfeeding. <u>Denominator:</u> Total number of children 6-23 months in the survey.
Fed milk or milk products for non-breastfed children 6-23 months	Percent of non-breastfed children aged 6-23 months who were fed milk, dairy products, or infant formula in 24 hours	<u>Numerator:</u> # non-breastfed children aged 6-23 months who were fed milk, dairy products, or infant formula in 24 hours preceding survey. <u>Denominator:</u> Total number of non-breastfed children 6-23 months in the survey.

Minimum frequency of feeding for breastfed children 6-23 months	preceding survey Percent of breastfed children aged 6-23 months who ate solid or semi-solid foods at least the minimum recommended number of times in 24 hours preceding survey	<u>Numerator:</u> of breastfed children aged 6-23 months who ate solid or semi-solid foods at least the minimum recommended number of times in 24 hours preceding survey (6-8 months $\geq$ 2; 9-23 months $\geq$ 3) <u>Denominator:</u> Total number of breastfed children 6-23 months in the survey.
Minimum frequency of feeding for non-breastfed children 6-23 months	Percent of non-breastfed children aged 6-23 months who ate solid or semi-solid foods at least the minimum recommended number of times in 24 hours preceding survey	<u>Numerator:</u> of non-breastfed children aged 6-23 months who ate solid or semi-solid foods at least the minimum recommended number of times in 24 hours preceding survey (6-23 months $\geq$ 4) <u>Denominator:</u> Total number of non-breastfed children 6-23 months in the survey.
Minimum dietary (food group) diversity for breastfed children 6-23 months	Percent of breastfed children aged 6-23 months who received minimum (3 or more) dietary (food group) diversity in 24 hours preceding survey	<u>Numerator:</u> of breastfed children aged 6-23 months who received minimum (3 or more) dietary (food group) diversity in 24 hours preceding survey <u>Denominator:</u> Total number of breastfed children 6-23 months in the survey.
Minimum dietary (food group) diversity for non-breastfed children 6-23 months	Percent of non-breastfed children aged 6-23 months who received minimum (4 or more) dietary (food group) diversity in 24 hours preceding survey	<u>Numerator:</u> of non-breastfed children aged 6-23 months who received minimum (4 or more) dietary (food group) diversity in 24 hours preceding survey <u>Denominator:</u> Total number of non-breastfed children 6-23 months in the survey.
IYCF Practice Indicator 6-23 months	Percent of infants and young children aged 6-23 months fed according to a minimum of appropriate feeding practices	# breastfed children aged 6-23 months who met the Minimum frequency of feeding and the Minimum dietary (food group) diversity as described above for breastfed children + # non-breastfed children aged 6-23 months who met the Minimum frequency of feeding and the Minimum dietary (food group) diversity as described above for breastfed children as described above, for non-breastfed children <u>Denominator:</u> Total number of children 6-23 months in the survey.
De-worming medicine coverage	Percent of children aged 6-23 months receiving de-worming medicine in 6 months preceding survey	<u>Numerator:</u> : # children aged 6-23 months who received de-worming medicine in the last 6 months <u>Denominator:</u> Total number of children 6-23 months in the survey.

## 5. Child Immunization

Possession of a child	Percent of mothers of	<u>Numerator:</u> Number of mothers of children 0-23
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vaccination card or health booklet – Ever had	children 0-23 months who were ever given a vaccination card of health book for their youngest child 0-23 months	months who were ever given a vaccination card of health book for their youngest child 0-23 months <u>Denominator:</u> Number of mothers of children 0-23 months interviewed.
Possession of a child vaccination card or health booklet – Currently have EPI Access	Percent of children 0-23 months that currently have a vaccination card of health book. Percent of children aged 12-23 months who received DPT1	<u>Numerator:</u> Number of children 0-23 months currently have a vaccination card of health book <u>Denominator:</u> Number of children 0-23 months in the survey. <u>Numerator:</u> Number of children 12-23 months who received DPT1 before they reached 12 months of age as verified by vaccination card or health booklet <u>Denominator:</u> Number of children 12-23 months in the survey
EPI Coverage	Percent of children aged 12-23 months who received BCG, DPT3, OPV3, and measles vaccines by the time of the survey	<u>Numerator:</u> Number of children 12-23 months who received BCG, DPT3, OPV3, and measles vaccines DPT1 before they reached 12 months of age as verified by vaccination card or health booklet <u>Denominator:</u> Number of children 12-23 months in the survey
Health System Performance regarding Immunization services:	Percentage of children age 12-23 months who received a DPT3 vaccination before they reached 12 months	<u>Numerator:</u> # of children who received a DPT3 vaccination before they reached age 12 months as verified by vaccination card or child health booklet <u>Denominator:</u> Total # of children age 12-23 months in the survey
<u>Antigen and dose specific coverage:</u> Card verified by the time of the survey: for each vaccine and dose that is part of the national vaccination schedule, specifically for: BCG, Polio1, Polio2, Polio3, DPT1, DPT2, DPT3, Measles	Percentage of children 12-23 months who received antigen and dose by the time of the survey as verified by vaccination card or health booklet	<u>Numerator:</u> Number of children 12-23 months who received antigen dose by the time of the survey as verified by vaccination card or health booklet <u>Denominator:</u> Number of children 12-23 months in the survey
<u>Antigen and dose specific coverage:</u> Card verified or mother recall by the time of the survey: for each vaccine and dose that is part of the national vaccination schedule, specifically for: BCG, Polio1, Polio2, Polio3, DPT1, DPT2, DPT3, Measles	Percentage of children 12-23 months who received antigen and dose by the time of the survey as verified by vaccination card or health booklet or mother recall	<u>Numerator:</u> Number of children 12-23 months who received antigen dose by the time of the survey as verified by vaccination card or health booklet or mother recall <u>Denominator:</u> Number of children 12-23 months in the survey
Drop-out Rate (DPT1-DPT3)/DPT1:	Percentage of children aged 12-23 months who received DPT1 but did not receive follow up immunization and therefore did not receive	(Percentage of children 12-23 months who received <u>Numerator:</u> DPT1 by the time of the survey according to card or mother's recall) – (Percentage of children 12-23 months who received DPT3 at the time of the survey according to card or mother's recall)

	DPT3	<u>Denominator:</u> Percentage of children 12-23 months who received DPT1 by the time of the survey according to card or mother's recall
Measles vaccination:	Percentage of children 12-23 months who received a measles vaccination	<u>Numerator:</u> Number of children 12-23 months who had received a measles vaccination by the time of the interview as recalled by the mother or card verified. <u>Denominator:</u> Number of children 12-23 months in the survey.

## 6. Integrated Management of Childhood Illnesses (IMCI)

Maternal knowledge of child danger signs	Percentage of mothers of children 0-23 months who know at least two signs of childhood illness that indicate the need for treatment	<u>Numerator:</u> Number of mothers of children age 0–23 months who know at least two signs of childhood illness that indicate the need for treatment <u>Denominator:</u> Number of mothers of children age 0–23 months in the survey
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## 7. Malaria Prevention and Treatment

Child sleeps under an insecticide-treated bednet	Percentage of children 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night.	<u>Numerator:</u> Number of children 0-23 months who slept under an insecticide-treated bed net the previous night <u>Denominator:</u> Number of children 0-23 months in the survey
Prevalence of fever	Percent of mothers of children 0-23 months who report that their child had a fever in the 2 weeks prior to the survey	<u>Numerator:</u> Number of children 0-23 months that have had a fever in the 2 weeks prior to the survey <u>Denominator:</u> Number of children 0-23 months included in the survey
Health Facility Care-seeking for Fever	Percentage of children aged 0-23 months with a febrile episode that ended during the last two weeks who were brought to a health facility within 48 hours after the fever began	<u>Numerator:</u> Percentage of children aged 0-23 months with a febrile episode that ended during the last two weeks who were brought to a health facility within 48 hours after the fever began <u>Denominator:</u> Number of children 0-23 months that had a fever in the last 2 weeks, but the fever has ended at the time of the interview
Child with fever receives appropriate antimalarial treatment	Percentage of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.	<u>Numerator:</u> Number of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began <u>Denominator:</u> Number of children 0-23 months in the survey with a febrile episode that ended during the last two weeks
Mothers knowledge of	Percentage of mothers of	<u>Numerator:</u> Number of mothers of children age 0–

the cause of malaria	children 0-23 months who know the cause of malaria	23 months who know the cause of malaria <u>Denominator:</u> Number of mothers of children age 0–23 months in the survey
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## 8. Control of diarrhea

Prevalence of diarrhea	Percent of mothers of children 0-23 months who report that their child had a diarrhea in the 2 weeks prior to the survey	<u>Numerator:</u> Number of children 0-23 months that have had diarrhea in the 2 weeks prior to the survey <u>Denominator:</u> Number of children 0-23 months included in the survey
ORT use	Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration Solution (ORS) and/or recommended home fluids.	<u>Numerator:</u> Number of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration Solution (ORS) and/or recommended home fluids <u>Denominator:</u> Number of children 0-23 months who had diarrhea in the last two weeks
Zinc use	Percentage of children 0-23 months with diarrhea in the last two weeks who were treated with zinc supplements	<u>Numerator:</u> Number of children 0-23 months with diarrhea in the last two weeks who were treated with zinc supplements <u>Denominator:</u> Number of children 0-23 months who had diarrhea in the last two weeks
Use of Medicine during diarrhea	Percentage of children 0-23 months with diarrhea in the last two weeks who were not treated with anti-diarrheals or antibiotics.	<u>Numerator:</u> Number of children 0-23 months with diarrhea in the last two weeks who were not treated with anti-diarrheals or antibiotics <u>Denominator:</u> Number of children with diarrhea in the last two weeks
Increased fluid intake during diarrheal episode	Percentage of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness	<u>Numerator:</u> Number of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness <u>Denominator:</u> Number of children with diarrhea in the last two weeks
Continued feeding during a diarrheal episode	Percentage of children 0-23 months with diarrhea in the last two weeks who were offered the same amount or more food during the illness	<u>Numerator:</u> Number of children 0-23 months with diarrhea in the last two weeks who were offered the same amount or more food during the illness <u>Denominator:</u> Number of children with diarrhea in the last two weeks
Care Seeking for Diarrhea	Percent of children 0-23 months with diarrhea in the past two weeks whose mothers sought appropriate outside advice or treatment for the illness	<u>Numerator:</u> Number of children 0-23 months with diarrhea in the past two weeks whose mothers sought appropriate outside advice or treatment for the illness <u>Denominator:</u> Number of children with diarrhea in the last two weeks Appropriate source are: hospitals, health centers, health posts, mobile clinics, field workers, private doctors or nurses. It excludes pharmacy, shop or traditional healer.
Mothers knowledge of ORS	Percent of mothers of children 0-23 months who can correctly describe the preparation of ORS	<u>Numerator:</u> Number of mothers of children age 0–23 months who can correctly describe the preparation of ORS <u>Denominator:</u> Number of mothers of children age 0–23 months in the survey

\*Indicators discussing hand washing will be covered in the section titled Hygiene.

## 9. ARI Recognition and Management

Prevalence of ARI	Percent of mothers of children 0-23 months who report that their child had a cough in the 2 weeks prior to the survey	<u>Numerator:</u> Number of children 0-23 months that have had a cough in the 2 weeks prior to the survey <u>Denominator:</u> Number of children 0-23 months included in the survey
Prevalence of ARI with difficulty breathing	Percent of mothers of children 0-23 months who report that their child had a cough and difficulty breathing/fast breaths in the 2 weeks prior to the survey	<u>Numerator:</u> Number of children 0-23 months that have had a cough and difficulty breathing/fast breaths in the 2 weeks prior to the survey <u>Denominator:</u> Number of children 0-23 months included in the survey
Antibiotic treatment for ARI	Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who received antibiotics.	<u>Numerator:</u> Number of children age 0-23 months with chest-related cough and difficult breathing in the last two weeks who received antibiotics. <u>Denominator:</u> Number of children with chest-related cough in the last two weeks.
Cough syrup treatment for ARI	Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who received cough syrup instead of antibiotics.	<u>Numerator:</u> Number of children age 0-23 months with chest-related cough and difficult breathing in the last two weeks who received cough syrup instead of antibiotics. <u>Denominator:</u> Number of children with chest-related cough in the last two weeks.
Appropriate Care Seeking for Pneumonia	Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to a health facility or received antibiotics from an alternative source.	<u>Numerator:</u> Number of children age 0-23 months with chest-related cough and difficult breathing in the last two weeks who were taken to a health facility or received antibiotics from an alternative source. <u>Denominator:</u> Number of children with chest-related cough in the last two weeks.

## 10. HIV/AIDS

Maternal knowledge of HIV	Percentage of mothers of children aged 0–23 months who have heard of HIV or AIDS	Numerator: Number of mothers of children aged 0–23 months who have heard of HIV or AIDS. Denominator: Number of mothers of children age 0–23 months in the survey
Maternal knowledge of HIV risk reduction	Percentage of mothers of children aged 0–23 months who mention at least two correct responses that relate to safer sex or practices involving blood.	Numerator: Number of mothers of children aged 0–23 months who mention at least two correct responses that relate to safer sex or practices involving blood. Denominator: Number of mothers of children age 0–23 months in the survey

## 11. Hygiene/Hand washing Practices



Presence of Household Hand-washing Facility	Percent of households with a designated hand-washing facility	<u>Numerator:</u> Number of mothers who report that their household has a designated place for hand washing <u>Denominator:</u> All mothers of children 0-23 interviewed
Presence of Soap at Hand-washing Facility	Percent of households with a designated hand-washing facility that has soap or other cleansing agent present	<u>Numerator:</u> Number of mothers of children 0-23 months who live in households with soap at the place for hand washing <u>Denominator:</u> All mothers of children 0-23 interviewed
Appropriate Hand washing Practices	Percentage of mothers of children 0-23 months who live in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period.	<u>Numerator:</u> Number of mothers of children 0-23 months who live in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period <u>Denominator:</u> All mothers of children 0-23 interviewed. Appropriate times for hand washing refers to after defecation and one of the following: after cleaning a young child, before preparing food, before eating, and before feeding a child.

## 12. Water and Sanitation

Coverage by an Improved Source for Drinking Water	Percent of households with an improved source for drinking water (Piped, borehole, protected well, protected spring, rain water collection)	<u>Numerator:</u> Number of mothers interviewed whose households have an improved source for drinking water (Piped, borehole, protected well, protected spring, rain water collection) <u>Denominator:</u> Number of mothers interviewed
Appropriate Point of Use (POU) Water treatment	Percentage of households of children 0-23 months that treat water effectively.	<u>Numerator:</u> Number of households of mothers of children 0-23 months that treat water effectively <u>Denominator:</u> All households of mothers of children 0-23 months surveyed. To properly treat drinking water, household should: treat drinking water between the time it is collected and consumed by boiling, chlorination, solar disinfection, or filtration to reduce or eliminate microbiological contaminants.
Coverage by an Improved Toilet Facility	Percent of households using an improved toilet facility	<u>Numerator:</u> Number of mothers interviewed whose households have an improved toilet facility (pour/flush toilet with appropriate outlet source, VIP latrine, pit latrine with slab, compost) <u>Denominator:</u> Number of mothers interviewed

Appendix D: Indicators Followed Annually

<b>INDICATORS FOLLOWED THROUGHOUT THE LIFE OF THE PROJECT*</b> <b>Rapid CATCH Indicators (RCI) are in red font</b> -not all RCI are listed here-see Rapid CATCH Indicator List for the full list of RCI <b>*Project matrix Indicators are in BOLD</b>	Baseline	Final Target	Final Evaluation	Combined Frequency for Project Area Sep 2009	Combined Frequency for Project Area Sep 2008	CF from Dec 2007
% of newborns who were put to the breast within one hour of delivery and did not receive prelactal feeds (bfimmAapp)	33.7% (28.3%-39.3%)	50%	87.0% (82.7%-90.6%)	81.82%	51.04%	52.50%
% of infants 0-5m exclusively breastfed (ExclBF)	86.0% (78.5%-91.6%)	NA	98.0% (93.0%-99.8%)	90.82%	NA	NA
% of infants 6-9m receiving breastmilk and complementary foods (BFandCF)	37.5% (22.7%-54.2%)	65%	76.3% (65.2%-85.3%)	72.16%	72.92%	54.43%
% of infants 6-23m receiving breastmilk and complementary foods (BFandCF)	NA	NA	74.6% (67.9%-80.5%)	70.70%	NA	NA
% of mothers of children aged 6-23m who are providing the appropriate Feeding frequency for complimentary feeding	19.4% (13.5%-25.3%)	NA	70.6% (63.7%-76.8%)	64.58%	NA	NA
IYCF: Percent of children age 6-23 months fed according to a minimum of appropriate feeding practices	18.9% (13.1%-24.7%)		55.3% (48.1%-62.4%)	NA	NA	NA

<b>% of children 6-23m who received a dose of Vitamin A in the last 6 months (Mother's recall). (VitaminAChildSixMonths1)</b>	<b>76.2%</b> <b>(67.8%-83.3%)</b>	85%	<b>91.4%</b> <b>(86.5%-94.9%)</b>	91.67%	85.42%	90.60%
<b>Additional Indicator:</b> Percentage of children age 0-23 months who are underweight (>-2SD for the median weight for age, according to WHO/NCHS reference population) (WFA)	<b>27.1%</b> <b>(22.1% 32.6%)</b>	17%	<b>23.7%</b> <b>(19.0%-27.0%)</b>	15.63%	20.83%	NA
<b>% of children 12-23 months who received DPT3 before they reached 12 months by the time of the interview card verified. (dpt3donebydate)</b>	<b>30.6%</b> <b>(22.2%-40.1%)</b>	50%	<b>71.1%</b> <b>(61.0%-79.9%)</b>	73.47%	60.42%	57.89%
Percent of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey	<b>52.3%</b> <b>(42.6%-61.8% )</b>	NA	<b>87.6%</b> <b>(79.4%-93.4%)</b>	NA	NA	NA
Percent of children aged 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey	<b>82.9%</b> <b>(74.6%-89.4% )</b>	NA	<b>92.8%</b> <b>(85.7%-97.9%)</b>	NA	NA	NA
<b>% of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age (fullimmcvrgbyDATE)</b>	<b>18.9%</b> <b>(12.1%-27.5%)</b>	40%	<b>52.6%</b> <b>(42.2%-62.8%)</b>	44.90%	39.58%	35.53%
Percent of children aged 12-23 months who received measles vaccine according to the vaccination card or mother's recall by the time of the survey	<b>65.8%</b> <b>(56.2%-74.5% )</b>	NA	<b>75.3%</b> <b>(65.5%-83.5%)</b>		NA	NA

<b>% of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.) (TetanusGood)</b>	<b>61.3%</b> <b>(55.6%-66.9%)</b>	80%	<b>94.7%</b> <b>(91.5%-96.9%)</b>	70.71%	66.67%	87.18%
<b>% of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration solution (ORS) and/or recommended home fluids. (ORTUse)</b>	<b>74.2%</b> <b>(63.8%-82.9%)</b>	85%	<b>84.1%</b> <b>(69.9%-93.4%)</b>	96.88%	79.17%	85.51
<b>% of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness. (diarrheaMoreDrink)</b>	<b>51.7%</b> <b>(40.8%-62.4%)</b>	70%	<b>88.6%</b> <b>(75.4%-96.2%)</b>	69.79%	64.58%	71.62%
<b>% of children 0-23 months with diarrhea in the last two weeks who were offered the same amount or more food during the illness. (diarrheaMoreFood)</b>	<b>18.2%</b> <b>(9.8%-29.6%)</b>	NA	<b>57.5%</b> <b>(40.9%-73.0%)</b>	54.17%	NA	NA
<b>% of households of children 0-23 months that treat water effectively. (waterTx)</b>	<b>21.7%</b> <b>(17.1%-26.8%)</b>	40%	<b>18.7%</b> <b>(14.4%-23.5%)</b>	25.25%	7.29%	18.67%

<p><b>% of mothers of children 0-23m who live in households with soap or ash at the place for hand washing and that washed their hands with soap or ash at least 2 of the appropriate times during a 24 hour recall period. (approhandwashing)* Altered indicator-the Rapid CATCH does not include washing at appropriate time</b></p> <p><b>Additional Indicator:</b> % of mothers of children 0-23m who live in households with an improved source for drinking water (cleanwater)</p>	<p><b>19.0%</b> (14.7%-23.9%)</p> <p><b>72%</b> (66.6%-77.0%)</p>	<p>40%</p> <p>NA</p>	<p><b>87.7%</b> (83.4%-91.2%)</p> <p><b>92.7%</b> (89.1%-95.3%)</p>	<p>82.83%</p> <p>84.85%</p>	<p>43.75%</p> <p>82.29%</p>	<p>28.00%</p> <p>NA</p>
<p><b>% of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider. (HCPCCough)</b></p>	<p><b>43.2%</b> (35.3%-51.4%)</p>	<p>65%</p>	<p><b>90.8%</b> (83.3%-95.7%)</p>	<p>81.25%</p>	<p>83.33%</p>	<p>60.56%</p>
<p>% of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider within 48 hours. (ARIAppropTime)</p>	<p>NA</p>	<p>NA</p>	<p><b>88.8%</b> (80.8%-94.3%)</p>	<p>79.17%</p>	<p>83.33%</p>	<p>60.56%</p>
<p>% of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who received antibiotics (ariTxOrMed)</p>	<p><b>49.7%</b> (41.6%-57.8%)</p>	<p>NA</p>	<p><b>93.9%</b> (87.1%-97.7%)</p>	<p>84.38%</p>	<p>83.33%</p>	<p>60.56%</p>
<p><b>% of children 0-23 months who slept under an insecticide-treated bed net the previous night. (ChildNet)</b></p>	<p><b>17.7%</b> (13.5%-22.5%)</p>	<p>35%</p>	<p><b>69.3%</b> (63.8%-74.5%)</p>	<p>66.67%</p>	<p>67.71%</p>	<p>22.08%</p>

<b>% of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug after the fever began. (FeverPropMed)* Altered indicator-DOES NOT INCLUDE "WITHIN 24 HOURS</b>	<b>12.5%</b> <b>(6.4%-18.6%)</b>	50%	<b>59.5%</b> <b>(50.9%-68.1%)</b>	53.13%	48.96%	40.58%
<b>% of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.</b>	<b>3.6%</b> <b>(1.0%-8.9%)</b>	NA	<b>32.5%</b> <b>(24.3%-40.7%)</b>	17.24%	9.38%	7.25%
% of mothers of children 0-23m who had at least one prenatal visit prior to the birth of her youngest child less than 24 months of age	<b>56.3%</b> <b>(50.5%-62.0%)</b>	NA	<b>86%</b> <b>(81.6%-89.7%)</b>	88.89%	92.71%	NA
% of mothers of children 0-23m who had at least three prenatal visit prior to the birth of her youngest child less than 24 months of age	NA	NA	<b>84.7%</b> <b>(80.1%-88.6%)</b>	68.69%	66.67%	NA
% of mothers of children 0-23m who have a maternal health card	NA	NA	<b>67.3%</b> <b>(61.7%-72.6%)</b>	41.41%	31.25%	NA
% of pregnant mothers who ate the same amount or more food during this pregnancy. (MoreOrSameFood)	NA	NA	<b>69.3%</b> <b>(63.8%-74.5%)</b>	69.07%	NA	NA
% of children aged 0-23 months whose delivery was in an appropriate health facility	NA	NA	<b>34.7%</b> <b>(28.3%-39.3%)</b>	29.29%	25.00%	NA
% of children aged 0-23 months whose delivery was attended by a skilled health personnel	<b>21.3%</b> <b>(16.8%-26.4% )</b>	NA	<b>33.7%</b> <b>(29.3%-40.3%)</b>	30.30%	23.96%	NA

% of mothers of children 0-23m who received a post-natal visit from an appropriately trained health worker within three days after birth	<b>6.0%</b> <b>(3.6%-9.3% )</b>	NA	<b>39.3%</b> <b>(33.8%-45.1%)</b>	32.32%	28.13%	NA
Percentage of children age 0-23 months who received a post-natal visit from an appropriately trained health worker within three days after birth	<b>7.0%</b> <b>(4.4%-10.5% )</b>	NA	<b>40.3%</b> <b>(34.7%-46.1%)</b>	37.37%	36.46%	NA
% of mothers of children age 0-23 months who are using a modern contraceptive method	<b>NA</b>	NA	<b>10.0%</b> <b>(6.8%-14.0%)</b>	9.09%	NA	NA
Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to WHO/HCHS reference population)	<b>27.1%</b> <b>(22.1%-32.6% )</b>	NA	<b>23.7%</b> <b>(19.0%-29.0%)</b>	NA	NA	NA

**Appendix E**

**MAIN QUESTIONNAIRE\***  
**For Mothers of Children 0 – 23 months**

**Complete this entire questionnaire at the randomly selected household, with the mother of any child aged 0-23 months.**

**Ask the following at each household to find a mother eligible for the survey:**

- 1. You get any child in this house who never reach two years yea?**
- 2. The child here now? Can I see the child?**
- 3. The child sleep in this house?**
- 4. The child ma here?**
- 5. The ma sleep here?**
- 6. Can I see the ma?**

**If yes, proceed with interview, if no thank the mother, end the interview, and move to the house with the nearest doorway to this house's doorway.**

Identification

Supervision Area

Household Number

Community

Name of Mother

Name of Interviewer

Interview Date

\_\_\_\_/\_\_\_\_/\_\_\_\_  
Day/month/year

**INFORMED CONSENT**

*Hello Sister or Ma. My name \_\_\_\_\_. I work for the government house that taking care of medicine and hospital business in Liberia. We are going around to ask people in Cape Mount some question about their children and wan for you to take part. Do you want to take part or not?*

*I want to ask you about you and your baby that not reach two years about your body business. What you tell me will help us to make the medicine in the hospital and clinic better for you and the baby. You not force to answer everything I will ask you. Tell me only about the one you know or can remember.*

*The talk will not take too long. Anything you tell me will stay between you and me. No one will no about it.*

*Do you want to ask me anything about what I finin telling you?*

*Can two of us sit somewhere so we can talk now?*

Signature of interviewer: \_\_\_\_\_ Date: \_\_\_\_\_



**QUESTIONNAIRE**

**ALL QUESTIONS ARE TO BE ADDRESSED TO MOTHERS WITH A CHILD 0-23 MONTHS OF AGE**

1. You how many years old?  
RECORD AGE OF RESPONDENT IN YEARS: \_\_\_\_\_
2. How many children you get living in this house with you? \_\_\_\_\_
3. How many of the children you born yourself? \_\_\_\_\_
4. "What is the name, sex, and date of birth of that child who never reach two years yea?" (if more than 1 child is under 2 years of age, randomly pick one child (picking numbered paper, flipping a coin, etc.))

NAME	SEX	DATE OF BIRTH	AGE IN MONTHS
	1. MALE 2. FEMALE	____/____/____ DD MM YY	

**Anthropometry**

5. Can I see the last child, so I can put him on the scale?
  1. YES
  2. NO ➔ SKIP TO Q. 7
6. IF MOTHER AGREES, WEIGH THE CHILD AND RECORD WEIGHT BELOW.  
RECORD TO THE NEAREST TENTH.

\_\_\_\_ . \_\_\_\_ KILOGRAMS

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ALL SUBSEQUENT QUESTIONS PERTAIN TO THE YOUNGEST CHILD UNDER AGE TWO

**Maternal and Newborn Care**

7. The time you had the belly for (Name) did you see or get advice from anybody about the belly before you deliver?
  1. YES
  2. NO ➔ SKIP TO Q. 9

IF YES: Who see you when you were having the belly?

PROBE FOR THE TYPE OF PERSON AND  
RECORD ALL PERSONS MENTIONED BY THE MOTHER.

**IF THE MOTHER ANSWERS DOCTOR, PLEASE PROBE:  
“WAS IT A ZOE WOMAN, A MIDWIFE, NURSE OR DOCTOR”?**

**IF THE MOTHER ANSWERS DOCTOR AGAIN PLEASE ASK:  
“WHERE DID THE DELIVERY TAKE PLACE”?**

**THEN MAKE THE CORRECT CHOICE BELOW.**

- HEALTH PROFESSIONAL
- DOCTOR .....A
  - NURSE .....B
  - MIDWIFE .....C
  - PHYSICIAN ASSISTANT.....D
  - OTHER HEALTH STAFF.....E
- OTHER PERSON
- TRADITIONAL BIRTH ATTENDANT. ....F
  - TRADITIONAL HEALER.....G
  - COMMUNITY HEALTH WORKER . . . . H
  - OTHER\_\_\_\_\_ X  
(SPECIFY)
  - NO ONE ..... Z

8. How many times did you see or get advice from them about the belly before you deliver??

- 1 NUMBER OF TIMES.....|\_\_\_|
- 8. DON'T KNOW

9. Do you have a maternal health card (big belly card) for your pregnancy with (NAME)?

- 1. ....YES, SEEN
- 2. NOT AVAILABLE ➡ SKIP TO Q. 11
- 3. NEVER HAD A CARD ➡ SKIP TO Q. 11

10. LOOK AT CARD AND RECORD THE NUMBER OF PRENATAL VISITS WHILE  
MOTHER WAS PREGNANT WITH (NAME).

|\_\_\_|

11. Sometimes the hospital people can give vaccination to belly women on their arms for tetanus. When you had the belly with (NAME) you take vaccination in your arm so that the baby will not get tetanus or jerking sickness after you deliver?

- 1. YES
- 2. NO ➔ SKIP TO Q. 13
- 8. DON'T KNOW ➔ SKIP TO Q. 13

**YOU GET THIS VACCINATION CARD WITH YOU? IF YES, BRING IT LET ME SEE.**

12. When you had the belly with (NAME), how many times you take vaccination in the arm for tetanus or jerking sickness?

- 1 TIMES.....|\_\_|
- 8. DON'T KNOW

13. From the time you have been taking belly (starting from the first belly/pregnancy) up to the time you born (NAME), they give you any vaccination to make the baby not to get tetanus or jerking sickness?

- 1. YES
- 2. NO ➔ SKIP TO Q. 15
- 99. DON'T KNOW ➔ SKIP TO Q. 15

14. Before the belly with (NAME), how many times they give you the tetanus vaccination?  
**If 7 or more times, record 7**

- 1 TIMES.....|\_\_|
- 8. DON'T KNOW

15. The time you take belly, with (NAME), they give you blood tablet in the clinic or you buy the blood medicine from the drug store to take?

SHOW TABLET/SYRUP.

- 1. YES
- 2. NO → SKIP TO Q.17
- 99. DON'T KNOW → SKIP TO Q.17

16. How many days you take the blood tablet for?

IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.

- NUMBER OF DAYS.....|\_|\_|\_|
- DON'T KNOW

**“Nan I wan ask you about the time you were in pain with (NAME)”.**

17. Where you born the baby?

IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. \_\_\_\_\_

**HEALTH FACILITY**

- HOSPITAL ..... 1
- CLINIC ..... 2
- HEALTH CENTER ..... 3
- PVO CENTER ..... 4
- HEALTH POST ..... 5
- OTHER HEALTH FACILITY \_\_\_\_\_ 6  
(SPECIFY)

**HOME**

- YOUR HOME ..... 7
- OTHER HOME ..... 8

OTHER \_\_\_\_\_ 88  
(SPECIFY)

18. Who help you to catch or deliver the baby that time?

**IF THE MOTHER ANSWERS DOCTOR, PLEASE PROBE:  
“WAS IT A ZOE WOMAN, A MIDWIFE, NURSE OR DOCTOR”?**

**IF THE MOTHER ANSWERS DOCTOR AGAIN PLEASE ASK:  
“WHERE DID THE DELIVERY TAKE PLACE”?**

**THEN MAKE THE CORRECT CHOICE BELOW.**

HEALTH PERSONNEL

- 1. DOCTOR
- 2. NURSE OR CLINICAL OFFICER
- 3. MIDWIFE
- 4. AUXILIARY MIDWIFE
- 5. PHYSICIAN ASSISTANT
- 6. OTHER HEALTH STAFF

OTHER PERSON

- 7. TRADITIONAL BIRTH ATTENDANT \_\_\_\_\_ (NAME)
- 8. COMMUNITY HEALTH WORKER
- 9. RELATIVE/FRIEND
- 10. OTHER \_\_\_\_\_  
(SPECIFY)
- 11. NO ONE

**Questions 19-21 refer to the mother after the delivery of her youngest child**

19. Did some one working in the hospital or the woman who can deliver women in the village check on you after you deliver your last child either in the clinic or at home?

1. YES
2. NO ➔ SKIP TO Q. 22

20. When you deliver your last child, how long it take before they check on you the first time?

**If less than one day, record hours, if less than one week, record days.**

Hours.....|\_|\_|  
Days.....|\_|\_|  
Weeks.....|\_|\_|  
Don't Know.....

21. Who checked you that time?

**Probe for the most qualified person.**

**IF THE MOTHER ANSWERS DOCTOR, PLEASE PROBE:  
“WAS IT A ZOE WOMAN, A MIDWIFE, NURSE OR DOCTOR”?**

**IF THE MOTHER ANSWERS DOCTOR AGAIN PLEASE ASK:  
“WHERE DID THE DELIVERY TAKE PLACE”?**

**THEN MAKE THE CORRECT CHOICE BELOW**

HEALTH PERSONNEL

1. DOCTOR
2. NURSE OR CLINICAL OFFICER
3. MIDWIFE
4. AUXILIARY MIDWIFE
5. PHYSICIAN ASSISTANT
6. OTHER HEALTH STAFF WITH MIDWIFERY SKILLS

OTHER PERSON

7. TRADITIONAL BIRTH ATTENDANT \_\_\_\_\_  
(NAME)
8. COMMUNITY HEALTH WORKER
9. OTHER \_\_\_\_\_

**Questions 22-24 refer to the youngest child shortly after birth**

22. After you born (Name) did anybody in the hospital/clinic or the woman who can deliver women in the village check the baby at home or in the hospital/clinic to see if the baby was all right?

- 1. YES
- 2. NO ➔ SKIP TO Q.25

23. When you born (NAME) how long it take before they check the baby for the first time?

**If less than one day, record hours, if less than one week, record days.**

Hours.....|\_\_|\_\_|  
Days.....|\_\_|\_\_|  
Weeks.....|\_\_|\_\_|  
Don't Know.....99

24. Who checked (Name) that time to see if he/she was all right?

**Probe for the most qualified person.**

**IF THE MOTHER ANSWERS DOCTOR, PLEASE PROBE:  
“WAS IT A ZOE WOMAN, A MIDWIFE, NURSE OR DOCTOR”?**

**IF THE MOTHER ANSWERS DOCTOR AGAIN PLEASE ASK:  
“WHERE DID THE DELIVERY TAKE PLACE”?**

**THEN MAKE THE CORRECT CHOICE BELOW**

HEALTH PERSONNEL

- 1. DOCTOR
- 2. NURSE OR CLINICAL OFFICER
- 3. MIDWIFE
- 4. AUXILIARY MIDWIFE
- 5. PHYSICIAN ASSISTANT
- 6. OTHER HEALTH STAFF WITH MIDWIFERY SKILLS

OTHER PERSON

- 7. TRADITIONAL BIRTH ATTENDANT \_\_\_\_\_ (NAME)
- 8. COMMUNITY HEALTH WORKER
- 9. OTHER \_\_\_\_\_

25. Are you currently doing something or using any method to delay or avoid getting pregnant?

- YES.....1
- NO ➔ SKIP TO Q.27..... 2

26. Which method are you (or your husband/ partner) using?

DO NOT READ RESPONSES. CODE ONLY ONE RESPONSE.

IF MORE THAN ONE METHOD IS MENTIONED, ASK,  
What is your MAIN method that you (or your husband/ partner) use to delay or avoid getting pregnant?"

IF RESPONDENT MENTIONS BOTH CONDOMS AND STANDARD DAYS METHOD,  
CODE "12" FOR STANDARD DAYS METHOD.

IF RESPONDENT MENTIONS BREASTFEEDING, CODE "15" FOR OTHER AND  
RECORD BREASTFEEDING.

IF RESPONDENT MENTIONS ABSTINENCE OR ISOLATION, CODE "15" FOR OTHER  
AND RECORD RESPONSE IN SPACE PROVIDED.

FEMALE STERILIZATION.....	1
MALE STERILIZATION.....	2
PILL.....	3
IUD.....	4
INJECTABLES.....	5
IMPLANTS.....	6
CONDOM.....	7
FEMALE CONDOM.....	8
DIAPHRAGM.....	9
FOAM/JELLY.....	10
LACTATIONAL AMEN. METHOD.....	11
STANDARD DAYS METHOD/ CYCLEBEADS.....	12
RHYTHM METHOD (OTHER THAN STANDARD DAYS).....	13
WITHDRAWAL.....	14
OTHER.....	15

(SPECIFY)

**Breastfeeding and Young Child Feeding**

27. You ever give (NAME) tay-tay when he/she was born?

- 1. YES
- 2. NO → SKIP TO Q.32

28. The time you deliver, how long it take before you give (NAME) tay-tay?

**If less than 1 hour, record 00 hours; if less than 24 hours, record the hours; Otherwise record days.**

Hours..... |\_\_|\_\_|  
 Days.....|\_\_|\_\_|  
 Don't Remember.....99

29. From the day you deliver with (NAME) up to the 3 days, did you give him/her anything else to drink beside the tay-tay water?

- YES ..... 1
- NO.....2
- DON'T KNOW ..... 8

30. You still giving (NAME) tay-tay?

- YES → SKIP TO Q.32. .... 1
- NO.....2

31. How many months did you give tay-tay to (NAME)?

MONTHS.....|\_\_|\_\_|

32. Now, the whole day yesterday, what all you give (NAME) to eat or drink?. Did (NAME) have. . .

**READ EACH OF THE FOLLOWING AND PLACE A CHECK MARK IN THE BOX NEXT TO EACH ITEM CONSUMED.**

	LIQUID/FOOD	CONSUMED IN LAST 24 HOURS?
A	Breast milk/tay-tay water?	
B	Plain water?	
C	Baby milk from the store/shop?	
D	Civilized food (bread coster)?	
E	Rice dust or plantain dust?	
F	Fufu or rice?	



33. You as a baby ma, when you born your baby, what you supposed to give that baby to eat or drink from one moon to the six moon?

DO NOT PROMPT (Do not read the answers to the mother/caretaker-let her answer on her own).

CIRCLE ALL MENTIONED.

- BREAST MILK .....1
- MILK (OTHER THAN BREAST MILK) ....2
- INFANT FORMULA .....3
- PLAIN WATER .....4
- SUGAR OR GLUCOSE WATER .....5
- FRUIT JUICE .....6
- TEA/INFUSIONS .....7
- GRUEL ..... 8
- OTHER (specify) \_\_\_\_\_.....9
- DON'T KNOW .....88
- NO RESPONSE .....99

34. Have you started to give (NAME) any hard food, soft food, not too soft food, not too hard food to eat besides tay-tay, liquid, or water?

- YES..... 1
- NO ➔ SKIP TO Q. 37. .... 2
- DON'T KNOW ➔ SKIP TO Q.37. .... 8

**IF "YES", ASK:**

35. The whole of yesterday and up to last night, how many times did you give (NAME) hard food, soft food, not too soft food, not too hard food to eat besides liquid or water?

IF MOTHER ANSWERS SEVEN OR MORE TIMES, RECORD "7"

- NUMBER OF TIMES .....|\_\_\_\_|
- DON'T KNOW.....8

**36. PLEASE FILL IN THE TABLE BELOW**

**Nan, I want ask you whether yesterday in the daytime or in the night time, you give other watery food or hard food to (NAME) even if it was part of other food?**

**“Did (NAME) eat or drink:”**

		<b>Yes</b>	<b>No</b>	<b>DK</b>
<b>A</b>	Powdered milk or tin milk?			
<b>B</b>	Tea or coffee?			
<b>C</b>	Any other liquids?			
<b>D</b>	Bread, rice, or other foods made from grains?			
<b>E</b>	Pumpkin, sweet potatoes?			
<b>F</b>	White potatoes, yams, cassava, plantain or banana?			
<b>G</b>	Potato greens, cassava leaf, palaver sauce or any other dark green leafy vegetables?			
<b>H</b>	Plum, golden plum or porpor?,			
<b>I</b>	Any other fruits or vegetables like oranges, grapefruit or pineapple?			
<b>J</b>	Meat Liver, meat kidney, meat heart			
<b>K</b>	Any meat such as cow meat, pork, goat meat, sheep meat, chicken, deer meat, monkey meat, duck?			
<b>L</b>	Eggs?			
<b>M</b>	Fresh or dried fish or shellfish?			
<b>N</b>	Beans, split peas, peanuts, bennnen seed, kaytay seed or nuts?			
<b>O</b>	Cheese, yogurt, or other milk products?			
<b>P</b>	Any oils, fats, or butter, or foods made with any of these?			
<b>Q</b>	Any sugary foods, such as chocolates, candy, sweets, pastries, cakes, or biscuits?			
<b>R</b>	Snails, crickets bamboo worm or bucker bugs			
<b>S</b>	Foods made with red palm oil, palm nut?			
<b>T</b>	Any other solid or soft food?			

37. You ever give any Vitamin A medicine like this before to (NAME)?(Show Vitamin A capsule)

**Show common types of ampules/capsules/syrups**

YES ..... 1  
 NO → SKIP TO Q.39 ..... 2  
 DON'T KNOW→SKIP TO Q.39 ..... 8

38. Did (Name) take this same medicine (Vitamin A) in the last 6 months?

YES .....1  
 NO..... 2  
 DON'T KNOW.....88

**Child Immunization**

39. Do you have vaccination card or any small paper to show that your child nan take vaccination?

**IF, 'YES', ask, 'Please let me see it?' If no, ASK Q.40.**

1. YES, SEEN BY INTERVIEWER→SKIP TO Q.41
2. YES, NOT SEEN.....→SKIP TO Q42
3. NO CARD...→ASK THE NEXT QUESTION

40. Did you ever have a vaccination card for (Name)?

- YES→SKIP TO Q.42 ..... 1  
 NO → SKIP TO Q.42 ..... 2

41. **RECORD** INFORMATION EXACTLY AS IT APPEARS ON (NAME'S) VACCINATION CARD.

	DAY	MONTH	YEAR
BCG	<input type="text"/>	<input type="text"/>	<input type="text"/>
POLIO 0: (Given at birth)	<input type="text"/>	<input type="text"/>	<input type="text"/>
POLIO 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
POLIO 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
POLIO 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
DPT 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
DPT 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
DPT 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
MEASLES	<input type="text"/>	<input type="text"/>	<input type="text"/>
VITAMIN A (most recent)	<input type="text"/>	<input type="text"/>	<input type="text"/>

42. Check if BCG to Measles are **ALL** recorded

- YES→SKIP-Q.52. ....1  
 OTHER..... → ASK THE NEXT QUESTION ..... 2

43. Ask this question ONLY of mothers who HAVE an INCOMPLETE immunization card:  
If there is no card, skip to question 44

“This child ever take any vaccinations that are not on this paper/card, even the vaccination he take when the vaccination campaign in the county was on”?

Record YES only if respondent mentions BCG, Polio 0-3, DPT1-3, and/or measles vaccines

- 1. YES → (Probe for vaccinations and write “66” in the corresponding day column in 3 →SKIP TO-Q.52
- 2. NO → SKIP TQ.52.
- 3. DON’T KNOW →SKIP TO Q.52

44. Ask this question ONLY of mothers who DO NOT HAVE an immunization card:  
Did (NAME) ever take any vaccinations in the clinic/hospital or during the vaccination campaign in the county?

- YES . . . . . 1
- NO → -SKIP TO-Q.52 . . . . . 2
- DON’T KNOW → SKIP TO Q.52. . . . . 8

IF YES, ASK:

“PLEASE TELL ME IF (NAME) RECEIVED ANY OF THE FOLLOWING VACCINATIONS”:

45. BCG, the vaccination which children can take in the right arm (it can leave sore mark) to stop them from getting TB.?

- YES . . . . . 1
- NO . . . . . 2
- DON’T KNOW . . . . . 8

46. Polio vaccine, the one they can put in the children mouth?

- YES . . . . . 1
- NO → SKIP TO Q.49 . . . . . 2
- DON’T KNOW → SKIP TO Q.49 . . . . . 8

47. Your child take the first polio vaccination from the time he/she was born up to two weeks after you deliver or after that time?

- FIRST 2 WEEKS . . . . .1
- LATER . . . . .2

48. How many times they give the polio vaccine to the child?

- NUMBER OF TIMES \_\_\_\_\_
- DON’T KNOW . . . . .2

49. Another vaccine is called DPT, the vaccine they can give in the thigh or butt. Sometimes they can also give it the same time they can give the polio vaccine in the mouth. Your child ever take that vaccination too?

- YES . . . . . 1
- NO → SKIP TO Q.51 . . . . . 2
- DON'T KNOW → SKIP TO Q.51 . . . . . 8

50. How many times your child take that kind of vaccine (DPT vaccine)?

- NUMBER OF TIMES \_\_\_\_\_
- DON'T KNOW.....99

51. What about the measles vaccine, the vaccination the children can take when they are 9 months old or when they pass nine months. The children can take that kind of vaccination so that measles will not catch them. You child take that vaccination too?

- YES . . . . . 1
- NO . . . . . 2
- DON'T KNOW . . . . . 8

52. In the past six months did (NAME) take worm medicine?

- YES . . . . . 1
- NO.....2
- DON'T KNOW . . . . . 8

**Integrated Management of Childhood Illnesses (IMCI)**

53. What are some things that will happen to your child to tell you that the child is sick and need to be carried to the hospital for treatment?

DO NOT PROMPT (do not read the answers to the mother-let her answer on her own).

**CIRCLE ALL MENTIONED.**

- A. DON'T KNOW
- B. LOOKS UNWELL OR NOT PLAYING NORMALLY
- C. NOT EATING OR DRINKING
- D. LETHARGIC OR DIFFICULT TO WAKE
- E. HIGH FEVER/SKIN HOT/KIMA
- F. FAST OR DIFFICULT BREATHING
- G. VOMITS EVERYTHING
- H. CONVULSIONS OR JERKING
- I. RUNNING STOMACH/DIARRHEA
- J. OTHER \_\_\_\_\_  
(SPECIFY)
- K. OTHER \_\_\_\_\_  
(SPECIFY)

## Malaria Prevention and Treatment

54. You get mosquito nets in your house to use when your go to sleep?

1. YES
2. NO → SKIP TO Q.58

55. Tell me who sleep under the mosquito net last night? **CIRCLE ALL THAT APPLY.**

- A. CHILD (NAME)
- B. RESPONDENT
- C. OTHER INDIVIDUAL(S) \_\_\_\_\_  
(SPECIFY)

56. They get some kind of medicine water they can put on the mosquito net to kill the mosquito. Has the mosquito net your can sleep under last night ever put in that kind of water before or is the mosquito net the kind that has the medicine already in it?

**IF THE ANSWER IS YES TO HAVING THE MEDICINE ALREADY IN IT, ASK TO SEE THE MOSQUITO NET, AND VERIFY THAT IT IS THE TYPE GIVEN BY THE MOH. IF IT IS, MARK “YES”; IF IT IS NOT A BRAND YOU RECOGNIZE, MARK “DON’T KNOW”**

1. YES (dipped in medicine water or medicine already in it (MOH net)
2. NO → SKIP TO Q.58
8. DON’T KNOW → SKIP TO Q.58

57. How long since you put the mosquito net in the medicine water or put some medicine on the mosquito net?

1. LESS THAN 1 YEAR AGO
2. MORE THAN 1 YEAR AGO
3. DON’T KNOW

58. Has (NAME) been having FEVER/SKIN HOT/KIMA in the last two weeks?

- YES ..... 1  
NO ..... 2  
DON’T KNOW..... 8

59. Does (NAME) have FEVER/SKIN HOT/KIMA now?

- YES ..... 1  
NO → SKIP TO Q.65 ..... 2  
DON’T KNOW → SKIP TO Q.65..... .8

60. Did you go to anyone for advice about what to do for the FEVER/SKIN HOT/KIMA?

- YES ..... 1
- NO → SKIP TO Q.65 ..... 2

61. Where was the first place you carry the child for advice or medicine or treatment?

HEALTH FACILITY

IF SOURCE IS **HOSPITAL, HEALTH CENTER, OR CLINIC**,  
WRITE THE NAME OF THE PLACE, AND **ALSO** CHECK THE CORRECT  
BOX

\_\_\_\_\_ (NAME OF PLACE)

- HOSPITAL** .....01
- HEALTH CENTER** ..... 02
- CLINIC** ..... 03
- HEALTH POST ..... 04
- PVO CENTER .....05
- FIELD/COMMUNITY HEALTH  
WORKER .....06
- OTHER HEALTH  
FACILITY \_\_\_\_\_ .....07

(SPECIFY)

OTHER SOURCE

- TRADITIONAL PRACTITIONER.....08
- SHOP.....09
- DRUG STORE/MEDICINE STORE/PHARMACY.....10
- BLACK BAGGER/COMMUNITY DISTRIBUTORS.....11
- FRIEND/RELATIVE.....12

OTHER \_\_\_\_\_.....88

(SPECIFY)

62. When (NAME) had FEVER/SKIN HOT/KIMA, how long it take before you go to that person or clinic for medicine or treatment?

- SAME DAY ..... 0
- NEXT DAY ..... 1
- TWO OR MORE DAYS.....2

63. When (Name) was sick did you give him any medicine for the FEVER/SKIN HOT/KIMA?

- YES ..... 1
- NO ..... 2
- DON'T KNOW ..... 8

64. What can make people get malaria?

**DO NOT PROMPT** (Do not read the answers to the mother-let her answer on her own).

**RECORD ALL MENTIONED**

- 1. MOSQUITO BITES
- 2. WITCHCRAFT
- 3. INTRAVENOUS DRUG USE
- 4. BLOOD TRANSFUSIONS
- 5. INJECTIONS
- 6. SHARING RAZORS/BLADES
- 7. KISSING

88. OTHER \_\_\_\_\_  
(SPECIFY)

89. OTHER \_\_\_\_\_  
(SPECIFY)

99. DON'T KNOW

**Diarrhea**



65. Has (NAME) had running stomach in the last 2 weeks?

- YES ..... 1
- NO → SKIP TO Q.74 ..... 2
- DON'T KNOW → SKIP TO Q.74 ..... 8

66. Tell me which of the thing that I will call they give to the child when his stomach was running?

READ EACH:

		YES	NO	DK
a)	A fluid made from a special packet called ORS or glucose water?.....	1	2	8
b)	A pre-packaged ORS liquid?.....	1	2	8
c)	Sugar, salt solution.....	1	2	8
d)	Coconut or rice water .....	1	2	8

67. When (NAME) was having the running stomach, did you give any other thing for the running stomach?

- YES ..... 1
- NO → SKIP TO Q.69 ..... 2
- DON'T KNOW → SKIP TO Q.69 ..... 8



68. What ELSE was given to him for the running stomach beside what you called?

**RECORD ALL MENTIONED**

**DO NOT PROMPT.**

**If answer pill or syrup, show local packaging for zinc** and ask if the child received this medicine

Pill or Syrup

- 1. Antibiotic
- 2. Antimotility
- 3. Zinc
- 4. Other (not antibiotic, antimotility or Zinc)
- 5. **Unknown Pill or syrup**

Injection

- 6. Antibiotic
- 7. Non-antibiotic
- 8. **Unknown injection**
- 9. (IV) Intravenous /Drip
- 10. Home Remedy/Herbal medicine/Country medicine/Bush  
Medicine \_\_\_\_\_  
Specify
- 11. Other \_\_\_\_\_  
Specify

69. When (NAME’S) stomach was running, did you give him less tay-tay water, the same tay-tay water or more tay-tay water?

- LESS.....1
- SAME.....2
- MORE.....3
- CHILD NOT BREASTFED AT THIS TIME.....4
- DON’T KNOW.....8

70. When (NAME) had running stomach, you give him less water, the same amount of water, or more water to drink?

- LESS.....1
- SAME.....2
- MORE.....3
- NOTHING TO DRINK BECAUSE EXCLUSIVELY BREASTFEEDING.....4
- DON’T KNOW.....8

71. When (NAME) was having running stomach, you give him less food, the same amount food or more food to eat?

- LESS.....1
- SAME.....2
- MORE.....3
- NOTHING TO EAT BECAUSE EXCLUSIVELY BREASTFEEDING .....4
- DON'T KNOW.....8

72. Did you go to someone outside of the home to advise you or give treatment or medicine for (NAME'S) running stomach?

- YES ..... 1
- NO → SKIP TO Q.72 ..... 2

73. What was the first place you carry the baby for advice or treatment or medicine for the running stomach?

**HEALTH FACILITY**

IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC,  
WRITE THE NAME OF THE PLACE, AND **ALSO** CHECK THE CORRECT

**BOX**

- 
- (NAME OF PLACE)
  - HOSPITAL** .....01
  - HEALTH CENTER** ..... 02
  - CLINIC** ..... 03
  - HEALTH POST ..... 04
  - PVO CENTER .....05
  - FIELD/COMMUNITY HEALTH  
WORKER .....06
  - OTHER HEALTH  
FACILITY\_\_\_\_\_ .....07

(SPECIFY)

**OTHER SOURCE**

- TRADITIONAL PRACTITIONER.....08
- SHOP.....09
- DRUG STORE/MEDICINE STORE/PHARMACY.....10
- BLACK BAGGER/COMMUNITY DISTRIBUTOR.....11
- FRIEND/RELATIVE.....12
- OTHER\_\_\_\_\_ .....88

(SPECIFY)

## ARI Recognition and Management

74. Has (NAME) been having cough at any time in the last two weeks?

YES ..... 1  
NO →SKIP TO Q.80.....2  
DON'T KNOW→SKIP TO Q.80. .... 8

75. When (NAME) was having the cough, did he/she have hard time breathing or was breathing fast fast?

YES ..... 1  
NO..... 2  
DON'T KNOW ..... 8

76. When the child was coughing and breathing fast fast, did you go to someone outside for advice or treatment or medicine?

YES ..... 1  
NO → SKIP TO Q.79 ..... 2

77. From the time you know (NAME's) was having cough and breathing fast fast, how long it take before you carry the child for treatment or medicine?

SAME DAY ..... 0  
NEXT DAY ..... 1  
TWO OR MORE DAYS ..... 2

78. What place you carry the child for advice or treatment or medicine for the cough/fast breathing?

**HEALTH FACILITY**

IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC,  
WRITE THE NAME OF THE PLACE, AND ALSO CHECK THE CORRECT  
BOX

\_\_\_\_\_ (NAME OF PLACE)

- HOSPITAL** .....01
- HEALTH CENTER** ..... 02
- CLINIC** ..... 03
- HEALTH POST ..... 04
- PVO CENTER .....05
- FIELD/COMMUNITY HEALTH  
WORKER .....06
- OTHER HEALTH  
FACILITY \_\_\_\_\_ .....07

(SPECIFY)

**OTHER SOURCE**

- TRADITIONAL PRACTITIONER.....08
- SHOP.....09
- PHARMACY/DRUG STORE/MEDICINE STO.....10
- BLACK BAGGER/COMMUNITY DISTRIBUTOR.....11
- FRIEND/RELATIVE.....12

OTHER \_\_\_\_\_ .....88

(SPECIFY)

79. What kind of medicines they or you give to the child for the cough or fast breathing?

- AMOXICILLIN.....1
- ERYTHROMYCIN.....2
- AZITHROMYCIN.....3
- NOTHING.....4
- ASPIRIN.....5
- PANADOL.....6
- UNKNOWN PILL/TABLET.....7
- UNKNOWN SYRUP/WATER MEDICINE.....8
- OTHER \_\_\_\_\_ .....9

(SPECIFY)

DON'T KNOW.....99

## HIV/AIDS

80. You ever hear about any sickness called AIDS or the Big Sickness?

1. YES
2. NO → SKIP TO Q.83

81. What some things people suppose to do not to catch the sickness called AIDS or the Big Sickness?

**DO NOT PROMPT** (Do not read the answers to the mother/caretaker-let her answer on her own).

**CIRCLE ALL MENTIONED**

### ACCEPTED METHODS

- A. NOTHING
- B. ABSTAIN FROM SEX
- C. USE CONDOMS
- D. LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER
- E. LIMIT NUMBER OF SEXUAL PARTNERS
- F. AVOID SEX WITH PROSTITUTES
- G. AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS
- H. AVOID INTERCOURSE WITH PERSONS OF THE SAME SEX
- I. AVOID SEX WITH PERSONS WHO INJECT DRUGS  
INTRAVENOUSLY
- J. AVOID BLOOD TRANSFUSIONS
- K. AVOID INJECTIONS
- L. AVOID SHARING RAZORS, BLADES

### NOT ACCEPTED METHODS

- M. AVOID KISSING
- N. AVOID MOSQUITO BITES
- O. SEEK PROTECTION FROM TRADITIONAL HEALER
- W. OTHER \_\_\_\_\_  
(SPECIFY)
- X. OTHER \_\_\_\_\_  
(SPECIFY)
- Z. DON'T KNOW

## Water and Sanitation

82. Your that living here, what place your can get water from to drink?

### DO NOT PROMPT

- |                                     |   |
|-------------------------------------|---|
| PIPED WATER INTO DWELLING           | 1 |
| PIPED WATER INTO YARD/PLOT/BUILDING | 2 |
| PUBLIC TAP/STANDPIPE                | 3 |
| HAND PUMP/TUBEWELL/BOREHOLE         | 4 |
| PROTECTED DUG WELL                  | 5 |
| PROTECTED SPRING                    | 6 |

RAIN WATER COLLECTION	7
UNPROTECTED DUG WELL	8
UNPROTECTED SPRING	9
CART WITH SMALL TANK/DRUM	10
TANKER TRUCK	11
BOTTLED WATER	12
SURFACE WATER (CREEK/RIVER /POND/LAKE/ DAM/ STREAM/CANAL/IRRIGATION CHANNEL)	13
OTHER _____	99

(SPECIFY)

83. You can get water from that place all the time for drinking?

YES .....	1
NO .....	2
DON'T KNOW .....	8

84. You do anything with the water to make it good to drink?

YES .....	1
NO ➔ SKIP TO Q. 86 .....	2
DON'T KNOW ➔ SKIP TO Q. 86 .....	8

85. What thing you do with the water to make it good to drink?

(ONLY CHECK MORE THAN ONE RESPONSE, IF SEVERAL METHODS ARE USUALLY

USED TOGETHER, FOR EXAMPLE, CLOTH FILTRATION AND CHLORINE)

BOIL.....	1
ADD BLEACH/CHLORINE.....	2
WATER FILTER (CERAMIC, SAND, OR COMPOSITE)....	3
SOLAR DISINFECTION.....	4
LET IT STAND AND SETTLE/SEDIMENTATION.....	5
STRAIN IT THROUGH CLOTH.....	6
OTHER..... _____	88

(SPECIFY)

DON'T KNOW .....	99
------------------	----

86. What place you and the people living in this house can go all the time to toilet (pupu)?

FLUSH/POUR-FLUSH TOILET.....	1
VENTILATED IMPROVED PIT LATRINE (VIP).....	2
SIMPLE PIT LATRINE WITH SLAB.....	3
COMPOSTING/DRY TOILET.....	4
PIT LATRINE WITHOUT SLAB/OPEN PIT.....	5
SERVICE OR BUCKET LATRINE.....	6
HANGING LATRINE.....	7
NO FACILITY, FIELD, BUSH, IN WATER PLASTIC BAG.....	8

## Hand-washing Practices

87. Can you show me where you usually wash your hands and **WHAT YOU USUALLY USE TO WASH YOUR HANDS?**

OBSERVATION ONLY: IS THERE SOAP OR DETERGENT OR LOCALLY USED CLEANSING AGENT?

THIS ITEM SHOULD BE **EITHER IN PLACE OR BROUGHT BY THE INTERVIEWEE** WITHIN ONE MINUTE. IF THE ITEM IS NOT PRESENT WITHIN ONE MINUTE CHECK NONE, EVEN IF BROUGHT OUT LATER.

SOAP.....1  
DETERGENT.....2  
ASH.....3  
MUD/SAND.....4  
NONE.....5  
OTHER.....6

(SPECIFY)

88. When do you wash your hands?

**DO NOT PROMPT** (do not read the answers to the mother/caretaker-let her answer on her own).

**CIRCLE ALL MENTIONED.** ASK: "ANY OTHER TIME?"

A. NEVER  
B. BEFORE FOOD PREPARATION  
C. BEFORE FEEDING CHILDREN  
D. AFTER DEFECATION  
E. AFTER ATTENDING TO A CHILD WHO HAS DEFECATED  
X. OTHER \_\_\_\_\_

(SPECIFY)

**Annex 7**



**Grand Cape Mount Child Survival Project  
Improved Child Health in a Transitional State through IMCI**

**Grand Cape Mount County, Liberia  
October 2006 – September 2010**

**In Partnership with**

**Liberia Ministry of Health and Social Welfare  
Grand Cape Mount County Health Team  
Christian Health Association of Liberia**

**Final Rapid Health Facility Assessment  
Grand Cape Mount County  
Liberia**

**August/September 2010**



## Table of Contents

Acronyms	3
Executive Summary	4
i. Summary of Core Indicator Results	5
Chapter 1 Program Overview	8
Chapter 2 Purpose of the Health Facility Assessment and Methodology	11
Chapter 3 Main Findings: Accomplishments and Priorities	15
Chapter 4 Action Plan/Conclusions/Recommendations	26
<b>Annexes:</b>	
Annex 1: List of Health Facilities	28
Annex 2: Training of Survey Team	29
References	31

## ACRONYMS

<b>ANC</b>	Antenatal Care
<b>ARI</b>	Acute Respiratory Infection
<b>CHAL</b>	Christian Health Association of Liberia
<b>CHP</b>	Community Health Promoter
<b>CHT</b>	County Health Team
<b>CHW</b>	Community Health Workers
<b>C-IMCI</b>	Community IMCI
<b>CS</b>	Child Survival
<b>CORE</b>	Collaborations and Resources Group
<b>CSHGP</b>	Child Survival and Health Grant Program
<b>CSP</b>	Child Survival Project
<b>EPI</b>	Expanded Program of Immunizations
<b>GCM</b>	Grand Cape Mount County
<b>GCMCSP</b>	Grand Cape Mount County Child Survival Project
<b>GIK</b>	Gifts-in-kind
<b>HF</b>	Health Facility
<b>HFA</b>	Health Facility Assessment
<b>HHP</b>	Household Health Promoter
<b>HW</b>	Health Worker
<b>IMCI</b>	Integrated Management of Childhood Illnesses
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MNC</b>	Maternal Newborn Care
<b>MOHSW</b>	Liberia Ministry of Health and Social Welfare
<b>MTE</b>	Midterm Evaluation
<b>MTI</b>	Medical Teams International
<b>MTI/Liberia</b>	Medical Teams International/Liberia
<b>N</b>	Sample size
<b>NDS</b>	National Drug Service
<b>ORS</b>	Oral Rehydration Salts
<b>PHC</b>	Primary Health Care
<b>RHFA</b>	Rapid Health Facility Assessment
<b>USAID</b>	United States Agency for International Development

## I. Executive Summary

From October 2006-September 2010, Medical Teams International conducted the Grand Cape Mount Child Survival Project: Improved Child Health in a Transitional State through IMCI, aimed at reducing child and maternal mortality and morbidity in Grand Cape Mount (GCM), Liberia. A large part of the project is to increase the capacity of 31 health facilities (HFs) and accompanying staff in GCM County.

In August 2010, the Child Survival team carried out a Rapid Health Facility Assessment as part of the final evaluation process to assess the project's success in building the capacity of the 31 health facilities present in GCM County. The assessment measures capacity in the areas of access and inputs, processes, and performance. The team visited 18 of the 31 PHC facilities. Five teams of three individuals, consisting of one supervisor and two enumerators, were developed using the same staff that performed the baseline and Midterm evaluation (MTE) HFAs. This staff was comprised of MTI Supervisors and CHT members. Each team contained at least two members with experience in health. All 18 HFs were scheduled to be surveyed in 4 days.

The project has had a significant impact on improving access and care at the Health Facilities through IMCI and C-IMCI. The major areas of concern, identified through the initial HFA performed at baseline, were in the areas of health worker performance, service availability, information systems, and supervision. Each of these areas was significantly impacted by the project, as can be seen in the 12 core indicators measured in the RHFA.

At baseline, only 9.1% of HF clinical encounters occurred in which all assessment tasks were made by HWs for sick child. Through IMCI training of HWs by the project, coupled with alternating, bi-monthly supervisory visits and mentoring visits by MTI Supervisors, this indicator has now been increased to 67%, with the percentage of assessment tasks being performed on average at each HF at 94%. In addition, in 83% of the HFs the treatment given by the HW is appropriate to diagnosis. This is a marked improvement over the baseline frequency of 45.5%. Also, the weakest area noted at baseline in regards to HW performance was in the area of counseling the caretaker on the proper method of administering the medicines prescribed. At MTE, only 11% of HFs were properly instructing caretakers in how to correctly administer drugs prescribed for their child. This was a decrease from baseline, where it was reported that 48.5% of caretakers could correctly describe how to administer all prescribed drugs. By final MTI was able to significantly improve this to 72.7%.

No facilities were providing growth monitoring, which is the reason the indicator for the percentage of HF that offer child, immunization, and growth monitoring services was 0% at baseline. As part of the IMCI training, growth monitoring was to be implemented at each HF. At final, therefore, 94% of HFs are now providing growth monitoring, increased from 44% at MTE. It is also encouraging that 100% of the HFs now offer ANC services at least once a week.

At baseline, no (0%) HFs had up to date records available for child care or for antenatal care. Through training and supervisory visits the project was able to markedly increase the percentage of HFs that had up to date records, with 89% of HFs having up to date child health records and 89% of HFs having up to date records for antenatal care.

At baseline only 4.5% of HF had received external supervision at least once in the previous 6 months. The project has implemented a regular system of supervision, and has increased this

indicator dramatically. The indicator has now changed to the percentage of HFs that have received external supervision in the last 3 months, versus 6 months, and still the project attained 94%.

With regard to medications, 83% of HFs had all first line medications for child health in stock, with the percentage of HF attainment at 97% (meaning each HF had an average of 90% of the immunizations in stock). Also, 67% of HFs were found to have all nationally mandated immunizations in stock, with the percentage of HF attainment at 69%. A summary of the 12 core indicators measured in the RHFA are as follows:

### ACCESS (INPUTS)

1. **Service Availability:** From baseline to final all HFs offered ANC at least once per week. Also, by final 44% of HFs offered delivery services on all days. However, at final only 6% of HFs were deemed to offer all 3 basic child health services. This is increased from baseline (0%), but decreased from MTE (44%), due to the fact that all facilities see sick patients 20 hours per week, where the indicator requires greater than 20 hours per week.
2. **Staffing:** 78% of all staff who provide clinical services were present on the day of the final survey, and the average HF attainment was 89% (meaning the average HF had 89% of its staff present). This indicator had been changed since baseline, and the MTE finding was 56% with 77% HF attainment.
3. **Infrastructure:** At final, all essential health infrastructure was present on the day of the survey in 44% of the HFs, with the average HF attainment at 45%. This is increased from 33% at midterm, but is decreased from the baseline of 50%. The limiting factors are emergency transport, which was available in none of the HFs, electricity, which was available in only 11% of the HFs, and emergency communication, which was available in only 33% of the HFs on the day of the survey.
4. **Supplies:**
  - a. **Supplies – Child:** At final 89% of HFs had all of the essential supplies to support child health, with the average HF attainment of these essential supplies at 98%. The limiting factors are that infant scales and scales for children/adults are available in 94% of the facilities.
  - b. **Supplies-MNC:** At final, only 11% of the HFs have all of the essential supplies available to support maternal-newborn services. This is only slightly increased from the MTE finding of 0%. This is due to the fact that only 11% of HFs have functioning vacuum extractors. However, partographs are now available at 94% of the HFs, up from 11% at MTE.
  - c. **Supplies-ANC:** None of the HFs have all of the essential supplies to support antenatal care, which remains unchanged from MTE. No facilities have

hemoglobin or syphilis tests available and only 6% of facilities have urine albumin test strips available. This remains unchanged from BL.

## 5. **Drugs:**

- a. **Child:** At final, 83% of HFs had all first line medications for health care present on the day of the survey. This included the fact that 100% of facilities had first line drugs for pneumonia and vitamin A, and 94% of facilities had ORS, dysentery, and first line antimalarial drugs available, showing an improvement in these areas. This compares to baseline where 64% of HFs had all first line medications available, which at that time was defined as ORS, a first line oral antibiotic for pneumonia, and a first line antimalarial. Using the new RHFA indicator, which also includes Vitamin A and a first line antibiotic for dysentery, 83% of HFs have all of the first line medications for child health available. This is an improvement from the MTE (61%) and an improvement from baseline despite the fact that this new indicator is more rigid than the baseline indicator. At midterm the limiting factor in drug supply was Vitamin A (72%). This has now been improved, and at final 100% of the facilities have Vitamin A in stock.
- b. **MNC:** 44 % of HFs had all of the essential delivery and neonatal drugs present on the day of the final survey. This is increased from the midterm finding of 33% (there was no baseline for this indicator). The limiting factor in this indicator is neonatal eye ointment, which is available in only 50% of the facilities.

## **PROCESSES**

### 6. **Information Systems**

- a. **Child:** At final, 89% of HFs had up to date records available for child care, including use of the data. Additionally, the average facility has 98% of the elements required in having up to date records available for child care. This is a vast improvement considering that at baseline, 0% of the facilities had all of the elements in place, and at MTE 61% of the facilities had all of the elements in place.
  - b. **ANC:** At final 89% of HFs maintain up to date records for antenatal care, with the average facility having 94% of the elements required in having up to date records available for antenatal care. At baseline, 0% of the facilities had all of the elements in place, and at midterm only 39% of the facilities had all of the elements in place.
7. **Training:** At final 39% of the HF had HW who reported receiving in-service or pre-service training in both maternal neonatal care and child health in last 12 months. This is down from the midterm finding of 61%. A baseline finding of 79% was found for a different less specific indicator “receiving any in-service or pre-service education relevant to their work in last 12 months”, but the indicator used for midterm and final was

much more rigorous. However, the midterm was comparable or higher than the baseline rate when you consider that MNC training alone was provided to 72% of HW. Both the rate of training in child health and the rate of MNC training dropped significantly by final and are 39% and 44%, respectively, as the trainings were conducted more intensively in the first 3 years of the project.

8. **Supervision:** External supervision has dramatically increased since baseline, from 4.5% of HF receiving external supervision at least once in the last 6 months, to 94% of HFs receiving external supervision in the last 3 months, which was the indicator at final.

## **PERFORMANCE**

9. **Utilization of Curative services:** The percentage of HF with > 1 sick child encounter per child under the age of 5 in GCM County was 6.24% at final. This is an increase from the baseline of 1.89%. The number of sick children being seen in the facilities has increased over the 4 years of the project due to the fact that the project strived to improve utilization of health services through HHPs and Care Groups providing health education and providing referrals of sick children encountered in the community to the facilities.
10. **HW Performance (Assessment):** At final 67% of HFs were performing the key assessment tasks routinely, with the average facility performing 94% of the key assessment tasks. This is a significant improvement over the baseline, where only 9% of facilities were found to routinely perform all key assessment tasks, and is a continued improvement over midterm, where it was found that the average facility was performing 66% of the key assessment tasks and 28% of the facilities were found to routinely perform all key assessment tasks.
11. **HW Performance (Treatment):** It is encouraging that at final, in 83% of the HFs, the treatment given by the HW is appropriate to diagnosis (meaning provided in at least 5 of the 6 observed cases). This is a marked improvement over the baseline frequency of 45.5%, and continued improvement over the midterm of 72%.
12. **HW Performance (Counseling):** The weakest area noted at baseline, in regards to HW performance, is in the area of counseling the caretaker on the proper method of administering the medicines prescribed. At MTE, only 11% of HFs were properly instructing caretakers in how to correctly administer drugs prescribed for their child. This was a decrease from baseline, where it was reported that 48.5% of caretakers could correctly describe how to administer all prescribed drugs. By final MTI was able to significantly improve this to 72.7%. While GCM County continues to be hindered by the fact that the most experienced HWs, who have been trained by the project in IMCI, were often not at the facility on the day of the survey, new regulations were implemented in the HFs, by the CHT, to try to ensure that HWs are present during all normal HF hours. In addition, the project followed up with the HWs trained in IMCI to ensure that they are committed to providing this training to the other pertinent staff in their HF, as agreed upon at the start of the IMCI training sessions.

# **CHAPTER 1**

## **Program Overview**

### Project Area and Description:

Medical Teams International implemented the Grand Cape Mount County Child Survival Project (GCMCSP) in Grand Cape Mount County (GCM) located in northwestern Liberia. The goal of the GCMCSP was to reduce morbidity and mortality of children under five and women of reproductive age within Grand Cape Mount County, Liberia. The interventions and level of effort were: Nutrition 30%, PCM 20%, CDD 20%, Malaria 20%, and EPI 10%. All interventions were implemented within the recently adopted IMCI framework for Liberia and in accordance with MOHSW policy.

The implementing partners for this project were the County Health Team (CHT) and the Christian Health Association of Liberia (CHAL). The CHT which was charged with the responsibility of coordinating the delivery of health services throughout the county. CHAL implemented the social and behavior change and community mobilization components.

Working in partnership with the MOHSW, the CHT, and CHAL, MTI/Liberia implemented a project that aimed to improve the health of village communities in GCM County through strengthening HFs and the MOHSW's ability to address community health needs. This was accomplished through targeted behavior change at the household level, community mobilization, improving quality of care and access at the clinic level, and institutional capacity building for MTI and partners.

### **Quality of care and access at the clinic level**

At the county level, the MOH has created County Health Teams as a means of de-centralizing management and encouraging good governance. The CHT is comprised of the County Health Officer, Community Director, Administrator, Nursing Director, Medical Director, Financial Officer, and a Logistics Officer. The decentralization process was on hold during recent war years, but is now resuming.

At baseline there were a total of 17 functioning government health facilities out of a potential 32. This number has now increased to 31 at final evaluation. In the county, there are currently 1 physician, 38 registered nurses, 26 certified midwives, 14 physician's assistants, and 46 licensed practical nurses. There is also one church-supported private clinic which is open to participating in the project activities.

The HF objective of the GCMCSP was to improve the quality of care and access at the health facility level by implementing IMCI through training, mentoring, supportive supervision, and systems development in referral and logistics. The project implemented the three components of IMCI through the following activities:

Component 1: Improved case management skills of the health facility staff:

- Implemented IMCI in 30 clinics and one health center by supporting skills application of health workers in assessment, classification, standard case management, referral, and counseling
- Facilitated the training of HF staff, MTI, CHAL, CHT in IMCI in the 11 days IMCI training utilizing the national MOH training team
- Provided an orientation on IMCI for HF support staff, government, and traditional leaders
- Trained HF staff in complementary topics to improve clinic management and quality of care such as counseling, supportive supervision, management, logistics, M&E, rational drug use, and BCC
- Facilitated an exchange visit for MTI, CHAL, and the MOH to a Child Survival project in Sierra Leone and to the Liberia Improved Community Health project
- Quality of care was to be monitored and evaluated by HF staff, CHT, and MTI following IMCI training. Quality of Care Indicators were developed with the IMCI task force, coordinated by WHO.

Component 2: Improved the overall health system:

- Funds and GIK donations were made available to improve the availability of drugs and supplies for implementing IMCI.
- Coordinated with other agencies to improve drug supply (NDS, UNICEF, WHO, other NGOs)
- Provided training and support to HF staff to more effectively utilize logistics systems
- A referral system was instituted utilizing the HHPs and CHPs through the Care Group model.
- Implemented a mentoring and supportive supervision system for reinforcement of new skills
- Strengthened the existing HIS, with a focus on use of information for decision making and introduction of new tools such as LQAS and quality of care checklists
- Supported monthly health sector County Coordinating Committee meetings chaired by the CHT to improve coordination between government and other NGOs working in the county

Component 3: Improved family and community health care practices:

C-IMCI was phased into all districts of GCM and included three elements:

Element 1: Improved partnerships between health facilities and the communities they serve

- Clinic staff participated in training and supervising HHPs with assistance from MTI and CHAL.
- Developed a referral system to improve referral of sick children from HHPs to 1<sup>st</sup> level HFs
- Established monthly meetings at the HFs for CHWs and TBAs for information sharing, continuous education, and problem solving
- HHPs/CHCs encouraged families to use HF services and ensure equity of access.

Element 2: Increased appropriate and accessible care and information from community providers

- Trained approximately 250 HHPs and 150 TBAs in 132 communities in C-IMCI including management of illnesses, danger signs and prompt care-seeking, maternal and child nutrition including micronutrients and breastfeeding, environmental health and hygiene,



promotion of EPI (including TT), community HIS, communication/adult learning, home visits, and the 16 key family practice messages

- Provided assistance to HHPs/TBAs/CHCs in applying the above training through supportive supervision by HF/CHT/project staff
- Developed a plan for motivating and sustaining HHPs in coordination with the CHCs
- Encouraged the establishment of community-based emergency transport systems and the formation of Susu and/or Savings Clubs to fund health emergencies.
- Advocated with the MOH for the establishment of a supply of essential drugs at the community level (ORS, Vitamin A, and iron)

Element 3: Integrated promotion of key family practices critical for child health and nutrition

- Promoted community education by CHW/TBA/CDC/clinic staff utilizing effective integrated IEC/BCC methodologies for the promotion and adoption of key household practices

The increased capacity of the health facilities and health facility staff improved the quality of treatment and the outcomes for all of the major childhood diseases causing morbidity and mortality in GCM County:

## **CHAPTER 2**

### **Purpose of the Rapid Health Facility Assessment and Methodology**

The objective of a Health Facility Assessment is to collect both quantitative data regarding the health system in the project area, particularly the primary health care (PHC) facilities (level 1) providing maternal, neonatal, and child health (MNCH) services. The new Rapid Health Facility Assessment (RHFA) used to collect this data has been designed and recently upgraded by CSTS, and is now called RHFA Version 2.1.<sup>i</sup>

The RHFA is designed to be rapid and cost effective, and is designed to be used at the local level to devise strategies, with the MOH entity present in the project area, and to improve the delivery of integrated child health services.<sup>ii</sup> The baseline assessment was conducted before IMCI training had begun, and prior to any interventions aimed at health facilities so that an integrated strategy to improve the quality of health care could be implemented. This Final RHFA will measure progress in the 12 core areas of HF capacity, and will compare these results to baseline and midterm so that successes and continuing challenges may be identified. This R-HFA includes the first six children, under the age of five, entering the health facility on the day of the survey with diarrhea, fever, or cough and examines three major areas of health care delivery<sup>iii</sup>:

- **Case management:** Does the healthcare worker (HW) assess, diagnose, and treat children with diarrhea, fever (malaria), and ARI properly? Does the HW explain follow up care to the caretaker well?
- **Health facility infrastructure:** Does the health facility have the necessary equipment, supplies, medications, and privacy to perform adequate MCH services?
- **Management (Processes):** Are the proper management processes being followed in the health facility (supervision, record keeping, and continuation of training)?

The R-HFA focuses on the delivery of care for the most important causes of infant and child morbidity and mortality, which include: diarrhea, acute respiratory infections (ARI), malaria, measles, and malnutrition. The purpose of collecting this data is to allow the project, in conjunction with the MOH, DHO, and other health workers in the project area, to determine gaps in service and prioritize their response in order to provide essential, integrated health services. There are four main modules in the R-HFA, with a fifth optional module. All are formatted in Excel for ease of use<sup>iv</sup>:

- a. **Observation Checklist for sick child care:** To observe the HW in the assessment, diagnosis, and treatment of six consecutive cases of care of children under the age of five with fever, diarrhea, or breathing difficulty. The HW is assessed for adherence to the national (IMCI) protocol for assessment, classification, and treatment of childhood illness.
- b. **Client (Caretaker) Exit Interview:** To assess whether the caretaker has the correct knowledge of how to administer drugs given for diarrhea, malaria, and/or breathing difficulty (used a proxy for adequate counseling), and whether the caretaker knows under what circumstances the child is to return to the clinic.
- c. **Health Facility Checklist:** To assess the presence of a minimal level of infrastructure, equipment, supplies, and medications.

- d. Health Worker Interview and Record Review: To assess the staffing, MNCH services offered, and also assess the frequency of training, supervision, and other key processes.
- e. CHW Survey and Checklist (optional): To collect data on CHWs regarding six of the twelve health facility core indicators (through examination of registers).

#### *Selecting the Sampling Frame*

The sampling methodology has been revised by CSTS to use a quality assurance type approach similar, but not identical, to that used in LQAS. The methodology dictates that at least 80% of the health facilities perform adequately, according to the indicators chosen in the HFA, for the project area to pass. This is called the performance benchmark. Also, an unacceptable level of 50% is chosen as the level that should not go undetected in determining that the health facilities are not performing adequately in regard to a given indicator<sup>v</sup>. The alpha and beta errors have been placed at 10%. The new R-HFA software automatically calculates the sample size needed, and calculates the results following the survey. Because the number of facilities in the project area is 31, using a performance standard of 80% and a lower threshold of 50%, the sample size needed is 18 health facilities

#### *Selecting the Sampling Unit*

The new R-HFA version 2.1 methodology made choosing the sampling frame a straightforward process. A simple random sampling methodology was used.

- In GCM County there are 31 PHC health facilities in the project area, and therefore the software determined that a sample size of 18 is needed. The listing of HFs is available in Annex 1.
- Each health facility was listed, and each was given a number between one and 31.
- Using a two-digit random number table, 18 random numbers were selected between 01 and 31.

#### *Selecting the Survey Teams*

Five teams of three individuals, one supervisor and two enumerators, were developed using the same staff that performed the baseline HFA. This staff was comprised of MTI Supervisors and CHT members. Each team contained at least two members with experience in health. Therefore, all 18 HFs were scheduled to be surveyed in 4 days. It was necessary to return to 4 HFs to include the needed 6 children, as these 4 facilities were originally visited on slow days due to market days and other factors. The entire HFA was completed in 5 consecutive days.

Each element of the R-HFA is administered by the following members of the R-HFA survey team:

- a. Observation Checklist for sick child care: Enumerator with experience in health
- b. Client (Caretaker) Exit Interview: Enumerator, with guidance from Enumerator with experience in health
- c. Health Facility Checklist: Supervisor
- d. Health Worker Survey: Supervisor or Enumerator with experience in health; should be performed by whichever team member has completed their other duties.
- e. CHW Survey and Checklist (optional): Enumerator with guidance from Supervisor or Enumerator with experience

### *Training the Survey Team*

The training of the survey team required four days. The main objectives of the training were to discuss the purpose of the survey and the resulting information; discuss the logistics of the survey; review and practice each of the forms; and practice administering these forms in the facility setting. A health facility that was near the training site and which was not randomly chosen for the HFA was used for the field test. The training schedule<sup>vi</sup>, provided by CSTS, used to train the survey team is available in Annex 2.

### **The Survey Process**

#### *Observation of Clinical Care and Caretaker Exit Interview*

The first six children under the age of five presenting to the facility during the survey period whose caretakers describe them as having diarrhea/vomiting, fever/malaria, or cough/difficulty breathing/pneumonia were included in the sample. The caretakers were met as they entered the clinic, and if they agreed to take part in the survey they were followed throughout the facility. If the caretaker brought more than one sick child under the age of five, one child was randomly chosen to be the index child. The enumerator with experience in health observed the clinical encounter between the HW and the caretaker and child. The second enumerator conducted the Exit Interview with the caretakers of sick children outside of the facility as they exited, following receiving the child's medications.

#### *Health Facility Checklist*

After ensuring that these interviews were proceeding well, the supervisor completed the Health Facility Checklist with an available HW at the facility. A HW was present because determining the conditions in the consultation room and of some of the equipment required some discussion with the HW.

#### *Health Worker Survey*

Following completion of the observation of six consultations between the HW and the caretaker/child, the enumerator with experience or the supervisor, whichever was available, performed the HW Survey.

#### *CHW Survey and Checklist*

The CHW Survey and Checklist were performed if CHWs are involved in the health facility. In total there were only 5 CHWs interviewed.

#### *Providing Feedback to the Staff*

Surveyors were instructed to provide some feedback to staff on the day of the assessment. The feedback was positive wherever possible to alleviate any anxiety the staff may have felt due to

the survey, but also included any comments necessary to improve clinical treatment and management techniques. It was recommended during the training that feedback regarding the following items be given<sup>vii</sup>:

- Strengths and problems in case management, particularly in the assessment and treatment of sick children
- Quality of home-care advice and communication between health workers and caretakers
- Inappropriate use of medications
- Problems in record keeping
- Ways to improve clinic organization
- Major barriers to effective practice

### *Checking the Completed Questionnaires*

Completed questionnaires were checked by the supervisor or enumerator administering the questionnaire immediately at the conclusion of the interview so that any discrepancies or missed questions could be discussed with the person being interviewed. At the end of each facility session, the Supervisor reviewed all forms with the enumerators before leaving the facility. The completed forms were then brought to the central point chosen for data entry and given to the data entry staff. This was done nightly so that data entry could be performed during the data collection period. The data entry staff reviewed the completed questionnaires for accuracy while the survey team was there, in order to clarify or correct any unclear or incorrect items noticed in the forms.

### *Data Entry*

During the data collection phase of the survey, data was entered into the R-HFA Excel program provided in the R-HFA zip file available on the CSTS website<sup>viii</sup>. As much as possible, data was entered daily throughout the survey so that any discrepancies could be discussed with the supervisors as soon as possible. Cleaning of the survey data was accomplished by the data entry staff as the data was presented. Following data entry for the final assessment, all data was then combined in the single Excel file provided by CSTS.

The R-HFA survey forms file has a tabulation plan for hand tabulating the disaggregated indicators (each indicator alone), and the aggregated indicators that comprise the 12 core indicators<sup>ix</sup>. This includes bar graphs and tables that will provide useful reporting tools to provide in the HFA Report.

### **Constraints/Difficulties:**

Two of the HF did not have the required number of children present with illness, due to environmental factors such as market day in the village or an adjacent village, and the preparations for Ramadan. Therefore, the same interview team returned to these facilities the following day to complete the survey. This did not effect the results.

## CHAPTER 3

### Results

#### ACCESS (INPUTS)

##### 1. Service Availability

Indic. #	Domain	Indicator	% HF with all elements		
			BL	MTE	FINAL
1 CHILD	Service Availability - Child	% HF that offer all three basic child health services (growth monitoring, immunization, sick child care)	0%	44%	6%
1 ANC	Service Availability - ANC	% HF that offer ANC at least once a week	100%	100%	100%
1 NEO	Service Availability - Delivery	% HF that offer delivery services on all days	NA	39%	44%

From baseline to final all HF's offered ANC at least once per week. Also, by final 44% of HF's offered delivery services on all days. However, at final only 6% of HF's were deemed to offer all 3 basic child health services. This is increased from baseline (0%), but decreased from MTE (44%), due to the fact that all facilities see sick patients 20 hours per week, where the indicator requires greater than 20 hours per week. As part of the IMCI protocol, growth monitoring has been introduced to the HF's, and at final 94% of HF's are providing growth monitoring services in the facility and/or through outreach, which is significantly greater than the 44% found at midterm. In addition, 100% of the facilities are offering Immunization services through the facility and/or outreach. Also, 100% of HF in GCM County offer sick child services through the facility and/or outreach for a total of 20 days or more per month. Most facilities provide sick child services Monday-Friday, for a total of 20, but at final no HF's provided outreach, which was down from 11% at MTE. The project concentrated on providing outreach services through the HHPs, who refer sick children to the HF's. It is encouraging to note that 100% of HF's in GCM County offer ANC services, but only 44% of these facilities offer delivery services on all days. This is because most offer delivery services during their normal operational hours, which constitute 20 days per month, and do not offer outreach services.

## 2. Staffing

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
2	Staffing	% HF with all staff who provide clinical services working on the day of survey	NA	56%	78%	NA	77%	89%

This indicator has been changed since the baseline HFA was performed, at which time it was: “% of HFs with at least one provider meeting the country definition as qualified to provide curative care for children is present on day of survey”. All HFs met this requirement (100%) at baseline, and would have met it at midterm as well. However, the new indicator determines the number of each type of staff, and determines if they are all present on the day of the survey. In the final HFA, 78% were present, and the average HF attainment was 89% (meaning the average HF had 89% of its staff present). This is significantly raised from the MTE finding of 56%. The project met with the CHT following the MTE to discuss the low rate found in the MTE, because at that point in the project only the most experienced HW in each facility had been trained in IMCI, and therefore had the responsibility of training the other HWs in their facility. This HW was therefore responsible to be at the HF to provide services, and also to train other staff in IMCI. The CHT introduced new guidelines to all of the HW in the county to ensure their presence at the HF, and by the final evaluation this indicator was significantly improved.

## 3. Infrastructure

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
3	Infrastructure	% HF in which all essential infrastructure is present and functioning on day of the survey ( <b>improved water source; functional latrine for clients; setting allowing auditory and visual privacy; power; communication equipment; emergency transport; overnight beds</b> )	50%	33%	44%	NA	45%	45%

ELEMENT	BL	MTE	FINAL
Has at least one bed	NA	56%	44%
Has 24 hour staff coverage	NA	56%	39%
Has functioning emergency communication	NA	28%	33%
Has emergency transportation usable today	NA	6%	0%
Has electricity from the grid or a generator with fuel	NA	11%	11%
<b>Has a usable client latrine</b>	NA	61%	50%
<b>Has water from protected water source on or near grounds</b>	NA	56%	89%
<b>Has auditory and visual privacy</b>	NA	89%	94%

At final, all essential health infrastructure was present on the day of the survey in 44% of the HFs, with the average HF attainment at 45%. This is increased from 33% at midterm, but is decreased from the baseline of 50%, but this is because this indicator is also more rigid than the last baseline of the HFA, in which communication equipment, overnight beds, and emergency transport was not required. As can be seen in the preceding table, the limiting factors are: emergency transport, which was available in none of the HFs, electricity, which was available in only 11% of the HFs, and emergency communication, which was available in only 33% of the HFs. The project worked with the communities through the CHCs to develop emergency transportation systems in each village in order to work around the fact that HFs do not have the means for transportation systems.

#### 4. Supplies

##### Supplies - Child

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
4 CHILD	Supplies - Child	% HF with all essential supplies to support child health on day of the survey (accessible and working scale for child, accessible and working scale for infant, timing device for diagnosis of pneumonia, spoon/cup/jug to administer ORS)	90.9%	44%	89%	NA	79%	98%
ELEMENT						BL	MTE	FINAL
Has functioning and accessible infant scale						NA	67%	94%
Has functioning and accessible scale for children/adults						NA	94%	94%
Has functioning timer or watch						NA	78%	100%
Has pitcher for ORS						NA	78%	100%
Has cup or spoon for ORS						NA	78%	100%



At final 89% of HF's had all of the essential supplies to support child health, with the average HF attainment of these essential supplies at 98%. This is similar to the finding at baseline, where 90.9% of HF's had the entire essential infrastructure required for child health, and much improved from the MTE finding of 44%. The table of disaggregated indicators reveals that the limiting factors are that infant, children, and adult scales are available in 94% of the facilities.

## Supplies - MNC

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
4 MNC	Supplies - MNC	% HF with all essential supplies to support maternal-newborn health present on day of the survey (partograph, vacuum extractor, resuscitation device, weighing scale, antibiotics and baby wraps)	NA	0%	11%	NA	33%	67%
ELEMENT						BL	MTE	FINAL
Has functioning neonatal resuscitation equipment						NA	39%	94%
Has functioning and accessible infant scale						NA	56%	78%
Has functioning vacuum extractor						NA	6%	11%
Has neonatal wraps for warming						NA	56%	56%
Has partographs						NA	11%	94%

At final, only 11% of the HF's had all of the essential supplies available to support maternal-newborn services. This is only slightly increased from the MTE finding of 0%. This is due to the fact that only 11% of HF's have functioning vacuum extractors. Partographs are now available at 94% of the HF's, up from 11% at MTE. In addition, only 94% of facilities now have neonatal resuscitation equipment, up from 39% at MTE. Only slightly more than half (56%) of facilities have neonatal wraps and infant scales, which is consistent with the finding at MTE.

## Supplies - ANC

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
4 ANC	Supplies - ANC	% HF with all essential supplies to support antenatal care present on day of survey (blood pressure machine, tetanus toxoid vaccine, hemoglobin reagents, syphilis testing kit, and albastix for protein)	NA	0%	0%	NA	42%	43%

ELEMENT	BL	MTE	FINAL
Has functioning refrigerator	NA	72%	56%
Has functioning blood pressure equipment	NA	94%	100%
Has hemoglobin testing reagents	NA	0%	0%
Has syphilis testing kits	NA	0%	0%
Has malaria test kits	NA	78%	94%
Has urine albumin test strips	NA	6%	6%
Has tetanus toxoid	NA	72%	67%

None of the HFs have all of the essential supplies to support antenatal care, which remains unchanged from MTE. No facilities have hemoglobin or syphilis tests available and only 6% of facilities have urine albumin test strips available. This remains unchanged from BL.

## 5. Drugs

### Drugs – Child

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
5 CHILD	Drugs - Child	% HF with all first line medications for child health present on day of the survey (ORS, oral antibiotic for pneumonia, first line oral antibiotic for dysentery, first line antimalarial, vitamin A)	64%*	61%	83%	NA	90%	97%

ELEMENT	BL	MTE	FINAL
Has ORS packets	NA	89%	94%
Has first line child pneumonia drug	NA	94%	100%
Has first line dysentery drug	NA	100%	94%
Has first line antimalarial	NA	94%	94%
Has vitamin A	NA	72%	100%

\*Did not include dysentery drug or Vitamin A

At final, 100% of facilities have first line drugs for pneumonia and vitamin A, and 94% of facilities had ORS, dysentery, and first line antimalarial drugs available, showing an improvement in these areas. This compares to baseline where 64% of HF's had all first line medications available, which at that time was defined as ORS, a first line oral antibiotic for pneumonia, and a first line antimalarial. Using the new RHFA indicator, which also includes Vitamin A and a first line antibiotic for dysentery, 83% of HF's have all of the first line medications for child health available. This is an improvement from the MTE (61%) and an improvement from baseline despite the fact that this new indicator is more rigid than the baseline indicator. At midterm the limiting factor in drug supply was Vitamin A (72%). This has now been improved, and at final 100% of the facilities have Vitamin A in stock.

#### Drugs - MNC

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
5 MNC	Drugs - MNC	% HF with all essential delivery & neonatal drugs present on day of survey (i.e., Oxytocin, antibiotics for newborn sepsis and eye infections)	NA	33%	44%	NA	74%	74%
ELEMENT			BL	MTE	FINAL			
Has antibiotics for newborn sepsis/pneumonia			NA	89%	94%			
Has neonatal eye ointment			NA	94%	50%			
Has Oxytocin			NA	39%	78%			
Has Nevirapine (in high HIV prevalence areas only)			NA	0%	0%			

44 % of HF's had all of the essential delivery and neonatal drugs present on the day of the final survey. This is increased from the midterm finding of 33% (there was no baseline for this indicator). The limiting factor in this indicator is neonatal eye ointment, which is available in only 50% of the facilities. It should be noted that Nevirapine is not available in GCM County.

## PROCESSES

### 6. Information Systems

#### Information System - Child

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
<b>6 CHILD</b>	<b>Information System - Child</b>	% HF that maintain up-to-date records of sick U5 children (age, diagnosis, treatment) and for HF: have report in last 3 months and evidence of data use	0%	61%	89%	NA	82%	98%

At final, 89% of HF's had up to date records available for child care, including use of the data. Additionally, the average facility has 98% of the elements required in having up to date records available for child care. This is a vast improvement considering that at baseline, 0% of the facilities had all of the elements in place, and at MTE 61% of the facilities had all of the elements in place.

#### Information System - ANC

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
<b>6 MNC</b>	<b>Information System - ANC</b>	% HF that maintain up-to-date records of antenatal care (TT, blood pressure, expected date of delivery) & deliveries (present & up to date)	0%	39%	89%	NA	81%	94%
ELEMENT			BL	MTE	FINAL			
An ANC register was observed			NA	100%	100%			
ANC register with complete delivery information, last 3 months			NA	83%	100%			
ANC register with complete TT information, last 3 months			NA	67%	100%			
ANC register with complete BP information, last 3 months			NA	89%	100%			
ANC register with entry in last 7 days			NA	83%	94%			
Delivery register was observed			NA	89%	100%			
Delivery register was up to date (entry in last 30 days)			NA	72%	94%			

At final 89% of HFs maintain up to date records for antenatal care, with the average facility having 94% of the elements required in having up to date records available for antenatal care. Each component, when disaggregated, was complete over 90% of the time by final evaluation. At baseline, 0% of the facilities had all of the elements in place, and at midterm only 39% of the facilities had all of the elements in place.

## 7. Training

Indic. #	Domain	Indicator	% HF with all elements		
			BL	MTE	FINAL
7 CHILD	Training - Child Health	% HF in which interviewed HW reported receiving in-service or pre-service training in child health in last 12 months	NA	61%	39%
7 MNC	Training - Maternal- Neonatal Care	% HF in which interviewed HW reported receiving in-service or pre-service training in maternal neonatal care in last 12 months	NA	61%	39%
Interviewed HW received any MNC training in last 12 mo.			NA	72%	44%
<b>MNC</b>					
Immunization training			NA	28%	28%
Pneumonia case management training			NA	44%	67%
Diarrhea case management training			NA	44%	67%
Malaria case management training			NA	56%	72%
ACT use training			NA	56%	72%
ITN use training			NA	50%	72%
Nutrition training			NA	33%	50%
Breastfeeding promotion training			NA	44%	61%
IMCI training			NA	56%	61%
<b>CHILD HEALTH</b>					
IPT use training			NA	50%	67%
Newborn care training			NA	44%	67%
Post-partum care training			NA	6%	50%
ANC training			NA	11%	39%
Infection control training			NA	11%	33%
AMTSL training			NA	11%	33%
Ob / neonatal emergencies referral training			NA	22%	28%

At final 39% of the HF had HW who reported receiving in-service or pre-service training in both maternal neonatal care and child health in last 12 months. This is down from the midterm finding of 61%. A baseline finding of 79% was found for a different less specific indicator “receiving any in-service or pre-service education relevant to their work in last 12 months”, but the indicator used for midterm and final was much more rigorous. However, the midterm was comparable or higher than the baseline rate when you consider that MNC training alone was

provided to 72% of HW. Both the rate of training in child health and the rate of MNC training dropped significantly by final and are 39% and 44%, respectively, as the trainings were conducted more intensively in the first 3 years of the project.

## 8. Supervision

Indic. #	Domain	Indicator	% HF with all elements		
			BL	MTE	FINAL
8	Supervision	% HF that received external supervision at least once in the last 3 months (supervision included one or more of the following: checked records or reports, observed work, provided feedback, gave praise, provided updates, discussed problems))	4.5%	56%	94%*

External supervision has increased since baseline, from 4.5% of HF receiving external supervision at least once in the last 6 months, to 94% of HF receiving external supervision in the last 3 months, which was the indicator at final. Despite the fact that the indicator has changed from 6 months to 3 months, the Supervision results are quite encouraging, as they increased to 56% by midterm evaluation and then continued to consistently improve to 94% by final.

## PERFORMANCE

### 9. Utilization of Curative services

Indic. #	Domain	Indicator	% HF with $\geq 1$ encounter/child in GCM		
			BL	MTE	FINAL
9 CHILD	Utilization of Curative Services	Annualized number of clinical encounters for sick children per U5 population (% HF with $\geq 1$ sick child encounter per U5 in catchment area)	1.89%	5.00%	6.24%

The percentage of HF with  $> 1$  sick child encounter per child under the age of 5 in GCM County was 6.24% at final. This is an increase from the baseline of 1.89%. The number of sick children being seen in the facilities has increased over the 4 years of the project due to the fact that the project strived to improve utilization of health services through HHPs and Care Groups providing health education and providing referrals of sick children encountered in the community to the facilities. It should be noted that this indicator was hand tabulated using the number of clinical encounters with sick children fewer than 5 in last three complete calendar months divided by the most recent figure available from the CHT regarding the number of children under 5 in the catchment area.

## 10. HW Performance (Assessment)

Indic. #	Domain	Indicator	% HF with all elements			Index Value (% avg. HF attainment)		
			BL	MTE	FINAL	BL	MTE	FINAL
10 CHILD	HW Performance (Assessment)	% HF where key assessment tasks are routinely performed (check presence of general danger signs, assess feeding practices, assess nutritional status, check vaccination status)	9%	28%	67%	NA	66%	94%

In order for a HF to be considered as having key assessment tasks routinely performed, in greater than 80% (5 or 6 out of the 6 cases observed) of the encounters the HW must perform all of the key assessment tasks. At final 67% of HFs were performing the key assessment tasks routinely, with the average facility performing 94% of the key assessment tasks. This is a significant improvement over the baseline, where only 9% of facilities were found to routinely perform all key assessment tasks, and is a continued improvement over midterm, where it was found that the average facility was performing 66% of the key assessment tasks and 28% of the facilities were found to routinely perform all key assessment tasks. The survey team discussed this finding after the midterm evaluation, and determined the major factor contributing to this low percentage was the fact that the most experienced HW, who has been trained by the project in IMCI, was often not at the facility on the day of the survey. A meeting was held with the CHT where this finding was discussed, and new regulations were implemented in the HFs to ensure that HW are present during all normal HF hours. In addition, the project followed up with the HW trained in IMCI to ensure that they provided this training to the other pertinent staff in their HF, as agreed upon at the start of the IMCI training sessions. This greatly improved the assessment capacity of staff as the project progressed.

## 11. HW Performance (Treatment)

Indic. #	Domain	Indicator	% HF with all elements		
			BL	MTE	FINAL
11 CHILD	HW Performance (Treatment)	% HF where treatment is routinely appropriate to diagnosis (for encounters in which at least one of the presenting problems was fever, breathing problem, or diarrhea)	45.5%	72%	83%

It is encouraging that at final, in 83% of the HFs, the treatment given by the HW is appropriate to diagnosis (meaning provided in at least 5 of the 6 observed cases). This is a marked improvement over the baseline frequency of 45.5%, and continued improvement over the midterm of 72%.

## 12. HW Performance (Counseling)

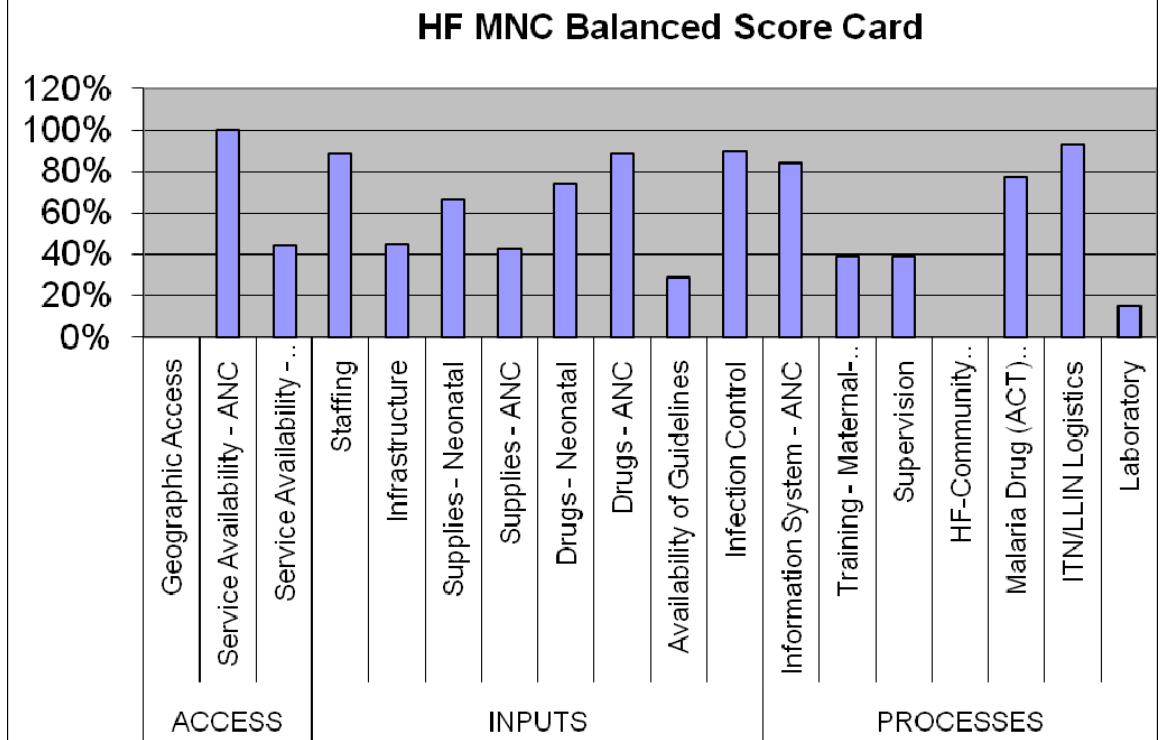
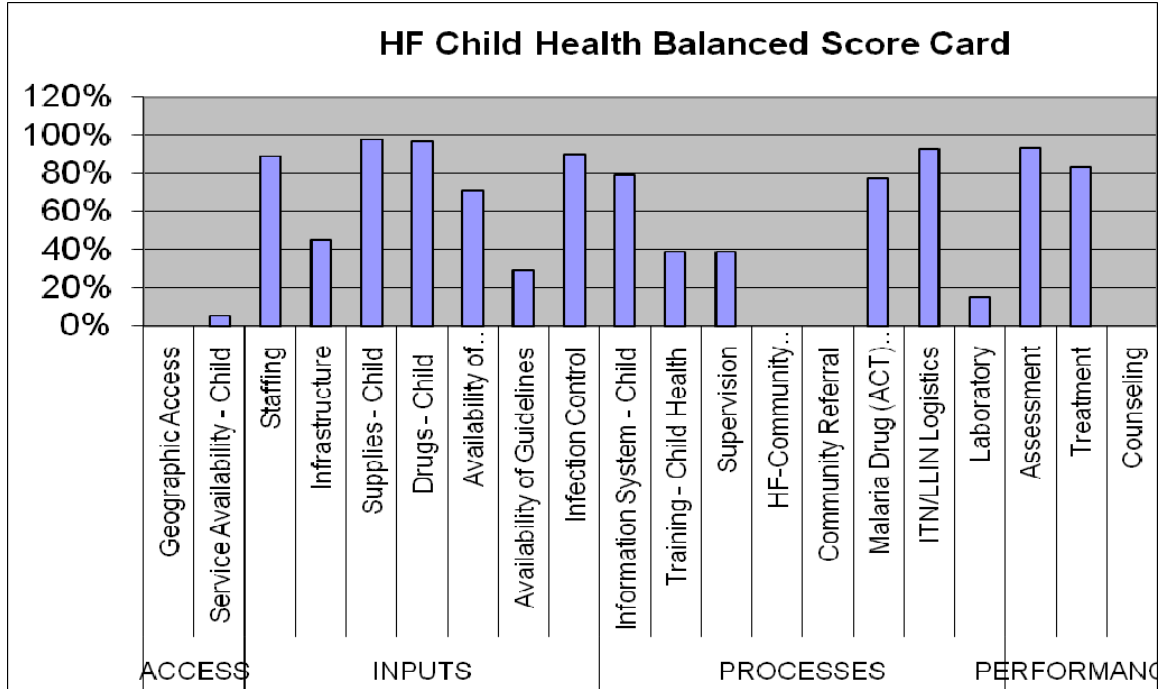
Indic. #	Domain	Indicator	% HF with all elements		
			BL	MTE	FINAL
12 CHILD	HW Performance (Counseling)	% HF where caretakers whose child was prescribed an antibiotic, antimalarial, or ORS, correctly describe how to administer all prescribed drugs	48.5%	11%	72.2%

The weakest area noted at baseline, in regards to HW performance, is in the area of counseling the caretaker on the proper method of administering the medicines prescribed. At MTE, only 11% of HFs were properly instructing caretakers in how to correctly administer drugs prescribed for their child. This was a decrease from baseline, where it was reported that 48.5% of caretakers could correctly describe how to administer all prescribed drugs. By final MTI was able to significantly improve this to 72.7%. While GCM County continues to be hindered by the fact that the most experienced HWs, who have been trained by the project in IMCI, were often not at the facility on the day of the survey, new regulations were implemented in the HFs, by the CHT, to try to ensure that HWs are present during all normal HF hours. In addition, the project followed up with the HWs trained in IMCI to ensure that they are committed to providing this training to the other pertinent staff in their HF, as agreed upon at the start of the IMCI training sessions.



# CHAPTER 4

## Conclusions



Overall, the project has had a significant impact on improving access and care at the Health Facilities through IMCI and C-IMCI. The major areas of concern, identified through the initial HFA performed at baseline, were in the areas of health worker performance, service availability, information systems, and supervision. At baseline, only 9.1% of HF clinical encounters occurred in which all assessment tasks were made by HWs for sick child. Through IMCI training of HWs by the project, coupled with alternating, bi-monthly supervisory visits and mentoring visits by MTI Supervisors, this indicator has now been increased to 67%, with the percentage of assessment tasks being performed on average at each HF at 94%. In addition, in 83% of the HFs the treatment given by the HW is appropriate to diagnosis. This is a marked improvement over the baseline frequency of 45.5%. Also, the weakest area noted at baseline in regards to HW performance was in the area of counseling the caretaker on the proper method of administering the medicines prescribed. At MTE, only 11% of HFs were properly instructing caretakers in how to correctly administer drugs prescribed for their child. This was a decrease from baseline, where it was reported that 48.5% of caretakers could correctly describe how to administer all prescribed drugs. By final MTI was able to significantly improve this to 72.7%.

No facilities were providing growth monitoring, which is the reason the indicator for the percentage of HF that offer child, immunization, and growth monitoring services was 0% at baseline. As part of the IMCI training, growth monitoring was to be implemented at each HF. At final, therefore, 94% of HFs are now providing growth monitoring, increased from 44% at MTE. It is also encouraging that 100% of the HFs now offer ANC services at least once a week.

At baseline, no (0%) HFs had up to date records available for child care or for antenatal care. Through training and supervisory visits the project was able to markedly increase the percentage of HFs that had up to date records, with 89% of HFs having up to date child health records and 89% of HFs having up to date records for antenatal care.

At baseline only 4.5% of HF had received external supervision at least once in the previous 6 months. The project has implemented a regular system of supervision, and has increased this indicator dramatically. The indicator has now changed to the percentage of HFs that have received external supervision in the last 3 months, versus 6 months, and still the project attained 94%.

With regard to medications, 83% of HFs had all first line medications for child health in stock, with the percentage of HF attainment at 97% (meaning each HF had an average of 90% of the immunizations in stock). Also, 67% of HFs were found to have all nationally mandated immunizations in stock, with the percentage of HF attainment at 69%.

**Annex 1**  
**LIST OF HEALTH FACILITIES**

	<b>Health Facility</b>	<b>District</b>	<b>Supporting Agency</b>	<b>Status</b>
1	Damballa Clinic	Porkpa	MTI	Functional
2.	Bandaja Clinic	Porkpa	MTI	Functional
3.	Bamballa Clinic	Porkpa	MTI	Functional
4.	Mano River Clinic	Porkpa	CHT	Functional
5.	Kalwielahun Clinic	Porkpa	CHT	Functional
6.	Jenneh Wonde Clinic	Tewor	MTI	Functional
7.	Genolor Clinic	Tewor	MTI	Functional
8.	Gordama Clinic	Tewor	MTI	Functional
9.	Tieni Clinic	Tewor	MTI	Functional
10.	Bo Waterside Clinic	Tewor	MTI	Functional
11.	Diah Clinic	Tewor	MTI	Functional
12.	Mambo Clinic	Tewor	CHT	Functional
13.	Bangormah Clinic	Tewor	CHT	Functional
14.	Tahn Maffa Clinic	Tewor	MTI	Functional
15.	Kulangor Clinic	Tewor	MTI	Functional
16.	Fanjah Clinic	Tewor	CHT	Functional
17.	Kpeneji Clinic	Garwula	Private/CAM	Functional
18.	Sinje Health Center	Garwula	MTI	Functional
19.	Kangar Clinic	Garwula	MTI	Functional
20.	Madina Clinic	Garwula	MTI	Functional
21.	Jundu Clinic	Garwula	MTI	Functional
22.	Bomboja Clinic	Garwula	MTI	Functional
23.	Sembahun Clinic	Garwula	CHT	Functional
24.	Bendu Clinic	Garwula	MTI	Functional
25.	Mbaloma Clinic	Gola Konneh	MTI	Functional
26.	Lofa Bridge Clinic	Gola Konneh	MTI	Functional
27.	Tahn Clinic	Gola Konneh	CHT	Functional
28.	Varguay Clinic	Gola Konneh	MTI	Functional
29.	Tallah Clinic	Commonwealth	MTI	Functional
30.	Fanti Town Clinic	Commonwealth	MTI	Functional
31.	St.Timothy Hospital OPD	Commonwealth	CHT	Functional
	<b>Not Included</b>			
	<b>D-8 Private Clinic</b>	Garwula	Guthrie Rubber Plantation	Functional
	Zaway Clinic	Garwula		Non-functional

## Annex 2 Training Of the Survey Team

The training of the survey team should require four days. The main objectives of the training are to discuss the purpose of the survey and the resulting information; discuss the logistics of the survey; review and practice each of the forms; and practice administering these forms in the facility setting. A health facility that is near the training site and which was not randomly chosen for the HFA should be used for the field test. The schedule<sup>1</sup> below combines a discussion of each form with actual facility based practice in collecting the information needed to complete the form.

Day	Activities
1	<p><b>AM: Opening &amp; General Information</b> Opening</p> <ul style="list-style-type: none"> <li>• Introduction of the participants</li> <li>• Administrative information</li> </ul> <p>General information</p> <ul style="list-style-type: none"> <li>• Purpose of the survey</li> <li>• Training objectives</li> <li>• Survey protocol and techniques</li> <li>• Introduction of Participant Guidelines</li> <li>• Clarification of participant expectations or concerns</li> </ul> <p><b>PM: Introduction to first two forms: Clinical Observation &amp; Sick Child</b> Clinical Observation - Sick Child</p> <ul style="list-style-type: none"> <li>• Review the instrument</li> <li>• Role play</li> </ul> <p>Caretaker Exit Interview – Sick Child</p> <ul style="list-style-type: none"> <li>• Review the instrument</li> <li>• Role play</li> </ul>
2	<p><b>AM: Health facility visit for Clinical Observation and Caretaker Exit Interview</b></p> <ul style="list-style-type: none"> <li>• Visit to health facility for practice of Clinical Observations and Exit Interviews</li> <li>• Debriefing of the health facility visit</li> </ul> <p><b>PM: Intro to Health Worker Interview and Health Facility Checklist</b> Health Worker Interview</p> <ul style="list-style-type: none"> <li>• Review the instrument</li> <li>• Role play</li> </ul> <p>Health Facility Checklist</p> <ul style="list-style-type: none"> <li>• Review the instrument</li> <li>• Role play</li> </ul>
3	<p><b>AM: Health facility visit for HW Interview and Health Facility Checklist</b></p> <ul style="list-style-type: none"> <li>• Visit to health facility to practice the HW interview and using the Health</li> </ul>

<sup>1</sup> Training schedule provided by CSTS; R-HFA short instruction 12-09-07; R-HFA Version 2.1; CSTS 2007; [http://www.childsurvival.com/rhfa\\_1.cfm](http://www.childsurvival.com/rhfa_1.cfm)

Facility Checklist

- Debriefing of health facility visit

**PM: Sampling Health Facility and Data Analysis**

Sampling health facilities in districts

- Explanation of how health facilities were sampled in each district
- Reviewing list of health facilities sampled and to be visited during the assessment

Analysis of R-HFA data

- Analysis of data at the health facility level. Identifying strengths and areas of needed improvement
- Analysis of data at the district level. Identifying areas of needed improvement

## REFERENCES

- 
- <sup>i</sup> R-HFA Version 2.1; CSTS 2007; [http://www.childsurvival.com/rhfa\\_1.cfm](http://www.childsurvival.com/rhfa_1.cfm)
- <sup>ii</sup> BASICS II Health Facility Assessment; BASICS 1999;  
[http://www.basics.org/Publications/pubs/hfa/hfa\\_apdxc.htm](http://www.basics.org/Publications/pubs/hfa/hfa_apdxc.htm)
- <sup>iii</sup> Ibid.
- <sup>iv</sup> R-HFA Version 2.1; CSTS 2007; [http://www.childsurvival.com/rhfa\\_1.cfm](http://www.childsurvival.com/rhfa_1.cfm).
- <sup>v</sup> R-HFA Version 2.1; CSTS 2007; [http://www.childsurvival.com/rhfa\\_1.cfm](http://www.childsurvival.com/rhfa_1.cfm)
- <sup>vi</sup> Training schedule provided by CSTS; R-HFA short instruction 12-09-07; R-HFA Version 2.1; CSTS 2007; [http://www.childsurvival.com/rhfa\\_1.cfm](http://www.childsurvival.com/rhfa_1.cfm)
- <sup>vii</sup> R-HFA short instruction 12-09-07; R-HFA Version 2.1; CSTS 2007;  
[http://www.childsurvival.com/rhfa\\_1.cfm](http://www.childsurvival.com/rhfa_1.cfm)
- <sup>viii</sup> R-HFA Version 2.1; CSTS 2007; [http://www.childsurvival.com/rhfa\\_1.cfm](http://www.childsurvival.com/rhfa_1.cfm)
- <sup>ix</sup> Ibid.

## **Annex 8: Community Health Committee Self-assessment**

### **Introduction and purpose:**

Community health committees (CHCs) were a community structure supported by the Liberia Ministry of Health before the civil war. An important aspect of the community mobilization component of the Grand Cape Mount Child Survival Project was providing support to revitalize these traditional structures. The project re-established a CHC in each of the 132 communities of Grand Cape Mount County in which there was a Care Group. Each CHC on average has 8 members including community leaders such as Imams, pastors, women's leader, and Trained Traditional Midwives. CHCs support their communities to assume responsibility for their own health by supporting the work of Household Health Promoters, creating linkages between communities and health facilities, identifying problems, and mobilizing the community to implement local solutions. The committees also led the establishment of emergency transportation and fund systems.

To monitor the work of CHCs and enable them to appraise themselves, the project designed a self assessment tool. Project Community Health Promoters (CHPs) used this tool to guide the CHCs through the process of assessing themselves. The first self assessment was conducted in August 2009 and a follow-up self assessment was conducted in March 2010, seven months later.

### **Methodology**

Key tasks of the CHCs were identified and integrated into a structured questionnaire. The key tasks included:

- Frequency and organization of meetings;
- Participation and leadership in meetings;
- Problem identification,
- Prioritization and action planning;
- Support to household health promoters (HHPs) and
- Utilization of data from care groups;
- Establishment of emergency health fund and transportation system; and
- Participation in conflict prevention and resolution.

Training was provided to the CHPs on how to facilitate the process of self-assessment after which the CHPs, supervised by project Supervisors, supported each of the 132 CHCs to identify their status and fill in the questionnaire. The findings were entered into a CHC-self assessment database created by the CSP Manager and was analyzed.

## Results and how they were utilized

Results (presented below) were discussed by the CSP team and shared with the CHT, CHAL and CHCs themselves. Gaps such as skills in group facilitation, strategies to enhance participation of members to reach decisions, support for HHPs, utilization of care group data, establishment of effective work plans and establishment of effective emergency health fund were identified based on the results of the self-assessment and appropriate measures were taken as described in table 1.

Table 1: activities undertaken to strengthen the CHCs by indicators

Indicators	Activities (results)
<b>Frequency of Meetings</b>	Almost 90% of the CHCs met at least once every 3 months with 82% meeting every month as of March 2010. The 10% of the CHCs that did not meet were identified and encouraged by the project staff to meet at once least every three months.
<b>Meeting Organization</b>	More than 95% of the CHCs had clear objectives for each meeting they had.
<b>Meeting Participation and leadership</b>	CHPs and Field Supervisors participated in CHC meetings in their respective communities to mentor the CHC chairmen in leading meetings and involving all CHC members including women in decision makings.
<b>Needs Identification</b>	94% of the CHCs identified needs.
<b>Needs Prioritization</b>	14% of the CHC did not prioritize needs they identified and the CSP staff members supported them in doing prioritization. All the CHCs were also supported in making their work plans realistic and achievable with locally available resources.
<b>Support to HHPs</b>	67% of the CHC showed little appreciation and support for the HHPs. This finding was verified by asking the HHPs and the finding was almost the same. The CSP team has encouraged the CHCs to make supporting HHPs a higher priority.
<b>Using Care Group data for planning</b>	88% of the CHCs discuss the care group data with 63% using it for planning purposes. CHPs and field supervisors supported the CHCs to use the CG data by discussing why it is useful to use the CG data and how they can use it for planning purposes. They were also supported to review their work plans regularly in line with the CG data.
<b>Effective Work plan established</b>	More than 95% of the CHC have established work plans with only 30% reporting to be on track with implementing the activities. The CSP staff members provided orientation to the CHC on monitoring activities. The CHCs were also encouraged to review the implementation of the work plans every time they



	meet and to make their activities time bound and to designate responsible individuals to each task.
<b>Emergency Health Fund</b>	78% of the CHCs have established emergency health fund system with 52% reporting that their emergency fund system is working well. The main reason for the rest of the CHCs for not having the emergency health fund system was due to failure of the communities to trust those who handle the fund. The CHCs were encouraged to identify their own strategies that are locally acceptable to develop trust with the communities.
<b>Emergency Transport System</b>	88% of the CHCs have established emergency transport systems that were working well.
<b>Conflict prevention</b>	100% of the CHCs have at least one person trained in conflict prevention and resolution with 68% reporting that four or more people were trained per CHC.  87% reported to have used the skills gained during the training in preventing or settling conflicts in their respective communities.

Table 2: CHC self-assessments result

		Mar-10	Aug-09
		%(D=129)	%(D=130)
<b>1</b>	<b>Frequency of Meetings</b>		
a	Meets at least once every Month ( <i>meets regularly was used in August 2009</i> )	82.2	54.5
b	Meets at least once every three Month ( <i>meets irregularly was used in August 2009</i> )	7.0	19.7
c	Seldom Meets	10.1	20.5
d	Does meet at all	0.8	5.3
<b>2</b>	<b>Meeting Organization</b>		
a	There is an agenda or clear objectives for each meeting	96.9	93.8
b	There is no agenda or clear objective for the meeting	3.1	6.2
<b>3</b>	<b>Meeting Participation and leadership</b>		
a	There is good representation of the community at the community meetings	84.5	72.0
b	Both Men and Women are encouraged to contribute to the discussions	78.3	76.5
c	Both youth and adults are encouraged to contribute to the discussions	77.5	78.0

d	Processes such as voting are used to ensure input from every one	19.4	13.6
e	Processes such as voting are used to ensure equal participation in decision making	51.9	31.1
f	Leaders have been trained in group facilitation	34.9	28.8
	# CHCs that met at least 50%	74.4	57.6
	# CHCs that met at least 75%	33.3	18.2
<b>4</b>	<b>Needs Identification</b>		
a	Has Identified Problems	93.8	89.3
b	Has not Identified Problems	6.2	10.7
<b>5</b>	<b>Needs Prioritization</b>		
a	Has Prioritized needs	86.0	82.9
b	Has not Prioritized needs	14.0	17.1
<b>6</b>	<b>Support to HHPs</b>		
a	Actively supports HHPs by providing materials support and recognition	10.1	15.6
b	Shows appreciation and recognition of HHPs and provide some material support	22.5	27.5
c	Shows little appreciation and support for HHPs	66.7	56.9
<b>7</b>	<b>Using Care Group data for planning</b>		
a	Discusses Care Group data and uses it for planning	62.8	55.7
b	Discusses Care Group data but do not use it for planning	20.2	10.7
c	Does not discuss Care Group data or use it for planning	17.1	33.6
<b>8</b>	<b>Effective Work plan established</b>		
a	Has established a work plan and are on track with implementing the activities	30.2	31.4
b	Has established a work plan and has made some progress in implementing activities	34.1	43.0
c	Has established a work plan but have not put it into practice	32.6	18.2
d	Has not established a work plan	3.1	7.4
<b>9</b>	<b>Emergency Health Fund</b>		
a	Has established community emergency health fund	51.9	46.7
b	Has established a community emergency health fund but the system is not working well	26.4	22.5
c	Has plan for a community emergency health fund but has not put it into practice	10.9	18.3
d	Has not established a community emergency health fund	10.9	12.5
<b>10</b>	<b>Emergency Transport System</b>		

a	Has established emergency transport system and the system is working well	87.6	74.6
b	Has established emergency transport system but the system is not working well	7.0	4.9
c	Has plan for emergency transport system but has not put it into practice	3.1	11.5
d	Has not established emergency transport system at all in the community	2.3	9.0
<b>11</b>	<b>How many CHC members were trained in conflict prevention?</b>		
a	Less than four	31.8	NA
b	Four or More	68.2	NA
c	No one was trained	0.0	NA
<b>12</b>	<b>Have you used skills learned during the training to prevent or settle conflict or palava?</b>		
a	Yes	87.6	NA
b	No	12.4	NA

## Annex 9: Medical Teams International in Liberia Capacity Building Plan

### MTI, CHAL and GCM CHT Technical Assistance Plans for Institutional Capacity Building

#### Capacity Building needs for all three agencies

Category	Priority Activities	Indicators	Who is Responsible	Status	Comment
Leadership & Agency Plan	Conduct monthly CSP program coordination meetings with partners and MTI	# times CSP committee met	CHO, CS Project Manager, Community Outreach Coordinator, MTI Country Director,	Completed	Meetings were established in Y1; at end of Y2 meetings were sporadic;  Field based MTI and CHAL staff have met every month during Yr 3 and 4.  Coordination meetings with CHT officials were held quarterly during year 3 and were held monthly during first half and quarterly during second half of year 4.
Financial Management	Continue annual financial management reviews and provide training in areas of identified weakness	# of reviews # of training	MTI Finance & Administrative Manager CHAL Accountant CHT Administrator	Completed	Vice President of Finance visited MTI Liberia annually to conduct audit and provide capacity building.
Administration & Human Resources	Develop training/professional development plans for staff related to CSP	# staff trained in CS related activities	MTI Country Director CHAL Executive Director CHO	Completed	20 CHPs, 4 field supervisors, 4 coordinators and 1 IMNCI mentor were provide with basic and several refresher trainings in C-IMNCI or clinical IMNCI as appropriate. They were also trained in facilitative supervision for quality improvement, conflict prevention; monitoring and evaluation methodologies.  12 Child Survival Project staff and partners were trained as trainers in facilitative supervision

	Review and/or develop procedures and policies on Logistics and medicines and supply management systems and train staff in the correct use of these systems	# relevant staff familiar with policies and procedures related to logistics and medicines and supply management systems	MTI F& A Manager MTI, CHAL & CHT Logistician, HQ Commodity support officer	Completed	Systems developed.  Additional training in supply chain mgmt provided in February 2010 for 8 people from MTI and CHAL. MTI also hired a Drug Store and Medical Supplies Officer through its RBHS Project who oversees the logistics and supply chain management of drugs and medical supplies.
Project Design & Management	Conduct training in Program Cycle Management	# of CSP program and partner staff trained in PCM	HQ Technical Services HQ Africa Region	Completed - July 2007	19 CSP and partner staff were trained in PCM (9 MTI; 6 CHAL; 2 CHT; 2 MoH)
	Develop Conflict Resolution guidelines and train staff in conflict resolution methods and local capacities for peace.	# CSP program and partner staff who received training in conflict resolution strategies	Director of the Resource Center for Community Empowerment	Completed - June 2009	Training of t trainers was provided to CSP staff members at the end of Y 3. The staff cascaded the training to HHPs, CHCs and CHDCs during first quarter of Y 4. 88% of the CHCs reported to have utilized the skills learned from the training in their communities.
	Conduct training in BEHAVE Framework, IEC/BCC strategies and methods	# of CSP program and partner staff trained in BEHAVE, IEC/BCC	CS Advisor, BCC Specialist, CSP Training Coordinator	Completed	Initial training provided in October 2007 for 30 MTI, CHAL and CHT staff and refresher training provide during 2008 and 2009.
	Conduct training in IMCI	# CSP program and partner staff trained in IMCI	CSP Manager Training and IMCI Coordinators	Completed	Training provided in September, 2007, December 2008, and May 2010.  86 Physician assistants, registered and licensed practical nurses and certified midwives and 5 CSP staff members trained in IMCI and 132 health facility support staff provided with orientation to the components of IMCI relevant to their roles.

	Conduct training in adult learning teaching strategies and methods, and in development of curricula and teaching materials	# CSP program and partner staff demonstrate competency in informal teaching methods	HQ Capacity Building/Training Advisor	Completed - May 2007	35 people were trained in TOT (5 MTI; 24 CHAL; 3 CHT; 3 MoH)
	Conduct training in Qualitative Care Methods	# CSP program and partner staff who received training in COPE	CS Advisor CSP Training Coordinator	Completed	As recommended by MTE consultant, the facilitate supervision training and Quality Improvement Verification Checklists were implemented in place of the COPE approach.
	Conduct Training on Community Transformation and mobilization	# CSP program and partner staff who received training in Community Transformation and mobilization	Community Transformation Consultant	Completed - November 2006	27 MTI, CHT and CHAL staff trained in community transformation and mobilization
	Conduct Training on KPC, HFA and Qualitative Research Methods	# CSP program and partner staff who received training KPC, HFA and Qualitative Research Methods	M&E Specialist CS Consultant Community Consultant	Completed - November 2006	30 MTI and CHAL staff trained on KPC, HFA and Qualitative Research Methods
	Conduct training on community participatory processes in planning and development	# CSP program and partner staff trained in participatory processes and community development	Development Education Network-Liberia (DEN-L, local NGO)	Completed - Nov 2007	27 MTI, CHT and CHAL staff trained in community participation in planning and development
	Training in use of monitoring and evaluation plans to report on progress against objectives and indicators	# CSP program and partner staff competent in M&E and reporting procedures	MTI M&E Specialist CSP M&E Coordinator	Completed - July 2007	30 MTI and CHAL staff trained in use of monitoring and evaluation plans to report on progress against objectives and indicators
	Conduct Training in Health Management Information Management System	# CSP program and partner staff who received training in Health Information Management Systems	CS Specialist CS Project Manager MOH Disease Surveillance Division	Completed - March 2008	25 MTI and CHAL staff trained  Follow up training for CHT provided in August 2010.
	Develop a feasible health management information system	Existence of an implemented HMIS that is used for decision making	CHO CHAL Community Outreach Coordinator, CS Country Director	Completed - May 2007	The HMIS is established. HHPs have been collecting health information at the community level since July of 2008. Care Group data has been shared with communities since October 2008.  A CHC self assessment conducted in March 2010 showed that 83% of the CHCs discuss the information obtained from HHPs while 63% of CHCs use it for planning purposes.

					<p>The CHCs directly get the information from the HHPs in their respective communities.</p> <p>Representative of CHC members attend Care Group meetings, some HHPs also go to CHCs meetings during which information sharing takes place.</p>
	Develop CSP exit strategy	Existence of a sustainable CSP exit strategy	CS Project Manager CHAL Executive Director GCM CHO	Completed - December 2009	<p>During December 2009, the project facilitated district level conferences with CHCs, CHDCs and HHPs in 15 strategic locations across five districts in Grand Cape Mount County.</p> <p>During the workshops, a strategy for sustaining community level and facility level activities was established. The plan will be reviewed during the final evaluation.</p>
Infrastructure & Relationships	Train staff use of electronic state of the art resources and project information/documents for technical health intervention support	# staff who demonstrate competent use of electronic and technical resources	MTI Country Director CSP Training Coordinator	Not completed	Activity was constrained by lack of access to the internet for electronic materials. Hard copies of materials of materials were provided to establish a resource library.

## Annex 10: CHW Training Matrix

Project Area (name of district or community)	Type of CHW	Official government CHW or Grantee developed cadre	Paid or Volunteer	Number Trained over life of project	Focus of Training
Garwula district	Household Health Promoters (Care group volunteers, all women)	Grantee-developed cadre	Volunteer	132	C-IMCI (without treatment) in the major CSP intervention areas such as nutrition, malaria, diarrhea, pneumonia and immunization.
	Community Health Committees	Grantee-developed cadre	Volunteer	41	PRA methodologies, leadership and group facilitation skills, conflict prevention and management
	General Community Health Volunteers (gCHVs)*	Government	Volunteer	28	Community mobilization and case management of childhood diarrhea, malaria and pneumonia. Only case management of diarrhea was introduced before the end of the CSP.
Tewor district	Household Health Promoters (Care group volunteers, all women)	Grantee-developed cadre	Volunteer	124	C-IMCI (without treatment) in the major CSP intervention areas such as nutrition, malaria, diarrhea, pneumonia and immunization.
	Community Health Committees	Grantee-developed cadre	Volunteer	32	PRA methodologies, leadership and group facilitation skills, conflict prevention and management
	General Community Health Volunteers (gCHVs)*	Government	Volunteer	26	Community mobilization and case management of childhood diarrhea, malaria and pneumonia. Only case management of diarrhea was introduced before the end of the CSP.
Porpka district	Household Health Promoters (Care group volunteers, all women)	Grantee-developed cadre	Volunteer	98	C-IMCI (without treatment) in the major CSP intervention areas such as nutrition, malaria, diarrhea, pneumonia and immunization.
	Community Health Committees	Grantee-developed cadre	Volunteer	25	PRA methodologies, leadership and group facilitation skills, conflict prevention and management

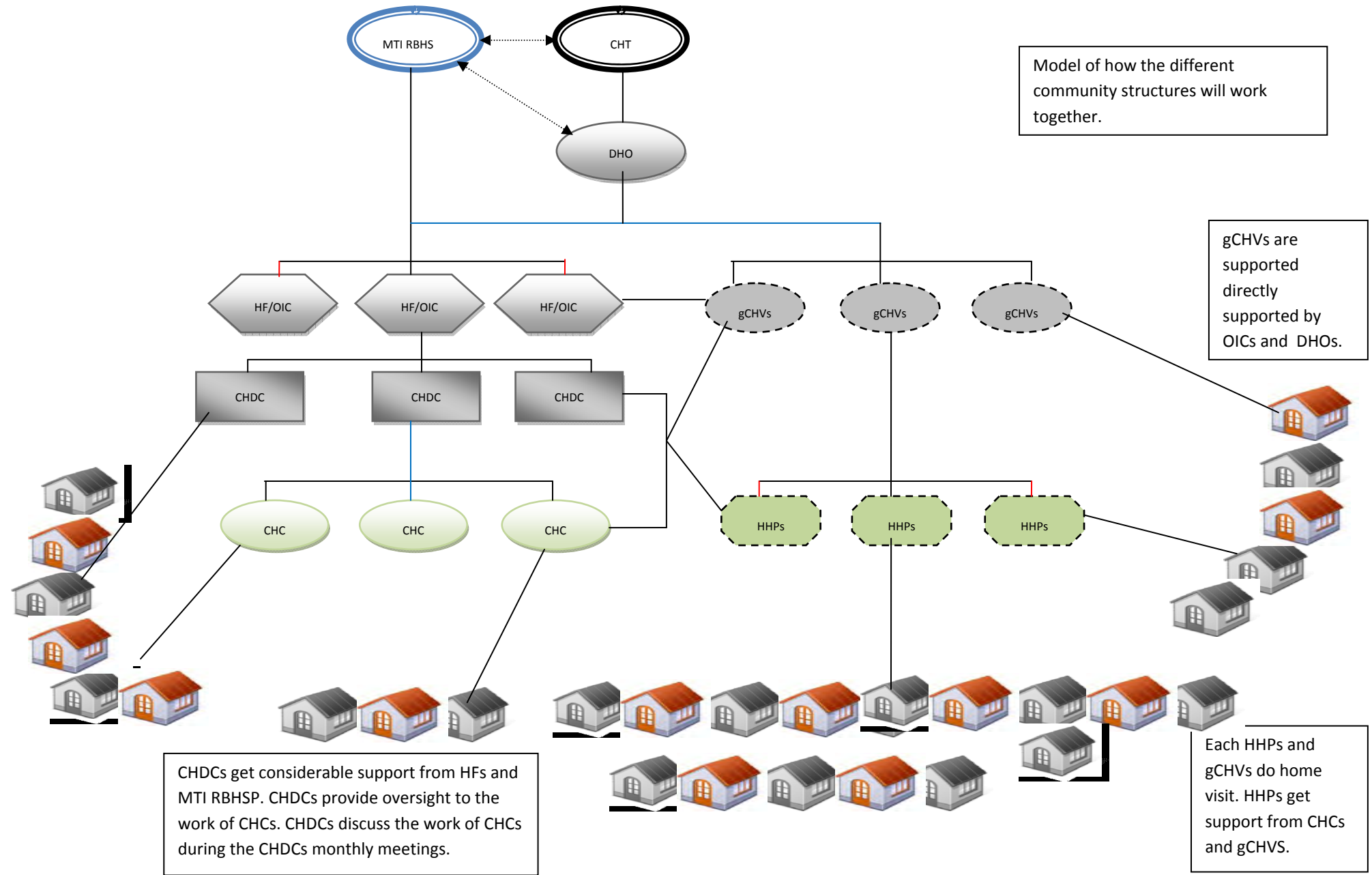


	General Community Health Volunteers (gCHVs)*	Government	Volunteer	45	Community mobilization and case management of childhood diarrhea, malaria and pneumonia. Only case management of diarrhea was introduced before the end of the CSP.
Common Wealth district	Household Health Promoters (Care group volunteers, all women)	Grantee-developed cadre	Volunteer	38	C-IMCI (without treatment) in the major CSP intervention areas such as nutrition, malaria, diarrhea, pneumonia and immunization.
	Community Health Committees	Grantee-developed cadre	Volunteer	7	PRA methodologies, leadership and group facilitation skills, conflict prevention and management.
	General Community Health Volunteers (gCHVs)*	Government	Volunteer	7	Community mobilization and case management of childhood diarrhea, malaria and pneumonia. Only case management of diarrhea was introduced before the end of the CSP.
Gola Konneh district	Household Health Promoters (Care group volunteers, all women))	Grantee-developed cadre	Volunteer	128	C-IMCI (without treatment) in the major CSP intervention areas such as nutrition, malaria, diarrhea, pneumonia and immunization.
	Community Health Committees	Grantee-developed cadre	Volunteer	28	PRA methodologies, leadership and group facilitation skills, conflict prevention and management
	General Community Health Volunteers (gCHVs)*	Government	Volunteer	26	Community mobilization and case management of childhood diarrhea, malaria and pneumonia. Only case management of diarrhea was introduced before the end of the CSP.
Grand Cape Mount County	Child survival staff members	Grantee and sub-grantee employee	Employee	29	IMCI or C-IMCI as appropriate, CSP methodologies, survey methodologies, community transformation and mobilization, project cycle management, facilitative supervision, conflict prevention – Note: some CHT members have also participated in some of the trainings.

Grand Cape Mount County	Health Facilities and CHT staff	CHT employees	Employee	86	86 health workers were trained in IMNCI and received facilitative supervision including mentoring and coaching services.
Grand Cape Mount County	Health Facilities' support staff	CHT employees	Employee	132	132 health facility support staff members were provided with orientation to the components of IMNCI relevant to their roles

\* The gCHVs were trained by County Health Team staff with financial support from RBHS project. The GCMCSP assisted in recruiting the gCHVs, planning the training and providing guidance in the training process.

# Annex 11: Integrated Care Group Structure



## Annex 12: Progress in Addressing Midterm Evaluation Recommendations

### General Recommendations

Recommendation	Status
1. The project should continue work plan activities as planned for Year 3 and 4.	Activities for Years 3 and 4 were carried out according to the work plan.
2. The project should obtain national census final results as soon as these become available.	The census results were obtained and the beneficiary numbers updated on the CSHGP Project Data Form.
3. Year 3 LQAS and final evaluation KPC survey should include additional questions to confirm that families practicing early care-seeking are receiving appropriate treatment for pneumonia. It should also include additional questions to assess progress in improving infant and young child feeding practices.	Questions regarding appropriate infant and young child feeding practices and care-seeking and treatment for pneumonia were included in the Year 3 LQAS survey and final KPC survey. The results are reported in the M and E table.
4. Increased visibility of the project at national level is encouraged, along with advocacy at national level for solution to critical issues at the county level. The Country Director and Project Manager should actively seeking ways to promote visibility of the project and its accomplishments at national level and for promoting sharing and scale-up of project strategies.	<p>The Ministry of Health and Social Welfare, and many national and international NGOs are familiar with the GCM CSP. Project strategies are being scaled up in other counties. IMNCI has been scaled up in all the 15 counties of Liberia. The project Social behavior change and community mobilization strategy based on the Care Group approach has been scaled up in Gbarpolu County by a UNICEF funded child survival project.</p> <p>In June 2010 MTI hosted Curamericas for a cross visit to learn about the Grand Cape Mount Child Survival Project Care Group and C-IMCI strategies. Since the cross visit, Curamericas has used the MTI C-IMCI modules and training methodology.</p> <p>During year 3, project staff shared experience and lessons learned during workshops to develop the national Child Survival Strategy and training manual for Community Health Volunteers.</p> <p>In April 2009, the Project Manager co-facilitated training on IMNCI supervision for nurses and physicians assistants from Bomi, Gbarpolu, Montserrado, Margibi and Rivercess counties.</p>

<p>5. The project should continue capacity-building activities as planned based on institutional capacity assessment, for project partners, and adhere to a regular meeting schedule that results in planned action. Quarterly coordination meetings among project partners are an effective forum for ensuring good coordination, sharing information, facilitating problem solving and providing capacity building assistance. Priorities for capacity building for project staff are facilitative supervision, conflict negotiation.</p>	<p>During years 3 and 4 coordination meetings were held on a quarterly and if needed monthly basis.</p> <p>During May 2009, training of trainers in facilitative supervision was provided for Project supervisors and coordinators. During June, the supervisors cascaded the training for the CHPs. Project staff have adopted aspects of the facilitative supervision approach and use techniques such as providing constructive feedback and action planning during their monitoring and supervision visits.</p> <p>In September 2009, the Director of the Resource Center for Community Empowerment provided a three-day training in conflict prevention and mitigation for Project CHPs, supervisors and coordinators. During the first quarter of Year 4, the CHPs and supervisors cascaded this training for HHPs, CHCs, and CHDCs.</p> <p>Training in Supply Chain management and Logistics was provided for CHAL and MTI staff in February 2010 with Joseph Gitau, MTI Finance &amp; Admin Manager, Geeton Gayflor, MTI Drugs &amp; Medical Supplies Officer and Mrs. Norwu Hoff, CHAL Finance Manager facilitating.</p>
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Recommendations for Social and Behavioral Change

Recommendation	Status
<p>1. Refresher training for HHPs should continue as planned and include additional emphasis on the following topic for child health: recommended infant and young child feeding practices. Refresher training specifically on the benefits of colostrum (besides the promotion of early initiation of exclusive breastfeeding) should be included. Increased focus should be on the complementary feeding of children age 6 to 23 months. It is suggested training be based on the Essential Nutrition Actions (ENA) for complementary feeding (CF) of children age 6 to 23 months, and that training materials on this topic obtained by MTI HQ from Freedom From Hunger be used.</p>	<p>During Year 3, the Project provided refresher training for HHPs on immediate breastfeeding, active feeding practices, and appropriate complementary feeding practices using locally available foods. The trainings were based on the Freedom from Hunger <i>Infant and Child Feeding: Helping Young Children Eat and Grow Well.</i> and the <i>Improved Complementary Foods Recipe Booklet</i> developed by the Zambian National Food and Nutrition Commission. Refresher training on these topics was provided during Year 4.</p>
<p>2. HHPs should be trained in rational drug use to provide follow-up for correct drug usage by community members referred to health facilities. HHPs and mothers should receive additional training in differentiating between common child illness signs and symptoms which indicate a need for referral to health facility.</p>	<p>During Year 3, HHPs were provided with training on correct drug usage. In January 2010, they were provided with additional training on Pneumonia/Upper respiratory tract infection.</p>
<p>3. HHPs and mothers should receive additional emphasis for the promotion of some elements of maternal care – specifically the promotion of tetanus toxoid and understanding of IPTp and its benefits.</p>	<p>HHPs were provided with training in maternal care including nutrition during pregnancy and ante natal care, including the importance and benefits of tetanus toxoid and IPTp. Refresher training on these topics was provided during Year 4.</p>
<p>4. To take some of the first steps in reducing the high level of stigma found in midterm LQAS regarding HIV, HHPs and CHCs should be oriented to basic prevention and reduction of stigma messages. The Facilitator Guide from Freedom from Hunger <i>Facing AIDS Together</i> is an excellent training resource on HIV and AIDS.</p>	<p>HIV/AIDS is addressed by the Rebuilding Basic Health Services project which MTI began implementation in July 2009.</p>

Recommendations for Community Mobilization

Recommendation	Status
<p>1. The Community Health Committees have recently been established. To be effective, they need support in developing work plans and establishing links with the CHDCs. CHCs (including HHP members) should receive training as planned, with the addition of a module on basic conflict negotiation. It is suggested that CHAL might have useful materials for this topic.</p>	<p>In March 2010, the project conducted self-assessments with the CHCs to evaluate progress made in meeting regularly, analyzing and using health data, developing workplans, and implementing emergency transport and finance systems. 89% of CHCs reported meeting at least quarterly. 63% reported they use Care Group data for planning. 65% of the committees reported having established a work plan and making some progress implementing the activities. 78% have established an emergency health fund with 52% reporting it is working well. 94% have established emergency transport systems with 87% reporting the system is working well.</p> <p>Conflict prevention training was provided during the first quarter of Year 4. 88% of the CHCs and 63% of the CHDCs report they have utilized the skills gained from the training.</p>
<p>2. The project should take a more active role in building the skills of the CHDCs formed by the County Health Team, with training in problem analysis and action planning, along with basic conflict negotiation. It is suggested training activities should be coordinated among NGOs providing support to the CHT, so that the same methods and materials are used as determined by the CHT. The status of CHDCs should be (informally) assessed at end of Year 3, at which time the project should look for ways to promote links between HHPs, CHCs and CHDCs.</p>	<p>In January 2009, MTI assisted the CHT to establish and train new Community Health and Development Committees CHDCs at five health facilities.</p> <p>The March 2010 CHDC self-assessment revealed that 92% of CHDCs reported meeting monthly. 79% of the committees reported they use HMIS data for planning and 75% reported having established a work plan and making some progress implementing the activities.</p>

Recommendations for Health Services Strengthening

Recommendation	Status
<p>1. IMCI mentoring activities should include additional focus on strengthening health staff skills in completing all assessment tasks of the sick child and in counseling caregivers on the usage of drugs prescribed. Project support for pictorial drug dosage labels should be provided.</p>	<p>Supervision and monitoring visits have included additional focus on completing assessments tasks and counseling caregivers on usage of drugs prescribed. The final R-HFA indicated that 72% of caretakers whose child was prescribed an antibiotic, antimalarial, or ORS, could correctly describe how to administer all prescribed drugs</p> <p>In September 2010, the National Drug Service provided MTI and the CHT with drug dispensing bags with pictorial labels. The bags will be distributed to facilities by the Rebuilding Basic Health Services Project.</p>
<p>2. Health facility staff not trained in IMCI or scheduled for training in Year 3, including support staff, should be updated on individual protocols for common childhood illness and oriented to the basic IMCI framework.</p>	<p>During Years 3 and 4, monitoring and supervision visits have included providing health facility staff not trained in IMCI, including support staff, with an orientation to the IMNCI protocols and framework.</p> <p>The project trained an additional 30 health workers in IMNCI in May 2010. All 32 health facilities have at least one IMNCI trained staff person.</p>
<p>3. It is not recommended that the project use the COPE tool (Client Oriented Provider Efficient) as noted in the DIP, as the R-HFSA tool is an effective replacement.</p>	<p>In place of COPE, the Project has adopted the Facilitative Supervision approach developed by Engenderhealth.</p>
<p>4. It is not recommended that the project take on full-scale capacity building of health staff skills in growth monitoring and counseling at this time, as it is not prioritized in the national plan for the Basic Package of Health Services. It is recommended that IMCI mentoring activities continue including a focus on strengthening staff skills to weigh and record child's weight correctly.</p>	<p>The Project is not supporting full scale capacity building for health facility staff in growth monitoring and promotion but has focused on strengthening their skills to weigh and record the child's weight correctly and provide appropriate counseling for the caregiver.</p>



## Annex 13

### LIBERIA CHILD SURVIVAL PROJECT (2006-2010)

#### SAVED LIVES ESTIMATES

The calculations of estimated lives saved are based on the Lives Saved Tool (LiST)<sup>i</sup>. A consortium of academic and international organizations, led by the Institute of International Programs at the Johns Hopkins Bloomberg School, and supported by a Gates Foundation grant to the US Fund for UNICEF, has developed this modeling system that looks at the estimated impact of different intervention packages and coverage levels for countries, states or districts. These scenarios, developed with the LiST tool, provide a structured format for program managers or ministry of health personnel to combine the best scientific information about effectiveness of interventions for maternal, neonatal and child health with information about cause of death and current coverage of interventions to inform their planning and decision-making, to help prioritize investments and evaluate existing programs. The LiST tool utilizes data collected at baseline and final evaluations of the Liberia project to estimate the number of lives saved through the project's interventions. Running within Spectrum, an existing software package developed by the Futures Institute, the tool's LiST module works by:

- specifying the current demographic projection (either reading directly from the demographic projections of the United Nations Population Division or from national or provincial demographic projections);
- cause of death information for children under five and maternal mortality, again either standard estimates from the WHO or based on local data;
- current levels of coverage of key health interventions that affect child and maternal mortality which in this case are taken from Baseline and Final results; and
- Estimated effectiveness of interventions on cause-specific neonatal, child and maternal mortality.

#### RESULTS

Additional Deaths Prevented in Children 0-60m	2006	2007	2008	2009	2010
Total (0-60m)	0	445	866	1350	1763
<1 m	0	146	294	500	650
1-59m	0	299	572	849	1086

Mortality Rates Summary	2006	2007	2008	2009	2010
Maternal Mortality Ratio	347	345	344	330	327
Neonatal Mortality Ratio	31	20	19	18	17
Under 5 Mortality Rate	48	44	42	39	36

Additional Maternal Deaths Prevented Relative to Impact Year	2006	2007	2008	2009	2010
Maternal Deaths Prevented	0	1	3	26	30

A total of 4,424 lives of children aged 0-60 months are estimated to have been saved during the 4 years of the project (2006-2010). This consists of a total of 1,590 infants under 1 month of age and 2,806 children aged 1-59 months. In addition, the maternal mortality ratio (per 100,000 live births) is estimated to have been lowered from 347 to 327 over the course of the project. The neonatal mortality rate (per 1,000 live births) is estimated to have been lowered from 31 to 17, and the under 5 mortality rate (per 1,000 live births) is estimated to have been lowered from 48 to 36 over the life of the project. An additional 60 maternal lives are estimated to have been saved during the course of the project due to interventions aimed at improving antenatal and postnatal care.

The table below summarizes the interventions in the Liberia CSP that most significantly contributed to preventing deaths in children aged 0-60 months of age.

<b>Additional Deaths Prevented in Children Under 5 by Intervention relative to Impact Year</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>TOTAL ESTIMATED LIVES SAVED BY INTERVENTION</b>
Tetanus toxoid	0	7	13	20	28	68
Delivery services and emergency obstetric care	0	19	39	85	108	251
Breastfeeding						
Breastfeeding promotion	0	80	161	240	318	799
Preventive after birth						
Insecticide treated materials (Insecticide treated bed nets) or indoor residual spraying	0	32	78	126	129	365
Vitamin A for prevention	0	10	21	32	44	107
Vaccines						
Measles vaccine	0	8	16	25	34	83
Curative after birth						
ORS	0	64	128	190	249	631
Case management of pneumonia (oral antibiotics)	0	61	124	189	256	630
Antimalarials	0	49	96	139	189	473

<sup>i</sup> LiST: The Lives Saved Tool, An evidence-based tool for estimating intervention impact, JHSPH; <http://www.jhsph.edu/dept/ih/IIP/list/index.html>

## **Annex 14: Grantee Plans to Address Final Evaluation Findings**

### Recommendation 1:

MTI CSP met, and in many cases, significantly exceeded targets in their quantitative impact child survival indicators. Only point of use water treatment made no progress which was likely due to low diarrhea prevalence and perceived access to clean water in communities. Strong commitment to learning and improving technical performance at every level from HQ to the household certainly contributed to these achievements. Lessons learned in developing and administering effective and cost-effective community based MCH programs can benefit other areas of Liberia and provide the basis for additional programs in reproductive health and MCH programs there and in other places.

MTI share their experiences in addressing IYCN within a CSHGP-supported program, specifically the social and behavior change assessments and strategies they used, including Care Groups. Even though MTI is not a Title II implementing organization, they should offer to share these accomplishments with organizations working on preventing chronic malnutrition in those programs.

### MTI Response

MTI shared their experience with Care Groups at the December 8, 2010 Technical Advisor Group meeting on the Care Group approach and benefited from the experience of other NGOs supporting Care Groups. MTI will continue to work with this network to improve the implementation of this successful model and contribute to research and advocacy.

MTI will continue to learn from and contribute to the CORE Monitoring and Evaluation and Social and Behavior Change Working Groups and disseminate best practices within MTI programs.

MTI will share the final evaluation report with Judy Canahutati, the USAID Office of Food for Peace Maternal and Child Health, Nutrition, and HIV Technical Advisor, who has expressed interest in successful approaches to improving infant and young child feeding practices.

Lessons learned from GCM CSP and best practices have been shared with other MTI programs including the Liberia Rebuilding Basic Health Services project, Uganda Child Survival and Malaria Communities Program projects, and the privately funded Chamelco Community Health Project in Guatemala and Child Survival project in Nias, Indonesia. Lessons learned and best practices have also been shared with community health partners in Mexico, Guatemala and Afghanistan.

Lessons learned and best practices will inform future projects including two privately funded safe motherhood projects MTI is supporting in Liberia and Southern Sudan which will start up during the first quarter of 2011.

### Recommendation 2:

The CSP included health system (CHT) capacity building in IMNCI and supportive supervision. CHT members specifically mentioned this training as an important factor in their improved performance

in MCH services. The addition of newborns to the IMCI (now IMNCI) algorithm was also important. Emphasis on early initiation of breastfeeding behaviors and maternal TT in the project will be important contributions to decreasing newborn mortality. More infants and mothers now receive post-natal checkups, largely due to increased facility deliveries.

MTI should share their experiences with improving health worker performance, including successes in using quality assurance tools and checklists as well as challenges they encountered in achieving optimum outcomes, with RBHS and other partners working on health systems strengthening.

MTI Response:

The GCM CSP experience in implementing IMNCI has informed the strategies of the MTI Uganda CSP and MCP and Afghanistan Community Health project and will continue to inform their implementation. IMCI quality assurance tools have also been shared with MTI's community health partner in Afghanistan.

The GCM CSP clinical supervisors worked closely with the RBHS clinical coordinators before the end of the project to transfer skills in IMNCI mentoring and on the use of quality assurance tools. RBHS clinical coordinators who were not trained in IMNCI previously were included in the May 2010 IMNCI training facilitated by the CSP. The clinical coordinators of the RBHS are providing mentoring services to the health facilities under their supervision.

Recommendation 3:

The CSP strategy to meet the community and household ownership for increased hygiene, and significantly better preventative and curative MCH behaviors was successful. The Care Group model, including the community structures (CHC) were cited as major reason for community and household behavior changes. The Government of Liberia is searching for successful and realistic community health care models.

MTI should proactively seek opportunities to contribute to developing standards and approaches for community health care services in Liberia by sharing their strategies and results (including objective quantitative data) with appropriate MoHSW and partner organizations such as USAID's RBHS partners at the national level. In child survival forums such as CORE group meetings, MTI should collaborate with other organizations that have experienced similar challenges in building health worker capacity in MCH services, including IMCI and skilled delivery. Specific experience MTI has had in improving complementary feeding practices should especially be shared.

MTI Response:

MTI will continue to learn from and contribute to the Care Group Technical Advisory network and the CORE Monitoring and Evaluation and Social and Behavior Change Working Groups and disseminate best practices within MTI programs.

GCM CSP strategies are being scaled up in other counties. IMNCI has been scaled up in all the 15 counties of Liberia. The project social behavior change and community mobilization strategy based on the Care Group approach has been scaled up in Gparpolu County by a UNICEF funded child survival project.

In June 2010 MTI hosted Curamericas for a cross visit to learn about the Grand Cape Mount Child Survival Project Care Group and C-IMCI strategies. Since the cross visit, Curamericas has used the MTI C-IMCI modules and training methodology.

During year 3, project staff shared experience and lessons learned during workshops to develop the national Child Survival Strategy and training manual for Community Health Volunteers.

The Child Survival Project Manager has participated in several health forums including forums organized for preparation of writing the proposal for Round 10 Global Fund for malaria, International NGO meetings, workshops to develop the national strategies on child survival and family planning, and MoHSW organized health coordination meetings. The forums provided an opportunity for the Project Manager to contribute from the lessons gained from the CSP and learn from the experiences of the MoHSW and NGOS.

MTI will continue to participate, learn from and contribute to these forums and new forums as they present themselves.

#### Recommendation 4:

MTI has made a long term commitment to facilitate health development in Liberia. They are already a USAID RBHS partner. MTI is an active member of the CORE group and will continue to collaborate with other child survival PVOs for technical strengthening for their programs.

MTI should consider submitting proposals for additional programs in Liberia (they have already started doing this), including those supported by CSHGP and PMI in Liberia, as well as seek additional opportunities to partner with USAID Liberia and other programs such as the Global Fund. Another CSHGP grant in Liberia would be appropriate. This would probably require an expanded program area, or perhaps entry into other parts of Liberia.

#### MTI Response:

MTI has submitted a proposal to the Global Fund to implement community based malaria activities in GCM County. A private donor has committed funding for a pilot safe motherhood project in Garwula district of GCMC which will start up in during the first quarter of 2011. MTI will seek future opportunities to work in maternal, newborn and child health and HIV/AIDS as they arise.

## **Annex 15: Project Management Evaluation**

### Planning

Project planning was very participatory. The DIP development process included the MoHSW, CHT, and CHAL. The MTE also included the partners who were involved in the action plan that followed. The project opened an office in Sinje town in 2007, where the main county health center is located and reduced the number of trips back and forth from Monrovia (2 hours away) that were necessary to implement the program. Most of the field staff working on the program live in GCMC and many of them originate from the same area of Liberia. Use of the BEHAVE framework and Doer/Nondoer analysis facilitated community input into the social and behavior change strategy. The DIP was adjusted to substitute the R-HFA for the original COPE facility assessment tool and malaria was added as an intervention based on baseline assessments and analysis of local epidemiology.

### Supervision of Project Staff

At the country level, most of the supervisory staff, including the Country Director, had changed by the time of the final evaluation. The Monitoring and Evaluation Coordinator who resigned during the last quarter of the project was not replaced and his duties were assumed by the Project Manager. At the time of the final evaluation, the new Country Director, a Liberian national had been in place for only a few weeks. Supervision by field staff for CSP activities used the Quality Improvement Verification Checklist, adapted from tools developed by Freedom from Hunger, Food for the Hungry and CSTS+ as well as to the R-HFSA for assessing and mentoring facility health worker skills. Contributions from CHAL staff as supervisors will discontinue with the end of the program. Health system support through the RBHS project is expected to strengthen supervisory support of health facilities and MTI's RBHS grant activities include a Community Outreach Coordinator position that will be filled by the same person who held that position in the CSP.

### Human Resources and Staff Management

CHAL's staff who were hired specifically for the CSP will not be retained within the organization, but many have secured positions with other community oriented health programs. CHAL as an organization is a well-established health network that will continue well beyond the project period. CHAL did not have management capacity to provide the Community Outreach Coordinator staff person with the mentoring and supervision support required and MTI took responsibility for providing this support.

MTI will continue working with CHT health facilities and communities through the RBHS project. During the lifetime of the project, CHAL staff turnover was low with the exception of some staff who were not performing. They were terminated and replaced. The CHAL Executive Director will retire shortly after the CSP ends and take a position as the Director for Mental Health Services in the national MoHSW.

Morale, cohesion and working relationships of project technical personnel within the CSP were strong. There were, however, weaknesses in administrative and logistic support at the field office level that became apparent during the final evaluation. This was identified by the MTI management in country and corrective measures were taken. MTI HQ should increase support to

their country office's efforts to develop a solid management and administrative structure for future programs in Liberia.

Staff turnover was handled well and did not affect project implementation. Staff turnover is not unusual in CSPs, especially in the last months of a program and where there is high demand for qualified health managers and M&E staff. The first project manager resigned to take a high level position with the Liberia MoHSW (certainly recognition that MTI had hired a very qualified candidate). Monitoring and evaluation staff are particularly susceptible to leave for better positions. The CSP Project Manager in place at the end of the CSP will continue to work as MTI's Liberia Health Advisor.

### Financial Management

MTI HQ and regional staff provided support in financial management during the life of the program and the Vice President of Finance conducted annual audits. There were sufficient financial resources to complete all program activities until the end of the project period (September 30, 2010) and MTI has mobilized additional resources for complementary activities from other donors, including USAID's RBHS. JSI conducted an assessment of NGO capacity for performance-based contracting in Liberia and found that MTI has sufficient financial management systems in place and experience in following USAID financial rules and reporting requirements, therefore qualify to manage funds for a sub-grant from JSI's RBHS project funded.

### Logistics

MTI used matching funds to provide staff incentives and to procure essential medicines for five health clinics. This responsibility has been transitioned into the MoHSW programs. Support for health facility staff and medicines are now supported through the RBHS contract.

Some gaps in logistical support in the first two years of the project that were identified in the MTE report included coordination of vehicles, procurement of goods and services, constraints due to poor roads, etc. that at times created barriers for staff to carry out the work of the project. At the time of the final evaluation, gaps in administrative and logistic support at the Sinje office posed barriers for the final evaluation team to conduct fieldwork. Difficulties in scheduling cars resulted in delays in transport to communities to conduct FGDs. The Sinje office did not have adequate printing and photocopying facilities so the team needed to use the photocopier at the health center to duplicate handouts and focus group questionnaires. The Program Manager and Country Director addressed the issue with the responsible staff members and the situation improved. Effective future programs will continue to require strong and effective administrative and logistic support.

Infrastructure in GCMC is still weak from the effects of 20 years of civil war in Liberia. While conditions are improving in Monrovia, it will take several years for rebuilding efforts to bring rural areas back to pre-war conditions. The office supplies and vehicles provided by the CSP and MTI were adequate for the duration of the CSP, but wear and tear indicate that additional inputs will be needed to support follow-on program activities there. The cost-benefit of continuing major program support out of the Monrovia office (2 hours away) versus building up the Sinje office for future programs was not investigated as part of the final evaluation but should be discussed within MTI.

## Information Management

MTI devoted significant project efforts to data collection and analysis both at the country level and with HQ support through their Monitoring and Evaluation staff person. Annual LQAS measured progress made in reaching each objective. Data were shared and analyzed at every level from the community to the MoHSW and feedback was given back to each level. Use of the HMIS system by project staff and partners was impressive as mentioned in the Data Quality section of the main report).

Quantitative assessments at the time of the MTE led the evaluation team to conclude that additional emphasis on complementary feeding practices was needed and the project increased program efforts in those areas. This resulted in significant increases in those indicators by the time of the project.

Data quality issues are addressed in the main evaluation report. A detailed database was developed by the first M&E Coordinator but it was not “user-friendly” and could not be easily used after he left. Nevertheless, it was felt that valuable information about morbidity and mortality at the community level is contained in the database and could be used for more in-depth analysis of the impact of the project. Future programs should orient more than one person to the database and how to extract information from it.

Project data was shared on a regular basis, but more frequently at the earlier stages of the project. With turnover and reorganization of the national MoHSW as well as USAID HPN (Health, Population and Nutrition) Officers this is a continuing need. The final evaluation team, including the Project Manager, the Country Director, the MTI HQ backstop and the Evaluation Team Leader met with the new USAID Health Team Leader, Senior Health Management Specialist and the RBHS Technical Team Leader at the end of the evaluation fieldwork to share results and discuss possibilities of additional opportunities for MTI in health programs in Liberia.

## Technical and Administrative Support

MTI headquarters staff visited Liberia several times per year including visits from the Monitoring and Evaluation Specialist who trained and supported CSP staff and partners to establish and implement the project HMIS and carry out KPC and LQAS surveys. Managerial support was provided by MTI HQ staff. The HQ backstop has many years of health and nutrition program experience in very challenging environments and has visited to support the project at least once a year. The Capacity Building Advisor contributed expertise in non-formal education, training design, and adult education. Overall, MTI provided more technical assistance to the project than many PVOs provide. The CSP also benefitted from in-country technical expertise such as that provided to develop the DIP. The majority of outside technical assistance activities took place in the early years of the project. A complete list is included in the MTE report.

During Year 3 the Community Outreach Coordinator visited World Relief Mozambique to share and bring back lessons learned from their experience with Care Groups. She shared with the Project team World Relief’s strategy for sustainability and strategies for community support for Care Groups. The lesson which primarily impressed the team is that the most important motivation for volunteers is personal development through an opportunity for training and learning new skills. Although she left the project, she is working in another CSP funding by UNICEF using the Care Group model in another area of Liberia.



A consultant trained by Engenderhealth provided a six-day training of trainers in Facilitative Supervision for Quality Improvement for CSP coordinators and supervisors, MTI Liberia's Primary Health Care Program and Finance and Administration Managers and a representative from the CHT. The training covered modules on leadership, communication, team building, coaching and mentoring and provided opportunities to practice these skills during practice supervisory visits to two health facilities. Following the training of trainers, the team adapted and cascaded the facilitative supervision training for 19 CHPs and the new IMNCI Mentor.

In September 2009, the Director of the Resource Center for Community Empowerment provided a three-day training in conflict prevention and mitigation for Project CHPs, supervisors and coordinators. The training focused on types, sources and effects of conflict and violence and techniques for preventing and mitigating conflict. Following this training, CHPs and supervisors cascaded the training for HHPs, CHCs, and CHDCs to enable them to resolve conflicts that arise within households, between households and community volunteers and conflicts in the community at large. This is probably the reason 68% of 129 CHC members answered that four or more CHC members had been trained in conflict management as of March 2010 and 88% of those said they had used the skills they had learned to prevent or settle conflicts.

MTI's HQ Child Survival Advisor also provided refresher training in concepts of social and behavior change for Child Survival Project coordinators and supervisors, and two representatives from the CHT. During the training the team reviewed and revised the project's social and behavior change strategy and community education plan.

#### Management Lessons Learned

Transition of qualified staff from NGO projects to jobs with government or other international organizations is fairly common and to some extent unavoidable. MTI was able to fill vacant positions. The project M and E and Training Coordinators resigned during the last quarter of the project. Training activities had been completed by that time so the Training Coordinator was not replaced. The Project Manager took on the responsibilities of the M and E Coordinator with assistance from short term data entry staff. Technical capacity building within the PVO and partner staff helps promote long term Liberian health capacity building even if the individuals do not remain employed by the PVO or NGO partner. Community mobilization for behavior change allows for sustainable long term public health impact that is less susceptible to impacts of health worker changes.

Complex health development programs implemented by qualified health technical staff require strong administrative and logistic support when projects last for several years. MTI is making adjustments and raising staff performance standards in these areas to meet the demand.

Management of CSPs largely through partner NGOs can present certain challenges, especially when the partner NGO does not normally directly implement field programs as was the case with CHAL. An important lesson learned from the GCM CSP is the importance of capacity building in particular partner weaknesses such as in the areas of administration and human resources that were identified in the baseline and annual organizational assessments. The project identified areas of weakness, established capacity building indicators and annually assessed progress in reaching these indicators.

MTI used some of this information to make changes in the project. For example, CHAL was initially responsible the Community Outreach Coordinator position, but by the time of the MTE it was evident that CHAL did not have capacity to provide the mentoring and support this staff person needed in the CSP. MTI assumed the position within its direct responsibility as it was a critical position for program implementation.

Database development, storage of data and ability to extract data from automated systems should not be overly complex and should be accessible to multiple members of the staff. All data should be archived both in country and at MTI HQ, especially at times when information might be needed for planning and decision-making and/or evaluation purposes.

## **Annex 16: Final Evaluation Team Members**

External consultant: Jean Meyer Capps RN MPH

### Medical Teams International

Mary Helen Carruth, MTI HQ Child Survival Advisor

### Grand Cape Mount County Health Team

Theresa Alpha; Community Health Division Director

Hawa K. Karva, Reproductive Health Coordinator

Morris J. Lasanna; Child Survival focal person/EPI

### Christian Health Association of Liberia (CSP Partner)

Ellen Williams, CHAL Executive Director

Nafie Kromah, CSP CHAL (field) Supervisor

Jackson Barclay, CSP CHAL (field) Supervisor

Boakai Kamara, CSP CHAL (field) Supervisor

Florence Rogers, CSP CHAL (field) Supervisor

Senesse Williams, CSP/CHAL Community Health Promoter

Varney L. Massaquoi, CSP/CHAL Community Health Promoter

Edwin Jacobs, CSP/CHAL Community Health Promoter

Oscar Dolo, CSP/CHAL Community Health Promoter

Mohammed A. Kiawien, CSP/CHAL Community Health Promoter

Hannah K. Stewart, CSP/CHAL Community Health Promoter

Alice T. Kiazolu, CSP/CHAL Community Health Promoter

Namah Massaly, CSP/CHAL Community Health Promoter

### MTI Child Survival Project Staff

Shiferaw Dechasa, MTI Liberia CSP Manager

Jerry Zangar, CSP Community Health Outreach Coordinator

Jallah Massayan, MTI CSP IMNCI Mentor

John M. Kallon, MTI Liberia CSP IMCI Mentor

## **Annex 17: Evaluation Assessment Methodology**

The purposes of the final evaluation were:

- To determine the extent to which the project accomplished the results that were outlined in the Detailed Implementation Plan (DIP) and to present the evidence of these accomplishments.
- To provide a record of how these results were obtained, so that USAID can share these results with others outside of the CSHGP program--including the U.S. Congress--and so that in-country partners and the PVO grantee understand what should be done if they want to reproduce these results.
- To demonstrate how this project contributes to global learning about community based health programming.

### **A) Preparation**

- Invitation to partners for participation
- Joint evaluation planning with MTI HQ, MTI Liberia, CHAL and CHT based on USAID Evaluation Guidelines
- Document review including DIP, Annual reports, MTE report and DIP review feedback.
- 30 cluster KPC and R-HFA conducted one month prior
- Criteria for selection of health facilities and communities for qualitative final evaluation field visits
- Consultant/HQ CS Advisor and CS Project Manager draft fieldwork guides

### **B) Triangulation of results**

- Quantitative 30 cluster KPC survey of mothers of children age 0-23 months
- Quantitative Rapid-Health Facility Services Assessment
- Qualitative Community Health Committee Self-Assessment
- Qualitative field visits to health facilities and communities for interviews and focus groups
- HMIS review
- Comparison of data with available national and regional data, including DHS and MIS.

### **C) Participatory**

- Participation by:
  - External consultant
  - MTI HQ CS Advisor
  - MTI Liberia project staff
  - CHAL executive and project staff
  - Grand Cape Mount County Health Team
- One day orientation and training for team members

#### **D) Triangulation of perspectives from participatory fieldwork**

- Each of four teams includes external MTI Liberia, CHAL and County Health Team participants
- Within each team, participants rotate conducting interviews/focus groups and note taking; participants rotate each day between participation in:
  - Focus group discussions with Household Health Promoters
  - Focus group discussions with IMCI-trained Health Facility staff
  - Focus groups discussions with mothers
  - Focus group discussions with grandmothers
  - Focus group discussions with fathers
  - Focus group with Community Health Committees
  - Focus group with community leaders

#### **E) Participatory analysis of results and key findings**

- Participation in analysis by all members participating in fieldwork
- Review of key KPC and R-HFA findings
- External consultant leads participatory analysis of findings from focus group interviews
- Staff interviews and management review
- Financial overview

#### **F) Finalization of key findings, recommendations and action planning**

- Debriefing to project partners on key findings and recommendations
- Debriefing to USAID Liberia and JSI Rebuilding Basic Health Services Program

## **Annex 18: Final Evaluation, List of Persons Interviewed and Contacted**

### **A) Interviews**

#### Grand Cape Mount County Health Team

Theresa Alpha; Community Health Division Director  
Hawa K. Karva, Reproductive Health Coordinator  
Morris J. Lasanna; Child Survival focal person/EPI

#### Christian Health Association of Liberia

Ellen Williams, Executive Director  
Nafie Kromah, CSP Community Supervisor  
Florence Rogers, CSP Community Supervisor  
Jackson Barclay, CSP Community Supervisor  
Boakai Kamara, CSP Community Supervisor

#### Medical Teams International

Gayah Kezele, MTI Country Director  
John Kallon, MTI CSP IMNCI Coordinator  
Jallah Massayan, MTI CSP IMNCI Mentor

### **B) Debriefing meetings**

#### Debriefing at USAID, 3:00 – 10:45 pm, September 23, 2010

Randolph Augustin, Health Team Leader  
Sophie Parwon, Senior Health management Specialist  
Dr. Rose Macauley, RBHS/JSI Technical Team Leader  
Gayah Kezele, MTI Country Director

#### Attendance at FE Debriefing in Grand Cape Mount County, Garwula District Commissioner's meeting Hall, September 22, 2010

Theresa Alpha; Community Health Division Director  
Hawa K. Karva, Reproductive Health Coordinator  
Morris J. Lasanna; Child Survival focal person/EPI  
Ellen Williams, CHAL Executive Director  
Samuels Zay Zay, Grand Cape Mount County Health Team Child Survival focal person  
Mary Helen Carruth, MTI HQ Child Survival Advisor  
Shiferaw Dechasa, MTI CSP Manager  
Jerry Zangar, CSP Community Health Outreach Coordinator  
John Kallon, MTI CSP IMNCI Coordinator  
Jallah Massayan, MTI CSP IMNCI Mentor  
Nafie Kromah, CSP CHAL (field) Supervisor  
Jackson Barclay, CSP CHAL (field) Supervisor  
Boakai Kamara, CSP CHAL (field) Supervisor  
Florence Rogers, CSP CHAL (field) Supervisor  
Alice T. Kiazolu, CSP/CHAL Community Health Promoter  
Hannah K. Stewart, CSP/CHAL Community Health Promoter

Edwin Jacobs, CSP/CHAL Community Health Promoter  
Oscar Dolo, CSP/CHAL Community Health Promoter  
Mohammed A. Kiawien, CSP/CHAL Community Health Promoter  
Varney L Massaquoi, CSP/CHAL Community Health Promoter  
Namah Massaly, CSP/CHAL Community Health Promoter  
Senesse Williams, CSP/CHAL Community Health Promoter  
Flomo K. Konie, CHT District Health Officer  
Varlee S. Kamak, CHT District Health Officer  
G.Geoffrey Gbarlo, CHT District Health Officer  
Edward Massarj, CHT District Health Officer