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

LQAS Survey
Grand Cape Mount County
Liberia

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ACRONYMS

ARI	Acute Respiratory Infection
ACT	Artemisinin based combination therapy
BAG	Breastfeeding Advocacy Group
BCC	Behavior Change Communication
BL	Baseline Assessment
CDD	Control of Diarrheal Disease
CHAL	Christian Health Association of Liberia
CHP	Community Health Promoter
CHT	County Health Team
CHW	Community Health Workers
C-IMCI	Community IMCI
CS	Child Survival
CORE	Collaborations and Resources Group
CSHGP	Child Survival and Health Grant Program
CSP	Child Survival Project
D	Precision
DPT3	Diphtheria, Pertussis and Tetanus vaccine 3
EBF	Exclusive Breastfeeding
EPI	Expanded Program of Immunizations
GCM	Grand Cape Mount County
GCMCSP	Grand Cape Mount County Child Survival Project
GIK	Gifts-in-kind
HF	Health Facility
HHP	Household Health Promoter
HQ	Headquarters of MTI located in Portland, Oregon
IMCI	Integrated Management of Childhood Illnesses
IPT	Intermittent preventive treatment
KPC	Knowledge, Practice, and Coverage Survey
M&E	Monitoring and Evaluation
MOHSW	Liberia Ministry of Health and Social Welfare
MTI	Medical Teams International
MTI/Liberia	Medical Teams International/Liberia
N	Sample size
NDS	National Drug Service
ORS	Oral Rehydration Salts
P	Proportion
PCM	Pneumonia Case Management
PHC	Primary Health Care
Rapid CATCH	Core Assessment Tool on Child Health
SA	Supervision Area
USAID	United States Agency for International Development
WFA	Weight for Age

I. Executive Summary

In October 2006, Medical Teams International was awarded funding by the United States Agency for International Development in Washington (USAID) for 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, Liberia.

In September 2008, the Child Survival team carried out a KPC survey using Lot Quality Assurance Sampling (LQAS) as part of a mid term assessment process to assess progress in meeting Project indicators during the first two years of the project, and to investigate other intervention areas that may be added to the project. The team interviewed mothers of children aged 0-23 months. Mothers were asked questions about breastfeeding, complementary feeding, immunization, and treatment and prevention of diarrhea, ARI, and malaria. In addition to questions regarding these areas of the project design, mothers were also asked about antenatal and HIV knowledge and practices, as well as questions pertaining to their satisfaction with the health facilities in the project area. Data entry and analysis were done in Excel. All 4 SAs were analyzed using LQAS decision rules to determine if performance meets the benchmarks chosen for the midterm of the project. New indicators were analyzed to determine their baseline, and to determine the performance of each SA relative to the cumulative combined frequency of all 4 SAs for this indicator, which indicates if any SA is having more difficulty with regard to this indicator than the average. The results obtained from the survey are being used to determine the current situation in the target districts and to revise strategies for the next two years of the project.

All 4 SAs met the respective benchmarks for 10 of the 13 project matrix indicators, and the combined frequency for 8 of the 13 indicators has already met or exceeded the final target for that indicator. Some key survey findings include:

Breastfeeding and Complementary Feeding:

All 4 Supervision Areas were analyzed using LQAS decision rules to determine if performance meets their benchmarks with regard to all of the Project Design Logframe (PDL) indicators for breastfeeding and complimentary feeding. While all 4 SAs met the benchmarks set for these three indicators in year 1, as determined by the LQAS performed in December 2007, all 4 SAs met the benchmark for 1 of the indicators at midterm. The Results are as follows

- % of newborns who were put to the breast within one hour of delivery and did not receive prelactal feeds: all 4 SAs met their benchmark, and the combined frequency for this indicator is 51.40%, which continues to surpass the expected target of 50% for the project. A new final target for this indicator was set at 60%
- % of infants aged 6-9m receiving breastmilk and complementary foods: while all 4 SAs met their benchmark for this indicator in December 2007, only SA1 and SA3 met their midterm benchmarks, with SA2 and SA4 failing. The combined frequency, 40.63%, did not meet the midterm benchmark of 51% for this indicator. Substantial work will need to be done to meet the final target of 65%.
- % of children 6-23m who received a dose of Vitamin A in the last 6 months: The cumulative frequency of 85.42% for this indicator continues to surpass the midterm benchmark (81%) and meet the project target (85%). However, SA1 failed to meet the benchmark for the midpoint of the project.

- An additional indicator, the percentage of children age 0-23 months who are underweight, which is not in the Project Matrix but is a Rapid CATCH indicator, was added to the LQAS in order to assess the possible impact of the projects interventions in the area of malnutrition, particularly in the area of health behaviors surrounding immediate and

exclusive breastfeeding and continued feeding with the addition of complimentary foods. It was encouraging to find that the combined frequency is 20.83%, which is an improvement from the baseline finding of 27%. This includes the percentage of children age 0-23 months who are severely underweight, which is 10.41%. This compares to the baseline rate of severely underweight children of 13.10%.

Immunization:

All 4 Supervision Areas met their performance benchmarks for the midterm of the project for the 2 indicators regarding the immunization of children. However, while the indicator for the immunization of pregnant mothers against Tetanus met the chosen benchmark for year one in all 4 SAs, SA1 failed to meet its benchmark for the end of year 2. SAs 2-4 did meet their benchmarks for the midterm:

- % of children 12-23 months who received DPT3 before they reached 12 months of age, card verified: the combined frequency of this indicator at midterm is 60.42%, which already surpasses the expected target of 50% for the project.
- % of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age, card verified: the combined frequency of this indicator is 39.58%, which exceeds the projected benchmark of 30% for the end of the second year of the project, and reaches the project target of 40%.
- Percentage of mothers with children aged 0-23 months that were protected against Tetanus before the birth of their youngest child: the combined frequency of this indicator, 66.67%, did not reach the benchmark of 71% for the end of the second year. This is due to the fact that SA1 is well below its benchmark target.

Prevention and Treatment of Diarrhea:

All 4 Supervision Areas are performing adequately with regard to the 3 diarrhea and hygiene indicators in the project matrix:

- % of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration solution (ORS) and/or recommended home fluids: the combined frequency of this indicator, 79.17%, meets the benchmark for this period (80).
- % of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness: the cumulative frequency of 64.58% also exceeds the midterm benchmark of 61%.
- % 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: the combined frequency, 43.75%, exceeded the benchmark of 30% and the project target of 40% for this period of the project. A new final target was set as 70%.

- However, all 4 SAs did not reach the midterm benchmark for the indicator: % of households of children 0-23 months that treat water effectively. Because there has been an actual decline in this indicator at the midterm (7.29%) from baseline (22%), these results represent a decline from the last study at the end of year 1, where only SA2 failed to meet its benchmark The project will investigate the barriers that have caused the use of water treatment at the household level to decline from baseline, despite our programmatic efforts. Community feedback sessions are planned, and an Action plan to deal with this issue will be formulated in collaborative fashion with community members. It has been determined from the additional indicator added to this LQAS to further investigate this issue that the percentage of mothers who live in households with an improved source for drinking water has

improved from 72% at baseline to 82.29% at midterm. In addition, when using the combined frequency (83%) as the year 2 benchmark for this indicator, SA3 fails to reach this benchmark, indicating that this area has below average use of improved water sources. Following the community feedback it may be decided to target those communities who do not have improved water sources, as overall the diarrhea rate is low in GCM, but is most likely higher in these areas.

ARI:

All 4 SAs performed adequately with regard to the Project Matrix Indicator in the intervention area of ARI, receiving care from an appropriate provider:

- % 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. The cumulative frequency of 83.33% exceeds the benchmark set for this time period of 54%, and the target of 65%. A new target was set at 85%.

Malaria:

All 4 SAs met their performance benchmark for the use of bednets, with a combined frequency of 67.71%, which far exceeds the project target of 35%. Also, each of the 4 SAs met their performance benchmark for treatment of children with fever with an appropriate antimalarial within 24 hours of the onset of symptoms

- % of children 0-23 months who slept under an insecticide-treated bed net the previous night: the cumulative frequency of 67.71% far exceeded both the midterm benchmark of 27% and the target of 35% set for this indicator. This is due to wide distribution by the PMI of ITNs throughout all of the HFAs in GCM during the first quarter of 2008. A new final target was set at 70%.
- 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: The cumulative midterm frequency of 48.96% surpasses the midterm benchmark of 32% and reaches the project target of 50%.

Additional Indicators Collected:

Due to the concerns of the County Health Team, CHAL and MTI staff regarding safe motherhood and HIV/AIDS in the county, the project collected additional information to assess needs in these areas.

Prenatal Care

- 92.71% of mothers of children aged 0-23 m had at least one prenatal visit prior to the birth of her youngest child.
- Only 31.25% of mothers have a maternal health card, and only 46.88% of mothers could name at least one prenatal danger sign.

Delivery Care

- The percentage of women giving birth in a facility is quite low at 25.00%, and the percentage of births that are attended by a skilled birth attendant, which is defined in this study as a doctor, nurse, physician assistant, or midwife, is only 23.96%.

Postnatal Care

- Postnatal visits within 3 days of the birth of the child are now occurring at a rate of 28.13% for the mother and 36.46% for the child. These rates are markedly better than baseline (6% and 7%, respectively) but still quite low.

HIV

- While 90.63% of mothers have heard of AIDS, only 37.50% of mothers could name two or more correct methods of reducing the risk of contracting the virus that causes HIV.
- Only 37.50% of mothers have heard of Voluntary Counseling and Testing (VCT), and only 26.04% of mothers have the knowledge of where such treatment is available in the community.
- Only 13.54% of mothers know where one may receive treatment for HIV, and only 5.21% of mothers know that there is PMTCT treatment available and 8.33% of mothers know where PMTCT treatment may be received
- Stigma against those living with HIV is a very real issue in GCM County; 43.75% of mothers believe that PLWHA should be ashamed and 53.13% believe that PLWHA should be forced to leave the community.

CHAPTER 1

Program Overview

Project Area and Description:

Medical Teams International is implementing the Grand Cape Mount County Child Survival Project (GCMCSP) in Grand Cape Mount County (GCM) located in southwestern Liberia. The goal of the GCMCSP is 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 are: Nutrition 30%, PCM 20%, CDD 20%, Malaria 20%, and EPI 10%. All interventions are being implemented within the recently adopted IMCI framework for Liberia and in accordance with MOHSW policy.

Implementing partners for this project include the Christian Health Association of Liberia (CHAL), a local NGO responsible for implementing the Care Group and community mobilization activities, and the County Health Team (CHT) which is charged with the responsibility of coordinating the delivery of health services throughout the county.

Working in partnership with the MOHSW, the CHT, and CHAL, MTI/Liberia is implementing a project that aims to improve the health of village communities in GCM County through strengthening HFs and the MOHSW's ability to address community health needs. This is 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.

Socioeconomic and Health Conditions in the Project Area:

Liberia was immersed in a violent civil war for fourteen years, from 1989 to 2003. In 2003, 76% of the population lived on less than $1 per day and 52% lived on less than 50 cents a day. 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.

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. The health and social conditions of GCM are relatively worse than the rest of the country. GCM suffered greatly during the civil war, losing not only health infrastructure but also the majority of its health personnel. 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.

The project is being implemented in the five districts of GCM and benefits the entire population of GCM (127,124 people), including direct benefits to 21,612 children under five and 29,239 women of reproductive age.

Immunization: Immunization rates are low in GCM County, with full EPI coverage by 12 months of age found to be only 18.9% at baseline in children aged 12-23 months. EPI Health System Performance, measured by card verified rates of DPT3 vaccination by 12 months of age, was only 30.6%.

MTI and its partners are utilizing the IMCI and C-IMCI approach in order to improve vaccination rates and utilization of vaccination services by the community. Demand for EPI services is being created through CHPs, and HHPs, including messages to the community about bringing children in for immunization. The project provides logistical support for National Immunization days, advocates for the implementation of routine EPI services, and reduces missed opportunities for immunizations through IMCI. The project is presently addressing gaps in present immunization service delivery, including a lack of training of MOHSW staff and gaps in the cold chain and other equipment at the HF level. In addition, the MOHSW in conjunction with MTI/Liberia project staff is conducting immunization training with HF staff in logistics and drug forecasting, and injection technique and safety.

The percentage of mothers at baseline survey receiving at least two immunizations in GCM County was only 61.3%, indicating some utilization of antenatal care services and tetanus immunizations being performed by antenatal health care staff when these services were utilized, but this rate needed improvement to ensure protection of mothers and children from tetanus. The project is addressing this problem by strengthening the MOHSW's ability to address this need through enhancing the capacity of antenatal care staff and providing consistent preventative-based services that include immunization services.

Respiratory Infections: 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 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 revealed that most mothers were not routinely seeking 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 are ill with cough and respiratory infection.

To address these issues, the project utilizes the Case Management Training on IMCI to improve the knowledge and skills of health workers in the assessment and treatment of infants and young children with respiratory problems Through home visits, mothers and caregivers are being educated in recognizing the signs of ARI including cough and difficulty/fast breathing and the importance of seeking timely medical treatment for their child with ARI. Ensuring that antibiotics are readily available at the HF level is also a priority of the project through the GIK and working along with the CHT and other partners (NGOs) in the county who support other health facilities.

Diarrhea: While diarrhea is a major cause of morbidity in Liberia and GCM County, due to seasonal fluctuations the prevalence of diarrhea at the time of the baseline KPC survey was 30.1%, which is somewhat lower than found at other times of the year. Poor hand washing practices, poor water quality and inappropriate home treatment practices contribute to the high rates of diarrhea. While 74.2% of mothers treated their child's diarrhea with Oral Rehydration Solution and/or a recommended home fluid, in this context usually coconut water or rice water, only 36.0% of mothers could correctly describe the correct preparation of ORS and there was no way to verify the quality of the home fluid being used. Only 51.7% of mothers offered their child more breastmilk or fluid and only 18.2% of mothers offered their child more or the same amount of food when their child had diarrhea.

In the baseline KPC survey 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%. In addition, while 72.0% of households in GCM County had access to an improved water source, only 21.7% of households were treating water effectively at baseline. Also, only 32.3% of households had access to a sanitary latrine.

Key home practices that are emphasized by this project include continued breastfeeding and fluids as well as the frequent feeding of small amounts of food, and catch-up feeding. In the Care Groups and in home visits, CHPs, and HHPs are emphasizing these key home practices, proper hygiene including proper hand washing practices, and proper techniques to store and treat water effectively. The project is coordinating with the CHT to ensure a regular supply of ORT at the community level.

Malaria: The prevalence of fever in children aged 0-23 months in GCM County was found to be quite high in the baseline survey at 70%. Part of the reason for this can be explained by the fact that at baseline only 17.7% of children less than 24 months were sleeping under an insecticide treated bed net. Of the children who had a fever that had ended in the 2 weeks prior to the survey, only 20.5% were brought to a qualified health facility within 48 hours of the start of the fever. Only 3.6% of mothers treated their child with an effective anti-malarial drug within 24 hours after the fever began.

Project activities for malaria are focused on the prevention of malaria with the supporting the distribution of Insecticide Treated Nets (ITNs) provided by the PMI and community education on proper use of these nets through Care Groups and home visits. The project has begun to work with the MOHSW Malaria Control Division, NDS and GIK sources to ensure adequate ACT pharmaceutical availability at HFs in the county and training health care workers in their use. GIK will also supply Fansidar for use in IPT as well as drugs for malaria treatment, where gaps exist, according to MOHSWSW protocols.

Nutritional Status: The nutritional status of children aged 0-23 months is of major concern in GCM County. The Baseline KPC Survey conducted in November 2006 found the overall rate of under-nutrition to be 27.1%, with 14.1% moderately underweight and 13.1% severely underweight. The survey also showed low rates of immediate and exclusive breastfeeding. Mothers were immediately and exclusively breastfeeding their newborns at a rate of only

33.7%, and providing prelactal feeds during the first 3 days of the newborns life at a rate of 26.8%. Only 62.8% of mothers continue to breastfeed their children until 23 months of age.

Inappropriate complimentary feeding practices also contribute to the high rates of undernutrition. The baseline survey 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 is the fact that only 21.9% of breastfed and 12.5% of non-breastfed children eat the minimum number of essential food groups to meet the recommended dietary diversity standards. The percentage of children aged 0-23 months receiving supplemental Vitamin A in the last 6 months is 76.2%.

The Child Survival Project through its case management training on IMCI of health workers and Community IMCI trainings of HHPs continue to promote immediate initiation of breastfeeding, exclusive breastfeeding, and proper complimentary feeding for children aged 6-23 months in regards to diversity, density and frequency of feeding. The introduction of IMCI at health facilities has also improved both growth monitoring and nutrition counseling services.

CHAPTER 2

Purpose of the Monitoring Survey and Methodology

Purpose of the Survey:

The purpose of this LQAS Survey was to monitor each supervision area to ensure that each area is reaching the benchmarks set for the midterm of the project for each of the projects main objectives, captured by the Project Matrix Indicators. This is quite useful in project management as it allows project managers to determine if a SA is falling behind in one or more intervention areas, or if all of the SAs are having difficulty in a certain intervention area, and which SAs are performing very well in the project's intervention areas. This allows rapid action in order to determine the cause of any difficulties noted, examine the barriers related to overcoming these difficulties, and ascertain solutions to this problem. If one or more SAs are performing very well regarding the indicators collected, a solution may be found in evaluating the differences found between a successful SA and the SA that needs improvement. Staff from the SA that is performing well in a certain area may even be used to help train staff or overcome barriers found in the struggling SA. A LQAS survey was also performed at the end of the first year of the program, in December of 2007. Because the project had been so successful with regard to the project indicators at the end of the first year of the project, this LQAS also included indicators in intervention areas in which the project may be interested in moving.

Survey Team:

The survey team consisted of 5 Supervisors and 20 CHPs, all of whom participated in the baseline KPC survey, and the LQAS survey performed in 2007, and have been active participants in the project activities. A three day LQAS refresher training was provided for the survey teams before implementation of the survey began.

Survey Questionnaire:

The LQAS questionnaire was developed by adapting the previously successful baseline KPC questionnaire. The questions pertaining to the indicators in the project matrix were chosen and placed in the LQAS questionnaire, and to this additional questions were added to provide indicators in intervention areas that the project may have interest in adding to the project. A questionnaire was developed for each category (denominator) of child needed to be interviewed that contained the questions pertinent to that child's category. There were a total of 7 questionnaires developed for the following categories:

1. Questionnaire for the mother of any child aged 0-23 months-to be asked at the first randomly chosen household (called the "main questionnaire")
2. Questionnaire for the mother of any child aged 6-9 months
3. Questionnaire for the mother of any child aged 6-23 months
4. Questionnaire for the mother of any child aged 12-23 months
5. Questionnaire for the mother of any child who had diarrhea in the last 2 weeks

6. Questionnaire for the mother of any child who had a cough with difficult or fast breathing in the last 2 weeks
7. Questionnaire for the mother of any child who had a fever in the last 2 weeks and whose fever is now resolved

The questionnaires were field tested to ensure accuracy and consistency in both language (Pigeon English) and numerical sequencing (skip patterns, etc.).

Sampling

The project area was divided into 4 Supervision Areas (SAs). These SAs were chosen on the basis of management structure and geography, with each SA being monitored by a Supervisor, and with CHPs and HHPs committed to villages in that SA.

For each individual SA, each community was listed randomly, with its population beside it. In each SA, the cumulative population of each community was then determined by summing the total population of that community with the combined population of all the preceding communities on the list. The total cumulative population of the communities in that SA was then divided by 24 to obtain the sampling interval for that SA, because to optimize the results using the available Decision Rule table, while yielding an overall sample size of 96 in order to yield significant combined frequencies, 24 answers are desired for each question in the interview in each SA. A random number was then chosen, with the stipulation being that the number be less than or equal to the sampling interval (24). The cumulative population of each community was then consulted, and the community containing the random number was then chosen as cluster number 1. 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 community based on its population size.

Fieldwork:

Under the supervision of the five Supervisors, interviews were all carried out by CHPs. The center of each cluster was determined by allowing the CHP, who is quite familiar with the community, to enlist the help of the head of the community leaders to determine the spot where they feel that an equal number of households are on each side. The CHP then chose a random starting direction by spinning a bottle in the physical center of the cluster. The CHP then walked in the direction the bottle pointed, and counted the number of households in that direction until the last household in that cluster was reached. The CHP returned to the center and then chose 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. The CHP then counted the doorways in the direction the bottle was pointing until the doorway that corresponded to the random number chosen. This was deemed the first house. If the chosen household contained a child aged 0-23 months that was present at the time of the interview and sleeps in the house at night, and a mother that was present and sleeps in the house at night, the survey was begun at this household. If there was no child under two present, or the mother was not available for the interview, the enumerator

moved to the household that had the closest door relative to the doorway of the household just eliminated. The first eligible mother was asked the main questionnaire, and then all of the questionnaires appropriate for that child's age and status of illness. The enumerator would then continue to the house with the nearest doorway, as described above, and determine if there was a child living in the household and present that was 0-23 months in age. If there was a child aged 0-23 months in the household, and the mother was present, the enumerator would determine the age and recent illnesses of that child to determine if the child met any of the age or illness requirements of one of the remaining questionnaires. This procedure was then repeated until the number of interviews that needed to be taken in that community, in order to have each question answered once, was completed. A parallel sampling guide was written for the CHPs to help them in this process.

Data Analysis:

Data analysis was performed in the MTI/Liberia office using the Epi-info 3.3.2 database. The results were then placed in a pre-designed Excel spreadsheet (see Appendix 1), based upon the Decision Rule Table (see Appendix 2)for LQAS analysis, which allows for easy identification of whether a SA is performing well in regards to that particular indicator based upon the decision rule for that indicator. LQAS is a form of stratified random sampling, but owes its accuracy to using binomial distributions versus frequencies. A binomial distribution is a count of the number of times an event occurs, in this case a positive response. The Decision Rule Table (DRT) created for LQAS samples was used to determine the number of positive responses required, based on the sample size in each SA and the benchmark chosen for each indicator, for each SA to be considered to be performing well in that particular indicator. If the number of desired responses equals or is greater than the decision rule chosen by using the DRT, the SA is considered to have met the decision rule and thus is performing well in regard to that indicator.

Constraints/Difficulties:

Because the LQAS survey needed to be performed during the rainy season, a few of the communities sampled were not accessible by vehicles and therefore some of the teams had to walk for hours in order to reach these communities. This had no effect on the data collected.

CHAPTER 3

Main Findings: Accomplishments, Priorities by Supervision area, and for the Program as a Whole

Overall, the project has had a significant impact on improving immediate and appropriate breastfeeding practices, immunization rates, and caretaking practices during episodes of diarrhea and respiratory infections. All SAs met the respective benchmarks for 10 of the 13 project matrix indicators, and the combined frequency for 8 of the 13 indicators has already met or exceeded the final target for that indicator. The LQAS performed at the end of the first year (LQAS1) revealed that all SAs performed adequately with regard to every indicator other than the water treatment indicator, in which only SA1 failed to meet the benchmark for year 1. There were, however, a few changes in the results noted in this midterm LQAS from LQAS1. The percentage of infants aged 6-9 months receiving breast milk and complementary foods was found to be lower than the result found in LQAS1, with SA2 and SA4 not meeting their benchmarks set for the midterm. While the indicator for the percentage of children 6-23m who received a dose of Vitamin A in the last 6 months is still very high and at the level of the final target chosen for the project, SA1 did not meet the midterm benchmark for this indicator in this LQAS. The percentage of mothers protected from Tetanus was reduced from the end of year one, and SA1 did not meet the midterm benchmark set for this indicator. There continues to be difficulty regarding the treatment of drinking water, with all 4 SAs not meeting the midterm benchmark. Addressing quality of drinking water will require targeting communities drinking from streams and rivers with water hygiene education messages and targeting communities with hand pumps with the means to successfully chlorinate hand pumps regularly. The results, listed by intervention area, are discussed below.

Nutrition:

The project intends 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. The project is partnering with CHAL to use the Care Groups Methodology to promote the immediate initiation of breastfeeding, exclusive and prolonged breastfeeding, and proper complimentary feeding for children aged 6-23 months. Nutrition indicators that were measured were taken from the Project

matrix, with undernutrition also measured. As discussed with CSTS prior to the survey, as this is a midterm LQAS, IYCF would not be collected but will be collected during the Final Evaluation.

Table 1: 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

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency for the Project Area Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Immediate and exclusive BF	yes	14	12	8	15	34%	50%	42%	7	7	7	7	Y	Y	Y	Y	51.04%	52.50%
	(n) size	24	24	24	24													

At baseline only 33.7% of mothers were practicing immediate and exclusive breastfeeding of newborns, defined as newborns who were put to the breast within one hour of delivery and who did not receive prelactal feeds. Each SA has reached the decision rule for its respective midterm benchmark and sample size, which signifies that each supervision area is performing well in educating mothers in the benefits of immediate and exclusive breastfeeding. The performance is excellent as shown by the fact that the combined frequency of immediate and exclusive breastfeeding is 51.04%, which already has surpassed the final target for this indicator of 50%. Advances regarding this indicator have remained steady from its increase to 52.5% at the end of the first year.

Table 2: Introduction of complimentary foods: % of infants aged 6-9m receiving breastmilk and complementary foods

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency for the Project Area Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Children 6-9m with continued BF and complimentary feeding	yes	10	9	13	7	38%	65%	**51%**	10	10	10	10	Y	N	Y	N	40.63%	54.43%
	(n) size	24	24	24	24													

Each supervision area had made quite an initial improvement with the interventions regarding the teaching of continued breastfeeding with the introduction of complimentary foods. The combined frequency for this indicator rose from 38% at baseline to 54.43% at the end of

the first year, due to the fact that Nutrition was the first intervention in which the CHPs and HHPs were trained. Since that time, communities have received nutrition education through home visits, which includes the provision of education in correct complimentary feeding practices for their children. However, in the second year of the project these results did not continue to increase. The combined frequency of 40.63% is lower than that found at the end of year 1, and is comparable to baseline. SAs 2 and 4 failed to reach their benchmark for this indicator, which explains the lower combined frequency. Health education programming focusing on continued breastfeeding with the introduction of complimentary foods and nutrition will be carried out again in all SAs, and will be repeated at regular intervals moving forward in order to reinforce the health education messages provided through home visits and the Care Groups in order to ensure these SAs increase to the levels of the other SAs, and that all of the SAs continue to show improvement over time.

Table 3: 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).

Indicator	numerator/ denominator	Supervision Area				BE	Target	Benc h- mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Children 6-23m receiving Vitamin A in the last 6m	yes	16	24	21	21	76%	85%	**81%**	18	18	18	18	N	Y	Y	Y		
	(n) size	24	24	24	24												85.42%	90.60%

At the end of year 1 of the project each SA had met the year 1 benchmark and had a combined frequency that surpassed the project target. This is in large part due to the fact that the MOHSW , through the CHT, has collaborated closely with the CSP to conduct three integrated EPI campaigns which included the administration of Vitamin A. This has greatly increased the availability and use of Vitamin A in children under 5. The midterm LQAS reveals that the combined frequency continues to exceed the benchmark and meet the project target, with SA2, SA3, and SA4 well above the decision rule. SA2, however, did not meet the benchmark, and the project will investigate through use of the HHPs and Care Groups the barriers that have caused this SA to lag behind in Vitamin A use.

Additional Nutrition Indicators:

Table 4*: Percentage of children age 0-23 months who are underweight (>-2SD for the median weight for age, according to WHO/NCHS reference population)

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Children aged 0-23 months who are underweight	yes	20	19	18	19	27%	17%	**22%**	16	16	16	16	**Y**	**Y**	**Y**	**Y**	20.83%	NA
	(n) size	24	24	24	24													

Table 5*: Percentage of children age 0-23 months who are severely underweight (>-3SD for the median weight for age, according to WHO/NCHS reference population)

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Children aged 0-23 months who are severely underweight	yes	22	22	21	21	13%	NA	**CF**	19	19	19	19	**Y**	**Y**	**Y**	**Y**	10.41%	NA
	(n) size	24	24	24	24													

* The numbers in the SA and decision rule boxes of these tables were reversed in order to get the required decision rule. For example, there were 4 underweight children in SA1. 24-4=20, so 20 was used (instead f 4) so that that the more underweight children, the lower this number, which would make it fail bynot reaching the decision rule. The baseline, benchmark, target, and combined frequency values are not reversed.

In order to assess the possible impact of the projects interventions in the areas of nutrition, particularly in the area of health behaviors surrounding immediate and exclusive breastfeeding and continued feeding with the addition of complimentary foods, WFA measurements were taken at midterm. Benchmarks and targets were set for the indicator of undernutrition (>-2SD for the median weight for age) to be in line with the other nutrition interventions, and it was encouraging to find that all SAs met the benchmark for the midterm and that the combined frequency is 20.83%, which is an improvement from the baseline finding of 27%. This includes the percentage of children age 0-23 months that are severely underweight, which is 10.41%. This compares to the baseline rate of severely underweight children of 13.10%. Health education programming focusing on continued breastfeeding with the introduction of complimentary foods and nutrition will be carried out again in all SAs, to continue to reduce malnutrition.

Immunization:

At baseline, full EPI coverage by 12 months of age was found to be only 18.9% and Health System Performance (DPT3 vaccination by 12 months of age), was only 30.6%% in children aged 12-23 months. The project has begun utilizing the IMCI and C-IMCI approach in order to improve vaccination rates and utilization of vaccination services by the community. Demand for EPI services is being created through CHWs and Care Groups. The project is providing logistical support for National Immunization days, advocates for the implementation of routine EPI services, and has been reducing missed opportunities for immunizations through IMCI at the HF level. This includes immunization outreach which is presently being accomplished by 89% of the HF surveyed in the Health Facility Assessment.

Table 6: Health System Performance regarding Immunization services: Percentage of children aged 12-23 months who received DPT3 before they reached 12 months by the time of the interview as verified by a vaccination card.

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench-mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Health System Performance (DPT3)	yes	15	16	17	10	31%	50%	**41%**	7	7	7	7	**Y**	**Y**	**Y**	**Y**		
	(n) size	24	24	24	24												60.42%	57.89%

Each SA has reached the midterm benchmark with regard to Health System Performance, and the combined frequency of 60.42% for all SAs has surpassed the project target of 50%. Demand has been created through immunization messages and a recent National Immunization Day has been supported by the project as well. MOHSW staff at 27 HFs in the county have received training in IMCI, and through this training are reducing missed opportunities to begin, continue, or complete immunizations. This training includes an emphasis on checking the Road to Health Card for all children under five attending their HF to ensure that they have been fully immunized, and sending them for immunization immediately if they have not, as well as stressing the importance of providing outreach EPI services to catchment communities in order to track defaulters.

Table 7: 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.

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
EPI Coverage	yes	10	10	10	8	19%	40%	**30%**	3	3	3	3	Y	Y	Y	Y		
	(n) size	24	24	24	24												39.58%	35.53%

All 4 SA areas met the midterm benchmark with regards to full immunization coverage as well, and the combined frequency of 39.58% meets the final target of 40%. The recent immunization campaigns in the county, reducing missed opportunities at the HF through IMCI, and outreach services provided by vaccinators to catchment communities has improved this indicator significantly. In addition, through community education about these campaigns and through education about the importance of immunization during home visits by CHPs and HHPs, more mothers have brought their children to receive EPI services conducted in their communities.

Table 8: Maternal TT Vaccination: Percentage of mothers with children age 0-23 months that 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).

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Maternal TT Vaccination	yes	12	16	18	18	61%	80%	**71%**	15	15	15	15	N	Y	Y	Y		
	(n) size	24	24	24	24												66.67%	87.18%

At the end of the first year of the project, all four SAs had met the benchmark regarding maternal TT vaccinations, and the combined frequency of the four supervision areas was 87.18%, which surpassed the project target of 80%. This was due to the fact that the MOHSW had carried out two maternal neonatal tetanus (MNT) campaigns in the county during the first year of the project. In addition, the project has been working at the HF level to increase the capacity of the staff, and at the community level through Care Groups to increase the

knowledge of mothers about the importance and thus the demand for TT vaccination. The CSP and other supporting NGOs have also provided logistical support to ensure that vaccines are available at the various HFs in the county and at the community level during these campaigns. The midterm HFA showed that 72% of HF in the county had TT toxoid available. However, at midterm the frequency has dropped to 66.76%, with 3 SAs still meeting their benchmarks but SA1 falling below the benchmark and thus lowering the combined frequency.

Control of Diarrhea:

Key home practices to mitigate diarrheal disease are emphasized by this project through the Care Groups and home visits by the CHPs and HHPs. These practices include the appropriate use of ORT, continued breastfeeding and fluids, and the frequent feeding of small amounts of food (catch-up feeding). Proper hygiene, including proper hand washing practices and the building and use of dish racks in communities for household utensils, is also emphasized in the project along with proper techniques to store and treat water effectively. The project is coordinating with the CHT and other NGOs to ensure a proper supply of ORT is available at the various HFs and the midterm HFA revealed that 89% of HFs have ORS available.

Table 9: 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.

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
ORT Use	yes	18	16	21	21	74%	85%	**80%**	16	16	16	16	**Y**	**Y**	**Y**	**Y**	79.17%	85.51%
	(n) size	24	24	24	24													

Each SA has met the midterm benchmark for ORT use, and while the baseline was already at 74%, the project, through use of the Care Groups and through home visits, has been able to raise the combined frequency of ORT use in all SAs to 79.17%, which meets the benchmark for the midterm. Through the GIK supplied by the CSP, ORS has been made available in communities of the project for use by HHPs for children under five during emergencies before they are referred to the clinic. In addition, ORS was shown to be available at 89% of the HFs in the county.

Table 10: 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

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Increased fluid during diarrheal episode	yes	16	13	15	18	52%	70%	**61%**	13	13	13	13	**Y**	**Y**	**Y**	**Y**	64.58%	71.62%
	(n) size	24	24	24	24													

The midterm benchmark for increased fluid intake was reached for each of the SAs, and the combined frequency for the project was 64.58% which exceeds the midterm benchmark. CHWs, CHPs, and HHPs have all had a significant impact through working with mothers at the household level and in the Care Group setting to raise awareness about the control and treatment of diarrhea. CHPs and HHPs have continuously stressed the importance of increased breastfeeding and using other homemade ORS substitutes such as coconut water and rice water in the absence of ORS for managing children with diarrhea quickly at home in order to prevent dehydration.

Table 11: Point of Use (POU): Percentage of households of children 0-23 months that treat their water effectively

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Effective water treatment	yes	2	2	0	3	22%	40%	**31%**	4	4	4	4	**N**	**N**	**N**	**N**	7.29%	18.67%
	(n) size	24	24	24	24													

Additional Water Indicator:

Table 12: Additional Indicator: Improved Water Source: Percentage of mothers of children 0-23m who live in households with an improved source for drinking water

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Households with improved water source	yes	20	20	17	22	72%	**NA**	**CF**	18	18	18	18	**Y**	**Y**	**N**	**Y**	82.29%	NA
	(n) size	24	24	24	24													

Only 22% of households treated their water effectively at baseline, and this frequency has decreased over time (18.67% at year 1 and 7.29% at year 2). Possible reasons include the fact that 82% of households in GCM County have access to improved water sources which creates the perception in most of the communities that water treatment is unnecessary. In addition, the areas with a lack of improved water sources (which are using stream and river water) are the most vulnerable communities and are the hardest to reach, which is a barrier the project will look to overcome by targeting services to these areas. Also, a midterm evaluation regarding the availability of clean water was added to the survey to survey to determine the change from baseline. There is access to clean water sources in GCM County as 82.0% of households have access to either piped or protected water sources, which has increased from 72% at baseline. The remaining 18% of the communities have limited or seasonal access and SA2 has more of these villages. This was determined by using the combined frequency (CF) or average as the "benchmark" for the Decision Rule Table. Using the CF as the average allows the project to determine if a SA is not meeting the average of all of the SAs combined. In this case, SA2 did not meet the average. Community feedback sessions are scheduled in 12 of the communities to determine the barriers around this indicator, and an Action Plan will be created during these sessions. Possible solutions may include targeting those communities (18%) that are using water from rivers and streams as no hand pumps are available, and working to ensure that hand pumps are chlorinated at regular intervals.

Table 13: 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.																		
Indicator	**numerator/ denominator**	**Supervision Area**				**BE**	**Target**	**Bench -mark**	**Decision Rule**				**Decision**				**Combined Frequency Sep 2008**	**CF from Dec 2007**
		1	**2**	**3**	**4**				**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**		
Appropriate hand washing Practices	yes	9	9	14	10	19%	40%	**30%**	3	3	3	3	**Y**	**Y**	**Y**	**Y**	43.75%	28%
	(n) size	24	24	24	24													

At baseline 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). The project has trained CHPs and HHPs in sanitation and hygiene promotion messages, which they have disseminated in the Care Group setting and through on-going educational programs and interventions in the communities during home visits. This methodology is proving effective, and each SA has reached the benchmark for the midterm of the project. In addition, the combined frequency of the SA is 43.75%, which exceeds both the midterm benchmark and the project target.

Pneumonia Case Management:

Table 14: 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.																		
Indicator	**numerator/ denominator**	**Supervision Area**				**BE**	**Target**	**Bench -mark**	**Decision Rule**				**Decision**				**Combined Frequency Sep 2008**	**CF from Dec 2007**
		1	**2**	**3**	**4**				**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**		
Appropriate care seeking for pneumonia	yes	22	23	21	14	43%	65%	**54%**	10	10	10	10	**Y**	**Y**	**Y**	**Y**	83.33%	60.56%
	(n) size	24	24	24	24													

There has been a focus on the training of HF skilled and support staff, CHPs, and HHPs in health promotion/education in order to increase timely health seeking behaviors by mothers for their sick children, and in referring sick children to the HF during home visits. HF personnel are being trained in IMCI and are being trained to properly measure respiratory rate as this is the best measure of respiratory problems in infants and young children. Through Care Groups mothers are being educated in recognizing the signs of ARI, including cough, difficulty/fast breathing, and chest-in-drawing, and the importance of seeking timely medical treatment for their child with ARI. Children found to have signs of pneumonia, such as cough/difficulty breathing, are being referred to the health facility for treatment. Ensuring that antibiotics are readily available at the HF level is also a priority of this phase of the project. This concerted effort is providing results as all SA reached the midterm benchmark, with the combined frequency of 83.33% well above the midterm benchmark and project target of 65%.

Malaria and the Management of Febrile Illness:

Table 15: Child sleeps under an insecticide-treated bednet: Percentage of children 0-23 months who slept under an insecticide-treated bed net the previous night.

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Child sleeps under ITN	yes	12	15	18	20	18%	35%	**27%**	3	3	3	3	**Y**	**Y**	**Y**	**Y**	67.71%	22.08%
	(n) size	24	24	24	24													

Only 17.7% of children less than 24 months slept under an insecticide treated bed net at the time of the baseline KPC survey. During March of 2008 the CHT and Child Survival Project distributed nets provided by the President's Malaria Imitative. HHPs, through home visits in their assigned communities, are making follow up visits to ensure that mothers and other caregivers are using the mosquito nets that have been provided to them in their communities for their children under five. We, therefore, expected midterm results for this indicator to be significantly higher. As hoped, all SA met the midterm benchmark for this indicator, and the combined frequency of 67.71% is well above the project target of 35%.

Table 16: 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.

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Child receives appropriate antimalarial	yes	12	13	6	16	12.5%	50%	**32%**	4	4	4	4	**Y**	**Y**	**Y**	**Y**	48.96%	40.58%
	(n) size	24	24	24	24													

*"Treated with an effective anti-malarial drug within 24 hours after the fever began" was defined as children who were taken to an appropriate health facility within 24 hours and given a medication at that facility.

At baseline only 12.5% of children were treated with proper anti-malarial medication within 24 hours of the onset of fever. Project staff, HHPs, and Care Groups have now been trained in health promotion in order to increase timely health seeking behaviors by mothers for their sick children. IMCI is being instituted at all HF in the project area to ensure proper diagnosis and treatment of malaria with anti-malarial medication. The midterm Health Facility Assessment has shown that ACT is available at 94% of the HFs in the County. All 4 SAs have met the mid term benchmark for this indicator, and the combined frequency of 48.96% is within range of the project target. The project will focus on continuing to improve this rate, and priority will be given to health promotion in order to increase timely health seeking behaviors by mothers for their sick children. It should be noted that for this survey this rate was calculated based on the child being seen in a qualified health facility and taking a medicine within 24 hours of the onset of fever. The new indicator developed by the CORE Group and CSTS, which requires the mother to identify that an antimalarial was taken, was not used in this survey as it was not yet included in the Rapid CATCH at the time of the baseline survey. It has been verified through the HFA that ACT is the first line DOC for malaria.

Additional Indicators Measured for Possible Project Intervention:

ANTENATAL CARE

Prenatal Care

Table 17: Prenatal Care: Percentage 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

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Prenatal Care	yes	20	24	23	22	56%	NA	**CF**	21	21	21	21	N	Y	Y	Y	92.71%	NA
	(n) size	24	24	24	24													

Table 18: Prenatal Care-3 or more visits: Percentage 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

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Maternal Health Card	yes	14	20	16	14	NA	NA	**CF**	14	14	14	14	Y	Y	Y	Y	66.67%	NA
	(n) size	24	24	24	24													

Table 19: Maternal Health Card: Percentage of mothers of children 0-23m who have a maternal health card

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Maternal Health Card	yes	7	6	9	8	NA	NA	**CF**	4	4	4	4	**Y**	**Y**	**Y**	**Y**	31.25%	NA
	(n) size	24	24	24	24													

Table 20: **Prenatal Danger Signs:** Percentage of mothers of children 0-23m able to report at least one known prenatal danger signs indicating the need to seek health care

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Prenatal Danger Signs	yes	11	11	8	15	NA	NA	**CF**	9	9	9	9	**Y**	**Y**	**N**	**Y**	46.88%	NA
	(n) size	24	24	24	24													

Table 21: Knowledge of prenatal Danger Signs: Percentage of mothers of children 0-23m who report that they would first go to an appropriate health provider if they experienced any prenatal danger symptoms

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Prenatal Appropriate Emergency Care	yes	24	24	21	22	NA	NA	**CF**	21	21	21	21	**Y**	**Y**	**Y**	**Y**	94.79%	NA
	(n) size	24	24	24	24													

*It should be noted that all new indicators, that are not part of the project matrix, do not have a baseline, benchmark, or targets. In these cases the combined frequency is used as the benchmark upon which the Decision Rule is based. If a SA fails to meet this benchmark it is statistically significantly below the average for the entire project area.

It is quite encouraging that 92.71% of mothers had prenatal, with at least one prenatal visit prior to the birth of her youngest child, compared to 56% at baseline. SA1 is below this average, but is still quite high. The midterm evaluation also found that 67.71% of mothers had at least 3 prenatal visits, (the baseline did not include this indicator as it is not part of the Rapid CATCH or Prenatal Care module). However, only 31.25% of mothers have a maternal health card, and only 46.88% of mothers could name at least one prenatal danger sign. These are areas that could be improved through possible future programming. This would include working with the HF in order to ensure that mothers receive Maternal Health cards, and extending the health education messages given to the mothers to include the recognition of prenatal danger signs. It is also encouraging to note that 94.7% of mothers would first go to an appropriate health provider if they experienced prenatal danger signs. As far as transportation to the nearest health provider, 86.46% stated that they would walk, while only 16.67% stated they would take a car and 3.13% would take a motorcycle. An emergency transportation plan would be important for those mothers who do not have access to motorized transportation, and the project has been working to put this in place in each community, through the CHDCs.

Delivery Care

Table 22: **Delivery in a HF:** Percentage of children aged 0-23 months whose delivery was in an appropriate health facility

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Delivery in an appropriate health facility	yes	6	7	6	5	NA	NA	**CF**	2	2	2	2	**Y**	**Y**	**Y**	**Y**	25.00%	NA
	(n) size	24	24	24	24													

Table 23: **Skilled Birth Attendant:** Percentage of children aged 0-23 months whose delivery was attended by a skilled health personnel																		
Indicator	**numerator/ denominator**	**Supervision Area**				**BE**	**Target**	**Bench -mark**	**Decision Rule**				**Decision**				**Combined Frequency Sep 2008**	**CF from Dec 2007**
		1	**2**	**3**	**4**				**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**		
Skilled Birth Attendant	yes	7	6	7	3	21.3%	NA	**CF**	2	2	2	2	**Y**	**Y**	**Y**	**Y**	23.96%	NA
	(n) size	24	24	24	24													

The percentage of women giving birth in a facility is quite low, at 25.00%, and the percentage of births that are attended by a skilled birth attendant, which is defined in this study as a doctor, nurse, physician assistant, or midwife, is only 23.96%. Additionally, at baseline traditional birth attendants (TBA) attended the delivery 73.0% of the time, and presently these birth attendants are not skilled in proper cord care or other clean birthing practices. This signifies that there is a lack of skilled personnel in these areas, and a need to train TBAs in proper birthing practices as they carry the majority of the burden regarding deliveries. At present, MTI does not have resources at this time to provide training for TBAs but plans to pursue funding possibilities. TBAs and HHPs should be trained in the importance of assuring that both mother and child receive skilled delivery and follow up care including post partum visit with a trained health professional, including referring the mother when necessary.

Postnatal Care

Table 24: **Postnatal Visit-Mom:** Percentage of mothers of children 0-23m who received a post-natal visit from an appropriately trained health worker within three days after birth																		
Indicator	**numerator/ denominator**	**Supervision Area**				**BE**	**Target**	**Bench -mark**	**Decision Rule**				**Decision**				**Combined Frequency Sep 2008**	**CF from Dec 2007**
		1	**2**	**3**	**4**				**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**		
Postnatal Visit-Mom	yes	9	7	4	7	6.0%	NA	**CF**	3	3	3	3	**Y**	**Y**	**Y**	**Y**	28.13%	NA
	(n) size	24	24	24	24													

Table 25: **Postnatal Visit-Child :** Percentage of mothers of children 0-23m who received a post-natal visit from an appropriately trained health worker within three days after birth																		
Indicator	**numerator/ denominator**	**Supervision Area**				**BE**	**Target**	**Bench -mark**	**Decision Rule**				**Decision**				**Combined Frequency Sep 2008**	**CF from Dec 2007**
		1	**2**	**3**	**4**				**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**		
Postnatal Visit-Child	yes	9	9	4	13	7.0%	NA	**CF**	6	6	6	6	**Y**	**Y**	**Y**	**Y**	36.46%	NA
	(n) size	24	24	24	24													

Table 26: **Knowledge of Neonatal Danger Signs:** % of mothers able to report at least two known neonatal danger signs																		
Indicator	**numerator/ denominator**	**Supervision Area**				**BE**	**Target**	**Bench -mark**	**Decision Rule**				**Decision**				**Combined Frequency Sep 2008**	**CF from Dec 2007**
		1	**2**	**3**	**4**				**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**		
Knowledge of Neonatal Danger Signs	yes	0	0	0	1	NA	NA	**CF**	too low to calculate				**NA**				1.04%	NA
	(n) size	24	24	24	24													

At baseline, postpartum visits with a skilled professional occurred at an alarmingly low rate, which was 6.0% for mothers and 7.0% for newborns. By midterm these numbers have improved, due to health education messages provided in the Care Groups and home visits stressing the utilization of health services for child and antenatal care. Postnatal visits within 3 days of the birth of the child are now occurring at a rate of 28.13% for the mother and 36.46% for the child. These rates are markedly better but still quite low, and therefore the project is considering adding more specific health education messages about prenatal care, delivery care, and postnatal care. These messages will be given at the household level by the HHPs through the care Group structure. Knowledge about neonatal danger signs is extremely low, at 1.04%. Health education messages will be given to the mothers through the Care Group structure to teach them to recognize neonatal danger signs and to encourage them to seek prenatal, delivery, and postnatal care from appropriately trained health workers at the HF.

HIV

Table 27: **Knowledge of HIV :** % of mothers of children 0-23m who have heard of AIDS

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Heard of AIDS	yes	20	23	21	23	81.9%	NA	**CF**	21	21	21	21	N	Y	Y	Y		
	(n) size	24	24	24	24												90.63%	NA

Table 28: **HIV Risk Reduction:** % of mothers of children 0-23m who can correctly name at least 2 ways to reduce the risk of HIV/AIDS

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Know 2 or more ways to reduce risk of HIV	yes	10	6	11	9	19.0%	NA	**CF**	6	6	6	6	Y	Y	Y	Y		
	(n) size	24	24	24	24												37.50%	NA

The prevalence of HIV/AIDS in the general population of Liberia is 8.2% as of 1986, but this is thought to be a low estimate. Liberia has incurred the same increase in exposure to the disease as the rest of Africa, and is presently ill prepared to deal with this epidemic as the knowledge about HIV/AIDS is extremely low. In GCM County, while 90.63% of mothers have heard of AIDS, only 37.50% of mothers could name two or more correct methods of reducing the risk of contracting the virus that causes HIV. Therefore, it is quite important to increase the knowledge of the community about HIV/AIDS and risk reduction. This intervention could be introduced through educational messages in the Care Groups and household visits.

Table 29: Heard of VCT: % of mothers of children 0-23m who have heard of VCT

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Heard of VCT	yes	7	10	11	8	NA	NA	**CF**	6	6	6	6	**Y**	**Y**	**Y**	**Y**		
	(n) size	24	24	24	24												37.50%	NA

Table 30: **Access to VCT :** % of mothers of children 0-23m who know of a place where people can go to get VCT

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Know where to get VCT	yes	6	3	9	7	NA	NA	**CF**	3	3	3	3	**Y**	**Y**	**Y**	**Y**		
	(n) size	24	24	24	24												26.04%	NA

Table 31: **Access to HIV Treatment:** % of mothers of children 0-23m who know of a place where people can go to get treatment for HIV

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Know where to get treatment for HIV	yes	4	1	4	4	NA	NA	**CF**	too low to calculate				**NA**				13.54%	NA
	(n) size	24	24	24	24													

Table 32: **Knowledge of PMTCT:** % of mothers of children 0-23m who know that there are special medications that can be given to a pregnant woman infected with the AIDS virus to reduce the risk of mother-to-child transmission

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Knowledge of PMTCT	yes	3	1	0	1	NA	NA	**CF**	too low to calculate				**NA**				5.21%	NA
	(n) size	24	24	24	24													

Table 33: **Access to PMTCT:** % % of mothers of children 0-23m who know of a place in the community to go to get these special medications that can be given to a pregnant woman infected with the AIDS virus to reduce the risk of mother-to-child transmission

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Know where to get PMTCT	yes	4	1	2	1	NA	NA	**CF**	too low to calculate				**NA**				8.33%	NA
	(n) size	24	24	24	24													

While only 37.50% of mothers have heard of Voluntary Counseling and Testing (VCT), even fewer, 26.04%, of mothers have the knowledge of where such treatment is available in the community. Educational messages regarding the importance of knowing ones HIV status and receiving counseling on HIV may be introduced into the health education messages delivered through the Care Group structure. It is worrisome, but understandable that only 13.54% of mothers know where one may receive treatment for HIV. This is due to a combination of the stigma involved with disclosing information if you are HIV positive, and the fact that treatment at this time is only available in Monrovia. Even worse is the fact that only 5.21% of mothers know that there is PMTCT treatment available and only 8.33% of mothers know where PMTCT treatment may be received. More mothers answered that they knew where PMTCT treatment is available than answered that they knew what PMTCT actually is, most likely due to confusing PMTCT treatment with general HIV treatment. It is quite apparent that HIV is an area where much work may be done to increase awareness of risk reduction, VCT, and treatment options for HIV and treatment to reduce transmission to newborns. The project will consider adding these health education messages into the Care Group structure.

HIV Stigma

Table 34: **Know someone Stigmatized:** % of mothers of children 0-23m who personally know someone who has been denied involvement in social events, religious services, or community events in the last 12 months because he or she is suspected to have the AIDS virus or has the AIDS virus?

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Know someone Stigmatized	yes	2	0	2	0	NA	NA	**CF**	too low to calculate				**NA**				4.17%	NA
	(n) size	24	24	24	24													

Table 35: **Believe They Should Be Ashamed :** % of mothers of children 0-23m who believe that people with the AIDS virus should be ashamed of themselves

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Believe people with HIV should be ashamed	yes	13	6	12	11	NA	NA	**CF**	7	7	7	7	**Y**	**N**	**Y**	**Y**		
	(n) size	24	24	24	24												43.75%	NA

*In this instance SA2, by being significantly below the average, SA2 actually has less stigma against people with HIV than the other SAs

Table 36: **Believe They Should Be Forced Out of the Community:** % of mothers of children 0-23m who belIeve that a person with the AIDS virus should be forced to leave the community.

Indicator	numerator/ denominator	Supervision Area				BE	Target	Bench -mark	Decision Rule				Decision				Combined Frequency Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
Believe people with HIV Should Be Forced Out of the Community	yes	11	12	15	13	NA	NA	**CF**	10	10	10	10	**Y**	**Y**	**Y**	**Y**	53.13%	NA
	(n) size	24	24	24	24													

While only 4.17% of mothers state that they actually know someone who has suffered outward stigmatization due to having HIV, it is quite apparent that high levels of stigma against people living with HIV/AIDS (PLWHA). Approximately half of the mothers interviewed believe that PLWHA should be ashamed of themselves (43.75%) and believe that PLWHA should be forced to leave the community (53.13%). This is an important revelation, because no knowledge of the methods of testing and treating HIV will be utilized by a society in which such fear of stigmatization exists. The project will add important messages against stigmatizing those with HIV to the Health education messages already being presented through the Care Group structure.

Health Facility Client Satisfaction Survey Indicators

In addition to the Health Facility Assessment (HFA) performed at baseline, a client satisfaction survey was added to the LQAS survey of mothers of children aged 0-23 months in place of performing it during the HFA. The reason for this is that bias is introduced into any client satisfaction survey given at the HFA, because clients dissatisfied with HF services are less likely to go to a HF, and therefore would not be included in the survey. A community based survey of mothers of children aged 0-23 months avoids this bias.

Table 1.		**Supervision Areas**				**Base-line**	**Final Target**	**Target for this LQAS**	**Combined Frequency for Project Area**
		1	**2**	**3**	**4**				
% of mothers with children age 0-23 months who have taken the child to the nearest HF in the last 12 months	Numerator (**yes** answers)	91	92	75	90	NA	TBD	**CF**	97.75%
	Denominator (**Total**)- Sample size	93	93	77	93				

Utilization of health services in GCM County is very high, with 97.75% of mothers of children under the age of two bringing their child to the HF within the last year. Due to the fact that only 7 of the 356 mothers interviewed did not utilize health services, reasons for not utilizing health services could only be asked of these 7 mothers, which do not yield statistically significant results.

Table 2.		Supervision Areas				Base-line	Final Target	Target for this LQAS	Combined Frequency for Project Area
% of mothers of children aged 0-23m who felt the time waited to be seen at the HF was reasonable (exc., good, Acceptable)	Numerator (**yes** answers)	81	84	75	77	NA	TBD	**CF**	89.04%
	Denominator (**Total**)- Sample size	93	93	77	93				

Table 3.		Supervision Areas				Base-line	Final Target	Target for this LQAS	Combined Frequency for Project Area
% of mothers of children aged 0-23m who felt the treatment received for their child's illness at the HF was reasonable (exc., good, fair)	Numerator (**yes** answers)	88	82	71	85	NA	TBD	**CF**	91.57%
	Denominator (**Total**)- Sample size	93	93	77	93				

Table 4.		Supervision Areas				Base-line	Final Target	Target for this LQAS	Combined Frequency for Project Area
% of mothers of children aged 0-23m who were likely or very likely to return to the same facility the next time the child is sick	Numerator (**yes** answers)	90	89	74	90	NA	TBD	**CF**	96.30%
	Denominator (**Total**)- Sample size	93	93	77	93				

Mothers were overwhelmingly satisfied with the amount of time they were required to wait to be seen at the HF (89.04%), and the treatment received at the HF (91.57%). It is not surprising, therefore, that 96.30% of mothers stated they were likely or very likely to return the same facility the next time the child is sick.

CHAPTER 4

Action Plan/Conclusions/Recommendations

The Grand Cape Mount Child Survival Project has improved the health of children and families in remarkable fashion since its inception in 2006. The midterm LQAS has verified that the project has had a significant impact on improving immediate and appropriate breastfeeding practices, immunization rates, and caretaking practices during episodes of diarrhea, respiratory infections, and malaria. All SAs met the respective benchmarks for 10 of the 13 project matrix indicators, and the combined frequency for 8 of the 13 indicators has already met or exceeded the final target for that indicator. There also are some areas in which the project needs to increase its effectiveness. The project has scheduled community feedback sessions in 12 of the communities surveyed in order to present the results of the midterm LQAS survey and involve the community in planning for next steps. The following is a summary of the Action Plan for the next two years that has been discussed with project partners:.

Nutrition

1. The percentage of infants aged 6-9 months receiving breast milk and complementary foods was found to be 40.63%, which does not meet the midterm benchmark for this indicator and is lower than the result found in the LQAS at the end of year 1 (LQAS1). This is mainly due to the fact that SA2 and SA4 did not meet their benchmarks set for the midterm. Health education programming focusing on continued breastfeeding with the introduction of complimentary foods and nutrition will be carried out again in all SAs, and will be repeated at regular intervals moving forward in order to reinforce the health education messages provided through home visits and the Care Groups in order to ensure these SAs increase to the levels of the other SAs, and that all of the SAs continue to show improvement over time.

2. While the indicator for the percentage of children 6-23m who received a dose of Vitamin A in the last 6 months is still very high and at the level of the final target chosen for the project, SA1 did not meet the midterm benchmark for this indicator in this LQAS. An investigation into why this has occurred in SA1 will be conducted, with care being taken to ensure the availability of Vitamin A at the HF.

Immunization

1. During the first year of the project the MOHSW had carried out two maternal neonatal tetanus (MNT) campaigns in the county, and the end of year 1 results were excellent, with all 4 SAs meeting their benchmark and the CF of 87% surpassing the project target. The midterm LQAS, however, shows that the rate of maternal Tetanus immunization has declined somewhat to 66.67%, which is above the baseline of 61%, but below the midterm benchmark of 71%. Also, SA1 did not meet the midterm benchmark. Health education messages regarding the importance of TT vaccination will be carried out in increased fashion, particularly in SA1, to increase utilization of this service at the HF.

This will be combined with efforts to ensure that TT toxoid is available at all of the HFs in the county and that all HWs in the facilities are checking the mothers TT immunization status during prenatal care visits

Control of Diarrhea

1. The issue of not treating water effectively continues to be a concern in GCM County. Only 22% of households treated their water effectively at baseline, and this frequency has decreased over time (18.67% at year 1 and 7.29% at year 2). Possible reasons include the fact that 82% of households in GCM County have access to improved water sources which creates the perception in most of the communities that water treatment is unnecessary. In addition, the areas with a lack of improved water sources (which are using stream and river water) are the most vulnerable communities and are the hardest to reach, which is a barrier the project will look to overcome by targeting services to these areas. Community feedback sessions are scheduled in 12 of the communities to determine the barriers around this indicator, and an Action Plan will be created during these sessions. Possible solutions may include targeting those communities (18%) that are using water from rivers and streams as no hand pumps are available, particularly in SA3 which was significantly below the average, and working to ensure that hand pumps are chlorinated at regular intervals. The following activities may be planned, pending the results of the community feedback sessions:
    a. The GCM CSP, CHCs and the CHT will discuss with partners in water and sanitation the chlorination of handpumps and other sources of drinking water.
    b. Partners in WATSAN will also be asked to participate in our CG sessions so that they may teach HHPs how to treat water with Chlorox so that this information can be shared with households.
    c. CHPs and HHPs will increase the awareness in the communities about the importance of boiling water taken from untreated sources.
    d. The GCM CSP will Work with the CHT and the CHCs to advocate with NGOs involved with water and sanitation, such as the African Development Network and Norwegian Refugee Council, to provide hand pumps in these communities.

In addition, the project has trained CHPs and HHPs in sanitation and hygiene promotion messages, which they have disseminated in the Care Group setting and through on-going educational programs and interventions in the communities during home visits. This methodology is proving effective, and each SA has reached the benchmark for the midterm of the project. In addition, the combined frequency of the SA is 43.75%, which exceeds the project target. While this result is excellent, it is still below 50%, and therefore the project will continue to improve this health behavior in the following manner:

a. The CSP will conduct IEC/BCC at the community level through CHPs and HHPs
b. The CSP will increase community awareness through the mosques and churches through the imams and pastors who have been trained in the five intervention areas of the CSP.
c. The HHPs will work with their households to make sure water is always available for washing hands by members of the households

d. The HHPs will encourage families to have a hand washing station near their latrine
e. The HHPs will encourage the washing hands with soap (locally made or commercial) or soap alternative such as ash.
f. Parents will be instructed to set the example for their children by always washing their hands at appropriate times so that this behavior will continue to be practiced in the community.
g. Parents will be instructed to ensure that their children wash their hands every time before eating.

Malaria

1. The proper treatment of malaria with antimalarials within 24 hours has increased from 12.55% at baseline to 48.96% at midterm, which meets the project target. Project staff, HHPs, and Care Groups have now been trained in health promotion in order to increase timely health seeking behaviors by mothers for their sick children. IMCI is being instituted at all HF in the project area to ensure proper diagnosis and treatment of malaria with anti-malarial medication. The midterm Health Facility Assessment has shown that ACT is available at 94% of the HFs in the County. However, because malaria is such a burden in this population, the project will focus on continuing to improve this rate, and priority will be given to health promotion in order to increase timely health seeking behaviors by mothers for their sick children. Included in the Action Plan will be the following, which was devised by project staff:

   a. HHPs will continue to stress the importance of taking children with fever immediately to a HF in order to receive appropriate treatment.
   b. HHPs will make sure that children with fever are referred immediately, using their community referral cards, to a clinic.
   c. The CSP will advocate with the MOHSW to begin a pilot project in a few very remote communities in the county by the 3rd year of the project to do Operational Research on the availability of treatment to children by CHPs with antimalarial medications at the community level, because most of these communities are far away from the HFs.
   d. The Project will encourage communities to collect emergency funds to be used to ensure that children sick with fever or other severe conditions are quickly taken to a clinic for treatment.
   e. The Project will encourage communities to set up an emergency transport system (hammock/wheelbarrow) with young men placed in charge of the system so that sick children may be immediately taken to the clinic

Possible New Intervention Areas

Antenatal Care

Only 31.25% of mothers have a maternal health card, and only 46.88% of mothers could name at least one prenatal danger sign. These are areas that could be improved through possible future programming. This would include:

a. Working with the HF in order to ensure that mothers receive Maternal Health cards
b. Extending health education messages to the mothers to include the recognition of prenatal danger signs
c. As far as transportation to the nearest health provider, 86.46% stated that they would walk, while only 16.67% stated they would take a car and 3.13% would take a motorcycle. An emergency transportation plan would be important for those mothers who do not have access to motorized transportation, and the project will increase efforts to put this in place in each community, through the CHDCs

Delivery Care

The percentage of women giving birth in a facility is quite low, at 25.00%, and the percentage of births that are attended by a skilled birth attendant, which is defined in this study as a doctor, nurse, physician assistant, or midwife, is only 23.96%. Additionally, at baseline traditional birth attendants (TBA) attended the delivery 73.0% of the time, and presently these birth attendants are not skilled in proper cord care or other clean birthing practices.

Postnatal Care

1. Postnatal visits within 3 days of the birth of the child are now occurring at a rate of 28.13% for the mother and 36.46% for the child. These rates are markedly better than baseline (6% and 7%, respectively) but still quite low, and therefore the project is considering adding more specific health education messages about prenatal care, delivery care, and postnatal care. These messages will be given at the household level by the HHPs through the care Group structure. Also, TBAs and HHPs will be trained in the importance of assuring that both mother and child receive skilled delivery and follow up care including post partum visit with a trained health professional, including referring the mother when necessary.
2. Knowledge about neonatal danger signs is extremely low, at 1.04%. Health education messages will be given to the mothers through the Care Group structure to teach them to recognize neonatal danger signs and to encourage them to seek prenatal, delivery, and postnatal care from appropriately trained health workers at the HF.

HIV/AIDS

1. In GCM County, while 90.63% of mothers have heard of AIDS, only 37.50% of mothers could name two or more correct methods of reducing the risk of contracting the virus that causes HIV. Health Education messages regarding HIV could be introduced through educational messages in the Care Groups and household visits in order to increase the knowledge of the community about HIV/AIDS and risk reduction.
2. Only 37.50% of mothers have heard of Voluntary Counseling and Testing (VCT), and only 26.04% of mothers have the knowledge of where such treatment is available in the community. Educational messages regarding the importance of knowing ones HIV status and receiving counseling on HIV may be introduced into the health education messages delivered through the Care Group structure
3. Only 13.54% of mothers know where one may receive treatment for HIV. This is due to a combination of the stigma involved with disclosing information if you are HIV positive, and the fact that treatment at this time is only available in Monrovia. Even more worrisome is the fact that only 5.21% of mothers know that there is PMTCT treatment available and only 8.33% of mothers know where PMTCT treatment may be received. The project will consider adding these health education messages into the Care Group structure, along with ensuring that proper referral of patients in need of services to the proper venues.
4. Stigma against those living with HIV is a very real issue in GCM County. Approximately half of the mothers interviewed believe that PLWHA should be ashamed of themselves (43.75%) and believe that PLWHA should be forced to leave the community (53.13%). This is an important revelation, because no knowledge of the methods of testing and treating HIV will be utilized by a society in which such fear of stigmatization exists. The project will add important messages against stigmatizing those with HIV to the Health education messages already being presented through the Care Group structure.

CONCLUSIONS/RECOMMENDATONS

The GCMCSP continues to improve the lives of children and families in Grand Cape Mount County. The project remains very successful in attaining, and in many cases surpassing benchmark and target coverage for most of the indicators in its project matrix. The Action Plan outlined above will guide the third and fourth years of the project in order to continue to improve the indicators with which the project has had such success, and to overcome the barriers and improve the results of the interventions which need continued improvement. Because the project has been so successful, it will also strive to add the new activities discussed in the Action Plan in order to continue to broaden its scope and sustainable results in the communities it serves.

Annex 1: LQAS Summary Table of Project Matrix Indicators

		Supervision Areas				Base -line	Final Target	Bench-mark for this LQAS	Decision Rule Number X Axis is Target for this LQAS Y Axis is the Total sample Size				Decision Rule (Yor N) for each Supervision Area				CF for Project Area Sep 2008	CF from Dec 2007
		1	2	3	4				1	2	3	4	1	2	3	4		
% of newborns who were put to the breast within one hour of delivery and did not receive prelactal feeds **(bfimmAapp)**	Numerator (**yes** answers)	14	12	8	15	34%	50%	**42%**	7	7	7	7	**Y**	**Y**	**Y**	**Y**	51.04%	52.50%
	Denominator (**Total**)-Sample size	24	24	24	24													
% of infants 6-9m receiving breastmilk and complementary foods **(BFandCF)**	Numerator (**yes** answers)	10	9	13	7	38%	65%	**51%**	10	10	10	10	**Y**	**N**	**Y**	**N**	40.63%	54.43%
	Denominator (**Total**)-Sample size	24	24	24	24													
% of children 6-23m who received a dose of Vitamin A in the last 6 months (Mother's recall). **(VitaminAChildSixMonths1)**	Numerator (**yes** answers)	16	24	21	21	76%	85%	**81%**	18	18	18	18	**N**	**Y**	**Y**	**Y**	85.42%	90.60%
	Denominator (**Total**)-Sample size	24	24	24	24													
Additional Indicator: Percentage of children age 0-23 months who are underweight (>-2SD for the median weight for age, according to WHO/NCHS reference population) **(WFA)**	Numerator (**NORMAL WEIGHT**)	20	19	18	19	27%	17%	**22%**	16	16	16	16	**Y**	**Y**	**Y**	**Y**	20.83%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of children 12-23 months who received DPT3 before they reached 12 months by the time of the interview card verified. **(dpt3donebydate)**	Numerator (**yes** answers)	15	16	17	10	31%	50%	**41%**	7	7	7	7	**Y**	**Y**	**Y**	**Y**	60.42%	57.89%
	Denominator (**Total**)-Sample size	24	24	24	24													

% of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age **(fullimmcvrgbyDATE)**	Numerator (**yes** answers)yy35.53%52.50%	10	10	10	8	19%	40%	**30%**	3	3	3	3	**Y**	**Y**	**Y**	**Y**	39.58%	35.53%
	Denominator (**Total**)-Sample size	24	24	24	24													
% 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)**	Numerator (**yes** answers)	12	16	18	18	61%	80%	**71%**	15	15	15	15	**N**	**Y**	**Y**	**Y**	66.67%	87.18%
	Denominator (**Total**)-Sample size	24	24	24	24													
% of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration solution (ORS) and/or recommended home fluids. **(ORTUse)**	Numerator (**yes** answers)	18	16	21	21	74%	85%	**80%**	16	16	16	16	**Y**	**Y**	**Y**	**Y**	79.17%	85.51
	Denominator (**Total**)-Sample size	24	24	24	24													
% of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness. **(diarrheaMoreDrink)**	Numerator (**yes** answers)	16	13	15	18	52%	70%	**61%**	13	13	13	13	**Y**	**Y**	**Y**	**Y**	64.58%	71.62%
	Denominator (**Total**)-Sample size	24	24	24	24													
% of households of children 0-23 months that treat water effectively. **(waterTx**	Numerator (**yes** answers)	2	2	0	3	22%	40%	**31%**	4	4	4	4	**N**	**N**	**N**	**N**	7.29%	18.67%
	Denominator (**Total**)-Sample size	24	24	24	24													
% 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. **(approphandwashing)**	Numerator (**yes** answers)	9	9	14	10	19%	40%	**30%**	3	3	3	3	**Y**	**Y**	**Y**	**Y**	43.75%	28.00%
	Denominator (**Total**)-Sample size	24	24	24	24													

Additional Indicator: Percentage of children age 0-23 months who are underweight (>-2SD for the median weight for age, according to WHO/NCHS reference population) **(WFA)**	Numerator (**NORMAL WEIGHT**)	20	19	18	19	27%	17%	**22%**	16	16	16	16	**Y**	**Y**	**Y**	**Y**	20.83%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% 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)**	Numerator (**yes** answers)	22	23	21	14	43%	65%	**54%**	10	10	10	10	**Y**	**Y**	**Y**	**Y**	83.33%	60.56%
	Denominator (**Total**)-Sample size	24	24	24	24													
% of children 0-23 months who slept under an insecticide-treated bed net the previous night. **(ChildNet)**	Numerator (**yes** answers)	12	15	18	20	18%	35%	**27%**	3	3	3	3	**Y**	**Y**	**Y**	**Y**	67.71%	22.08%
	Denominator (**Total**)-Sample size	24	24	24	24													
% 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. **(FeverPropMed)**	Numerator (**yes** answers)	12	13	6	16	13%	50%	**32%**	4	4	4	4	**Y**	**Y**	**Y**	**Y**	48.96%	40.58%
	Denominator (**Total**)-Sample size	24	24	24	24													
% 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	Numerator (**yes** answers)	20	24	23	22	56%	NA	**CF**	21	21	21	21	**N**	**Y**	**Y**	**Y**	92.71%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% 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	Numerator (**yes** answers)	14	20	16	14	NA	NA	**CF**	14	14	14	14	**Y**	**Y**	**Y**	**Y**	66.67%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													

% of mothers of children 0-23m who have a maternal health card	Numerator (**yes** answers)	7	6	9	8	NA	NA	**CF**	4	4	4	4	**Y**	**Y**	**Y**	**Y**	31.25%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m able to report at least one known prenatal danger signs indicating the need to seek health care?	Numerator (**yes** answers)	11	11	8	15	NA	NA	**CF**	9	9	9	9	**Y**	**Y**	**N**	**Y**	46.88%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who report that they would first go to an appropriate health provider if they experienced ony prenatal danger symptoms	Numerator (**yes** answers)	24	24	21	22	NA	NA	**CF**	21	21	21	21	**Y**	**Y**	**Y**	**Y**	94.79%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who report that they would walk to the nearest appropriate health provider	Numerator (**yes** answers)	23	22	16	22	NA	NA	**CF**	NA	NA	NA	NA		NA			86.46%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who report that they would take a car to the nearest appropriate health provider	Numerator (**yes** answers)	2	3	9	2	NA	NA	**CF**	NA	NA	NA	NA		NA			16.67%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who report that they would ride a motorcycle to the nearest appropriate health provider	Numerator (**yes** answers)	1	2	0	0	NA	NA	**CF**	NA	NA	NA	NA		NA			3.13%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who report that they would take an oxcart to the nearest appropriate health provider	Numerator (**yes** answers)	0	0	0	0	NA	NA	**CF**	NA	NA	NA	NA		NA			0.00%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who report that they would take a canoe to the nearest appropriate health provider	Numerator (**yes** answers)	0	1	0	0	NA	NA	**CF**	NA	NA	NA	NA		NA			1.04%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													

% of mothers of children 0-23m who report that they would take another form of transport to the nearest appropriate health provider	Numerator (**yes** answers)	0	0	0	0	NA	NA	**CF**	NA	NA	NA	NA	NA				0.00%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of children aged 0-23 months whose delivery was in an appropriate health facility	Numerator (**yes** answers)	6	7	6	5	NA	NA	**CF**	2	2	2	2	**Y**	**Y**	**Y**	**Y**	25.00%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of children aged 0-23 months whose delivery was attended by a skilled health personnel	Numerator (**yes** answers)	7	6	7	3	21%	NA	**CF**	2	2	2	2	**Y**	**Y**	**Y**	**Y**	23.96%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who received a post-natal visit from an appropriately trained health worker within three days after birth	Numerator (**yes** answers)	9	7	4	7	6.0%	NA	**CF**	3	3	3	3	**Y**	**Y**	**Y**	**Y**	28.13%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
Percentage of children age 0-23 months who received a post-natal visit from an appropriately trained health worker within three days after birth	Numerator (**yes** answers)	9	9	4	13	7.0%	NA	**CF**	6	6	6	6	**Y**	**Y**	**Y**	**Y**	36.46%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers able to report at least two known neonatal danger signs	Numerator (**yes** answers)	0	0	0	1	NA	NA	**CF**	too low to calculate								1.04%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who have heard of AIDS	Numerator (**yes** answers)	20	23	21	23	81.9%	NA	**CF**	21	21	21	21	**N**	**Y**	**Y**	**Y**	90.63%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m who can correctly name at least 2 ways to reduce the risk of HIV/AIDS	Numerator (**yes** answers)	10	6	11	9	19%	NA	**CF**	6	6	6	6	**Y**	**Y**	**Y**	**Y**	37.50%	NA
	Denominator (**Total**)-Sample size	24	24	24	24													
% of mothers of children 0-23m	Numerator	7	10	11	8	NA	NA	**CF**	6	6	6	6	**Y**	**Y**	**Y**	**Y**	37.50%	NA

who have heard of VCT	(**yes** answers)																
	Denominator (Sample size)	24	24	24	24												
% of mothers of children 0-23m who know of a place where people can go to get VCT	Numerator (**yes** answers)	6	3	9	7	NA	NA	**CF**	3	3	3	3	**Y**	**Y**	**Y**	**Y**	26.04%	NA
	Denominator (Sample size)	24	24	24	24												
% of mothers of children 0-23m who know of a place where people can go to get treatment for HIV	Numerator (**yes** answers)	4	1	4	4	NA	NA	**CF**	too low to calculate				NA				13.54%	NA
	Denominator (Sample size)	24	24	24	24												
% of mothers of children 0-23m who know that there are special medications that can be given to a pregnant woman infected with the AIDS virus to reduce the risk of mother-to-child transmission	Numerator (**yes** answers)	3	1	0	1	NA	NA	**CF**	too low to calculate				NA				5.21%	NA
	Denominator (**Total**)-Sample size	24	24	24	24												
% of mothers of children 0-23m who know of a place in the community to go to get these special medications that can be given to a pregnant woman infected with the AIDS virus to reduce the risk of mother-to-child transmission	Numerator (**yes** answers)	4	1	2	1	NA	NA	**CF**	too low to calculate				NA				8.33%	NA
	Denominator (**Total**)-Sample size	24	24	24	24												
% of mothers of children 0-23m who personally know someone who has been denied involvement in social events, religious services, or community events in the last 12 months because he or she is suspected to have the AIDS virus or has the AIDS virus?	Numerator (**yes** answers)	2	0	2	0	NA	NA	**CF**	too low to calculate				NA				4.17%	NA
	Denominator (**Total**)-Sample size	24	24	24	24												
% of mothers of children 0-23m who believe that people with the AIDS virus should be ashamed of themselves	Numerator (**yes** answers)	13	6	12	11	NA	NA	**CF**	7	7	7	7	**Y**	**N**	**Y**	**Y**	43.75%	NA
	Denominator (Sample size)	24	24	24	24												
% of mothers of children 0-23m who believe that a person with the AIDS virus should be forced to leave the community.	Numerator (**yes** answers)	11	12	15	13	NA	NA	**CF**	10	10	10	10	**Y**	**Y**	**Y**	**Y**	53.13%	NA
	Denominator (Sample size)	24	24	24	24												

Annex 2: LQAS Summary Table of Client Satisfactions Indicators

LQAS SUMMARY TABLE OF CLIENT SATISFACTION INDICATORS

		Supervision Areas				Base-line	Final Target	Target for this LQAS	Combined Frequency for Project Area
		1	2	3	4				
% of mothers with children age 0-23 months who have taken the child to the nearest HF in the last 12 months	Numerator (**yes** answers)	91	92	75	90	NA	TBD	**CF**	97.75%
	Denominator (**Total**)- Sample size	93	93	77	93				
% of mothers who did not take their child to the HF in the last 12 months due to distance	Numerator (**yes** answers)	1	0	0	0	NA	TBD	**CF**	0.28%
	Denominator (**Total**)- Sample size	93	93	77	93				
% of mothers who did not take their child to the HF in the last 12 months due to no HW available	Numerator (**yes** answers)	0	0	1	0	NA	TBD	**CF**	0.28%
	Denominator (**Total**)- Sample size	93	93	77	93				
% of mothers who did not take their child to the HF in the last 12 months due to lack of medicines	Numerator (**yes** answers)	0	0	1	2	NA	TBD	**CF**	0.84%
	Denominator (**Total**)- Sample size	93	93	77	93				

% of mothers who did not take their child to the HF in the last 12 months due to poor treatment	Numerator (**yes** answers)	0	0	0	0	NA	TBD	**CF**	0.00%
	Denominator (**Total**)- Sample size	93	93	77	93				
% of mothers who did not take their child to the HF in the last 12 months due to other reasons	Numerator (**yes** answers)	1	1	0	1	NA	TBD	**CF**	0.84%
	Denominator (**Total**)- Sample size	93	93	77	93				
% of mothers of children aged 0-23m who felt the time waited to be seen at the HF was reasonable (exc., good, Acceptable)	Numerator (**yes** answers)	81	84	75	77	NA	TBD	**CF**	89.04%
	Denominator (**Total**)- Sample size	93	93	77	93				
% of mothers of children aged 0-23m who felt the treatment received for their child's illness at the HF was reasonable (exc., good, fair)	Numerator (**yes** answers)	88	82	71	85	NA	TBD	**CF**	91.57%
	Denominator (**Total**)- Sample size	93	93	77	93				
% of mothers of children aged 0-23m who were likely or very likely to return to the same facility the next time the child is sick	Numerator (**yes** answers)	90	89	74	90	NA	TBD	**CF**	96.30%
	Denominator (**Total**)- Sample size	93	93	77	93				

Annex 3: Additional Indicators Collected during Midterm LQAS

		Supervision Areas				Base-line	Final Target	Benchmark for this LQAS	Decision Rule Number X Axis is Target for this LQAS Y Axis is the Total sample Size				Decision Rule (Yor N) for each Supervision Area				CF for Project Area Sep 2008
		1	2	3	4				1	2	3	4	1	2	3	4	
% of children 12-23 months who received DPT3 before they reached 12 months by the time of the interview card verified. **(dpt3donebydate)**	Numerator (**yes** answers)	15	16	17	10	31.00%	50%	**41%**	7	7	7	7	Y	Y	Y	Y	60.42%
	Denominator (**Total**)-Sample size	24	24	24	24												
% of children 12-23 months who received BCG before they reached 12 months by the time of the interview card verified. **(BCGdonebydate)**	Numerator (**yes** answers)	20	24	20	17	48.60%											83.50%
	Denominator (**Total**)-Sample size	24	24	24	24												
% of children 12-23 months who received OPV3 before they reached 12 months by the time of the interview card verified. **(OPV3donebydate)**	Numerator (**yes** answers)	14	18	19	12	36.00%											65.29%
	Denominator (**Total**)-Sample size	24	24	24	24												
% of children 12-23 months who received immunization against meales before they reached 12 months by the time of the interview card verified. **(MEASLESdonebydate)**	Numerator (**yes** answers)	12	13	11	12	25.20%											49.98%

	Denominator (**Total**)-Sample size	24	24	24	24												
% 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. **(FeverPropMed)********	Numerator (**yes** answers)	12	13	6	16	12.5%	50%	**32%**	2	2	2	2	**Y**	**Y**	**Y**	**Y**	48.960%
	Denominator (**Total**)-Sample size	24	24	24	24												
% of children 0-23 months with a febrile episode that ended during the last two weeks who who were brought to a health facility for treatment. **(FeverHCPC)**	Numerator (**yes** answers)	22	21	13	20												79.17%
	Denominator (**Total**)-Sample size	24	24	24	24												
% of children 0-23 months with a febrile episode that ended during the last two weeks who who were brought to a health facility for treatment within 24 hours. **(FeverProp)**	Numerator (**yes** answers)	20	18	18	18												77.10%
	Denominator (**Total**)-Sample size	24	24	24	24												
% 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 **(FeverMed)**	Numerator (**yes** answers)	16	17	14	21												70.83%
	Denominator (**Total**)-Sample size	24	24	24	24												