



Lira District Child Survival Project in Uganda
Child Health and Development in a Transitional Region

Erute North Sub-District, Uganda
October 2009 – September 2013

In Partnership with

Uganda Ministry of Health
Lira District Health Office

Knowledge, Practice, and Coverage MTE LQAS Survey

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Table of Contents

Acknowledgements	2	
Table of Contents	3	
Acronyms	4	
Executive Summary	5	
Chapter 1	Background, Process and Partnership Building, and Methods	9
	1.1 Background	9
	1.2 Process and Partnership Building	17
	1.3 Methods	18
Chapter 2	Maternal and Newborn Care	24
Chapter 3	Anthropometry and Infant and Young Child Feeding	26
	4.1 Anthropometry-Nutritional Status of Children aged 0-23 months	26
	4.2 IYCF-Nutrition	27
Chapter 4	Pneumonia Case Management	29
Chapter 5	Control of diarrhea	30
Chapter 6	Expanded Program of Immunization	32
Chapter 7	Early Childhood Development	34
Chapter 8	Malaria and the Management of Febrile Illness	35
Chapter 12	Summary	36
	Attachments:	
	A. Project Matrix Indicators	
	B. Revised Rapid CATCH Indicators	

ACRONYMS

ACF	Action Contre la Faim
ACT	Artemisinin-based Combination Therapies
ANC	Antenatal Care
ARI	Acute Respiratory Infection
BCC	Behavior Change Communication
BCG	Bacille Calmette-Guerin vaccine
BL	Assessment
CATCH	Core Assessment Tool on Child Health
CDD	Control of Diarrheal Diseases
CHW	Community Health Workers
C-HIS	Community Health Information System
C-IMCI	Community IMCI
CI	Confidence Interval
CL	Confidence Limits
CMR	Crude Mortality Rate
CS	Child Survival
CORE	Collaborations and Resources Group
CSHGP	Child Survival and Health Grant Program
CSP	Child Survival Project
CSTS	Child Survival Technical Support
D	Precision
DHO	District Health Office
DHS	Demographic and Health Survey
EBF	Exclusive Breastfeeding
EPI	Expanded Program of Immunizations
HHI	Hands to Hearts International
HC	Health Center
HF	Health Facility
HIV/AIDS	Human Immune Deficiency Virus/ Acquired Immune Deficiency Syndrome
HQ	Headquarters of MTI located in Portland, Oregon
IDP	Internally Displaced Person
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant Mortality Rate
IPTp	Intermittent Preventive Treatment during pregnancy
ITN	Insecticide Treated Net
IYCF	Infant and Young Child Feeding
KPC	Knowledge, Practice, and Coverage Survey
LLITN	Long Lasting Insecticide Treated Net
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MICS	Multiple Indicator Cluster Survey
MNC	Maternal Newborn Care
MOH	Ministry of Health
MT	Midterm
MTE	Midterm Evaluation
MTI	Medical Teams International
MTI Uganda	Medical Teams International Uganda
N	Sample size
NGO	Non-Governmental Organization
NMCP	National Malaria Control Program
NUMAT	Northern Uganda Malaria AIDS & Tuberculosis
ORS	Oral Rehydration Salts
PCM	Pneumonia Case Management
PDC	Parish Development Committee
PHC	Primary Health Care
POU	Point Of Use
Rapid CATCH	Core Assessment Tool on Child Health
R-HFA	Rapid Health Facility Assessment
SP	Sulfadoxine-Pyrimethamine
SO	Strategic Objective
TBA	Traditional Birth Attendant
TOT	Training of Trainers
TT	Tetanus Toxoid
U5MR	Under 5 Mortality Rate
USAID	United States Agency for International Development
VHT	Village Health Team
WFA	Weight for Age

Executive Summary

Uganda is a priority country for child survival efforts, with an IMR estimated in 2006 of 78/1,000 live births, U5MR of 134/1,000 live births, and an MMR of 550/100,000 which has not declined during the past ten years. The leading causes of child morbidity in Lira District are (in rank order): malaria, anemia, diarrhea, respiratory infections, and pneumonia. Causes of child mortality are: pneumonia, anemia, malaria, diarrhea, and respiratory infection. Malnutrition is an important contributing factor to infant and child deaths. The targeted location is Erute North Sub-district in Lira District in Northern Uganda. Direct beneficiaries will be 21,948 children <5 and 24,624 WRA for a total of 46,572 direct beneficiaries. Capacity building activities with the DHO will improve the quality of health care for the sub-district population of 107,061.

The project goal is to reduce child morbidity and mortality in Uganda. Objectives are: 1) Communities assume responsibility for their own health through strengthening community capacity (VHTs, Parish Development Councils, and Health Sub-districts); 2) Improved health (C-IMCI) and child care (ECD) behaviors among mothers of children <5 years; 3) Improved quality of health facility services through strengthened IMCI and MNC capacity; 4) Strengthened institutional capacity of MTI and DHO to implement effective and efficient child survival activities. These objectives support MoH goals and strategies as well as those of USAID Uganda. MTI is using a two-pronged strategy: a) promoting behavior change and community mobilization to take appropriate responsibility for health; and b) building DHO capacity to provide sustainable, quality service delivery at the facility and community levels. The level of effort by intervention for this Child Survival Project (CSP) is: 25% MNC, 25% PCM, 20% IYCF, 20% CDD, and 10% EPI.

MTI is incorporating Early Childhood Development (ECD) activities into its CS project to enhance the impact and sustainability of technical interventions. Research confirms that child survival is indivisible from ECD – including health, physical, social/emotional, and language/cognitive domains. The CSP is integrating ECD into community health activities in order to improve feeding, care giving, and care-seeking behaviors by increasing women's participation in CHW structures and integrating ECD into C-IMCI and ANC/EPI outreaches.

The primary implementing partner for this project is the Lira DHO, which regularly met with the design team and committed human resources to the implementation of the proposal, in order to harmonize approaches and plan for sustainability. Hands to Hearts International (HHI) is a collaborate partner, providing ECD TOT trainings for VHTs, women leaders, and HF staff, and is working with MTI and DHO to adapt existing curriculum to the local context. The project is also coordinating with other CS stakeholders in country.

This MTE Knowledge, Practices, and Coverage (KPC) survey was performed in January, 2012. The overall objective of this MTE survey was to estimate the current level of chosen indicators as per the monitoring and evaluation (M&E) Matrix of specific

objectives and intervention logic in the areas of maternal newborn care (MNC), nutrition and Infant and Young Child Feeding (IYCF), control of diarrheal disease (CDD), pneumonia case management (PCM), and Expanded Program of Immunization (EPI), along with the indicators of the Rapid Core Assessment Tool on Child Health (CATCH). A Lot Quality Assessment Survey design was utilized to, with the project area divided into 6 Supervision Areas (SAs) through which the project is managed. The SAs chosen for this project are: Ogur comprises SA1 and SA2, Aromo comprises SA3, and SA4, and Aromo comprises SA5 and SA6. Stratified random sampling of 33 eligible households (households that had both an eligible child and the child's mother present at the time of survey) in each SA was utilized to select the mothers of children aged 0-23 months. The KPC MTE survey was designed utilizing participatory principles of evaluation in the spirit of partnership and capacity building.¹ The main findings in the areas of MNC, nutrition and IYCF, control of diarrheal disease, pneumonia case management, EPI, and ECD are as follows:

MNC

Three of the five project indicators for MNC, IPT, skilled birth attendants, maternal knowledge of postpartum danger signs, and postnatal visit for the mother within 3 days after birth, significantly improved from BL to MT. However, only 2 of the five (IPT use and the use of skilled birth attendants) met the benchmarks set for them at MT.

Only the % of mothers receiving at least two tetanus toxoid immunizations in Lira District remained the same through MT (73%). This indicator did not meet the benchmark of 83%, and SAs 1 and 3 did not meet the DR, indicating that they were statistically significantly below the benchmark. This will be investigated as portions of SAs 1 and 3 are furthest from the HFs. Regarding IPT, at baseline only 35% of mothers took proper anti-malarial medication at least 2 times during pregnancy with their youngest child. By midterm this was significantly increased to 59%, meeting the benchmark for MT. However, SA4 did not meet the DR. This will be investigated, as a portion of SA4 is also far from the HF. Also, At MTE, 53% of all childbirths occur under the supervision of a skilled birth attendant, which is statistically significantly improved from BL (35%). In addition, the project met the benchmark for the midterm and all 6 SAs met the decision rule for skilled birth attendance.

Anthropometry AND IYCF

The overall rate of under-nutrition at baseline was 27.7%, with 17.0% moderately underweight and 10.7% severely underweight. At MT, The % of children with a Z-score of <-2SD at MT is 17.6%, not significantly decreased from BL. However, the benchmark for the MT was met, and all SAs met the DR.

Of the 4 IYCF indicators in the project matrix, only 1, the IYCF aggregated indicator, significantly increased at MT, increasing from 23% at BL to 42% at MT. Also, all SAs

¹ KPC 2000+ Field Guide, The Child Survival Technical Support Project and CORE, <http://www.childsurvival.com/kpc2000/kpc2000.cfm>, August 2001.

met the DR set for MT. The % of children aged 0-5m who were exclusively breastfed during the last 24 hours did not increase at MT. Additionally, 4 of the 6 SAs did not meet the DR set by the MT benchmark (SAs 2, 3, 4, and 5). Immediate BF practices for newborns remained quite low, at 23%, which does not meet the MT BM. Also, 4 of the 6 SAs did not meet the DR (SAs 1, 3, 5, and 6). Similarly, at 55% there was no significant improvement in the % of mothers who do not practice prelacteal feeding, and SAs 3, 4, and 5 did not meet the DR.

Pneumonia Case Management

Both ARI indicators in the project matrix met the benchmark for MT. The % of children with ARI who were taken to an appropriate health provider increased significantly over the first half of the project (58% to 86%). This increase not only met the BM but also met the Target for the project. All SAs met the DR. The % of children age 0-23 months with ARI who were treated with an antibiotic also increased significantly from BL to MT (35% to 64%). This increase also met the BM and also met the Target for the project. All SAs met the DR.

Control of Diarrheal Disease

There is a statistically significant increase in the % of mothers of children 0-23m who practice appropriate hand washing. The rate rose from 54% at BL to 75% at MT, with the project meeting the BM for the MT. However, SA 3 did not meet the DR for the benchmark set for MT. There has been no significant improvement in the % of children who received ORS when suffering from diarrhea since baseline (47% to 54%). Also, SAs 2 and 4 did not meet the DR for the BM set for the MT. In addition, zinc usage in children to treat diarrhea remains almost non-existent at 2.6%, due to the fact that the HFs do not have Zinc available. The project did not meet the BM for the MT, and SAs 1, 3, 4, and 5 did not meet the DR for the MT BM. The project will need to investigate the barriers to ORS and zinc use, and also investigate why SA4 did not meet the DR for any of the diarrhea indicators in the project matrix. The % of households of children age 0-23 months that treat water effectively (a Rapid CATCH indicator but not in the project matrix) remained very low at 11%, unchanged from BL. The likely reason for the low water treatment rates is that 91.0% of households in Lira District have access to an improved water source.

Expanded Program of Immunization

The project showed a significant increase in EPI coverage (BCG, DPT3, OPV3, and measles vaccination before the age of 12 months) from 16% at BL to 38% at MT, with all SAs meeting the DR. In addition, the BM for MT was met. However, there has been no significant change in measles vaccination coverage (80% at MT), as coverage was already quite high (77% at BL). SA1 did not meet the DR for the benchmark set for MT. With regard to Rapid CATCH indicators not in the project matrix, there has been no significant change in access to immunization, as measured by DPT1 immunization rates, card or mother verified (87% at BL to 89% at MT), because this indicator was already quite high. All SAs met the average of the project area as a whole. There also has been no significant change in Health system performance as to immunization, measured by DPT3,

card or mother verified (85% at BL to 73% at MT), because this indicator was already quite high. All SAs met the average of the project area as a whole.

Early Childhood Development

There has been a significant increase from BL (38% to 68%) of mothers of children aged 0-23 months who report playing games with their child in which they have their child identify their body parts, imitate actions, pretend play, or name objects, with all SAs meeting the DR.. There has also been a significant increase from BL of mothers reporting engaging their children in linguistic learning activities (23% at BL to 40% at MT), such as telling their child stories, singing them songs, or naming objects for them at least twice weekly, but this also represents a significant decrease from year 1 (62% at YR 1). SAs 3 and 4 did not meet the DR set for the MT for this indicator. In addition, there has been no significant change from BL in the % of mothers who report that they talk or sing to their child while feeding the child (58% at BL to 65% at MT). SAs 1 and 5 did not meet the DR for this indicator.

Malaria

At baseline only 51.3% of children less than 24 months presently slept under an insecticide treated bed net. There has been no significant increase in the use of bed nets since BL (51% to 43%), which can be attributed to the fact that there remains a lack of ITNs available in the program area . Also, SA 3 did not meet the average of the combined SAs (the average for the project area). Of the children who had a fever in the 2 weeks prior to the survey, at BL only 22.3% were brought to a qualified health facility within 48 hours of the start of the fever. There has been a significant increase in the proper treatment of malaria (69% at MT). However, SA3 did not meet the average of the combined SAs (project area). Investigation into why SA3 is lagging behind in both the prevention and treatment of malaria will be investigated.

Working in partnership with the DHO, MTI Uganda is implementing a project that aims to improve the health of village communities in Lira District through building DHO capacity to provide sustainable, quality service delivery at the facility and community levels, and through promoting behavior change and community mobilization to take appropriate responsibility for health. This is being accomplished through a combination of interventions, including providing supplementary training, supervision, and follow-up coaching of VHTs. The results of this MT KPC Survey using LQAS methods will allow the project to continue in areas with success while developing strategies to investigate and improve both those interventions and SAs that have not met the desired benchmarks for the mid point of the project.

CHAPTER 1

BACKGROUND, PROCESS AND PARTNERSHIP BUILDING, AND METHODS

1.1 Background

Project Location and Uganda Overview

After almost 20 years of protracted insecurity and internal displacement due to attacks from the “Lord’s Resistance Army” (LRA), Northern Uganda has entered a welcome phase of peace. A peace agreement was signed in August 2006, followed by a detailed truce in October 2006. All Internally Displaced Person (IDP) camps have been disbanded in Lira District. This proposed project will operate in Erute North Sub-district of Lira District, part of the Northern Region.

The North has traditionally been marginalized, receiving less assistance in comparison to the South. According to the 2006 Demographic and Health Survey (DHS), the Northern region is Uganda’s poorest, with 58% of the region’s population in the country’s lowest wealth quintile. DHS reports that the Northern Region has the fewest available Ante-Natal Care (ANC) clinics and delivery services, and the North Central Region (where Lira is located) reports 76% of facilities have no source of external funding (including MoH, insurance schemes, and donor agencies), the lowest proportion in Uganda.² The population is comprised of the Lango and Acholi tribes, with 99% Christians and approximately 1% Muslim.

Uganda is a priority country for child survival efforts, with an IMR estimated in 2006 of 78/1,000 live births (neonatal mortality accounts for 41% of this), U5MR of 134/1,000 live births, and an MMR of 550/100,000 which has not declined during the past ten years.³ The leading direct causes of child morbidity in Lira District are (in rank order): malaria, anemia, diarrhea, respiratory infections, and pneumonia.⁴ Causes of child mortality are: pneumonia, anemia, malaria, diarrhea, and respiratory infection. Malnutrition is an important contributing factor to infant and child deaths. Causes of MMR include hemorrhage (26%), sepsis (22%), obstructed labor (13%), and other (25%, includes malaria and HIV).⁵ Child mortality values show improvement from 6-10 years ago, when IMR was 98 and U5MR 162⁶, but in 2008 Uganda was rated 23rd internationally for high U5MR. In the 2006 DHS, IMR is highest in the Southwest (109) and Northern Regions (106). Total Fertility Rate (TFR) for Uganda remains high at 6.7

² Uganda DHS, Service Provision Assessment Survey, 2007.

³ Statistics in this paragraph are from the 2006 Uganda Demographic Health Survey; MACRO International; USAID MCH Initiative; and the State of the World’s Children 2008, UNICEF.

⁴ Lira District Health Office, Annual Report FY2007-008.

⁵ MoH: Roadmap for Accelerating the Reduction of Maternal and Neonatal Mortality and Morbidity in Uganda 2007-15.

⁶ The MMR historical trend has variations in methodology and sampling that do not permit for precise comparison.

and higher in the North at 7.5. Life expectancy in Uganda is low for males and females (49.1/50.2). Twenty-five percent of households in the North are headed by women, and nearly 50% of female-headed households have virtually no income.⁷ The national literacy rate is 72.6%⁸; in the North it is only 56% (72% male, 42% female).⁹

Health Care Services : The Ugandan MoH is decentralized with district teams responsible for planning, budgeting, and monitoring performance. Each district is divided into Health Sub-Districts which are responsible for delivering a basic package of health services, including control of communicable disease, Integrated Management of Childhood Illness (IMCI), reproductive health, immunization, environmental health, health education and promotion, epidemics, and nutrition.¹⁰ Uganda was among the first countries to implement the IMCI approach on a national scale, beginning in 1996. By 2000, IMCI had been introduced to 55 of the 56 districts as a MoH priority. A follow-up study of 10 districts (none in the North) had mixed results. Staff turnover following the training was low, but only about half of clinic visits incorporated IMCI.

Formation of Village Health Teams (VHTs) is a strategy of the National Health Policy, a focus of the first and second Health Sector Strategic Plan (HSSP) for the MoH. The VHT is planned to be the equivalent of a Health Center (HC) I level, which covers a population of 1,000. However, in reality there are only 2 VHTs per village versus the 5 recommended, and therefore each VHT often covers more than the 1,000 recommended. VHT responsibilities include identification of community health needs, mobilization and monitoring of resources (including HC performance), oversight of specific support activities by trained Community Health Workers (CHWs), and maintenance of registers of population and health status.

Erute North has 4 health facilities: 3 level III and 1 level IV.¹¹ One of the HFs (Aromo) is privately funded. Action Contre le Faim (ACF) operated 5 Supplementary Feeding Centers and 5 Outpatient Therapeutic Programs in Lira District from 2004, but handed over these programs to DHO in 2009. Drug supply in Lira District is relatively stable. Utilization of health services is low, according to MTI's Knowledge, Practices & Coverage (KPC) baseline survey (conducted in 2009): 22% of mothers took their child to an appropriate provider for fever, and 58% for pneumonia symptoms.

Maternal & Newborn Care (MNC)¹²: On a national level, DHS 2006 found more than 90% of women went at least once for ante-natal care from a skilled provider, but the median length of pregnancy at first visit was 5.5 months and only 47% had 4 ANC visits as recommended by national policy. Similarly, pregnant women in Lira District tend to

⁷ UNDP/GoU survey: Return Livelihood Trends in Northern Uganda.

⁸ UNDP Human Development Report, 2008.

⁹ Government of Uganda: Peace, Development & Reconciliation Plan for Northern Uganda. 2007.

¹⁰ Uganda MoH: National Health Policy, 1999.

¹¹ Lira District Health Office Annual Work Plan, FY2008-09

¹² If not otherwise noted, information comes from the *Roadmap for Accelerating the Reduction of Maternal and Neonatal Mortality and Morbidity in Uganda 2007-2015*; Ministry of Health, Republic of Uganda, 2007.

seek little and late antenatal care. Lira District HMIS also shows a higher dropout rate from 1st to 4th visit than the national level with only 26% of women attending ANC clinic 4 times.¹³ The DHS showed only 61.8% of mothers in rural areas have taken iron supplements during pregnancy, while only 32.9% were counseled about the signs of pregnancy complications. DHS found 50.8% of women have received 2 or more TT doses during last pregnancy. This was similar in rural areas and in the North. With malaria endemic in most of Uganda, including Lira District, Intermittent Presumptive Treatment during pregnancy (IPTp) is part of the ANC package, with at least 2 doses of Sulfadoxine-Pyrimethamine (SP) recommended to be given through ANC. DHS found 16% of women in rural areas have received at least 2 doses of SP during their last pregnancy. The Lira DHO reports 43% receiving 2 or more.¹⁴

In Lira District, during ANC visits at any HF, mothers should receive a “Mama Kit” free, containing 2 sheets of plastic, prophylactic eye ointment, soap, cord ligature, gloves, and 2 syringes. Supplies of Mama Kits from UNICEF were sporadic, and are no longer available at the time of the MT. Nationally, for rural areas, DHS 2006 showed 36% of childbirth to occur in a HF while MTI’s baseline KPC in 2009 found only 35% had a skilled health provider at childbirth. Focus groups with Parish Development Councils (PDCs), VHTs, and mothers revealed a poor opinion of the quality of labor and delivery services in HFs. Trained midwives are said to be “rude”, especially to young girls and older women, and “harsh” during labor.

MTI’s KPC Baseline Survey in 2009 showed post-partum care visits for mothers and newborns both low at 16%, similar to DHS results for urban or rural areas. Post-partum care services for child spacing have limitations. The in-charge DHO of maternal health reports only condoms are typically sent and that other supplies (such as injectables, a popular method) are usually low.

Infant and Young Child Feeding (IYCF): For the Northern Region, DHS 2006 found 40% stunting (ht/age <-2 SD) and 21.8% low weight for age (<-2 SD), higher than the national averages for rural areas (39.5%/16.5%). MTI’s KPC Survey in 2009 in Lira District found 27.7% with weight for age <-2 SD. Uganda has tended to focus on food security through food availability. Use of pre-lacteal feeds is common (about half of mothers) and early initiation at childbirth is low (Oct. 09 KPC 29%).

Although mothers are embracing the message of exclusive breastfeeding, strengthening of recommended infant and young child feeding practices is still strongly needed to ensure optimal health and growth for infants and young children.

ACF’s anthropometric survey reports that dietary diversity and frequency is low, with 97% consuming 1-3 food group sources, and 98.9% consuming 1-3 meals per day. Foods include cereals (usually rice, consumed by 42.3% of children under 5), vegetables (45%),

¹³ Lira District Health Office Annual Report, July 2008.

¹⁴ Lira District Health Office HMIS: District Quarterly Assessment Report, September 2008.

and legumes (38.8%). Food security is low in the district, and ACF's survey indicated low food stocks and high price of food.

Control of Diarrheal Diseases (CDD): Uganda follows the iCCM approach and CDD as a part of maternal-child health activities at the district and village levels. ORS is a part of the medicine kit irregularly provided to VHTs; in focus groups, VHTs stated they receive sporadic and insufficient ORS. According to DHS 2006, of children with diarrhea, 56% in Northern Region were treated with ORS packets and there was negligible access to zinc. The MTI KPC baseline survey in 2009 found that 47% of mothers to have given ORS during their child's recent bout of diarrhea. In Lira District, health staff occasionally continue to recommend use of homemade sugar-salt solution, but also recommend increased fluids (breastmilk for infants 0-6 months) and feeding with porridge or other grain-based soft foods during diarrhea for children >6 months.

Pneumonia Case Management (PCM): The low coverage of complete childhood immunization and high rates of undernutrition in Lira District most likely contributes to pneumonia as the second cause of morbidity. Pneumonia is the fifth-highest contributor to the district's burden of disease, but is the primary cause of child mortality.¹⁵

DHS 2006 found 73% of children with signs of acute respiratory infection were taken to a skilled health provider; but only 47% received antibiotics (similar in Northern Region). MTI's KPC Survey in 2009 found 58% of children with signs of pneumonia were taken to a skilled provider.

Immunization: DHS 2006 found national complete immunization coverage for children 12-23 months to be 46% (documented or mother's recall). A May 2008 ACF survey in Lira District found 42% of children received (documented) the measles vaccine. According to the MTI baseline KPC survey, EPI coverage, as measured by BCG, DPT3, OPV3, and measles vaccination before the age of 12 months verified by an immunization card (16%), was exceptionally low. Transport of vaccines from HFs to villages has proven in the past to be the greatest limitation.

Malaria: The prevalence of fever in children aged 0-23 months in Lira District was found to be quite high in the baseline KPC Survey at 74.8%. Malaria is highly endemic in Uganda (90-98% *P. falciparum*) and is the leading cause of morbidity and mortality nearly country-wide.¹⁶ In Lira District, malaria accounts for 34% of the disease burden. Part of the reason for this can be explained by the fact that at baseline only 51.3% of children less than 24 months presently slept under an insecticide treated bed net. Of the children who had a fever in the 2 weeks prior to the survey, at BL only 22.3% were brought to a qualified health facility within 48 hours of the start of the fever.

Early Childhood Development (ECD): Uganda's ECD policy was established in 2007, and the sector is still in its infancy. The government ECD policy defines ECD as "a set of actions and behaviors that support a child's development in a holistic manner including: feeding; providing clothing; shelter and supervision; preventing and attending

¹⁵ Lira District Health Office Annual Report, July 2008

¹⁶ Uganda Malaria Control Strategic Plan: 2005-6 – 2009-10.

to illnesses; engaging the child in interaction; providing stimulation and safe environment for play and exploration; providing love; affection and security; and enabling the development of self-esteem and self confidence.”¹⁷ The policy targets children below 8 years of age, with the first subset consisting of children 0-3 years. MTI plans to incorporate Early Childhood Development (ECD) activities into its CS project to enhance the impact and sustainability of interventions. The post-conflict period is often characterized by food insecurity, unreliable infrastructure, and a fragile family unit, and is an important time to rebuild community resilience by strengthening the mother-child bond, developing and reinforcing positive caregiving practices, and investing in quality of care, stimulation, and promoting optimal nutrition to improve long term child health and well being.

The CSP has integrated ECD as a means to effectively respond to the unique needs of mothers and children within the post-conflict setting and to enhance health improvements. This innovation complements the third element of the C-IMCI Platform: integrated promotion of key family practices critical for health and promotion. Two primary mechanisms have been identified for ECD integration: women’s groups and ANC/EPI clinics (which occur simultaneously). The CSP utilizes women to improve health and nutrition to a mothers’ group in selected villages. These women leaders provide education on health and nutrition and ECD messages and practices to mothers’ groups they form in their own village and in one other nearby village each, forming a new pair with a woman leader from that village. ANC/EPI clinics have also been integrating ECD in order to increase attendance at the clinics and because ANCs provide an ideal opportunity for waiting pregnant women and their husbands to receive health/EDC messages through “parent chats” and practice on infants.

Program Strategy and Interventions

<h3>Goal and Objectives</h3>

The project goal is to reduce child morbidity and mortality in Uganda. These objectives support MoH goals and strategies.

- **Objective 1:** Communities assume responsibility for their own health through strengthening community capacity (VHTs, Parish Development Councils, and Health Sub-districts).
- **Objective 2 :** Improved health (C-IMCI) and child care (ECD) behaviors among mothers of children <5 years.
- **Objective 3:** Improved quality of HF services through strengthened IMCI and MNC capacity.
- **Objective 4:** Strengthened institutional capacity of MTI and DHO to implement effective and efficient child survival activities.

Strategic Approaches: MTI is utilizing a two-pronged strategy: a) promoting behavior change and community mobilization to take appropriate responsibility for health; and b) building DHO capacity to provide sustainable, quality service delivery at the facility and

¹⁷ Government of Uganda: The Early Childhood Development (ECD) Policy. October 2007.

community levels. The CSP is implementing activities that strengthen community volunteer capacity to improve maternal and child health, based on the MoH policy prioritizing Village Health Teams (VHTs). Through the CSP, supplementary training, supervision, and follow-up coaching of VHTs is being provided. The proposed CSP is working hand-in-hand with DHO and HF staff that functions as the link for VHTs. At present, the Senior Health Educator of the DHO oversees VHT activities. At the HF level, the Enrolled Nurse or Enrolled Midwife is the contact person for VHTs. The overall plan in Lira District is for iCCM-trained community volunteers to form community-based teams with TB-DOTS monitors. The CSP is assisting with this strategy, guiding communities to form VHTs that include the C-IMCI trained members along with other key community health volunteers

With a dual purpose of (a) reaching mothers to improve IYCF practices and MNC care practices, and (b) building on the expertise and capacity of respected women in the community, the CSP is providing training to motivated Women Pairs to facilitate women's groups as a strategy for community mobilization. Pairs of women, called Child Health Promoters (CHPs), are being selected, with one member selected to influence local health behaviors, such as TBAs or other older women. The CHPs (approx. 8 per parish, for a total of 150) are providing health and nutrition education to mothers' groups in their own village and in one other nearby village each, forming a new pair with a woman leader from that village. In this way the groups are self-replicating and will reach coverage in an efficient manner. The groups are beginning to go through a series of topics, including ECD; new groups can be formed once the topics have been covered to participant's satisfaction. The groups are working in tandem with VHTs, as an activity in support of VHTs to reach community goals for health. MTI is assisting the VHTs to meet with *Parish Development Committees* (PDCs) on a quarterly basis and use structured processes for action-oriented meetings that are based on analysis of the Community Health Information System (C-HIS) information and link needs to available resources.

At their request, the CSP is assisting the DHO to build on previous training and strengthen the *health facility staff skills* through refresher trainings focused on selected topics within IMCI, such as CDD management with ORS+zinc and PCM.

Technical Interventions: The level of effort by intervention for this CSP is: 25% Maternal and Newborn Care, 25% Pneumonia Case Management, 20% Infant and Young Child Feeding, 20% Control of Diarrheal Disease, and 10% Immunization. The CSP is coordinating with the DHO and other actors in support of programs directed towards malaria control and HIV/AIDS. ECD is supporting the proposed technical interventions through cross-sectoral collaboration, focused on reinforcing positive early child care practices and interaction.

Maternal and Newborn Care (25%): The design of this MNC intervention is based on the Minimum Activities for Mothers and Newborns (MAMAN) framework. Community action is focused on home visits to encourage birth preparedness. Behavior Change Communication (BCC) strategies focus on dissemination of the benefits of early and

frequent ANC and complete TT immunization, the danger signs of pregnancy, the dangers inherent in labor and delivery that do not permit for early identification, and post-partum danger signs for mother and newborn. Post-partum home visits by VHTs (especially as women's involvement in VHT is improved) provide education on cord care and thermal care to mothers. A focus on maternal nutrition, noting sources of micronutrients, emphasizes the preventive aspects of good nutrition before pregnancy, during pregnancy and after pregnancy. IYCF promotion of immediate and exclusive breastfeeding for newborns is linked to MNC activities. Adding ECD training at ANC visits for both parents is helping to draw greater attendance. TBAs that accept the present MoH policy restricting support for labor and delivery are being drawn in as persons of influence and/or as local women leaders and trained in key messages.

The project has been working to improve HF staff attitude and approach to client care if improvements in the use of MNC services are to be achieved. Midwives are being encouraged to embrace their role as parent-educator and support person. Refresher training in safe labor and delivery for HF staff is being supported (by an MNC specialist from Kampala and an experienced American medical volunteer), with emphasis on use of the partograph, infection prevention, active management of the 3rd stage of labor, and newborn resuscitation. A Referral System workshop was held with key sub-county and VHT leaders in order to problem-solve barriers to timely referrals. Cord care, thermal care, and promotion of immediate and exclusive breastfeeding are elements of post-partum care training.

Pneumonia Case Management (25%): Improvements in HF and community-based management of respiratory infections is a critical element of the CSP. Pneumonia and diarrhea are the key causes of child morbidity and mortality and at baseline under-detection of pneumonia was likely, with HF staff said to use only methods of observation to identify pneumonia and a tendency to categorize any fever as malaria. MTI is providing refresher training for HF staff, within the IMCI approach emphasizing diagnosis and treatment of the pneumonia-malaria complex. In coordination with the DHO, follow-up supportive supervision is including an emphasis on PCM skills. MTI is also coordinating with the DHO to provide administrative assistance for improving planning, procurement, and logistics, to ensure that supplies of essential medicines, including antibiotics for pneumonia, are available at HCs.

Training of VHTs is teaching caretakers to recognize the danger signs of pneumonia and of the very sick child in general, to emphasize prompt care seeking. A focus on teaching "rational use of medicines" at the community level is included, along with promotion of understanding the difference between a cold or upper respiratory infection and pneumonia, so that caretakers will make wise decisions about the opportunity costs of seeking care. Links between immunization, Vitamin A status, exclusive breastfeeding, and the prevention of pneumonia or reduction of severity are being stressed.

Infant and Young Child Feeding (20%): Key messages are based on the Essential Nutrition Actions (ENA), including training on management of common breastfeeding problems and cooking demonstrations based on locally available foods for a diversified

diet for children 6-23 months of age. Because KPC baseline data shows significant growth faltering after five months, appropriate complementary feeding is being emphasized. IYCF is enhanced by highlighting the importance of interaction and engagement while eating, making eye contact, and talking to the child to enhance good nutrition and care giving (ECD principles). The greatest level of IYCF efforts are with CHPs and women's groups, with the rationale that peer-to-peer nutritional counseling and support will improve anthropometric status. The ENA package is also being used to strengthen the IMCI/C-IMCI training curricula for HF staff and VHTs.

Control of Diarrheal Disease (20%): USAID funding is being used to improve VHT community-based management of diarrhea and recognition of danger signs of dehydration, blood in stool, or persistent diarrhea that requires seeking care at a HF. The project is working to increase the acceptance of ORS in the target area and improve management with zinc in order to create an opportunity for the CSP to contribute to national scale-up. VHTs, mothers' groups, and PDCs are excellent media for increasing household awareness and use of this state-of-the-art recommended treatment. MTI is assisting the DHO to include details on ORS + zinc treatment into CDD training through the IMCI approach for HF staff and the C-IMCI approach for VHT/CHWs.

At the same time, BCC strategies discourage the previous MoH promotion of home preparation of sugar and salt mixtures, and promote the use of recommended home fluids and nutritional management during illness, including increased breastfeeding (0-23m) and increased feeding (6-23m) up to 8 times/day in reduced amounts with locally used starch and legume staple food (bean and millet porridge). VHTs teach child caretakers to recognize the danger signs of dehydration, bloody diarrhea, and persistent diarrhea that require referral to an HF. MTI's ECD component reinforces the importance of bonding and understanding infant cues that indicate need for seeking appropriate health care. BCC strategies emphasize prevention, including proper hand washing with soap, safe disposal of infant feces, and safe storage of water in the home. Integrated practices recommended for prevention of diarrhea is also emphasized, including promotion of exclusive breastfeeding, hygienic preparation of complementary foods, and complete immunization, particularly measles.

Immunization (10%): The CSP is increasing EPI/ANC attendance and assisting the DHO to expand routine immunization. Integrating ECD in ANC clinics is a key strategy for improving attendance (see "MNC" intervention area above). The DHO has been rolling out efforts to revitalize immunization services with support from multi-lateral and bilateral partners, and this CSP is using Lot Quality Assurance Sampling (LQAS) as a methodology to efficiently target needs for additional outreach activities by HFs to increase immunization coverage and other critical services, such as ANC. MTI promotes community use of existing static health services for immunization. Community vaccinators are being trained by UNICEF and DHO; however, implementing an effective cold chain from the HF to the village level has been a challenge for DHO. Instead, DHO is emphasizing increased immunization coverage through the EPI strategy, which is integrated with ANC clinics. EPI includes immunizations, (DPT, Hib3+ Hep),

deworming, Vitamin A, and growth monitoring. This CSP is reinforcing the MoH policy of static EPI/ANC.

Objectives of the KPC Survey

The MTE KPC survey was conducted in January of 2012. The objectives of the KPC survey were as follows:

- Appropriately collect data on the major areas of child and maternal health, including: maternal and newborn care, infant and young child feeding (IYCF), anthropometry, immunization coverage, diarrhea, acute respiratory infection (ARI), fever and malaria, water and sanitation, and hygiene. The survey collected the appropriate data by interviewing 33 mothers of children aged from 0-23m of each age and previous illness category needed to obtain 33 answers to each question in each of 6 SAs. Therefore, this produced a sample size of 198 for each question/indicator. This data will be used to determine progress of all indicators in the Project Design and, combined with qualitative studies, will determine areas of success and challenges, and direct the project in its second half.
- Promote capacity building: staff members were trained in the use of survey training methodology in order to facilitate future monitoring and evaluation.
- Train staff members in data analysis through the use of LQAS hand tabulation and training sessions following data collection.
- Train staff members in making changes to the monitoring and evaluation plan and health information system by relating the indicators used to the projects objectives, outputs, and activities during the data analysis training.
- Promote community awareness and acceptance through follow up Community Feedback Sessions.
- Partnership building: The survey utilized the concept of partnership building in all phases of training, data collection, and data analysis by involving all key stakeholders in all phases of the survey process.

1.2 Process and Partnership Building

MTI has two principal implementing partners in the project, the DHO and Hands to Hearts International. Hands to Hearts International (HHI) is a collaborate partner which has and will continue to provide ECD TOT trainings for VHTs, women leaders, and HF staff, and will work with MTI and DHO to adapt existing curriculum to the local context. The project is coordinated with other CS stakeholders in country as well. The DHO is the local representative of the MOH, and therefore a critical partner for long-term strengthening of county health services. An inclusive process was followed to involve all stakeholders in the design, training, implementation, and analysis of the KPC survey. The DHO, HHI, and USAID were all invited to participate in all aspects of the survey via letters and personal contact that outlined the exact process and dates of the training and survey. The DHO was interested all phases of the survey, and helped in areas where they were able, including, getting the word out to all villages via radio and personal visits, and reviewing and discussing results. They were also helpful during the baseline in adapting the survey to the local context and ensuring that the survey was performed in a culturally appropriate manner. Permission to conduct the survey was obtained from the MOH. The

survey team was comprised to be as inclusive as possible in order to foster partnership. Six supervisors and twenty four enumerators were chosen from members of MTI Uganda and the communities of Lira District.

1.3 Methods

The overall objective of this MTE survey is to estimate the current level of chosen indicators as per the M&E Matrix of specific objectives and intervention logic in the areas of nutrition, immunization, pneumonia case management, and control of diarrheal disease, along with the indicators of the Rapid CATCH. In addition to this, questions and indicators were chosen to measure areas of Early Childhood Development. The survey was designed using LQAS methodology so that the project area may be divided into 6 management areas (Supervision Areas), and each of these areas monitored along with the project area as a whole. This provides the project with MT results for the entire project as well as a breakdown by SA so that actions based on the results may be targeted not only by indicator but also by management area. The KPC MTE survey was designed utilizing participatory principles of evaluation in the spirit of partnership and capacity building.¹⁸ The Core Team consisted of members of MTI Uganda, with backstopping by the Sr. Advisor in M&E from HQ. The survey team was comprised of 6 supervisors, who were members of MTI Uganda, and the communities of Lira. The enumerators were devised of members of MTI Uganda, , and local survey takers (enumerators) chosen from Lira District. Selection of the team members was based on their skills and their future role in the project and thus provided ownership of the survey and the project itself. The Sr. Advisor in M&E HQ, Africa Health Advisor, MTI Uganda Child Survival Program Manager, MTI Monitoring and Evaluation Officer Joel Okello, , and MTI Uganda country office staff were involved in the evaluation planning process, including the development of the questionnaires and the recruitment of various team members. The trainings for the KPC Survey, data entry, and data analysis were directed by the Director of Operations, the Administrator, and the Sr. Advisor in M&E HQ. Data analysis was performed utilizing Epi Info by the Sr. Advisor in M&E HQ and shared back with the MTI Uganda Core staff for discussions so that the results could be shared with the country staff and then the communities of Lira District through Community Feedback sessions. Final data analysis was performed in MTI HQ.

a. Development of the Questionnaire

The evaluation team reviewed the project documents including the detailed M&E Matrix with the project's goal, objectives, and activities. Key indicators were then chosen based on these parameters in conjunction with the newly revised Rapid CATCH (2008) and KPC 2000+ modules.¹⁹ The initial draft questionnaire was developed and shared with the MTI Uganda staff for comments, suggestions, and feedback. Local and regional

¹⁸ KPC 2000+ Field Guide, The Child Survival Technical Support Project and CORE, <http://www.childsurvival.com/kpc2000/kpc2000.cfm>, August 2001.

¹⁹ *ibid.*

translators then translated the finalized version of the questionnaire into Luo. Separate translators then translated the questionnaires back into English to ensure that the wording of the questions and answer choices were accurate. Any changes necessary were made at that time. Additional changes important to the local context would be made throughout the training, and the final questionnaire was completed following the fourth day of the training which included a field test of the questionnaire.

Due to the use of LQAS methodology, in which it is necessary to have each question of every survey answered by the mother (unlike 30 cluster where some questions may go unanswered), there were 8 final questionnaires, broken down by the subgroups necessary to ensure that all questions could be answered by the mother randomly chosen to answer the survey questionnaire. They were:

1. Main Questionnaire-the first questionnaire, asked of the mother of any child 0-23m. Contains questions on the following:
 - a. General information
 - b. Maternal and Newborn Care including antenatal, birth, and postnatal care
 - c. Hygiene
 - d. Water and sanitation, including access to clean water and hygienic sanitation facilities
 - e. Anthropometry
 - f. Early Childhood Development
2. Questionnaire for 0-5m
 - a. Exclusive BF
3. Questionnaire for 6-9m
 - a. Complimentary BF
4. Questionnaire for 6-23m
 - a. Infant and Young Child Feeding
5. Questionnaire for 12-23m
 - a. Immunization coverage
6. Questionnaire for children 0-23m with diarrhea in the 2 weeks prior to the survey
7. Questionnaire for children 0-23m with ARI in the 2 weeks prior to the survey
8. Questionnaire for children 0-23m with malaria in the 2 weeks prior to the survey

In addition to the questionnaires, anthropometric measurements consisting of age, gender, and weight of the eligible children aged 0-23 months were taken at the time of the survey from those children randomly chosen for the main questionnaire. Salter hanging scales were used for the weight measurement, which were calibrated prior to each weighing to ensure accuracy. The measurements were taken in order to calculate the child's weight for age and corresponding Z-scores.

b. Sampling design

A LQAS sampling design was utilized to add the benefit of managing the project by management areas (Supervision Areas). This methodology allowed the project to obtain rates on all indicators in the project design for the entire project area to compare with baseline, and also determine if each SA in the project met the Decision Rule set for each indicator based on the benchmark set by the project for MT. This allows the project to determine, with a low sample size in each SA, if a SA did not meet the DR for an indicator, indicating that it was statistically significantly below the benchmark set for that indicator. This alerts management that investigation into the causes, and an action plan to overcome the barriers, is required.

c. The Selection Process:

The MTI Africa Health Advisor, MTI Uganda Child Survival Program Manager, MTI Monitoring and Evaluation Officer Joel Okello, and Monitoring and Coordination Officer for MCP Ronald Apunyu, along with other country office staff met with the DHO and various local leaders and community personnel to determine the respective populations of each of the villages included in the survey sampling frame. Population figures obtained from MOH Lira district statistics for 2011 were used in conjunction with mapping techniques and visualization of the areas by MTI Uganda staff. The project had been divided into SAs at the outset of the project, for management purposes. Survey clusters for each SA were chosen separately. In each SA, each village in that SA was listed randomly, with its population beside it. When the list was complete, the cumulative population of each village was determined by summing the total population of that village with the combined population of all the preceding villages on the list. The total cumulative population of the villages in the SA was then divided by 33 (because 33 sets of the 8 questionnaires were to be answered in each SA) to obtain the sampling interval for that region. A random number was then chosen, with the stipulation being that the number had to be less than or equal to the sampling interval. The cumulative population of each village was then consulted, and the village containing the random number (the village whose cumulative population is equal to or larger than the random number, and whose preceding village had a cumulative population less than the random number) was chosen as cluster number 1. The second cluster was then identified by adding the sampling interval to the random number. The village whose cumulative population contained this number was chosen as the location of cluster number 2. The remaining clusters were then identified by continuing to add the sampling interval to the number that identified the previous cluster. In this way, each cluster was randomly chosen, with proper weight assigned to each village based on its population size. The larger the size of a population of a village, the greater the chance of having one or more clusters assigned to it. This was repeated for each of the 6 SAs, so that 33 sets of questionnaires would be asked in each SA.

The center of each cluster was determined by allowing the supervisors and enumerators local to these villages enlist the help of the Village Chief or elders to determine the spot where they felt that an equal number of households were on each side. The survey team

then chose a random starting direction by spinning a bottle in the physical center of the cluster. The team would then walk in the direction the bottle pointed, and count the number of households in that direction until they reached the end of the households in that cluster. The survey team would return to the center and then choose a random number from a random number table, with the requirement that it had to be less than the number of homes in that direction. They then counted the doorways in the direction the bottle was pointing until they reached the doorway that corresponded to the random number chosen. This was deemed the first house. A protocol was established and written during the training sessions, prior to the survey, that determined which households, children, and thus mothers would be eligible for the survey. If the chosen household contained a child aged 0-23 months that was present and sleeps in the house at night, and a mother that was present and sleeps in the house at night, the survey would be taken at this household, starting with the Main questionnaire. Then, based on the child's age and sicknesses suffered in the last 2 weeks, other questionnaires in the set of 8 questionnaires were asked. The survey team then would move to the household that had the closest door relative to the doorway of the household just eliminated to answer any questionnaires in the set of 8 questionnaires that the mother of a child in that house would be eligible to answer. This procedure was then repeated until all 8 questionnaires in the set of questionnaires for that cluster was completed. If a additional clusters were chosen in that same village, the process would then begin again for each new cluster with spinning of the bottle and randomly selecting the first house, until each set of 8 questionnaires were completed. 33 clusters in each SA were used to complete the survey of each SA.

d. Training of Supervisors and Enumerators

The training of supervisors and enumerators required 4 days in total. The training curriculum was adapted from the CORE Group's Knowledge, Practice, and Coverage (KPC) Survey Training Curriculum and LQAS curriculum. The training curriculum was shared with the Core team prior to the training, and the Core team was fully involved with all aspects of the training in order to strengthen the local capacity to conduct future small-sample surveys.

Six supervisors were chosen for the MTE survey from MTI Uganda staff. The training regimen of the supervisors included: the objective of the evaluation, the sampling process of a 30-cluster sampling frame, proper selection of the clusters, households, children, and mothers, accepted technique and protocol regarding data collection, and an in-depth review of the questionnaires to be used. Measurement of weight was first demonstrated, and then performed, to ensure proper technique. Training methods used included several days of mini lecture followed by discussions, demonstrations, role-play, group work, and pre-testing of the questionnaires. Their responsibilities included supervising twenty-four local enumerators, taking part in every aspect of the data collection, and taking the lead in choosing each cluster's center, the household chosen, the eligible infant, and then the eligible mother. The training of the enumerators took place with the training of the supervisors and consisted of a several day process that was similar in nature to the training regimen of the supervisors. It included the same several days of mini lecture

followed by discussions, demonstrations, role-play, and group work including the measurement of weight, using several children under two for practice. Repeated practice administering the questionnaires and completing each set of 8 questionnaires properly was performed on local volunteer mothers who were not eligible for inclusion in the actual survey. The survey teams then performed a field test of the questionnaire in nearby Lira district villages that had not been randomly selected for the survey, under the watchful eyes of the Core team. Following the field test the training concluded with a meeting to discuss any issues that arose during the field test and make final changes or adjustments of the questionnaire so that it would be as accurate and context appropriate as possible for the survey. These changes were then made to the questionnaire prior to making copies for the survey.

e. Data Collection

Each supervisor was assigned four enumerators for a total of six groups, each consisting of four enumerators and one supervisor. A supervisor went to the first chosen house, with two of the enumerators in his/her team, to determine the eligibility of that household, choose the eligible child aged 0-23 months, choose the eligible mother, and weigh the child chosen, using the protocol developed previously. The supervisor would then help determine which questionnaires in the set of 8 questionnaires could be asked at that household (always beginning with the main questionnaire). As the 2 enumerators conducted the rest of the interview with the appropriate questionnaires, the supervisor would then take the other two enumerators in the team to the next eligible household and repeat this process, and would therefore alternate between the two groups of two enumerators. The supervisor would then help each group find the remaining eligible children to complete the set of questionnaires. This allowed the supervisor to take the lead role in determining the eligibility of the household, the weighing process, and immediately checking and correcting any problems with each finished questionnaire while the mother was still available. bbbbbbEach evening the supervisors and Core team met and discussed any issues that arose during the day in order to ensure consistency in the data collection process. The data collection process required 6 days in total, with an average length of interview of approximately 35 minutes.

f. Data Analysis

A preliminary analysis of the data was performed by calculating frequency distributions of major indicators were prepared using the Epi-info 3.5.1 database, so that MTI Uganda staff had some immediate results to guide programmatic decisions and guide community feedback sessions . These results were then used in discussing the Project design in detail with the MTI Uganda staff in order to increase their capacity in developing project designs and formulating monitoring plans from the objectives, outputs, activities, and indicators chosen.

The final analysis was then performed, also using the Epi-info 3.5.1 database. All Rapid CATCH indicators, indicators from the M&E Matrix, several indicators chosen from the KPC 2000+ modules, and indicators dealing with ECD and Health Contacts were presented in the analysis. A 95% confidence interval and a precision of 0.5 were used for each indicator, and 95% confidence limits were calculated for each. The results for each SA were calculated separately, and then entered into an Excel Spreadsheet created by the Sr. Advisor for M&E at HQ. This spreadsheet was designed to calculate the DRs for each SA for each indicator, and whether each SA met that DR for that indicator. It also calculated the rate for each indicator using the population of each SA to obtain a weighted average, which is more accurate as it takes each SA's population into account in the calculation.

g. Results and Discussion

The results are organized into sections that represent each area of the different study indicators. The following chapters represent the program intervention areas, as per the M&E Matrix. The table located at the beginning of each section specifies the M&E Matrix indicators, with those that are also Rapid CATCH indicators in red font, their definitions, which SAs met or did not meet the DR, and the weighted combined rates for those indicators. The following table then contains any additional indicators that were not in the project matrix but were collected because they are Rapid CATCH indicators. Because they do not have MT benchmarks set for the project (because they are not in the project matrix) the average of results for all 6 SAs for that indicator was used to determine the DR. For these indicators, if a SA did not meet the DR it means that it is statistically significantly below the average of all 6 SAs combined; it does not mean that it did not meet a BM, because no BM was set. For those intervention areas that are not in the project matrix only contain the Rapid CATCH indicators for that area.

CHAPTER 2

MATERNAL AND NEWBORN CARE

PROJECT MATRIX INDICATORS *Rapid CATCH Indicators highlighted in red

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Y or N) for each Supervision Area						Weighted combined Pre frequency (average coverage) FOR MTE	LL CI	UL CI
		1	2	3	4	5	6				1	2	3	4	5	6			
% of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Tetanusgood)	Numerator (yes answers)	17	27	22	24	27	29	75.7% (70.4-80.4)	90.0%	83%	N	Y	N	Y	Y	Y	73.49%	67.34%	79.64%
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y			
% of mothers with children aged 0-23 months who received at least 2 doses of IPT during the pregnancy with this youngest child.	Numerator (yes answers)	18	26	14	11	18	24	35.0% (29.6-40.7)	60.0%	48%	Y	Y	Y	N	Y	Y	59.13%	52.28%	65.97%
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y			
% of children age 0-23 months whose births were attended by skilled personnel	Numerator (yes answers)	14	19	16	12	14	25	35.3% (29.9-41.0)	50.0%	43%	Y	Y	Y	Y	Y	Y	53.30%	46.35%	60.24%
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y			
% 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	19	6	7	17	4	16.7% (12.5-20.9)	50.0%	33%	Y	Y	Y	Y	Y	N	30.04%	23.65%	36.42%
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y			
% of mothers of children 0-23m able to report at least two known maternal danger signs during the postpartum period indicating the need to seek health care?	Numerator (yes answers)	14	4	5	3	10	4	2.3% (0.9-4.7)	80.0%	41%	Y	N	N	N	Y	N	19.98%	14.41%	25.55%
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y			

- Tetanus Toxoid:** The percentage of mothers receiving at least two tetanus toxoid immunizations in Lira District remained the same through MT (73%), indicating relatively good utilization of antenatal care services and tetanus immunizations being performed by antenatal health care staff when these services are utilized. This indicator did not meet the benchmark of 83%, and SAs 1 and 3 did not meet the DR, indicating that they were statistically significantly below the benchmark. This will be investigated as portions of SAs 1 and 3 are furthest from the HFs.
- IPT:** At baseline only 35% of mothers took proper anti-malarial medication at least 2 times during pregnancy with their youngest child. By midterm this was significantly increased to 59%, meeting the benchmark for MT. However, SA4 did not meet the DR. This will be investigated, as a portion of SA4 are far from the HF
- Skilled Birth Attendant:** At MTE, 53% of all childbirths occur under the supervision of a skilled birth attendant, which is statistically significantly improved from BL (35%). In addition, the project met the benchmark for the midterm and all 6 SAs met the decision rule. MTI has accomplished this through focus on increasing the use of health facilities and skilled birth attendants through VHTs, and CHPs who are being trained in health promotion. This training also includes the importance of ensuring that

both mother and child receive follow up care including a post partum visit with a trained health professional within 3 days of birth

- **Danger Signs:** There was a statistically significant improvement from BL (2% at BL to 20% at MT); however, the project did not meet the benchmark set for MT, and SAs 2, 3, 4, and 6 did not meet the DR. The benchmark was set quite high at 41% considering the BL was only 2.3%, which explains the significant improvement while not meeting the BM.
- **Mother Postnatal Visit:** There was significant improvement in this indicator, from 16.7% at BL to 30% at MT, and the benchmark (33%) was met due to confidence interval considerations. All SAs met the DR except SA6.

RAPID CATCH INDICATORS NOT INCLUDED IN THE PROJECT MATRIX

*All indicators that are not in the project matrix do not have a benchmark or target for the project. Therefore the average coverage (the MT combined frequency) of all 6 SAs is utilized to determine the DRs.

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Yor N) for each Supervision Area						Weighted combined Frequency (average coverage) FOR MTE	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
% of mothers of children age 0-23m who had four or more antenatal visits when they were pregnant with the youngest child	Numerator (yes answers)	13	19	15	12	22	18	35.3% (29.9-41.0)	NA	50%	Y	Y	Y	Y	Y	Y	49.57%	42.61%	56.54%	39.8 (31.0-48.6)
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y				
Percentage of children age 0-23 who received a post-natal visit from an appropriate trained health worker within two days after the birth of the youngest child	Numerator (yes answers)	2	7	10	8	15	2	16.33% (12.2-20.5)	NA	19%	Y	Y	Y	Y	Y	Y	18.77%	13.34%	24.21%	NA
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y				
Percentage of mothers of children age 0-23 months who are using a modern contraceptive method	Numerator (yes answers)	12	13	3	10	13	9	33.3% (28.0-39)	NA	30%	Y	Y	N	Y	Y	Y	29.97%	23.59%	36.35%	NA
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	N	Y	Y	Y				

- **ANC:** Antenatal coverage (4 or more antenatal visits) made a significant increase from BL (35%) to MT (50%), with all SAs meeting the DR.
- **Child Postnatal Visit:** While postnatal visits to mothers increased from 16.7% to 30%, it is interesting to find that postnatal visits to children, while starting at the same point at BL (16%) did not significantly increase by MT (19%). No Supervision area was significantly below the average of all the SAs combined (average coverage) for this indicator. Reasons for this discrepancy in postnatal visits between mothers and infants will be investigated.
- **Contraceptive Use:** Remains unchanged from BL. SA 3 is significantly below the average.

CHAPTER 3

ANTHROPOMETRY AND INFANT AND YOUNG CHILD NUTRITION

4.1 Anthropometry-Nutritional status of children aged 0-23 months

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

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

ANTHROPOMETRY PROJECT MATRIX INDICATORS *Rapid CATCH Indicators are highlighted in red

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Yor N) for each Supervision Area						Weighted combined Frequency (average coverage) FOR MTE	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
Percentage of children age 0-23 months who are NOT underweight (<-2SD for the median weight for age, according to WHO/NCHS reference population) (WFA)	Numerator (yes answers)	24	25	28	29	31	29	72.3% (66.9-77.3)	88.0%	80%	Y	Y	Y	Y	Y	Y	82.36%	77.05%	87.67%	
	Denominator (Total)-Sample size	33	33	33	33	33	33													

***this indicator had to be reversed in this table (to % NOT underweight) in order to calculate the DR**

- **Undernutrition:** The % of children with a Z-score of <-2SD at MT is 17.6%, not significantly decreased from BL. However, the benchmark for the MT was met, and all SAs met the DR.

4.2 Infant and Young Child Feeding (IYCF)-Nutrition

Health promotion and education regarding nutrition and breastfeeding is one of the interventions of MTI Uganda. The project is improving 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.

PROJECT MATRIX INDICATORS *Rapid CATCH Indicators are highlighted in red

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Yor N) for each Supervision Area						Weighted combined Frequency (average coverage) FOR MTE	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
% of children 0-5 months who were exclusively breastfed during the last 24 hours (ExclBF)	Numerator (yes answers)	24	21	19	23	18	26	73.6% (59.7-84.7)	95.0%	84%	Y	N	N	N	N	Y	67.73%	61.22%	74.24%	79.7% (72.4-87.0)
	Denominator (Total)-Sample size	33	33	33	33	33	33													
% of children aged 0-23m who were immediately breastfed (put to the breast within 1 hour of birth) (ImmedBF)	Numerator (yes answers)	7	11	5	16	3	4	29.0% (23.9-34.5)	60.0%	45%	N	Y	N	Y	N	N	22.73%	16.89%	28.57%	26.3% (18.4-34.2)
	Denominator (Total)-Sample size	33	33	33	33	33	33													
% of children aged 0-23m who did not receive prelacteal feeding during the first 3 days of life (NoPrelact)	Numerator (yes answers)	21	25	10	16	22	15	46.6% (37.5- 59.2)	75.0%	61%	Y	Y	N	N	Y	N	55.03%	48.10%	61.95%	55.5% (46.2-64.8)
	Denominator (Total)-Sample size	33	33	33	33	33	33													
IYCF: % of children aged 6-23m who are fed according to a minimum of appropriate feeding practices (IYCF)	Numerator (yes answers)	11	16	14	14	13	15	23.1% (18.4-27.9)	50.0%	37%	Y	Y	Y	Y	Y	Y	42.25%	35.37%	49.13%	36.4% (27.5-46.3)
	Denominator (Total)-Sample size	33	33	33	33	33	33													

- **Exclusive Breastfeeding:** The % of children aged 0-5m who were exclusively breastfed during the 24 hours prior to the survey did not increase at MT. Additionally, 4 of the 6 SAs did not meet the DR set by the MT benchmark (SAs 2, 3, 4, and 5). The second half of the project will be concentrating on improving nutrition in the project area.
- **Immediate Breastfeeding:** Immediate BF practices for newborns remained quite low, at 23%, which does not meet the MT BM. Also, 4 of the 6 SAs did not meet the DR (SAs1, 3, 5, and 6).
- **No Prelacteal Feeding:** Again, at 55% there was no significant improvement for this indicator, and SAs 3, 4, and 5 did not meet the DR.
- **IYCF:** There has been a significant improvement in this indicator, increasing from 23% at BL to 42% at MT. Also, all SAs met the DR set for MT.

The results reveal that while feeding practices for children aged 6-23m have improved significantly, there remains challenges with immediate and exclusive BF of newborns and children aged 0-5m, respectively.

Programming in the 2nd half of the project will focus on determining the barriers to success and improving upon the immediate BF of newborns and the exclusive BF of children aged 0-5m, while continuing to improve feeding of children 6m of age and above. This will be accomplished through continued education of mothers through VHTs, CHPs, and HF staff about the importance of immediate breastfeeding in order to break the culturally and socially driven norms causing women to wait hours or even longer before breastfeeding their child.

RAPID CATCH INDICATORS NOT INCLUDED IN THE PROJECT MATRIX

*All indicators that are not in the project matrix do not have a benchmark or target for the project. Therefore the average coverage (the MT combined frequency) of all 6 SAs is utilized to determine the DRs.

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Y or N) for each Supervision Area						Weighted combined Frequency (average coverage) FOR MTE	LL CI	UL CI	** Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
% of infants aged 6-9 months receiving breast milk and complementary foods (ComplFeed)	Numerator (yes answers)	31	23	28	27	31	29	69.8% (55.7-81.7)	NA	84%	Y	N	Y	Y	Y	Y	84.13%	79.05%	89.21%	NA
	Denominator (Total)-Sample size	34	33	33	33	33	33				Y	Y	Y	Y	Y	Y				
% of children aged 6-23m who received Vitamin A in the past 6 months (Vitamin A)	Numerator (yes answers)	18	15	16	17	21	23	70.1 (63.3-76.4)	NA	55%	Y	Y	Y	Y	Y	Y	55.49%	48.57%	62.41%	NA
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y				

- **Complimentary feeding:** Complimentary feeding is quite high at MT, at 84.13% (79.1-89.2). This is not significantly higher than at BL (69.8% (55.7-81.7) because the sample size of mothers of children aged 6-9m at BL was small (n=53) due to 30 cluster methodology. However, a complimentary feeding rate of 84% is quite high. It is important to note that SA 2 did not meet the DR for the average of all SAs at MT combined.
- **Vitamin A:** The % of children receiving Vitamin A in the past 6m at MT (55%) was significantly decreased from BL (70%). Reasons for this should be investigated to determine the barriers to receiving and taking Vitamin A.

CHAPTER 4

PNEUMONIA CASE MANAGEMENT

PROJECT MATRIX INDICATORS

*Rapid CATCH Indicators are highlighted in red

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS	Decision Rule (Yor N) for each Supervision Area						Weighted combined Frequency (average coverage)	LL CI	UL CI	** Combined Frequency for Project Area
		1	2	3	4	5	6			Or Average Coverage	1	2	3	4	5	6	FOR MTE			FOR YEAR 1
% 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. (ARIApprCareSeeking)	Numerator (yes answers)	26	30	26	29	25	32	57.8% (49.4-65.9)	80.0%	69%	Y	Y	Y	Y	Y	Y	86.11%	81.30%	90.93%	82.6 (73.6-91.6)
	Denominator (Total)-Sample size	33	33	33	33	33	33													
% of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were treated with an antibiotic (AbxCough)	Numerator (yes answers)	15	28	16	23	28	21	34.7% (27.0-43.0)	70.0%	52%	Y	Y	Y	Y	Y	Y	64.36%	57.69%	71.03%	60,0 (51,7-68.3)
	Denominator (Total)-Sample size	33	33	33	33	33	33													

Acute Respiratory Infection is recognized as one of the major public health problems in Uganda. Most children were given symptom relieving not curative medicines in the form of cough syrups or country medicines. Objectives of the project are the recognition of the danger signs of pneumonia, improving the access to quality care, and promoting optimal and timely health seeking behavior among mothers/caretakers. The present evaluation estimates the prevalence of ARI among children aged 0-23 months, the mother's knowledge concerning ARI, the mother's management of ARI, and timely health seeking behaviors in relation to ARI.

- **Health Seeking for ARI:** The % of children with ARI who were taken to an appropriate health provider increased significantly over the first half of the project (58% to 86%). This increase not only met the BM but also met the target for the project. All SAs met the DR.
- **Antibiotics for ARI:** The % of children age 0-23 months with ARI who were treated with an antibiotic also increased significantly from BL to MT (35% to 64%). This increase met both the BM for MT and also the target for the project. All SAs met the DR.

CHAPTER 5

CONTROL OF DIARRHEA

PROJECT MATRIX INDICATORS

*Rapid CATCH Indicators are highlighted in red

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Y or N) for each Supervision Area						Weighted combined Prevalence (average coverage) FOR MTE	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
% 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)	22	14	19	11	19	19	47.2% (37.5-57.1)	70.0%	59%	Y	N	Y	N	Y	Y	53.51%	46.56%	60.46%	46.5 (37.3-55.7)
	Denominator (Total)-Sample size	33	33	33	33	33	33													
% of children 0-23 months with diarrhea in the last two weeks who were treated with Zinc (Zinc)	Numerator (yes answers)	0	2	0	0	0	2	0.9% (0.0-5.1)	30.0%	15%	N	Y	N	N	N	Y	2.60%	0.38%	4.81%	1.8 (0.0-4.2)
	Denominator (Total)-Sample size	33	33	33	33	33	33													
% 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)	22	32	21	17	32	25	54.0% (48.2-59.7)	80.0%	67%	Y	Y	Y	N	Y	Y	75.34%	69.34%	81.35%	54.2 (45.2-63.2)
	Denominator (Total)-Sample size	33	33	33	33	33	33													

Diarrhea is a common cause of childhood morbidity and mortality in Lira District and, and Uganda as a whole. It is well proven that diarrhea is one of the major contributors to malnutrition in children. MTI Uganda has made a high priority the reduction of childhood diarrhea prevalence and morbidity through preventive and curative measures. This diarrhea management initiative is an intervention aimed at raising the awareness of mothers/caretakers about the necessary steps required to both prevent and treat diarrheal disease. Interventions aimed at the prevention of diarrhea include instruction in the importance of appropriate hand washing behaviors as well as the promotion of the use of sanitary latrines. Diarrhea case management at the household level is to include proper feeding and fluid management during diarrhea episodes, including the proper preparation and use of Oral Rehydration Salts (ORS).

- **ORS Use:** There has been no significant improvement since baseline (47% to 54%). Also, SAs 2 and 4 did not meet the DR for the BM set for the MT.
- **Zinc:** Zinc usage remains almost non-existent at 2.6%. The project did not meet the BM for the MT, and SAs 1, 3, 4, and 5 did not meet the DR for the MT BM. The reasons for this should be investigated and a decision as to an Action Plan determined to increase both demand and supply.

- **Appropriate hand washing with soap:** There has been a significant increase from BL, with the project meeting the BM for the MT. However, SA 3 did not meet the DR for the benchmark set for MT.

RAPID CATCH INDICATORS NOT INCLUDED IN THE PROJECT MATRIX

*All indicators that are not in the project matrix do not have a benchmark or target for the project. Therefore the average coverage (the MT combined frequency) of all 6 SAs is utilized to determine the DRs.

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Yor N) for each Supervision Area						Weighted combined Frequency (average coverage) FOR MTE	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
% of households of children age 0-23 months that treat water effectively.	Numerator (yes answers)	2	3	1	1	5	8	11.3 % (8.0-15.5)	NA	11%							10.68%	6.38%	14.98%	NA
	Denominator (Total)-Sample size	33	33	33	33	33	33													

- **Point of Use water treatment:** There has been no significant change from BL, and the % is too low to determine a DR for each SA. The likely reason for the low water treatment rates is that 91.0% of households in Lira District have access to an improved water source

CHAPTER 6

IMMUNIZATION

In this survey Expanded Program of Immunization (EPI) Access is measured by the percentage of children aged 12-23 months who received a DPT1 vaccination before the age of 12 months as verified by a vaccination card, and EPI Coverage is measured by the percentage of children aged 12-23 months who received a BCG, DPT3, OPV3, and measles vaccination before the age of 12 months verified by an immunization card, meaning that they received full vaccination coverage. Added to these measurements is the drop-out rate which measures the number of children aged 12-23 months who received a DPT1 vaccination by card verification or mothers recall but who were not continued in a vaccination program and therefore did not receive a DPT3 vaccination. These indicators provide an excellent picture of immunization services with regard to access, coverage, and completion of immunizations.

PROJECT MATRIX INDICATORS

*Rapid CATCH Indicators are highlighted in red

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Yor N) for each Supervision Area						Weighted combined Frequency (average coverage) FOR MTE	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
Percent of children aged 12-23 months who received measles vaccine according to the vaccination card or mother's recall by the time of the survey	Numerator (yes answers)	22	27	26	27	30	28	77.0% (69.7-83.3)	90.0%	84%	N	Y	Y	Y	Y	Y	79.73%	74.13%	85.33%	78.4 (70.9-85.9)
	Denominator (Total)-Sample size	33	33	33	33	33	33													
% of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age, card verified	Numerator (yes answers)	11	19	14	10	10	9	15.5% (10.3-22.1)	50.0%	33%	Y	Y	Y	Y	Y	Y	37.88%	31.12%	44.63%	28.4 (20.2-36.6)
	Denominator (Total)-Sample size	33	33	33	33	33	33													

- **Measles vaccination (card verified or mother's recall):** There has been no significant change in measles vaccination coverage (80% at MT), as coverage was already quite high (77% at BL). Also, SA1 did not meet the DR for the benchmark set for MT. This should be investigated and in part may be due to the distance of some villages in sa1 from the HFs.
- **Full EPI coverage (card verified by 12m):** There has been a significant increase in EPI coverage, from 16% at BL to 38% at final, with all SAs meeting the DR. The BM for MT was met.

RAPID CATCH INDICATORS NOT INCLUDED IN THE PROJECT MATRIX

*All indicators that are not in the project matrix do not have a benchmark or target for the project. Therefore the average coverage (the MT combined frequency) of all 6 SAs is utilized to determine the DRs.

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Yor N) for each Supervision Area						Weighted combined Frequency (average coverage) FOR MTE	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
Percent of children aged 12-23 months who received DPT1 according to the vaccination card or mother's recall by the time of the survey	Numerator (yes answers)	30	29	26	31	31	30	87.0% (80.8-91.7)	NA	89%	Y	Y	Y	Y	Y	Y	88.87%	84.49%	93.25%	NA
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y				
Percent of children aged 12-23 months who received DPT3 according to the vaccination card or mother's recall by the time of the survey	Numerator (yes answers)	24	24	22	26	22	26	85.1% (78.6-90.2)	NA	73%	Y	Y	Y	Y	Y	Y	73.23%	67.06%	79.40%	NA
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y				

- **Access to Immunization (DPT1):** There has been no significant change in this indicator (87% at BL to 89% at MT) because this indicator was already quite high. All SAs met the average of the project area as a whole.
- **Health system performance as to immunization (DPT3):** There also has been no significant increase in this indicator (85% at BL to 73% at MT) because this indicator was already quite high. All SAs met the average of the project area as a whole.

CHAPTER 7 EARLY CHILDHOOD DEVELOPMENT

PROJECT MATRIX INDICATORS *There are no Rapid CATCH Indicators in ECD

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS	Decision Rule (Y or N) for each Supervision Area						Weighted combined Frequency (average coverage)	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		Or Average Coverage	1	2	3	4	5			6	FOR MTE									
% of mothers of children aged 0-23 months who provide cognitive stimulation to their child in the form of games such as “where are your eyes”, etc.	Numerator (yes answers)	21	29	19	20	23	22	38.0% (29.3-40.3)	80.0%	59%	Y	Y	Y	Y	Y	Y	68.47%	62.00%	74.94%	68.4 (59.9-76.9)
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	Y	Y	Y	Y				
% of mothers of children aged 0-23 months who told their child a story, sang a song, or spent time naming objects for (CHILD) at least 2 times in the past week	Numerator (yes answers)	13	21	10	3	13	14	22.7% (18.1-27.8)	75.0%	49%	Y	Y	N	N	Y	Y	40.06%	33.23%	46.89%	61.9 (53.1-70.7)
	Denominator (Total)-Sample size	33	33	33	33	33	33				Y	Y	N	N	Y	Y				
% of mothers of children aged 0-23 months who report that they talk or sing to the child while feeding the child	Numerator (yes answers)	18	24	20	21	14	27	57.7% (51.9-63.3)	80.0%	69%	N	Y	Y	Y	N	Y	65.36%	58.74%	71.99%	64.4 (55.8-73.0)
	Denominator (Total)-Sample size	33	33	33	33	33	33				N	Y	Y	Y	N	Y				

- **Cognitive development:** There has been a significant increase from BL (38% at BL to 68% at MT), with all SAs meeting the DR.
- **Linguistic development:** There has been a significant increase from BL (23% at BL to 40% at MT), but this also represents a significant decrease from year 1 (62% at YR1 to 40% at MT). SAs 3 and 4 did not meet the DR set for the MT for this indicator.
- **Stimulation while feeding:** There has been no significant increase from BL for this indicator (58% at BL to 65% at MT). SAs 1 and 5 did not meet the DR for this indicator.

CHAPTER 8

MALARIA AND THE MANAGEMENT OF FEBRILE ILLNESS

Lira District is a malaria endemic area and the incidence of fever in children less than 24 months is quite high in these areas. Malaria is highly endemic in Uganda (90-98% *P. falciparum*) and is the leading cause of morbidity and mortality nearly country-wide.²⁰ In Lira District, malaria accounts for 34% of the disease burden. The present evaluation estimates the prevalence of febrile illness among children aged 0-23 months, the mother's knowledge concerning malaria and health seeking behaviors in relation to malaria.

RAPID CATCH INDICATORS NOT INCLUDED IN THE PROJECT MATRIX

*All indicators that are not in the project matrix do not have a benchmark or target for the project.

Indicator		Supervision Areas						Base-line	Final Target	Bench-mark for this LQAS Or Average Coverage	Decision Rule (Yor N) for each Supervision Area						Weighted combined Prequency (average coverage) FOR MTE	LL CI	UL CI	**Combined Frequency for Project Area FOR YEAR 1
		1	2	3	4	5	6				1	2	3	4	5	6				
% of children age 0-23 months who slept under an insecticide-treated bed net the previous night.	Numerator (yes answers)	12	12	8	16	20	20	51.3% (45.5-57.1)	NA	43%	Y	Y	N	Y	Y	Y	43.26%	36.36%	50.16%	NA
	Denominator (Total)-Sample size	33	33	33	33	33	33													
% of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began	Numerator (yes answers)	23	27	18	21	24	23	25.0% (19.4-31.3)	NA	69%	Y	Y	N	Y	Y	Y	69.23%	62.80%	75.66%	NA
	Denominator (Total)-Sample size	33	33	33	33	33	33													

- **ITN use (child):** There has been no significant increase in the use of bed nets since BL (51% at BL to 43% at MT). SA 3 did not meet the average of the combined SAs (the average for the project area).
- **Treatment of malaria:** There has been a significant increase in the proper treatment of malaria (25% to 69%). However, again sa3 did not meet the average of the combined SAs (the average for the project area).

²⁰ Uganda Malaria Control Strategic Plan: 2005-6 – 2009-10.

CHAPTER 9

SUMMARY

The goal of the Lira District Child Survival Project is to reduce child morbidity and mortality in Uganda. Objectives are: 1) Communities assume responsibility for their own health through strengthening community capacity (VHTs, Parish Development Councils, and Health Sub-districts); 2) Improved health (C-IMCI) and child care (ECD) behaviors among mothers of children <5 years; 3) Improved quality of health facility services through strengthened IMCI and MNC capacity; and 4) Strengthened institutional capacity of MTI and DHO to implement effective and efficient child survival activities. These objectives support MoH goals and strategies as well as those of USAID Uganda. MTI is using a two-pronged strategy that includes promoting behavior change and community mobilization to take appropriate responsibility for health and building DHO capacity to provide sustainable, quality service delivery at the facility and community levels. The level of effort by intervention for this Child Survival Project (CSP) is as follows:

1. 25% MNC
2. 25% PCM
3. 20% IYCF
4. 20% CDD
5. 10% EPI.

MNC

Three of the four project indicators for MNC, IPT, skilled birth attendants, maternal knowledge of postpartum danger signs, and postnatal visit for the mother within 3 days after birth, significantly improved from BL to MT. However, only 2 of the four (IPT use and the use of skilled birth attendants) met the benchmarks set for them at MT. Only the percentage of mothers receiving at least two tetanus toxoid immunizations in Lira District remained the same through midterm (73%), indicating relatively good utilization of antenatal care services and tetanus immunizations being performed by antenatal health care staff when these services are utilized. However, this indicator did not meet the benchmark of 83%, and SAs 1 and 3 did not meet the DR, indicating that they were statistically significantly below the benchmark. This will be investigated as portions of SAs 1 and 3 are furthest from the HFs. Regarding IPT, at baseline only 35% of mothers took proper anti-malarial medication at least 2 times during pregnancy with their youngest child. By midterm this was significantly increased to 59%, meeting the benchmark for MT. However, SA4 did not meet the DR. This will be investigated, as a portion of SA4 is far from the HF. Also, At MTE, 53% of all childbirths occur under the supervision of a skilled birth attendant, which is statistically significantly improved from BL (35%). In addition, the project met the benchmark for the midterm and all 6 SAs met the decision rule. MTI has accomplished this through focus on increasing the use of health facilities and skilled birth attendants through VHTs, and CHPs who are being trained in health promotion. This training also includes the importance of ensuring that both mother and child receive follow up care including a post partum visit with a trained

health professional within 3 days of birth. There was significant improvement from BL in the % of mothers who received postnatal visits, from 16.7% to 30%, and the benchmark (33%) was met due to confidence interval considerations. All SAs met the DR except SA6. While there was a statistically significant improvement from BL in the % of mothers who knew at least 2 postnatal danger signs (2% at BL to 20% at MT); however, the project did not meet the benchmark set for MT, and SAs 2, 3, 4, and 6 did not meet the DR. The benchmark was set quite high at 41% considering the BL was only 2.3%, which explains the significant improvement while not meeting the BM.

Other MNC Rapid CATCH indicators (that were not in the project matrix) were measured at MT. Antenatal coverage (4 or more antenatal visits) made a significant increase from BL 35% at BL to 50% at MT, with all SAs meeting the DR. While postnatal visits to mothers increased from 16.7% to 30%, it is interesting to find that postnatal visits to children, while also starting at 16% at BL did not significantly increase by MT (19% at MT). This will be investigated to determine the proper course of action for the 3rd year of programming. All SAs met the average of the SAs combined (average coverage) for this indicator. Contraceptive use Remains unchanged from BL. SA 3 is significantly below the average.

Anthropometry AND IYCF

The nutritional status of children aged 0-23 months is of major concern in Lira District. The overall rate of under-nutrition at baseline was 27.7%, with 17.0% moderately underweight and 10.7% severely underweight. This is similar to the results found by a DHS study in 2006 which revealed the overall rate of under-nutrition to be 21.8% in the Northern region of Uganda. At MT, The percentage of children with a Z-score of <-2SD at MT is 17.6%, not significantly decreased from BL. However, the benchmark for the MT was met, and all SAs met the DR.

Of the 4 IYCF indicators in the project matrix, only 1, the IYCF aggregated indicator, was statistically significantly increased at MT, increasing from 23% at BL to 42% at MT. Also, all SAs met the DR set for the MT BM for this indicator. The % of children aged 0-5m who were exclusively breastfed during the 24 hours prior to the survey did not increase at MT. Additionally, 4 of the 6 SAs did not meet the DR set by the MT benchmark (SAs 2, 3, 4, and 5). The second half of the project will be concentrating on improving nutrition interventions. Immediate BF practices for newborns remained quite low, at 23%, which does not meet the MT BM. Also, 4 of the 6 SAs did not meet the DR (SAs1, 3, 5, and 6). Similarly, at 55% there was no significant improvement in the % of mothers who do not practice prelacteal feeding, and SAs 3, 4, and 5 did not meet the DR.

Other nutrition Rapid CATCH indicators that were not in the project matrix were measured at MT. The complimentary feeding rate is quite high at MT, at 84.1% (79.1-89.2). This is not statistically significantly higher than at BL (69.8% (55.7-81.7) because the sample size of mothers of children aged 6-9m at BL was small (n=53) due to utilizing 30 cluster methodology. However, a complimentary feeding rate of 84% is quite high. It is important to note that SA 2 did not meet the DR for the average of all SAs at MT.

Also, the % of children receiving Vitamin A in the past 6m at MT (55%) was significantly decreased from BL (70%). Reasons for this should be investigated to determine the barriers to receiving and taking Vitamin A.

Pneumonia Case Management

Pneumonia is the fifth-highest contributor to Lira District's burden of disease, but is the primary cause of child mortality.²¹ Objectives of the project are the recognition of the danger signs of pneumonia, improving the access to quality care, and promoting optimal and timely health seeking behavior among mothers/caretakers. Both ARI indicators in the project matrix met the benchmark for MT. The % of children with ARI who were taken to an appropriate health provider increased significantly over the first half of the project (58% at BL to 86% at MT). This increase not only met the BM but also met the Target for the project. All SAs met the DR. The % of children age 0-23 months with ARI who were treated with an antibiotic also increased significantly from BL to MT (35% at BL to 64% at MT). This increase met the BM and also met the Target for the project. All SAs met the DR.

Control of Diarrheal Disease

MTI Uganda has made a high priority the reduction of childhood diarrhea prevalence and morbidity through preventive and curative measures. This diarrhea management initiative is an intervention aimed at raising the awareness of mothers/caretakers about the necessary steps required to both prevent and treat diarrheal disease. Interventions aimed at the prevention of diarrhea include instruction in the importance of appropriate hand washing behaviors as well as the promotion of the use of sanitary latrines. Diarrhea case management at the household level is to include proper feeding and fluid management during diarrhea episodes, including the proper preparation and use of Oral Rehydration Salts (ORS).

There has been a statistically significant improvement in the % of mothers of children 0-23m who practice appropriate hand washing. The rate rose from 54% at BL to 75% at MT, with the project meeting the BM for the MT. However, SA 3 did not meet the DR for the benchmark set for MT. There has been no significant improvement in the % of children who received ORS when suffering from diarrhea since baseline (47% at BL to 54% at MT). Also, SAs 2 and 4 did not meet the DR for the BM set for the MT. In addition, zinc usage in children to treat diarrhea remains almost non-existent at 2.6%. The project did not meet the BM for the MT, and SAs 1, 3, 4, and 5 did not meet the DR for the MT BM. The project will need to investigate the barriers to ORS and zinc use, and also investigate why SA4 did not meet the DR for any of the diarrhea indicators in the project matrix.

A Rapid CATCH indicator for diarrhea (that was not in the project design matrix) is point of use water treatment. The % of households of children age 0-23 months that treat water effectively remained very low at 11%, unchanged from BL. The likely reason for the low water treatment rates is that 91.0% of households in Lira District have access to an improved water source

²¹ Lira District Health Office Annual Report, July 2008

Expanded Program of Immunization

EPI Coverage is measured by the percentage of children aged 12-23 months who received a BCG, DPT3, OPV3, and measles vaccination before the age of 12 months verified by an immunization card, meaning that they received full vaccination coverage. The project showed a significant increase in EPI coverage from BL (16% at BL to 38% at MT), with all SAs meeting the DR. In addition, the BM for MT was met. However, there has been no significant change in measles vaccination coverage (80% at MT), as coverage was already quite high (77% at BL). SA1 did not meet the DR for the benchmark set for MT. This should be investigated and in part may be due to the distance of some villages in sa1 from the HFs.

Rapid CATCH indicators for EPI coverage that were not in the project matrix were measured at MT. There has been no significant change in access to immunization, as measured by DPT1 immunization rates, card or mother verified (87% at BL to 89% at MT), because this indicator was already quite high. All SAs met the average of the project area as a whole. There also has been no significant change in Health system performance as to immunization, as measured by DPT3, card or mother verified (85% at BL to 73% at MT) because this indicator was already quite high. All SAs met the average of the project area as a whole.

Early Childhood Development

MTI is incorporating ECD activities into its CS project to enhance the impact and sustainability of technical interventions. Research confirms that child survival is positively linked to ECD – including health, physical, social/emotional, and language/cognitive domains. There has been a significant increase from BL of mothers of children aged 0-23 months who report playing games with their child in which they have their child identify their body parts, imitate actions, pretend play, or name objects (38% at BL to 68% at MT), with all SAs meeting the DR.. These are important builders of cognitive, motor, or linguistic functions. In addition, There has been a significant increase from BL of mothers report engaging their children in linguistic learning activities such as telling their child stories, singing them songs, or naming objects for them at least twice weekly(23% at BL to 40% at MT), but this also represents a significant decrease from year 1 (62% at YR1 to 40% at MT). SAs 3 and 4 did not meet the DR set for the MT for this indicator. In addition, there has been no significant change from BL in the % of mothers who provide report that they talk or sing to the child while feeding the child (58% at BL to 65% at MT). SAs 1 and 5 did not meet the DR for this indicator. The CSP is integrating ECD into community health activities in order to improve feeding, care giving, and care-seeking behaviors, by increasing women's participation in CHW structures and integrating ECD into C-IMCI and ANC/EPI outreaches. Two primary mechanisms have been identified for ECD integration: women's groups and ANC/EPI clinics (which occur simultaneously). The CSP is utilizing women pairs to improve health and nutrition to a mothers' group in selected villages. These women leaders provide education on health and nutrition and ECD messages and practices to mothers' groups they form in their own village and in one other nearby village each, forming a new pair with a woman leader from that village.

ANC/EPI clinics have also been selected for integration of ECD in order to increase attendance at the clinics and because ANCs provide an ideal opportunity for waiting pregnant women and their husbands to receive health/ECD messages through “parent chats” and practice on infants.

Malaria

The prevalence of fever in children aged 0-23 months in Lira District was found to be quite high in the baseline KPC Survey at 74.8%. Malaria is highly endemic in Uganda (90-98% *P. falciparum*) and is the leading cause of morbidity and mortality nearly country-wide.²² In Lira District, malaria accounts for 34% of the disease burden. Part of the reason for this can be explained by the fact that at baseline only 51.3% of children less than 24 months presently slept under an insecticide treated bed net. There has been no significant increase in the use of bed nets, at only 51% at MT. Barriers to distribution and use of ITNs will be investigated and an AP to increase demand and supply developed. Also, SA 3 did not meet the average of the combined SAs (average for the project area). Of the children who had a fever in the 2 weeks prior to the survey, at BL only 22.3% were brought to a qualified health facility within 48 hours of the start of the fever. There has been a significant increase in the proper treatment of malaria to 69% at MT. However, again SA3 did not meet the average of the combined SAs (project area). Investigation into why SA3 is lagging behind in both the prevention and treatment of malaria will be investigated.

In conclusion, by working in partnership with the DHO, MTI Uganda is implementing a project that aims to improve the health of village communities in Lira District through building DHO capacity to provide sustainable, quality service delivery at the facility and community levels, and through promoting behavior change and community mobilization to take appropriate responsibility for health. This is being accomplished through a combination of interventions, including providing supplementary training, supervision, and follow-up coaching of VHTs. The results of this MT KPC Survey using LQAS methods will allow the project to continue to improve in areas where they have had success while developing strategies to investigate and improve those interventions and those SAs that have not met the desired benchmarks for the mid point of the project.

²² Uganda Malaria Control Strategic Plan: 2005-6 – 2009-10.

Uganda CSP Project Matrix Indicators

CSHGP Intervention Area	Project Matrix Indicator	Baseline	MTE
Nutrition	<u>Exclusive breastfeeding</u> : Percentage of children 0-5 months who were exclusively breastfed during the last 24 hours	73.6% (59.7-84.7)	67.7% (61.2-74.2)
	<u>Immediate breastfeeding of newborns</u> : Percent of newborns who were put to the breast within one hour of delivery	29.0% (23.9-34.5)	22.7% (16.9-28.6)
	<u>Exclusive breastfeeding of newborns</u> : Percent of newborns who did not receive prelactal feeds during the first 3 days after delivery	46.6% (40.8-52.5)	55.0% (48.1-62.0)
	<u>IYCF</u> : Percent of children age 6-23 months fed according to a minimum of appropriate feeding practices	23.14% (18.4-27.9)	42.3 (35.4-49.1)
Immunization	<u>Measles vaccination</u> : Percent of children aged 12-23 months who received measles vaccine according to the vaccination card or mother's recall by the time of the survey	77.0% (69.7-83.3)	78.4% (70.9-85.9)
	<u>EPI Coverage</u> : Percentage of children aged 12-23 months who are fully vaccinated (received BCG, DPT3, OPV3, and measles vaccines) by 12 months of age, card verified	15.5% (10.3-22.1)	37.9% (31.1-44.6)
Control of Diarrhea	<u>ORT use</u> : Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration solution (ORS) and/or recommended home fluids.	47.2% (37.5-57.1)	53.5% (46.6-60.5)
	<u>Zinc</u> : Percentage of children 0-23 months with diarrhea in the last two weeks who were treated with Zinc.	0.9% (0.0-5.1)	2.6% (0.4-4.8)
	<u>Appropriate Hand washing Practices</u> : Percentage of mothers of children 0-23 months who live in households with soap at the place for hand washing that washed their hands with soap at least 2 of the appropriate times during a 24 hour recall period.	54.0% (48.2-59.7)	75.3% (69.3-81.4)
ARI/Pneumonia	<u>Appropriate Care Seeking for Pneumonia</u> : Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider.	57.8% (49.4-65.9)	86.1% (81.3-90.9)
	<u>Treated with Antibiotic</u> : Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were treated with an antibiotic	34.7% (27.0-43.0)	64.4% (57.7-71.0)
MNC	<u>Maternal TT Vaccination</u> : Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.)	75.7% (70.4-80.4)	73.5% (67.3-79.6)
	<u>IPT</u> : Percentage of mothers with children age 0-23 months who received at least 2 doses of IPT during the pregnancy with this youngest child.	35.0% (29.6-40.7)	59.1% (52.3-66.0)
	<u>Skilled Delivery Assistance</u> : Percentage of children age 0-23 months whose births were attended by skilled personnel	35.3% (29.9-41.0)	53.3% (46.4-60.2)
	<u>Post Partum visit to check on child within the first 3 days after birth</u> : Percentage of mothers of children 0-23 months who received a post-partum visit by an appropriate trained health worker within three days after the birth of the youngest child.	16.33% (12.2-20.5)	18.8% (13.3-24.2)
	<u>Post-partum Danger Signs</u> : % of mothers of children 0-23 m are able to report at least two known maternal danger signs during the postpartum period	2.0% (0.7-4.3)	20.0% (14.4-25.6)
Anthropometrics	<u>Underweight</u> : Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to	27.7% (22.7-33.1)	17.6% (12.3-23.0)

	WHO/HCHS reference population)		
Early Childhood Development	<u>Cognitive Stimulation</u> : Percentage of mothers of children aged 0-23 months who provide cognitive stimulation to their child in the form of games such as “where are your eyes, etc.	38.0% (29.3-40.3)	68.5% (62.0-74.9)
	<u>Linguistic Stimulation</u> : Percentage of mothers of children aged 0-23 months who told their child a story, sang a song, or spent time naming objects for (CHILD) at least 2 times in the past week	22.7% (18.1-27.8)	40.1% (33.2-46.9)
	<u>Stimulation While Feeding</u> : Percentage of mothers of children aged 0-23 months who report that they talk or sing to the child while feeding the child	57.7% (51.9-63.3)	65.4% (58.7-72.0)

**Uganda CSP December 2011
Revised Rapid CATCH indicators**

CSHGP Intervention Area	Rapid CATCH Indicator	BASELINE	MTE
Maternal Newborn Care	(1) <u>Antenatal Care</u> : Percentage of mothers of children age 0-23 months who had four or more antenatal visits when they were pregnant with the youngest child	35.3% (29.9-41.0)	49.6% (42.6-56.6)
	(2) <u>Maternal TT Vaccination</u> : Percentage of mothers with children age 0-23 months who were protected against Tetanus before the birth of the youngest child. (Protected refers to receiving at least 2 TT or Td injections before the birth of the youngest child sufficiently close to that birth to provide protection.)	75.7% (70.4-80.4)	73.5% (67.3-79.6)
	(3) <u>Skilled Delivery Assistance</u> : Percentage of children age 0-23 months whose births were attended by skilled personnel	35.3% (29.9-41.0)	59.1% (52.3-66.0)
	(4) <u>Post Partum visit to check on mother within the first 3 days after birth</u> : Percent of mothers of children 0-23 months who received a post-partum visit by an appropriate trained health worker within three days after the birth of the youngest child.	16.7% (12.5-20.9)	30.0% (23.7-36.4)
	(5) <u>Modern Contraception</u> : Percentage of mothers of children age 0-23 months who are using a modern contraceptive method	33.3% (28.0-39)	30.0% (23.6-36.4)
Breastfeeding	(6) <u>Exclusive breastfeeding</u> : Percentage of children 0-5 months who were exclusively breastfed during the last 24 hours	73.6% (59.7-84.7)	67.7% (61.2-74.2)
	(7) <u>IYCF</u> : Percent of children age 6-23 months fed according to a minimum of appropriate feeding practices	23.1% (18.4-27.9)	42.6% (35.4-49.1)
Vitamin A Supplementation	(8) <u>Vitamin A Supplementation in the last 6 months</u> : Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months (Mother's recall).	70.1% (63.3-76.4)	55.5% (48.6-62.4)
Immunization	(9) <u>Access to immunization services</u> : Percent of children aged 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey	87.0% (80.8-91.7)	88.9% (84.5-93.3)
	(10) <u>Health System Performance regarding Immunization services</u> : Percent of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey	85.1% (78.6-90.2)	73.2% (67.1-79.4)
	(11) <u>Measles vaccination</u> : Percent of children aged 12-23 months who received measles vaccine according to the vaccination card or mother's recall by the time of the survey	77.0% (69.7-83.3)	78.4% (70.9-85.9)
Malaria	(12) <u>Child sleeps under an insecticide-treated bednet</u> : Percentage of children 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night.	51.3% (45.5-57.1)	43.3% (36.4-50.2)
	(13) <u>Child with fever receives appropriate antimalarial treatment</u> : Percentage of children 0-23 months with a febrile episode that ended during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.	25.0% (19.4-31.3)	69.2% (62.8-75.7)

Control of Diarrhea	(14) <u>ORT use</u> : Percentage of children 0-23 months with diarrhea in the last two weeks who received Oral Rehydration Solution (ORS) and/or recommended home fluids.	47.2% (37.5-57.1)	53.5% (46.6-60.5)
ARI/Pneumonia	(15) <u>Appropriate Care Seeking for Pneumonia</u> : Percentage of children age 0-23 months with chest-related cough and fast/difficult breathing in the last two weeks who were taken to an appropriate health provider.	57.8% (49.4-65.9)	86.1% (81.3-90.9)
Water and Sanitation	(16) <u>Point of Use (POU)</u> : Percentage of households of children 0-23 months that treat water effectively.	11.3% (8.0-15.5)	10.7% (6.4-15.0)
	(17) <u>Soap at the Place for washing</u> : Percentage of mothers of children age 0-23 months who live in a household with soap at the place for hand washing	85.0% (80.4-88.8)	88.6% (84.2-93.0)
Anthropometrics	(18) <u>Underweight</u> : Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to WHO/HCHS reference population)	27.7% (22.7-33.1)	17.6% (12.3-23.0)