Catholic Relief Services, USCCB

Final Evaluation of the Kasai Child Survival Project

Democratic Republic of the Congo
(Muene Ditu and Sankuru Districts)

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ACRONYMS

ACT	Artemisin-Based Combination Therapy
ARI	Acute Respiratory Infection
BCC	Behavior Change Communication
BCZS	Bureau Central de la Zone de Santé (Health Zone Office)
BCG	Bacille Calmette-Guérin (BCG Vaccine)
BDOM	Bureau Diocésain des Œuvres Médicales
CCM	Community Case Management
CDD	Control of Diarrheal Diseases
CHW	Community Health Worker (Relay)
C-IMCI	Community IMCI
CODESA	Comité de Développement de l'Aire de Santé
CSP	Child Survival Project
CRS	Catholic Relief Services
CSHGP	Child Survival Health Grant Program
DIP	Detailed Implementation Plan
DRC	Democratic Republic of the Congo
EB	Exclusive Breastfeeding
EDL	Essential Drugs List
EPI	Expanded Program of Immunizations
HFA	Health Facility Assessment
HN	Head Nurse (In charge of a Health Center)
HQ	Headquarters
HZ	Health Zone
IEC	Information, Education, Communication
IMCI	Integrated Management of Childhood Illnesses
IPT	Intermittent Presumptive Treatment (for Malaria)
KCSP	Kasai Child Survival Project
KPC	Knowledge Practices and Coverage Survey
LAITN	Long-Acting Insecticide Treated Mosquito Nets
MCH	Maternal Child Health
M&E	Monitoring and Evaluation
MMR	Maternal Mortality Rate
MOH	Ministry of Health
MTE	Midterm Evaluation
ORS	Oral Rehydration Salt (Oral Rehydration Solution)
PHC	Primary Health Care
TOT	Training of Trainers
TT	Tetanus Toxoid
USAID	United States Agency for International Development
WHO	World Health Organization
WRA	Women of Reproductive Age

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The Executive Summary (3 pages)

1- Project description

The Kasai Child Survival Project (KCSP) was implemented in Mwene-Ditu and Sankuru Districts in Kasai Province of the Democratic Republic of Congo (DRC). Kasai Oriental Province is in the south-central part of the country and is a 2.5 hour plane ride from Kinshasa. The two districts are not contiguous; but are a 2.5 day's drive from each other. The project's target area includes six health zones (HZ); three in Mwene-Ditu - Kalenda, Kanda Kanda, and Makota - and three in the District of Sankuru - Bena Dibele, Djalo-Ndjeka, and Tshumbe. The estimated direct beneficiary population of the project is 141,851 children less than five years of age, and 28,371 pregnant women.

The goal of the KCSP is to contribute to reduced mortality and morbidity in children under-two and pregnant women in the six targeted health zones. This goal was sought through the following three strategic objectives:

SO1: The health of children 0 – 23 months is improved;
SO2: The health of pregnant women is improved; and
SO3: Household access to quality health services is improved.

To achieve these objectives, Catholic Relief Services (CRS) contracted[1] the Bureau Diocésain des Oeuvres Médicales (BDOM) who partnered with the Ministry of Health (MOH) to implement activities in the following areas with the corresponding level of effort.

(1) Malaria prevention and case management, 40%;
(2) Control of Diarrheal Diseases, 20%;
(3) Support for Expanded Program of Immunization (EPI), 20%;
(4) Pneumonia Case Management, 10%; and
(5) Counseling to promote Exclusive Breastfeeding, 10%.

2- Key Findings/Results

1. Scale up – The project contributed to the scale up of IMCI in the country and the Kasai Oriental Province by training 8 trainers in IMCI. These trainers are based in the Province and districts targeted by the project and they sometimes train providers from other districts in the province and sometimes from other provinces.
2. Reduced exposure to malaria due to increased (2% - 69%[2]) used of ITNs by children U2. This practice was facilitated by the distribution of 20,000+ ITN in both target districts.

[1] The actual arrangement between CRS and BDOM was a sub-agreement, but since CRS did not have staff in the field until the last 2 quarters of the project and visits to the field were infrequent, in essence, BDOM was the implementing agent and the arrangement was more contractual in nature.

[2] These figures represent the results from all six health zones (HZ). The first figure is the lowest among the 6 HZ and the second figure is the highest among all six HZ. For comparison of baseline and final results by HZ see Table 3.

3. Increased (18% - 78%) practice of exclusive breastfeeding of infants 0-6 months in all six health zones due to improved access to information about and support for exclusive breastfeeding through the formation of 173 knowledgeable and dynamic village-based breastfeeding support groups. This practice was also promoted by 212 providers trained in IMCI, 24 trained in Exclusive Breastfeeding; and 259 health care providers and 4,348 Community Health Workers (Relais promotionalles) trained in C-IMCI.
4. Reduced exposure to malaria due to increased (19% - 92%) Intermittent Presumptive Treatment (IPT) among pregnant women.
5. Improved quality of care for children U5 through the practice of IMCI at 100 health centers in 6 Health Zones in Sankuru and Mwene-Ditu Districts. IMCI practice was supported by regular supervision of the health centers by the Central Health Zone Office (CHZO) and the provision of essential medicines and equipment to the 100 health Centers in 6 health zones.
6. Improved quality of care in 14 private facilities in Makota Health Zone through the inclusion of these providers in IMCI training and provision of essential drugs and equipment;
7. Increased access to health care services through the creation and support of 56 Community Care sites where integrated Community Case Management (iCCM) is practiced;
8. Increased access to information about healthy behaviors through the training and support of 4,348 community Health Workers (relais promotionelles).

Table 1: Summary of Major Project Accomplishments

Objective #1: Health of children 0-23 months is improved (activities in Malaria, Diarrhea Disease Control, EPI, Pneumonia management and breastfeeding promotion)			
Project Inputs	**Activities**	**Outputs**	**Outcome**
Technical support; Funds to support staff, transport supervision, training, the purchase of inputs Supplies, drugs, equipment, vehicles, fuel	▪ Training of: - 8 IMCI trainers - 99 C-IMCI trainers - 212 health care providers in IMCI - 24 providers trained in Exclusive BF; -259 provider trained in C-IMCI - 4,348 CHW in C-IMCI - 56 iCCM providers - 173 breastfeeding support groups - 161 CODESA ▪ BCC - Creation and dissemination of radio spots - Support for community festivals Provision of medicines, ITNs, supplies and equipment to support	- Increased access to ITN, ORS, promotional services, preventive services, treatment, breastfeeding support - 56 Community Care Sites (iCCM) offering curative services - improved quality of care at 100 health centers	1. Mothers practice preventive measures 1.1. Mothers seek prompt care for sick child 1.2. Mothers manage sick children at home

	IMCI and iCCM and malaria prevention		
SO 2. Health of pregnant women is improved			
Same as above	Provision of ITN for pregnant women	Increased access to ITN and IPT and promotional services	2.1. Pregnant women practice preventive measures (ITN use and IPT)
SO 3. Household access to quality health services is increased			
Same as above	• Training of: - 29 IMCI trainers - 225 health care providers in IMCI • BCC activities • Provision of medicines, ITNs, supplies and equipment to support IMCI and iCCM and malaria prevention	Increased access to quality care at health area and community levels.	3.1. Health Center provide care using IMCI protocols

4- Main Conclusions and Recommendations

1 - Project designers seem to have misunderstood what the expanded impact category was looking for. In addition to working in a larger geographical area, the grantees in this category were also supposed to influence policies and approaches at the national level so that lessons learned could be implemented in other parts of the country by the MOH or other groups. There is little evidence, apart from having trained 8 trainers in IMCI, for impact outside the project area.

Recommendation

2- CRS was not the direct implementer of this project. Rather it contracted with BDOM to implement the activities and as a result CRS lost considerable influence and control over the project.

Recommendation
In a future project CRS should partner with MOH and BDOM rather than contracting with BDOM to implement the project and CRS should have staff in the field to assist with and oversee project implementation.

3 – Behavior Change strategies seem not to have been strong enough to promote many of the key behaviors of the project. While over 4000 Community Health Workers were trained, only between a half and a quarter are still active. The remaining active CHWs have a difficult time covering all the households. Supervision of CHWs is weak. Therefore it's possible that CHWs didn't feel their work was appreciated.

Recommendation
In a future project, more thought needs to be put into the design of the behavior change strategy, particularly with regard to continued support of the CHWs.

4- Many of the actions taken by the project after the MTE – especially with regard to the provision of inputs – can not be sustained.

Recommendation
In a future project, since not all activities need to be or can be continued past the end-date of the project, the sustainability design should identify those key activities that it seeks to sustain and design a realistic approach to achieve sustainability in key areas.

Chapter One: Overview of the Project

1- Project Description

The Kasai Child Survival Project (KCSP) was implemented in Mwene-Ditu and Sankuru Districts in Kasai Province of the Democratic Republic of Congo (DRC). Kasai Orientale Province is in the south-central part of the country and is a 2.5 hour plane ride from Kinshasa. The two districts are not contiguous; but are a 2.5 day's drive from each other. The project's target area includes six health zones (HZ); three in Mwene-Ditu - Kalenda, Kanda Kanda, and Makota - and three in the District of Sankuru - Bena Dibele, Djalo-Ndjeka, and Tshumbe. The estimated direct beneficiary population of the project is shown below.

Table 2. Beneficiary Population

	Bena Dibele	Djalo Ndjeka	Kalenda	Kanda Kanda	Tshumbe	Makota	Total
Women of Rep. Age	12,051	14,420	32,022	36,931	38,407	15,115	148,945
Pregnant women	2,295	2,747	6,099	7,035	2,879	7,316	28,371
Children under five							
Under 12 months	2,295	2,747	6,099	7,035	2, 879	7316	28, 371
12–23 months	2,169	2,596	5764	6648	2721	6913	26811
24–59 months	7,013	8389	17771	19,943	8764	24589	86469
Total	11,477	13732	30,496	35, 173	14, 395	36578	141,851

The goal of the KCSP is to contribute to reduced mortality and morbidity in children under-two and pregnant women in the six targeted health zones. This goal was sought through the following three strategic objectives:

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SO3: Household access to quality health services is improved.

To achieve these objectives, Catholic Relief Services (CRS) contracted the Bureau Diocésain des Oeuvres Médicales (BDOM) who partnered with the Ministry of Health (MOH) to implement activities in the following areas with the corresponding levels of effort.

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Technical and Cross Cutting Interventions.

To achieve the project's objectives, the KCSP worked to improve the quality of care (supply side) while increasing demand for services (demand side). The former was tackled by training IMCI trainers at the national and district levels who in turn trained health care providers in the six target health zones. KCSP also significantly improved the supervision of health center staff

by providing supervision incentive and covering transport costs. After the mid term evaluation, CRS also began to provide the necessary inputs to make practicing IMCI possible. This included refrigerators and kerosene to support the vaccination work, and drugs, supplies and equipment essential to IMCI. Long-lasting insecticide treated mosquito nets were also made available to pregnant women during ante natal visits. In addition to IMCI training, a select number of health care providers also received training in immunizations and exclusive breastfeeding, and to support the community promotion work, some were trained in C-IMCI. As part of the national plan to increase community involvement in managing the health centers, the project also trained CODESA (Community Development Committees)

To promote demand for services and healthy practices in the home, the KCSP trained over 4000 community health workers (approximately 1 for every 15 households) in C-IMCI. They also trained groups of women to promote exclusive breastfeeding. To increase access to curative services, the project trained 312 CHWs in integrated community case management (iCCM). These men (no women) are located in the community and run what the project calls, Community Care Sites. They are able to treat mild cases of diarrhea, malaria, and pneumonia and to refer all cases that are beyond their care level or that do not show signs of recovery in 48 hours.

Additional behavior change strategies included radio messages and annual festivals.

Key messages included:

- exclusive breastfeeding from 0 – 6 months
- complete immunization before 12 months
- children U2 sleep under an ITN
- timely care seeking when child is ill
- appropriate feeding of a sick child
- ORS administration for child with diarrhea
- pregnant women get 2 TT
- pregnant women receive IPT
- the importance of and when to wash hands

Project Design

The KCSP sought to improve care seeking by improving the quality of care, by bringing care closer to communities that have difficulties accessing services, and improving mother's knowledge of the signs of danger in an ill child. The project also sought to reduce the need for care-seeking by increasing mother's knowledge of ways to prevent illness and treating mild illnesses at home.

To do this, CRS contracted BDOM to partner with the MOH to implement the activities described above (and in the next chapter). In the six health zones targeted by the project there are three types of health facilities: public (MOH-run), religious (Catholic – BDOM-run - and Protestant) and private. The project works in all three types of health facilities. While the MOH sets the policies that govern the provision of care, pays staff salaries and provides drugs, materials and supplies to the state and religious facilities[3], under the KCSP, the BDOM managed

[3] Although these are the expected norms, in reality the MOH finds it difficult to adequately support the health facilities.

the funds used to implement the project. The BDOM employed staff to interface with the MOH in the implementation of the project, and CRS did not have staff in the two districts until the last year of the project. Working through the BDOM who partnered with the MOH was considered a more reliable and efficient way of improving health care services in the districts.

From the outset, USAID found issues with the design of the project and required CRS to rewrite the Detailed Implementation Plan (DIP) twice. USAID also required CRS to carry out separate KPC survey's for each of the six Health Zones, which was not anticipated in the original design or in the budget. The final DIP was not approved until August 2007, nearly two years into the project. This delay put significant pressure on project implementers to achieve the objectives in essentially 3, rather than 5 years.

Another aspect of the design which created difficulties is that the two targeted districts are not contiguous. In fact they are 2.5 day's drive apart from each other and can only be reached otherwise, by flying via Kinshasa. This made the project more expensive to manage and more difficult to harmonize approaches and share lesson learned. Although there were reasons for this selection, they were not compelling enough to be submitted for implementation under one project.

The project was designed around an unusual logical framework. Rather than designing the framework around the technical intervention areas (EPI, Malaria, pneumonia etc), as most projects do, it was designed around target audience – mothers of U2 children, pregnant women and health center staff.

2- Partnerships

As mentioned above, CRS contracted with BDOM to partner with the MOH in the implementation of the KCSP. Because CRS did not plan to have any staff in the districts (this changed in the last year of the project) and all inputs were managed by the BDOM, the relationship between CRS and the BDOM can not be considered a partnership per se. Rather, BDOM was the implementing organ and CRS was the contractor. This is not to say that CRS had no presence or influence on the ground, but that it was less significant than that of a true implementer or an implementing partner. BDOM, on the other hand, partnered with the MOH. BDOM hired staff (6 Technical Assistants – one per health zone – and others) to train and supervise providers and monitor project implementation. Because of this arrangement, CRS forfeited quite a bit of control over the project and lost an opportunity to create a direct partnership with the MOH and BDOM.

ADD STUFF HERE ABOUT THE ROLE OF MOH AND BDOM

3– Mission Collaboration

As the MCH specialist and the CTO for the Kasai Project (a different project from KCSP) , Ms. Lina Piripri, the Maternal and Child Health Specialist with USAID/Kinshasa, was regularly informed through meetings and received copies of the annual reports from CRS.

USAID's main health objective is to increase service utilization and improve the quality of services. In the KCSP area it appears that service utilization rate is increasing, especially with community mobilization activities and the establishment of "community care sites". Although at

this stage one cannot attribute this increase only to the KCSP, Ms. Piripiri feels certain that the project has contributed in some way to the increase especially in the areas of immunization coverage, exclusive breastfeeding, and improved IMCI (facility & community-based).

The KCSP was designed as a complement to the USAID-funded Kasai project. The limited budget of the Kasai project could not cover all the needs. The MSH/LMS project replaced the Kasai project - they work in a complementary fashion to maximize results while avoiding duplication.

With regard to scale up, this project has trained IMCI trainers at the provincial and district levels in the IMCI (facility and community-based). The trainees are currently used by the Ministry of Health as trainers in provinces and districts beyond the project intervention area. The project team participates actively in several child survival policy-related workshops at the national level.

Chapter Two: Data Quality: Strengths and Limitations

As mentioned above, USAID required CRS to carry out six different KPC studies; one for each of the six health zones. The basis for this request was a presumed significant difference in ethnic groups, customs, behaviors etc between the zones which was expected to make a significant difference in the KPC results. In fact this was not the case and even if it was, the budget was not large enough to have created different strategies for each of the six health zones. This request does not seem consistent with the handling of other projects. The expanded impact project in Cameroon implemented by Plan was not asked to conduct separate KPC surveys even though their areas of intervention really did represent significant differences and the same is true for HKI's child survival project in Diffa, Niger. In addition to being not worthwhile programmatically, the cost in terms of money and time was also considerable to the project. In the future, if justifiable, USAID may ask CSHGP projects to conduct separate KPC surveys for Districts or Provinces, but these should either use the much simpler sampling approach, LQAS, or extra funds should be allocated for this work. Alternatively, in the case of the DRC, the results from the KPC survey could just be disaggregated by the health zones.

The Kasai Child Survival Project collected data at the outset of the project (baseline) and at the end (final), but did not carefully monitor progress regarding the project outcomes during the life of the project. They monitored the provision of inputs (# of ITN etc) and outputs (# of people trained) but did not have a mechanism in place to check on the outcome indicators, especially for objectives #1 (mothers' behaviors) and #2 (pregnant women's behaviors). With regard to objective #3, quality of care, post-training supervision of health facilities provided a good idea of the adherence to the IMCI protocols, and some questions on the monthly supervisory tool used by the project TAs also checked on treatment of a sick child. In at least some health zones results from supervisory visits were discussed at quarterly review meetings and solutions proposed to problems identified.

The project experienced difficulties carrying out the final KPC survey. There appears to have been some misunderstandings regarding the administration of the questionnaire among the surveyors. For example, in many cases, the question on hand washing was only asked of mothers whose children had diarrhea during the previous two weeks. Worse results at final than at baseline for some indicators also suggest other abnormalities. The project used its own staff to conduct the survey which is not a recommended practice. At the very least, people should not have evaluated the districts where they worked.

The data shown in Chapter Three is from the project's own KPC and Health Facility Assessment, it is not from the MOH's information system.

Chapter Three: Presentation of Project Results

Table 3, shown below, is complex because it shows the baseline and final results of the KPC surveys for each of the six health zones. A full KPC survey was conducted in each of the six health zones upon request of USAID. The corresponding zones are: Mwene Ditu District – health zones 3, 4, 6, and Sankuru District - health zones 1, 2, and 5. It is also difficult to follow because the LOP targets differ for each health zone and each indicator and it is quite often not easy to see the logic behind the target. Apparently when the DIP was written (one of the three iterations) the in-country authors had in-depth discussions about each indicator and each zone which included a discussion of the difficulty associated with the behavior in the local contexts. In this way, the targets were set.

Table 3. Presentation of Progress Toward Objectives

Objective/ Result	Indicators	Data Source	HZ	BL	Final	Target	Visual Results[4]
SO1: Health of children 0-23 months is improved							
Result 1.1: Mothers practice preventive measures	1.1% children 0-5 months who were exclusively breastfed	KPC baseline and final evaluations	1	39	73	57	√
			2	54	78	66	√
			3	18	61	33	√
			4	28	52	43	√
			5	40	63	61	√
			6	67	64	67	–
	1.2% of children 12-23 months who are fully vaccinated (five preventable diseases vaccines)	KPC baseline and final evaluations	1	0	29	15	√
			2	0	50	15	√
			3	4	23	35	–
			4	0	100	15	√
			5	27	51	57	–
			6	0	0	15	–
	1.3. % of children 12-23 months who receive measles vaccine (without card)	KPC baseline and final evaluations	1	5	19	50	–
			2	8	26	55	–
			3	3	9	45	–
			4	4	3	49	–
			5	20	23	70	–
			6	10	2	45	–
	1.4. % of children 0-23 months who slept under an insecticide-treated net the previous night	KPC baseline and final evaluations	1	10	69	25	√
			2	4	57	34	√
			3	3	45	34	√
			4	2	35	34	√
			5	8	26	40	–
			6	7	47	40	√
	1.5. % of mothers	KPC baseline	1	2	0.33	11	–

[4] Given the complexity of this table, this column was added to make the results easier to 'see'. The – means that the target was not met and the √ means the target was achieved or surpassed.

Objective/ Result	Indicators	Data Source	HZ	BL	Final	Target	Visual Results[4]
	with children 0-23 wash their hands with soap or ash before food preparation, before feeding children, after defecation, and after attending to a child who has defecated	and final evaluations	2	2	0.34	11	–
			3	0	1	12	–
			4	1	.33	10	–
			5	1	1	10	–
			6	4	.33	13	–
Result 1.2: Mothers seek promptly care for sick child	1.6. % of children age 0-23 months with diarrhea in the last two weeks who were treated with zinc supplements	KPC baseline and final evaluations	1	0	83	30	√
			2	0	79	30	√
			3	0	78	30	√
			4	0	100	30	√
			5	0	73	30	√
			6	0	100	30	√
	1.7.% of children 0-23 months with diarrhea receive zinc for 10-14 days	Baseline and FE HFA/Monitoring Reports quarterly	1				
			2				
			3				
			4				
			5				
			6				
	1.8.% of mothers with children aged 0-23 months who sought care when their child was sick at the health center	KPC Baseline and Final Evaluations	1	48	60	70	–
			2	50	62	80	–
			3	46	53	70	–
			4	38	43	70	–
			5	28	40	65	–
			6	48	66	75	–
	1.9. % of mothers with children aged 0-23 months who sought care when their child had cough and difficult breathing at the health center	KPC Baseline and Final Evaluations	1	44	57	66	–
			2	45	76	67	√
			3	53	34	80	–
			4	34	22	70	–
			5	39	24	70	–
			6	58	47	80	–
	1.10.% of mother with children 0-23 months with high fever that sought care at the health center within 24 hours	KPC Baseline and Final Evaluations	1	55	55	64	–
			2	67	43	80	–
			3	67	56	79	–
			4	55	43	70	–
			5	69	52	78	–
			6	66	51	81	–
Result 1.3:	1.11. % children	KPC baseline	1	44	25	74	–

Objective/ Result	Indicators	Data Source	HZ	BL	Final	Target	Visual Results[4]
Mothers manage sick children at home	age 0-23 months with diarrhea in the last two weeks who received oral rehydration Therapy (ORT) and/or recommended home fluids	and final evaluations	2	16	25	74	–
			3	10	12	40	–
			4	13	2	43	–
			5	17	10	47	–
			6	19	25	50	–
	1.12. % of children 0-23 months with cough and difficulty breathing were treated with cotrimoxazole (mothers were shown the pill)	Baseline and FE KPC	1	45	67	75	–
			2	45	43	75	–
			3	38	36	80	–
			4	23	22	75	–
			5	23	20	75	–
			6	53	49	90	–
	1.13.% of sick children 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	KPC Baseline and Final Evaluations	1	17	2	47	–
			2	25	8	55	–
			3	15	6	30	–
			4	12	3	29	–
			5	11	1	32	–
			6	36	6	51	–
	1.14.% of children aged 0-23 months with diarrhea in the last two weeks who were offered more fluids during illness	KPC baseline and final evaluations	1	22	40	52	–
			2	25	22	57	–
			3	23	20	41	–
			4	23	21	38	–
			5	26	17	47	–
			6	20	18	50	–
	1.15.% of children 0- 23 months with diarrhea in the last two weeks who were breastfed more than usual	KPC baseline and final evaluations	1	17	11	47	–
			2	10	16	30	–
			3	62	25	75	–
			4	52	16	75	–
			5	58	6	75	–
			6	49	15	75	–
	1.16.% of children aged 0-23 months with diarrhea in the last two weeks who were offered the same amount or more food	KPC baseline and final evaluations	1	30	10	60	–
			2	24	16	50	–
			3	30	31	60	–
			4	26	38	60	–
			5	22	31	55	–
			6	26	24	60	–
	1.17.% of children 0-23 months with	KPC baseline and final	1	6	1	36	–
			2	6	5	36	–

Objective/ Result	Indicators	Data Source	HZ	BL	Final	Target	Visual Results[4]
	high fever in the last 2 weeks report receiving appropriate anti-malarial Rx.	evaluations	3	0	1	35	–
			4	0	8	35	–
			5	0	2	35	–
			6	2	15	35	–
	1.18.% of mothers who can correctly prepare ORS	KPC baseline and final evaluations	1	8	14	38	–
			2	8	10	38	–
			3	8	7	38	–
			4	9	4	27	–
			5	36	7	66	–
			6	21	9	51	–
SO2: Health of pregnant women is improved							
2.1: Pregnant women practice preventive measures	2.1.% of mothers with children 0-23 months who received 2 doses of fansidar during pregnancy with youngest child	KPC baseline and final evaluations	1	27	92	57	√
			2	27	84	57	√
			3	19	73	50	√
			4	21	7	70	–
			5	42	75	75	√
			6	27	79	60	√
	2.2.% of mothers with children 0-23 months who received at least two TT before the birth of their youngest child	KPC baseline and final evaluations	1	37	62	52	√
			2	37	67	52	√
			3	55	54	70	–
			4	50	42	65	–
			5	51	53	81	–
			6	22	63	43	√
SO3: Household access to quality health services is increased							
3.1:Health Center provide care using F-IMCI protocols	3.1.% of consultations in accordance with IMCI guidelines	Baseline/ FE and quarterly HFA/IMCI checklist	1	23	100	53	√
			2	23	100	53	√
			3	33	88	75	√
			4	17	76	50	√
			5	24	97	60	√
			6	21	100	60	√
	3.2.% of nurses providing counseling during sick child care	Baseline/ FE HFA and quarterly HFA	1	0	97	20	√
			2	0	80	20	√
			3	0	76	28	√
			4	0	53	36	√
			5	0	35	34	√
			6	0	84	28	√
	3.3. % of nurses counseling about Breast feeding	HFA/IMCI checklist	1	0	70	80	–
			2	0	58	80	–
			3	0	43	80	–
			4	0	36	80	–

Objective/ Result	Indicators	Data Source	HZ	BL	Final	Target	Visual Results[4]
			5	0	69	80	–
			6	0	80	80	√
	3.4. % Of health units reporting more than one stock out (>7 days) of ORS, cotrimoxazole, zinc[5], anti-malarial drugs	Baseline and FE HFA/Monitoring Reports quarterly	1	35	17 *	5	–
			2	35	67*	5	–
			3	35	0	5	√
			4	35	0	5	√
			5	35	0	5	√
			6	35	0	5	√

* All essential IMCI drug available except ORS

[5] The HFA did not inquire about availability of zinc in health centers.

Chapter Four: Discussion of the Results

Strategic Objective #1 - Health of children 0-23 months is improved

The first strategic objective relates to improving the health of children U2 by achieving three specific results: 1- mothers practice preventive measures; 2- mothers seek care promptly for a sick child; and 3-mothers manage sick children at home. These three results were measured by a total of eighteen (18) indicators as shown in Table 3.

The behaviors that are included under result #1 are: exclusive breastfeeding, vaccination, ITN use, and hand washing. The behaviors for result #2 include: the treatment of diarrhea with zinc and prompt care seeking in the presence of cough, difficult breathing and fever. The indicators for result #3 are associated with the use of ORS for diarrhea, cotrimoxazole for pneumonia and treatment for malaria as well as appropriate feeding of sick children.

For result #1, the behaviors that showed the most improvement included exclusive breastfeeding (18% to 78%[6]) and ITN use (2% to 69%). Vaccination coverage also appears to have increased but the results are confusing. Two indicators were used (completely vaccinated and vaccinated against measles) and should have had similar results; but they don't. Furthermore, these two indicators should have had similar *targets*, since they are two ways of measuring essentially the same thing, but the targets are much lower for 'completely vaccinated' than they are for measles vaccination. It also doesn't make sense that in Health Zone 4, apparently they have achieved 100% vaccination coverage, but only 3% of the children were vaccinated against measles.

The hand washing results should be disregarded because an error in administering that question was made during the interviews. It therefore does not reflect the progress of the project.

The final KPC results associated with mothers seeking care promptly for a sick child (result #2) are very disappointing, as are those for result # 3, management of a sick child. With the exception of treatment of diarrhea with zinc (which is actually a quality of care indicator) none of the indicators met their targets. As discussed earlier this could be more a reflection of a poorly executed KPC Survey or it could also reflect the fact that only 112 Community Health Workers continue to function and even these are not performing optimally.

Strategic Objective #2 - Health of pregnant women is improved

The second objective focused on behaviors of pregnant women and promoted only two behaviors – Intermittent Presumptive Treatment (IPT) for malaria and tetanus toxoid (TT) vaccination. For IPT, all but HZ 4 achieved or surpassed the target, and for TT half of the HZ achieved or surpassed the target.

Strategies for Strategic Objectives #1 and # 2

[6] In this chapter the percentages being presented will be the lowest among all the 6 health zones and the highest among all the health zones. For the specific results by health zone refer to Table 3.

The strategies used to achieve SO #1 and #2 were the same: the training of 4,348 community health workers (relais promotioneles) in C-IMCI, training 173 breastfeeding promoters, festivals and radio spots and the provision of ITNs and supplies and equipment to support the Expanded Program for Immunization.

The KCSP sought to promote behavior change, including demand for services and timely care seeking, by training one CHW for each 15 households in every community. According to the national C-IMCI protocol, the CHWs are supposed to visit each household once per month and according to the make-up of the household, promote the appropriate behaviors. Unfortunately after the training, when the CHWs realized that they would not be remunerated, about one-half to two–thirds of the 4,348 CHW became inactive. This also happened because another project operating in the area which remunerated CHWs for their EPI activities came to a close, which caused further discontent among the CHWs. This teaches us that it is important to harmonize approaches, such as CHW remuneration, between programs operating in the same communities. It's also important to have the community select the health promoters and not just the health center nurse – which was the case with the KCSP. And further to this, at least half of the CHW should have been female. Gender equity seems to have been less of an issue in the two semi urban health zones of Makota and Tschumbe, but in Kalenda, Kanda Kanda, Bena Dibele and Dialo Ndjeka health zones, there are hardly any female CHWs.

Poor supervision of the CHWs and lack of appreciation for their role in preventing illness, improving care seeking and home care of sick children may have also contributed to the high attrition rates of CHWs. Head nurses of the health center who selected and trained the CHWs, did not actually supervise them. Rather, the CHWs are supposed to come to the health center once per month and hand in their monthly Behavior Promotion Forms (Fiche du Relais pour le Pointage des Pratiques-cles dans les Manages – see Annex 16). A small percentage of CHW do this on a regular basis and when they do, many of the forms are incomplete or contain serious errors. Given the lack of esteem felt for the CHW by the head nurses and the condition in which most of the forms were kept, it is unlikely that they use the information on these forms for decision-making.

The CHW's Behavior Promotion Booklet, furnished by the project, contain 12-months worth of forms on which they are required to record the practice of 26 behaviors for each of 15 households each month. The form, which is written in French, is very daunting and it's not always clear how the CHW should measure the practice of the behavior. For example, regarding hand washing it is practically impossible to know if the mother actually washes her hands with soap or ashes before food preparation or before feeding her child. The evaluation team examined a number of these forms and consistently found errors; and when a health center head nurse (trainer of the CHW) was shown an error-riddled form he was unable to identify the mistakes. This suggests that the training and support of the Head Nurses was lacking and that the support for the CHWs is also weak.

In a future project, the work of the CHW should be simplified by reducing the number of key behaviors being promoted. A more participatory approach to CHW selection and better supervision would also make a major difference. It would also be beneficial for the project to introduce the idea of the CHW through a problem-solving approach (such as participatory rural

appraisal) so that the community members would identify the problem (unhealthy behaviors leading to poor child health) and the solution (trained CHW) and would therefore take responsibility for ensuring the continued performance of the CHW through some sort of community-supported remuneration mechanism. A good portion of the CHW should also be women.

The poor KPC results related to Results #2 and #3 are mostly like due to the high attrition rate among CHWs and the poor performance of those remaining. These two factors are in turn related to the issues discussed in the preceding paragraph.

The message about exclusive breastfeeding has been broadly disseminated and support to pregnant and nursing mothers is ensured by the presence of 173 breastfeeding promotion groups in the two districts who were trained by head nurses with support from the project. The breastfeeding support groups are not found in all communities, but rather in the larger villages. The breastfeeding promotion groups are made up of interested women who agree to make time each month to conduct health education sessions about exclusive breastfeeding and support the practice among new mothers. The final evaluation team interviewed 35 breastfeeding promotion groups and found them to be well active, dedicated and very knowledgeable about exclusive breastfeeding.

Achievement of the ITN-use indicator was facilitated by the project's provision of more than 20,000 Long-Acting Insecticide Treated Mosquito Nets (LAITN). This activity was significantly delayed however because a waiver from USAID/Washington was not granted and a modification to the budget had to made so that matching funds could be used to purchase the LAITINs. In the future, USAID should be more forth-coming regarding waivers in the case of LAITINs so such delays can be avoided.

Improvements in vaccination coverage are linked to improvements in the cold chain which the project supported with the provision of 8 refrigerators to the 2 districts and the organization of vaccination outreach activities to more isolated areas. The project also provided bicycles to 100 health centers which enabled staff to access vaccines at storage points for use during vaccination days.

The project also used radio spots and festivals to promote behavior change. Regarding the radio spots, the principle themes were on immunizations and malaria prevention, and spots were aired periodically on local radio stations. The air time was paid for by the project. No listening clubs were organized, nor was an estimate of listeners done. During the life of the project no one tried to assess the effectiveness of this behavior change mode. The final evaluation team asked 35 breastfeeding promoters about their listening practices, and found that while 25 out of 34 had not listened to the radio in the past 10 days, 28 had heard at least one health message on the radio ever. This suggests that women don't listen to the radio very often and therefore, the radio may not have been the most effective behavior change mechanism. When using the radio as communication mechanism it is not enough just to disseminate the message. Efforts need to be made before hand to assess listenership (including times of listening), to promoting listening (through clubs etc), and to assess the impact of the radio messages.

Health festivals were conducted four times per year in a different Health Areas in each HZ. They were organized by the CHWs and health center staff and usually consisted of songs and skits on a particular health topic. The festivals lasted from one hour to a couple of hours and several villages could be invited to attend. The project did not try to estimate the number of attendees. These types of festivals may be effective in increasing knowledge about a behavior among a very limited audience, but they are not a particularly effective in promoting behavior change.

The strategies used to achieve result # 3 – mothers manage sick children at home – which is measured by the administration of ORS in the case of diarrhea, ACT for malaria and cotrimoxazole for pneumonia and appropriate feeding during illness – included the training of CHWs and the creation of 56 Community Care Sites (CCS) where Integrated Community Case Management was practiced in villages with difficulties accessing the health center. CHW promoted prompt care seeking either at the health center or the CCS and at CCS treatment of diarrhea, malaria and pneumonia was available. Unfortunately the high attrition rate and poor performance of the CHWs prevented the project from achieving the targets that were set in the DIP. Also it's important to note that the MOH Behavior Change Forms which guide the CHW's work, has only one space dedicated to feeding a sick child. It would be easy for the CHW to over look this, especially since most children will not be sick on the day of the monthly visit. Even the presence of some CCS where treatment was available closer to home, did not make a difference in the overall picture.

Of the two target behaviors for pregnant women, five out of six of the health zones met or surpassed their targets for IPT, whereas half achieved the TT indicator. This suggests that attendance at antenatal consultations is high but that some circumstance prevented some pregnant women from getting the two doses of tetanus toxid. Combining our knowledge of the challenges facing the EPI related to children, it's quite possible that the lack of adequate cold chain (few health centers have a refrigerator) may have contributed to this result. With regard to the strategy for reaching pregnant women (SO #2), pregnant women were one of the target audiences for the CHW. Eight of the 23 behaviors on the Household Behavior Change Form focus on pregnant women. The project also helped to ensure the supply of anti-malarials by supplementing the stock in the two target districts.

Strategic Objective #3 – Household access to quality health services is increased

This SO is measured by 1 result – use of the IMCI protocol - and 4 indicators, all of which are linked to IMCI. The first two indicators (use of the IMCI protocol and nurses counseling a sick child) were achieved by all health zones. While only one HZ achieved its target for the third indicator – breastfeeding counseling provided by nurses – significant progress was made by all the other health zones. The fourth indicator, related to stock outs, also showed tremendous progress with no stock outs reported of essential drugs used in IMCI in four of the six health zones. It's important to note that the Health Facility Assessment questionnaire did not inquire about the presence of zinc and that is why there are no responses to two of the indicators related to the treatment of diarrhea. The final evaluation, however, found that 24/27 health centers visited had a supply of zinc at the time of the evaluation.

The project trained 212 health care providers in 100 health centers in the IMCI protocol and ensured monthly supervision of the trained nurses. Each month, joint supervision was carried out by project (BDOM) Technical Assistants and the MOH supervisors at the Central Health Zone Office. The project provided per diem to the MOH supervisors, a means of transport and fuel. The project also supplemented the supply of essential IMCI drugs which significantly reduced stock outs in the two districts.

In addition to this, access to health services was also increased by the creation of 56 Community Care Sites (CCS) in villages that have difficulties (due to distance or obstacles like rivers) accessing the health center. Particularly attentive and effective CHWs were trained by head nurses in integrated Community Case Management (iCCM) to treat mild cases of diarrhea, malaria and pneumonia and to refer more serious cases to the health center. The project equipped each CCS with guidance cards, reporting forms, Salter scales, and stop watching to time breathing. The project also ensured access (through the health centers) to drugs and supplies such as paracetamol, cotrimoxizole, artemisinin-based combination therapies (ACT), ORS and zinc. These drugs are sold to the patients and the supply replenished from the health center during monthly supervisory visits. These CHWs received monthly supervisory visits by the head nurse from the health center in his health area. The project ensured this by providing a bicycle (or two if there was a CCS) and a monetary incentive ($10/month) to each head nurse. An assessment of the CCS approach showed that about 10% of the total consultations in the five HZ where CCS were established (there are none in Makota which is an urban HZ) took place at CCS.

Role of key partners

The following table shows the roles of the various key partners on the project.

Table 4. Role of Key Partners

Partner	Role in the Project	Result of Collaboration
Medical Works of the Dioceses Office (BDOM - Bureau Diocésain des Œuvres Médicales)	Primary implementer of the project activities. Project funds were provided to the BDOM by CRS who hired staff to implement project activities (training and supervision, data collection) and oversaw project progress. The BDOM liaised with the MOH	This was not so much a partnership as a contractual relationship. Since CRS didn't have any project staff in the field until the last three quarters of the project, essentially CRS turned over project implementation authority to BDOM. In so doing, CRS relinquished much authority and control over the project and could not easily monitor the quality of implementation or progress toward the objectives.
Ministry of Health – Provincial, District, health zone and health center levels	The MOH sets policy and procedures in all health facilities (even BDOM facilities), hires health care providers and ensures access to the drugs, supplies and equipment needed to provide care to sick children and pregnant	The MOH was the partner of BDOM and through BDOM with CRS. MOH received funds from BDOM to implement activities such as training and supervision. The MOH received inputs from the project and these were channeled from CRS to BDOM to the

	women.	MOH. Because of this arrangement, CRS had a cordial but 'at arms-length' relationship with the MOH. The MOH saw the BDOM as the 'go between' between itself and CRS.

Overall Design Factors that Influenced Results

There are many design factors that influenced – usually negatively – the results of the KCSP.

From the outset the KCSP seems to have suffered from design flaws. This evidenced by the fact that the DIP had to be written three times over a period of two years before it was approved by the CSHGP. In light of this, one is compelled to question whether the project deserved to be funded in the first place and what caused USAID to fund it. It appears that the decision was not based on a clearly conceived project design.

The most critical of the design factors was the role of the BDOM, as described above, as the implementing agent for CRS. For 4 years of the project CRS had little authority over the project because BDOM staff – not CRS staff – was implementing the project and CRS had no means to adequately oversee project implementation. Quarterly visits to the field by the CRS project manager, whose role was not appreciated by BDOM, was seriously insufficient. The selection of BDOM was also questionable since this organ of the Catholic Church specialized in facility-based care and not community mobilization or behavior change at the community and household level. It is possibly due to this lack of expertise and experience that the Behavior change strategy – particularly the CHW component – did not function very well. It could also be seen as a conflict of interest that funds were allocated to BDOM which in turn allocated them to it's own health facilities.

Coupled with the BDOM issue above, was the decision not to have CRS staff in the field. Had CRS had senior staff in the field from the outset of the project; staff with expertise in community health and behavior change, it is possible that this influence would have had a positive impact on the project.

The other questionable design feature was in the selection of the geographic intervention area. The two districts, Mwene-Ditu and Sankuru, are not contiguous; in fact they are a 2.5 days drive apart, or two expensive plane rides. This made collaboration between and oversight of the sites extremely difficult and costly. These two areas were chosen because they were formed when new health zones were formed which were not covered under the USAID-mission funded Primary Health Care Project which was also being implemented by CRS. It would have been more logical for CRS to cover these two districts under two different funding mechanisms.

The project did not anticipate the need to 'motivate' the CHWs (the foundation of the behavior change strategy) or to involve the community in solving this problem. Extremely high attrition

rates (only 112 of 312 trained were still functioning at the end of the project) among CHWs resulted from this oversight and seriously weakened the BCC strategy.

Chapter Five: Expanded Impact Grantees – Contribution to Scale up

By reading the documentation of the Kasai Child Survival Project, it appears that CRS did not fully understand the concept of the Expanded Impact Project category. The DIP proposes to 'expand' PHC activities into six daughter health zones that were created when larger health zones were split. These new health zones were not covered under CRS' Kasai PHC project. While the EIP category does expect the grantee to work in a larger-than-usual geographical area, this is to allow it to have a greater visibility at the national level, not just reach a larger population. According to USAID/ Kinshasa, and the project documents, the project helped to promote the use of IMCI by training of 8 IMCI trainers at the Provincial Level who then trained other health care providers from other districts in the province and from nearby provinces in IMCI. This is the only activity that promoted scale-up as anticipated in the EIP guidance.

The use of Community Care Sites (CCS) might have been considered a scale-up trial except that other organizations were already trying out this approach in the DRC, and very little was done by CRS to share the KCSP experiences with others and learn from them. It is true that CRS presented their experiences with CCS at a conference in Madagascar in 2008 and that CCS was identified as a best practice for the DRC, but other than this, nothing was done to help scale-up the approach in other areas of the country.

Chapter Six: Sustainability, Contribution to Scale, Equity, Community Health Worker Models, and Global Learning

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1. Sustainability

In the KCSP Detailed Implementation Plan there is a section on sustainability and it is clear from that that the DIP authors spent quite a lot of time discussing sustainability. The group developed a sustainability vision statement and made a list of activities according to the six categories: health outcomes, health services, organizational capacity, organization viability, community capacity and social-ecological environment contained in the Child Survival Sustainability Assessment. The problem with the vision statement and the list of activities is that they describe what the project will do during the project (training in IMCI and C-IMCI, creation of BF promotion groups, provision of various inputs etc.) to achieve the objectives, but NOT what will be done to ensure that the benefits of the project continue after the project ends. The sustainability indicators also relate more to achievements during the project than the capacity to maintain activities or benefits or services etc.

Table 5. Sustainability Indicators

- 50% of villages implementing IMCI preventive activities
- 50% of community care sites functioning
- 60% of breastfeeding support groups functioning
- 60% of health units implementing F-IMCI to assess sick child
- 70% of health units implementing community outreach for vaccinations
- 60% of health units receiving supportive supervision

For example, if the community care sites were functioning *without support from the project*, then that would be a sustainability indicator; and if the health center nurses were able to continue to follow the IMCI protocol even when the project did not supply the drugs and ensure monthly supervision, that would be a sustainability achievement.

During the final evaluation, the team discussed what would be continued after support from the project ended and the team agreed that very little will continue. This concern was reiterated during discussions with the Health Zone Central Office staff of Kanda Kanda Health Zone who were concerned about who would replace the refrigerator parts (meshes) when they were finished.

Although it doesn't show up in the DIP sustainability plan, per se, there was a plan to help sustain access to drugs at the health centers. This plan consisted of selling drugs and LLINs donated by CRS and using the proceeds to purchase additional drugs for the health center. This has been done, but because the drugs are sold at a price lower than actual replacement cost, each time a purchase is made, the quantity is less. While this approach did make drugs available during the life of the project, it is not a viable sustainability plan.

2. Contribution to replication or scale up
See Chapter Five

3. Equity

The design of this project was geared toward providing equal access to health services to newly formed health zones that were not covered under the Kasai Primary Health Care project. That is how two non-contiguous districts that are very far apart were selected. In this regard the project was quite successful since all of the districts and health zones received assistance.

Gender equity was not really a focus of the project and as a result outside of the urban health zones of Makota and Tshumbe there are very few female CHWs or CCS providers. The reason given is the need for these people to be literate in order to fill out the forms and reports. Unfortunately this seems more like an excuse, since all of the breastfeeding promotion groups are women and they also prepare and submit monthly reports. It was surprising to find that none of the 'project staff' (referring to CRS and BDOM staff working directly on the project) were women. This is a very rare occurrence these days, and might reflect a preference in favor of men of the project partners.

4. Role of Community Health Workers

See the discussion on CHW in Chapter Four and the CHW Matrix in Annex 7.

5. Contribution to Global Learning

One of the important lessons learned from this project is the importance of maintaining some control over the project even as one partners with other organizations and seeks to strengthen their capacity to manage a project on their own. The CSHGP grantee should always have staff on the ground, in the project area, and a means to closely monitor and oversee the quality of project implementation.

Chapter Seven: Conclusions and Recommendations

PROJECT ACHIEVEMENTS

1. Scale up – The project contributed to the scale up of IMCI in the country and the Kasai Oriental Province by training 8 trainers in IMCI. These trainers are based in Kasai Occidentale Province and Sankuru and Mwene-Ditu districts targeted by the project and they have trained providers from other districts in the province and from other provinces.
2. Reduced exposure to malaria due to increased (2% - 69%[7]) used of ITNs by children U2. This practice was facilitated by the distribution of 20,000+ ITN in both target districts.
3. Increased (18% - 78%) practice of exclusive breastfeeding of infants 0-6 months in all six health zones due to improved access to information about and support for exclusive breastfeeding through the formation of 173 knowledgeable and dynamic village-based breastfeeding support groups. This practice was also promoted by 212 providers trained in IMCI, 24 providers trained in Exclusive Breastfeeding; and 259 health care providers and 4,348 Community Health Workers trained in C-IMCI.
4. Reduced exposure to malaria due to increased (19% - 92%) Intermittent Presumptive Treatment (IPT) among pregnant women.
5. Improved quality of care for children U5 through the practice of IMCI at 100 health centers in 6 Health Zones in Sankuru and Mwene-Ditu Districts. IMCI practice was supported by regular supervision of the health centers by the Central Health Zone Office (CHZO) and the provision of essential medicines and equipment to the 100 health Centers in 6 health zones.
6. Improved quality of care in 14 private facilities in Makota Health Zone through the inclusion of these providers in IMCI training and provision of essential drugs and equipment;
7. Increased access to health care services through the creation and support of 56 Community Care sites where integrated Community Case Management (iCCM) is practiced;
8. Increased access to information about healthy behaviors through the training and support of 4,348 community Health Workers.

RECOMMENDATIONS

Project Funding (for CSHGP)

- Only proposals that are well conceived, clearly written and respond to the requirements of the grant category (EIP, in this case) should be funded. Projects should be funded on their technical merit – not for other reasons.

Project Management (CRS)

- CRS should design projects where they maintain a substantial level of control over the project. They should have staff in the field in decision-making positions. Rather than

[7] These figures represent the results from all six health zones (HZ). The first figure is the lowest among the 6 HZ and the second figure is the highest among all six HZ. For comparison of baseline and final results by HZ see Table 3.

contracting an implementing agency, they should partner with the BDOM and the MOH as equal partners.

CHW Issues

- Projects which plan to train CHWs should work closely with the villages they will serve to ensure that the CHWs address a 'felt need' of the community. The means to remunerate that CHW should then be the concern of the village, NOT the outside organization. The issue about remuneration should be settled BEFORE the CHW is trained.
- Two programs operating in the same geographical area should harmonize their approaches (means of remuneration, for example) so they do not damage each other's programs by creating unrealistic expectations.
- Programs should try hard to recruit equal numbers of men and women as CHWs and CCS providers. Training approaches and reporting requirements should be developed with the education levels (literacy levels) of the participants in mind. Recruitment should not be based only on literacy skills.
- In a future project, the importance of the role of the CHW should be emphasized more heavily among the health center nurses. A stronger supervisory system should be developed so that CHW feel that their work is appreciated.
- The number of behaviors promoted by CHWs needs to be reduced. Twenty-three is too many.

LAITN /Waivers (CSHGP)

- USAID should be willing and able to provide a waiver to CSHGP grantees to facilitate the provision of LAITN. If this is out of the question or highly unlikely, it should be made known in the RFA

BCC - Radio

- When using the radio as communication mechanism it is not enough just to disseminate the message. The KPC should be used to assess listenership (including who listens and when) and then means to encourage listening (through clubs etc) and to assess the impact of the radio messages should be included in the BCC plan.

CATHOLIC RELIEF SERVICES

Innovations in Health Care

Empowering communities to care for sick children in the DR of Congo

The problem

In the Democratic Republic of the Congo (DRC), the catchment area of a government health facility is established on the basis of population size. Though the goal is to serve 10,000 inhabitants per facility, many areas of the DRC have low population densities and as a result, health centers must cover very large areas. One health zone, Bena Dibele, covers 27,500 square kilometers but has only three inhabitants per square kilometer. Due to the poor quality of roads, limited transportation and insufficient resources to pay for public transportation, most people -- especially pregnant women and children -- are unable to access health services. According to a 2007 study by the Congolese Ministry of Health and Macro International, almost 40% of mothers aged 15 to 49 in the province of Eastern Kasai claim they are unable to access health services because the nearest center is too far away.

A joint project between CRS, Caritas and the Congolese Ministry of Health is active in six health zones in two of the DRC's least accessible districts, yet many centers treat as few as 20 children per month. This means not all children are benefiting from the trained staff, equipment and supplies that the project -- the Kasai Child Survival Project (CSP) -- is making available.

An innovative solution

Recognizing the barrier that distance was presenting to prompt care-seeking for sick children, the CSP decided to use an innovative new approach to bring the most essential curative services closer to the most remote communities. The goal was to empower local communities to be involved in ensuring that sick children gained access to life-saving health care. To do so, the project trained health facility staff as trainers in integrated Community Case Management (iCCM). The trainers in turn trained two selected village health agents from each site to manage cases of diarrhea, pneumonia and malaria. In five of six health zones served by the project, a significant percent of the population lives further than 5km from the nearest health facility. In these zones, the project team worked with local stakeholders including and members of affected communities to implement the iCCM approach at 56 Community Care Sites (CCS) where children are receiving quality curative integrated management of childhood illness (IMCI) closer to home.

A woman displays her healthy twin babies born at a hospital supported by the CRS Child Survival Project in Nyanza province. Photo: Elena McEwan

Happy mothers in line to receive vaccinations for their children. Photo: Elena McEwan

After the village health agents were trained, the project equipped the community care sites with basic equipment such as guidance cards, reporting forms, salter scales and stopwatches to time breathing. A supply chain was also developed to provide the sites with supplies such as paracetamol, cotrimoxizole, Artemisinin-based combination therapies (ACTs) against malaria, oral rehydration salts (ORS), and zinc. Once active, the new care sites received regular supportive supervision from the health facility staff, the health zone leadership team and the project team.

Scale and impact

At the beginning of the project, the idea of empowering communities to assess, diagnose and treat sick children was in its infancy in the DRC. Out of the 525 health zones in the country, only 80 -- or 15% -- had implemented community care case management at both the community and facility levels. In contrast, with the help of CRS and Caritas, 100% of the project-supported health zones reviewed their need for iCCM and all of the zones with populations further than 5km from the nearest facility -- or five out six health zones -- established iCCM community care sites.

As of 2009, 130 volunteers at 56 sites were actively providing care for sick children. A total of 2,235 consultations were made at these sites up to September 2009, reaching roughly 5% of the children in the project area. In comparison, 21,211 consultations were provided in facilities, meaning that community care sites account for over 10% of all sick children receiving iCCM services through the project.

In August 2008, an annual review meeting of the Community Care Sites strategy took place in Madagascar with the participation of Ministry of Health officials from 22 countries and the World Health Organization, USAID and UNICEF. In this meeting the iCCM activities implemented by the CSP were highlighted as best practices from the DRC. Discussions were also focused on the integration of malaria, pneumonia and diarrhea indicators to be used for the monitoring and evaluation of the community care site information within the national health information system.

Families outside a local health center in Tshiamvi, Eastern Kasai. Photo: Elena McEwan

The iCCM approach is part of a comprehensive Child Survival Project which will also include community engagement in Behavior Change Communication activities to promote exclusive breastfeeding, malaria and diarrhea prevention, support for Expanded Program of Immunization, and health system strengthening by improving the quality of care for sick children.

Looking ahead

The success of community case management has shown that accessibility is a major barrier to care-seeking. CRS and its partners are making renewed efforts to fully implement this component of the Child Survival Project. Some sites throughout the project area continue to run out of key medications, so the project will focus on supply chain issues during its final year of implementation.

Sustainability is another main concern in the DRC, where the government health system remains unable to finance even the basic functioning of health centers. To ensure sustainability, CRS has increased the technical and project management capacity at the field level. During the project's final year, CRS field staff will work increasingly closely with Caritas leaders to help transition capacity.

Annex 1: Results Highlight (CRS)
Annex 2: List of Publications and Presentations Related to the Project (CRS): No related publications

Annex 3: Project Management Evaluation

Planning

- The project planning process

Project planning was very inclusive, particularly during the DIP workshop held in March 2006, when all KCSP stakeholders participated in the process. Stakeholders included MOH directors of national programs of diarrhea control, Expanded program of immunization and the IMCI national coordinator; the WHO and UNICEF/DRC heads of IMCI, district representatives, medical chief supervisors of the six health zones, directors of Tshumbe and Muene-Ditu BDOM and CRS staff members. The DIP workshop was very interesting experience to the majority of participants as it was a new project management technique.

This planning process had a very positive effect on project implementation. It encouraged the District, the Health Zone and BDOM staff to acknowledge how important the DIP is and to use it as a reference (since it was translated into French for everyone) throughout the project.

- To what extent was the DIP work plan practical? What could be added to the DIP preparation and review process that would have strengthened implementation?

The DIP work plan was very practical. The strategies and activities are very detailed and the responsibilities of each stakeholder are very clearly defined.

One important thing that could be added to the DIP preparation is the inclusion of community organizations and/or facility staff during the preparation phase. Although community organizations members were included in the review processes this was not very effective because most of communities' influential members were not informed about the project at the beginning.

Supervision of Project Staff

- Was the supervisory system adequate?

During the first 4 years of the project CRS did not have any project staff based outside of Kinshasa. The CRS Project Manager was based in the capital and made quarterly visits to the field lasting from 5 – 10 days. This level of supervision of the project by CRS was not sufficient and the mid term evaluation recommended that CRS place its own staff in the field. For various reasons this did not happen until April 2010 when one person was placed in each of the two districts. At that point in the project and with the BDOM Director confident in his role, it is not clear what the role of the Field Project Manager was. The Catholic Church in the DRC is a strong force and since responsibility for

managing the project was delegated to the BDOM, it became a delicate task for CRS staff to oversee project implementation.

BDOM was the de facto project implementer and the BDOM directors (one in each of the two districts) managed the project through the actions of the three (one in each district) Technical Assistants (TA). The supervisory plan consisted of monthly field visits to different health zones and health areas to follow up on the supervisory visits conducted each month by the Technical Assistants and the review of monthly supervisory reports the TAs wrote. The final evaluation team didn't have time to check on the implementation of this supervision protocol but it seemed evident from discussion with the TAs and visits to the health centers, that if supervision was regular, the content was lacking. TAs were not as well informed about the project as they should have been and this had to have had an impact on the quality of their work – particularly the community-based activities.

With regard to supervision by the MOH, the project provided support to the MOH provincial, district and health zones to develop their capacity to supervise staff. The BDOM TAs and Health Zone Central Office staff conducted joint supervisory visits each month to each health center in the HZ. The CHWs and iCCM agents were supervised by the Health Center nurse. In collaboration with the Provincial Health Department, the project provided supervision guidelines/checklists to the Health Zone staff.

The evaluation team checked on the regularity of the supervisory visits to the health center and CHWs and iCCM. Monthly visits by the TAs were regular and written feedback was recorded in the supervision notebook kept by the Head Nurse. This supervision, however, does not appear to have been consistently well done (information missing from reports) nor was it evident that changes were made based on the supervisory visit. The checklist provided by the project does not include any meaningful information about the work of the CHWs, which could easily be a source of demotivation for them.

With regard to supervision of CHWs, the head nurse did not visit them in the field each month. Rather the CHWs were supposed to come to the health center each month and drop off their Household Behavior Change Form for that month. A check of this showed that only a few CHWs do this. Head nurses are supposed to schedule visits to CHWs in their villages when they make their supervision plan and they receive an incentive for this, since it represents work that they would not ordinarily be required to do.

- Is the supervisory system fully institutionalized and can it be maintained?

Because the project subsidized the supervisory visits, arranging for transport and per diem, it is unlikely that the MOH will be able or motivated to continue the monthly supervisory visits to the health center or that the head nurse at the health center will continue to supervise the community-based activities in the same manner as during the project. While some contact may continue, the evaluation team concluded that the quality would diminish.

Human Resources and Staff Management

- Are essential personnel policies and procedures of the grantee and partner organizations in place, to continue project operations that are intended to be sustainable?

CRS has adequate personnel policies in place but since most of the project staff are employees of BDOM, CRS's policies are of little consequence. The evaluation team did not look into the personnel policies of the BDOM.

- Describe the morale, cohesion and working relationships of project personnel and how this affected project implementation.

The morale and working relations between the BDOM director (Mwene-Ditu) and this TAs appeared to be quite good whereas there was a bit of a competitivenesses between the three TAs. This may be the result of each TA in the Mwene-Ditu district being assigned to a specific health zone. In the Sankuru District this competitiveness and sense of 'owership' of a HZ was avoided by rotating the TA to different HZ on a regular basis.

- Describe the level of staff turnover throughout the life of the project, and the impact it has had on project implementation.

The project experienced significant personnel turn over. During the life of the project staff turnover affected all level of project management and technical staff from CRS heads through health zones staff and community members involved. Changes in staffing occurred as follows:

- Twice at the Country Representative position
- Five times at the Health Coordinator position
- Three times at the Project Manager position
- Once at M&E officer and Data manager positions
- Many trained health zones staff and community members

This turnover impacted negatively on project planning and monitoring/supervision processes in terms of effectiveness and consistency. A lot of time was spent by new staff to learn about the project before starting any assigned implementation activities or tasks.

One aspect that was quite unusual and note-worthy is that none of the health center staff trained in IMCI was reassigned to posts outside the project area. As a result, no retraining in IMCI was required.

- Have plans been developed to facilitate staff transition to other paying jobs at the end of the project?

The BDOM director in Mwene-Ditu indicated that all three of the TAs currently working on the KCSP will continue to work on other projects when the KCSP ends.

Financial Management [to be completed with the field staff and lead evaluator]
In this section only address broad areas of financial management, such as was there timely transfer of funds to field activities or were there enough funds to cover key activities. The following are points that can be considered.

- Adequacy of the grantee's and partner's financial management and accountability for project finances and budgeting.

The CRS financial system is computerized and has strong procedural documentation. The BDOM staff involved in financial management was trained to use the CRS system. A budget amendment was needed to address the difficulty of obtaining permission to purchase drugs (LAITN) with US government funds.

- Are adequate resources in place to finance operations and activities that are intended to be sustained beyond this cooperative agreement?

No because the cost recovery system put in place with the support of the project and follow guidance provided by the MOH only partially covers the cost of drugs.

- Was there sufficient outside technical assistance available to assist the grantee and its partners to develop financial plans for sustainability?

No outside technical assistance was provided to develop financial plans for sustainability. Given the socio economic situation in the country, the majority of sustainability plans were not very effective.

Logistics

- What impact has logistics (procurement and distribution of equipment, supplies, vehicles, etc.) had on the implementation of the project?

Procurement of LAITNs was delayed while waiting for a waiver to be granted by USAID. When it became clear that the waiver was not going to come through, CRS amended its budget so it could use matching funds to purchase the LAITNs. Due to the MOH's inability to ensure the provision of basic drugs necessary to follow the IMCI protocol CRS agreed to donate these as part of its match. The project also provided a large number of other commodities necessary for the project to function. Unfortunately when the project ends and these commodities and other support are not available, many of the activities – such as supervision, IMCI service provision, vaccinations – will be curtailed.

- Is the logistics system sufficiently strong to support operations and activities that are intended to be sustained?

Unfortunately, once support from the project ends, many of the systems put into place by the project will have a great deal of difficulty continuing. For example, the refrigerators will remain, but the fuel to run them will run out and the government can not furnish this. Nor can the MOH replace the spare parts. This will impact the EPI program. Eventually access to drugs will also become difficult like it was when the project started and there will be more and more stock outs. Likewise, supervisory visits to health centers and by health centers to CHWs will also dwindle and the quality will suffer.

Information Management

- How effective was the system to measure progress towards project objectives?

The project had two monitoring tools that measured progress toward some objectives. One was the Household Behavior Change Form completed by the CHW (shown in Annex 15), and the other was the monthly supervision checklist administered by the TAs (shown in Annex 16). Neither of these systems was very effective because the Head Nurses (in the case of the CHWs) didn't take the time to support the CHWs and help them learn to complete the form correctly (plus it was too complicated to begin with). The Head Nurses did not appreciate the work of the CHW (particularly compared to the work of the CCS providers) and did not analyze the data on the form or use it to make decisions. High attrition rates also affected the utility of these forms.

Although the monthly supervision forms developed by the project are quite good and it appears that monthly visits were consistent, the data on the form reviewed for the evaluation was incomplete. For example, none of the completed forms examined as part of the evaluation had the U2 population filled, in even though this is the target audience of the project. The way the information is presented made it difficult to understand the situation and make decisions. For example, there is a question about the number of pregnant women who received IPT (which is an indicator). However, without knowing how many should have received the treatment, this number is meaningless.

- Was there a systematic way of collecting, reporting and using data at all project levels? Cite examples of how project data was used to make management or technical decisions.

Every level of personnel in the project reports on his/her activities/achievements and submits their reports to their supervisor usually on a monthly basis. While the evaluation team didn't ask for examples of decisions made based on these reports, as is common, the data was not used to its greatest advantage as discussed previously.

- Is the project staff sufficiently skilled to continue collecting project data/information and to use it for project revisions or strengthening?

Project staff is sufficiently skilled to continue collecting data and other project information using all the tools provided by the project but it is clear that staff at different level doesn't show much capacity and/or motivation for data/information analysis, except in few cases where information didn't require more analytical attention.

- Did the project conduct or use special assessments, mini survey focus groups, etc. to solve problems or test new approaches? Give examples of the research, use of data, and outcomes.

No.

- Do the project staff, headquarters staff, local level partners, and the community have a clear understanding of what the project has achieved?

The project staff (BDOM) and local partners (MOH) are well aware of the assistance that the project provided and how much better functioning the health services are in the target districts than they were before. Through the supervisory visit MOH and BDOM staff are better aware of the function of the health centers, presence of drugs and supplies and performance of the nurses. This said, when the final results of the KPC survey were share there was a degree of shock and disbelief and the TAs, who are the closest to the work, were not able to explain the results.

Technical and Administrative Support

- Discuss types and sources, timeliness, and utility of external technical assistance the project has received to date.

Outside technical assistance was provided to lead the mid term evaluation and the final evaluation. For the MTE a local consultant (Congolese) was hired. Unfortunately this person had never conducted a CS evaluation before and was not familiar with the requisites of CSHGP, including the meaning of an EIP. As a result the MTE was not as valuable to the project as it could have been. In the future, CRS should engage consultants with the appropriate experience to conduct project evaluations.

- What assistance did the project need that was not available? How could grantee headquarters and/or USAID better plan for the technical assistance needs of grantee projects?

No one from CRS/HQ participated in either the mid term or final evaluations. In future projects the technical backstop person should participate in these important events. Also it would be beneficial to the project to have a backstop official who speaks French.

- Discuss grantee headquarters and regional technical and managerial support of the field project. Approximately how much time has been devoted to supporting this project?

The CS technical Advisor at CRS/ HQ visited the project once per year to provide assistance to the project and dedicated about 25% of her time on the project. In between visits support was provided by email. CRS Regional staff provided technical and managerial support. The DRD / PQ helped to set up the M&E system. Budget amendment and approvals were also handled by the same department.

5. Management Lessons Learned

- When authority for project implementation is delegated to another organization (BDOM) the grantee looses significant control over the project, even if the rapport between the two agencies is good. Project design should ensure control over project implementation by the grantee.

- Excessive staff turn-over, especially among project management, usually has a detrimental effect on the project. All efforts should be made to retain project staff, including offering competitive salaries and benefits.

- Supervision systems should ensure that the grantee maintains a first-hand understanding of what it happening in the field. Grantee supervision of the implementing partner needs to be conducted at the very least bi-monthly (every other month).

- Project design should take into consideration the funding level of the project. The high costs of travel to the two districts, not only because they were far from Kinshasa, but because they were distant from each other, increased project implementation cost immensely.

- CRS/HQ missed opportunities to learn about the project and provide useful input by not participating in the mid-term and final evaluations. In the future the back stop officer should participate in both evaluations. A backstop officer who

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Annex 4: Work Plan Table

Activity	Status	Comments
Purchase of materials/vehicles	Complete	
Develop project training plan for LOP	Complete	
RED workshop (HC, HZ)	Complete	
EPI monthly monitoring meeting(HZ and HC)	Complete	
Organize Outreach immunization sessions with RED strategy	Complete	
Provide supplies and equipment for health facilities	Complete	
Implementation of community activities (CHCS, HH visits, sensitization, LLINs distribution)	Complete	
Design/review/implementation of supervision and monitoring activities	Complete	
Monthly VHA supervision by nurses	Complete	These visits were done to iCCM Relays only; the VHA submitted monthly reports to the nurse each month.
Home visits by VHAs	Complete	VHA didn't visit homes on a systematic basis and the reduce number reduced the coverage
Community festivals	Complete	Limited effectiveness
Radio messages	Complete	Limited effectiveness
Monthly CCS supervision by nurses	Complete	
COGE/CODESA meetings	Complete	COGE/CODESA members have limited management role in the health center
Health post and community health providers supervision	Complete	Supervision of the ICCM relays was much more effective than supervision of the VHA
Annual activity performance assessment	Not sure	
Quarterly activity reports	Not sure	
Final HFA	complete	
Final KPC	complete	With some difficulties and questions about quality of data
Final evaluation	complete	

Annex 5: Rapid CATCH Table (CRS)
Please refer to the Data Form
Annex 6: Final KPC Report (CRS),
Please refer to the KPC report
Annex 7: CHW Training Matrix

Project Area (District)	Type of CHW	Official Gov or Grantee cdre	Paid or Volunteer	Number Trained Life of Project	Focus of Training
Sankuru	Promotional Relay	grantee	Vol	2,364 (1268)	CIMCI
Mwene-Ditu	Promotional Relay	grantee	Vol	3,180 (2080)	CIMCI
Sankuru	iCCM	grantee	Vol	60	Diarrhea, malaria and pneumonia treatment
Mwene-Ditu	iCCM	grantee	Vol	96	Diarrhea, malaria and pneumonia treatment
Sankuru	Breastfeeding promoters	grantee	Vol	89 (75)	Exclusive BF
Mwene Ditu	Breastfeeding promoters	grantee	Vol	523 (184)	Exclusive BF
Sankuru	CODESA (Community Committee for Development and Health)	grantee	Vol	252 (41 committees) 410 members	Health facility management
Mwene-Ditu	CODESA (Community Committee for Development and Health)	grantee	Vol	17 (59 committees) 413 members	Health facility management

Annex 8: Evaluation Team Members and their Titles

	Nom	Provenance	Fonction
	Bonnie Kittle		Indep. Consult
	Dr. Denis Mas	CRS/Kinshasa	Prog. Officer
1	Dr Bob Kitu	CRS/Kinshasa	Pro. Manager
2	Richard Muzang	BDOM/M Ditu	Assistant Tech.
3	Daniel Omambo	CRS/Lodja	Assistant Tech
4	Patrick Komba	DS/Muene Ditu	Chef 2è Cell,
5	Auguy Lubuyi	BDOM/M Ditu	Assistant Tech
6	Dr Serge Masuku	CRS /Kinshasa	PM
7	Laurent Ahoka	DS	IS
8	Dr Jean bosco Mutombo	BDOM/M Ditu	Director
9	Dr John Ntumba	CRS/M Ditu	Field Proj Manager
10	Clovis Tshibangu	BDOM/M Ditu	Assistant Tech
11	Dr Pius	BDOM/Tshumbe	Director
12	Anaclet	BDOM/M Ditu	Logistician

Annex 9: Evaluation Assessment methodology

The final evaluation was implemented in three phases: document review (1 day), in-country data collection (13 days) and report writing (7 days). It is important to note that the field work of the evaluation only took place in Mwene-Ditu district because travel to Sankuru using the airlines available was not permitted by CRS.

The in-country portion of the work was divided into the team planning meeting (3 days) during which time we discussed the project in detail, identified the key informants, developed and reproduced the questionnaires, and determined the sites to be visited and who would interview whom. The large team was divided into 3 health zones teams with 4-5 people per team. Each sub team was assigned specific health centers and communities to visit following a set of criteria. Each of the 6 teams visited approximately 9 communities, 1 Central Health Zone Office, Health Center Staff, and Community Care Site (Relais SdS) providers, and CHW (Relay Promotionalle) as shown in the following table.

Numbers /Types of People Interviewed

Types of People	Kanda Kanda	Makota	Kalenda	Totals
BCZS	1	1	1	3
Nurse Titulaire	9	9	9	27
CODESA	9	9	9	27
Relais Promotionel	16	19	14	49
Relais SdS	7	0	5	12
BF Support Grp	9	13	13	35
Individual BFSG	18	22	22	62
	68	73	73	215

Following the 3 days in the field, the evaluation team tabulated the results and discussed findings, conclusions and recommendations.

On the last day, a presentation of the preliminary results was conducted for CRS/Kinshasa staff .

The report was drafted between September 22 – 29 and the final report was submitted to CRS on Oct. 25, 2010.

Annex 10: List of persons interviewed and contacted during Final Evaluation

See list of Evaluation Team members (annex 8) and the table below.

Types of People	Kanda Kanda	Makota	Kalenda	Totals
BCZS	1	1	1	3
Nurse Titulaire	9	9	9	27
CODESA	9	9	9	27
Relais Promotionel	16	19	14	49
Relais SdS	7	0	5	12
BF Support Grp	9	13	13	35
Individual BFSG	18	22	22	62
	68	73	73	215

Annex 11: Special reports (optional) (CRS)
Annex 12: Project Data Form (CRS)
Annex 13: Grantee Response to and Plans to Address Final Evaluation Findings (CRS)

Annex 15. Monthly Supervisory Form (completed by TA)

I. INFORMATIONS GENERALES

Nom de l'Aire de santé / ZS	
Population de l'AIRE	
Cible de 0-11 mois	
Cible de 0-23 mois	
Cible de 0-59 mois	
Nombre des villages	
Nombre des 'relais des sites des soins communautaires	
Nombre de sites de soins communautaires opérationnels dans l'aire de santé	
Nom du superviseur	
Nom du supervisé	
Date de supervision	

II. SUIVI PROPREMENT DIT

N	TACHES	OUI	NON	COMMENTAIRES
	ITNTERVIEW DE L'IT			
1	Population cible de 0-23 mois connue			
2	Population cible PEV connue			
3	Existence de la cartographie de l'Aire de santé			
4	Existence d'un comite de santé opérationnel			
5	A quand remonte la dernière réunion du Comite de Santé ?			
6	PV de la dernière réunion est il accessible			
7	Ya t-il combien des relais communautaires formés en PCIME communautaire			
8	Infirmier consultant est il formé en PCIME clinique			
9	Existe-il un cahier des présences a jour du personnel du centre de santé			
10	Le Rapport mensuel SNIS du CS est il à jour			
11	Le Rapport synthèse des relais communautaires de l'AS est il a jour			
12	Rapport relais des sites des soins communautaires est il a jour a jour			
13	Les visites de supervision des relais communautaires sont elles organisées par l'infirmier du CS (l' Rapport mensuel de supervision des relais communautaires			

	disponibles pour le mois passé)			
	Le copie de Feed back est il disponible au CS			
14	Existe il un cahier de supervision au CS ?			
15	Le CS organise t-il la vaccination en stratégie avancée dans l'AS			
16	Y –a- t- il combien des sites avancées de vaccination opérationnel dans l'AS ?			
17	Le rapport de la vaccination intégrée en avancée existe-t – il au CS ?			
18	Combien de femmes enceintes ont-elles reçu la SP lors des séances de vaccination en sites avancées ?			
19	Combien des enfants de moins de 24 mois ont-ils reçus une MII lors de la vaccination en sites avancées			
20	Combien des femmes enceintes ont-ils reçus une MII lors de la vaccination en sites avancées			
21a	Rupture de stock en SP> ou=7jour			
21b	Rupture de stock en ACT> ou=7 jours			
21c	Rupture de de stock en SRO>ou= 7 jours			
21d	Rupture de d stock en Bactrim >ou=7 jours			
21e	Rupture de de stock en zinc > ou= 7 jours			
22	Existe- t- il des groupes de soutien pour l'allaitement maternel ? Combien dans l'AS			
23	Combien de groupe y a-t-il dans l'AS			
24	Ces groupes bénéficient ils d'une supervision de l'infirmier Titulaire ?			
25	A quand remonte la dernière visite de supervision ?			
26	Les activités des ces groupes sont elles documentées ? Existe-t-il des rapports pour le mois passé			
27	A quand remonte les dernières manifestations culturelles de mobilisation sociale ?			
28	A quand remonte la dernière supervision de l'équipe cadre de la Zone de Santé au CS			

REVUE DOCUMENTAIRE CS

29	Combien d'enfants des 0-5 ans ont été soignés le mois passé		
30	Combien ont été vu pour la fièvre ?		
31	De ces enfants avec fièvre combien ont reçu un antipaludéen approprié ? (ACT)		
32	Combien ont été vu pour toux avec respiration		

	rapide ?			
33	De ces enfants avec pneumonie combien ont-ils reçu un antibiotique approprié (Bactrim ou amoxycilline)			
34	Combien ont été vu pour la diarrhée ?			
35	Combien des enfants avec diarrhée ont été traités avec le SRO a faible osmolarite et le Zinc ?			
36	combien d'enfant ont été referes par les relais des sites ?			
	OBSERVATION DES CAS DE CONSULTATION LORS DE LA VISITE			
37	Combien des cas ont été observées par le superviseur au moment de la visite ?			
38	Le diagnostic a -t-il été bien posé ?			
39	Le traitement est il approprié ?			
40	Les conseils en rapport avec l'alimentation, la vaccination et les signes de danger ont-ils été donnés aux mères ?			
41	La démarche PCIME clinique est elle correctement suivie ?			
	INTERVIEW POST CONSULTATION			
		Num	**Den**	
42	Combien des meres ayant reçu un antimalarien a donner a leurs enfants décrivent correctement comment administrer ?			
43	Combien des meres ayant reçu un antibiotique approprié a donner à leurs enfants décrivent correctement comment prendre le produit			
44	Combien des meres dont les enfants ont été mis sous SRO a faible osmolarite décrivent correctement comment préparer la solution ?			
45	Combien des meres dont les enfants ont été mis sous le Zinc a faible osmolarite décrivent correctement comment donner ce médicament à l'enfant présentant la diarrhée ?			
46	Combien des meres savent à quand revenir au CS			
47	Combien des meres souhaiteraient revenir encore au CS si un autre problème ?			
	REVUE DOCUMENTAIRE RELAIS DES SITES			
		Num	**Den**	
48	Combien des cas de fièvre reçus ?			
49	Combien traites correctement avec ACT			

50	Combien des cas de diarrhée reçus ?			
51	Combien des cas traités correctement avec SRO et ZINC			
52	Combien des cas de pneumonie reçus			
53	Combien des cas traités correctement avec le Bactrim			
54	Combien des cas ont été transfères au CS			
55	Le registre est il a jour			
56	Les médicaments sont gardes à un endroit sec et aéré ?			
57	La rupture de stock a il été constatée pour un medicament ?			
58	Quel médicament et depuis combien de temps			
59	La gestion des ressources est elle assurée par le Cogesite			

III. RECOMMANDATIONS

Annex 16. Household Behavior Change Form (completed by CHW)

FICHE DU RELAIS POUR LE POINTAGE DES PRATIQUES-CLES DANS LES MENAGES.

PROVINCE DE ..... MOIS: ..... ANNEE : .....
ZONE DE SANTE ..... AIRE DE SANTE DE : ..... Village/rue) .....

PRATIQUES-CLES /MENAGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
DENOMBREMENT																
Femmes enceintes																
Femmes allaitantes																
Enfants de 0-5 ans																
Naissances																
# de visites dans les ménages par le relais																
1. Ménage où la mère donne un traitement approprié à domicile à son enfant malade																
2 Ménage où la mère poursuit l'alimentation et augmente les liquides pdt la maladie de l'enfant																
3. Ménage où les Enfants en ordre avec leur calendrier vaccinal ou complètements vaccinés avant leur 1er anniversaire																
4. Ménage où la mère poursuit régulièrement les CPS pour son (ses) enfant (s) au-delà de 1 an.																
5. a) Ménage où Les enfants de moins de 5 ans dorment sous la MII																
b) Ménage où la femme enceinte dort sous MII																
6. a) Ménage où La mère pratique le lavage des mains avec du savon/cendre avant de préparer la nourriture et d'alimenter l'enfant																
b) Ménage où la latrine est présente et utilisée																
c) Ménage où l'évacuation des ordures est bien pratiquée																
7. a) Ménage où les mesures de prévention de VIH/ SIDA sont adoptés																
b) Ménages où le CDV/PTME est adopté																
8. Ménage où l'allaitement exclusif jusqu'à 6 mois est adopté																
9. a) Ménage où la mère allaite jusqu'à 24 mois et plus,																
b) Et où un repas complémentaire équilibré est donné à l'enfant à plus de 6 mois d'âge N																
10. Ménage où l'enfant(s) est (sont) en ordre avec la supplémentation en Vit A N																
11. Ménage où les signes de danger et d'alerte pour le recours au CS sont connus																
12. Ménage où la mère a observé les conseils de ttt de l'agent de santé pdt la maladie de l'enfant																
13. Ménage où il y a une FEMME ENCEINTE, et																
a) Elle fréquente régulièrement la CPN																
b) Elle reçoit régulièrement son VAT																
c) Elle reçoit régulièrement le fer																
d) Elle reçoit régulièrement son Traitement anti palu (TPI)																
e) Elle accouche (ou a accouché) dans un CS intégré ou auprès d'une accoucheuse traditionnelle formée.																
f) Après l'accouchement, la mère a reçu sa Vit A en supplémentation dans le délai de 8 semaines																
g) Après l'accouchement, la mère a reçu le fer folate en supplémentation																
14. Ménage où la femme enceinte/allaitante a bénéficié du soutien de sa famille et communauté																
15. Ménages où le mari participe activement aux soins des enfants et de la SR (grossesse et accouchement)...																

16. Nombre d'enfants malades visités :
17. Combien de visites d'enfants malades réalisées :
18. Nombre d'enfants malades référés au site de soins ou Centre de Santé :

Noms et Signature du Relais, Date :

EXECUTIVE SUMMARY

The general objective of the KPC Survey was to assess the knowledge, Practices and Coverage of child and maternal health in the 6 health zones of the intervention of the CS Project. The specific objectives of the 2010 KPC Final Evaluation survey are:

1. Determine the prevalence of malaria, Diarrhea, ARI et EPI diseases to children under 2 years
2. Observe the households base cleaning conditions
3. Determine and compare changes in the knowledge, practices and coverage in terms of child survival between 2006 (Baseline) and 2010 (end of project).

Nutritional Status of children

Nutritional status of children was assessed through the weight for age index which is a composite indicator (Anthropometry Index) for levels of malnutrition which is a reflection of wasting, stunting or both elements of malnutrition among children. Anthropometry indexes are: 18.9%, 17.23%, 19.4%, 29%, 16.4% and 14% in Health Zone 1, 2, 3, 4, 5 and 6 respectively. Declining indexes where realized in Health Zone 1, 2, 3 and 5, showing that children nutrition has improved between 2006 and 2010 in these health zones. However, Health Zone 4 registered an increase in the anthropometry index from 27% to 29% between the two survey years. The index remained the same in health zone 6.

Maternal and Newborn

There is a general improvement in the maternal and newborn indicators across health zones from 2006 to 2010. There were increases in the percentages of mothers who were assisted by nurse/midwife/Doctor during births of their youngest child in all the six health zones between 2006 and 2010. The percentage changes between 2006 and 2010 of mothers who were assisted by this category of skilled health personnel in the six health zones in 2006 and 2010 respectively are: 28% - 40.6%, 20% - 34%, 22 - 41%, 16.5% - 27%, 47% - 76% and 30% - 38% from Health Zone 1 – 6. The percentage trends of mothers who received at least two tetanus injection during pregnancy between 2006 and 2010 are: Health Zone 1: 37% - 62%, Health Zone 2: 32% - 67%, Health Zone 3: 1.4% - 54%, Health Zone 4: 50% - 42% (decline), Health Zone 5: 3% - 2.7% (decline) and Health Zone 6: 47.8% - 63.5%. Declines were experienced in health Zones 4 and 5 over the two years.

HIV/AIDS

There were increases in the percentage of mothers who could cite at least two known ways of reducing the risk of HIV infection from 2006 to 2010 increased in Health Zones 1, 2 and 5 and are: 33% - 71.6%, 47% - 63% and 47% - 73% for the 3 Health Zones respectively. There were decreases in the percentage of mothers who could cite at least two known ways of reducing the risk of HIV infection from 2006 to 2010 increased in Health Zones 3, 4 and 6 are: 56% - 40%, 41% - 25% and 42.7% – 33.6% for the 3 Health Zones respectively.

There is need to emphasize on all the elements of the ABC Strategy for preventing against HIV infection across all behavioral change communication media to improve on the percentages of mothers who are knowledgeable with at least two known ways of reducing the risk of HIV in all the six health zones.

Breastfeeding and Infant/Child nutrition

The were percent increases of mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth in 2006 and 2010 in Health Zone 1, 2, 3, 4 and 5 and these are: 83% - 51%, 55% – 78.49%, 20% - 61%, 28% - 51.6% and 40% - 62.5% respectively. Decline in the percent of mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth in 2006 and 2010 were experienced in Health Zone from 68% in 2006 to 64% in 2010. There percent of children 0 – 5 months who missed out on initial breast milk in the 2010 KPC final survey are: 27%, 21%, 39%, 48%, 37.5% and 36% for Health Zone 1 to Health Zone 6 respectively.

In general, there is a decline in the percent of children aged 6 – 9 months who receive breastfeeding and complimentary foods within the last 24 hours preceding the KPC surveys. Only Health Zone 3 experienced an increase in this indicator. The percentage trends between 2006 and 2010 are: 92% - 80%, 88.5% - 62.9%, 56% - 59% (increase), 70.42% - 41%, 70% - 67.5% and 83% - 51% for Health Zone 1 to Health Zone 6 respectively.

Initial breastmilk contains high concentrates of colostrum, which is contained in the first breastmilk after delivery, with the essential antibodies that protect babies from infection. Furthermore, breastmilk contains all nutrients needed by children in the first six months of life as a nutritional source and uncontaminated, and recommend for infants. There is need for health education to put more focus on the importance initial breastfeeding and of exclusive breastfeeding for children aged 0 - 5 months and the need to ensure children aged 6 – 9 months receive both breastmilk and complementary foods. There is need to strengthen health provides' counseling on child health and nutrition skills through update and refresher seminars to facilitate imparting of information to mothers.

Childhood illnesses (IMCI)

The percentage trends of mothers who knew at least two signs of childhood illness that indicate the need for treatment between 2006 and 2010 are: 64% - 80%, 70% - 79.9%, 65% -52% (decline), 77% - 49.5% (decline), 84% - 46% (decline) and 70.3% - 70.7% in Health Zone 1 - 6 respectively. However, there is still poor feeding practice by mothers with regard to giving fluids and food to children who are ill in all the six health zones. The percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks between 2006 and 2010 are: 4.5% - 1.98%, 6.83% - 8.18%, 1.8% - 6.25%, 2% - 3%, 3.6% -1.3% and 6.6% - 6.3% in Health Zone – 6 respectively.

Poor feeding practice by mothers of sick children implies the general lack of knowledge among mothers about the importance and/or effect of increased giving fluids and continued feeding during child illness. Hence, mothers should be regularly targeted with education talks and information materials that focus on child care and nutrition during illness.

Child Immunization

The percent of children aged 12 – 23 months whose health cards were seen by interviewers during the two surveys showing they were fully immunized against the five preventable diseases declined between 2006 and 2010 except in Health Zone 2 and Health Zone 6. The percentage trends of children who were fully immunized are: 29% - 16.7%, 28.6 - 50%, 88% -23%, 77% - 49.5%, 84% - 46% and 70.3% - 70.7% in Health Zone 1- 6 respectively. There were few mothers who had their children's health cards across all the six zones, hence proportions were also low. There are huge declines in the percent of children immunized against measles across all the six health zones between 2006 and 2010 KPC surveys. The percent trends of children age 12–23 months who received a measles vaccine are: 50.4% - 18.6%, 50% - 26%, 60% to 9%, 46.7% - 3%, 61% - 23% and 57.26 % - 1.67% in Health Zone 1 – 6 respectively.

There is need to develop & employ communication strategies that can reach mothers and educate everyone on the importance of ensuring their children are immunized against preventable diseases. Also there is need to ensure that health facilities are stocked with immunization vaccinations to ensure effective supplies.

Diarrhea Case Management

There are very mothers who recognize 2 signs of dehydration as danger signs and this indicator is declining across all the six health zones from 2006 to 2010. The percent trends of mothers who recognize 2 signs of dehydration as danger signs are: 28% - 8.9%, 26.6 – 7.05, 30% - 5.7%, 22% - 4%, 24% - 2.67% and 23.7% - 6.25% for Health Zone 1 – 6 respectively. Similarly, very few mothers in all the six Health Zones could describe ORS correctly. The percent trends of mothers who could describe ORS correctly are: 6% - 14%, 18% - 9.72%, 8% - 7%, 3.7% - 4.1%, 32% - 7%, and 9% - 21% for Health Zone 1 – 6 respectively.

The majority of mothers with children suffering from diarrhea do not receive ORS and/or home fluids. The percent trends from 2006 to 2010 of children who received ORS and/or home fluids are: 14.6% - 25%, 25.45 - 8.05%, 5% - 12%, 4% -2.5%, 4.2% - 10% and 9.5% to 24.7% for Health Zone 1 – 6 respectively.

Almost all mothers in all the six health zones do not practice all the four hand washing practices (wash hands with soap ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated). The percent trends from 2006 to 2010 of mothers who employ all the four hand washing practices who received ORS and/or home fluids are: 2% - 0.33%, 2% - 0.34%, 0% - 1%, 1% - 0.33, 1% - 1% (no change) and 4% - 0.3% for Health Zone 1 – 6 respectively.

The declining level of mothers' knowledge of defining ORS correctly is likely to negatively affect the preparation of ORS/home fluids for children with diarrhea by mothers. Mother's knowledge of ORS and hand washing practices can be strengthened through regular health education that includes these topics targeting mothers during their visit to health facilities. Hence, strengthening of health providers counseling skills too becomes a critical programmatic intervention to ensure that there is no room for complacency on the management of diarrhea health education that is given to mothers during health facility visits.

Acute Respiratory Infections case Management

There were few mothers who could recognize two signs of pneumonia in all the six health zones and the percent of mothers who could recognize two signs of pneumonia declined from 2006 to 2010 except in health zone 3. The percent trends among mothers who could recognize two signs of pneumonia are: 16% - 14%, 25% - 14.8%, 11% – 21%, 4% - 7%, 13.38% - 10% and 15.5% - 13.49% in Health Zone 1 – 6 respectively.

Health Zones 1, 2 and 6 registered increased percentages of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source from 2006 to 2010 whilst Health Zones 3, 4 and 5 registered declines in the same indicator. The percent trends of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source from 2006 to 2010 are: 38.6% - 57%, 34.6 – 75.93%, 36% - 34%, 24.6% – 22%, 36.4% – 24% and 41% - 46.6% in Health Zone 1 – 6 respectively.

The percent trends of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics from 2006 to 2010 are: 37% - 67%, 38.46 – 42.59%, 35% - 36%, 24.6% – 22%, 40% - 20% and 41% - 48.57% in Health Zone 1 – 6 respectively.

There is need to educate mothers on the signs and dangers of pneumonia among children to facilitate good timeliness by mothers to seek medical treatment for their children who have a cough/difficulty in breathing.

Malaria Case Management

There were decreases in Health Zones 2, 4, 5 and 6 in the percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider in 2006 compared to 2010. Increases were registered in the percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider 2006 compared to 2010 in Health Zone 1 and 3. The percent trends of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider 2006 compared to 2010 are: 47% - 55%, 63% - 43%, 58% - 64%, 50.57% - 42.52%, 64% - 52% and 52% - 51% in Health Zone 1 – 6 respectively.

Treatment for fever in children with fever was rarely treated with anti-malaria dugs except in Health Zone 1.The percent trends of Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment in 2006 compared to 2010 are: 79.3% - 92.4%, 4% - 5%, 16% - 0.9%, 11% - 8%, 24% - 0.8%, and 6.72% - 15% in health Zone 1 – 6 respectively.

Fansidar is the common drug that mothers took to prevent malaria during pregnancy of their youngest child. The percent trends of mothers who took anti-malarial medicine to prevent malaria during pregnancy in 2006 compared to 2010 are: 45% - 86%, 71.8% - 83.6%, 27% - 73%, 7% - 8% (very low in Health Zone 4), 36% - 75% and 79% - 89% in Health Zone 1 – 6 respectively.

The majority of mothers across health zones know that malaria is caused by a mosquito. The percent trends of mothers with children 0-23 months who know how malaria is caused in 2006 compared to 2010 are: 45.5% - 86.14%, 34% - 61%, 51% - 59%, 38% - 54%, 56% - 70% and 35% - 59% in Health Zone 1 – 6 respectively.

Improvement on the mother's knowledge on causes of malaria would facilitate malaria prevention especially for mothers and their children.

Mosquito Bed nets and Maintenance

There is an increase in the percent of mothers with bed nets in their homes to prevent malaria between 2006 and 2010 in all health zones. Also there is an increase in the percent of mothers who ensure that their youngest children sleep under treated bednets between 2006 and 2010 accordingly. The percent trends in the youngest children who slept under treated bednets the previous night preceding the surveys in 2006 compared to 2010 are: 10% - 69, 4% - 57% , 3% - 45%, 2% - 36%, 8% - 26% and 69% - 47% in Health Zone 1 – 6 respectively. The percent of mothers bednets that were inspected by interviewers and had holes and/or lacerations during the 2010 KPC Final Evaluation survey was:50%, 25%, 35.8%, 14.9%, 34% and 49% in Health Zone 1 – 6 respectively.

There is need to educate mothers on the maintenance of bed nets to facilitate carefully handling of bed nets, their treatment and frequent inspection for holes and lacerations to ensure the nets are in good conditions for effective use for preventing mosquitoes and other insects.

BENA DIBELE: HEALTH ZONE 1

There was one record that was blank across all variables. Hence, 303 records were analyzed.

Table 1A: KPC Key Indicators

HEALTH ZONE 1					
INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	94	174	54.02	14.81
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	56	296	18.92	8.92
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	188	303	62.05	10.93
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	123	303	40.59	11.06
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	185	303	61.06	10.98
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	65	89	73.03	18.44
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	66	83	79.52	17.36

CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	9	31	29.03	31.96
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	19	102	18.63	15.11
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	242	303	79.87	9.03
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	217	303	71.62	10.15
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	1	303	0.33	1.3
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	209	303	68.98	10.42
IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	4	202	1.98	3.84
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	56	102	54.90	19.31
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	1	102	0.98	3.82
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	181	196	92.35	7.44
	Percent of mothers with children 0-23 months who know how malaria is caused	261	303	86.14	7.78

DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	18	71	25.35	20.24
	Percentage of mothers who can correctly prepare ORS	43	303	14.19	7.86
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	8	71	11.27	14.71
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	27	303	8.91	6.42
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	35	61	57.38	24.82
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	43	303	14.19	7.86
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	41	61	67.21	23.56

Table 1B: KPC Key Indicator Trends

HEALTH ZONE 1			
INDICATOR	INDICATOR	2006	2010
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	60.23	54.02
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	22.13	18.92
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	36.91	62.05
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	27.85	40.59
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	46.31	61.06
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	37.38	73.03
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	92.31	79.52
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	16.67	29.03
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	50.40	18.63
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	66.44	79.87
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	33.22	71.62
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	2.35	0.33
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	9.73	68.98

IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	4.49	1.98
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	47.24	54.90
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	2.36	0.98
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	79.27	92.35
	Percent of mothers with children 0-23 months who know how malaria is caused	45.30	86.14
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	14.56	25.35
	Percentage of mothers who can correctly prepare ORS	6.04	14.19
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	11.65	11.27
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	28.19	8.91
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	38.57	57.38
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	16.11	14.19
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	37	67.21

RESULTS AND DISCUSSION

BENA DIBELE HEALTH ZONE 1

Socio-Demographics of Mothers

Age

Data was obtained from a total of 303 mothers who had children aged between 0 – 23 months in this health zone. The median age of mothers was 26 years. About 34 percent of mothers (104) were aged below 25 years of age. The age of mothers ranged from 14 years to 47 years.

Education level

Twenty seven percent of mothers had no education, 49% had primary education, 20% had attended secondary education and 10 mothers had attended school beyond six years of secondary education.

Income Generation Activities

Majority of mothers are engaged in harvesting/farming activities (67.7%) as a source of income followed by mothers who sell food items (36%). About six percent indicated they are shop keepers/street vendors and four percent are involved in handicrafts. About 15% of mothers said that they had no income generating activities they are involved in.

Household Headship

Only four mothers cited themselves as heads of their households. The majority of households visited are headed by husbands (93%) and the rest reported household heads were relatives.

Children Density & Spacing in Households

There were 550 children below five years of age in households visited for the survey. Of these, 514 children were biological children to the mothers interviewed. The average number of children per household aged below five years was 1.8 and the mean number of biological children in households per woman was 1.7. The mean difference in age between the two youngest siblings under five years was 24.9 months (Table 2A). There were about 54 percent of children who were born at least 24 months after the previous surviving child. [*Indicator: Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child]*.

Table 2A : Children density in households

Children density	Number	mean
Children under 5 in the household(n)	550	1.84
Biological children (n)	514	1.71
Difference between the two youngest siblings under 5 (months)	174	24.93

Table 2B: Number of Children by Age Group

Age Group	Number
0 – 5 months	89
6 – 9 months	83
12 – 23 months	102
0 – 11 months	201
0 – 23 months	303
Total	**303**

Child Minders during mother's absence from home

About 47% of mothers leave their children with other relatives, 42% leave their children with their husbands and 40% leave their children with their older children/siblings. Twenty eight percent of mothers take their children with them while the rest of the mothers said they leave their children with either their maternal grand mothers (eight percent) or with neighbors/friends (four percent).

Anthropometry

Of the surveyed children whose sex, age and weight data were recorded, 18.9% of children were underweight according the WHO/NCHS reference population standards [*Indicator: Percentage of children age 0 – 23 months who are underweight (-2SD from the median weight-for-age, according to the WHO/NCHS reference population]*. During the 2006 KPC baseline survey, 22% of the children were underweight.

The year 2010 KPC final evaluation results show that the older the child, the higher the levels of malnutrition. There is higher prevalence of malnutrition among boy children compared to girls, and there were more children of older mothers who were under weight compared to children of mothers aged up to 25 years.

TABLE 3: Percentage of children age 0–23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)

Weight-for-age				
Demographic characteristics	**Percentage below -2SD**	**Mean Z-score (SD)**	**Number of children below -2SD**	**Number of children**
Child's age				
<6 months	2.31	-0.06	7	87
6- 11 months	7.59	-0.88	23	110
12- 23 months	8.58	-1.48	26	99
Child's sex				
Male	12.21	-1	37	164
Female	6.27	-0.65	19	132
Mother's age				
< 25 years	4.95	-0.7	15	101
> or = 25 years	13.53	-0.93	41	194
Mother's Level of Education				
No Education	7.59	-1.1	23	80
Primary Education	7.59	-0.81	23	141
Secondary Education		0.71	0	60
Tertiary Education		-0.4	0	10
Total	**18.92**	**-0.84**	**56**	**296**

Comment:

*The Z-score deviation from means for nutrition data ranges from extreme values -9.02 (a 13 months old child whose weight is 1.05kgs) to 7.38 (a 14 months child whose weight is 17.9 kgs).

**296 children within the 0 – 23 months age range were weighted. 5 records had nothing recorded on mother's level of education resulting in total under education to be 291 instead of 296.

***One record had missing data on mother's age resulting in total under mother's age to be 194 instead of 196.

*Anthropometric data was processed by Epinut software

Edema

There were only five children who had signs of edema in Health Zone 1 in 2010 compared to 15 children who had signs of edema in 2006. Edema automatically means child is malnourished and is strongly associated with mortality.

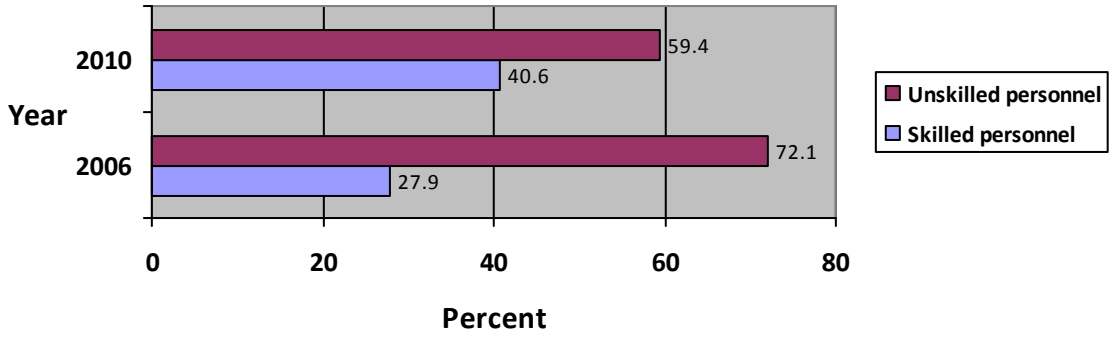
MATERNAL & NEWBORN

Births Assisted by skilled health personnel

Births assisted by only Nurse/Midwife/Doctor
The percentage of mothers who were assisted by skilled personnel during delivery is abo[redacted] 41% compared to 28% who were assisted by skilled health personnel in 2006. [*Indicator: Per[redacted]ntage of children age 0–23 months whose births were attended by skilled health personnel.*

Figure 1A: Births Assisted Delivery

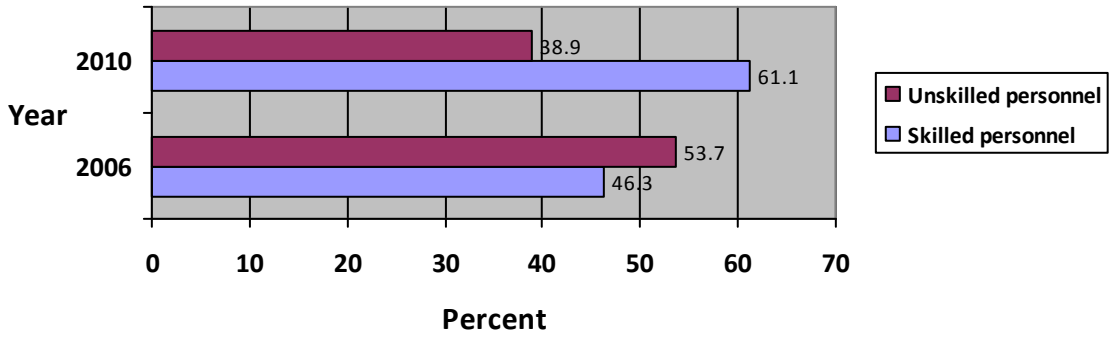
***Auxiliary midwives Excluded in skilled personnel category**



Births Assisted by Nurse/Midwife/Doctor/Auxiliary midwife
There were about 61% of mothers whose delivery was assisted by the skilled personnel compared to 46% who were assisted by skilled personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel]*.

Figure 1B: Births Assisted Delivery

***Auxiliary midwives included in skilled personnel category**



Receipt of Tetanus Toxoid during Pregnancy

There were 62% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 37% of mothers who received the same dosage during pregnancy in 2006. [*Indicator: Percentage of mothers with children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child]*.

KNOWLEDGE OF HIV AND AIDS

About 93% of mothers have ever heard of an illness called AIDS. There were 71.6% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection *[Indicator: Percentage of mothers with children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection*]. Forty nine percent of mothers mentioned abstinence from sex as one of the ways of avoiding getting AIDS, while 38.9% mentioned being faithful to one sexual partner and 23.1% mentioned the use of condoms as other ways of avoiding getting AIDS. Other mothers mentioned avoiding sex with prostitutes (29.7%), 10.6% mentioned limiting the number of sexual partners and 5.3% mentioned avoiding sex with persons who have many partners as ways of avoiding getting AIDS.

In the 2006 KPC baseline survey, 72% had ever heard of an illness that is called AIDS and about 33% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection.

BREASTFEEDING AND INFANT/CHILD NUTRITION

Exclusive breastfeeding

Current breastfeeding is high among mothers interviewed (94 percent). For the 18 mothers who were not currently breast feeding, only two people had never breastfed. Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were 73% compared to about 37% in 2006. *[Indicator: Percentage of children age 0–5 months who were exclusively breastfed during the last 24 hours]*. Female infants were more likely to have been exclusively breast fed within the first 24 hours compared to male infants. Also the practice of exclusive breast feeding within the first 24 hours was more common among mothers aged less than 25 years compared to older mothers.

Table 4: Exclusive Breastfeeding during the last 24 hours

Exclusive		**Infants age 0 – 5 months**		**Age of mother**	
Breast feeding	**Total**	**Male**	**Female**	**< 25 years**	**≤ 25 years**
Yes	73.03(65)	69.39(34)	77.50(31)	74.47(357)	71.43(30)
No	26.97(24)	30.61(15)	22.50(9)	25.53(12)	28.57(12)
Total	100.00(89)	100.00(49)	100.00(40)	100.00(47)	100.00(42)

Breastfeeding and Complementary Feeding

The results show that there were 79.5% of children who receive breast milk and complimentary food within the last 24 hours compared to 92% in 2006. *[Indicator: Percentage of children age 6–9 months who received breast milk and complementary foods during the last 24 hour]*. Older mothers were more likely to give their infants breast milk and complementary feeding within the last 24 hours compared to younger mothers aged below 25 years.

Table 5: Breast feeding and Complementary feeding within the last 24 hours

Breast milk & Complementary foods		**Infants age 6 – 9 months**		**Age of mother**		
	Total	**Male**	**Female**	**< 25 years**	**≤ 25 years**	**Unknown***
Yes	79.52(66)	80.00(40)	78.79(26)	75.68(28)	84.44(38)	0.00
No	20.48(17)	20.00(10)	21.21(7)	24.32(9)	15.56(7)	100.00(1)
Total	100.00(83)	100.00(50)	100.00(33)	100.00(37)	100.00(45)	100.00(1)

* Unknown category refers to children with mothers whose age information was missing

CHILDHOOD ILLNESS (IMCI)

There were about 79.9% of mothers who knew at least two signs of childhood illness that indicate the need for treatment *[Indicator: Percentage of mothers of children age 0–23 months who know at least two signs of childhood illness that indicate the need for treatment]*. There were 66.4% of mothers who knew at least two signs of childhood illness during the 2006 KPC baseline survey.

The most cited sign of child illness was high fever (80.9%), followed by “child looking unwell/not playing normally” (52.8%), “child not eating” (45.5%), child vomits everything (29%) and convulsions (17%) respectively. The percent of mothers citing all the other known signs of child illness fell below 20 percent. This implies that a many ill children who do not necessarily present high fever are likely to be neglected for being treatment considerations by mothers, and can result in delays by mothers to seek treatment for their children.

The commonly cited child illness experiences in the last two weeks were cough (38.9%) followed by fever (33.7%), followed by diarrhea (27.1%).

Increased fluids and continued feeding during child illness

The results show that only 1.98% (four out of 202) sick children received increased fluids and continued feeding during illness. This is extremely low and shows continued poor practice regarding feeding of children recovering from illnesses. *[Indicator: Percentage of sick children age 0–23 months who received increased fluids and continued feeding during an illness in the past two weeks]*.This indicator was at 4.5% in 2006, and implies poor feeding practice by mothers although there is about 2% improvement in this indicator.

Source of First Advice or treatment for sick Child

There were 67% of mothers who sought advice from someone outside of the home when their youngest child was sick (136 out of 202). The most common source of first advice or treatment was at health centre (60 percent), followed by pharmacy (9.5%). Other sources of first advice or treatment reported by mothers were Hospital (6.3%), Private Practitioner (6.3%), village health worker/TBA/VHC (6.3%) and Traditional Healer (4.8%).

CHILD IMMUNIZATION

Full immunization is defined as children receiving vaccines for all the five preventable diseases. BCG, DTP, Polio and measles vaccines. It is also expected that child would be fully immunized by the time they reach age of 12 months.

Full Immunization of children

The vaccinations considered for fully immunization are Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card. Results show that of the 31 children aged between 12-23 months with child health cards, only nine children (29%) were fully immunized compared to 16.7% in 2006. *[Indicator: Percentage of children age 12–23 months who are fully vaccinated against the five vaccine-preventable diseases before the first birthday]*. This shows about 12% improvement in the percentage of children who are fully immunized by age 12 months.

Immunization against Measles

Only 18.6% (19 out of 102) children aged above 12 months were vaccinated against measles *[Indicator: Percentage of children age 12–23 months who received a measles vaccine]*. There has been a huge decline of 31% in terms of children immunized against measles between 2006 and 2010, declining from 50%.

Immunization against Tuberculosis

BCG is the vaccine for prevention against tuberculosis. Overall, 78% of children aged 12 – 23 months were vaccinated against tuberculosis.

Immunization against Tuberculosis	Number	Percent
Yes	79	77.5
No	23	22.5
Total	**102**	**100.0**

Immunization against Yellow Fever

There were 16 children (15.7%) aged 12 - 23 months who were vaccinated against yellow fever.

Immunization against Yellow Fever	Number	Percent
Yes	16	15.7
No	86	84.3
Total	**102**	**100.0**

Vitamin A Supplement for children aged >6 – 23 months in the last six months

There were about 41% of children who were older than six months had received Vitamin A supplement during the survey [*Indicator: Percentage of children > 6 months receiving one Vitamin A dose*].

Vitamin A Supplement	Number	Percent
Yes	88	41.1
No	126	58.9
Total	**214**	**100.0**

DIARRHEA CASE MANAGEMENT

Prevalence of Diarrhea and knowledge of signs of child illness

There were 71 mothers who reported that their youngest children suffered from diarrhea in the last two weeks. However, there were only 8.9% of mothers with children aged 0 – 23 who could recognize at least 2 signs of dehydration as danger signs compared to 28% during the 2006 KPC Baseline survey.*[Indicator: Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs]*. The most frequently mentioned danger sign to push a mother to seek immediate treatment at a health facility or hospital when a child has diarrhea was intense weakness (80.3%) followed by refusal eat (49.3%), intense thirst (21.1%), dark eyes/rings under eyes (15.5%) and very dry mouth (9.9%).

Diarrhea treatment by mother

Twenty five percent of the children, who had diarrhea in the last two weeks of were reported by their mothers to have received ORS and/or home fluids compared to 14.6% in 2006. *[Indicator: Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids].* The most common treatment for diarrhea among children reported by mother was giving the sick child the ORS packet (59.2%) followed by giving sick child pill or syrup (25.4 percent). About 13% of mothers did nothing when their children had diarrhea in 2010 compared to 16% who did nothing in 2006.

Breast feeding of sick child

Out the 71 mothers who reported that their youngest children suffered from diarrhea, only eight children (11.3%) were breastfed more than usual, 24 children (33.8%) were breast fed less than usual while 28 children (39%) were breastfed the same as before they were ill from diarrhea. There were 11.7% sick children who were breastfed more than usual and 40% of children who received less breastmilk during the period when they were sick with diarrhea in the 2006 KPC Baseline survey.

Frequency of eating sick child

Out of the 71 mothers reporting that their children suffered diarrhea during the past two weeks 41children (57.7%) were offered less to eat when they had diarrhea. Seven children (9.9%) were offered more than usual to eat, (18%) were given the same amounts to eat when they had diarrhea, and one child was reported not to have eaten anything during this period. There were 4% who received more to eat and 57% (59 out of 103) of children who received less to eat during the period when they have diarrhea in the 2006 KPC Baseline survey.

Intake of liquids by recovering child

About 41% of the 71 mothers offered children same amount as usual to drink when children were recovering from diarrhea and 40% offered more than usual to drink during their recovery period. Twelve recovering children (16.9%) were offered less than usual to drink in 2010 compared to 16.5% of children recovering from diarrhea who received fewer/less liquids in the 2006 KPC Baseline survey. About 13% of recovering children were offered more to drink in 2006.

Intake of food by recovering child

About 35% of the 71 mothers offered children same amount as usual to eat when children were recovering from diarrhea and 29.6% offered more than usual to eat during their recovery period. Thirteen (18%) recovering children were offered less than usual to eat whilst eight children were said not to have started eating yet. There were 18.4% of children offered more to eat and 24.3% of children recovering from diarrhea who received less to eat during the period when they have diarrhea in the 2006 KPC Baseline survey.

Knowledge of oral re-hydration solution (ORS)

The percentage of mothers who ever heard of ORS and can correctly describe ORS is only 14%. This is higher compared to the 2006 baseline survey where only six percent could describe ORS correctly. *[Indicator: Percentage of mothers who can correctly prepare ORS]*.

Hand washing practices

Results show that only one (0.33%) mother washes her hands with soap/ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated. *[Indicator: Percentage of mothers with children age 0–23 months who report that they wash their hands with soap/ash before food preparation, before feeding children, after defection, and after attending to a child who has defecated]*. This indicator was at two percent during the 2006 KPC baseline survey. The percent of mothers who practice any hand washing at some point falls far below 20% for each hand washing category, hence, it is clear that a higher percent of mothers do not practice hand washing when caring for their children. This continues to be critical programmatic intervention area required for diarrhea control in this health zone.

ACUTE RESPIRATORY INFECTIONS (ARI) CASE MANAGEMENT

The prevalence of cough amongst youngest children in the last two weeks was reported by 33.3% of mothers (100 out of 300 children). The most frequently mentioned danger sign by these 100 mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (77%) followed by rapid breathing (36%), Tightened chest muscles (21%) and child's chest caved/sunken in (10%). However, only about 14% of mothers could recognize at least two signs of pneumonia compared to 16% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize two signs of pneumonia]*.

Child Problem breathing experience

About 61% of children who had a cough illness were reported to have difficulty in breathing (61 out of 100 children). About 39.6% of mothers mentioned they would seek advice or treatment for the child's cough and fast breathing the next day followed by same day (28.3%, two days later (20.8%), three or more days later (11.3%).

First Source of Advice or Treatment for sick child

Fifty-one mothers sought advice or treatment for the cough or difficulty in breathing. The most cited source of first advice for children with a cough or experiencing breathing were health centre (44.6%). There were about 57% of mothers with children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 38.6% in 2006. *[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source]*. This shows a marked improvement in this indicator.

Medicines given to sick child with cough/difficulty in breathing

The majority of children with cough and difficulty in breathing were treated with cotrimoxazole (52.5%), followed by paracetamol (37.7%), followed by amoxyllin/ampicillin. Of the 61 children who suffered from cough and/or had difficulty in breathing 67.2% of them had received antibiotics for the cough compared to 37% in 2006.*[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics]*.

MALARIA CASE MANAGEMENT

About 33% of mothers reported that their children had a fever in the past 2 weeks before the survey (102 children out of 303). About 55% of mothers of children with high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 47% in 2006. *[Indicator: Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider]*.

Medicines given to sick child for fever

Results show that 19.6% of children who presented fever were treated with cotrimoxazole and 17.6% were treated with paracetamol. Treatment for fever with aspirin was 7.8% and with an unknown medicine was 6.9% while with ampicillin/amoxyllin was 3.9%. Anti malaria treatment with either Quinine or Artesunate was given to sick children with fever only in one case (0.98%) compared to 2.4% in 2006. *[Indicator: Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment]*.

Drugs given/taken to prevent malaria during pregnancy

There were 196 (65%) mothers who reported that they took drugs to prevent malaria when they were pregnant with their youngest child compared to 92% during the 2006 KPC Baseline survey. Among women who were given drugs to prevent malaria during pregnancy, the majority of mothers mentioned to have taken Fansidar (92%). [*Indicator: Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy]*. Very few mothers reported taking drugs such as Chloroquine (8/196) and/or Quinine (10/196). During the 2006 KPC survey, about 79% (65 out of 82) of mothers who took drugs to prevent against malaria when pregnant with their youngest child during the last two weeks preceding the survey said they took Fansidar.

Causes of malaria

The majority of mothers (86%) knew that malaria is caused by mosquitoes compared to only about 45% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who know how malaria is caused]*. Only 10% of the mothers said they did not know what causes malaria.

MOSQUITO BEDNET USE AND MAINTENANCE

Availability of Bednets

About 76% of mothers said they have bed nets in the house to prevent against malaria (230 mothers out of 303) compared to only 19% of mothers during 2006 KPC Baseline survey. Ninety-five percent of these mothers with bed nets (219 out of 230) said that they had ever impregnated or soaked bed nets in a liquid to repel mosquitoes and/or other insects. 79% of mothers with bed nets that were ever impregnated or soaked (173 out of 219) also indicated that their bed nets were ever washed. Of the 24 bed nets that were inspected by interviewers, 50% of them had holes and lacerations thereby not in good condition to prevent penetration by mosquitos and other insects.

Children who slept under treated net

About 69% of mothers reported that their youngest children slept under ever treated bednets the previous night preceding the 2010 KPC survey *[Indicator: Percentage of children age 0–23 months who slept under an insecticide-treated net the previous night]*. This indicator was only about 10% during the 2006 KPC Baseline survey.

Iron/Folic acid intake during pregnancy

Almost 75% of mothers indicated that they took or bought tablets/syrup with iron or folic acid when they were pregnant with their youngest child (226 mothers out of 303) compared to 58% during the 2006 Baseline survey.

CONCLUSION AND RECOMMENDATIONS

Nutritional Status of children

Nutritional status of children was assessed through the weight for age index which is a composite indicator for levels of malnutrition which is a reflection of wasting, stunting or both elements of malnutrition among children. About 18.9% of children aged below 24 months were underweight compared to 22% during the 2006 KPC Baseline survey. Hence, there is some improvement in the nutritional status of children aged below 24 months in this zone. There were very few children who had signs of edema in Health Zone 1 in 2010 compared to 15 children who had signs of edema during the 2006 KPC Baseline survey.

Maternal and Newborn

There is a marked increase in the percent of mothers who were assisted by either nurse midwifes and/or doctors between 2006 and 2010 from 28% to 40.6% respectively. There were 62% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 37% of mothers who received the same dosage during pregnancy in 2006.

HIV/AIDS

About 93% of mothers have ever heard of an illness called AIDS. There were 71.6% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection compared to 33% of mothers during the 2006 Baseline survey. Hence, there is an increase in the percent of mothers who are knowledgeable about at least two ways of preventing HIV between the two years.

Breastfeeding and Infant/Child nutrition

Current breast feeding was almost universal (94%). There were 73% mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth compared to about 37% in 2006. Hence, about 27% of children missed out on initial breast feeding within the first 24 hours. This means these children were likely to have low intake of colostrum, which is contained in the first breast milk after delivery, as it has been shown that that initial breast milk is highly concentrated of antibodies that protect babies of infection. Breastmilk contains all nutrients needed by children in the first six months of life as a nutritional source. Exclusive breast feeding is highly nutritious, uncontaminated and recommend for children up to an age of at least four months.

Results also show that almost 80% of children aged 6 – 9 months received breast milk and complimentary food within the last 24 hours after delivery compared to 92% in 2006. There is need to strengthen health providers counseling for child health and nutrition and launching of regular community awareness campaigns on the importance of exclusive breast feeding.

Childhood illnesses (IMCI)

There were about 80% of mothers who knew at least two signs of childhood illness that indicate the need for treatment. There has been an improvement in the percent of mothers who know at least two signs of childhood illnesses between 2006 and 2010 from about 66.4%. However, there is still poor feeding practice by mothers with regard to giving fluids and food to children who are ill. There was only 1.98% sick children who received increased fluids and continued feeding during illness inn 2010 compared to 4.5% in 2006.

Child Immunization

Only 29% whose health cards were seen by the interviewer are fully immunized by age 12 months compared to 16.7% in 2006. There is a decrease in the percent of children immunized against measles between 2006 and 2010, from 50.4% to 18.6%. About 78% of children aged 12 – 23 months were vaccinated against tuberculosis and 18.6% were immunized against measles. Immunization against yellow fever was low (15.7%) while there were 41.1% of children older than six months who had received vitamin A supplement.

Diarrhea Case Management

About a quarter of the children, who had diarrhea in the last two weeks of were reported by their mothers to have received ORS and/or home fluids compared to 14.6% in 2006. Very few mothers could recognize at least 2 signs of dehydration as danger signs. The commonly known danger sign of dehydration by mothers to seek immediate treatment at a health facility or hospital was intense weakness. Very few mothers are able to describe ORS correctly (6% in 2006 and 14% in 2006). Almost all mothers do not wash hands with soap ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated (only 2.4% in 2006 and 0.3% in 2010 said they employed all the four hand washing practices). Mother's knowledge of ORS and hand washing practices can be strengthened through regular health education that includes these topics targeting mothers during their visit to health facilities.

Acute Respiratory Infections case Management

The most frequently mentioned danger sign by mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with a cough is when a child has difficulty in breathing. However, only 14% of mothers could recognize at least two signs of pneumonia compared to 16% in 2006. About 40% of mothers said they would seek advice or treatment for the child's cough and fast breathing the next day. About 57% of mothers with children with cough and/or difficulty in breathing sought advice/treatment at health facilities or trained alternative source compared to 38.6% in 2006. About 67% children suffering from cough and/or had difficulty in breathing who received antibiotics such as cotrimoxazole and or amoxyllin/ampicillin compared to 37% during the 2006 KPC Baseline survey.

Malaria Case Management

About 55% of mothers of children with high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 47% in 2006. Children who had a fever in the last two weeks were treated with mainly cotrimoxazole and paracetamol. Treatment for fever in children with fever was rarely treated with anti-malaria dugs. Fansidar is the common drug that mothers take to prevent malaria during pregnancy by 79.3% in 2006 and 92.4% in 2010. There were about 86% of mothers who knew that malaria is caused by mosquitos compared 45% in 2006.

Mosquito Bed nets and Maintenance

There is an increase in the number of mothers with bed nets in their homes to prevent malaria between 2006 and 2010 from 19% to 76% among mothers. Also there is an increase in the number of mothers who ensure that their youngest children sleep under treated bed nets from 10% to 69% between 2006 and 2010 accordingly. Of the 24 bednets that were inspected by interviewers, 50% of them had holes and lacerations thereby not in good condition to prevent penetration by mosquitos and other insects. There is need to educate mothers on the maintenance of bed nets to facilitate carefully handling of bed nets, their treatment and frequent inspection for holes and lacerations to ensure the nets are in good conditions for effective use for preventing mosquitoes and other insects.

DJALO NDJEKA HEALTH ZONE 2

There were 301 records initially. The first record had no information except for the uniquekey (1) field only. 2 records had children whose age was more than 23 months old resulting in n=298)

Table 1A: KPC Key Indicators

HEALTH ZONE 2					
INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	0	10	0.00	0
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	51	296	17.23	8.6
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	199	298	66.78	10.7
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	101	298	33.89	10.75
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	238	298	79.87	9.11
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	73	93	78.49	16.71
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	39	62	62.90	24.05
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	26	52	50.00	27.18
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	30	114	26.32	16.17
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	238	298	79.87	9.11

HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	187	298	62.75	10.98
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	1	298	0.34	1.31
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	169	298	56.71	11.25
IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	13	159	8.18	8.52
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	25	58	43.10	25.49
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	3	58	5.17	11.4
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	158	189	83.60	10.56
	Percent of mothers with children 0-23 months who know how malaria is caused	181	298	60.74	11.09
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	14	55	25.45	23.03
	Percentage of mothers who can correctly prepare ORS	29	298	9.73	6.73
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	9	55	16.36	19.55
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	21	298	7.05	5.81

INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	41	54	75.93	22.81
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	44	298	14.77	8.05
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	23	54	42.59	26.38

Table 1B: KPC Key Indicators Trends

HEALTH ZONE 2			
INDICATOR	INDICATOR	2006	2010
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	59.17	0.00
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	26.02	17.23
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	3.70	66.78
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	19.87	33.89
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	66.67	79.87
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	55.00	78.49
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	88.52	62.90
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	28.57	50.00
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	50.00	26.32
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	70.03	79.87
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	44.44	62.75
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	2.02	0.34
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	4.04	56.71

IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	6.83	8.18
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	63.03	43.10
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	4.2	5.17
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	71.79	83.60
	Percent of mothers with children 0-23 months who know how malaria is caused	34.01	60.74
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	8.05	25.45
	Percentage of mothers who can correctly prepare ORS	14.48	9.73
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	10.34	16.36
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	26.60	7.05
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	34.62	75.93
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	11.78	14.77
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	38.46	42.59

RESULTS AND DISCUSSION

DJALO NDJEKA HEALTH ZONE 2

Socio-Demographics of Mothers

Age

Mothers' age was obtained from a total of 298 mothers who had children aged between 0 – 23 months in this health zone. The average of mothers was 26.4 years. Mother's age ranged from 12 years to 67 years and about 47% of mothers (104) were aged below 25 years of age.

Education level

Only six percent of mothers had no education, 56% had primary education, 36.6% had attended secondary education and three mothers had attended school beyond six years of secondary education.

Income Generation Activities

Majority of mothers are engaged in harvesting/farming activities (55.7%) as a source of income followed by mothers who sell food items (43.64%). About seven percent of mothers indicated they were household workers, five percent indicated they are salaried workers, four percent were shop keepers/street vendors and four percent were involved in handicrafts. There were 34 mothers who said that they had no income generating activities they are involved in.

Household Headship

Only six mothers cited themselves as heads of their households. The majority of households visited are headed by husbands (82.6%) and the rest reported household heads were relatives.

Children Density & Spacing in Households

There were 349 children below five years of age in households visited for the survey. Of these, 328 children were biological children to the mothers interviewed. The average number of children per household aged below five years was 1.18 and the mean number of biological children in households per woman was 1.1. The mean difference in age between the two youngest siblings under five years was 10 months (Table 2A). There were no children who were born at least 24 months after the previous surviving child. [*Indicator: Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child]*.

Table 2A : Children density in households

Children density	Number	mean
Children under 5 in the household(n)	348	1.18
Biological children (n)	326	1.1
Difference between the two youngest siblings under 5 (months)	10	0.52

Table 2B: Number of children by age Group

Age Group	Number
0 – 5 months	93
6 – 9 months	62
12 – 23 months	114
0 – 11 months	184
0 – 23 months	298
Total	**298**

Child Minders during mother's absence from home

About 57% of mothers leave their children with their husbands, 42% leave their children with their older children/siblings and 32% with their other relatives. Twelve percent of mothers take their children with them while 13% of the mothers said they leave their children with their maternal grand mothers and five percent leave them with neighbors/friends.

Anthropometry

Of the surveyed children whose sex, age and weight data were recorded, 17.23% of children were underweight according the WHO/NCHS reference population standards [*Indicator: Percentage of children age 0 – 23 months who are underweight (-2SD from the median weight-for-age, according to the WHO/NCHS reference population]*. During the 2006 KPC baseline survey, 26% of the children were underweight. The year 2010 KPC final evaluation results show that older children are more likely to be malnourished compared to younger children. Underweight is higher among male children compared to female children.

TABLE 3: Percentage of children age 0–23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)

Weight-for-age				
Demographic characteristics	**Percentage below -2SD**	**Mean Z-score (SD)**	**Number of children below -2SD**	**Number of children**
Child's age				
<6 months	1.01	0.42	3	93
6- 11 months	4.73	-0.6	14	90
12- 23 months	11.49	-1.32	34	113
Child's sex				
Male	10.14	-0.71	30	152
Female	7.09	-0.4	21	144
Mother's age				
< 25 years	8.45	-0.57	25	139
> or = 25 years	8.78	-0.56	26	155
Mother's Level of Education				
No Education	1.35	-0.44	4	19
Primary Education	11.15	-0.75	33	165
Secondary Education	4.39	-0.28	13	109
Tertiary Education	0.34	-0.64	1	3
Total	**17.23**	**-0.56**	**51**	**296**

Comment:

*The Z-score deviation from means for nutrition data ranges from extreme values -9.07 (a 13 months old child whose weight is 1 kg) to 5.36 (a child less than one month old whose weight is 5.2 kgs).

* 2 mothers had information on their ages missing reducing the total of mother's age to 294 instead of 298 records.

*296 children within the 0 – 23 months age range were weighted and the records processed by Epinut software.

Edema

There were 14 children who had signs of edema in Health Zone 2 in 2010 compared to seven children who had signs of edema in 2006. Edema automatically means child is malnourished and is strongly associated with mortality.

MATERNAL & NEWBORN

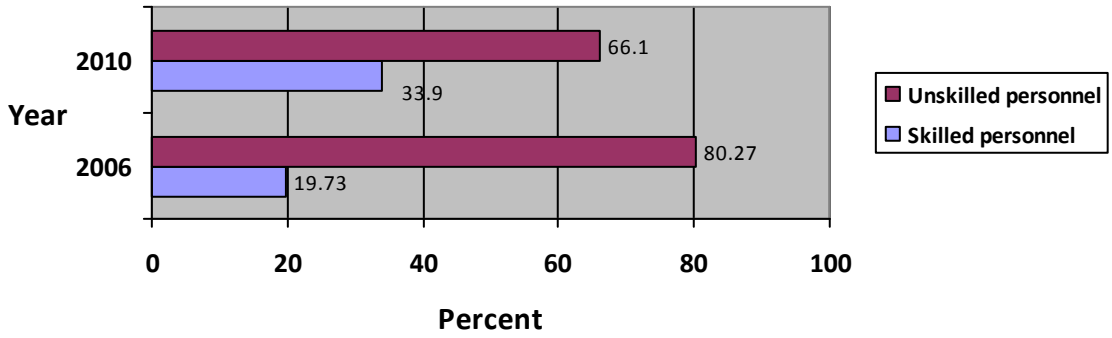
Births Assisted by skilled health personnel

Births assisted by only Nurse/Midwife/Doctor

The percentage of mothers who were assisted by skilled personnel during delivery is abo[redacted] 34% compared to about 20% who were assisted by skilled health personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel.*

Figure 1A: Births Assisted Delivery

*Auxiliary midwives Excluded in skilled personnel category

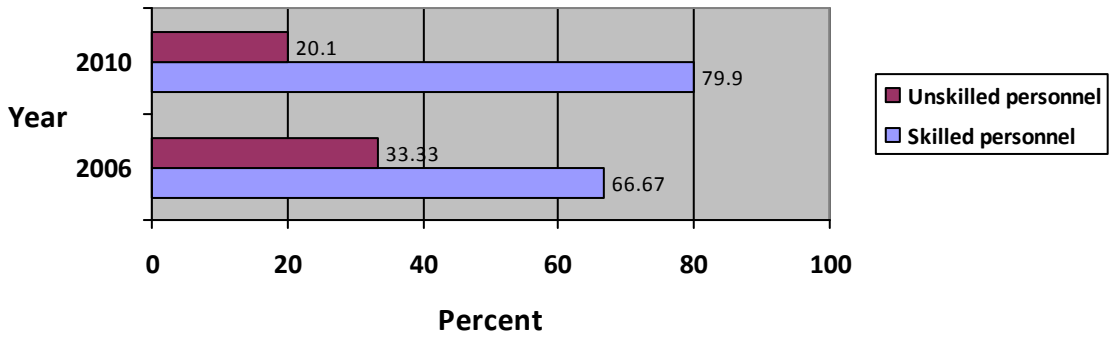


Births Assisted by Nurse/Midwife/Doctor/Auxiliary midwife

Eighty percent of mothers' delivery was assisted by the skilled personnel compared to about 67% who were assisted by skilled personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel]*.

Figure 1B: Births Assisted Delivery

*Auxiliary midwives included in skilled personnel category



Receipt of Tetanus Toxoid during Pregnancy

There were 66.78% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 3.7% of mothers who received the same dosage during pregnancy in 2006. [*Indicator: Percentage of mothers with children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child]*.

KNOWLEDGE OF HIV AND AIDS

About 95% of mothers have ever heard of an illness called AIDS. There were 62.75% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection *[Indicator: Percentage of mothers with children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection*]. About 52% of mothers mentioned abstinence from sex as one of the ways of avoiding getting AIDS, while 29% mentioned being faithful to one sexual partner and 19% mentioned the use of condoms as other ways of avoiding getting AIDS. Other mothers mentioned avoiding sex with prostitutes (9.7%) and limiting the number of sexual partners was mentioned by eight percent of mothers as ways of avoiding getting AIDS. In the 2006 KPC baseline survey, about 44% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection. Hence, there is an increase in the level of knowledge among mothers about ways of preventing HIV between the two years.

BREASTFEEDING AND INFANT/CHILD NUTRITION

Exclusive breastfeeding

Current breastfeeding is high among mother interviewed (91 percent). For the 27 mothers who were not currently breast feeding, 17 mothers had never breastfed. Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were 78.49% compared to about 55% in 2006. *[Indicator: Percentage of children age 0–5 months who were exclusively breastfed during the last 24 hours]*. Male infants were more likely to have been exclusively breast fed within the first 24 hours compared to female infants. The practice of exclusive breast feeding within the first 24 hours was more likely among mothers aged at least 25 years compared to younger mothers. The percent of infants aged 0-5 months who receive breast milk within the last 24 hours increased from55% to 78.5% between 2006 and 2010.

Table 4: Exclusive Breastfeeding during the last 24 hours

Exclusive Breast feeding		**Infants age 0 – 5 months**		**Age of mother**	
	Total	**Male**	**Female**	**< 25 years**	**≥ 25 years**
Yes	78.49(73)	80.85(38)	76.09(35)	73.17(30)	82.69(43)
No	21.51(20)	19.15(9)	23.91(11)	26.83(11)	17.31(9)
Total	100.00(93)	100.00(47)	100.00(46)	100.00(41)	100.00(52)

Breastfeeding and Complementary Feeding

The results show that there were 62.9% of children who receive breastmilk and complementary food within the last 24 hours compared to 88.5% in 2006. *[Indicator: Percentage of children age 6–9 months who received breast milk and complementary foods during the last 24 hour]*. Older mothers were more likely to give their infants aged 6- 9 months breast milk and complementary feeding within the last 24 hours compared to younger mothers aged below 25 years. During the 2006 KPC Baseline survey, 88.5% of children aged 6 -9 months received breast milk and complementary foods during the last 24 hour. There is a decline in the percent of children who receive breast milk and complementary food within the last 24 hours from 88.5% to 62.9% between 2006 and 2010.

Table 5: Breast feeding and Complementary feeding within the last 24 hours

Breast milk & Complementary foods		Infants age 6 – 9 months		Age of mother		
	Total	Male	Female	< 25 years	≥ 25 years	*Unknown
Yes	62.90(39)	62.50(20)	63.33(19)	60.71(17)	66.67(22)	0.00
No	37.10(23)	37.50(12)	36.67(11)	39.29(11)	33.33(11)	100.00(1)
Total	100.00(62)	100.00(32)	100.00(30)	100.00(28)	100.00(33)	100.00(1)

* Unknown category refers to children with mothers whose age information was missing

CHILDHOOD ILLNESS (IMCI)

There were about 79.87% of mothers who knew at least two signs of childhood illness that indicate the need for treatment compared to 70% during the 2006 KPC baseline survey.*[Indicator: Percentage of mothers of children age 0–23 months who know at least two signs of childhood illness that indicate the need for treatment]*. The most cited sign of child illness was high fever (69.1%), followed by "child looking unwell/not playing normally" (41.6%), "child not eating" (38.3%), child vomits everything (33.8%), convulsions (29.9%), difficulty or rapid breathing (20.1%), and lethargic or difficult to wake (13.8%) respectively.

The commonly cited child illness experiences in the last two weeks were cough (37.6%) followed by fever (19%) and diarrhea (18.7%).

Increased fluids and continued feeding during child illness

The results show that only 8.18% (13 out of 159) sick children received increased fluids and continued feeding during illness. *[Indicator: Percentage of sick children age 0–23 months who received increased fluids and continued feeding during an illness in the past two weeks]*.This indicator was at 6.8% in 2006. The low percent of mothers who give their children more fluids and continued feeding of recovering children implies deepening poor feeding practice by mothers.

Source of First Advice or treatment for sick Child

About 36% of mothers sought advice from someone outside of the home when their youngest child was sick. The most common source of first advice or treatment was at health center (61.7%), followed by hospital (12.1%). Other sources of first advice or treatment reported by mothers were Private Practitioner, village health worker/TBA/VHC and Traditional Healer but had percentages less than 5%.

CHILD IMMUNIZATION

Full immunization is defined as children receiving vaccines for all the five preventable diseases. BCG, DTP, Polio and measles vaccines. It is also expected that child would be fully immunized by the time they reach age of 12 months.

Full Immunization of children

The vaccinations considered for fully immunization are Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card. Results show that of the 52 children aged between 12-23 months with child health cards, 50% of them were fully immunized*[Indicator: Percentage of children age 12–23 months who are fully vaccinated against the five vaccine-preventable diseases before the first birthday]*. There were about 28.6% who were fully immunized during the 2006 KPC Baseline survey.

Immunization against Measles

Only 26.3% (30 out of 114) children aged above 12 months were vaccinated against measles *[Indicator: Percentage of children age 12–23 months who received a measles vaccine]*. There has been a huge decline in terms of children immunized against measles between 2006 and 2010, declining from 50% to 26% between the two surveys.

Immunization against Tuberculosis

BCG is the vaccine for prevention against tuberculosis. About 83% of children aged 12 – 23 months were vaccinated against tuberculosis.

Immunization against Tuberculosis	Number	Percent
Yes	95	83.3
No	19	16.7
Total	**114**	**100.0**

Immunization against Yellow Fever (children with vaccination card)

There were 21 children (18%) aged 12 - 23 months were vaccinated against yellow fever.

Immunization against Yellow Fever	Number	Percent
Yes	21	18.4
No	93	81.6
Total	**114**	**100.0**

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Vitamin A Supplement for children aged >6 – 23 months in the last six months

There were about 65% of children who were older than six months had received Vitamin A supplement during the survey [*Indicator: Percentage of children > 6 months receiving one Vitamin A dose*]. This indicator was at 68.8% during 2006 KC Baseline survey.

Vitamin A Supplement	Number	Percent
Yes	134	65.4
No	71	34.6
Total	**205**	**100.0**

DIARRHEA CASE MANAGEMENT

Prevalence of Diarrhea and knowledge of signs of child illness

There were 55 mothers (18.5%) who reported that their youngest child suffered from diarrhea in the last two weeks. However, there were only 7.05% of mothers who could recognize at least 2 signs of dehydration as danger signs compared to 26.6% during the 2006 KPC baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs]*. The most frequently mentioned danger sign to push a mother to seek immediate treatment at a health facility or hospital when a child has diarrhea was intense weakness (81.8%) followed by refusal eat (43.6%), intense thirst (32.7%), dark eyes/rings under eyes (20%) and deep soft spots (5.5%).

Diarrhea treatment by mother

About 25% of the children, who had diarrhea in the last two weeks of were reported by their mothers to have received ORS and/or home fluids compared to about 8% during the 2006 KPC Baseline survey. *[Indicator: Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids].* The most common treatment for diarrhea among children reported by mother was giving the sick child the ORS packet (55.4%) followed by giving sick child home remedies (19.6%), pill or syrup (12.5%). About 7% of mothers did nothing when their children had diarrhea in 2010 compared to 16% in 2006.

Breast feeding of sick child

Out the 55 mothers who reported that their youngest child suffered from diarrhea, only nine children (16.4%) were breastfed more than usual, 12 children (21.8%) were breast fed less than usual while 22 children (40%) were breast fed the same as before they were ill from diarrhea. There were 10.3% of sick children breastfed more than usual and about 40% sick children who had diarrhea who were breastfed less than usual during the 2006 KPC Baseline survey. Hence, there is an improvement in terms of mothers who breastfed during diarrhea illness in 2010 compared to 2006.

Frequency of eating sick child

Out of the 55 mothers reporting that their children suffered diarrhea during the past two weeks 29 children (52.7%) ate less. Only nine children (16.4%) were offered more than usual to eat and 9 (16.4%) children were given the same amounts to eat when they had diarrhea and one child was reported not yet eating. Six children were said not to have anything to eat during the survey.

There were 3% of children given more to eat and 59.8% of children who were given less to eat when sick with diarrhea during the 2006 KPC Baseline survey. Although there is an improvement in the percentage of mothers who give children less to eat during illness (53% vs. 60%), the percentage of children who receive less food still consist the majority of cases.

Intake of liquids by recovering child

About 56% of the 55 mothers offered children same amount as usual to drink when children were recovering from diarrhea and 21.8% offered more than usual to drink during their recovery period. About nine recovering children were offered less than usual to drink compared to 24% who received less to drink and 24% who received more to drink in 2006.

Intake of food by recovering child

About 44% of the 55 mothers offered children same amount as usual to eat when children were recovering from diarrhea and 20% offered more than usual to eat during their recovery period. Seventeen recovering children (31%) were offered less than usual to eat whilst two children were said not to have started eating yet. About 24% more to eat and 30% of children recovering from diarrhea were given less to eat during the 2006 KPC Baseline survey hence, there seem to be some slight improvement by mothers in terms of feeding their children recovering from diarrhea.

Knowledge of oral re-hydration solution (ORS)

About 15% of mothers had ever heard about ORS. However, the percentage of mothers who ever heard of ORS and can correctly describe ORS is only 9.73%. *[Indicator: Percentage of mothers who can correctly prepare ORS]*. This is lower compared to the 2006 baseline survey where 14% could describe ORS correctly. There were 15 mothers who said they had ever heard of ORS although they described it incorrectly. Nine mothers said they had never heard of ORS.

Hand washing practices

Results show that only one mother (0.34%) washes her hands with soap/ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated. *[Indicator: Percentage of mothers with children age 0–23 months who report that they wash their hands with soap/ash before food preparation, before feeding children, after defection, and after attending to a child who has defecated]*. This indicator was at two percent during the 2006 KPC baseline survey. The percent of mothers who practice any hand washing at some point falls far below 20% for each hand washing category. For example, there were only 12% of mothers who indicated that they wash their hands before food preparation.

ACUTE RESPIRATORY INFECTIONS (ARI) CASE MANAGEMENT

The prevalence of cough amongst youngest children in the last two weeks was reported by about 35% of mothers (104 out of 298 children). The most frequently mentioned danger sign by these 104 mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (52.9%) followed by rapid breathing (46.2%), Tightened chest muscles (25%) and child's chest caved/sunken in (14.4%). However, 14.8% of mothers could recognize at least two signs of pneumonia compared to 11.78% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize two signs of pneumonia]*.

Child Problem breathing experience

About 51.9% of children who had a cough illness were reported to have difficulty in breathing (54 out of 104 children) compared to 56% in 2006. 31.5% of mothers mentioned they sought advice or treatment for the child's cough and fast breathing the same day, followed by 29.6% who said they sought advice or treatment the next day. Nine mothers (16.4%) indicated they sought treatment two days later and four mothers (7%) said treatment was sought three days later. There were eight mothers that did not indicate when advice or treatment for their coughing child was sought compared to 20 mothers in 2006.

First Source of Advice or Treatment for sick child

Forty-seven mothers sought advice or treatment for the cough or difficulty in breathing compared to 62% during the 2006 Baseline survey. The most cited source of first advice for children with a cough or experiencing breathing by these mothers were health center (68%) followed by the hospital (12.8%). There were about 75.9% of mothers of children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 34.6% during the 2006 KPC Baseline survey. *[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source]*.

Medicines given to sick child with cough/difficulty in breathing

Children with cough and difficulty in breathing were treated with cotrimoxazole (27.8%), paracetamol (25.9%), unknown tablets (20.4%), amoxyllin/ampicillin (18.5%), Aspirin (13%) and unknown injection (9%). There other treatments administered to coughing children accounted for less that 10%. Of the 54 children who suffered from cough and/or had difficulty in breathing 42.59% of them had received antibiotics for the cough.*[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics]*. About 38.46% of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks received antibiotics during the 2006 KPC Baseline survey.

MALARIA CASE MANAGEMENT

About 19.5% of mothers reported that their children had a fever in the past 2 weeks before the survey (58 children out of 298). Forty-three percent mothers of children with high fever in the last 2 weeks sought care within 24hours from a trained provider. *[Indicator: Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider]*. There were 63% of mothers of children 0 – 23 months with high fever in the last 2 weeks seeking care within 24 hours from a trained provider during the 2006 KPC Baseline survey.

Medicines given to sick child for fever

Results show that 5% of children who presented fever were treated with aspirin, 3% were treated with cotrimoxazole, 1.7% with paracetamol. Treatment for fever with an unknown medicine was 1.7%. Anti-malaria medicines given to sick children with fever were given only in seven cases (Chloroquine, Mefloquine, Quinine and Artesunate). There were 5.17% of children with a fever who were treated with Quinine or Artesunate. *[Indicator: Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment]* During the 2006 KPC survey, about four percent (5 out of 119) of children with fever during the last two weeks preceding the survey took malaria treatment (Quinine or Artesunate).

Drugs given/taken to prevent malaria during pregnancy

There were 63% mothers (189 out of 298) who reported that they took drugs to prevent malaria when they were pregnant with their youngest child compared to 26.72% during the 2006 KPC Baseline survey. Among women who were given drugs to prevent malaria during pregnancy, the majority of mothers mentioned to have taken Fansidar (83.6%). [*Indicator: Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy]*. There were 71.8% of mothers who took Fansidar to prevent against malaria during pregnancy of their youngest child in the 2006 KPC Baseline survey.

Causes of malaria

About 61% of mothers (181 out of 298 knew that malaria is caused by mosquitoes compared to about 34% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who know how malaria is caused]*. There has been an increase in the knowledge of causes of malaria by mothers in this health zone. However, 34% of the mothers said they did not know what causes malaria.

MOSQUITO BEDNET USE AND MAINTENANCE

Availability of Bednet

There is an increase of the bed nets in this health zone compared to the year 2006. About 74% of mothers said they have bed nets in the house to prevent against malaria (219 mothers out of 298) compared to only seven percent of mothers during 2006 KPC Baseline survey. About 90% of these mothers with bed nets (198 out of 219) said that they had ever impregnated or soaked bed nets in a liquid to repel mosquitoes and/or other insects. 81% of mothers with bed nets that were ever impregnated or soaked (161 out of 198) also indicated that their bed nets were ever washed. However, 25% (55 out of 219) of bed nets that were inspected by interviewers that had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos.

Children who slept under treated net

About 57% of mothers reported that their youngest children slept under the ever treated bed nets the previous night preceding the 2010 KPC survey *[Indicator: Percentage of children age 0–23 months who slept under an insecticide-treated net the previous night]*. This indicator was only four percent during the 2006 KPC Baseline survey.

Iron/Folic acid intake during pregnancy
Almost 62.4% of mothers indicated that they took or bought tablets/syrup with iron or folic acid when they were pregnant with their youngest child (188 mothers out of 298) compared to 46% during the 2006 Baseline survey.

CONCLUSION AND RECOMMENDATIONS

Nutritional Status of children
There is a decline in the percent of children who are underweight from 26% to 17.23% between 2006 and 2010. This means that fewer children were malnourished during the 2010 KPC final evaluation than those in 2006. However, there were 14 children who had signs of edema in Health Zone 2 in 2010 compared to seven children who had signs of edema in 2006.

Maternal and Newborn
There is an increase in the percent of mothers assisted by nurses and doctors during delivery from 20% to 34% between 2006 and 2010. There is also an increase in the percent of mothers who received at least two tetanus injections during pregnancy from 32% to 67% between 2006 and 2010.

HIV/AIDS
The percent of mothers who have ever heard of HIV/AIDS is very high. There is an increase in the percent of mothers who could cite at least two ways of reducing the risk of HIV infection from 47% to 63% between 2006 and 2010.

Breastfeeding and Infant/Child Nutrition
Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were 78.49% compared to about 55% in 2006. This implies that about 21% of these children missed out on the initial breastmilk that is essential in the protection of children against illness. The percent of infants aged 0-5 months who receive breast milk within the last 24 hours increased between 2006 and 2010 by about 24%. There is a decline in the percent of children who receive breastmilk and complementary food within the last 24 hours from 88.5% to 62.9% between 2006 and 2010.

Childhood illnesses (IMCI)
There were about 79.87% of mothers who knew at least two signs of childhood illness that indicate the need for treatment compared to 70% during the 2006 KPC baseline survey**.** This shows that mothers' knowledge level of signs of childhood illnesses has improved from 70% to about 80% between the two years. The percent of sick children age 0-23 months who received increased fluids and continued feeding during illness in the past two weeks increased from 6.8% in 2006 to 8.81 in 2010. The low percent of mothers who give their children more fluids and continued feeding of recovering children implies deepening poor feeding practice by mothers. About 36% of mothers sought advice from someone outside of the home when their youngest child was sick.

Child Immunization

About 50% of children with health cards were fully immunized against the 5 preventable diseases compared to 28.6% during the 2006 KPC Baseline survey. There is an increase in the percent of children 12 – 23 months who are fully immunized in Health Zone 2. However, there were very few children with health cards, hence the percentages may provide blown out impressions about the situation. About 83% of children aged 12 – 23 months were vaccinated against tuberculosis. There is a huge decline in terms of children immunized against measles between 2006 and 2010, declining from 50% to 26% between the two surveys. There were 21 children (18%) aged 12 - 23 months who were vaccinated against yellow fever. There were about 65% of children who were older than six months who had received Vitamin A supplement during the survey compared to about 69% in 2006.

Diarrhea Case Management

There were 55 mothers (18.5%) who reported that their youngest children suffered from diarrhea in the last two weeks. However, there were only 7.05% of mothers who could recognize at least 2 signs of dehydration as danger signs compared to 26.6% in 2006. This implies an improvement in the level of knowledge among mothers in terms of danger signs of dehydration over the two survey years. Only 16.4% of children were breastfed more than usual when they were suffering from diarrhea compared to 10.3% in 2006. About 15% of mothers had ever heard about ORS. However, the percentage of mothers who ever heard of ORS and can correctly describe ORS is only 9.73% compared to 18% in 2006. There is a decline in the level of mothers' knowledge of defining ORS correctly over the two survey years hence, likely to affect the preparation of ORS/home fluids for children with diarrhea. Results show that only one mother (0.34%) washes her hands with soap/ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated compared to 2% in 2006. Hence, it is clear that a higher percent of mothers do not practice hand washing when caring for their children. This continues to be critical programmatic intervention area required for diarrhea control in this health zone.

Acute Respiratory Infections case Management

The most frequently mentioned danger sign by these 104 mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (52.9%) followed by rapid breathing (46.2%). However, 14.77% of mothers could recognize at least two signs of pneumonia compared to about 25% in 2006. The most cited source of first advice for children with a cough or experiencing breathing by these mothers were health center (68%) followed by the hospital (12.8%). There were about 75.93% of mothers of children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 34.6% in 2006. Of the children who suffered from cough and/or had difficulty in breathing 42.59% of them had received antibiotics for the cough compared to 38.46% in 2006.

Malaria Case Management

43% of mothers of children with high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 63% in 2006. There were 5.17% of children with a fever who were treated with Quinine or Artesunate compared to % in 2006. Among women who were given drugs to prevent malaria during pregnancy, the majority of mothers mentioned to have taken Fansidar (83.6%) compared to 71.8% in 2006. About 61% of mothers (181 out of 298 knew that malaria is caused by mosquitoes compared to only about 34% during the 2006 KPC Baseline survey.

Mosquito Bed nets and Maintenance

There is an increase of the bed nets in this health zone compared to the year 2006. About 74% of mothers said they have bed nets in the house to prevent against malaria (219 mothers out of 298) compared to only seven percent of mothers during 2006 KPC Baseline survey. However, 25% of bed nets that were inspected by interviewers that had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos. There is a marked increase in the percent of youngest children who slept under bednet from 4% to 57% over the two KPC survey years.

HEALTH ZONE 3

* Comments on indicator table

Initially there were 301 records, deleted the first record as it had no information just the last variable only uniquekey was entered. Records with missing children's ages were calculated from given dates of birth resulting in n = 300 and 299 children were weighted

Table 1: KPC Key Indicators

HEALTH ZONE 3					
INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	124	171	72.51	13.39
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	58	299	19.40	8.96
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	162	300	54.00	11.28
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	122	300	40.67	11.12
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	169	300	56.33	11.23
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	70	115	60.87	18
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	38	64	59.38	24.07
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	6	26	23.08	32.39
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	9	102	8.82	11.01

IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	157	300	52.33	11.31
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	157	300	52.33	11.07
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	3	300	1.00	2.26
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	135	300	45.00	11.26
IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	15	240	6.25	6.12
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	63	109	57.80	18.54
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	1	109	0.92	3.58
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	93	127	73.23	15.4
	Percent of mothers with children 0-23 months who know how malaria is	177	300	59.00	11.14
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	13	105	12.38	12.6
	Percentage of mothers who can correctly prepare ORS	21	300	7.00	5.78
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	26	105	24.76	16.51
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	17	300	5.67	5.23

INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	30	88	34.09	19.8
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	64	300	21.33	9.27
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	32	88	36.36	20.1

Table 1B: KPC Key Indicator Trends

HEALTH ZONE 3			
INDICATOR	INDICATOR	2006	2010
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	66.92	72.51
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	23.60	19.40
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	1.36	54.00
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	22.03	40.67
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	57.97	56.33
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	19.75	60.87
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	55.88	59.38
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	87.50	23.08
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	60.00	8.82
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	65.08	52.33
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	55.59	52.33
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	0.00	1.00
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	3.39	45.00

IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	1.79	6.25
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	64.15	57.80
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	15.72	0.92
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	26.79	73.23
	Percent of mothers with children 0-23 months who know how malaria is	50.51	59.00
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	5.00	12.38
	Percentage of mothers who can correctly prepare ORS	7.80	7.00
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	5.00	24.76
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	29.83	5.67
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	35.87	34.09
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	10.85	21.33
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	34.78	36.36

RESULTS AND DISCUSSION

BENA DIBELE: HEALTH ZONE 3

Socio-Demographics of Mothers

Age

Mothers' age was obtained from a total of 295 mothers who had children aged between 0 – 23 months in this health zone. The average age of mothers was 27 years. Mother's age ranged from 16 years to 45 years. There were 2 mothers with ages entered 1 & 11 years, hence, these not considered under age analysis. One mother also had her age missing.

Education level

There were eight mothers (2.7%) who had no education, 59% had primary education and 35% had attended secondary education. There were two mothers whose years attended school was recorded as 34years and 60 years.

Income Generation Activities

Majority of mothers are engaged in harvesting/farming activities (85.4%) as a source of income followed by mothers who sell food items (9.7%). About 6% of mothers indicated they were shop keepers/street vendors and 3.7% were involved in handicrafts. There were only eight mothers (2.7%) who said that they had no income generating activities they are involved in. Percentages of mothers for the rest of the income generating categories were all below 5%.

Household Headship

Only nine mothers (9%) cited themselves as heads of their households. The majority of households visited are headed by husbands (92%) and 3% reported household heads were relatives.

Children Density & Spacing in Households

There were 523 children below five years of age in households visited for the survey. All the 506 children were biological children to the mothers interviewed. The average number of children per household aged below five years was 1.74 and the mean number of biological children in households per woman was 1.69. The mean difference in age between the two youngest siblings under five years was 16.1 months (Table 2A). There were about 75.5% of children who were born at least 24 months after the previous surviving child. [*Indicator: Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child]*. There were about 66.9% of children who were born at least 24 months after the previous surviving child during the 2006 KPC baseline survey.

Table 2A: Children density in households

Children density	Number	mean
Children under 5 in the household(n)	523	1.74
Biological children (n)	506	1.69
Difference between the two youngest siblings under 5 (months)	171	16.1

Table 2B: Number of Children by Age Group

Age Group	Number
0 – 5 months	115
6 – 9 months	64
12 – 23 months	102
0 – 11 months	198
0 – 23 months	300
Total	**300**

Child Minders during mother's absence from home

About 45.7% of mothers leave their children with their older children/siblings, 31.7% with their other relatives, 15% with their maternal grand mothers, 15% of mothers take their children with them, 8.7% with their husbands and 3.3% with their neighbors/friends.

Anthropometry

Of the surveyed children whose sex, age and weight data were recorded, 19.4% of children were underweight according the WHO/NCHS reference population standards [*Indicator: Percentage of children age 0 – 23 months who are underweight (-2SD from the median weight-for-age, according to the WHO/NCHS reference population]*. This malnutrition/underweight index was about 23.6% during the 2006 KPC baseline survey. The year 2010 KPC final evaluation results show that older children have higher levels of malnutrition, boys also have higher malnutrition levels compared to girls and there were more children of older mothers who were underweight compared to children of mothers aged up to 25 years.

TABLE 3: Percentage of children age 0–23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)

	Weight-for-age			
Demographic characteristics	**Percentage below -2SD**	**Mean Z-score (SD)**	**Number of children below -2SD**	**Number of children**
Child's age				
<6 months	3.01	-0.05	9	114
6- 11 months	7.02	-0.88	21	83
12- 23 months	9.36	-1.44	28	102
Child's sex				
Male	13.04	-0.91	39	157
Female	6.35	-0.58	19	142
Mother's age				
< 25 years	9.03	-0.81	27	126
> or = 25 years	10.37	-0.73	31	169
Mother's Level of Education				
No Education	0.00	0	0	8
Primary Education	13.71	-0.83	41	177
Secondary Education	5.69	-0.71	17	104
Tertiary Education	0.00	0	0	2
Total	**19.40**	**-0.76**	**58**	**299**

Comment:

*The Z-score deviation from means for nutrition data ranges from extreme values -9.91 (a 12 months old child whose weight is 0.1 kg) to 8.07 (a 2 months old child whose weight is 8.07 kgs).

* 2 mothers were had age below 12 years old and 1 mothers had information on their ages missing reducing the total of mother's age to 295 instead of 299.

* 8 mothers had no information on their level of education reducing the total of mother's age to 291 instead of 299

*299 children within the 0 – 23 months age range were weighted and the records processed by Epinut software.

Edema

There were 0.7% children (2 out of 295) who had signs of edema in Health Zone 3 in 2010 and only two percent children had signs of edema during the 2006 KPC Baseline survey. Edema automatically means child is malnourished and is strongly associated with mortality.

MATERNAL & NEWBORN

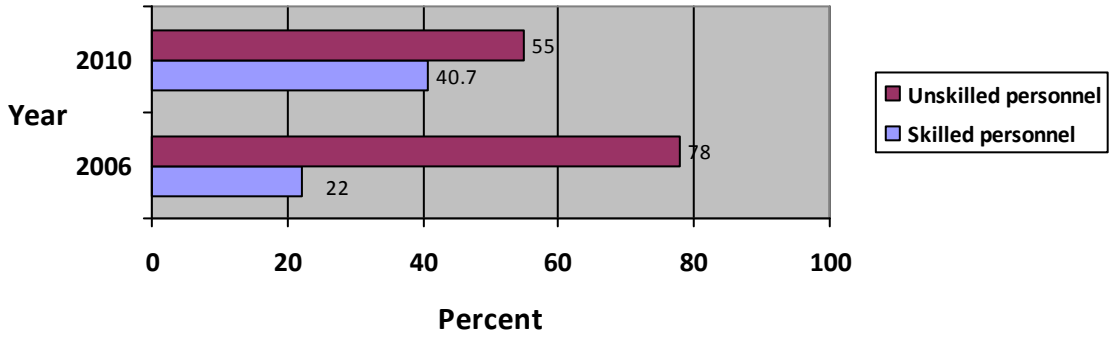
Births Assisted by skilled health personnel

Births assisted by only Nurse/Midwife/Doctor

The percentage of mothers who were assisted by skilled personnel during delivery is abo[redacted] 41% compared to about 22% of mothers who were assisted by skilled health personnel i[redacted]2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled[redacted]ealth personnel.*

Figure 1A: Births Assisted Delivery

***Auxiliary midwives Excluded in skilled personnel category**

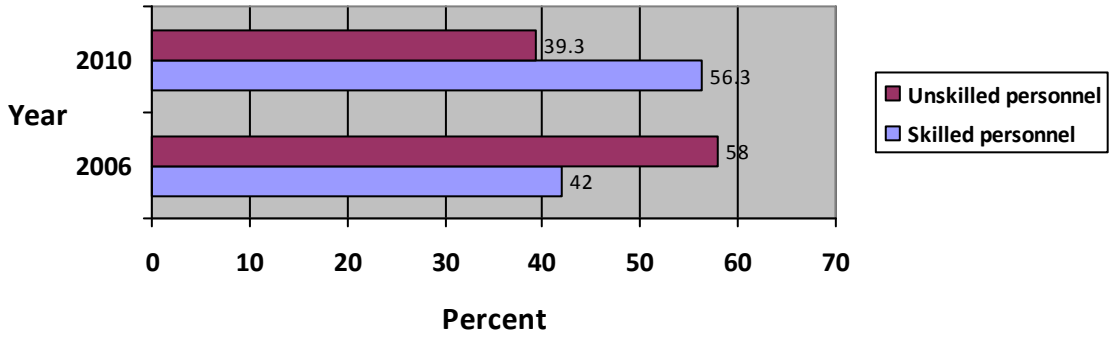


Births Assisted by Nurse/Midwife/Doctor/Auxiliary midwife

About 56% of mothers' delivery was assisted by the skilled personnel that includes Auxiliary midwife compared to about 42% who were assisted by this grouped skilled personnel during the 2006 KPC Baseline survey. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel]*.

Figure 1B: Births Assisted Delivery

***Auxiliary midwives included in skilled personnel category**



Receipt of Tetanus Toxoid during Pregnancy

There were 54% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 1.4% of mothers who received the same dosage during pregnancy during the 2006 KPC Baseline survey. [*Indicator: Percentage of mothers with children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child]*.

KNOWLEDGE OF HIV AND AIDS

About 92% of mothers have ever heard of an illness called AIDS. There were 39.7% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection compared to 55.6% in 2006.*[Indicator: Percentage of mothers with children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection*]. About 48% of mothers mentioned abstinence from sex as one of the ways of avoiding getting AIDS, 31% mentioned avoiding sex with prostitutes and 26% mentioned avoiding razors/blades, 6% mentioned use of condoms, and 3% said limiting number of sexual partners as other ways of avoiding getting AIDS. Other mothers mentioned avoiding sex with persons with many sexual partners (2.7%) as way of avoiding getting AIDS.

BREASTFEEDING AND INFANT/CHILD NUTRITION

Exclusive breastfeeding

Current breastfeeding is high among mother interviewed (95.6%). For the 12 mothers who were not currently breast feeding, 7 mothers had never breastfed. Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were about 60.87% compared to 19.75% in 2006. *[Indicator: Percentage of children age 0–5 months who were exclusively breastfed during the last 24 hours]*. Male infants were more likely to have been exclusively breastfed within the first 24 hours compared to female infants. Younger mothers aged below 25 years with infants aged between 0 – 5 months were likely to have more malnourished children than mothers aged at least 25 years.

Table 4: Exclusive Breastfeeding during the last 24 hours

Exclusive		**Infants age 0 – 5 months**		**Age of mother**		
Breast feeding	**Total**	**Male**	**Female**	**< 25 years**	**≥ 25 years**	***Unknown**
Yes	60.87(70)	67.86(38)	54.24(32)	54.90(28)	65.08(41)	100.00(1)
No	39.13(45)	32.14(18)	45.76(27)	45.10(23)	34.92(22)	0.00(0)
Total	100.00(115)	100.00(56)	100.00(59)	100.00(51)	100.00(63)	100.00(1)

* Unknown category refers to children whose sex information was missing and children with mothers whose age information was missing

Breastfeeding and Complementary Feeding

The results show that there were 59.4% of children who receive breastmilk and complimentary food within the last 24 hours. *[Indicator: Percentage of children age 6–9 months who received breast milk and complementary foods during the last 24 hour]*. Mothers were more likely to give their male infants breastmilk and complementary feeding within the last 24 hours compared to their female infants. Mothers aged below 25 years with infants aged between 6 – 9 months were likely to have more malnourished children than mothers aged at least 25 years. During the 2006 KPC Baseline survey, 56% of children aged 6 - 9 months received breastmilk and complementary foods during the last 24 hour.

Table 5: Breastfeeding and Complementary feeding within the last 24 hours

Breast milk & Complementary foods		**Infants age 6 – 9 months**		**Age of mother**	
	Total	**Male**	**Female**	**< 25 years**	**≥ 25 years**
Yes	59.38(38)	60.61(20)	58.06(18)	56.00(14)	61.54(22)
No	40.63(26)	39.39(13)	41.94(13)	44.00(11)	38.46(15)
Total	100.00(64)	100.00(33)	100.0031)	100.00(25)	100.00(39)

CHILDHOOD ILLNESS (IMCI)

About 52% of mothers who knew at least two signs of childhood illness that indicate the need for treatment compared to 65% during the 2006 KPC baseline survey.*[Indicator: Percentage of mothers of children age 0–23 months who know at least two signs of childhood illness that indicate the need for treatment]*. The most cited sign of child illness was high fever (82.3%), followed by "Child looking unwell/not playing normally"(27.7%), "child not eating (27.7%), "child vomits everything" (11.7%), convulsions (9%), Lethargic of difficult to wake (7.3%) and difficult or rapid breathing (5%). The commonly cited child illness experiences in the last two weeks were cough (61%) followed by fever (35.3%) and diarrhea (35%).

Increased fluids and continued feeding during child illness

The results show that only 6.25% (15 out of 240) sick children received increased fluids and continued feeding during illness. *[Indicator: Percentage of sick children age 0–23 months who received increased fluids and continued feeding during an illness in the past two weeks]*. This indicator was at 1.8% in 2006.

Source of First Advice or treatment for sick Child

About 49% of mothers (117 out of 2240) sought advice from someone outside of the home when their youngest child was sick. The most common source of first advice or treatment for their sick children were health center (53%), followed by pharmacist (15.7%), Friends/Relative (12.2%) and Private Practitioner (5.27%) of mothers as a source of first advice/treatment for their sick child while the rest of the categories mentioned by mothers had percentages below 5%.

CHILD IMMUNIZATION

Full immunization is defined as children receiving vaccines for all the five preventable diseases. BCG, DTP, Polio and measles vaccines. It is also expected that child would be fully immunized by the time they reach age of 12 months.

Full Immunization of children

The vaccinations considered for fully immunization are Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card. Results show that of only 23% (6 out of 26) children aged between 12-23 months with child health cards, were fully immunized compared to 87.5% in 2006. *[Indicator: Percentage of children age 12–23 months who are fully vaccinated against the five vaccine-preventable diseases before the first birthday]*.

Immunization against Measles

Only 8.8% (9 out of 102) children aged above 12 months were vaccinated against measles. *[Indicator: Percentage of children age 12–23 months who received a measles vaccine]*. There is a huge decline in terms of children immunized against measles between 2006 and 2010, declining from 60%.

Immunization against Tuberculosis

BCG is the vaccine for prevention against tuberculosis. Overall, 71% of children aged 12 – 23 months were vaccinated against tuberculosis.

Immunization against Tuberculosis	Number	Percent
Yes	72	70.6
No	30	29.4
Total	**102**	**100.0**

Immunization against Yellow Fever

There were 10 children (3.3%) aged 0 - 23 months who had health cards showing that they had been vaccinated against yellow fever. During 2006 KPC baseline, only six children (5.5%) had health cards showing that they had been vaccinated against yellow fever.

Immunization against Yellow Fever	Number	Percent
Yes	10	3.3
No	290	96.7
Total	**300**	**100.0**

Vitamin A Supplement for children aged >6 – 23 months in the last six months

There were 69% of children who were older than six months had received Vitamin A supplement during the survey [*Indicator: Percentage of children > 6 months receiving one Vitamin A dose*]. During 2006 KPC baseline, there were 82% older that six months with health cards showing that they had received vitamin A supplement.

Vitamin A Supplement	Number	Percent
Yes	128	69.2
No	57	30.8
Total	**185**	**100.0**

DIARRHEA CASE MANAGEMENT

Prevalence of Diarrhea and knowledge of signs of child illness

There were 105 mothers (35%) who reported that their youngest children suffered from diarrhea in the last two weeks. However, there were only 5.67% of mothers who could recognize at least 2 signs of dehydration as danger signs compared to 29.8% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs]*. The most frequently mentioned danger sign to push a mother to seek immediate treatment at a health facility or hospital when a child has diarrhea was intense weakness (59%) followed by refusal eat (23.8%) and intense thirst (18.1%). The rest of the other danger signs were mentioned by less than 10% of mothers.

Diarrhea treatment by mother

About 12.4% of children who had diarrhea in the last two weeks of were reported by their mothers to have received ORS and/or home fluids compared to 5% during the 2006 KPC Baseline survey. *[Indicator: Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids]*. The most common treatment for diarrhea among children reported by mother was giving the sick child the ORS packet (33.3%) followed by pill or syrup (22.9%), injection (16.2%), home remedies (9.5%) and home based liquid (5.7%). About 15% of mothers said they did not do anything to treat their children who were sick of diarrhea.

Breastfeeding of sick child

Out the 105 mothers who reported that their youngest children suffered from diarrhea, only 26 children were breastfed more than usual (24.8%), 24 children were breast fed less than usual (22.9%) while 40 children were breast fed the same as before (38.1%) they were ill from diarrhea. Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual was at 24.8%. There were five percent of sick children who were breastfed more than usual and 30% of sick children from diarrhea who said to have been breastfed less during the 2006 KPC Baseline survey. Hence, there is an improvement in the knowledge of mothers about the effect of breastmilk on children with diarrhea between the two KPC surveys from 30% to 23% of children who were breastfed less during the period they had diarrhea.

Frequency of eating sick child

Out of the 105 mothers reporting that their children suffered diarrhea during the past two weeks 42 children (40%) ate less. There were seven children who were offered more than usual to eat (6.7%) and 33 children (31.4%) were given the same amounts to eat when they had diarrhea and 11 children (10.5%) were reported not yet eating during the survey. About three percent of sick children were offered more than usual to eat and 55% of children sick of diarrhea two weeks preceding the 2006 KOC Baseline survey were said to have eaten less than usual. Although there is a decline in the percent of sick children who eat less from 55% to 40% between 2006 and 2010, there is still a large percent of children who eat less food during illness. Hence, reflecting on the mothers' lack of knowledge about the necessity of ensuring that children continue eating during diarrhea illness.

Intake of liquids by recovering child

About 54% of the 105 mothers offered children same amount as usual to drink when children were recovering from diarrhea and 21 children (20%) offered more than usual to drink during their recovery period. There were 18 recovering children (17.1%) were offered less than usual to drink. About eight percent of recovering children were offered more than usual to drink and 22% of children recovering from diarrhea were said to have taken less liquids to drink during the 2006 KPC Baseline survey. There is a decline in the percent of children who are recovering from diarrhea who drink fewer liquids from 22% to 17% between 2006 and 2010. This implies a slight improvement in the mothers' knowledge about the need to give liquids to recovering children who are sick from diarrhea.

Intake of food by recovering child

About 48.6% of the 105 mothers offered children same amount as usual to eat when children were recovering from diarrhea 24 children (23%) offered more than usual to eat during their recovery period and 20 children (19%) were given less than usual to eat during their recovery period. Also 10 children were said not to have started eating yet (9.7%). About nine percent of recovering children were offered more than usual to eat and 31% of children who were recovering from diarrhea during the 2006 KPC Baseline survey were said to have eaten less. Hence, there is an improvement in terms of intake of food by children recovering from diarrhea from 31% to 19% between 2006 and 2010 KPC survey years.

Knowledge of oral re-hydration solution (ORS)

The percentage of mothers who ever heard of ORS was about 21.7% compared to 97% in 2006. The percentage of mothers who ever heard of ORS and can correctly describe ORS is only 7% *[Indicator: Percentage of mothers who can correctly prepare ORS]*. This is lower compared to the 2006 baseline survey where only about 8% could describe ORS correctly.

Hand washing practices

Results show that only three mothers (1%) wash their hands with soap/ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated. *[Indicator: Percentage of mothers with children age 0–23 months who report that they wash their hands with soap/ash before food preparation, before feeding children, after defection, and after attending to a child who has defecated]*. There were 18.7% of mothers who indicated that they wash their hands after defecation, 10.3% said they wash hands before food preparation, 6.3% wash hands before feeding child and 5% wash hands after attending to child who has defecated. There were no mothers who reported to implement all the four hand washing practice during the 2006 KPC Baseline survey.

ACUTE RESPIRATORY INFECTIONS (ARI) CASE MANAGEMENT

The prevalence of cough amongst youngest children in the last two weeks was reported by about 62% of mothers (186 out of 300). The most frequently mentioned danger sign by these 186 mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (56.5%) followed by rapid breathing (32.8%), Tightened chest muscles (12.4%) and child's chest caved/sunken in (10.8%). However, only 21.3% of mothers could recognize at least two signs of pneumonia. *[Indicator: Percent of mothers with children 0-23 months who recognize two signs of pneumonia]*. There were about 11% of mothers who could recognize two signs of pneumonia during the 2006 KPC Baseline survey.

Child Problem breathing experience

About 47% of children who had a cough illness were reported to have difficulty in breathing (88 out of 186 children). Only 11 mothers (12.5%) mentioned they sought advice or treatment for the child's cough and fast breathing the same day and 14 mothers (15.9%) said they sought advice or treatment the next day. About 18% (16) of mothers indicated they south treatment two days later and 18 (20.4%) mothers said treatment was sought three days later.

First Source of Advice or Treatment for sick child

There were 57 mothers who sought advice or treatment for the cough or difficulty in breathing of their children. The most cited source of first advice for children with a cough or experiencing breathing by these mothers were health center (53.4%). About 34% of mothers with children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 35.9% during the 2006 KPC Baseline survey. *[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source]*.

Medicines given to sick child with cough/difficulty in breathing

Children with cough and difficulty in breathing were treated with amoxyllin/ampicillin (21.6%), cotrimoxazole (18.2%) and paracetamol (15.9%. There other treatments administered to coughing children accounted for less than 10% {Aspirin (0%), unknown tablets (9.1%) & unknown injection (8%)}. Of the 88 children who suffered from cough and/or had difficulty in breathing, 36.4% of them had received antibiotics for the cough. *[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics]*. About 35% of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks had received antibiotics during the 2006 KPBC Baseline survey.

MALARIA CASE MANAGEMENT

About 36% of mothers reported that their children had a fever in the past 2 weeks before the survey (109 out of 300). About 57.8% of these mothers (63 out of 109) with high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 64% during the KPC 2006 Baseline survey. *[Indicator: Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider]*.

Medicines given to sick child for fever

Results show that 22.9% of children who presented fever were treated with paracetamol, 16.5% were treated with ampicillin/amoxyllin, 13.8% were treated with cotrimoxazole, and 11.9% were treated with Aspirin. Treatment of fever among children with other dugs was very low {Mefloquine (3.7%, Chloroquine, (2.8%), Quinine (0.9%), & unknown medicine (2.8%)}. Quinine and Artesunate were given to 1 out of 109 children (0.92%) as malaria treatment *[Indicator: Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment]*. About 16% children 0 – 23 moths with high fever in the last 2 weeks took malaria treatment (Quinine or Artesunate) during the 2006 KPC Baseline survey.

Drugs given/taken to prevent malaria during pregnancy

There were 42.3% of mothers (127 out of 300) who reported that they took drugs to prevent malaria when they were pregnant with their youngest child compared to 27% during the 2006 KPC Baseline survey. Among women who were given drugs to prevent malaria during pregnancy, 15.7% said they did not know what drug it was, 73.2% mentioned to have taken Fansidar, 1.6% took Chloroquine, and 1.6% took Quinine. About 73% (93 out of 127) said they took Fansidar as a prevention drug against malaria during pregnancy of their youngest child. [*Indicator: Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy]*. About 27% of mothers who prevented against malaria during pregnancy of their youngest child said they took Fansidar during the 2006 KPC Baseline survey.

Causes of malaria

Fifty-nine percent of mothers (177 out of 300 knew that malaria is caused by mosquitoes compared to only about 51% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who know how malaria is caused]*. However, 25% of the mothers said they did not know what causes malaria.

MOSQUITO BEDNET USE AND MAINTENANCE

Availability of Bed nets

There is an increase of the bed nets in this health zone compared to the year 2006. About 50% of mothers said they have bed nets in the house to prevent against malaria (151 mothers out of 300) compared to 11% of mothers during 2006 KPC Baseline survey. About 96% of these mothers with bed nets (145 out of 151) said that they had ever impregnated or soaked bed nets in a liquid to repel mosquitoes and/or other insects. About 78.8% of mothers with bed nets that were ever impregnated or soaked (119 out of 151) also indicated that their bed nets were ever washed. However, 35.8% (54 out of 151) of bed nets that were inspected by interviewers that had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos.

Children who slept under treated net

About 45% of mothers (135 out of 300) reported that their youngest children slept under the ever treated bed nets the previous night preceding the 2010 KPC survey *[Indicator: Percentage of children age 0–23 months who slept under an insecticide-treated net the previous night]*. This indicator was only three percent during the 2006 KPC Baseline survey.

Iron/Folic acid intake during pregnancy

About 37% of mothers indicated that they took or bought tablets/syrup with iron or folic acid when they were pregnant with their youngest child (110 out of 300) compared to 25% during the 2006 Baseline survey.

CONCLUSION AND RECOMMENDATIONS

Nutritional Status of children

There is an improvement in the malnutrition status of children in Health Zone 3 with the index declining from 23.6% in 2006 to 19.4% in 2010. Edema with pitting was also very low and has declined from 2% in 2006 to 0.7% in 2010.

Maternal and Newborn

There is an increase in the percent of mothers whose youngest child's birth was delivered by either nurse/midwife or doctor from 22% in 2006 to 41% in 2010. There is a marked increase in the percent of mothers who received at least two tetanus injections during the pregnancy of their youngest child from 1.4% in 2006 to 54% in 2010.

HIV/AIDS

The percent of mothers who cite at least two known ways of reducing the risk of HIV decreased from about 56% in 2006 to 40% in 2010.

Breastfeeding and Infant/Child Nutrition

There is an increase in Percentage of children age 0–5 months who were exclusively breastfed during the last 24 hours from abut 20% to 61% between 2006 and 2010. However, this means that 39% of the children missed out on colostrum that is contained in the first breast milk after delivery, as it has been shown that that initial breast milk is highly concentrated of antibodies that protect babies of infection. There is an increase in the percent of mothers who offer their 6 – 9 months infants breastmilk and complementary feeding from 56% in 2006 to 59% in 2010. There is need for health education to put more focus on the importance initial breastfeeding and of exclusive breast feeding for children aged less than 5 months. There is need to strengthen health provides' counseling on child health and nutrition skills to facilitate imparting of information to mothers.

Childhood illnesses (IMCI)

The percentage of mothers of children age 0–23 months who know at least two signs of childhood illness that indicate the need for treatment decreased from 65% in 2006 to 52% in 2010. There is an increase in the percent of children who received increased fluids and continued feeding during illness in the past two weeks from 1.8% in 2006 to 6.25% in 2010. However, this indicator is still very low and shows continued or deepening poor practice by mothers regarding feeding of children recovering from illnesses. Hence, remain a critical area of intervention through health education of mothers to facilitate appropriate care for sick children.

Child Immunization

There is a decrease in the percent of children who were fully immunized by their first birthday from 88% to 23% in 2010. There is a decrease in the percent of children who were immunized against measles by their first birthday from 60% to 9% in 2010. Overall, 71% of children aged 12 – 23 months were vaccinated against tuberculosis. There is a decrease in the percent of 0 – 23 months old children who were immunized from about 6% in 2006 to 3% in 2010. Similarly, there is a decrease in the percent of children aged >6 – 23 months who received Vitamin A supplement from 82% in 2006 to 69% in 2010.

Diarrhea Case Management

The percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger sign decreased from about 30% in 2006 to 5.7% in 2010. The percent of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluid increased from about 5% in 2006 to 12% in 2010. The percent of mothers who can correctly describe ORS is still very low although has decreased from 8% in 2006 to 7% in 2010. Similarly, the percent of mothers who practice all the four hand washing practices is still very low although it has improved from 0% in 2006 to 1% in 2010. Educating mothers on how to prepare the ORS and the benefits of practicing all the four hand washing practices continues to be critical programmatic intervention area required for diarrhea control in this health zone.

Acute Respiratory Infections case Management

There is an improvement in the mothers' knowledge of at least two signs of pneumonia from 11% in 2006 to 21% in 2010. There is a slight decrease in the percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source from about 36% in 2006 to 34% in 2010. There is also a slight increase in the percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics from 35% in 2006 to 36% in 2010.

Malaria Case Management

The percent of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider declined from 64% in 2006 to 58% in 2010. The percent of children 0-23 with high fever in the last 2 weeks that took malaria treatment (Quinine or Artesunate) decreased from 16% in 2006 to 0.9% in 2010. There is an increase in the percentage of mothers who took anti-malarial medicine (Fansidar) to prevent malaria during pregnancy from 27% in 2006 to 73% in 2010. There is also an increase in the percent of mothers with children 0-23 months who know how malaria is caused from 51% in 2006 to 59% in 2010.

Mosquito Bednets and Maintenance

About 50% of mothers said they have bed nets in the house to prevent against malaria compared to 11% of mothers during 2006 KPC Baseline survey. About 78.8% of mothers with bed nets that were ever impregnated or soaked also indicated that their bed nets were ever washed. However, 35.8% of bed nets that were inspected by interviewers that had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos. There was an increase in the percent of children aged 0 – 23 months who slept under the insecticide-treated net the previous night from 3% in 2006 to 45% in 2010.

KANDA KANDA HEALTH ZONE 4

* Comments on indicator table

- Initially there were 300 records, deleted the first record as it had no information just the last variable only uniquekey was entered resulting in n = 299 and 296 children were weighted

Table 1: KPC Key Indicators

HEALTH ZONE 4					
INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	106	155	68.39	14.64
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	86	296	29.05	10.35
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	125	299	41.81	11.18
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	81	299	27.09	10.08
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	122	299	40.80	11.14
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	50	97	51.55	19.89
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breast milk and complementary foods	26	59	44.07	25.34
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	4	4	100.00	0
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles Vaccine	4	121	3.31	6.37
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	143	299	47.83	11.33
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	70	279	25.09	9.78

HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	1	299	0.33	1.31
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bed net the previous night	106	299	35.45	10.84
IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	7	223	3.14	4.58
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	54	127	42.52	17.2
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	10	127	7.87	9.37
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	7	99	7.07	10.1
	Percent of mothers with children 0-23 months who know how malaria is caused	161	299	53.85	11.3
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	2	81	2.47	6.76
	Percentage of mothers who can correctly prepare ORS	12	299	4.01	4.45
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	13	81	16.05	15.98
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	13	299	4.35	4.62

INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	15	68	22.06	19.71
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	20	299	6.69	5.66
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	15	68	22.06	19.22

Table 1B: KPC Key Indicator Trends

HEALTH ZONE 4			
INDICATOR	INDICATOR	2006	2010
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	74.31	68.39
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	26.88	29.05
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	1.69	41.81
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	16.55	27.09
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	40.20	40.80
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	28.28	51.55
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	70.42	44.07
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	57.14	100.00
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	46.73	3.31
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	58.11	47.83
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	41.22	25.09
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	1.35	0.33
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	2.36	35.45

IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	2.33	3.14
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	50.57	42.52
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	10.92	7.87
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	7.94	7.07
	Percent of mothers with children 0-23 months who know how malaria is caused	37.84	53.85
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	3.85	2.47
	Percentage of mothers who can correctly prepare ORS	3.72	4.01
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	7.69	16.05
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	21.96	4.35
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	24.62	22.06
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	4.39	6.69
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	21.54	22.06

RESULTS AND DISCUSSION

KANDA KANDA: HEALTH ZONE 4

Socio-Demographics of Mothers

Age

Mothers' age was analyzed from a total of 297 mothers who had children aged between 0 – 23 months in this health zone. The average age of mothers was 27.3 years. Mother's age ranged from 16 years to 49 years. There were two mothers that had their ages indicated as 3 and 4 years respectively. Hence, these two mothers' ages were not considered under the age analysis. There were three mothers whose ages were missing.

Education level

There were 31 mothers (10.4%) who had no education, 72.6% had primary education and 9.7% had attended secondary education.

Income Generation Activities

Majority of mothers are engaged in harvesting/farming activities (76.6%) as a source of income followed by mothers who sell food items (18%) and 7% who are shopkeepers/street vendors. About one percent were involved in handicrafts. There were 12 mothers (4%) who said that they had no income generating activities they are involved in.

Household Headship

Only 13 mothers cited themselves as heads of their households. The majority of households visited are headed by husbands (93.3%) and the rest reported household heads were relatives.

Children Density & Spacing in Households

There were 480 children below five years of age in households visited for the survey. There 478 biological children to the mothers interviewed. The average number of children per household aged below five years was 1.61 and the mean number of biological children in households per woman was 1.60. The mean difference in age between the two youngest siblings under five years was 14.54 months (Table 2A). There were about 68.4% of children who were born at least 24 months after the previous surviving child. [*Indicator: Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child]*. There were about 74 percent of children who were born at least 24 months after the previous surviving child during the 2006 KPC baseline survey.

Table 2A : Children density in households

Children density	Number	mean
Children under 5 in the household(n)	480	1.61
Biological children (n)	478	1.60
Difference between the two youngest siblings under 5 (months)	155	14.54

Table 2B: Number of Children by Age Group

Age Group	Number
0 – 5 months	97
6 – 9 months	59
12 – 23 months	121
0 – 11 months	178
0 – 23 months	299
Total	**299**

Child Minders during mother's absence from home

About 55% of mothers leave their children with their children with their older children/siblings 22% with their other relatives, 9% with the child's maternal grand mothers, 8.7% take their children with them, 4% leave them with their husbands and 2% leave them with their neighbors/friends.

Anthropometry

Of the surveyed children whose sex, age and weight data were recorded, 29.05% of children were underweight according the WHO/NCHS reference population standards [*Indicator: Percentage of children age 0 – 23 months who are underweight (-2SD from the median weight-for-age, according to the WHO/NCHS reference population]*. This malnutrition/underweight index was about 27% during the 2006 KPC baseline survey. The year 2010 KPC final evaluation results show that the older the child, the higher the level of malnutrition. There is higher prevalence of malnutrition among children of older mothers who were underweight compared to children of mothers aged below 25 years.

Table 3: Percentage of children age 0–23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)

	Weight-for-age			
Demographic characteristics	**Percentage below -2SD**	**Mean Z-score (SD)**	**Number of children below -2SD**	**Number of children**
Child's age				
<6 months	2.70	0.17	8	97
6- 11 months	6.42	-1.09	19	81
12- 23 months	19.93	-2.18	59	121
Child's sex				
Male	14.86	-1.37	44	152
Female	14.19	-0.89	42	147
Mother's age				
< 25 years	9.46	-0.88	28	112
> or = 25 years	18.92	-1.25	56	184
Mother's Level of Education				
No Education	2.03	-1.13	6	31
Primary Education	20.61	-1.1	61	217
Secondary Education	3.72	-1.48	11	29
Tertiary Education	0.00	0	0	0
Total	**29.05**	**-1.13**	**86**	**296**

Comments:

*The Z-score deviation from means for nutrition data ranges from extreme values -9.97 (a 12 months old child whose weight is 0.04kgs) to 8.1 (a 15 months child whose weight is 19 kgs). *2 record had missing data on mother's age bringing down the total by mother's age to 84 from of 86 for children below -2SD and 2 records had invalid age of mother in which mother's age was less than 12 years old.

* A total of 296 children were weighted resulting in 296 records processed by Epinut software.

Edema

There were seven children (2.3%) who had signs of edema in Health Zone 4 in 2010 and there were no children who had signs of edema in 2006. Edema automatically means child is malnourished and is strongly associated with mortality.

MATERNAL & NEWBORN

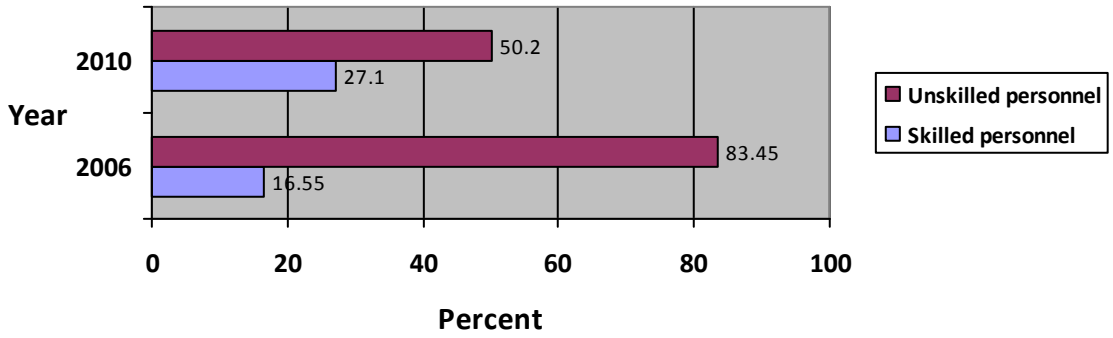
Births Assisted by skilled health personnel

Births assisted by only Nurse/Midwife/Doctor

The percentage of mothers who were assisted by skilled personnel during delivery is abo[redacted] 27% compared to about 16.6% who were assisted by skilled health personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel.*

Figure 1A: Births Assisted Delivery

***Auxiliary midwives Excluded in skilled personnel category**

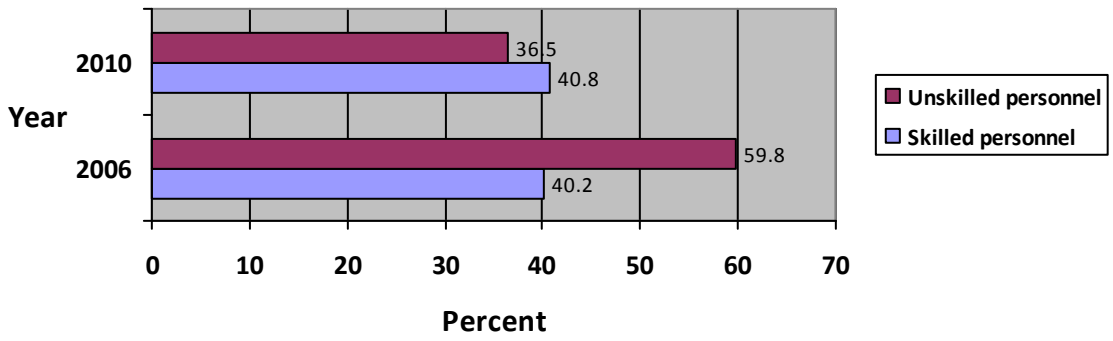


Births Assisted by Nurse/Midwife/Doctor/Auxiliary midwife

About 41% of mothers' delivery was assisted by the skilled personnel that includes Auxiliary midwife compared to about 40% who were assisted by this grouped skilled personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel]*.

Figure 1B: Births Assisted Delivery

***Auxiliary midwives included in skilled personnel category**



Receipt of Tetanus Toxoid during Pregnancy

There were 41.8% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 1.69% of mothers who received the same dosage during pregnancy in 2006. [*Indicator: Percentage of mothers with children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child]*.

KNOWLEDGE OF HIV AND AIDS

About 88% of mothers have ever heard of an illness called AIDS. There were 25% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection compared to 41% of mothers during the 2006 KPC Baseline survey*[Indicator: Percentage of mothers with children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection*]. About 52% of mothers mentioned abstinence from sex as one of the ways of avoiding getting AIDS, while 22% mentioned avoiding sex with prostitutes. There were 6% of mothers who mentioned the use of condoms and 6% who mentioned limiting number of sexual partners as other ways of avoiding getting AIDS. Other mothers mentioned avoiding sex with persons with many sexual partners (5%) as way of avoiding getting AIDS.

In the 2006 KPC baseline survey, there were 88% of mothers who had ever heard of AIDS and about 41% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection. Hence, there is a decline in the percent of mothers knowledgeable about ways of preventing HIV between the two years from 42% to 25%.

BREASTFEEDING AND INFANT/CHILD NUTRITION

Exclusive breastfeeding

Current breastfeeding is high among mother interviewed (93.6%). For the 19 mothers who were not currently breast feeding, 9 mothers had never breastfed. Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were 51.6% compared to about 28% in 2006. *[Indicator: Percentage of children age 0–5 months who were exclusively breastfed during the last 24 hours]*. Female infants were more likely to have been exclusively breast fed within the first 24 hours compared to male infants. Mothers aged less that 25 years were more likely to exclusively breastfeed their infants during the first hour compared to mothers aged at least 25 years. There is an increase in the percent of mothers who give their 0 -5 months old infants breastmilk within the first 24 hours of giving birth from 28% to 46% over the two KPC survey years.

Table 4: Exclusive Breastfeeding during the last 24 hours

Exclusive Breastfeeding		**Infants age 0 – 5 months**		**Age of mother**		
	Total	**Male**	**Female**	**< 25 years**	**≤ 25 years**	***Unknown**
Yes	51.55(50)	43.75(21)	53.06(26)	54.05(20)	50.85(30)	0.00
No	48.45(47)	56.25(27)	46.94(23)	45.95(17)	49.15(29)	100.00(1)
Total	100.00(97)	100.00(48)	100.00(49)	100.00(37)	100.00(57)	100.00(1)

* Unknown category refers to children whose sex information was missing and children with mothers whose age information was missing

* Invalid code refers to mothers whose age was below 12 years old. There were two mothers with ages 3 and 4 years.

Breastfeeding and Complementary Feeding

The results show that there were 44% of children aged 6 – 9 months who received breastmilk and complimentary food within the last 24 hours. *[Indicator: Percentage of children age 6–9 months who received breast milk and complementary foods during the last 24 hour]*. Mothers were more likely to give their male infants breastmilk and complementary feeding within the last 24 hours compared to their female infants. During the 2006 KPC Baseline survey, 70.4% of children aged 6 -9 months received breastmilk and complementary foods during the last 24 hour. There is a marked decline of mothers who give their 6 – 9 months old infants both breast milk and complementary feeding within the last 24 hours from 70% to 44% between the two KPC survey years.

Table 5: Breast feeding and Complementary feeding within the last 24 hours

Breast milk & Complementary foods		**Infants age 6 – 9 months**		**Age of mother**		
	Total	**Male**	**Female**	**< 25 years**	**≤ 25 years**	***Unknown**
Yes	44.07(26)	48.28(14)	40.00(12)	47.62(10)	43.24(16)	0.00
No	55.93(33)	51.72(15)	60.00(18)	52.38(11)	56.76(21)	100.00(1)
Total	100.00(59)	100.00(29)	100.00(30)	100.00(21)	100.00(37)	100.00(1)

* Unknown category refers to children with mothers whose age information was missing

* Invalid code refers to mothers whose age was below 12 years old

CHILDHOOD ILLNESS (IMCI)

There were about 47.8% of mothers who knew at least two signs of childhood illness that indicate the need for treatment compared to 58% during the 2006 KPC baseline survey.*[Indicator: Percentage of mothers of children age 0–23 months who know at least two signs of childhood illness that indicate the need for treatment]*. The most cited sign of child illness was high fever (74.6%), followed by "child not eating" (31.8%). "Child looking unwell/not playing normally" (23.7%), convulsions (13%). The "other" category constituted 12.7% while the rest constituted far below 10%. The commonly cited child illness experiences in the last two weeks were cough (51.5) followed by fever (39.8%) and diarrhea (36.1%).

Increased fluids and continued feeding during child illness

The results show that only 3.14% sick children received increased fluids and continued feeding during illness compared to 2% during the 2006 KPC Baseline survey. *[Indicator: Percentage of sick children age 0–23 months who received increased fluids and continued feeding during an illness in the past two weeks]*.

Source of First Advice or treatment for sick Child

About 31% of mothers (68 out of 219) sought advice from someone outside of the home when their youngest child was sick. The most common source of first advice or treatment was at health center (43%), followed by friends/relatives (23.5%). Other sources of first advice or treatment reported by mothers were Private Practitioner (5.9%), Village health worker (5.9%), Traditional healer (5.9%) and Pharmacist (5.9%) while the rest of the categories mentioned by less than 5% of mothers.

Mothers' knowledge of signs of childhood illnesses declined between the two years from 58% to 48%. The percent of sick children who received increased fluids and feeding increased from 2% to 3% between 2006 and 2010. However, this is extremely low and shows continued poor practice regarding feeding of sick children.

CHILD IMMUNIZATION

Full immunization is defined as children receiving vaccines for all the five preventable diseases. BCG, DTP, Polio and measles vaccines. It is also expected that child would be fully immunized by the time they reach age of 12 months.

Full Immunization of children

The vaccinations considered for fully immunization are Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card. Results show that all the four children aged 12-23 months with child health cards, were fully immunized (100%). *[Indicator: Percentage of children age 12–23 months who are fully vaccinated against the five vaccine-preventable diseases before the first birthday]*. There were only four out of seven children (57%) aged between 12 – 23 months with health cards who were fully immunized during the 2006 KPC Baseline survey.

Immunization against Measles

Only 3.3% (four out of 121) children aged above 12 months were vaccinated against measles *[Indicator: Percentage of children age 12–23 months who received a measles vaccine]*. There is a huge decline in terms of children immunized against measles between 2006 and 2010, declining from 46.7% to 3%.

Immunization against Tuberculosis

BCG is the vaccine for prevention against tuberculosis. Overall, 42.1% of children aged 12 – 23 months were vaccinated against tuberculosis.

Immunization against Tuberculosis	Number	Percent
Yes	51	42.1
No	70	57.9
Total	**121**	**100.0**

Immunization against Yellow Fever

There were 0.7% of children aged 0 - 23 months who had health cards showing that they had been vaccinated against yellow fever.

Immunization against Yellow Fever	Number	Percent
Yes	2	0.7
No	277	99.3
Total	**279**	**100.0**

Vitamin A Supplement for children aged >6 – 23 months in the last six months

There were about 55% of children who were older than six months had received Vitamin A supplement during the survey [*Indicator: Percentage of children > 6 months receiving one Vitamin A dose*]. During 2006 KPC baseline, there were 81% older than six months with health cards showing that they had received vitamin A supplement.

Vitamin A Supplement	Number	Percent
Yes	110	54.5
No	92	45.5
Total	**202**	**100.0**

DIARRHEA CASE MANAGEMENT

Prevalence of Diarrhea and knowledge of signs of child illness

There were 81 mothers who reported that their youngest children suffered from diarrhea in the last two weeks. However, there were only 4.4% of mothers who could recognize at least 2 signs of dehydration as danger signs compared to 21.96% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs]*. The most frequently mentioned danger sign to push a mother to seek immediate treatment at a health facility or hospital when a child has diarrhea was intense weakness (50.6%) followed by refusal eat (27.2%). The rest of the other danger signs were mentioned by less than 5% of mothers.

Diarrhea treatment by mother

About 2.47% of children who had diarrhea in the last two weeks of were reported by their mothers to have received ORS and/or home fluids compared to 3.9% during the 2006 KPC Baseline survey. *[Indicator: Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids]*. The most common treatment for diarrhea among children reported by mother was giving the sick child the home based liquid (19.8%) followed by ORS packet (12.3%). Giving sick children home remedies was done by 6.2% of mothers, pill or syrup (6.2%) and 29.6% of mothers said they did nothing. Similarly, 29% of mothers did nothing when their children had diarrhea in 2006.

Breastfeeding of sick child

Out the 81 mothers who reported that their youngest children suffered from diarrhea, only 13 children were breastfed more than usual (16%), 15 children were breastfed less than usual (18.5%) while 27 children were breast fed the same as before they were ill from diarrhea (33%). There were 7.6% of children were breastfed more than usual and 35% sick children who breastfed less during the period they had diarrhea during the 2006 KPC Baseline survey.

Frequency of eating sick child

Out of the 81 mothers reporting that their children suffered diarrhea during the past two weeks 29 children ate less (35.8%). Only 3 children were offered more than usual to eat (3.7%) and 31children (38.3%) were given the same amounts to eat when they had diarrhea and 10 children were reported not to have eaten anything during this period. During the 2006 KPC Baseline survey, none of the children with diarrhea were offered more to eat but a much larger percent of children were given less to eat (57%) when they were ill with diarrhea.

Intake of liquids by recovering child

About 61% of the 81 mothers offered children same amount as usual to drink when children were recovering from diarrhea and 17children (21%) were offered more than usual to drink during their recovery period. Only three recovering children were offered less than usual to drink (4%). About 6.7% recovering children were offered more liquids and 19% of recovering children who were said to have taken fewer liquids during the 2006 KPC Baseline.

Intake of food by recovering child
About 44% of the 81 mothers offered children same amount as usual to eat when children were recovering from diarrhea and 16 children (16%) were offered more than usual to eat during their recovery period. Only 20 recovering children (24.7%) were offered less than usual to eat whilst six children were said not to have started eating yet. There were about six percent of children and 31% of children recovering from diarrhea who were said to have eaten less food during the 2006 KPC Baseline survey.

Knowledge of oral re-hydration solution (ORS)
The percentage of mothers who ever heard of ORS was about 16.4% compared to 90% in 2006. The percentage of mothers who ever heard of ORS and can correctly describe ORS is only 4.1% *[Indicator: Percentage of mothers who can correctly prepare ORS]*.

Hand washing practices
Results show that only one mother (0.33%) washed her hands with soap/ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated. *[Indicator: Percentage of mothers with children age 0–23 months who report that they wash their hands with soap/ash before food preparation, before feeding children, after defection, and after attending to a child who has defecated]*. This indicator was at one percent during the 2006 KPC baseline survey. There were only nine of mothers who indicated that they wash their hands after defecation. The percent of mothers who practice any hand washing at some point fell far below 10% for each hand washing category.

ACUTE RESPIRATORY INFECTIONS (ARI) CASE MANAGEMENT

The prevalence of cough amongst youngest children in the last two weeks was reported by about 43% of mothers (129 out of 299). The most frequently mentioned danger sign by these 129 mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (56.6%) followed by rapid breathing (24.8%), Tightened chest muscles (7.8%) and child's chest caved/sunken in (5.4%). However, only 6.7% of mothers could recognize at least two signs of pneumonia compared to 4.4% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize two signs of pneumonia]*.

Child Problem breathing experience
About 52.7% of children who had a cough illness were reported to have difficulty in breathing (68 out of 129 children). About 9% (6 out of 68) mentioned they sought advice or treatment for the child's cough and fast breathing the same day, nine mothers who said they sought advice or treatment the next day (13%), 10 mothers indicated they sought treatment two days later (14.7%) and 13 mothers said treatment was sought three days later (19.1%).

First Source of Advice or Treatment for sick child
There were 37 mothers who sought advice or treatment for the cough or difficulty in breathing of their children. The most cited source of first advice for children with a cough or experiencing breathing by these mothers were health center (37.8%) followed by Friends/Neighbors (18.9%).

There were only about 22% of mothers with children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 24.6% during the 2006 KPC Baseline survey. *[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source]*.

Medicines given to sick child with cough/difficulty in breathing

Children with cough and difficulty in breathing were treated with amoxyllin/ampicillin (13.2%) and cotrimoxazole (10.3%). There other treatments administered to coughing children accounted for less than 10%. {Paracetamol (2.9%), Aspirin (2.9%), unknown tablets (7.4%) and "Other" (7.4%) & don't know (8.8%)}. Of the children who suffered from cough and/or had difficulty in breathing, 22% of them had received antibiotics for the cough compared to 24.6% during 2006 KPC Baseline survey. *[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics]*.

MALARIA CASE MANAGEMENT

About 42.5% of mothers reported that their children had a fever in the past 2 weeks before the survey (127 out of 299). About 43% of these mothers (54 out of 127) with high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 50.6% during the 2006 KPC Baseline survey. *[Indicator: Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider]*.

Medicines given to sick child for fever

Results show that 6.3% of children who presented fever were treated with Quinine, treatment with Mefloquine was 5.5%, treatment with Chloroquine was 3.1%, treatment with Artesunate (1.6%), treatment with Aspirin was 2.4%, treatment with cotrimoxazole was 0.8% and treatment with paracetamol was 0.8% whilst treatment with an unknown medicine accounted for 4.7%. Quinine and Artesunate were given to 10 out of 127 children (7.87%) as malaria treatment *[Indicator: Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment]*. There were about 11% children who had fever in the last two weeks preceding the 2006 KPC Baseline survey who received malaria treatment (Quinine or Artesunate).

Drugs given/taken to prevent malaria during pregnancy

There were 33% mothers (99 out of 299) who reported that they took drugs to prevent malaria when they were pregnant with their youngest child compared to 41.7% during the 2006 KPC Baseline survey. Among women who were given drugs to prevent malaria during pregnancy, 19% did not know what drug it was, 7% mentioned to have taken Fansidar, 4% mentioned Chloroquine, and 1% mentioned "other" drugs. Seven out of 99 (7%) said they took Fansidar as a prevention drug against malaria during pregnancy of their youngest child. [*Indicator: Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy]*. Similarly, a very low percent of mothers who took anti malaria drugs during pregnancy. About 8% took Fansidar to prevent against malaria when they were pregnant with their youngest child during the 2006 KPC Baseline survey.

Causes of malaria
About 54% of mothers (161 out of 299 knew that malaria is caused by mosquitoes compared to only about 37.8% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who know how malaria is caused]*. There is an increase in the percent of mothers who knew causes of malaria in this health zone. However, during the 2010 KPC Final evaluation survey, 15.7% of the mothers said they did not know what causes malaria.

MOSQUITO BEDNET USE AND MAINTENANCE

Availability of Bed nets
There is an increase of the bed nets in this health zone compared to the year 2006. About 49.5% of mothers said they have bed nets in the house to prevent against malaria (148 mothers out of 299) compared to 17% of mothers during 2006 KPC Baseline survey. About 87% of these mothers with bed nets (129 out of 148) said that they had ever impregnated or soaked bed nets in a liquid to repel mosquitoes and/or other insects. About 52% of mothers with bed nets that were ever impregnated or soaked (77 out of 148) also indicated that their bed nets were ever washed. However, 14.9% (22 out of 148) of bed nets that were inspected by interviewers had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos.

Children who slept under treated net
About 35.5% of mothers (106 out of 299) reported that their youngest children slept under the ever treated bed nets the previous night preceding the 2010 KPC survey *[Indicator: Percentage of children age 0–23 months who slept under an insecticide-treated net the previous night]*. This indicator was only two percent during the 2006 KPC Baseline survey.

Iron/Folic acid intake during pregnancy
About 29% of mothers indicated that they took or bought tablets/syrup with iron or folic acid when they were pregnant with their youngest child (88 mothers out of 299) compared to 40% during the 2006 Baseline survey.

CONCLUSION AND RECOMMENDATIONS

Nutritional Status of children

Nutritional status of children was assessed through the weight for age index which is a composite indicator for levels of malnutrition which is a reflection of wasting, stunting or both elements of malnutrition among children. About 29% of children aged below 24 months were underweight compared to 27% in 2006. Boys were relatively more malnourished compared to girls. There were very few children (5 children) who had signs of edema in Health Zone 4 in 2010.

Maternal and Newborn

There were 42% of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child compared to 50% in 2006. There was an increase in the percent of mothers assisted by nurses and doctors during delivery between the two surveys from. A relatively larger percentage of mothers (27%) were assisted by skilled personnel during delivery of their children in 2010 compared to 16.5% during the 2006 KPC Baseline survey.

HIV/AIDS

The knowledge of HIV/AIDS is very high (89%). However, only a quarter of mothers were able to cite at least two ways of avoiding contraction of HIV that causes AIDS. There is a decline in the percent of mothers who are knowledgeable about ways of preventing HIV between the two years from 41% to 25%. Most mothers do not seem to clearly articulate the ABC HIV prevention strategy as reflected by large percentage of mothers who did not mention the three elements of the strategy.

Breast feeding and Infant /Child Nutrition

Current breast feeding was almost universal (95%). Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were 51.6% compared to about 28% in 2006. Hence, about 48% of children missed out on initial breast feeding within the first 24 hours. This means these children were likely to have low intake of colostrum, which is contained in the first breast milk after delivery, as it has been shown that that initial breast milk is highly concentrated of antibodies that protect babies of infection. Results also show that almost 41% of children aged 6 – 9 months received breast milk and complimentary food within the last 24 hours after delivery compared to 70.4% in 2006.

Breastmilk contains all nutrients needed by children in the first six months of life as a nutritional source. Exclusive breast feeding is highly nutritious, uncontaminated and recommend for infants. There is need for update trainings to be conducted for health providers to strengthen their counseling for child health and nutrition and regular community awareness campaigns on the importance of excusive breast feeding.

Childhood Illness (IMCI)

There were about 49.5% of mothers who knew at least two signs of childhood illness that indicate the need for treatment compared to 77% during the 2006 KPC baseline survey. There is a marked decline in the percent of mothers who know at least two signs of childhood illness that indicate the need for treatment. The most cited sign of child illness was high fever (74.9%), followed by "child not eating" (32.3%). "Child looking unwell/or not playing normally" (24.4%) The low percentage of sick children (2% in 2006 and 3% in 2010) aged 0-23 months who receive increased fluids and continued feeding during illness in the past two weeks during the two KPC survey years implies the lack of knowledge among mothers about the importance and/or effect of increased giving fluids and continued feeding during child illness.

Child Immunization

All children aged 12 – 23 months with health cards were fully immunized against preventable diseases. The percent of children who were fully immunized increased from 57% to 100% between the two KPC survey years. There is a huge decline in terms of children immunized against measles between 2006 and 2010, declining from 46.7% to 3%. Overall, 42.1% of children aged 12 – 23 months were vaccinated against tuberculosis. There were 0.7% of children aged 0 - 23 months who had health cards showing that they had been vaccinated against yellow fever. There is a decline in the percent of children >6 – 23 months who received one dose of vitamin A from 81% to 55% in 2010.

Diarrhea Case Management

There is a decline in the percent of mothers who could recognize at least two signs of dehydration as danger signs from 22% in 2006 to 4% in 2010. There is decline in the percent of children who were reported to have received ORS and/or home fluids when they had diarrhea from about 4% to 2.5% between 2006 and 2010 respectively. The percent of mothers who could correctly describe ORS is slightly higher (4.1%) in 2010 compared to the 2006 baseline survey where only 3.7% could describe ORS correctly. The percentage of mothers who report that they wash their hands with soap/ash before food preparation, before feeding children, after defection, and after attending to a child who has defecated very low during the 2006 (1%) and in 2010 KPC surveys (0.33%). Mother's knowledge of ORS and hand washing practices can be emphasized through health provider trainings as these are related to the counseling mothers receive from health providers. Hence, strengthening of health providers counseling skills becomes a critical programmatic intervention.

Acute Respiratory Infections case Management

There is an increase in the percent of mothers with children 0-23 months who recognize two signs of pneumonia from 4% to 7% between 2006 and 2010. There were only about 22% of mothers with children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 24.6% during the 2006 KPC Baseline survey. Similarly, there were 22% in 2010 and 24.6% in 2006 children with cough who were given antibiotics as treatment.

Malaria Case Management

About 43% mothers of children with high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 52.6% in 2006. The percent of children 0 – 23 months with high fever in the last 2 weeks that took malaria treatment decreased from about 11% in 2006 to 8% in 2010. There were 8% of mothers who took anti-malarial medicine during pregnancy in 2006 and 7% 2010. There is an increase in the percent of mothers who knew causes of malaria from about 38% in 2006 to 54% in 2010. There is a large percent of mothers (16%) who still do not what causes malaria. Improvement on the mother's knowledge of malaria would facilitate malaria prevention especially for mothers and their children.

Mosquito Bed nets and Maintenance

There is an increase in the number of mothers with bed nets in their homes to prevent malaria between 2006 and 2010 from 17% to 50% respectively. Also there is an increase in the number of mothers who ensure that their youngest children sleep under treated bed nets from 2% to 36% between 2006 and 2010 accordingly. However, 14.9% (22 out of 148) of bed nets that were inspected by interviewers had holes and lacerations visible on them. Hence, these bednets were no longer in good condition to prevent penetration by mosquitos. There is need to educate mothers on the maintenance of bed nets to facilitate carefully handling of bed nets, their treatment and frequent inspection for holes and lacerations to ensure the nets are in good conditions for effective use for preventing mosquitoes and other insects.

MAKOTA HEALTH ZONE 5

Out of the 301 records entered, there is one record where child is greater than 23 months leaving a total of 300 records to be analyzed so (n=300)

Table 1: KPC Key Indicators

HEALTH ZONE 5					
INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	116	176	65.91	14
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	48	293	16.38	8.48
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	158	300	52.67	11.3
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	228	300	76.00	9.66
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	289	300	96.33	4.25
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	70	112	62.50	17.94
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breast milk and complementary foods	37	55	67.27	24.8
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	19	37	51.35	32.21
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles Vaccine	23	101	22.77	16.36

IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	138	300	46.00	11.04
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	140	300	46.67	11.29
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	3	300	1.00	2.26
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bed net the previous night	77	300	25.67	9.89
IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	3	236	1.27	2.86
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	65	125	52.00	17.52
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	2	125	1.60	4.4
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	140	186	75.27	12.4
	Percent of mothers with children 0-23 months who know how malaria is caused	209	300	69.67	10.41
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	10	100	10.00	11.76
	Percentage of mothers who can correctly prepare ORS	21	300	7.00	5.78
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	6	100	6.00	9.3
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	8	300	2.67	3.65

INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	18	74	24.32	19.55
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	30	300	10.00	6.78
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	15	74	20.27	18.32

Table 1B: KPC Key Indicator Trends

HEALTH ZONE 5			
INDICATOR	INDICATOR	2006	2010
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	65.73	65.91
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	19.80	16.38
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	2.34	52.67
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	46.82	76.00
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	91.97	96.33
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	40.38	62.50
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	70.00	67.27
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	54.05	51.35
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	37.19	22.77
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	55.52	46.00
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	73.24	46.67
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	1.00	1.00
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	8.36	25.67

IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	3.55	1.27
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	64.00	52.00
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	24	1.60
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	36.00	75.27
	Percent of mothers with children 0-23 months who know how malaria is	55.85	69.67
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	4.21	10.00
	Percentage of mothers who can correctly prepare ORS	32.44	7.00
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	7.37	6.00
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	24.08	2.67
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	36.36	24.32
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	13.38	10.00
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	40	20.27

RESULTS AND DISCUSSION

MAKOTA: HEALTH ZONE 5

Socio-Demographics of Mothers

Age

Mothers' age was obtained from a total of 300 mothers who had children aged between 0 – 23 months in this health zone. The average age of mothers was 27.9 years. Mother's age ranged from 17 years to 45 years.

Education level

There were eight mothers who had no education, 50.3% had primary education and 44.3% had attended secondary education and 2.7% had tertiary education.

Income Generation Activities

About 21% of mothers were engaged in harvesting/farming activities, 18% are shop keepers/street vendors, 18.7% were involved in selling food, 6.7% household workers and 3% were salaried workers. There were 23% of mothers who said that they had no income generating activities they are involved in.

Household Headship

Only four mothers cited themselves as heads of their households. The majority of households visited are headed by husbands (90.3%) and the rest reported household heads were relatives.

Children Density & Spacing in Households

There were 555 children below five years of age in households visited for the survey. There were 528 biological children to the mothers interviewed. The average number of children per household aged below five years was 1.85 and the mean number of biological children in households per woman was 1.76. The mean difference in age between the two youngest siblings under five years was 16.23 months (Table 2A). There were 65.9% of children who were born at least 24 months after the previous surviving child. [*Indicator: Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child]*. There were about 74 percent of children who were born at least 24 months after the previous surviving child during the 2006 KPC baseline survey.

Table 2A : Children density in households

Children density	Number	mean
Children under 5 in the household(n)	555	1.85
Biological children (n)	528	1.76
Difference between the two youngest siblings under 5 (months)	176	16.23

Table 2B: Number of Children by Age Group

Age Group	Number
0 – 5 months	112
6 – 9 months	55
12 – 23 months	101
0 – 11 months	199
0 – 23 months	300
Total	**300**

Child Minders during mother's absence from home

About 49% of mothers leave their children with their older children/siblings and 35% with their other relatives. Eight percent of mothers take their children with them while 4.7% of the mothers said they leave their children with their maternal grand mothers and about six percent leave them with neighbors/friends.

Anthropometry

Of the surveyed children whose sex, age and weight data were recorded, about 16.4% of children were underweight according the WHO/NCHS reference population standards [*Indicator: Percentage of children age 0 – 23 months who are underweight (-2SD from the median weight-for-age, according to the WHO/NCHS reference population]*. The same malnutrition/ underweight index was about 20% during the 2006 KPC baseline survey.

There is higher prevalence of malnutrition among boy children compared to girls and older the child. Also older children seem to have higher level of malnutrition compared to younger children. There were more children of older mothers who were under weight compared to children of mothers aged up to 25 years. Mothers with no education are more likely to have children who are underweight compared to mothers with education.

TABLE 3: Percentage of children age 0–23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)

	Weight-for-age			
Demographic characteristics	**Percentage below -2SD**	**Mean Z-score (SD)**	**Number of children below -2SD**	**Number of children**
Child's age				
<6 months	1.37	0.8	4	106
6- 11 months	5.80	-0.74	17	87
12- 23 months	9.22	-1.19	27	100
Child's sex				
Male	8.87	-0.74	26	136
Female	7.51	-0.41	22	157
Mother's age	0.00			
< 25 years	4.78	-0.47	14	106
> or = 25 years	11.60	-0.61	34	194
Mother's Level of Education				
No Education	0.34	-0.99	1	8
Primary Education	8.53	-1.85	25	147
Secondary Education	7.17	-0.57	21	130
Tertiary Education	0.34	-0.01	1	8
Total	**16.38**	**-0.56**	**48**	**293**

Comment:
*The Z-score deviation from means for nutrition data ranges from extreme values -8.59 (a 21 months old child whose weight is 1 kg) to 3.45 (a 1 month child whose weight is 6.6 kgs).
**293 children within the 0 – 23 months age range were weighted.
A total of 293 records were processed by Epinut software.

Edema

There were 2.7% children (8 out of 300) who had signs of edema in Health Zone 5 in 2010 and three percent of children who had signs of edema in 2006. Edema automatically means child is malnourished and is strongly associated with mortality.

MATERNAL & NEWBORN

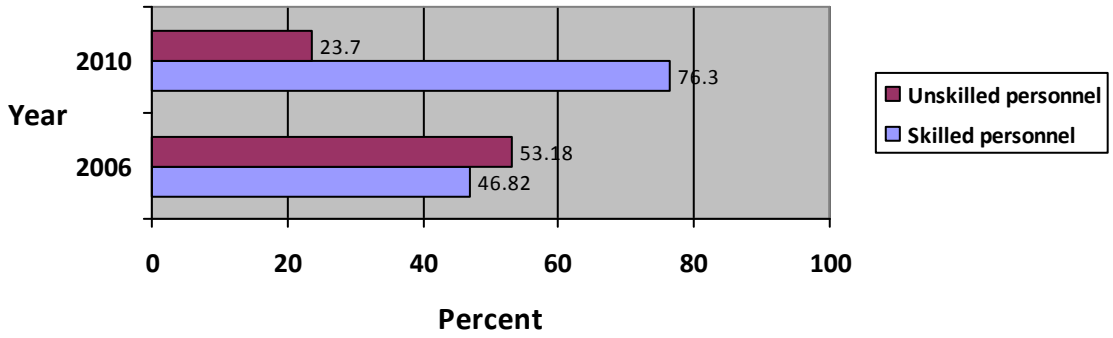
Births Assisted by skilled health personnel

Births assisted by only Nurse/Midwife/Doctor

The percentage of mothers who were assisted by skilled personnel during delivery is abo[redacted] 76% compared to about 47% who were assisted by skilled health personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel.* This shows an increase in the number of mothers assisted by nurses and doctors during delivery between the two surveys.

Figure 1A: Births Assisted Delivery

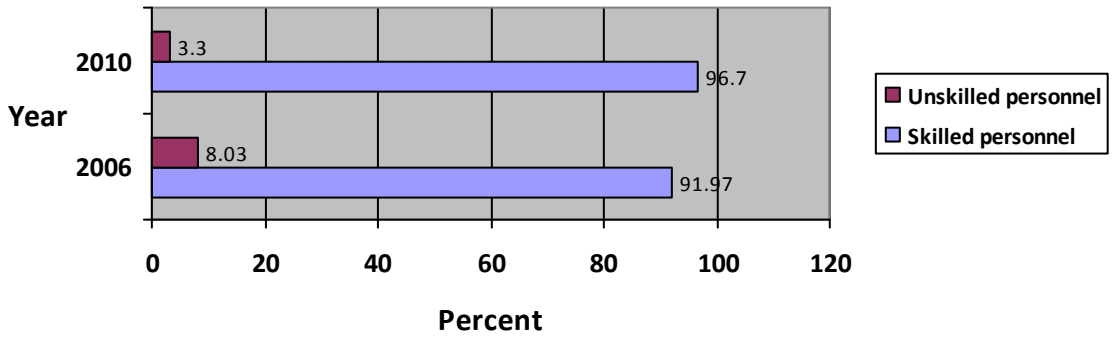
*Auxiliary midwives Excluded in skilled personnel category



Births Assisted by Nurse/Midwife/Doctor/Auxiliary midwife
About 97% of mothers' delivery was assisted by the skilled personnel that includes Auxiliary midwife compared to about 92% who were assisted by this grouped skilled personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel]*.

Figure 1B: Births Assisted Delivery

*Auxiliary midwives included in skilled personnel category



Receipt of Tetanus Toxoid during Pregnancy

There were 52.67% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 2.34% of mothers who received the same dosage during pregnancy in 2006. [*Indicator: Percentage of mothers with children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child]*.

KNOWLEDGE OF HIV AND AIDS

About 98% of mothers have ever heard of an illness called AIDS. There were 46.67% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection *[Indicator: Percentage of mothers with children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection*]. About 53% of mothers mentioned abstinence from sex as one of the ways of avoiding getting AIDS, 27% mentioned limiting sex to one partner/stay faithful to one partner, 23% mentioned avoiding sex with prostitutes and 11% said limiting the number of sexual partners. There were only six percent of mothers who mentioned the use of condoms as one of the ways of avoiding getting AIDS. Other mothers mentioned avoiding sex with persons who inject drugs intravenously (8%) and avoiding sex with persons with many partners (3%) as other ways of avoiding getting AIDS. In the 2006 KPC baseline survey, there were 99% of mothers who had ever heard of AIDS and about 73% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection.

BREASTFEEDING AND INFANT/CHILD NUTRITION

Exclusive breastfeeding

Current breastfeeding is high among mother interviewed (95%). For the 16 mothers who were not currently breast feeding, 4 mothers had never breastfed. Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were 62.5% compared to about 40% in 2006. *[Indicator: Percentage of children age 0–5 months who were exclusively breastfed during the last 24 hours]*. Male infants were more likely to have been exclusively breast fed within the first 24 hours compared to female infants. There has been an increase in the percent of mothers who give infants breast milk within the first 24 hours of giving birth between 2006 and 2010.

Table 4: Exclusive Breastfeeding during the last 24 hours

Exclusive		**Infants age 0 – 5 months**		**Age of mother**	
Breast feeding	**Total**	**Male**	**Female**	**< 25 years**	**≤ 25 years**
Yes	62.50(70)	65.38(34)	60.00(36)	64.29(27)	61.43(43)
No	37.50(42)	34.62(18)	40.00(24)	35.71(15)	38.57(27)
Total	100.00(112)	100.00(52)	100.00(60)	100.00(42)	100.00(70)

Breastfeeding and Complementary Feeding

The results show that there were about 67.3% of children who receive breast milk and complimentary food within the last 24 hours. *[Indicator: Percentage of children age 6–9 months who received breast milk and complementary foods during the last 24 hour]*. Mothers were more likely to give their female infants breast milk and complementary feeding within the last 24 hours compared to their male infants.

Similarly younger mothers were more likely to give breast milk and complementary feeding to their children compared to mothers aged 25 years or more. During the 2006 KPC Baseline

survey, 70% of children aged 6 -9 months received breast milk and complementary foods during the last 24 hour.

Table 5: Breast feeding and Complementary feeding within the last 24 hours

Breast milk & Complementary foods		Infants age 6 – 9 months		Age of mother	
	Total	Male	Female	< 25 years	≤ 25 years
Yes	67.27(37)	57.69(15)	75.86(22)	71.43(15)	64.71(22)
No	32.73(18)	42.31(11)	24.14(7)	28.57(6)	35.29(12)
Total	100.00(55)	100.00(26)	100.00(29)	100.00(21)	100.00(34)

CHILDHOOD ILLNESS (IMCI)

There were about 46% of mothers who knew at least two signs of childhood illness that indicate the need for treatment compared to 55.5% during the 2006 KPC baseline survey.*[Indicator: Percentage of mothers of children age 0–23 months who know at least two signs of childhood illness that indicate the need for treatment]*. There has been a marked decline in the percent of mothers' knowledge of signs of childhood illnesses between the two years from 84% to 46%. The most cited sign of child illness was high fever (81%), followed by "Child looking unwell/not playing normally"(34%), "child not eating" (19.7%) and child vomits everything (14.7%). The rest of the categories constituted far below 10%. The commonly cited child illness experiences in the last two weeks were cough (51.7%) followed by fever (39.7%) and diarrhea (34.7%).

Increased fluids and continued feeding during child illness

The results show that only 1.3% (three out of 236) sick children received increased fluids and continued feeding during illness. *[Indicator: Percentage of sick children age 0–23 months who received increased fluids and continued feeding during an illness in the past two weeks]*. This is extremely low and shows continued poor practice regarding feeding of children recovering from illnesses. This indicator was at 3.6% during the 2006 KPC Baseline survey. The low and declining percent of mothers who give their children less fluids and continued feeding to recovering children implies deepening poor feeding practice by mothers.

Source of First Advice or treatment for sick Child

About 36% of mothers (86 out of 239) sought advice from someone outside of the home when their youngest child was sick. The most common source of first advice or treatment was at health center (39.5%), followed by pharmacist (17.4%) and hospital (11.6%). Other sources of first advice or treatment reported by mothers were Private Practitioner was mentioned by 9.3% and Friend/Relative (9.3%). The rest of the categories mentioned by mothers had percents below 5%.

CHILD IMMUNIZATION

Full immunization is defined as children receiving vaccines for all the five preventable diseases. BCG, DTP, Polio and measles vaccines. It is also expected that child would be fully immunized by the time they reach age of 12 months.

Full Immunization of children

The vaccinations considered for fully immunization are Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card. Results show that 51.35% of children aged between 12-23 months with child health cards, were fully immunized compared to 54% in 2006. *[Indicator: Percentage of children age 12–23 months who are fully vaccinated against the five vaccine-preventable diseases before the first birthday]*. There is a slight decline in the percent of children aged 12 -23 months who were fully immunized between 2006 and 2010.

Immunization against Measles

About 23% (23 out of 101) children aged 12-23 months were vaccinated against measles *[Indicator: Percentage of children age 12–23 months who received a measles vaccine]*. There is a huge decline of 38% in terms of children immunized against measles between 2006 and 2010, declining from 37% to 23%.

Immunization against Tuberculosis

BCG is the vaccine for prevention against tuberculosis. About 86% of children aged 12 – 23 months were vaccinated against tuberculosis.

Immunization against Tuberculosis	Number	Percent
Yes	87	86.1
No	14	13.9
Total	**101**	**100.0**

Immunization against Yellow Fever

There were 17 children (16.8%) aged 12 - 23 months were vaccinated against yellow fever. During 2006 KPC baseline, only three children (3 percent) had health cards showing that they had been vaccinated against yellow fever.

Immunization against Yellow Fever	Number	Percent
Yes	17	16.8
No	84	83.2
Total	**101**	**100.0**

Vitamin A Supplement for children aged >6 – 23 months in the last six months

There were about 80% of children who were older than six months had received Vitamin A supplement during the survey [*Indicator: Percentage of children > 6 months receiving one Vitamin A dose*]. During 2006 KPC baseline, there were 95% older that six months with health cards showing that they had received vitamin A supplement.

Vitamin A Supplement	Number	Percent
Yes	145	77.1
No	43	22.9
Total	**188**	**100.0**

DIARRHEA CASE MANAGEMENT

Prevalence of Diarrhea and knowledge of signs of child illness

There were 100 mothers who reported that their youngest children suffered from diarrhea in the last two weeks. However, there were only 2.67% of mothers who could recognize at least 2 signs of dehydration as danger signs compared to 24% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs]*. The most frequently mentioned danger sign to push a mother to seek immediate treatment at a health facility or hospital when a child has diarrhea was intense weakness (72%) followed by refusal eat (20%). The rest of the other danger signs were mentioned by less than 10% of mothers.

Diarrhea treatment by mother

There were 10% of children who had diarrhea in the last two weeks were reported by their mothers to have received ORS and/or home fluids compared to 4.2% during the 2006 KPC Baseline survey. *[Indicator: Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids]*. The most common treatment for diarrhea among children reported by mother was giving the sick child the ORS packet (42%) followed by giving child pill or syrup (34% and injection (13%). Giving sick child home remedies was done by 5% of mothers and 16% of mothers said they did nothing. Similarly, 29% of mothers did nothing when their children had diarrhea in 2006.

The percent of mothers with children suffering with diarrhea who offer their children oral rehydration solution has increased from 4% in 2006 to 10% in 2010.

Breastfeeding of sick child

Out the 100 mothers who reported that their youngest children suffered from diarrhea, only 6% of children were breastfed more than usual, 32% of children were breast fed less than usual while 57 children were breast fed the same as before they were ill from diarrhea. During the 2006 KPC Baseline survey, there were 7% of children were breastfed more than usual and 29% of children sick with diarrhea who were said to have breastfed less.

Frequency of eating sick child

Out of the 100 mothers reporting that their children suffered diarrhea during the past two weeks 49 children ate less. Only one child was offered more than usual to eat and 31 children were given the same amounts to eat when they had diarrhea and nine children were reported not to have eaten anything during this period. There were 6% of children was offered more than usual to eat and 53% sick children with diarrhea who were reported to have had less to eat during the period of their illness during the 2006 KPC baseline survey. Although there seem to be an improvement on mothers who recognize then need to ensure that their sick children eat between the two surveys, there is still a large percent of children with diarrhea who are given less to eat (49%).

Intake of liquids by recovering child

Fifty-nine percent of the 100 mothers offered children same amount as usual to drink when children were recovering from diarrhea and 17% offered more than usual to drink during their recovery period. About 15% recovering children who were offered less than usual to drink compared to about 21% recovering children were given less than usual to drink during the 2006 KPC Baseline survey. There were about 17% of recovering children who were offered more than usual to drink during the 2006 KPC Baseline survey.

Intake of food by recovering child

Sixty-two percent of the 100 mothers offered children same amount as usual to eat when children were recovering from diarrhea and 7% offered more than usual to eat during their recovery period. Only 15% of recovering children were offered less than usual to eat whilst 16% of recovering children were said not to have started eating yet. About 24% children were offered more than usual to eat and 19% of recovering children were given less to eat during the 2006 KPC Baseline survey.

Knowledge of oral re-hydration solution (ORS)

The percentage of mothers who ever heard of ORS was about 29.7%. The percentage of mothers who ever heard of ORS and can correctly describe ORS is only seven percent *[Indicator: Percentage of mothers who can correctly prepare ORS]*. This is lower compared to the 2006 baseline survey where 32.4% of mothers could describe ORS correctly.

Hand washing practices

Results show that only three mothers (one percent) wash their hands with soap/ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated. *[Indicator: Percentage of mothers with children age 0–23 months who report that they wash their hands with soap/ash before food preparation, before feeding children, after defection, and after attending to a child who has defecated]*. This indicator was at one percent again during the 2006 KPC baseline survey. There were 21% of mothers who indicated that they wash their hands after defecation. The percent of mothers who practice other hand washing at some point falls below 10% for each hand washing category.

ACUTE RESPIRATORY INFECTIONS (ARI) CASE MANAGEMENT

The prevalence of cough amongst youngest children in the last two weeks was reported by about 50% of mothers (150 out of 300). The most frequently mentioned danger sign by these mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (72.7%) followed by rapid breathing (22%), child's chest caved/sunken in (10.7%) and Tightened chest muscles (8%). However, only 10% of mothers could recognize at least two signs of pneumonia. *[Indicator: Percent of mothers with children 0-23 months who recognize two signs of pneumonia]*. During the 2006 KPC Baseline, there were 13.4% mothers who recognized two signs of pneumonia.

Child Problem breathing experience

About 49.3% of children who had a cough illness were reported to have difficulty in breathing (74 out of 150 children). Only six mothers (4%) mentioned they sought advice or treatment for the child's cough and fast breathing the same day. Eight mothers (5.%) said they sought advice or treatment the next day, six mothers (4%) indicated they south treatment two days later and 11 mothers (7%) said treatment was sought three days later.

First Source of Advice or Treatment for sick child

There were 32 mothers who sought advice or treatment for the cough or difficulty in breathing of their children. The most cited source of first advice for children with a cough or experiencing breathing by these mothers were health center (46.9%). There were only about 24% of mothers with children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 36.4% during the 2006 KPC Baseline survey. *[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source]*.

Medicines given to sick child with cough/difficulty in breathing

Children with cough and difficulty in breathing were treated with amoxyllin/ampicillin (12.2%) and cotrimoxazole (9.5%). There other treatments administered to coughing children accounted for less than 10%. {Aspirin (8.1%), unknown injection (8.1%), paracetamol (4.1%), and unknown tablets (1.4%) & don't know (5.4%)}. Of the 74 children who suffered from cough and/or had difficulty in breathing, 20.27% of them had received antibiotics for the cough.*[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics]*. About 40% of children who were suffering from a cough/had difficulty in breathing had received antibiotics during the 2006 KPC Baseline survey.

MALARIA CASE MANAGEMENT

About 42% of mothers reported that their children had a fever in the past 2 weeks before the survey (125 out of 300). About 52% of these mothers (65 out of 125) with high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 64% during the 2006 KPC Baseline survey. *[Indicator: Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider]*.

Medicines given to sick child for fever

Results show that 23.2% of children who presented fever were treated with paracetamol, followed by aspirin (12%). Treatment with other medicines was as follows: ampicillin/amoxyllin (10.4%), Mefloquine (10.4%), cotrimoxazole (8.8%), Chloroquine (4%). Treatment with other medicines fell far below 5%. Quinine or Artesunate were given to 1 out of 125 children (0.8%) as malaria treatment *[Indicator: Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment]*. About 24% of children who were suffering from a fever in the last 2 weeks had received malaria treatment (Quinine or Artesunate) during the 2006 KPC Baseline survey.

Drugs given/taken to prevent malaria during pregnancy

There were 62% mothers (186 out of 300) who reported that they took drugs to prevent malaria when they were pregnant with their youngest child compared to 41.7% during the 2006 KPC Baseline survey. Among women who were given drugs to prevent malaria during pregnancy, 12.4% did not know what drug it was, 75.3% mentioned to have taken Fansidar, 4.3% Chloroquine, and Quinine (3.2%). About 75% of mothers took Fansidar to prevent against malaria during pregnancy during pregnancy of their youngest child compared to 36% during the 2006 KPC baseline survey. [*Indicator: Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy]*.

Causes of malaria

About 70% of mothers (209 out of 300 knew that malaria is caused by mosquitoes compared to only about 56% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who know how malaria is caused]*. However, 21% of the mothers said they did not know what causes malaria.

MOSQUITO BEDNET USE AND MAINTENANCE

Availability of Bed nets

There is an increase of the bed nets in this health zone compared to the year 2006. About 37% of mothers said they have bed nets in the house to prevent against malaria (111 mothers out of 300) compared to 17% of mothers during 2006 KPC Baseline survey. 86% of these mothers with bed nets (90 out of 111) said that they had ever impregnated or soaked bed nets in a liquid to repel mosquitoes and/or other insects. About 76% of mothers with bed nets that were ever impregnated or soaked (84 out of 111) also indicated that their bed nets were ever washed. However, 34% (38 out of 111) of bed nets that were inspected by interviewers that had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos.

Children who slept under treated net

About 25.7% of mothers reported that their youngest children slept under the ever treated bed nets the previous night preceding the 2010 KPC survey *[Indicator: Percentage of children age 0–23 months who slept under an insecticide-treated net the previous night]*. This indicator was only eight percent during the 2006 KPC Baseline survey.

Iron/Folic acid intake during pregnancy

About 57% of mothers indicated that they took or bought tablets/syrup with iron or folic acid when they were pregnant with their youngest child (170 mothers out of 300) compared to 40% during the 2006 Baseline survey.

CONCLUSION AND RECOMMENDATIONS

Nutritional Status of children

There is a slight decline in the malnutrition index between 2006 and 2010 in Zone 5 from 20% to 16.4%. Boys were relatively more malnourished compared to girls. Older children were also more malnourished compared to younger children. The percent of children with signs of edema was also very low and has remained almost the same between 2006 and 2010.

Maternal and Newborn

The percent of mothers who were assisted by nurse midwifes and/or doctors increased between 2006 and 2010 from 47% to 76%. This provides mothers with better counseling opportunities in terms on child health and nutrition than mothers who are assisted by unskilled personnel. There were 2.7% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 3% of mothers who received the same dosage during pregnancy during the 2006.

HIV/AIDS

There were about 47% of mothers with children age 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection compared to 73% of mothers during the 2006 KPC Baseline survey. There is a decline in the percent of mothers who are knowledgeable about ways of preventing HIV between 2006 and 2010.

Breastfeeding and Infant/Child Nutrition

Current breast feeding was very high in this health zone (95%). Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were 62.5% compared to about 40% in 2006. However, this still leaves 37.5% (100% - 62.5%) of those infants who were not breastfed within the first 24 hours as they have missed out on colostrum, which is contained in the first breast milk highly concentrated of antibodies that protect babies of infection. There were about 67.3% of children who received breast milk and complimentary food within the last 24 hours. There has been a slight decline from 70% in 2006, in the percent of mothers who give infants both breast milk and complementary feeding within the last 24 hours between the two years. There is need to conduct refresher seminars for health providers in order to strengthen and update their counseling to facilitate imparting knowledge to mothers on child health/nutrition and the importance of exclusive breastfeeding in particular.

Childhood illnesses (IMCI)

There has been a marked decline in the percent of mothers' knowledge of signs of childhood illnesses between the two years from 84% to 46%. The most cited sign of child illness was high fever (81%). Mothers need to be educated about signs of childhood illness so that they are able to seek treatment for their children on time. There were 1.3% sick children age 0–23 months who received increased fluids and continued feeding during an illness in the past two weeks compared to 3.6% in 2006. The low and declining percent of mothers who give their children less fluids and continued feeding to recovering children implies deepening poor feeding practice by mothers.

Child Immunization

Results show that 51.35% of children aged between 12-23 months with child health cards, were fully immunized compared to 57.6% in 2006. This leaves almost half of the children not fully immunized and exposes these children to diseases. There is a slight decline (6.3%) in the percent of children aged 12 -23 months who were fully immunized between 2006 and 2010. There is a huge decline of 38% in terms of children immunized against measles between 2006 and 2010, declining from 61% to 23%. About 86% of children aged 12 – 23 months were vaccinated against tuberculosis. About 17% of children aged 12 - 23 months were vaccinated against yellow fever compared to about three percent during the 2006 KPC Baseline survey. There were about 80% of children who were older than six months had received Vitamin A supplement during the survey compared to 95% during the 2006 KPC Baseline survey.

Diarrhea Case Management

There were only 2.67% of mothers who could recognize at least 2 signs of dehydration as danger signs in 2010 compared to 24% in 2006. There were 10% of children who had diarrhea in the last two weeks were reported by their mothers to have received ORS and/or home fluids compared to 4.2% during the 2006 KPC Baseline survey. Mothers' knowledge of ORS is very low and has declined from to 32% to 7% between 2006 and 2010 in terms of mothers who were able to describe ORS correctly. Only 1% of mothers practice all the four expected hand washing practices. Hence, a large percent of mothers do not practice hand washing when caring for their children. This continues to be critical programmatic intervention area required for diarrhea control in this health zone.

Acute Respiratory Infections case Management

The most frequently mentioned danger sign by these mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (72.7%). Only 10% of mothers can recognize at least two danger sign associated with pneumonia in their children compared to 13.38% in 2006. Hence, if a child doesn't have difficulty in breathing during a cough illness, most mothers are unlikely to recognize that their children could be attacked by pneumonia to facilitate mothers seeking treatment on time. There were only about 24% of mothers with children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 36.4% in 2006. About 20% of these children had received antibiotics for the cough compared to 40% in 2006.

Malaria Case Management

About 52% of mothers with children who had high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 64% in 2006. Only one child out of 125 children (0.8%) received appropriate malaria treatment (Quinine or Artesunate) among those children who were diagnosed as suffering from malaria compared to 24% in 2006. Fansidar is the common drug that mothers take to prevent malaria during pregnancy of their youngest child (36% in 2006 and 75% in 2010). The majority of mothers (70%) know that malaria is caused by a mosquito. There is an increase in the knowledge of causes of malaria by mothers in this health zone from 56% to 70%.

Mosquito Bed nets and Maintenance

About 37% of mothers said they have bed nets in the house to prevent against malaria compared to 17% of mothers during 2006 KPC Baseline survey. The majority of these mothers have ever soaked their bed nets in a liquid to repel mosquitoes and/or other insects. However, about 34% of the inspected bed nets had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos. There is an increase in the percent of mothers reporting that their youngest children sleep under treated bed nets from 8% to 26% between 2006 and 2010.

TSHUMBE HEALTH ZONE 6
(n=304)

Table 1: KPC Key Indicators

HEALTH ZONE 6					
INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	0	4	0.00	0
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	41	302	13.58	7.73
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	193	304	63.49	10.83
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	114	304	37.50	10.88
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	244	304	80.26	8.95
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	54	84	64.29	20.49
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	33	65	50.77	24.3
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	0	24	0.00	0
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	2	120	1.67	4.58
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	215	304	70.72	10.23

HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	102	304	33.55	10.62
HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	1	304	0.33	1.28
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	144	304	47.37	11.22
IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	14	222	6.31	6.39
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	51	100	51.00	19.6
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	15	100	15.00	14
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	121	153	79.08	12.89
	Percent of mothers with children 0-23 months who know how malaria is	178	304	58.55	11.08
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	21	85	24.71	18.33
	Percentage of mothers who can correctly prepare ORS	28	304	9.21	6.5
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	13	85	15.29	15.31
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	19	304	6.25	5.44

INDICATOR	INDICATOR	NUMERATOR	DENOMINATOR	PERCENT	95% CONFIDENCE INTERVAL
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	49	105	46.67	19.09
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	41	304	13.49	7.68
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	51	105	48.57	19.12

Table 1B: KPC Key Indicator Trends

HEALTH ZONE 6			
INDICATOR	INDICATOR	2006	2010
CHILD SPACING*	Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child	60.12	0.00
ANTHROPOMETRY*	Percentage of children age 0–23 months who are below 2 standard deviations (-2 SD) from the median weight-for-age, according to the WHO/NCHS reference population	14.06	13.58
MATERNAL AND NEWBORN CARE*	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	4.00	63.49
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(excluding auxiliary midwife)**	29.67	37.50
MATERNAL AND NEWBORN CARE*	Percentage of children age 0–23 months whose births were attended by skilled health personnel **(including auxiliary midwife)**	82.33	80.26
BREASTFEEDING AND NUTRITION*	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	67.83	64.29
COMPLEMENTARY FEEDING*	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	83.33	50.77
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	0.00	0.00
CHILD IMMUNIZATION*	Percentage of children age 12–23 months who received a measles vaccine	57.26	1.67
IMCI*	Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	70.33	70.72
HIV/AIDS*	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	42.67	33.55

HAND WASHING*	Percentage of mothers of children age 0–23 months who wash their hands with soap/ash before food preparation, after defecation, and after attending to a child who has defecated	3.67	0.33
USE OF ITNS*	Percentage of children aged 0-23 months who slept under an insecticide-treated bednet the previous night	6.67	47.37
IMCI TREATMENT*	Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	6.59	6.31
MALARIA	Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider	52.10	51.00
	Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment	6.72	15.00
	Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy	89.02	79.08
	Percent of mothers with children 0-23 months who know how malaria is caused	35.00	58.55
DIARRHEA	Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids	9.52	24.71
	Percentage of mothers who can correctly prepare ORS	0.00	9.21
	Percentage of children 0-23 months with diarrhea in the last 2 weeks breastfed more than usual	15.48	15.29
	Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs	23.67	6.25
PNEUMONIA CASE MANAGEMENT	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source	40.98	46.67
	Percent of mothers with children 0-23 months who recognize two signs of pneumonia	15.33	13.49
	Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics	40.98	48.57

RESULTS AND DISCUSSION

TSHUMBE: HEALTH ZONE 6

Socio-Demographics of Mothers

Age

Mothers' age was obtained from a total of 304 mothers who had children aged between 0 – 23 months in this health zone. The average age of mothers was 28.6 years. Mother's age ranged from 14 years to 58 years.

Education level

There were 33 mothers (11%) who had no education, 60% had primary education and 28% had attended secondary education and three mothers had attended tertiary education.

Income Generation Activities

Majority of mothers are engaged in harvesting/farming activities (67.4%) as a source of income followed by mothers who sell food items (28%). About seven percent of mothers indicated they were shop keepers/street vendors. The percent of mothers who indicated any other source of income constituted far below 5%.

Household Headship

Only 13 mothers cited themselves as heads of their households. The majority of households visited are headed by husbands (84.9%) and 7.6% reported that their households were headed by relatives.

Children Density & Spacing in Households

There were 338 children below five years of age in households visited for the survey. All the 316 children were biological children to the mothers interviewed. The average number of children per household aged below five years was 1.12 and the mean number of biological children in households per woman was 1.05. The mean difference in age between the two youngest siblings under five years was 0.12 months (Table 2A). There were about no children who were born at least 24 months after the previous surviving child. [*Indicator: Percentage of children age 0–23 months who were born at least 24 months after the previous surviving child]*. There were about 60% of children who were born at least 24 months after the previous surviving child during the 2006 KPC baseline survey.

Table 2A : Children density in households

Children density	Number	mean
Children under 5 in the household(n)	338	1.12
Biological children (n)	328	1.05
Difference between the two youngest siblings under 5 (months)	4	0.12

Table 2B: Number of Children by Age Group

Age Group	Number
0 – 5 months	84
6 – 9 months	65
12 – 23 months	120
0 – 11 months	184
0 – 23 months	304
Total	**304**

Child Minders during mother's absence from home

About 43% of mothers leave their older children/siblings, 39% leave their children with their husbands and 33% with their other relatives. Thirteen percent of mothers take their children with them while about 9% of the mothers said they leave their children with their maternal grand mothers and five percent leave them with neighbors/friends.

Anthropometry

Of the surveyed children whose sex, age and weight data were recorded, 13.58% of children were underweight according the WHO/NCHS reference population standards [*Indicator: Percentage of children age 0 – 23 months who are underweight (-2SD from the median weight-for-age, according to the WHO/NCHS reference population]*. This malnutrition/ underweight index was 14.06% during the 2006 KPC baseline survey.

The year 2010 KPC final evaluation results show that older children have higher malnutrition. Male children have higher malnutrition. Older mothers' children have higher malnutrition compared to mothers aged 25 years and below.

TABLE 3: Percentage of children age 0–23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)

Weight-for-age				
Demographic characteristics	Percentage below -2SD	Mean Z-score (SD)	Number of children below -2SD	Number of children
Child's age				
<6 months	1.99	0.34	6	106
6- 11 months	3.64	-0.74	11	87
12- 23 months	7.95	-0.12	24	100
Child's sex				
Male	7.95	-0.68	24	136
Female	5.63	-0.5	17	157
Mother's age				
< 25 years	4.97	-0.32	15	106
> or = 25 years	8.28	-0.76	25	194
Mother's Level of Education				
No Education	0.99	-0.77	3	8
Primary Education	9.27	-0.64	28	147
Secondary Education	2.98	-0.42	9	130
Tertiary Education	0.33	-0.46	1	8
Total	13.58	-0.59	41	302

Comment:
*The Z-score deviation from means for nutrition data ranges from extreme values -9.9 (a 14 months old child whose weight is 0.13 kg) to 4.84 (a 2 month child whose weight is 8 kgs).
* One child who was weighed had mothers age missing
*302 children within the 0 – 23 months age range were weighted.
A total of 302 records were processed by Epinut software.

Edema

There were about nine percent children (28 children) who had signs of edema in Health Zone 6 in 2010 and there were three percent of children who had signs of edema during the 2006 KPC Baseline survey. Edema automatically means child is malnourished and is strongly associated with mortality.

MATERNAL & NEWBORN

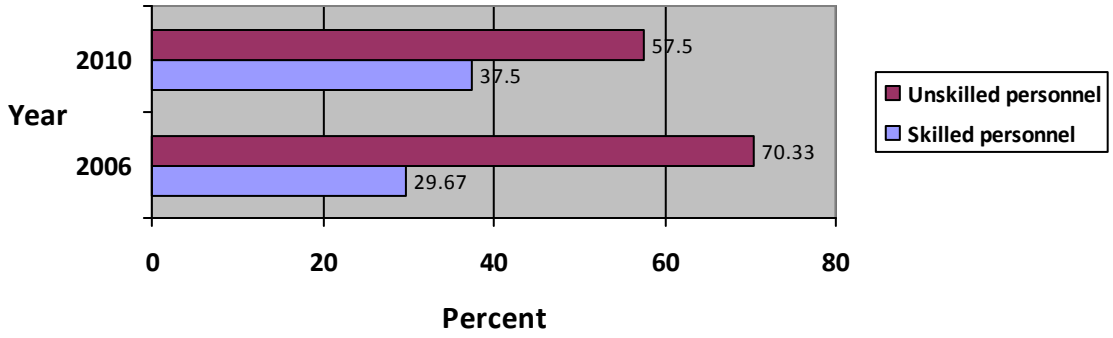
Births Assisted by skilled health personnel

Births assisted by only Nurse/Midwife/Doctor

The percentage of mothers who were assisted by skilled personnel during delivery is 37.5% compared to about 30% who were assisted by skilled health personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel.* This shows an increase in the number of mothers assisted by nurses and doctors during delivery between the two surveys.

Figure 1A: Births Assisted Delivery

***Auxiliary midwives Excluded in skilled personnel category**

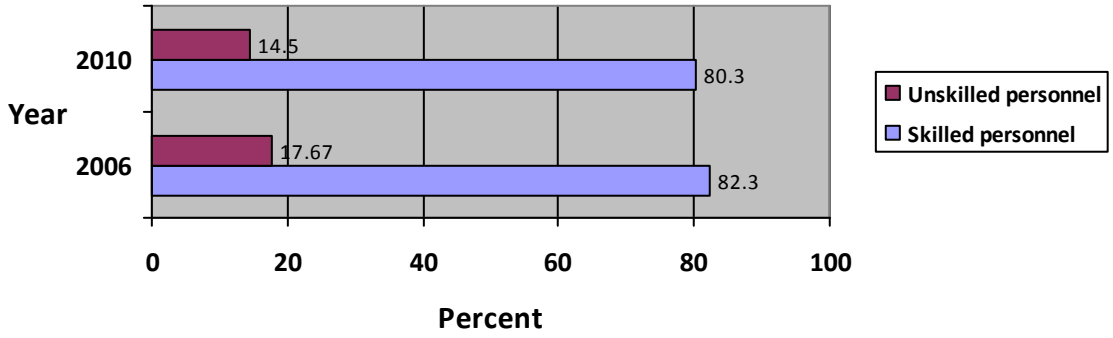


Births Assisted by Nurse/Midwife/Doctor/Auxiliary midwife

About 80% of mothers' delivery was assisted by the skilled personnel that includes Auxiliary midwife compared to about 82% who were assisted by this grouped skilled personnel in 2006. [*Indicator: Percentage of children age 0–23 months whose births were attended by skilled health personnel]*.

Figure 1B: Births Assisted Delivery

***Auxiliary midwives included in skilled personnel category**



Receipt of Tetanus Toxoid during Pregnancy

There were 63.5% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 4% of mothers who received the same dosage during pregnancy in 2006. [*Indicator: Percentage of mothers with children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child]*.

KNOWLEDGE OF HIV AND AIDS

About 89% of mothers have ever heard of an illness called AIDS. There were 33.6% of mothers with children aged 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection compared to 42.7% during the 2006 KPC Baseline survey.*[Indicator: Percentage of mothers with children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection*]. About 37% of mothers mentioned abstinence from sex as one of the ways of avoiding getting AIDS, 28% mentioned limiting sex to one partner/stay faithful to one partner and 11.8% mentioned condom use. Other ways of avoiding getting AIDS that were mentioned by mothers were: 11.5% avoiding sex with prostitutes (11.5%), limit number of sexual partners (6.9%), avoid sex with persons who have many partners (2.6%) and avoiding sex with persons who inject drugs intravenously (1.3%) as other ways of avoiding getting AIDS.

BREASTFEEDING AND INFANT/CHILD NUTRITION

Exclusive breastfeeding

Current breastfeeding is high among mothers (90.8%). For the 28 mothers who were not currently breast feeding, 15 mothers had ever breastfed. Mothers who breastfed their children aged 0 – 5 months within the first hour of giving birth were 64.29% compared to about 67.83% in 2006. *[Indicator: Percentage of children age 0–5 months who were exclusively breastfed during the last 24 hours]*. Female infants were more likely to have been exclusively breast fed within the first 24 hours compared to male infants. Mothers aged less than 25 years seem to be more likely to exclusively breastfeed within the first 24 hours compared to mother aged 25 years and above.

Table 4: Exclusive Breastfeeding during the last 24 hours.

Exclusive		**Infants age 0 – 5 months**		**Age of mother**	
Breast feeding	**Total**	**Male**	**Female**	**< 25 years**	**≤ 25 years**
Yes	64.29(54)	59.52(25)	69.05(29)	69.23(27)	60.00(27)
No	35.71(30)	40.48(17)	30.95(13)	30.77(12)	40.00(18)
Total	100.00(842)	100.00(42)	100.00(42)	100.00(39)	100.00(45)

Breastfeeding and Complementary Feeding

The results show that there were 50.77% of children who receive breast milk and complimentary food within the last 24 hours. *[Indicator: Percentage of children age 6–9 months who received breast milk and complementary foods during the last 24 hour]*. Mothers were more likely to give their female infants breast milk and complementary feeding within the last 24 hours compared to their male infants. Older mothers were more likely to give breastmilk and complementary feeding to their children aged 6 – 9 months in the last hour compared to mothers aged less than 25 years. During the 2006 KPC Baseline survey, 83.33% of children aged 6 -9 months received breast milk and complementary foods during the last 24 hour.

Table 5: Breast feeding and Complementary feeding within the last 24 hours

Table 5: Breast feeding and Complementary feeding within the last 24 hours

Breast milk & Complementary foods		**Infants age 6 – 9 months**		**Age of mother**	
	Total	**Male**	**Female**	**< 25 years**	**≤ 25 years**
Yes	50.77(33)	40.00(12)	60.00(21)	44.12(15)	58.06(18)
No	49.23(32)	60.00(18)	40.00(14)	55.88(19)	41.94(13)
Total	100.00(65)	100.00(30)	100.00(35)	100.00(34)	100.00(31)

CHILDHOOD ILLNESS (IMCI)

There were 70.72% of mothers who knew at least two signs of childhood illness that indicate the need for treatment compared to 70.33% during the 2006 KPC baseline survey.*[Indicator: Percentage of mothers of children age 0–23 months who know at least two signs of childhood illness that indicate the need for treatment]*. The most cited sign of child illness was high fever (61.5%), followed by "Child looking unwell/not playing normally" (54.3%) and "child not eating" (41.4%). The other mentioned signs of child illnesses were: child vomits everything (17.1%), lethargic/child difficult to wake (16.8%), difficult or raid breathing (10.9) and convulsions (10.5%). The commonly cited child illness experiences in the last two weeks were cough (50.3%) followed by fever (28.9%) and diarrhea (28.6%).

Increased fluids and continued feeding during child illness

The results show that about six percent sick children received increased fluids and continued feeding during illness. *[Indicator: Percentage of sick children age 0–23 months who received increased fluids and continued feeding during an illness in the past two weeks]*. This is extremely low and shows continued poor practice regarding feeding of sick children. There doesn't seem to be much change in this indicators compared to during the 2006 KPC Baseline survey.

Source of First Advice or treatment for sick Child

About 57% of mothers (126 out of 221) sought advice from someone outside of the home when their youngest child was sick. The most common source of first advice or treatment was at health center (66%). Other sources of first advice or treatment reported by mothers had percentages below 10%.

CHILD IMMUNIZATION

Full immunization is defined as children receiving vaccines for all the five preventable diseases. BCG, DTP, Polio and measles vaccines. It is also expected that a child would be fully immunized by the time they reach age of 12 months.

Full Immunization of children

The vaccinations considered for fully immunization are Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card. Results show that of the 24 children aged between 12-23 months with child health cards, none of them were fully immunized *[Indicator: Percentage of children age 12–23 months who are fully vaccinated against the five vaccine-preventable diseases before the first birthday]*. Similarly, there was no child who was fully immunized in this health zone among children aged between 12 – 23 months with health cards during the 2006 KPC Baseline survey.

Immunization against Measles

Only 1.67 (two out of 120) children aged above 12 months were vaccinated against measles *[Indicator: Percentage of children age 12–23 months who received a measles vaccine]*. There is a huge decline in terms of children immunized against measles between 2006 and 2010, declining from 57.3 % to 1.67%.

Immunization against Tuberculosis

BCG is the vaccine for prevention against tuberculosis. Overall, 77.5% of children aged 12 – 23 months were vaccinated against tuberculosis.

Immunization against Tuberculosis	Number	Percent
Yes	93	77.5
No	27	22.5
Total	**120**	**100.0**

Immunization against Yellow Fever

There were no children aged 12 - 23 months who were vaccinated against yellow fever. During 2006 KPC baseline, there was only one child who had a health card showing that they had been vaccinated against yellow fever.

Immunization against Yellow Fever	Number	Percent
Yes	0	0.0
No	120	100.0
Total	**120**	**100.0**

Vitamin A Supplement for children aged >6 – 23 months in the last six months

There were about 47% of children who were older than six months had received Vitamin A supplement during the survey [*Indicator: Percentage of children > 6 months receiving one Vitamin A dose*]. During 2006 KPC baseline, there were 94% older of children than six months with health cards showing that they had received vitamin A supplement in the last six months preceding the survey.

Vitamin A Supplement	Number	Percent
Yes	103	46.8
No	117	53.2
Total	**220**	**100.0**

DIARRHEA CASE MANAGEMENT

Prevalence of Diarrhea and knowledge of signs of child illness

There were 85 mothers who reported that their youngest children suffered from diarrhea in the last two weeks. However, there were only 6.25% of mothers who could recognize at least 2 signs of dehydration as danger signs compared to 23.7% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize 2 signs of dehydration as danger signs]*. The most frequently mentioned danger sign to push a mother to seek immediate treatment at a health facility or hospital when a child has diarrhea was intense weakness (78.8%) followed by refusal eat (37.6%), intense thirst (21.2%) and Dark eyes/rings under eyes (10.6). The rest of the other danger signs were mentioned by less than 5% of mothers.

Diarrhea treatment by mother

There were 24.71% of children who had diarrhea in the last two weeks of were reported by their mothers to have received ORS and/or home fluids compared to 9.52 during the 2006 KPC Baseline survey. *[Indicator: Percentage of children 0-23 months with diarrhea in the last 2 weeks who have received ORS and/or recommended home fluids]*. The most common treatment for diarrhea among children reported by mother was giving the sick child the ORS packet (58.8%) and pill or syrup (14.1%). Giving sick child home remedies was done by 8.2% of mothers and giving sick child home based liquid was done by 5.9% of mothers. About 5% did nothing to treat diarrhea of their sick children.

Breastfeeding of sick child

Out the 85 mothers who reported that their youngest children suffered from diarrhea, only 13 children (15.3) were breastfed more than usual, 34 children (40%) were breast fed less than usual while 26 children (30.6%) were breast fed the same as before they were ill from diarrhea. There were 15.5% of children who were breastfed more than usual and 26% of children who were breastfed less than usual when they had diarrhea during the 2006 KPC Baseline survey. The increase in the percent of mothers who breastfed less to children with diarrhea from 26% to 40% implies worsening knowledge among mothers about benefits of breastfeeding children especially during diarrhea illness.

Frequency of eating sick child

Out of the 85 mothers reporting that their children suffered diarrhea during the past two weeks 49 children (57.65%) ate less. Only one child was offered more than usual to eat and 20 children (23.5%) were given the same amounts to eat when they had diarrhea and three children were reported not yet eating. There were only six percent of children who were said to have been offered less to eat during the 2006 KPC Baseline survey. The large percent of children who were said to have eaten less (57.7%) during the time there had diarrhea, implies a decline in knowledge among mothers about the recovering child's need to re-built their immune system through eating.

Intake of liquids by recovering child

About 60% of the 85 mothers offered children same amount as usual to drink when children were recovering from diarrhea and 17.65% offered more than usual to drink during their recovery period. There were 12 recovering children (14.1%) who were offered less than usual to drink in 2010 compared to 16.7% recovering children who drank more liquids and 10.7% who were reported to have taken less to drink during the 2006 KPC Baseline survey. This implies a decline in knowledge among mothers about the need for recovering children to be offered to drink to guard against dehydration.

Intake of food by recovering child

About 54% of the 85 mothers offered children same amount as usual to eat when children were recovering from diarrhea and 11.8% offered more than usual to eat during their recovery period. There were 22 recovering children (25.9%) were offered less than usual to eat whilst for children were said not to have started eating yet. There were about 18% who ate more food and 21% who were given less to eat during their recovery period in the 2006 KPC Baseline survey.

Knowledge of oral re-hydration solution (ORS)

The percentage of mothers who ever heard of ORS and can correctly describe ORS is about nine percent *[Indicator: Percentage of mothers who can correctly prepare ORS]*. This is low although there is an improvement compared to the 2006 baseline survey where none of the mothers could describe ORS correctly.

Hand washing practices

Results show that only one mother (0.3%) washes her hands with soap/ash before food preparation, before feeding children, after defecation and after attending to a child who has defecated. *[Indicator: Percentage of mothers with children age 0–23 months who report that they wash their hands with soap/ash before food preparation, before feeding children, after defection, and after attending to a child who has defecated]*. This indicator was at 3.67% during the 2006 KPC baseline survey. There were 20% of mothers who indicated that they wash their hands before preparation of food, 17% after defecation, and 15.5% before feeding children and 7.2% after attending to child who has defecated.

ACUTE RESPIRATORY INFECTIONS (ARI) CASE MANAGEMENT

The prevalence of cough amongst youngest children in the last two weeks was reported by about 50.7% of mothers (154 out of 304). The most frequently mentioned danger sign by these mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (53%) followed by rapid breathing (39.6%), Tightened chest muscles (13.6%) and child's chest caved/sunken in (11%). However, only 13.49% of mothers could recognize at least two signs of pneumonia compared to 15.3% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who recognize two signs of pneumonia]*. Very few mothers can recognize at least two danger sign associated with pneumonia in their children. If a child doesn't have difficulty in breathing during a cough illness, mothers are unlikely to recognize that their children could be attacked by pneumonia to facilitate mothers seeking treatment on time.

Child Problem breathing experience

About 68% of children who had a cough illness were reported to have difficulty in breathing (105 out of 154 children). Only 11 mothers (10.5%) mentioned they sought advice or treatment for the child's cough and fast breathing the same day, 29 mothers (27.6%) who said they sought advice or treatment the next day. Seventeen mothers (16%) indicated they south treatment two days later and 21 mothers (20%) said treatment was sought three days later.

First Source of Advice or Treatment for sick child

There were 78 mothers who sought advice or treatment for the cough or difficulty in breathing of their children. The most cited source of first advice for children with a cough or experiencing breathing by these mothers were health center (57.7%). There were 46.7% of mothers with children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 41% during the 2006 KPC Baseline survey. *[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who were taken to a health facility or a trained alternative source]*.

Medicines given to sick child with cough/difficulty in breathing

Most children with cough and difficulty in breathing were treated with cotrimoxazole (40%), paracetamol (28.6%) and amoxyllin (12.4%). There other treatments administered to coughing children accounted for less than 10%. {Aspirin (9.5%), unknown tablets (1.9%) & don't know (3.8%)}. Of the 105 children who suffered from cough and/or had difficulty in breathing 48.57% of them had received antibiotics for the cough.*[Indicator: Percent of children aged 0-23 months with cough and fast/difficult breathing in the last two weeks who received antibiotics]*. There were about 41% of children 0 – 23 months with cough and/or had difficulty in breathing in the last 2 weeks preceding the 2006 KPC Baseline survey who received antibiotics.

MALARIA CASE MANAGEMENT

About 32.9% of mothers reported that their children had a fever in the past 2 weeks before the survey (100 out of 304). About 51% of these mothers (51 out of 100) with high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 52% during the 2006 KPC Baseline survey. *[Indicator: Percentage of mothers of children 0-23 with high fever in the last 2 weeks seeking care within 24 hours from a trained provider]*.

Medicines given to sick child for fever

Results show that 25% of children who presented fever were treated with paracetamol, 10% with aspirin, 10% with Artesunate, 9% with cotrimoxazole, 6% with quinine, 4% with Mefloquine, 3% with Chloroquine and 3% with ampicillin/amoxyllin. Quinine or Artesunate were given to 15 children out of 100 (15%) as malaria treatment compared to 6.7% during the 2006 KPC Baseline survey.*[Indicator: Percentage of children 0-23 with high fever in the last 2 weeks that took malaria treatment]*.

Drugs given/taken to prevent malaria during pregnancy

There were 50.3% mothers (153 out of 304) who reported that they took drugs to prevent malaria when they were pregnant with their youngest child compared to 27% during the 2006 KPC Baseline survey. Among women who were given drugs to prevent malaria during pregnancy, 79.1% mentioned to have taken Fansidar, 3.3% took Quinine, and 2.6% took Chloroquine. About 79% of mothers took Fansidar as a prevention drug against malaria during pregnancy of their youngest child. [*Indicator: Percentage of mothers who took anti-malarial medicine to prevent malaria during pregnancy]*. There were 89% of mothers (73 out of 82) who took Fansidar to prevent against malaria during pregnancy of their youngest child during the 2006 KPC Baseline survey.

Causes of malaria

About 59% of mothers (178 out of 304) knew that malaria is caused by mosquito bites compared to only 35% during the 2006 KPC Baseline survey. *[Indicator: Percent of mothers with children 0-23 months who know how malaria is caused]*. There has been an increase in the percent of mothers who knew what causes of malaria in this health zone. However, 36% of the mothers said they did not know what causes malaria.

MOSQUITO BEDNET USE AND MAINTENANCE

Availability of Bednet

There is an increase of the bed nets in this health zone compared to the year 2006. There were 62.5% of mothers who said they have bed nets in the house to prevent against malaria (190 mothers out of 304) compared to 14% of mothers during 2006 KPC Baseline survey. About 94% of these mothers with bed nets (178 out of 190) said that they had ever impregnated or soaked bed nets in a liquid to repel mosquitoes and/or other insects. About 73% of mothers with bed nets that were ever impregnated or soaked (139 out of 190) also indicated that their bed nets were ever washed. However, 49% (92 out of 190) of bednet that were inspected by interviewers had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos.

Children who slept under treated net

About 47% of mothers reported that their youngest children slept under the ever treated bed nets the previous night preceding the 2010 KPC survey *[Indicator: Percentage of children age 0–23 months who slept under an insecticide-treated net the previous night]*. This indicator was 6.7% during the 2006 KPC Baseline survey.

Iron/Folic acid intake during pregnancy

About 63% of mothers indicated that they took or bought tablets/syrup with iron or folic acid when they were pregnant with their youngest child (192 mothers out of 304) compared to 58% during the 2006 Baseline survey.

CONCLUSION AND RECOMMENDATIONS

Nutritional Status of children

The level of malnutrition has remained almost the same between 2006 and 2010 at about 14%. However, the percent of children who had signs of edema increased from 3% to 9% between the two surveys.

Maternal and Newborn

There percent of mothers who were assisted by skilled health personnel increased from about 30% to about 38% between 2006 and 2010. This means that mothers are better placed in terms of information on Child health/nutrition as they are being attended by nurses and doctors compared to the year 2006. There were 63.5% of mothers received at least two tetanus injection during pregnancy in 2010 compared to 47.8% of mothers who received the same dosage during pregnancy in 2006.

HIV/AIDS

The knowledge of HIV/AIDS increased from 81% to 89% between 2006 and 2010. However, there were 33.6% of mothers with children aged 0 – 23 months could cite at least two known ways of reducing the risk of HIV infection compared to 42.7% during the 2006 KPC Baseline survey. Hence, there is a decline in the percent of mothers who are knowledgeable about ways of preventing HIV between the two years.

Breastfeeding and Infant/Child Nutrition

Current breastfeeding is high among mothers (90.8%). Mothers who breastfed their children aged 0 – 5 *months within the first hour of giving birth were 64.29% in 2010 compared to about 67.83% in 2006*. There has been an increase in the percent of mothers who give infants breastmilk within the first 24 hours of giving birth from about 68% to 64% over the two KPC survey years. However, this means that in 2010, about 36% of these infants missed out on the concentrated colostrum that is contained in the initial breast milk, hence, these children are relatively at higher risk of illne**ss**. There has been a marked reduction in the percent of mothers who give infants both breastmilk and complementary feeding within the last 24 hours from about 83% to 51% of children of the same age group over the two KPC survey years.

Childhood illnesses (IMCI)

There doesn't seem to be any change in the percent of mothers who knew at least two signs of child illness between the 2006 and 2010 KPC surveys (70.3% and 70.7 respectively). Similarly, there doesn't seem to be much change in this indicators compared to during the 2006 KPC Baseline survey (6.6% and 6.3% respectively). The low percent of mothers who give their sick children less fluids and continued feeding implies deepening poor feeding practice by mothers. The most common source of first advice or treatment was at health center (66%).

Child Immunization

None of the 24 children aged between 12-23 months with child health cards, were fully immunized. The same scenario was also observed during the 2006 KPC Baseline survey. There is a huge decline in terms of children immunized against measles between 2006 and 2010, declining from 57.26 % to 1.67%. None of the 24 children with health cards aged 12—23 were immunized against yellow fever and 77.5% of the children were immunized against tuberculosis. There were 47% of children older than six months who had received vitamin A supplement compared to 94% in 2006.

Diarrhea Case Management

There is a decline in the percent of mothers who could recognize at least 2 signs of dehydration as danger signs from 23.7% to 6.25% between 2006 and 2010 KPC survey years. There is an increase in the percent of children with diarrhea in the last two weeks who received ORS and/or recommended home fluids from 9.5% to 24.7% between 2006 and 2010. The increase in the percent of mothers who breastfed less to children with diarrhea from 26% to 40% implies worsening knowledge among mothers about the benefits of breastfeeding children especially during diarrhea illness. The large percentage of children who were said to have eaten less during the time there had diarrhea, implies a decline in knowledge among mothers about the recovering child's need to rebuilt their immune system by eating. This implies a decline (10.7% vs. 14.1%) in knowledge among mothers as to the need for recovering children to be offered to drink to guard against dehydration. There were about 21% recovering children who were given less to eat during the 2006 KPC Baseline survey against 26% in 2010.

Mothers' knowledge of ORS is very low and there has been a decline of the percent of mothers who can describe ORS correctly from 9% to 21% between 2006 and 2010. There was a decline in the percent of mothers who practice all the four hand washing practices from about 4% in 2006 to 0.3% in 2010. A large percent of mothers do not practice hand washing when caring for their children. This continues to be critical programmatic intervention area required for diarrhea control in this health zone

Acute Respiratory Infections case Management

The most frequently mentioned danger sign by these mothers to push a mother to seek immediate treatment at a health facility or hospital for a child with cough is difficulty in breathing (53%). only 13.49% of mothers could recognize at least two signs of pneumonia compared to 15.3% during the 2006 KPC Baseline survey. There were 46.7% of mothers with children with cough and/or difficulty in breathing who sought advice/treatment at health facilities or trained alternative source compared to 41% during the 2006 KPC Baseline survey. Of the children who suffered from cough and/or had difficulty in breathing in 2010, 48.57% of them had received antibiotics for the cough compared to about 41% in 2006.

Malaria Case Management

About 51% of mothers with children who had high fever in the last 2 weeks sought care within 24hours from a trained provider compared to 52% in 2006. Quinine or Artesunate were given to 15 children out of 100 (15%) as malaria treatment among those children who were diagnosed as suffering from malaria compared to 6.7% in 2006. Fansidar is the common drug (58.6%) that mothers take to prevent malaria during pregnancy. The majority of mothers know that malaria is caused by mosquito bites. There is an increase in the knowledge of causes of malaria by mothers in this health zone from 35% to 59%.

Mosquito Bed nets and Maintenance

There is an increase of the bed nets from 14% to 62.5% in this health zone between 2006 and 2010. About 73% of mothers with bed nets that were ever impregnated or soaked (139 out of 190) also indicated that their bed nets were ever washed. However, 49% (92 out of 190) of bednet that were inspected by interviewers had holes and lacerations visible on them hence, were no longer in good condition to prevent penetration by mosquitos. About 47% of mothers reported that their youngest children slept under the ever treated bed nets the previous night preceding the 2010 KPC survey compared to 69% during the 2006 Baseline survey.

Child Survival and Health Grants Program Project Summary

Nov-29-2010

Catholic Relief Services
(DR Congo)

General Project Information

Cooperative Agreement Number: GHS-A-00-05-00028
CRS Headquarters Technical Backstop: Elena McEwan
CRS Headquarters Technical Backstop Backup:
Field Program Manager: Serge Masuku
Midterm Evaluator: Armand Utshudi
Final Evaluator: Bonnie Kittle
Headquarter Financial Contact: Tia Simmons
Project Dates: 9/30/2005 - 9/30/2010 (FY05)
Project Type: Expanded Impact
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Grant Funding Information

USAID Funding:$2,494,008 **PVO Match:**$1,254,504

General Project Description

Information from The Final Evaluation: The overall goal is to reduce under-five and maternal mortality in six targeted under-served, rural health zones.

Main Accomplishments

1. Scale up – The project contributed to the scale up of IMCI in the country and the Kasai Oriental Province by training 8 trainers in IMCI. These trainers are based in Kasai Occidentale Province and Sankuru and Mwene-Ditu districts targeted by the project and they have trained providers from other districts in the province and from other provinces.

2. Reduced exposure to malaria due to increased (2% - 69% [1]) used of ITNs by children U2. This practice was facilitated by the distribution of 20,000+ ITN in both target districts.

3. Increased (18% - 78%) practice of exclusive breastfeeding of infants 0-6 months in all six health zones due to improved access to information about and support for exclusive breastfeeding through the formation of 173 knowledgeable and dynamic village-based breastfeeding support groups. This practice was also promoted by 212 providers trained in IMCI, 24 providers trained in Exclusive Breastfeeding; and 259 health care providers and 4,348 Community Health Workers trained in C-IMCI.

4. Reduced exposure to malaria due to increased (19% - 92%) Intermittent Presumptive Treatment (IPT) among pregnant women.

5. Improved quality of care for children U5 through the practice of IMCI at 100 health centers in 6 Health Zones in Sankuru and Mwene-Ditu Districts. IMCI practice was supported by regular supervision of the health centers by the Central Health Zone Office (CHZO) and the provision of essential medicines and equipment to the 100 health Centers in 6 health zones.

6. Improved quality of care in 14 private facilities in Makota Health Zone through the inclusion of these providers in IMCI training and provision of essential drugs and equipment;

7. Increased access to health care services through the creation and support of 56 Community Care sites where integrated Community Case Management (iCCM) is practiced;

8. Increased access to information about healthy behaviors through the training and support of 4,348 community Health Workers.

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[1] These figures represent the results from all six health zones (HZ). The first figure is the lowest among the 6 HZ and the second figure is the highest among all six HZ. For comparison of baseline and final results by HZ

Project Location

Latitude: -2.61	**Longitude:** 27.86
Project Location Types:	(None Selected)
Levels of Intervention:	(None Selected)
Province(s):	--
District(s):	The six rural zones included in the Child Survival project were initially part of a CRS primary health care project but were not then independent administrative entities (prior to health zone splitting). The Child Survival Project will provide much needed resources to these new zones. The zones are Bena Dibele, Djalo-Ndjeka, Tshumbe, Kanda-Kanda, Kalenda in Kasai Oriental Province. There are over 200 ethnic groups in the DRC. Nonetheless, the majority of people in the targeted areas are Batetela.
Sub-District(s):	--

Operations Research Information

OR Project Title:	--
Cost of OR Activities:	--
Research Partner(s):	--
OR Project Description:	--

Partners

Diocesan medical office (BDOM) (Subgrantee)	$650,954
Mininstry of Health National, Provincial and Health Zone Level (Collaborating Partner)	$0

Strategies

Social and Behavioral Change Strategies:	Community Mobilization Group interventions Interpersonal Communication
Health Systems Strengthening:	Quality Assurance Conducting capacity assessment of local partners Supportive Supervision Task Shifting Developing/Helping to develop clinical protocols, procedures, case management guidelines Developing/Helping to develop job aids Monitoring health facility worker adherence with evidence-based guidelines Monitoring CHW adherence with evidence-based guidelines Referral-counterreferral system development for CHWs Community role in supervision of CHWs Community role in recruitment of CHWs Coordinating existing HMIS with community level data Pharmaceutical management and logistics
Strategies for Enabling Environment:	Create/Update national guidelines/protocols Advocacy for revisions to national guidelines/protocols Stakeholder engagement and policy dialogue (local/state or national) Advocacy for policy change or resource mobilization Building capacity of communities/CBOs to advocate to leaders for health
Tools/Methodologies:	BEHAVE Framework Sustainability Framework (CSSA) Rapid Health Facility Assessment

Capacity Building

Local Partners:	Local Non-Government Organization (NGO) Dist. Health System Health Facility Staff Other National Ministry Faith-Based Organizations (FBOs)

Interventions & Components

Immunizations (20%) - Classic 6 Vaccines - Cold Chain Strengthening - Mobilization - Community Registers	IMCI Integration	CHW Training HF Training
Pneumonia Case Management (10%) - Case Management Counseling - Recognition of Pneumonia Danger Signs	IMCI Integration	CHW Training HF Training
Control of Diarrheal Diseases (20%) - Hand Washing - ORS/Home Fluids - Feeding/Breastfeeding - Care Seeking - Case Management/Counseling	IMCI Integration	CHW Training HF Training
Malaria (40%) - Adequate Supply of Malarial Drug - ITN (Bednets) - Care Seeking, Recog., Compliance - IPT	IMCI Integration	CHW Training HF Training
Breastfeeding (10%) - Promote Exclusive BF to 6 Months - Introduction or promotion of LAM	IMCI Integration	CHW Training HF Training

Operational Plan Indicators

Number of People Trained in Maternal/Newborn Health			
Gender	**Year**	**Target**	**Actual**
Female	2010	31	
Female	2010		0
Male	2010		0
Male	2010	41	
Female	2011	0	
Male	2011	0	
Female	2012	0	
Male	2012	0	
Number of People Trained in Child Health & Nutrition			
Gender	**Year**	**Target**	**Actual**
Female	2010	31	
Female	2010		0
Male	2010		0
Male	2010	41	
Female	2011	0	
Male	2011	0	
Female	2012	0	
Male	2012	0	
Number of People Trained in Malaria Treatment or Prevention			
Gender	**Year**	**Target**	**Actual**
Female	2010		0
Female	2010	0	
Male	2010		0
Male	2010	0	
Female	2011	0	
Male	2011	0	
Female	2012	0	
Male	2012	0	

Locations & Sub-Areas

BENA DIBELE:HEALTH ZONE 1	57,384
DJALO NDJEKA:HEALTH ZONE 2	68,664
KALENDA:HEALTH ZONE 3	152,484
KANDA KANDA:HEALTH ZONE 4	175,864
MAKOTA: HEALTH ZONE 5	182,892
TSHUMBE:HEALTH ZONE 6	71,976
Total Population:	709,264

Target Beneficiaries

	BENA DIBELE:HEALTH ZONE 1	DJALO NDJEKA:HEALTH ZONE 2	KALENDA:HEALTH ZONE 3	KANDA KANDA:HEALTH ZONE 4	MAKOTA: HEALTH ZONE 5	TSHUMBE:HEALTH ZONE 6	Total
Children 0-59 months	11,477	13,732	30,496	35,173	36,578	14,395	141,851
Women 15-49 years	12,051	14,420	32,022	36,931	15,115	38,407	148,946
Beneficiaries Total	23,528	28,152	62,518	72,104	51,693	52,802	290,797

Rapid Catch Indicators: DIP Submission

Sample Type: 30 Cluster

Underweight Children
Description -- Percentage of children age 0-23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)
Numerator: No. of children age 0-23 months whose weight (Rapid CATCH Question 7) is -2 SD from the median weight of the WHO/NCHS reference population for their age
Denominator: Number of children age 0-23 months in the survey who were weighed (response=1 for Rapid CATCH Question 6)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	61	300	20.3%	6.8
DJALO NDJEKA:HEALTH ZONE 2	76	300	25.3%	7.5
KALENDA:HEALTH ZONE 3	66	298	22.1%	7.1
KANDA KANDA:HEALTH ZONE 4	76	300	25.3%	7.5
MAKOTA: HEALTH ZONE 5	52	300	17.3%	6.4
TSHUMBE:HEALTH ZONE 6	41	300	13.7%	5.7

Birth Spacing
Description -- Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child
Numerator: No. of children age 0-23 months whose date of birth is at least 24 months after the previous surviving sibling's date of birth
Denominator: Number of children age 0-23 months in the survey who have an older surviving sibling

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	106	300	35.3%	8.6
DJALO NDJEKA:HEALTH ZONE 2	0	300	0.0%	0.0
KALENDA:HEALTH ZONE 3	91	298	30.5%	8.2
KANDA KANDA:HEALTH ZONE 4	13	300	4.3%	3.3
MAKOTA: HEALTH ZONE 5	0	300	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	300	0.0%	0.0

Delivery Assistance
Description -- Percentage of children age 0-23 months whose births were attended by skilled health personnel
Numerator: No. of children age 0-23 months with responses =A ('doctor'), B ('nurse/midwife'), or C ('auxiliary midwife') for Rapid CATCH Question 10D
Denominator: Number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	137	300	45.7%	9.5
DJALO NDJEKA:HEALTH ZONE 2	200	300	66.7%	10.7
KALENDA:HEALTH ZONE 3	173	298	58.1%	10.3
KANDA KANDA:HEALTH ZONE 4	121	300	40.3%	9.1
MAKOTA: HEALTH ZONE 5	276	300	92.0%	11.3
TSHUMBE:HEALTH ZONE 6	247	300	82.3%	11.1

Maternal TT
Description -- Percentage of mothers of children age 0-23 months who received at least two tetanus toxoid injections before the birth of their youngest child
Numerator: Number of mothers of children age 0-23 months with responses=2 ('twice') or 3 ('more than two times') for Rapid CATCH Question 9
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	111	300	37.0%	8.8
DJALO NDJEKA:HEALTH ZONE 2	96	300	32.0%	8.3
KALENDA:HEALTH ZONE 3	163	298	54.7%	10.1
KANDA KANDA:HEALTH ZONE 4	150	300	50.0%	9.8
MAKOTA: HEALTH ZONE 5	154	300	51.3%	9.9
TSHUMBE:HEALTH ZONE 6	65	300	21.7%	7.0

Exclusive Breastfeeding
Description -- Percentage of infants age 0-5 months who were exclusively breastfed in the last 24 hours
Numerator: Number of infants age 0-5 months with only response=A ('breastmilk') for Rapid CATCH Question 13
Denominator: Number of infants age 0-5 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	42	108	38.9%	14.9
DJALO NDJEKA:HEALTH ZONE 2	55	101	54.5%	17.4
KALENDA:HEALTH ZONE 3	15	82	18.3%	12.5
KANDA KANDA:HEALTH ZONE 4	28	100	28.0%	13.6
MAKOTA: HEALTH ZONE 5	41	102	40.2%	15.6
TSHUMBE:HEALTH ZONE 6	77	115	67.0%	17.3

Complementary Feeding
Description -- Percentage of infants age 6-9 months receiving breastmilk and complementary foods
Numerator: Number of infants age 6-9 months with responses= A ('breastmilk') and D ('mashed, pureed, solid, or semi-solid foods') for Rapid CATCH Question 13
Denominator: Number of infants age 6--9 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	48	51	94.1%	27.4
DJALO NDJEKA:HEALTH ZONE 2	54	61	88.5%	24.9
KALENDA:HEALTH ZONE 3	38	67	56.7%	21.6
KANDA KANDA:HEALTH ZONE 4	50	71	70.4%	22.2
MAKOTA: HEALTH ZONE 5	43	61	70.5%	24.0
TSHUMBE:HEALTH ZONE 6	50	60	83.3%	24.9

Full Vaccination
Description -- Percentage of children age 12-23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday
Numerator: Number of children age 12-23 months who received Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card (as documented in Rapid CATCH Question 15)
Denominator: Number of children age 12-23 months in the survey who have a vaccination card that was seen by the interviewer (response=1 'yes, seen by interviewer' for Rapid CATCH Question 14)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	6	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	2	13	15.4%	29.0
KALENDA:HEALTH ZONE 3	1	7	14.3%	38.2
KANDA KANDA:HEALTH ZONE 4	0	7	0.0%	0.0
MAKOTA: HEALTH ZONE 5	9	33	27.3%	23.4
TSHUMBE:HEALTH ZONE 6	0	9	0.0%	0.0

Measles
Description -- Percentage of children age 12-23 months who received a measles vaccine
Numerator: Number of children age 12-23 months with response=1 ('yes') for Rapid CATCH Question 16
Denominator: Number of children age 12-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	5	110	4.5%	5.6
DJALO NDJEKA:HEALTH ZONE 2	8	98	8.2%	7.8
KALENDA:HEALTH ZONE 3	3	117	2.6%	4.1
KANDA KANDA:HEALTH ZONE 4	4	99	4.0%	5.5
MAKOTA: HEALTH ZONE 5	22	110	20.0%	11.2
TSHUMBE:HEALTH ZONE 6	0	96	0.0%	0.0

Bednets
Description -- Percentage of children age 0-23 months who slept under an insecticide-treated bednet the previous night (in malaria-risk areas only)
Numerator: Number of children age 0-23 months with 'child' (response=A) mentioned among responses to Rapid CATCH Question 18 AND response=1 ('yes') for Rapid CATCH Question 19
Denominator: Number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits

BENA DIBELE:HEALTH ZONE 1	29	300	9.7%	4.9
DJALO NDJEKA:HEALTH ZONE 2	12	300	4.0%	3.2
KALENDA:HEALTH ZONE 3	10	298	3.4%	2.9
KANDA KANDA:HEALTH ZONE 4	7	300	2.3%	2.4
MAKOTA: HEALTH ZONE 5	25	300	8.3%	4.5
TSHUMBE:HEALTH ZONE 6	20	300	6.7%	4.1

Danger Signs
Description -- Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment
Numerator: Number of mothers of children age 0-23 months who report at least two of the signs listed in B through H of Rapid CATCH Question 20
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	199	300	66.3%	10.7
DJALO NDJEKA:HEALTH ZONE 2	210	300	70.0%	10.8
KALENDA:HEALTH ZONE 3	194	298	65.1%	10.6
KANDA KANDA:HEALTH ZONE 4	175	300	58.3%	10.3
MAKOTA: HEALTH ZONE 5	166	300	55.3%	10.1
TSHUMBE:HEALTH ZONE 6	211	300	70.3%	10.8

Sick Child
Description -- Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks
Numerator: Number of children age 0-23 months with response=3 ('more than usual') for Rapid CATCH Question 22 AND response=2 ('same amount') or 3 ('more than usual') for Rapid CATCH Question 23
Denominator: Number of children surveyed who were reportedly sick in the past two weeks (children with any responses A-H for Rapid CATCH Question 21)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	33	200	16.5%	7.6
DJALO NDJEKA:HEALTH ZONE 2	48	190	25.3%	9.4
KALENDA:HEALTH ZONE 3	37	249	14.9%	6.5
KANDA KANDA:HEALTH ZONE 4	33	235	14.0%	6.5
MAKOTA: HEALTH ZONE 5	24	222	10.8%	5.9
TSHUMBE:HEALTH ZONE 6	52	207	25.1%	9.0

HIV/AIDS
Description -- Percentage of mothers of children age 0-23 months who cite at least two known ways of reducing the risk of HIV infection
Numerator: Number of mothers of children age 0-23 months who mention at least two of the responses that relate to safer sex or practices involving blood (letters B through I & O) for Rapid CATCH Question 25
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	117	300	39.0%	9.0
DJALO NDJEKA:HEALTH ZONE 2	157	300	52.3%	9.9
KALENDA:HEALTH ZONE 3	134	298	45.0%	9.5
KANDA KANDA:HEALTH ZONE 4	132	300	44.0%	9.4
MAKOTA: HEALTH ZONE 5	221	300	73.7%	10.9
TSHUMBE:HEALTH ZONE 6	143	300	47.7%	9.6

Handwashing
Description -- Percentage of mothers of children age 0-23 months who wash their hands with soap/ash before food preparation, before feeding children, after defecation, and after attending to a child who has defecated
Numerator: Number of mothers of children age 0-23 months who mention responses B through E for Rapid CATCH Question 26
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	7	300	2.3%	2.4
DJALO NDJEKA:HEALTH ZONE 2	7	300	2.3%	2.4
KALENDA:HEALTH ZONE 3	0	298	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	4	300	1.3%	1.8
MAKOTA: HEALTH ZONE 5	3	300	1.0%	1.6
TSHUMBE:HEALTH ZONE 6	11	300	3.7%	3.0

Rapid Catch Indicators: Mid-term

Sample Type: 30 Cluster

Underweight Children
Description -- Percentage of children age 0-23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)
Numerator: No. of children age 0-23 months whose weight (Rapid CATCH Question 7) is -2 SD from the median weight of the WHO/NCHS reference population for their age
Denominator: Number of children age 0-23 months in the survey who were weighed (response=1 for Rapid CATCH Question 6)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Birth Spacing
Description -- Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child
Numerator: No. of children age 0-23 months whose date of birth is at least 24 months after the previous surviving sibling's date of birth
Denominator: Number of children age 0-23 months in the survey who have an older surviving sibling

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Delivery Assistance
Description -- Percentage of children age 0-23 months whose births were attended by skilled health personnel
Numerator: No. of children age 0-23 months with responses =A ('doctor'), B ('nurse/midwife'), or C ('auxiliary midwife') for Rapid CATCH Question 10D
Denominator: Number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Maternal TT
Description -- Percentage of mothers of children age 0-23 months who received at least two tetanus toxoid injections before the birth of their youngest child
Numerator: Number of mothers of children age 0-23 months with responses=2 ('twice') or 3 ('more than two times') for Rapid CATCH Question 9
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Exclusive Breastfeeding
Description -- Percentage of infants age 0-5 months who were exclusively breastfed in the last 24 hours
Numerator: Number of infants age 0-5 months with only response=A ('breastmilk') for Rapid CATCH Question 13
Denominator: Number of infants age 0-5 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Complementary Feeding
Description -- Percentage of infants age 6-9 months receiving breastmilk and complementary foods
Numerator: Number of infants age 6-9 months with responses= A ('breastmilk') and D ('mashed, pureed, solid, or semi-solid foods') for Rapid CATCH Question 13
Denominator: Number of infants age 6--9 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Full Vaccination
Description -- Percentage of children age 12-23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday
Numerator: Number of children age 12-23 months who received Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card (as documented in Rapid CATCH Question 15)
Denominator: Number of children age 12-23 months in the survey who have a vaccination card that was seen by the interviewer (response=1 'yes, seen by interviewer' for Rapid CATCH Question 14)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Measles
Description -- Percentage of children age 12-23 months who received a measles vaccine
Numerator: Number of children age 12-23 months with response=1 ('yes') for Rapid CATCH Question 16
Denominator: Number of children age 12-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Bednets
Description -- Percentage of children age 0-23 months who slept under an insecticide-treated bednet the previous night (in malaria-risk areas only)
Numerator: Number of children age 0-23 months with 'child' (response=A) mentioned among responses to Rapid CATCH Question 18 AND response=1 ('yes') for Rapid CATCH Question 19
Denominator: Number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits

BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Danger Signs
Description -- Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment
Numerator: Number of mothers of children age 0-23 months who report at least two of the signs listed in B through H of Rapid CATCH Question 20
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Sick Child
Description -- Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks
Numerator: Number of children age 0-23 months with response=3 ('more than usual') for Rapid CATCH Question 22 AND response=2 ('same amount') or 3 ('more than usual') for Rapid CATCH Question 23
Denominator: Number of children surveyed who were reportedly sick in the past two weeks (children with any responses A-H for Rapid CATCH Question 21)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

HIV/AIDS
Description -- Percentage of mothers of children age 0-23 months who cite at least two known ways of reducing the risk of HIV infection
Numerator: Number of mothers of children age 0-23 months who mention at least two of the responses that relate to safer sex or practices involving blood (letters B through I & O) for Rapid CATCH Question 25
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Handwashing
Description -- Percentage of mothers of children age 0-23 months who wash their hands with soap/ash before food preparation, before feeding children, after defecation, and after attending to a child who has defecated
Numerator: Number of mothers of children age 0-23 months who mention responses B through E for Rapid CATCH Question 26
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	0	0	0.0%	0.0
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	0	0	0.0%	0.0
KANDA KANDA:HEALTH ZONE 4	0	0	0.0%	0.0
MAKOTA: HEALTH ZONE 5	0	0	0.0%	0.0
TSHUMBE:HEALTH ZONE 6	0	0	0.0%	0.0

Rapid Catch Indicators: Final Evaluation

Sample Type: 30 Cluster

Underweight Children
Description -- Percentage of children age 0-23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)
Numerator: No. of children age 0-23 months whose weight (Rapid CATCH Question 7) is -2 SD from the median weight of the WHO/NCHS reference population for their age
Denominator: Number of children age 0-23 months in the survey who were weighed (response=1 for Rapid CATCH Question 6)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	56	296	18.9%	6.7
DJALO NDJEKA:HEALTH ZONE 2	51	296	17.2%	6.4
KALENDA:HEALTH ZONE 3	58	299	19.4%	6.7
KANDA KANDA:HEALTH ZONE 4	86	296	29.1%	8.0
MAKOTA: HEALTH ZONE 5	48	293	16.4%	6.3
TSHUMBE:HEALTH ZONE 6	41	302	13.6%	5.7

Birth Spacing
Description -- Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child
Numerator: No. of children age 0-23 months whose date of birth is at least 24 months after the previous surviving sibling's date of birth
Denominator: Number of children age 0-23 months in the survey who have an older surviving sibling

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	94	174	54.0%	13.2
DJALO NDJEKA:HEALTH ZONE 2	0	0	0.0%	0.0
KALENDA:HEALTH ZONE 3	124	171	72.5%	14.4
KANDA KANDA:HEALTH ZONE 4	106	155	68.4%	14.9
MAKOTA: HEALTH ZONE 5	116	176	65.9%	13.9
TSHUMBE:HEALTH ZONE 6	0	4	0.0%	0.0

Delivery Assistance
Description -- Percentage of children age 0-23 months whose births were attended by skilled health personnel
Numerator: No. of children age 0-23 months with responses =A ('doctor'), B ('nurse/midwife'), or C ('auxiliary midwife') for Rapid CATCH Question 10D
Denominator: Number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	185	303	61.1%	10.4
DJALO NDJEKA:HEALTH ZONE 2	238	298	79.9%	11.1
KALENDA:HEALTH ZONE 3	169	300	56.3%	10.2
KANDA KANDA:HEALTH ZONE 4	122	299	40.8%	9.1
MAKOTA: HEALTH ZONE 5	289	300	96.3%	11.3
TSHUMBE:HEALTH ZONE 6	244	304	80.3%	11.0

Maternal TT
Description -- Percentage of mothers of children age 0-23 months who received at least two tetanus toxoid injections before the birth of their youngest child
Numerator: Number of mothers of children age 0-23 months with responses=2 ('twice') or 3 ('more than two times') for Rapid CATCH Question 9
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	188	303	62.0%	10.4
DJALO NDJEKA:HEALTH ZONE 2	199	298	66.8%	10.7
KALENDA:HEALTH ZONE 3	162	300	54.0%	10.0
KANDA KANDA:HEALTH ZONE 4	125	299	41.8%	9.2
MAKOTA: HEALTH ZONE 5	158	300	52.7%	10.0
TSHUMBE:HEALTH ZONE 6	193	304	63.5%	10.5

Exclusive Breastfeeding
Description -- Percentage of infants age 0-5 months who were exclusively breastfed in the last 24 hours
Numerator: Number of infants age 0-5 months with only response=A ('breastmilk') for Rapid CATCH Question 13
Denominator: Number of infants age 0-5 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	65	89	73.0%	20.0
DJALO NDJEKA:HEALTH ZONE 2	73	93	78.5%	19.8
KALENDA:HEALTH ZONE 3	70	115	60.9%	16.8
KANDA KANDA:HEALTH ZONE 4	50	97	51.5%	17.4
MAKOTA: HEALTH ZONE 5	70	112	62.5%	17.2
TSHUMBE:HEALTH ZONE 6	54	84	64.3%	20.0

Complementary Feeding
Description -- Percentage of infants age 6-9 months receiving breastmilk and complementary foods
Numerator: Number of infants age 6-9 months with responses= A ('breastmilk') and D ('mashed, pureed, solid, or semi-solid foods') for Rapid CATCH Question 13
Denominator: Number of infants age 6--9 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	66	83	79.5%	21.1
DJALO NDJEKA:HEALTH ZONE 2	39	62	62.9%	23.1
KALENDA:HEALTH ZONE 3	38	64	59.4%	22.4
KANDA KANDA:HEALTH ZONE 4	26	59	44.1%	21.2
MAKOTA: HEALTH ZONE 5	37	55	67.3%	25.0
TSHUMBE:HEALTH ZONE 6	33	65	50.8%	21.2

Full Vaccination
Description -- Percentage of children age 12-23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday
Numerator: Number of children age 12-23 months who received Polio3 (OPV3), DPT3, and measles vaccines before the first birthday, according to the child's vaccination card (as documented in Rapid CATCH Question 15)
Denominator: Number of children age 12-23 months in the survey who have a vaccination card that was seen by the interviewer (response=1 'yes, seen by interviewer' for Rapid CATCH Question 14)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	9	31	29.0%	24.8
DJALO NDJEKA:HEALTH ZONE 2	26	52	50.0%	23.5
KALENDA:HEALTH ZONE 3	6	26	23.1%	24.6
KANDA KANDA:HEALTH ZONE 4	4	4	100.0%	98.0
MAKOTA: HEALTH ZONE 5	19	37	51.4%	28.2
TSHUMBE:HEALTH ZONE 6	0	24	0.0%	0.0

Measles
Description -- Percentage of children age 12-23 months who received a measles vaccine
Numerator: Number of children age 12-23 months with response=1 ('yes') for Rapid CATCH Question 16
Denominator: Number of children age 12-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	19	102	18.6%	11.3
DJALO NDJEKA:HEALTH ZONE 2	30	114	26.3%	12.4
KALENDA:HEALTH ZONE 3	9	102	8.8%	8.0
KANDA KANDA:HEALTH ZONE 4	4	121	3.3%	4.5
MAKOTA: HEALTH ZONE 5	23	101	22.8%	12.4
TSHUMBE:HEALTH ZONE 6	2	120	1.7%	3.3

Bednets
Description -- Percentage of children age 0-23 months who slept under an insecticide-treated bednet the previous night (in malaria-risk areas only)
Numerator: Number of children age 0-23 months with 'child' (response=A) mentioned among responses to Rapid CATCH Question 18 AND response=1 ('yes') for Rapid CATCH Question 19
Denominator: Number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits

BENA DIBELE:HEALTH ZONE 1	209	303	69.0%	10.7
DJALO NDJEKA:HEALTH ZONE 2	169	298	56.7%	10.2
KALENDA:HEALTH ZONE 3	135	300	45.0%	9.5
KANDA KANDA:HEALTH ZONE 4	106	299	35.5%	8.7
MAKOTA: HEALTH ZONE 5	77	300	25.7%	7.6
TSHUMBE:HEALTH ZONE 6	144	304	47.4%	9.6

Danger Signs
Description -- Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment
Numerator: Number of mothers of children age 0-23 months who report at least two of the signs listed in B through H of Rapid CATCH Question 20
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	242	303	79.9%	11.0
DJALO NDJEKA:HEALTH ZONE 2	238	298	79.9%	11.1
KALENDA:HEALTH ZONE 3	157	300	52.3%	9.9
KANDA KANDA:HEALTH ZONE 4	143	299	47.8%	9.7
MAKOTA: HEALTH ZONE 5	138	300	46.0%	9.5
TSHUMBE:HEALTH ZONE 6	215	304	70.7%	10.7

Sick Child
Description -- Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks
Numerator: Number of children age 0-23 months with response=3 ('more than usual') for Rapid CATCH Question 22 AND response=2 ('same amount') or 3 ('more than usual') for Rapid CATCH Question 23
Denominator: Number of children surveyed who were reportedly sick in the past two weeks (children with any responses A-H for Rapid CATCH Question 21)

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	4	202	2.0%	2.7
DJALO NDJEKA:HEALTH ZONE 2	13	159	8.2%	6.2
KALENDA:HEALTH ZONE 3	15	240	6.3%	4.4
KANDA KANDA:HEALTH ZONE 4	7	223	3.1%	3.3
MAKOTA: HEALTH ZONE 5	3	236	1.3%	2.0
TSHUMBE:HEALTH ZONE 6	14	222	6.3%	4.6

HIV/AIDS
Description -- Percentage of mothers of children age 0-23 months who cite at least two known ways of reducing the risk of HIV infection
Numerator: Number of mothers of children age 0-23 months who mention at least two of the responses that relate to safer sex or practices involving blood (letters B through I & O) for Rapid CATCH Question 25
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	217	303	71.6%	10.8
DJALO NDJEKA:HEALTH ZONE 2	187	298	62.8%	10.5
KALENDA:HEALTH ZONE 3	157	300	52.3%	9.9
KANDA KANDA:HEALTH ZONE 4	70	279	25.1%	7.8
MAKOTA: HEALTH ZONE 5	140	300	46.7%	9.6
TSHUMBE:HEALTH ZONE 6	102	304	33.6%	8.4

Handwashing
Description -- Percentage of mothers of children age 0-23 months who wash their hands with soap/ash before food preparation, before feeding children, after defecation, and after attending to a child who has defecated
Numerator: Number of mothers of children age 0-23 months who mention responses B through E for Rapid CATCH Question 26
Denominator: Number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
BENA DIBELE:HEALTH ZONE 1	1	303	0.3%	0.9
DJALO NDJEKA:HEALTH ZONE 2	1	209	0.5%	1.3
KALENDA:HEALTH ZONE 3	3	300	1.0%	1.6
KANDA KANDA:HEALTH ZONE 4	1	299	0.3%	0.9
MAKOTA: HEALTH ZONE 5	3	300	1.0%	1.6
TSHUMBE:HEALTH ZONE 6	1	304	0.3%	0.9

Rapid Catch Indicator Comments

We didn't carry out KPC survey during the MTE, just post training IMCI observations (HFA), documents review, interview with key stakeholders (individual interviews and FGDs)

Annex 13: Grantee Response and Plans to Address Final Evaluation Findings

The CRS DR Congo program greatly appreciates the recommendations made by the evaluator and this opportunity to share our response to and plans in addressing a few of the final evaluation findings.

1a. Evaluator Finding: CRS was not the direct implementer of this project. Rather it designated BDOM as the primary implementer and overseer of the project, and as a result CRS lost considerable influence and control over the project.

Catholic Relief Services' vision that solidarity will transform the world requires a commitment to partnerships with local organizations in order to build local capacity and sustainability. CRS' partnership with BDOM assigned responsibility for decision-making and implementation to be as close as possible to the people whom decisions will affect. CRS' approach was designed to maximize community participation in all aspects of programming to ensure community ownership of, and decision-making within, the development process.

With this guiding principle in mind, it must be stressed that CRS had a sub-agreement, not a contract, with BDOM which designated them as an implementing partner but not as a project overseer. The working relationship with BDOM was designed to be a partnership. CRS worked at two levels with the partners:

- an agreement with MOH was drawn focusing on capacity building, improvement of data collection and reporting, incorporation of indicators within the SNIS
- an agreement with BDOM to reinforce quality monitoring and evaluation (supervisions), provide drugs at a more affordable price than MOH and ensure efficient coordination.

For the reasons detailed below, CRS was challenged to provide adequate field-level support, and technical assistance. However, the evaluation report did not discuss some critical factors that developed during the project that were beyond the control of CRS and its partners.

- **Geographic factors and constraints**

During the program design, it was well known that reaching the project sites of Mwene-Ditu and Sankuru districts from Kinshasa would one of the main challenges to project implementation. The limited availability of flight options from Kinshasa and poor road conditions between the two sites presented challenges to supervision, monitoring, and prompt delivery and provision of essential medical supplies at both facility and community level.

In order to reach these areas, the DIP included plans for AirServ to reach project sites in Kasai Oriental. The cost of this service was to be subsidized by the USAID local mission in the DRC. Unfortunately, this service was later cut, due to USAID local mission budgetary constraints. At one point, the airlines that serviced the area flew Antonovs but in August 2007, the Congolese government banned these aircrafts from flying due to safety concerns. CRS did identify alternate ways to reach the Kasai Child Survival Project (KCSP) sites through private and missionary

planes via the city of Kananga, but due to high costs and limited options, this had an overall impact on ensuring regular access.

As reported in the annual reports and mid-term evaluation, the project team was forced to reach these sites overland. Due to often impassable roads, the project team had difficulties reaching most of the remote sites, especially in Sankuru. Project staff had to travel by foot or use motorcycles or bicycles to reach the nearest health facility or their service areas. The use of 4X4 vehicles was limited to remaining few roads that were accessible in the region. In Bena Dibele (HZ 1) for example, the only way possible to reach some remote health centers along the Sankuru River is by river boats because roads were impassable or were washed away by torrential rains.

As a result of these logistical constraints and despite the efforts noted above, monitoring visits and F-IMCI trainings were often postponed/delayed and shortages of some key supplies did occur.

- **Political tension**

At project start-up, the 2006 presidential elections caused heightened tension and violence throughout the country that affected KCSP implementation. In March of 2006, tension and fighting in the city of Kinshasa between militia and government forces restricted movement of project personnel for two weeks and limited access to the CRS office in Kinshasa and project sites to carry out activities. In November of 2006, expatriate health staff was evacuated from the DRC and the Kinshasa office was closed for five days due to security concerns. This delayed the second rewriting of the DIP and consequently, the implementation of project activities.

- **Staff Turnover**

Another reason that led to inadequate accompaniment was the frequent turnover of project staff during the life of the project. The fact that project managers were being recruited by other NGO's and UN agencies offering better salaries and benefits was harmful in that CRS was not able to strengthen partner relationships with BDOM and local-level MOH. In addition, the lack of funding in the budget for monitoring by staff based in Kinshasa and logistical challenges of getting to the project site barred regular adequate supervision. CRS, knowing this lack of presence had an impact on the program quality, hired two field coordinators towards the end of the project.

1b. Evaluator Recommendation: In a future project CRS should partner with MOH and BDOM rather than delegating so much authority to BDOM to implement the project; and CRS should have staff in the field to assist with and oversee project implementation.

CRS has already begun to implement lessons learned regarding partnerships to future and ongoing projects such as *Bana Bimpa* (Healthy Babies), a three-year project aiming to improve infant health in the province of Kasaï Oriental in two of the same health zones that were targeted by the KCSP. In this project, CRS is also working with the BDOM to strengthen the delivery of intra-partum and post-partum services to mothers and newborn babies.

With the above recommendation in mind, CRS has re-examined partnership agreements with BDOM and MOH in various projects (Mbandaka, South Kivu and Kasai Oriental) to clarify roles and responsibilities of each project stakeholder. Terms of reference have been elaborated for each BDOM staff involved in all health projects. One the two CRS field coordinators has been promoted as a PM and is already based in Kasai Oriental in order to maximize field presence and ensure that partnership is characterized by a spirit of accompaniment throughout all stages of the project's life.

In addition, a stronger M&E system, supported by an M&E coordinator, is being put in place to better monitor the project's progress with partners. Semester and annual reviews are planned for *Bana Bimpa*, something which was not done for the Child Survival Project.

2a. Evaluator Finding: Projects which plan to train CHWs should work closely with the villages they will serve to ensure that the CHWs address a 'felt need' of the community. The means to remunerate that CHW should then be the concern of the village, NOT the outside organization. The issue about remuneration should be settled BEFORE the CHW is trained. Behavior Change strategies seem not to have been strong enough to promote many of the key behaviors of the project. While over 4000 Community Health Workers were trained, only between a half and a quarter are still active. The remaining active CHWs have a difficult time covering all the households. Supervision of CHWs is weak. Therefore it's possible that CHWs didn't feel their work was appreciated.

CRS agrees that village-based activities should be demand-driven; however many factors contribute to the challenge of attrition of CHWs, including limited access to the villages by project staff for adequate follow-up. The mid-term evaluation reported high morale and strong incentives by the CHWs who are highly respected within their communities. CRS continued activitities with the CHWs based on this positive feedback. As per the evaluator's recommendation, it is difficult for communities, especially in the chronically impoverished zones of Kasai Oriental where there are three ongoing health projects overseen by CRS, to remunerate their CHWs.

For the moment, per diem given during training sessions is the only way CHWs are financially awarded for their work. In addition to improved capacity on healthcare as a result of various trainings and workshops, CHW's also receive bicycles as a means of transport. A major motivational element is the recognition and respect they gain in the community. CHW's are chosen because of their reputation as volunteers for the MOH at local level. CRS tries to make sure that their work continues to be recognized by the community.

2b. Evaluator Recommendation: In a future project, more thought needs to be put into the design of the behavior change strategy, particularly with regard to continued support of the CHWs. Also, the importance of the role of the CHW should be emphasized more heavily among the health center nurses. A stronger supervisory system should be developed so that CHW feel that their work is appreciated.

For the KCSP in Kasai Oriental, CRS has implemented the Integrated Community Care Management approach which was very appropriate in terms of country context: extremely poor access to health facilities due to cost and distance. Selected by a village health committee based in each village, the community volunteers belong to the health system and work closely with the nearest health facility. They cover 15 to 20 households each and are recognized by the Ministry as part of the Health System but are volunteers. They are critical in providing community members with basic health information, encouraging health facility use, and providing follow-up to ensure understanding of and compliance to treatment prescribed at the facility. Under the CSP, they had kits with basic drugs to provide first care and refer patients to health facilities.

2c. Evaluator Recommendation: Programs should try hard to recruit equal numbers of men and women as CHWs and CCS providers. Training approaches and reporting requirements should be developed with the education levels (literacy levels) of the participants in mind. Recruitment should not be based only on literacy skills.

CRS agrees with the evaluator's recommendation as a desired objective. CRS/DRC is more committed than ever to identifying and redressing gender imbalances in programming and staffing. The country program is working with CRS on a regional and global level to implement and evaluate gender responsive programs over the long term while promoting equality in rights, participation and control. However, the evaluation findings do not account for the unique challenges that the local security, demographic, and legal environment pose to recruiting women as CHWs and CCS providers.

The initial selection was based on MOH selection criteria where it is stated community relays must be able to read and write to perform effectively. In the rural areas covered by the project, the literacy rate for women almost excluded their selection completely. However, in the more rural areas such as Makota health zone, women CHWs were more active than men.

Security in Kasai Orientale poses another challenge to women CHWs. More than anywhere else in the world, the situation of women in DRC is dire. Since armed violence started in 1998, tens of thousands of women and girls have been systematically raped as a strategy to terrorize and humiliate communities into defeat. Sexual harassment, marital rape and other forms of gender-based violence become a minor detail, tragically, in this backdrop of war. The situation is so

extreme that Margot Wallström, the UN's special representative on sexual violence in conflict, has recently called DR Congo the "rape capital of the world."[1]

In addition, there are legal obstacles. Traditionally and under Congolese law, men are the head of the household and women must obey them. Therefore according to the law, married Congolese women do not have the right to sign certain acts and contracts without their husband's permission.

These traditional laws that discriminate against women are often more pervasive in landlocked areas such as Kasai Oriental. The harsh realities of women's lives in the DRC made it difficult to recruit women CHW's for the Child Survival Project without the intervention of men in the household.

3. Evaluator Finding: Project designers seem to have misunderstood what the expanded impact category was looking for. In addition to working in a larger geographical area, the grantees in this category were also supposed to influence policies and approaches at the national level so that lessons learned could be implemented in other parts of the country by the MOH or other groups. There is little evidence, apart from having trained 8 trainers in IMCI, for impact outside the project area.

This project was designed to complement a USAID mission funded cooperative agreement (2002-7), implemented by CRS-DRC in 18 health zones in the provinces of Bas Congo, East Kasai, and West Kasai. In 2003 the MOH conducted a re-mapping exercise of health zones limits to increase accessibility to and facilitate the management of health services. This re-mapping exercise created seven "daughter" health zones from the original 16 HZ of the two Kasai over the 18 supported by CRS through Mission funding (previous Kasai Health Project). In a letter supporting CRS' original proposal, the USAID Mission requested that the project cover the health zones that were left out by the re-mapping. As the majority of supervision, monitoring and training activities are based at the health zone level, the redefinition of health zone limits and the concomitant creation of seven new management structures imposed certain budgetary implications on the implementation of programmatic activities.

At the time of proposal development, CRS wanted to focus on covering gaps in healthcare in the areas that were most overlooked by government services and donors such as the six health zones in the province of Kasai Oriental targeted by the project. Even so, during the second year of project implementation, KCSP team was directly engaged with the MOH at the national level by actively reviewing the implementation of IMCI in DRC. During these meetings, CRS was regarded as an expert in the field and the project was viewed as a model for IMCI activity implementation.

In addition, CRS played an active role in six national-level Technical Working Groups which covered the domains of malaria, diarrheal disease, acute respiratory infections, vaccine preventable diseases, IMCI and maternal and newborn health. Other organizations such as the

[1] Women For Women International, 2010

MOH, Helen Keller International, Médecins Sans Frontières, BASICS, University of Kinshasa School of Public Health, the World Health Organization and UNICEF participated in the Technical Working Groups. Specifically, the KCSP team actively participated in revising the CDD protocols and championed the adoption of low-osmolarity ORS and zinc as treatment for children with diarrhea. During the protocol revision process, the results of the KPC survey provided critical, up-to-date, detailed information on the targeted health zones.

Despite the logistical challenges (i.e. lack of frequent transport options) and other difficulties of working in such remote areas, CRS and its partners were committed to working in these locations. As a result, the project managed to contribute to the scale up of IMCI in the country and the Kasai Oriental Province by training 8 trainers in IMCI who subsequently train providers from other districts in the province and sometimes from other provinces.

An evaluation exercise conducted by USAID in July 2004 recommended CRS to concentrate the majority of programmatic intervention on the 18 original health zones while looking for additional support to extend coverage to the seven newly-created health zones. The child survival project would allow CRS-DRC to expand proven, high-impact child survival interventions to these seven health zones that were only receiving minimal support for running costs (i.e. supervision costs, office supplies) and that were not benefiting from any support for programmatic activities whatsoever.

5. Evaluator Finding: The project was designed around an unusual logical framework. Rather than designing the framework around the technical intervention areas (EPI, Malaria, pneumonia etc), as most projects do, it was designed around target audience – mothers of U2 children, pregnant women and health center staff.

CRS conducted the DIP following the Guidance for DETAILED IMPLEMENTATION PLANS (DIPS) For Child Survival and Health Grants, FY 2007 issued by United States Agency for International Development Bureau for Global Health Office of Health, Infectious Disease, and Nutrition USAID/GH/HIDN

6. Other issues:

The evaluator mentioned that the presence of a health technical advisor from CRS headquarters during the mid-term and final evaluations would have been helpful. The technical advisor did carry out field visits during the life of the project, participated during the midterm evaluation and was in-country a few months before the final evaluation process to orient and prepare the program team. In addition, the technical advisor was always available by phone or e-mail for various kinds of program support and feedback.