

Catholic Relief Services

Maguindanao Child Survival Baseline KPC Survey Report

Anwer Aqil, MD, MPH, DrPH
Mila Lasquty, MPH
Joseph Aricheta, MD, MPH
Alfonso Rosales, MD, MPH-TM

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i. Acknowledgement

We would like to thank all the surveyors, who participated in conducting the KPC survey. They went out in difficult terrain, in areas of conflict and at times, risked their lives. They made diligent efforts to complete the survey on time. We salute them.

We acknowledge the contributions of data entry personnel who worked overtime to enter the data accurately.

Lastly, Dr. Sulaik provided excellent management leadership. Without his support this survey would have not been possible. The future success of the project will need his continued support. Many thanks to all the members of the IPHO team for all their assistance.

Executive Summary

1.0 Background

Maguindanao, one of the three provinces that make up the Autonomous Region in Muslim Mindanao (ARMM), forms a pocket of poverty in the Philippine archipelago. The predominant language of the province is Maguindanaoan, while the various tribes have distinct languages. Seventy-six percent of Maguindanao's population lives in rural barangays, and the transportation infrastructure is poorly developed beyond the central arteries.

Decades of violent conflict between the rebel groups and the national government have disrupted the province's health service network, and have resulted in some of the highest morbidity rates in the nation. The under-five mortality rate of 97.6 per 1,000 live births, is double the national rate of 48.4 (DHS 1998). While no reliable literacy figures are available, the Provincial Health Office of Maguindanao estimates that 34% of the province has received no formal schooling, a rate that is 8 times higher than the country average. Health service delivery coverage is the lowest in the country, with the percentage of households utilizing health facilities falling 75% below the national average. Further, it is reported that only 15.5% of all births are attended by a trained doctor, nurse or midwife (DHS 1998).

Project Goal

- To improve the health status of 13,948 children under the age of five and 24,049 women of reproductive age in 76 communities (or barangays) in five municipalities of Maguindanao in four years (October 1, 2000 – September 30, 2004)

Project Objectives

- To improve the knowledge and practices of mothers regarding pneumonia, diarrhea, breastfeeding and nutrition, and vaccination
- To improve the coverage and quality of health services
- To promote IMCI at the facility and community level

2.0 Methods

Two types of instruments, KPC 2000+ Rapid Catch and health providers' competencies questionnaires, were used. The rationale for adding the health providers' competencies questionnaire was to assess the quality of care provided, which in turn assumed to affect the knowledge and practices of the targeted mothers.

Lot Quality Assessment Sampling (LQAS) was used to gather information. The unit of analysis was supervision area in a municipality. A sample size of 19 was chosen for each supervision area, as it reduces both types of alpha and beta errors to less than 10 percent. All of the health providers in the supervision areas were interviewed to assess their competencies.

3.0 KPC Key findings

Maternal Care

- 47% of mothers of children age 0-23 months received at least two TT injections before the birth of their youngest child.
- 11% of births were attended by skilled health personnel .

Growth monitoring and Nutrition

- 17% of mothers reported that their children were weighed at birth.
- 47% of the mothers had growth monitoring cards
- 25% of children suffered from -3 SD (7.6%) and -2 SD (17.6%) from the median weight of the WHO/NCHS reference.
- 97% of mothers reported that they ever breastfed their babies. Thirty four percent of mothers reported initiating breastfeeding immediately or within first hour. However, 75% of mothers reported that they fed the liquid that comes out of the breast during the first three days after delivery.
- 36% of mothers reported that they had given something before initiating breastfeeding.
- 45% of mothers exclusively breastfed in last 24 hours among 0-5 months old infants.
- 77% of infants age 6-9 months received both breast milk and complementary food.

Vaccination

- 36% of mothers reported that their children received a dose of vitamin A in last six months.
- 58% of children 12-23 months had complete vaccinations. Measles coverage was 27%.

Prevalence and practices about of common health problems

- 67% of children were reported to have experienced any one or a combination of these symptoms - diarrhea, blood in stool, cough, difficult breathing, fast breathing/short, quick breaths, fever, malaria, and convulsion in past two weeks.

- 45% of children experienced any one or a combination of cough, difficult breathing, fast breathing/short, quick breaths symptoms. However, when only difficult breathing, fast breathing/short, quick breaths was considered as symptoms of pneumonia, the prevalence was then 14%.
- 22% of the children reported to have experienced diarrhea or blood in the stool.
- 46% of the mothers have heard about ORS and were able to describe ORS preparation correctly.
- 37% of children reported to have experienced either or a combination of fever, malaria, and convulsion.
- 35% of mothers reported that mosquito bite causes malaria. 8% of children age 0-23 months who slept under an insecticide-treated mosquito net the previous night.
- 64% of the mothers were able to identify at least two signs of childhood illness that indicate need for treatment.
- 31% of the mothers of children 0-23 reported that they increased fluids and continued feeding during an illness in the past two weeks.
- 21% of the mothers were able to cite at least two known ways of reducing the risks of HIV infection
- 21% of mothers of children age 0-23 months reported that they wash their hands with soap/ash before food preparation, before feeding their children, after defecation, and after attending to a child who has defecated.

Health Contact and Source of Information

- Fifty percent and 25% of all mothers reported that it takes them less than 30 minutes, and between 30 and 60 minutes to reach health facility respectively, while for rest of the mothers, travel time was more than one hour.
- 76% of mothers reported consulting doctor (1-3 times) in last month, While 47% reported consulting midwives in last one month. Only 9% of the mothers consulted barangay health workers (BHW).
- Two-third of mothers get their general information or advise on health from midwives, while only 16% of mothers get advice from BHWs.
- In the past month, major sources for health messages for mothers were radio (71%), TV (15%) and BHWs (13%).

4.0 Key Findings Health Provider Competencies Survey

- 50% or less of the health providers were able to describe only 3 out of 7 tasks to be performed during general examination of a sick child.

- 50% or less of health providers had a competency score of 29% for history taking from mothers having a child with cough, indicating that they were performing less than 30% of their required tasks.
- An average score of 50%, indicating that health providers checked for only half of the required signs during examination.
- An average competency score for danger signs for pneumonia was 47%, indicating less than 50% performance.
- An average competency score for counseling regarding respiratory infection was 29%, indicating that 70% of the other messages were not communicated to the mothers.
- 52% of the health providers stated that they had enough supply of antibiotics during last month, indicating that insufficient supply of antibiotics could hinder their ability to treat pneumonia.
- An average competency score to take history from mothers having child with diarrhea was 34%, indicating 66% of the tasks were not performed.
- 67.9% was the mean score for competency in assessing signs of dehydration.
- On average, health providers gave 2 out of six (35%) messages during counseling for diarrhea management
- Forty-eight percent of the health providers stated that mothers should exclusively breast feed for four months
- 50% or less of the respondents could not describe a single message about breastfeeding. They could only describe the benefits of breastfeeding, which is not similar to how best breastfeeding could be carried out.
- 26% of health providers stated that they advise mothers to feed colostrums
- On average health providers mentioned 2 out of six foods (37.7%) while advising mothers on foods that prevent night blindness.
- 50% or less of the respondents carry out 40% of the required activities during growth monitoring.
- 100 % of the health providers knew about types and schedule of vaccinations. Sixty-three percent of the respondents knew about the correct range of temperature for maintaining cold chain.
- Fifty percent or more of the respondents gave only one message out of three (33.3%) on the side effects of the vaccination.
- Fifty percent or more of the respondents described only one out of four educational methods (25%) used during health education session.
- One out of four techniques (25%) was described by 50% or more of the respondents to improve the client understanding

- Sixty three percent and 52% of the respondents stated that they usually involve husband and mother-in-law respectively during counseling.

5.0 Discussion

All key indicators of maternal care and child survival showed room for improvement. Similarly, except for signs of dehydration, danger signs for pneumonia and explaining below normal weight to mothers, health providers showed percentile competencies scores less than 40%, indicating that they were not able to describe the required tasks necessary to provide quality care. Their performance also needs improvement.

We have seen a close link between knowledge and practices of mothers and the competency of health providers. This finding substantiates the utility of adding health providers' competency checklist to the KPC survey and the fact that improving knowledge and practices of mothers would not be possible without improving the competencies of the workers. Thus, capacity building of the health providers should be the first step that would enhance their skills to better communicate with mothers and provide quality services.

Another aspect of quality of care is adequate availability of supplies, equipment to carry out tasks. We have noticed that only half of the workers stated that they had adequate supply of antibiotics, curtailing their capacity to provide quality care. This area needs attention, as only educational activities would not be enough to treat pneumonia cases.

Programmatic Implications

- The program should have interventions such as integrated management of common health problems, improving nutrition and coverage of vitamin A and vaccination
- Enhance health providers' competencies by developing or improving the existing training curriculum, adding state of the art information.
- Develop health education messages and improve interpersonal communication skills of providers based on the findings of baseline survey.
- Use competency checklists to develop standards of quality of care, disseminate them to all concerned. Checklists could be converted into job aids.
- Improve supervision by adding supervisory checklists based on technical standards.
- Improve availability of supplies needed for job performance.
- Develop a monitoring system to maintain quality of care standards and improve them on a periodic basis.
- Use LQAS for monitoring results

- Involve communities through partner organizations in management and monitoring of project activities. Use appropriate social mobilization strategies for community participation in health activities.

1.0 Background

Maguindanao, one of the three provinces that make up the Autonomous Region in Muslim Mindanao (ARMM), forms a pocket of poverty in the Philippine archipelago. The province is a patchwork of mountain ranges and marshy lowlands, and even traveling short distances can take hours due to annual flooding, intraversable marshes and arduous mountain terrain. Seventy-six percent of Maguindanao's population lives in rural barangays, and the transportation infrastructure is poorly developed beyond the central arteries. While four-wheel drive vehicles can access the province's 20 municipal capitals, traversable roads frequently end at that point and continued travel is only possible by boat, horse, motorcycle, or on foot. The provincial land area is 5,245 square kilometers, and the distance between the IPHO office in Cotabato and the farthest provincial capital is approximately five hours.

The population of Maguindanao is 90% Muslim, with the remaining 10% comprised of Christian and tribal groups. The predominant language of the province is Maguindanaoan, while the various tribes have distinct languages. Members of all three groups can be found throughout the Province, but Christian populations tend to live toward major population centers and along the major roads. Tribal groups have been able to retain their unique culture by withdrawing to the highland areas where they are geographically isolated. Although the term "barangay" is often used interchangeably with "village", in fact, they are more frequently comprised of a collection of communities, or sitios. As such, even travel within barangays can be difficult and it is not unusual to find communities in the same barangay that are over two hours away from each other.

Decades of violent conflict between the rebel groups and the national government have disrupted the province's health service network, and have resulted in some of the highest morbidity rates in the nation. The under-five mortality rate of 97.6 per 1,000 live births, is double the national rate of 48.4 (DHS 1998). While no reliable literacy figures are available, the Provincial Health Office of Maguindanao estimates that 34% of the province has received no formal schooling, a rate that is 8 times higher than the country average. Health service delivery coverage is the lowest in the country, with the percentage of households utilizing health facilities falling 75% below the national average. Further, it is reported that only 15.5% of births are attended by a trained doctor, nurse or midwife (DHS 1998).

1.1 Project Goal

- To improve the health status of 13,948 children under the age of five and 24,049 women of reproductive age in 76 communities (or barangays) in five municipalities of Maguindanao in four year (October 1, 2000 – September 30, 2004).

1.2 Project Objectives

- To improve the knowledge and practices of mothers regarding pneumonia, diarrhea, breastfeeding and nutrition, and vaccination
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1.3 Project intervention activities

Pneumonia Case Management (25% of project effort)

Project efforts will improve case detection and care-seeking behavior at the community level and increase quality of care through midwife, Barangay Health Workers (BHW), and Rural Health Unit (RHU) training.

Diarrhea Case Management (25% of project effort)

Activities will strengthen the ability of caregivers to prevent, recognize and treat or seek care of chronic diarrhea and dehydration through training at the community, midwife, BHW and RHU level.

Breastfeeding and Nutrition (35% of project effort)

Interventions will promote exclusive breastfeeding, appropriate complementary feeding practices and micronutrient supplementation via community health education and social mobilization activities.

Expanded Program in Immunization (EPI) (15% of project effort)

1.4 Objectives of the KPC survey

- To gather information on the existing knowledge, practices of mothers on common health problems such as acute respiratory infection, diarrhea, malaria, nutrition, breast and complementary feeding, vaccination
- To gather information about mothers utilization of health services, sources of health information
- To assess the health providers' competencies regarding integrated management of childhood illness, nutrition and health education skills
- To use KPC survey finding for developing detailed implementation plan

2.0 Process of Partnership building

CRS/Philippines is collaborating with two partners in the implementation of the project, the Provincial Health Office (IPHO) and Kadtuntaya Foundation, Inc. (KFI). The IPHO provided all the surveyors. Two members of the KFI were also invited to participate in the KPC survey. IPHO took the lead of informing all the relevant quarters of the time of the survey.

The planning and execution of survey by the collaborating partners brought them closer and created a working relationship. The acceptance of survey results by the IPHO also created a trust among the partners. Opening a CRS project office and working closely with partners, hopefully, will be beneficial to the project success.

CRS/Philippines will serve as a catalyst to help develop a synergistic private/public partnership between the IPHO and KFI. CRS will also provide technical and administrative assistance to the two partners, supplying capacity building services in the areas of Child Survival and Project Management. CRS will collaborate with the CORE IMCI Working Group and Helen Keller International to incorporate the latest developments in community-based IMCI and appropriate feeding practices into the project.

3.0 METHODS

3.1 Questionnaire:

Two types of instruments, KPC 2000+ Rapid Catch and health providers' competencies questionnaires, were used. The rationale for adding health providers' competencies questionnaire was to assess the quality of care provided, which in turn assumed to affect the knowledge and practices of the targeted mothers.

CRS/Philippines used KPC 2000+ Rapid Catch along with modules on socio-demographic characteristics, ARI, diarrhea, malaria, and health services utilization. The Department of Health officials were of the opinion that the KPC questions were similar to many of their own surveys; therefore, there was no need for pre-testing of the KPC questionnaire in the field. Considering their opinion and shortage of time, the surveyors were used to pre-test the questionnaire. They also helped in translating the KPC questionnaire into native languages.

The health provider competencies questionnaire was developed based on the WHO IMCI module and other indicators relevant to the project interventions. Besides getting the socio-demographic information, questions were asked about the knowledge and skills of workers to take history, conduct examinations and counseling about pneumonia, diarrhea, malnutrition, breast and complementary feeding and their health education skills.

3.2 KPC Indicators

A list of 12 indicators, as recommended by the Core M&E working group, was chosen to report as described in the KPC2000+ Rapid Catch indicator reporting form. The same definitions were used to estimate the statistics.

3.3 Sampling design:

CRS/Philippines used Lot Quality Assessment Sampling (LQAS) to gather information on the knowledge, practices and coverage of the targeted mothers. The unit of analysis was supervision area in a municipality. The supervisor was a midwife covering a population of 3,000-5,000. There were five municipalities with a total of 23 supervision areas.

A sample size of 19 was chosen for each supervision area, as it reduces both types of alpha and beta errors to less than 10 percent. A total of 19 interviews of mothers having a child aged two years were conducted. Following is the procedure used to select location of interviews:

First, a list of all barangays (villages) and their population was prepared.

Second, the total population of the supervision area was calculated by adding population of all barangays belonging to it. The sampling interval was calculated by dividing the total supervision area population by 19.

Third, a random number was chosen between the 1 and sampling interval. This number is matched with the subsequent barangay and thus, become the first location site for interview.

Adding random number and sampling interval identified the second interview location. The process was repeated to identify the rest of the 17 interview locations.

The process of selecting a mother was random. The first step was to visit a village and divide it equally into four areas based on population, as shown in Fig. 1 (areas A-D). Select one area randomly either through lottery or direction of the pencil (e.g., area D). Repeat the first step (D divided into D1-D4) till the area is reduced and comprises of 30-50 households (e.g., D4 divided into D41-D44 to get a size of 30-50 households, and D44 is selected randomly). Go in the center of the selected area of the barangay and use pencil rotation to decide the direction to go and identify the mother for interview.

Figure 1: Process of dividing village into equal population areas and selecting one with a size of 30-50 households

First Step	D	D41	D42
A	D1	D44, 30-50 hh	D43
	D2	D3	
B	C		

Depending on the number of interviews in a barangays, the initial areas selected could be more than one to collect a more random and representative sample of the barangay. For example, if there were three interviews in the barangay, three out of four areas were selected in the initial phase and then rest of the steps repeated as described above.

The mothers having a child aged 2 years was interviewed. If there was more than one mother with a child less than two years of age, one is randomly chosen by a lottery or toss of a coin.

3.4 TRAINING

3.4.1 Selection of interviewers:

The government health department employees and local partner NGO staff were selected to carry out the KPC survey. The advantage of having a staff of partners was four fold;

- a) to increase local capacity to carry out the KPC surveys on their own;
- b) to increase ownership of the survey results and
- c) to create awareness about the content of the survey and its relationship to planning and implementation;
- d) to build an efficient and productive partnership.

Emphasizing honesty and fairness, as well as triangulating information through qualitative methods countered the biases of using government employees to affect the survey information.

3.4.2 Training of surveyors

A total of 25 persons including 5 supervisors and 20 surveyors participated in the training. All trainees belong to the health department except two persons from local partner NGO. All interviewers were females having a qualification of midwifery. Four supervisors held degrees in nursing, while one supervisor was a dentist. All the supervisors were holding the supervisory positions in the health department. Senior Health Technical Advisor/CRS HQ, Program Manager CRS/Philippines and Child Survival Project Officer CRS/Manindanao conducted the training.

The training involved the following:

- KPC2000+ rapid questionnaire
- Rationale for using LQAS, selection of interview locations and mothers
- How to conduct the interview

The training involved describing the rationale of the module, reviewing the KPC2000+ Rapid Catch module questions in groups and then practicing them in a team of two. The trainers watched the trainees' conduction of the interview. The practice was also used to translate the questionnaire in the local language. The training lasted for three days. On the fourth day, the first half was used to practice the whole questionnaire in a team of two.

The second half was used to train the surveyor how to select interview locations, households and informants as well as how to conduct the interviews.

CRS staff, involved in conducting the training, administered the health providers' competency questionnaire to all the health workers and supervisors. A total of 25 interviews of midwives and their supervisors were conducted.

3.5 Data Collection

The average length of interview for a mother was 45-60 minutes. The data collection was completed in 12 days. The logistics of the survey were well planned and thus, everything went smoothly. A total of 19 mothers were interviewed in each supervisory area except in Sultan Sa Borangis. In certain villages, conflict between government and rebel forces was intensified making it difficult to conduct the survey in those villages. Thus, a total of 18, 10 and 12 interviews were conducted in three supervision areas in Sultan Sa Borangis. The details are as follows:

No	Municipality	Supervisory areas	Mothers interviewed
1	Kabuntalan	5	95
2	Mamasapano	3	57
3	South Upi	4	76
4	Sultan Sa Borangis	8	135
5	Talitay	3	57
	TOTAL	23	420

The problem encountered in one municipality, Sultan Sa Borangis neither affected the quality of data nor the results.

3.6 Data entry, cleaning and analysis:

Three persons having competency in using Excel software were hired for data entry. The Senior Health Technical Advisor developed the data entry format and data was entered under his supervision. The Technical Advisor cleaned the data using SPSS software and conducted the data analysis. The Team leader entered the data on competency questionnaire in SPSS, cleaned and analyzed it.

The preliminary results were presented to government for their approval. The government officials appreciated the data quality and data was approved for planning purpose.

I have developed the health provider competency percentile score based on their number of correct responses. These raw scores were divided by the total possible number of correct responses and multiplied by 100, thus getting a percentile score, which is presented in Table 2.

4.0 RESULTS

This section provides the results from the KPC mothers' survey and health providers' competency survey. We have presented results on KPC reporting format suggested by CSTS. However, many results come from frequency table of all questions described under appendix III, while percentages for each question of health provider competency survey is provided under appendix II.

4.1 Mothers' Socio-demographic Information

Majority of the mothers (45%) fall in the age groups of 25-34 years and one third of them had no formal education. Eighty-two percent of the mothers could speak and understand maguindanao language. However, in South Upi and Kabuntalan municipalities Tirory and Tagalog are secondary languages.

Islam is the dominant religion (79.7%), while 15% of mothers follow Christianity. Forty-nine percent of women did not work outside home. However, those who worked outside home were mainly involved in farming (54%), domestic work (10%) and handicrafts (9%). Their children were usually taken care by older children (42%) or by other relatives (30%). Interestingly, 11% of the husbands also took care of their children while mothers were away. However, about 13 % of the mothers took their children with them to work. More than fifty percent of household had 6-10 family members.

About 50% of mothers had two children and another one third had only one child. The female children under two years (51%) were slightly more than male children. The majority of children below two years fell under the age group of 12-23 months.

The majority of respondents (51%) use shallow well as a source of water. One quarter of the respondents had no latrines, while 31% of them use water seal latrines.

4.2 Maternal Care

The good outcome of pregnancy is depended upon many factors including care received during pregnancy. Two indicators were selected to assess whether mothers received care before and during delivery. These indicators included receiving tetanus toxoid (TT) injections before birth and delivery assisted by skilled health personnel.

The results showed that overall mothers of children age 0-23 months who received at least two TT injections before the birth of their youngest child was 47%, indicating less than half of the mothers did not receive at least two TT injections. However, variations in TT coverage were observed between the municipalities. South Upi has the lowest rate of TT coverage (36%), while Kabuntalan has the highest rate of TT coverage (54%).

Table 1: Sociodemographic Profile of the Sample Population (N=420)

Age of the Mother	Number	Percentage
15-19	36	8.6
20-24	86	20.5
25-29	108	25.7
30-34	82	19.5
35-39	77	18.4
40-44	27	6.4
45+	4	0.9
Years of Schooling		
None	142	33.8
1-6	161	38.3
7-10	88	20.9
10+	29	7.0
Marital Status		
Married	414	98.6
Widowed	3	0.7
Separated	2	0.5
Divorced	1	0.2
Language spoken		
Maguindanao	344	81.9
Tagalog	169	40.2
Tirory	57	13.6
Ilongo	46	10.9
Cebuano	15	3.6
Ilocano	13	3.1
Others	19	4.5
Religion		
Muslim	335	79.7
Protestants	39	9.3
Catholics	23	5.5
Others	23	5.5
Types of work		
Harvesting/farming	116	54.2
Household worker/ domestic servant	22	10.3
Handicrafts	20	9.3
Selling food	19	8.9
Salaried worker	10	4.7
Fishing	7	3.3
Shop keeper/vendor	6	2.8
Others	14	6.5

Table 1: Sociodemographic Profile of the Sample Population (N=420)

	Number	Percentage
Household members		
0-5	164	39.1
6-10	229	54.5
10+	27	6.4
Number of biological children		
1	142	33.8
2	192	45.7
3	79	18.8
4 or more	7	1.6
Number of 0-5 years Children		
Sex of the child under 24 months		
Male	207	49.3
Female	213	50.7
Age of child in months		
0-5	143	34.0
6-9	91	21.7
10-11	43	10.2
12-23	143	34.0
Source of water		
Deep well	44	10.5
Shallow well	213	50.7
Spring water	73	17.4
River	15	3.6
Others	75	17.8
Types of latrine		
None/open field	99	23.6
Water seal	131	31.2
Open pit	85	20.2
Closed pit	11	2.6
Other	94	22.4

The number of births attended by skilled health personnel showed a poor picture. Overall, the skilled health personnel attended births of only 11 percent of children age 0-23 months. There were great variations among the municipalities, in Sultan Sa Borangis skilled health personnel attended 18% of births, while in Mamasapano, the attendance reduced to 5%.

4.3 Growth monitoring and Nutrition

To assess whether growth monitoring is a regular feature of health services, three indicators were used. These include child weighed at birth, having a growth chart and been weighed in last four months.

The results showed that 17% of mothers reported that their children were weighed at birth. Variations in weighing the children at birth existed, more marked in South Upi (29%), Kabuntalan (24%), while least in Talitay (9%) and Sultan Sa Borangis (10%).

Overall 47% of the mothers had growth monitoring cards, 21% stated that they misplaced it, while 32% never had a card, indicating that growth monitoring was not a routine practice of health providers. The mothers reported having growth-monitoring card less often (33%) in Mamasapano than other municipalities (47%-52%).

The total malnutrition rate, combining -3 SD (7.6%) and -2 SD (17.6%) from the median weight of the WHO/NCHS reference, was 25.3% (Table 1).

Breast and Complementary Feeding

About 97% of mothers reported that they ever breastfed their babies. Thirty four percent of mothers reported initiating breastfeeding immediately or within first hour. However, 75% of mothers reported that they fed the liquid that comes out of the breast during first three days after delivery.

Thirty six percent of mothers reported that they had given something before initiating breastfeeding. This practice was more reported in Mamasapno (52%) and Sultan Sa Borangis (44%). The most common thing given was other type of milk (11%) and formula milk (9%). Eight and seven percent of mothers gave sugar water and plain water respectively.

Overall exclusive breastfeeding rate in last 24 hours among 0-5 months infants was 45%, indicating that more than half of children aged 0-5 months were given some food or fluids. The exclusive breastfeeding was most common in South Upi (61%), while least common in Talitay (21%) followed by Mamasapano (29%).

Infants age 6-9 months receiving both breast milk and complementary food were 77% on average. However, complementary breastfeeding was found lowest in Mamasapano (21%) and South Upi (42%), while the rest of municipalities had high rate of complementary breastfeeding (82%).

Vitamin A

Overall, 36% of mothers reported that their children received a dose of vitamin A in the last six months, while the vitamin A capsule was shown to refresh their memory. Higher percentage of mothers from Sultan sa Borangis (44%) and South Upi (42%) reported their children receiving Vitamin A dose, while rest of the municipalities, Vitamin a coverage was less than 25%.

Use of Iodine salt

Use of iodine salt was very uncommon as only 4% of mothers in the project area reported using it.

4.4 Vaccination Coverage

Vaccination against the immunizable diseases reduces morbidity and mortality in children, improving their health status. Complete vaccination means children age 12-23 months receiving polio3, DPT3 and measles before the first birthday, according to the vaccination card. The overall complete vaccination was 58%, while no child was observed to have the complete vaccination in Talitay. The coverage rate range was 0-77%. However, if all children 12-23 months are included without having a card, then complete vaccination overall coverage rate goes down to 21%. The result shows that having a vaccination card does assure some degree of care was received, but still far from desired amount of care.

Measles coverage rate, according to vaccination card, in 12-23 months children reflects a better picture of the vaccination status in the target population. Overall, measles coverage is 27%, with a range of 9-32% among municipalities.

Comparing the complete vaccination and measles coverage, it seemed that there were more children who received measles vaccine but did not receive either Polio3 or DPT3. Thus, one could safely assume that vaccines were not administered according to schedule or their entries into the vaccination card were not made properly.

4.5 Childhood Illnesses

Based on any symptom experienced in past two weeks, 67% of children were reported to have experienced any of these symptoms (diarrhoea, blood in stool, cough, difficult breathing, fast breathing/short, quick breaths, fever, malaria, and convulsion).

- *Prevalence of Acute Respiratory Infection (ARI)*

The child suffering from any of three symptoms such as cough, difficult breathing, fast breathing/short, quick breaths was considered a case of ARI. Based on this definition, 45% of children experienced any of these symptoms. However, when only difficult breathing, fast breathing/short, quick breaths were considered as symptoms of pneumonia, then the prevalence was 14%.

KPC2000+ RAPID CATCH INDICATORS						
	INDICATOR	DEFINITION	NUMERATOR	DENOMINATOR	ESTIMATE	CONFIDENCE LIMITS
1.	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)	<p>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 For reference tables see http://www.odc.com/anthro/deskref/deskto.html</p> <p>Denominator Number of children age 0–23 months in the survey who were weighed (response=1 for Rapid CATCH Question 6)</p>	<p>-2SD 74</p> <p>-3SD 32</p>	<p>419</p> <p>419</p>	<p>17.7%</p> <p>7.6%</p>	<p>14.2%-21.7%</p> <p>5.4%-10.7%</p>
2.	Percentage of children age 0–23 months whose births were attended by skilled health personnel	<p>Numerator Number of children age 0–23 months with responses =A ('doctor'), B ('nurse/midwife'), or C ('auxiliary midwife') for Rapid CATCH Question 10</p> <p>Denominator Number of children age 0–23 months in the survey</p>	<p>Kabuntalan 8</p> <p>Mamasapano 3</p> <p>South Upi 8</p> <p>Sultan Sa boringis 25</p> <p>Talitay 4</p> <p>Total 47</p>	<p>95</p> <p>57</p> <p>76</p> <p>135</p> <p>57</p> <p>420</p>	<p>8.4</p> <p>5.2</p> <p>10.5</p> <p>18.5</p> <p>7.0</p> <p>11.1</p>	<p>2.8-13.9</p> <p>0.5-10.9</p> <p>3.6-17.3</p> <p>11.9-25.0</p> <p>0.3-13.6</p> <p>8.0-14.1</p>
3.	Percentage of mothers of children age 0–23 months who received at least two tetanus toxoid injections before the birth of their youngest child	<p>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</p> <p>Denominator Number of mothers of children age 0–23 months in the survey</p>	<p>Kabuntalan 51</p> <p>Mamasapano 27</p> <p>South Upi 27</p> <p>Sultan Sa boringis 67</p> <p>Talitay 26</p> <p>Total 199</p>	<p>95</p> <p>57</p> <p>76</p> <p>135</p> <p>57</p> <p>420</p>	<p>53.7</p> <p>47.3</p> <p>35.5</p> <p>49.6</p> <p>45.6</p> <p>47.3</p>	<p>43.6-63.7</p> <p>34.3-60.2</p> <p>24.7-46.2</p> <p>41.1-58.0</p> <p>32.5-58.5</p> <p>42.5-52.0</p>

KPC2000+ RAPID CATCH INDICATORS (continued)

	INDICATOR	DEFINITION	NUMERATOR	DENOMINATOR	ESTIMATE	CONFIDENCE LIMITS
4.	Percentage of infants age 0–5 months who were exclusively breastfed in the last 24 hours	<p>Numerator Number of infants age 0–5 months with only response=A (‘breastmilk’) for Rapid CATCH Question 13</p> <p>Denominator Number of infants age 0–5 months in the survey</p>	<p>Kabuntalan 14</p> <p>Mamasapano 5</p> <p>South Upi 14</p> <p>Sultan Sa boringis 17</p> <p>Talitay 5</p> <p>Total 5</p>	<p>29</p> <p>17</p> <p>23</p> <p>40</p> <p>23</p> <p>123</p>	<p>48.3</p> <p>29.4</p> <p>60.8</p> <p>42.5</p> <p>21.7</p> <p>44.7</p>	<p>30.1-66.4</p> <p>7.7-51.0</p> <p>40.8-80.7</p> <p>27.1-57.8</p> <p>4.8-38.5</p> <p>35.9-53.4</p>
5.	Percentage of infants age 6–9 months receiving breastmilk and complementary foods	<p>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</p> <p>Denominator Number of infants age 6–9 months in the survey</p>	<p>Kabuntalan 18</p> <p>Mamasapano 3</p> <p>South Upi 5</p> <p>Sultan Sa boringis 26</p> <p>Talitay 9</p> <p>Total 70</p>	<p>22</p> <p>14</p> <p>12</p> <p>32</p> <p>11</p> <p>91</p>	<p>81.8</p> <p>21.4</p> <p>41.6</p> <p>81.2</p> <p>81.8</p> <p>76.9</p>	<p>65.6-97.9</p> <p>0.0-42.8</p> <p>13.7-69.4</p> <p>67.6-94.7</p> <p>58.9-100</p> <p>68.2-85.5</p>
6.	Percentage of children age 12–23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	<p>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)</p> <p>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)</p>	<p>Kabuntalan 7</p> <p>Mamasapano 2</p> <p>South Upi 8</p> <p>Sultan Sa boringis 13</p> <p>Talitay 0</p> <p>Total 30</p>	<p>14</p> <p>4</p> <p>12</p> <p>17</p> <p>5</p> <p>52</p>	<p>50.0</p> <p>50.0</p> <p>66.6</p> <p>76.5</p> <p>0.0</p> <p>57.7</p>	<p>23.8-76.1</p> <p>1.0-100</p> <p>39.9-93.2</p> <p>56.3-96.6</p> <p>0</p> <p>44.2-71.1</p>

<i>PC2000+ RAPID CATCH INDICATORS (continued)</i>							
	INDICATOR	DEFINITION	NUMERATOR		DENOMINATOR	ESTIMATE	CONFIDENCE LIMITS
7.	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	Kabuntalan	10	31	32.2	15.7-48.6
Mamasapano			2	23	8.6	-2.8-20.0	
South Upi			11	25	44.0	24.5-63.4	
Sultan Sa boringis			14	48	29.1	16.2-41.9	
Talitay			2	16	12.5	-3.7-28.7	
Total			39	143	27.3	19.9-34.6	
8.			<i>THIS INDICATOR IS REQUESTED OF PROJECTS WORKING IN MALARIA ENDEMIC AREAS ONLY</i>				
	Percentage of children age 0–23 months who slept under an insecticide-treated bed net 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	Kabuntalan	0	95	0.0	0
Mamasapano			1	57	1.8	-0.1-5.2	
South Upi			24	76	31.6	21.1-42.0	
Sultan Sa boringis			2	135	1.5	8.9-21.0	
Talitay			4	57	7.0	0.3-13.6	
Total			31	420	7.4	4.8-9.9	
9.			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	Kabuntalan	48	95
Mamasapano	39	57			68.4	56.3-80.4	
South Upi	40	76			52.6	41.3-63.8	
Sultan Sa boringis	96	135			71.1	63.4-78.7	
Talitay	44	57			77.2	66.3-88.0	
Total	267	420			63.6	58.9-68.2	

<i>PC2000+ RAPID CATCH INDICATORS (continued)</i>							
	INDICATOR	DEFINITION	NUMERATOR		DENOMINATOR	ESTIMATE	CONFIDENCE LIMITS
10.	Percentage of sick children age 0–23 months who received increased fluids and continued feeding during an illness in the past two weeks	<p>Numerator Number of children age 0–23 months with response=3 ('more than usual') for Rapid CATCH Question 22 <u>AND</u> response=2 ('same amount') or 3 ('more than usual') for Rapid CATCH Question 23</p> <p>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)</p>	Kabuntalan	34	73	56.6	45.2-67.9
			Mamasapano	7	34	20.5	6.9-34.0
			South Upi	5	44	11.4	2.0-20.7
			Sultan Sa boringis	30	83	36.1	11.0-34.7
			Talitay	11	48	22.9	25.4-36.1
			Total	87	282	30.8	17.4-35.1
11.	Percentage of mothers of children age 0–23 months who cite at least two known ways of reducing the risk of HIV infection	<p>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</p> <p>Denominator Number of mothers of children age 0–23 months in the survey</p>	Kabuntalan	25	95	26.3	14.8-37.7
			Mamasapano	15	57	26.3	22.6-38.1
			South Upi	2	76	2.6	0-6.1
			Sultan Sa boringis	41	135	30.4	22.6-47.4
			Talitay	6	57	10.5	2.5-18.4
			Total	89	420	21.2	17.2-25.1
12.	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	<p>Numerator Number of mothers of children age 0–23 months who mention responses B through E for Rapid CATCH Question 26</p> <p>Denominator Number of mothers of children age 0–23 months in the survey</p>	Kabuntalan	2	95	4.0	0-7.9
			Mamasapano	20	57	35.0	22.6-47.3
			South Upi	9	76	11.8	4.5-19.0
			Sultan Sa boringis	59	135	43.7	35.3-52.0
			Talitay	15	57	26.3	14.8-37.7
			Total	105	420	25.0	20.8-29.1

Diarrhea Prevalence

The number of children reported to have experienced any of the symptoms such as diarrhea, blood in stool were 22%.

Overall 46% of the mother have heard about ORS and were able to describe ORS preparation correctly. However, 40% described ORS preparation incorrectly, while 14% of the mother have never heard of ORS.

Malaria

Overall, 37% of children reported to have either, or combination of the fever, malaria, and convulsions. The variations in municipalities were: Talitay 39%, Sultan Ss Borangis 34%, South Up 27.6%, Mamasapano 35%, and Kabuntalan 49.5%.

Malaria is endemic in the project area, especially in South Upi, as stated by the government officials. Thus, mothers' knowledge about malaria and its prevention were assessed, by asking cause of malaria and number of children 0-23 months slept under an insecticide-treated mosquito net.

In general 35% of mothers reported that mosquito bite causes malaria. South Upi (78%), Talitay (49%) reported high level of knowledge, while Kabuntalan (18%) reported the least knowledge.

Overall about 8% of children age 0-23 months slept under an insecticide-treated mosquito net the previous night. However, the practice of sleeping under insecticide mosquito net was highest among mothers from South Upi (32%). It is understandable keeping malaria is more prevalent in South Upi than in other municipalities.

4.6 Integrated management of childhood illnesses

Managing the childhood illnesses entails that people are able to identify the signs, symptoms and their severity and knowing when to seek treatment, as well as maintain or increase use of fluid and food during illness, thus reducing mortality caused by the illness. These two indicators were used to assess the knowledge of mothers to manage childhood illnesses.

Mothers were asked to report what signs of childhood illnesses caused them to seek treatment. Overall, 64% of the mothers were able to identify at least two signs of childhood illness that indicate need for treatment. However, mothers' identification of signs of childhood illness varied among municipalities. In Kabuntalan mothers' knowledge of two signs was lowest (51%), while mothers' knowledge of at least two signs was on the high extreme (77%) in Talitay.

Only 31% of the mothers of children 0-23 months reported that they increased fluids and continued feeding during an illness in the past two weeks. Except high reported usage of food and fluids during illness in Kabuntalan (57%), the rest of the municipalities showed that less than one third of mothers increasing food and fluids during illness, indicating a serious problem in managing childhood illness.

4.7 Knowledge of risk reduction behaviors of HIV

Although HIV/AIDS is not an intervention area for this project, still based on the CORE M&E group recommendation, an assessment of mothers' knowledge about HIV risk reduction was made. Overall, 21% of the mothers were able to cite at least two known ways of reducing the risks of HIV infection. However, percentage of mothers with knowledge of how to reduce risk of HIV infection was lowest (3%) in South Upi and highest (30%) in Sultan sa Borangis.

4.8 Hand washing

Twenty five percent of mothers of children age 0-23 months reported that they wash their hands with soap/ash before food preparation, before feeding their children, after defecation, and after attending to a child who has defecated. However, mothers' practice of hand washing was lowest in Kabuntalan (4%) and South Upi (12%), while highest percentage came from Sultan Sa Borangis (44%). The low practice of hand washing has implications for childhood illnesses, especially diarrhea.

4.9 Health Contact and Source of information

It is important for developing a health program to know access to services, types of health services utilized and source of health information. This information also helps in assigning priorities for health services and developing a communication strategy. Fifty percent and 25% of all mothers reported that it takes them less than 30 minutes, and between 30 and 60 minutes respectively, to reach health facility, while for the rest of the mothers, time taken was more than one hour.

When asked how often during last month they consulted each of the following health providers, 76% of mothers reported consulting doctor (1-3 times), while 47% reported consulting midwives. Only 9% and 13% of the mothers consulted barangay health workers (BHW) and a traditional healer 1-3 times in past one month, indicating low utilization of their services as well as preference of traditional healer over BHWs.

Two-thirds of mothers get their general information or advise on health from midwives, while only 20% and 16% of mothers get advice from doctors and BHWs respectively, showing that midwives play an important role in providing information. In the past month, major sources for health messages for mothers were radio (71%), TV (15%) and BHWs (13%).

4.10 Health Provider Competencies

Provision of modern medical care is the responsibility of health provider. The health providers' competencies play an important role in improving the knowledge and practices of mothers regarding health problems as well as increasing coverage of health services. Thus, without improving the knowledge and skills of health providers, it is very unlikely that knowledge and skills of their clients could be improved. Based on this rationale, an assessment of health providers' competencies was conducted. The major topics covered under health competencies include, assessment of a sick child suffering pneumonia, diarrhea, malnutrition, and health education skills.

This section of the report describes the socio-demographic characteristics of the health providers followed by results of assessment of health providers' competencies. The percentile scores are based on the index created by adding all subtasks of a task of a certain intervention area. The percentages on subtasks are presented in Appendix II.

All of the health providers were midwives (81.5%) and their supervisors were nurses with the additional qualification of midwifery. All of the respondents were women except one. Their mean age was 38.6 years (median=40 years), while the age range was between 27 and 56 years.

Seven percent of respondents had more than 10 years of schooling, while 70% had a diploma in midwifery. Majority of the health providers practice Islam as their religion (55%), while 41% practice Christianity. Except for two, all respondents were married. Fifty percent or more respondents had more than 2 children.

The majority of the health providers had more than 13 years of experience as shown by their service record. The average salary was 10,454 per month, while the range was 7,500-15,000.

4.10.a General Examination of Sick child

In order to assess the health providers competency to carry out proper general examination of the sick child, they were asked to describe what they check for during general examination of a sick child. The median score of 42% showed that 50% or less of the health providers were able to describe only 3 out of 7 tasks to be performed during general examination. The maximum score of 57% showed that the highest competency score was still less than sixty percent. Health providers described mostly checking temperature (78%), weighing child (71%), counting respiratory rate (56%), while weakness/lethargy (22%), sign of dehydration (18%), sign of malnutrition (7.4%) and checking for immunization status (15%) were described less (Appendix II). These low scores show a gap in integrated management of sick child.

Table 3: Socio-demographic Characteristics of the Health providers

	Number	Percentage
Designation of the respondents		
Nurse	2	18.5
Midwives	22	81.5
Sex		
Male	1	3.7
Female	26	96.3
Age		
25-29	2	7.4
30-34	7	25.9
35-39	4	14.8
40-44	10	37.1
45+	4	14.8
Education		
10+	2	7.4
Diploma in midwifery	19	70.4
Bachelor in Nursing	6	22.2
Marital Status		
Single	1	3.7
Married	26	96.3
Number of children		
None	2	7.4
1-2	13	48.1
3-4	7	25.9
5 or more	5	18.6
Religion		
Islam	15	55.6
Protestants	4	14.8
Catholics	7	25.9
Others	1	3.7
Years in Service		
1-5	2	7.4
6-10	7	25.9
11-15	7	25.9
16-20	6	22.2
21-25	5	18.5
Income (Pesos/month)		
7,500-9,999	9	39.1
10,000-15,000	14	60.9

4.10.b. Managing Child having a Cough

History taking from mothers having a child with cough, 50% or less of health providers had a competency score of 29%, indicating that they were performing less than 30% of their required tasks. The maximum competency score of 42% showed that none of the health providers was able to describe half the number of questions they were supposed to ask during history taking for child with cough. None of the workers said they ask about ear infection or family history of tuberculosis, few asked (15%) about past respiratory problems, and only 33% asked about the any treatment given before coming to the clinic.

Examination of child having cough showed that an average score of 50%, indicating that overall health providers checked for only half of the required signs during examination. However, health providers were able to describe checking for respiratory rate (81%), chest in-drawing (74%), while they checked less for strider/wheeze (44%), temperature (41%) and weakness/lethargy (11%).

Regarding danger signs for pneumonia, average competency score was 47%, indicating less than 50% performance. The most described danger signs were, chest in-drawing (82%), respiratory rate over 50 (67%), while less described signs were, strider (41%), inability to drink (33%) and weakness/lethargy (15%).

Counseling regarding respiratory infection showed lower competency score than history taking and examination. The average competency score was 29%, indicating that 70% of the other messages were not communicated to the mothers. The messages not described or described by a few health providers were, keep child in neutral room temperature, when to stop medication, how to clean nose, especially when breastfeeding (7%). Mostly described messages were give extra fluids (59%), when to return (52%) followed by continue feeding (41%), how to administer antibiotics (37%), and danger signs (37%).

Only 52% of the health providers stated that they had enough supply of antibiotics during last month, indicating that insufficient supply of antibiotics could hinder their ability to treat pneumonia.

Table 4: Distribution of Health Providers Competencies Percentile Scores

Indicators	Mean	Median	SD Error	Min-Max
<i>Exam sick child</i>	38.0	42.8	2.9	0-57.1
<i>Child with cough</i>				
History taking	24.9	28.6	2.7	0-42.7
Examination	50.4	40.0	3.4	20-80.0
Danger signs for pneumonia	47.4	40.0	3.0	20-80.0
Counseling	29.2	25.0	2.6	0-50.0
<i>Diarrhea</i>				
History taking	33.9	33.3	3.7	0-66.7
Signs of dehydration	67.9	66.6	4.5	0-100.0
Counseling	35.2	37.5	3.5	12.5-75.0
Counseling about Breastfeeding	6.8	0.0	2.0	0.0-33.3
Knowledge of cause of Night blindness	37.7	40.0	2.4	20.0-60.0
<i>Growth monitoring (GM)</i>				
Giving reasons for GM	37.9	50.0	3.6	0.0-75.0
Activities during GM	34.8	40.0	3.7	0.0-80.0
Explaining abnormal weight	59.2	50.0	7.1	0.0-100.0
Counseling about <normal weight	39.8	25.0	4.0	0.0-75.0
<i>Vaccination</i>				
Counseling	31.7	28.5	3.5	0.0-71.4
Side-effects	34.5	33.3	4.5	0.0-75.0
<i>Health education skills</i>				
Counseling method	22.2	25.0	2.4	0.0-50.0
Improving retention	22.2	25.0	3.6	0.0-50.0

4.10.c. Managing Diarrhea

Overall average competency score for taking history from mothers having child with diarrhea was 34%, indicating 66% of the tasks were not performed. Most asked question during history taking was blood in stools (67%), while other questions were asked less than 25% of the time (Appendix II).

Competency in assessing signs of dehydration was quite high as depicted by mean score of 67.9%. Majority of the respondents were able to describe sunken eyes (89%), skin retracting slowly (82%) while only 33% stated weakness/lethargy as sign of dehydration.

On average health providers gave 2 out of six (35%) messages during counseling for diarrhea management. The most common message given was proper mixing and administration of ORS (70%), followed by continue breast feeding (52%), give extra fluid (44%), initiate fluids rapidly (41%) and smaller and more frequent feeds (37%).

Eighty-five percent of the health providers said that they had enough supply of ORS packets in the last month.

4.10.d. Breastfeeding and Vitamin A

Forty-eight percent of the health provider stated that mothers should exclusively breast feed for four months, indicating that they were not familiar with new guideline of exclusive breastfeeding for first six months. Similarly, breastfeeding counseling showed a wide gap. Overall 50% or less of the respondents could not describe a single message about breastfeeding. They could only describe the benefits of breastfeeding, which is not similar to how best breastfeeding should be carried out. Only 26% stated that they advise mother to feed colostrums, while another 7% said that they advise, starting breastfeeding within one hour and continue breastfeeding even if the child is sick. However, no one stated messages such as feed on demand, use both breasts, feeding from one till it is empty and then continue with other breast, and start feeding from the breast that was not the one she started feeding last time.

Ninety-three percent of health providers knew that deficiency of vitamin A causes night blindness. However, advising mothers on food that prevent night blindness was poor, as health providers on average mentioned 2 out of six foods (37.7%). The most common food mentioned were green leafy vegetables (82%) and yellow or orange vegetables and fruits (78%).

4.10.e. Growth Monitoring

When asked to describe what advice is given to mothers to go for growth monitoring of their children, fifty percent or less gave 2 out of four messages (median=37%). The most common advice given was to check that weight gain is a sign of good health (81%), followed by providing nutritional recommendations (41%). The message to take action if the child is not gaining weight was given by 26% of the respondents, while opportunity to get other health services was given only by 4% of the respondents.

On average, 50% or less of the respondents carry out 40% of the required activities during growth monitoring. The majority of them stated that they explained to each mother nutritional status of her child (63%), record or plot weight at correct age (61%). However very few said that they would set the scale at zero (3.7%) or remove the child's clothing before weighing (11.1%).

Fifty percent or less of the respondents were not able to explain that if the child's weight remained the same from the previous weighing, the child is not growing normally, indicating that they are not aware of the fact that flat line is a sign of abnormal growth. Similarly, 50% or less of the respondents showed competency score of 50% for counseling about below normal weight. They were less aware of the fact that increasing quantity (33%) and frequency (26%) of food were good messages for mother having a child below weight. The most frequent message was to give special or better quality food (79%). Unfortunately, none of the respondents was able to say by comparing weight by height, they could recognize different categories of malnutrition.

4.10.g. Vaccination Counseling

The knowledge of the respondents about types and schedule of vaccination was 100%. Sixty-three percent of the respondents knew about the correct range of temperature for maintaining cold chain.

Counseling for vaccination was weak as only 50% or less of the respondents provided 29% of all messages. The most common messages given during vaccination counseling were: when to come back for next vaccination (67%) and what vaccination was given today (56%). However, some messages were less given such as, counseling about side-effects (41%), importance of completing the vaccination series (37%), scab formation after BCG vaccination (11%), encouraging mothers to bring other women (11%), child could be vaccinated even (s)he is ill (0%), indicating that vaccination counseling need improvement.

The respondents did not counsel well on the side effects of the vaccination. Fifty percent or more of the respondents gave only one message out of three (33.3%). The most commonly described side effect was fever (74%), while side effects such as, pain (22%), allergic reaction (7%), were least described.

4.10.h. Health Education Skills

Three indicators such as use of type of health education materials, improving client understanding of information, and involving other people during counseling were used to determine the health education skills of the health providers.

Fifty percent or more of the respondents described only one out of four educational methods (25%) used during health education session. Majority of the respondents said that they use of pictures and posters (74%), storybooks (11%) and role-play (4%), while none stated use of job aids.

To improve the client understanding, only one out of four techniques (25%) was described by 50% or more of the respondents. Forty-one of the respondents stated that they ask their client to repeat the instructions. The other techniques such as, asking client to ask questions (22%), repeating or paraphrasing the instruction by the providers (15%), asking client to repeat or paraphrase the instruction by the providers (11%), were used infrequently.

Sixty three percent and 52% of the respondents stated that they usually involve husband and mother-in-law respectively during counseling.

5.0 Discussion

We will discuss the key findings of both KPC and health providers competency survey. Later, we will discuss how both survey findings complement each other. Lastly, programmatic implications will be described.

It is heartening to note that breastfeeding was quite common as well as introduction of the complementary feeding at the correct age. However, it was noted that exclusive breastfeeding was low as well as receiving a dose of vitamin A. Interestingly the health providers' counseling skills about breast and complementary feeding was found to be low as well, thus showing a link between the two.

The high percentage (58%) of fully vaccinated children 12-23 months based on the presence of card is illusionary, when compared with those who did not have the card. The fully immunized coverage when all children 12-23 months were considered went down to (21%). The other child survival indicators showed similar picture such as second and third degree malnutrition rate (25%), children receiving Vitamin A (36%), birth attended by a skilled health personnel (11%) and knowledge of how to make ORS correctly was (45%).

The present survey found that only 11% of all births were attended by a trained doctor, nurse or midwife, which is close to national figure of 15.5% (DHS 1998). This indicates that maternal care needs improvement for better mother health and child survival.

Majority of the mothers (64%) were able to identify at least two signs of childhood illnesses that indicate treatment, their management of sick children was problematic as indicated by low practices of increasing food and fluid during illness. Similarly, health providers' knowledge and skills to manage children with pneumonia and diarrhea were low.

Although, malaria is not a priority of the project, presence of fever sign was quite high (37%). Also knowledge of cause of malaria was very low (35%) and so was practice of sleeping under mosquito net (8%).

It is interesting to note that mothers mainly utilize doctors for their health problems followed by midwives, while they did not use of barangay health workers frequently.

Similarly, mothers get advise on health from midwives. These findings show that barangay health workers utility and effectiveness needs improvement.

Except for signs of dehydration, danger signs for pneumonia and explaining below normal weight to mothers, health providers showed percentile competencies scores less than 40%, indicating that they were not able to describe the required tasks necessary to provide quality care. Their performance needs improvement. These findings also validated the utility of adding health providers' competency checklist to KPC survey.

We have seen a close link between knowledge and practices of mothers and competency of health provider. This finding substantiates the fact that improving knowledge and practices of mothers would not be possible without improving the competencies of the workers. Thus, capacity building of the health providers should be the first step that would enhance their skills to better communicate with mothers and provide quality services.

Another aspect of quality of care is adequate availability of supplies, equipment to carry out tasks. We have noticed that only half of the workers stated that they had adequate supply of antibiotics, curtailing their capacity to provide quality care. This area needs attention, as only educational activities would not be enough to treat pneumonia cases.

5.1 Programmatic Implications

- Program should have interventions such as management of common health problem, improving nutrition and coverage of vitamin A and vaccination
- Enhance health providers' competencies by developing or improving the existing training curriculum, adding state of the art information
- Develop health education messages and improve interpersonal communication skills of providers based on the findings of baseline survey.
- Use competency checklists to develop standards of quality of care, disseminate them to all concerned
- Improve supervision by adding supervisory checklists based on technical standards. Improve availability of supplies needed for job performance.
- Develop a monitoring system to maintain quality of care standards and improve them on periodic basis.
- Use LQAS for monitoring results
- Involve communities through partner organizations in management and monitoring of project activities. Use appropriate social mobilization strategies for community participation in health activities.