Baseline Survey and Formative Research
Ensuring Food Security and Nutrition among Children 0-23 Months of Age in the Philippines

FINAL REPORT

Submitted by:
College of Public Health
University of the Philippines Manila

Dr. Ofelia P. Saniel (Principal Investigator)
Dr. Lucila B. Rabuco (Co-Investigator)
May Antonnette O. Lebanan (Co-Investigator)

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LIST OF ABBREVIATIONS

ARI	-	Acute respiratory infection
BFHI	-	Baby-friendly hospital initiative
BHW	-	Barangay Health Worker
BNS	-	Barangay Nutrition Scholar
CI	-	Confidence interval
DOST	-	Department of Science and Technology
FAO	-	Food and Agriculture Organization
FGD	-	Focus Group Discussion
FNRI	-	Food and Nutrition Research Institute
GAIN	-	Global Alliance for Improved Nutrition
HH	-	Household
IEC	-	Information, Education and Communication
ILO	-	International Labor Organization
IYCF	-	Infant and Young Child Feeding
JP	-	Joint Programme
KII	-	Key Informant Interview
LPG	-	Liquefied petroleum gas
MCH	-	Maternal and Child Health
MDG	-	Millennium Development Goal
MDGF	-	Millennium Development Goal Fund
MICS	-	Multiple Indicator Cluster Surveys
MNAO	-	Municipal Nutrition for Action Officer
NCP	-	Nutrition Center of the Philippines
NCR	-	National Capital Region
NEDA	-	National Economic Development Authority
NNS	-	National Nutrition Survey
NSO	-	National Statistics Office
NTWG	-	National Technical Working Group
PSU	-	Primary Sampling Unit
SAQ	-	Self-Administered Questionnaire
SEC	-	Socio-economic classification
U2 children	-	Children aged 0-23 months
UN	-	United Nations
UNDP	-	United Nations Development Programme
UNICEF	-	United Nations International Children's Emergency Fund
WFP	-	World Food Program
WHO	-	World Health Organization

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EXECUTIVE SUMMARY

Introduction

Elimination of extreme poverty and hunger and reduction of child mortality are among the MDG goals for 2015. Worldwide, undernutrition is one of the major causes of mortality among infants and young children. In the Philippines, the prevalence of undernutrition and micronutrient deficiency remained high period of three years (i.e., from 2005 -2008).

Five participating UN organizations forged a partnership with the Government of the Philippines to undertake a Joint Programme under the UNDP-Spain MDG Achievement Fund (MDGF) to formulate a Medium Term Plan of Action for Nutrition for 2008-2015. The joint program hopes to contribute to the attainment of the MDGs of decreasing childhood under nutrition and reducing mortality among children 0-5 years old. The MDGF-2030 Joint Programme will be implemented over a three-year period to increase the practice of exclusive breastfeeding by 20% each year and decrease the prevalence of anemia by 3% each year among the target population.

In addition to the inputs of the MDGF 2030, the Global Alliance for Improved Nutrition (GAIN) also provided funds for the conduct of the IYCF baseline survey in the six MDGF sites plus two other non-MDGF cities. GAIN wishes to reduce prevalence of anemia and improve micronutrient status among target children by introducing a fortified complementary food through commercial social marketing.

The baseline survey was conducted in the six MDGF sites composed of three cities (Naga, Iloilo and Zamboanga) and three municipalities (Ragay in Camarines Sur, Carles in Iloilo and Aurora in Zamboanga del Sur). The cities of Manila and Cebu made up the GAIN study sites.

Objectives, Methodology and Significance of the Study

The survey was designed to provide baseline data which will be used as basis for program design, monitoring and evaluation. It will be used to measure changes in the project outcomes which could be attributed to the project inputs. The two major outcomes of interest among the target children are reduction in the prevalence of under nutrition in all eight sites and the reduction of the prevalence of micronutrient deficiencies in five cities.

Targeting children 0-23 months old, their mothers and caregivers, the following were the general and specific objectives of the study.

General Objective

To describe current IYCF practices and identify major individual, family and community factors that contribute to current breastfeeding practices, as well as to determine growth/nutritional and micronutrient status.

Specific Objectives

a. To determine the nutritional and morbidity status of children 0–23 months of age in the selected areas.
b. To determine the prevalence of anemia, iron and vitamin A deficiency in children 6–11 months and 12–23 months, of age.
c. To describe current IYCF practices for children 0–23 months of age.

d. To describe the health facility, community and work place activities, capacities, and structures to support good IYCF practices.
e. Determine the factors (individual, family, community) that facilitate or impede exclusive breastfeeding up to six months and appropriate complementary feeding with continued breastfeeding after 6 months.
f. Determine the type of information/messages and communication channels that can best convince mothers to adopt the recommended behaviors.
g. To describe the reasons for use of complementary foods among caregivers of young children.

The purpose of the study was to provide baseline information which will be used as basis for designing, monitoring and evaluating intervention programs/activities targeting infants and young children, mothers and caregivers, families and communities. Specifically, the baseline survey will provide data that can be used to measure changes in the project outcomes which could be attributed to the intervention programs/activities. The study will also contribute to the understanding of the determinants of exclusive breastfeeding, including the timely introduction of complementary feeding as information on the insights on the role of mothers, families and communities in feeding infants and young children will be collected.

The **quantitative survey** utilized a descriptive cross-sectional design. A stratified two-stage cluster sampling design was used in all the sites except for Zamboanga where a stratified three-stage cluster systematic sampling design was used instead. A total of 3,101 children under two years old were included in the study. The distribution of the sample size for each site is shown in Table 1 below. The estimates of the minimum number of children required for the survey (Table S. 1) were based on the desired changes in the major indicators of interest (i.e., undernutrition and micronutrient status) after the implementation of the Joint MDGF Program (Kahn, 1983).

The study also made use of **qualitative research methods** of data collection such as Focus Group Discussions and In-depth interviews with selected key informants. Qualitative research was done only in the six MDGF sites. FGDs among mothers of under two children, mothers who recently delivered in public or private birthing facilities, caregivers of young children, working mothers, and women who were involved in wet nursing. These FGDs were conducted to document knowledge, perceptions and attitudes of mothers and caregivers with regard to breastfeeding and complementary feeding. Meanwhile, in-depth interviews with breastfeeding advocates and health providers were conducted among barangay health workers and rural health midwives, a public health nurse, and a municipal nutrition action officer to document their insights and attitudes towards nutrition programs in general and IYCF in particular. Lastly, a mid-level manager of a large shopping mall in one city was interviewed to collect data about compliance of employers and managers to policies and directives that promote breastfeeding in the workplace.

Table S. 1. Distribution of the Primary Sampling Units or Barangay, Number of Children Required by Study Site

Site	No. of PSUs or Barangays	No. of children per PSU or Barangay	Actual Sample Size
MDGF-2030 Sites (Children 0-23 months)			
Naga City	10	25	250
Ragay	3	32	96
Iloilo City	27	21	567
Carles	4	30	120
Zamboanga City	43	25	1,075
Aurora	3	27	81
Sub-Total	90	-	2,189
GAIN sites (Children 6-23 months)			
Manila	29	16	464
Cebu	28	16	448
Sub-Total	57	-	912
TOTAL	147	-	3,101

SUMMARY OF RESULTS

1. This section presents the major findings of the study. .A total of 2,013 mothers of children 0-23 months agreed to be interviewed, some 2, 152 children 0-23 months had height and weight measurements, and blood sample from 981 children 6-23 months old were examined for haemoglobin, iron, and vitamin A levels. Participation rates in the each study component were high --- 98% for anthropometry, 91% for blood collection (Table S. 2 and Table S. 3).

2. Majority of the households included in the study were from depressed sections of the sampled barangays. Most of the households in the MDGF sites were from Class D socio-economic status while those in GAIN sites were from Class E.

3. Undernutrition among the target children was prevalent. The overall prevalence of underweight-for-age among children 0-23 months in the MDGF sites was 16% while the corresponding figure among children 6-23 months in the GAIN sites was is 21%. Both figures are far from the 2015 MDG target of 13.6% prevalence of underweight among 0-5 years old (FNRI, 2011). The prevalence of underlength-for-age was also high --- 23% in the MDGF sites and 34% in the GAIN sites while underweight-for-length was almost 3% and 7% in MDGF and GAIN sites, respectively (Table S. 3).

4. Prevalence of Micronutrient deficiencies was also high among the target children. The prevalence of anemia among children 6-23 months was 47% in the MDGF sites and 58% in the GAIN sites (FNRI, 2009). In MDGF sites, the prevalence of iron deficiency was 31% and iron deficiency anemia was 18%. In the GAIN sites, the corresponding figures were 44% and 33%,

respectively. In addition, one in ten children in both the MDGF and GAIN sites was vitamin A deficient (Table S. 4).

Table S. 2. Distribution of Children, Mothers, and Households by Data Collection Method and by Research Site

Result	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Anthropometric Measurement of Children										
Sampled Children	464	448	912	250	567	1,075	96	120	81	2,189
Refused	17	2	19	5	25	2	-	5	-	37
Participated	447	446	893	245	542	1,073	96	115	81	2,152
Response Rate (%)	**96.3**	**99.6**	**97.9**	**98.0**	**95.6**	**99.8**	**100.0**	**95.8**	**100.0**	**98.3**
Blood Collection Among Children 6-23 Months										
Eligible Children	464	448	912	204	414	457	-	-	-	1,075
Refused	88	7	95	19	43	32	-	-	-	94
Participated	376	441	817	185	371	425	-	-	-	981
Response Rate (%)	**81.0**	**98.4**	**89.6**	**90.7**	**89.6**	**93.0**	**-**	**-**	**-**	**91.3**
Mother and Household Interview										
Mothers	433	438	871	244	516	985	89	108	71	2,013
Households	442	446	888	245	542	1,073	96	115	81	2,152

5. Infection such as diarrhea and ARI were common among children 0-23 months. Up to 16% and 18% of them had diarrhea and ARI, respectively two weeks before the interview. Half of children 0-23 months had fever, a sign of infection, within two week before the survey. Malnourished children are likely to develop infections and children with infections are at high risk of under nutrition.

6. In a few sites, many newborns were never breastfed and up to 77% were unable to initiate breastfeeding within an hour after birth. Only one in two newborns in the MDGF sites and two in five newborns in the GAIN sites were breastfed within an hour of birth. The most common reasons for failing to initiate early breastfeeding were due to perceived inadequacy of milk, the mother needs to work, occurrence of breast/nipple problems, and the baby's refusal to suck.

7. Exclusive breastfeeding was relatively uncommon and breastfeeding tend to be short. At the time of the survey, 24% of the of the children under 6 months in MDGF sites were no longer being breastfed and only 22% were being exclusively breastfed. Although some babies were still being breastfed at a day before the survey, 20% of them were also given plain water, 22% were fed formula milk, and 10% were already being given complementary food. The study population in the GAIN sites was made up of children 6-23 months old so the results could not be compared to the MDGF sites. The most common reasons given by mothers for stopping breastfeeding were 'no more milk', the child 'refused the breasts', the mother went back to work, the child was 'old enough' to be weaned from the breasts, or the mother was pregnant again. Many mothers also believed that the breastmilk was not sufficient to provide the nutritional needs of the baby and could jeopardize the baby's health.

Table S. 3. Percentage of Children Underweight-for-Age, Underlength-for-Age and Underweight-for-Length According to Age Group (in months) and Study Site

Age Group in Months	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Underweight-for-age										
<6	-	-	-	0.0	21.6	9.9	16.6	4.2	14.9	10.4
6-23	22.8	16.9	20.5	20.4	19.6	17.4	20.6	25.3	11.1	18.5
6-11	13.3	16.1	14.9	21.0	12.8	17.1	4.2	22.2	2.4	16.9
12-23	24.5	17.3	22.0	20.1	23.1	17.6	28.9	27.4	15.9	19.6
Overall	22.8	16.9	20.5	17.0	20.1	14.8	19.8	21.8	11.7	16.2
Underlength-for-age / Stunting										
<6	-	-	-	12.6	23.2	15.8	22.4	29.1	8.8	16.5
6-23	36.6	29.6	33.8	28.7	31.1	20.8	25.8	39.0	30.8	25.0
6-11	35.3	24.5	29.2	19.8	22.9	20.6	7.7	30.4	30.7	20.9
12-23	36.8	31.8	35.1	33.6	35.3	21.0	34.9	44.8	30.8	27.6
Overall	36.6	29.6	33.8	26.0	29.1	19.1	25.1	37.4	27.2	22.6
Underweight-for-length / Wasting										
<6	-	-	-	7.0	6.4	6.7	5.8	8.4	19.3	6.9
6-23	2.3	3.0	2.5	3.5	7.6	8.0	2.6	3.1	7.5	6.6
6-11	7.2	4.2	5.5	5.7	7.5	6.4	0.0	0.0	2.4	6.1
12-23	1.4	2.5	1.8	2.3	7.7	9.1	3.9	5.1	10.3	7.0
Overall	2.3	3.0	2.5	4.1	7.3	7.6	3.2	4.0	9.4	6.7
Severe undernutrition										
Underweight	9.6	3.0	7.0	4.3	4.0	2.4	5.5	5.5	4.2	3.2
Stunting	10.7	9.3	10.2	9.6	11.3	4.9	14.5	13.9	10.3	7.3
Wasting	0.1	0.5	0.3	1.5	1.3	1.2	1.1	1.2	3.7	1.4

8. Although many introduced complementary food too early, there were also indications that complementary foods were introduced late and they were inadequate in both quality and quantity. For instance, in the GAIN sites, barely two-thirds (63%) of babies 6-11 months were fed complementary food in the last 24 hours and less than half on children 12-23 months old were given complementary food during the previous 24 hours but already less than half of them are still being breastfed.

9. Diets of many children appeared to be restricted in terms of quality and quantity. Only three out of five children 6-23 months, in both MDGF and GAIN sites, were receiving solid, semi-solid or soft foods from four or more food groups (minimum diet diversity). In both GAIN and MDGF sites, only three out of four target children were being fed at least the minimum number of times a day (minimum meal frequency). Less than half of the children in MDGF (37.9%) and GAIN (42.2%) sites were receiving minimum acceptable diet. A large majority of children in Carles, Naga and Manila were not being fed adequately (both in quality and quantity of their diets) as shown by the very low minimum acceptable diet scores. Only three out of five children

were given iron-rich or iron-fortified foods. This problem appears to have many causes which include poverty, the mothers' inadequate knowledge about proper complementary feeding, and the relative lack of information on proper child feeding available to the community.

10. Food taboos, including misconceptions about infant and child feeding were common among the mothers and caregivers in some of the sites.

Table S. 4. Prevalence of Anemia, Iron Deficiency, Iron Deficiency Anemia and Vitamin A Deficiency Among Children 6-23 Months by Age Category (in Months) and Study Site

Age Group in Months	GAIN Sites			MDGF-2030 Cities				
	Manila	Cebu City	Total	Naga City	Iloilo City	Combined Naga & Iloilo Cities	Zamboanga City	Total
Anemia / Hemoglobin <110 g/L								
6-11	64.5	53.7	58.2	56.1	50.6	53.9	69.6	61.5
12-23	65.9	44.7	58.4	42.4	32.7	38.6	38.6	38.6
6-23	65.7	47.4	58.3	47.1	39.0	43.9	50.9	47.0
Iron Deficient / Ferritin <12 ug/L with correction factor based on Thurnham et al								
6-11	55.4	39.0	45.9	28.7	18.9	24.8	25.8	25.3
12-23	44.6	40.8	43.2	34.1	27.2	31.4	37.2	33.8
6-23	46.2	40.3	43.8	32.2	24.3	29.1	32.6	30.7
Iron Deficiency Anemia								
6-11	49.18	26.62	36.15	18.60	14.74	17.07	22.54	19.70
12-23	35.80	25.34	32.07	19.21	14.39	17.35	17.34	17.35
6-23	37.75	25.72	32.91	19.00	14.51	17.25	19.43	18.22
Vitamin A Deficiency with correction factor based on Thurnham et al								
6-11	13.8	35.4	26.3	37.3	30.0	34.4	35.2	34.8
12-23	35.5	21.3	30.5	26.8	19.7	24.1	11.8	18.9
6-23	32.4	25.5	29.6	30.4	23.3	27.6	21.2	24.8

RECOMMENDATIONS

The following recommendations are directed to the MDGF program designers/developers as well as the program managers. They are also relevant to the local government officials and community leaders. Researchers will also find some of the recommendations relevant especially in measuring the outcomes and impact of the MDGF Joint Programme.

1. The problem of high prevalence of under nutrition, especially among children 6-11 months, should be addressed by promoting more aggressively exclusive breastfeeding for six months. Efforts should be made to educate and motivate the mothers to improve diet variety for children 6-23 months. Many mothers do not understand the importance of exclusive breastfeeding for six months since they think that any kind of breastfeeding will also provide the same benefits.

2. There is a need to enhance capacity of health workers in both public and private health facilities to build the mothers' confidence so they could initiate breastfeeding immediately after birth. They should also begin breastfeeding advocacy and education even during prenatal consultations of the mothers. It appears that breastfeeding advocacy work in many birthing facilities should be further strengthened.

3. More efforts should be exerted by health workers and breastfeeding advocates in the community to motivate the mothers to breastfeed exclusively for six months. This is especially important in Zamboanga City, Iloilo City and in Ragay where the practice not very common. One way to improve the practice of exclusive breastfeeding is to discourage mothers and caregivers from giving water and formula milk to infants less than six months. This measure is most needed in Carles, and Iloilo and Zamboanga cities where these practices were common.

4. The health workers, especially those who are in frequent contact with mothers, should be trained on how identify and adequately address various lactation problems so they can provide guidance to mothers who need assistance so they can breastfeed successfully. These health workers should be trained to have better communication/motivation skills so they can encourage mothers to breastfeed exclusively for six months and to continue breastfeeding up to two years.

5. It is crucial to strengthen advocacy efforts for the creation of supportive environment which will motivate lactating working mothers to continue breastfeeding even when they go back to work. This will be possible if government policies/ directives which support breastfeeding are implemented and/or complied with by birthing facilities and by the owners and managers of workplaces. For instance, putting up lactation rooms in workplaces, inform workers about the presence of these stations and grant 'lactation breaks' to lactating mothers.

6. Establish breastfeeding support groups and produce IEC materials and TV advertisements which will support desired IYCF practices, especially on proper complementary feeding practices to increase the number of children who are fed minimum acceptable diet. Mothers and caregivers should be trained on proper and timely complementary feeding including giving iron-rich and iron-fortified foods so as to reduce the prevalence of anemia among the target children.

7. The list of children 0-23 months who are the targets of IYCF initiatives should be computerized to facilitate regular updating. This will improve the process of identifying children who are targets for nutrition interventions. An updated list also improves the monitoring and evaluation outcomes and impact of IYCF interventions/activities.

I. INTRODUCTION

Elimination of extreme poverty and hunger and reduction of child mortality are among the Millennium Development Goals (MDGs) set by the United Nations to be achieved by 2015. With only three years remaining, the Philippines and many countries worldwide are still trying to reduce the high prevalence of under-nutrition and high mortality rates among infants and young children.

In 2008, Filipino children under five were undernourished --- one in three were underheight (stunted), one in five were underweight and almost one in ten were wasted (FNRI, 2011). In the same year, the problem of anemia among young children was very common that one out of two infants 6-11 months old and one out of five children 12-23 months were reportedly anemic (FNRI, 2011). Although the prevalence of Vitamin A deficiency among children 6 to 59 months dropped almost three times from the 2005 level, but anemia among young children remains a public health concern.

The UN Participating Organizations composed of UNICEF, WHO, FAO, ILO, and the WFP have forged a partnership with the Government of the Philippines in a Joint Programme under the UNDP-Spain MDG Achievement Fund (MDGF) enabling the country to formulate and implement a Medium Term Plan of Action for Nutrition for 2008-2015. By complementing the government initiatives to improve breastfeeding and complementary feeding practices among children 0–23 months old, the Joint Program hoped to contribute to the attainment of the MDGs of decreasing childhood under-nutrition and reducing mortality among children 0–5 years old. The program, MDGF-2030, being implemented over a three year period (2009-2012) and targets an annual increase of 20% in exclusive breastfeeding and an annual reduction of at least 3% percentage points in the prevalence of under-nutrition. The MDGF-2030 sites are composed of a city and a municipality from each main island group of the country --- Naga City and Ragay municipality in Camarines Sur for Luzon; Iloilo City and Carles in Iloilo for Visayas; and Zamboanga City and Aurora in Zamboanga del Sur for Mindanao. These areas were chosen because they reportedly have a high prevalence of under-nutrition and poverty.

In addition to the joint efforts by the UN partners, the Global Alliance for Improved Nutrition (GAIN) also provided funds to the Nutrition Center of the Philippines to market a cereal-based fortified complementary food, with the aim of reducing anemia and improving micronutrient status in children aged 6–23 months in the country's urban areas including Manila and Cebu. In order to assess the potential impact of the various interventions in the MDGF and GAIN sites, and all the stakeholders agreed that it was beneficial and more efficient to expand the scope of the baseline study.

The baseline survey provides data that will be used to measure changes in the project outcomes --- that is, the prevalence of undernutrition in all sites and the prevalence of micronutrient deficiencies in the three MDGF cities and in the two GAIN cities. Moreover, the baseline data will help assess whether the observed changes (i.e., decrease in undernutrition and increase in exclusive breast feeding; and reduction of anemia and other micronutrient deficiencies) can be attributed to the MDGF-2030 program and the GAIN initiatives, respectively. The baseline study, through the qualitative research techniques presents findings that can contribute to the understanding of the determinants of early initiation and exclusive breastfeeding, including the timely introduction of complementary feeding, and provides insights on the role of the mother, the influence of the family, community and society in feeding practices for infants and young children.

II. OBJECTIVES

The baseline study provides information that can assist the program/project designers and implementers design, monitor and evaluate the interventions and activities.

General Objective

To describe current IYCF practices and identify major individual, family and community factors that contribute to current breastfeeding practices, as well as to determine growth/nutritional and micronutrient status.

Specific Objectives

a. To determine the nutritional and morbidity status of children 0–23 months of age in the selected areas.
b. To determine the prevalence of anemia, iron and vitamin A deficiency in children 6–11 months and 12–23 months of age.
c. To describe current IYCF practices for children 0–23 months of age.
d. To describe the health facility, community and work place activities, capacities, and structures to support good IYCF practices.
e. Determine the factors (individual, family, community) that may facilitate or impede exclusive breastfeeding up to six months and appropriate complementary feeding with continued breastfeeding after 6 months.
f. Determine the type of information/messages and communication channels that can best convince mothers to adopt the recommended behaviors.
g. To describe the reasons for use of complementary foods among caregivers of young children.

III. CONCEPTUAL FRAMEWORK

To guide the investigation, a conceptual framework (Figure 1) has been constructed to illustrate the scope, the target populations/sub-populations of interest, as well as the concepts, the relevant variables and their hypothesized interrelationships.

There are internal and external factors that influence a mother's decision and behavior regarding IYCF practices. Internal factors include socio-demographic characteristics, lifestyle, and knowledge, attitude and beliefs about IYCF practices. External influences include their husband or partner, immediate family and other household members, the institutions around them and the communities they live in. Mothers' decisions and behavior regarding IYCF practices consequently affect the children's health outcomes which ultimately determine infant and child growth, morbidity and mortality.

IV. APPROACH / METHODS

The survey employed a cross-sectional study design, complemented by qualitative research techniques. Depending on the study site and the study objectives, the participants for the quantitative study were selected using a stratified two-stage systematic random sampling or a stratified three-stage systematic random sampling, as will be described in further detail below. A household survey through face-to-face interviews with mothers or caregivers of 0-23-month old children was conducted. Anthropometric measurement of children 0-23 months old were also taken. For children 6-23 months old, blood

samples were collected for assessment of micronutrients. The quantitative survey was not intended to be nationally representative but specific to the sites where the MDFG-2030 joint program and the GAIN programs will be implemented. Qualitative data collection methods such as focus group discussions (FGDs) among mothers/caregivers of target children as well as in-depth interviews of key informants (KIIs) were conducted.

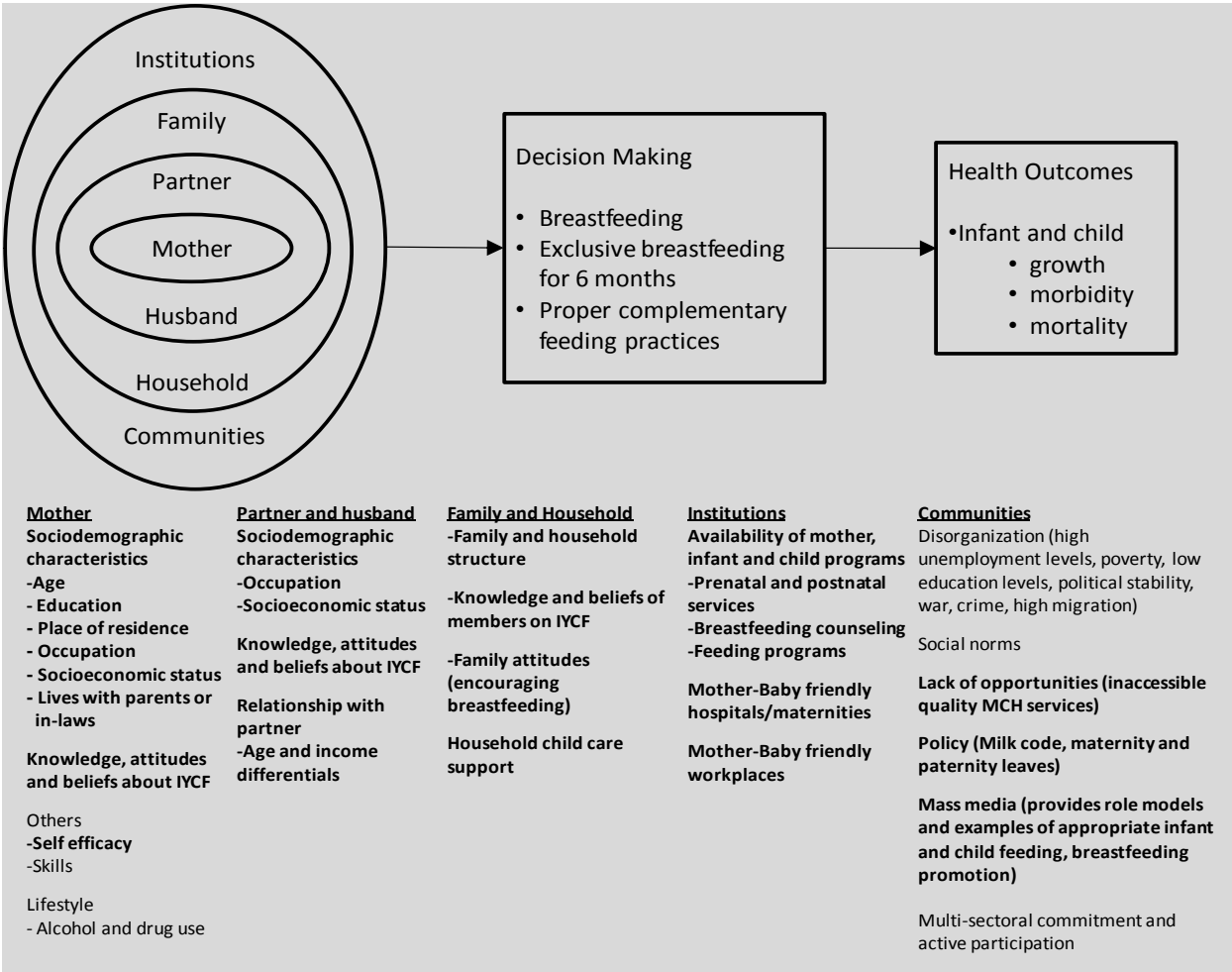

Figure 1. Conceptual framework of IYCF practices and their determinants. Determinants typed in bold were assessed in the proposed study.

4.1. Study Sites, Study Population and Outcome Variables

4.1.1. Quantitative Survey

The participants in this survey were children 0-23 months in the six MDGF sites and children 6-23 months in the two GAIN sites. Aside from socio-demographic data, anthropometric measurements of all children were collected to classify the children according to their nutritional status using the indices weight-for-age, length-for-age and weight-for-length z-scores based on the WHO Child Growth Standards (WHO, 2006). The mothers and/or caregivers of children 0–23 months were also asked to provide information on episodes of acute respiratory infection, fever, and diarrhea over two weeks preceding the survey. Information on initiation of breastfeeding, exclusive breastfeeding and complementary feeding among others were collected as part of the household interviews.

Blood sample was collected from children 6-23 months to assess their micronutrient status, specifically, iron and vitamin A status. Indicators of inflammatory status were determined by measuring two acute phase proteins --- C-reactive protein (CRP) and α-1 acid glycoprotein (AGP). However, blood specimen collection was done only among children 6-23 months old in the cities (Naga, Iloilo, Zamboanga, Cebu and Manila).

4.1.2. Qualitative Survey

Two methods, focus group discussion (FGD) and in-depth interviews of key informants (KII) were utilized for the qualitative part of the study. Focus group discussions were carried out among several target populations --- mothers of children under 2 years old; mothers of young children; adult primary caregivers ; mothers that have recently delivered; mothers who had experienced wet nursing; and mothers who are employed in establishments with lactation stations. Information on the different facilitating and impeding factors of infant and young child feeding were obtained from these FGDs. In addition, messages and the different communication channels that will convince mothers to adopt the recommended behaviors on proper IYCF were also determined. A total of 21 FGDs with a total of 182 participants were conducted in the six MDGF sites (Table A. 1, APPENDIX A).

In-depth interviews with key informants were conducted among breastfeeding advocates majority of whom were barangay health workers and RHU midwives. A mid-level manager in one shopping mall which currently has a lactation station in one MDGF city was also interviewed. The in-depth interviews provided data on the level of support for proper IYCF, including the level of knowledge, capacity to educate mothers about the benefits of breastfeeding and to motivate them to adopt the desired IYCF practices. Positive experiences as well as constraints about IYCF-related workplace policies and services were explored.

4.2. Sampling Design

4.2.1. Quantitative Survey

A multi-stage sampling design was used in this study. For all sites, children and mothers included in the anthropometric measurements and interview were selected using a stratified two-stage systematic random sampling. The barangays or contiguous barangays were the primary sampling units (PSU) selected systematically with probability proportional to the number of households. The sampling frame used was the list of barangays with number of household population in each site based on the 2007 population reports of the National Statistics Office (NSO). The secondary sampling units were the children under two years of age. The lists of children in the selected PSUs were obtained from the City Health Office, Rural Health Units, Barangay Health Centers (BHC) or directly from the Barangay Heath Workers or Barangay Nutrition Scholars themselves. If necessary, the lists were also validated and updated during the actual field work. The children who will be included in the sample were selected using simple random sampling.

After completing the household interview and the anthropometric measurements, all children 6–23 months in Naga City and Iloilo City, and the GAIN sites (Cebu and Manila) were invited to give a blood sample for the micronutrient status determination. In Zamboanga City, the eligible children included in the micronutrient status determination came from a sub-sample (or a third-stage sample) of children since the required sample size for this variable was much lower than the sample required for anthropometric data. From the second stage sample of children 6-23 months, a systematic sub-sample of three out of five children was obtained using a data collection control form (APPENDIX B) which

indicated who among the children would be included in the sample. The names of all the target children, who were included in the anthropometric measurement, were written in this control form. No blood collection was performed in the municipalities of Ragay, Carles and Aurora.

4.2.2. Qualitative Survey

Selection of participants for the FGDs was done using a non-probability selection approach (i.e., purposive sampling). Participants were selected using a predefined set of criteria for each of the 6 FGD groups, with a total of 6 to 13 participants per group. Breastfeeding advocates were also identified for the in-depth interviews, with at least one advocate interviewed per site.

4.3. Sample Size Requirement of the Quantitative Survey

The estimates of the minimum number of children required (Table 1) were based on the desired changes in the major indicators of interest (i.e., undernutrition and micronutrient status) (Kahn, 1983) (APPENDIX C).

4.3.1. Undernutrition

Among the three nutrition indicators (underweight-for-age, underlength-for-age and underweight-for-length), the key indicator for the MDGF-2030 domain, was the decrease in the prevalence of underweight-for-age by at least three 3 percentage points among the target children within a two-year period. Underweight-for-age is a major indicator under MDG Goal 1 and it had the biggest sample size requirement among the three indicators mentioned above. This was because the estimates of underweight prevalence were highest among children <12 months (12.4%) and children 12-23 months (30.3%) based on the 2008 National Nutrition Survey (FNRI, 2009). A baseline prevalence of 20% underweight-for-age among children 0-23 months was used in the sample size estimation.

An overall sample size of 1710 was required to detect at least four percent point reduction (from 20% to 16%) in underweight-for-age in the MDGF-2030 sites with alpha error of 5% (one-tailed), 80% power and design effect of 1.5. The sample size was adjusted for non-response rate of 20% which resulted to 2138 children 0-23 months old. The sample size that is required for site-specific assessment of reduction in undernutrition is very large and not feasible given the available program resources. Thus, only the assessment of overall reduction in the prevalence of undernutrition in the MDGF sites combined is feasible. The overall sample size was proportionally allocated to the six MDGF sites based on the population of children less than 2 years old (Table 1).

4.3.2. Micronutrient Status

The calculation of the minimum sample size requirement for micronutrient status was based on the national estimates of the prevalence of anemia of 55% and 41% among children 6-11 months of age and children 12-23 months of age, respectively (FNRI, 2009). GAIN aims to reduce the prevalence of anemia by one third in both age groups in each site within two years. Aside from the two GAIN sites, micronutrient status of children 6-23 months was also determined in Zamboanga City and Naga and Iloilo cities combined. Since site- and age-specific estimates of reduction in the prevalence of anemia prevalence were desired, the minimum sample sizes required for each site were computed. Thus, at least 137 children 6-11 months and 222 children 12 to 23 months (or a total of 359 children 6-23 months) were required for the study. These computations were based on an alpha error of 5% (one-tailed), 80% power and a design effect of 1.5. Adjusted for a non-response rate of 20%, the final sample size of 170 children 6-11 months and 278 children 12 to 23 months (or 448 children 6-23 months) were needed for each site (Table 1). The total number of 448 children required for biochemical assessment in the combined Naga-Iloilo estimate was proportionally allocated to each site based on their respective

population sizes. One hundred forty and 308 children 6-23 months in Naga and Iloilo cities, respectively, were required.

Because of the different sample size requirements, all children 6-23 months in Naga and Iloilo cities were invited to participate in the biochemical determination activity because the required sample size for micronutrient determination was almost the same as the sample size of children 6-23 months in the two cities. On the other hand, only three out of five children 6-23 months in Zamboanga City were invited for blood sampling.

Table 1. Minimum Sample Size Requirement by Research Site

Site	sample size requirement	PSUs/Brgys	sample children per PSU/Brgy	actual number of sample children
MDGF-2030 Sites (Children 0-23 months)				
Naga City	250	10	25	250
Ragay	94	3	32	96
Iloilo City	554	27	21	567
Carles	119	4	30	120
Zamboanga City	1,041	43	25	1,075
Aurora	80	3	27	81
Sub-Total	2,138	90		2,189
GAIN sites (Children 6-23 months)				
Manila	448	29	16	464
Cebu	448	28	16	448
Sub-Total	896	57		912
TOTAL	3,034	147	-	3,101

4.4. Data Collection Methods and Tools

A combination of different data collection methods was employed to attain the objectives of this baseline study. Prior to the actual data collection, investigators communicated with the Office of the Mayor, City Health Office, the Rural Health Units, and if applicable, the City/Municipal Nutrition Councils of the study sites to inform them about the study and to formally request their endorsement and assistance. The Regional Health and the Provincial Health Offices were also informed about the research. All field personnel were hired locally in each site. They were oriented by the researchers regarding the study and they were thoroughly trained on how to use the data collection tools and equipment. Only registered and experienced medical technologists were hired for the blood specimen collection and they were also trained on proper collection, handling and storage of the specimens.

4.4.1. Quantitative Survey

Each field team was composed of a site supervisor, an anthropometric data collector, and a medical technologist. Each research site had one field research team except in Zamboanga and Cebu cities which had two field teams each. To ensure standardized data collection procedures, a data collection manual was prepared to guide the teams in their respective tasks and to ensure good quality of the data.

A structured interview schedule was prepared to collect data on the households and mothers of children 0-23 months. The interview schedule (APPENDIX D) was adapted from the 2008 NDHS household

questionnaire (NSO [Philippines] and ICF Macro, 2009) and the WHO questionnaire on infant and young child feeding practices (WHO, 2010). The original English version of the interview schedule was translated into local dialects/languages (Bicol, Hiligaynon, Visayan, Chavacano, Tausug, and Tagalog), pretested and revised accordingly. Households with eligible children were visited to conduct the mother/caregiver interviews and to measure height and weight of children in the sample. The weight and the recumbent length measurements were taken using a digital weighing scale with a pan and an infant length measuring board, respectively. Weight and length measurements were recorded in the anthropometry module and were compared to the 2006 WHO Child Growth Standards (WHO, 2006). All sites had interview and anthropometric data collection. Results of nutritional status assessment based on the child's height and weight were immediately made available to the parents/caregivers immediately after the interview.

Eligible children were referred to the health center for blood collection,by skin puncture, to assess hemoglobin, iron and vitamin A levels. Blood was collected among all eligible children. It was conducted in the cities of Cebu, Manila, Naga, and Iloilo and only from a subsample of eligible children in Zamboanga City. Assessment of hemoglobin levels was done using a HemoCue, a portable hemoglobinometer. The results were recorded by the medical technologist in the Blood Collection Masterlist. In instances where the hemoglobin result showed moderate to severe anemia, sachets of micronutrient powder for the child were given to the mother/caregiver. The children were also referred to a local health facility for further evaluation and management. After blood processing to convert whole blood into plasma, resulting samples were kept frozen. The latter were then sent to Germany for analysis of ferritin, transferrin receptor, retinol-binding protein (as proxy for vitamin A status), including indicators of subclinical inflammation (C-reactive protein and α1-acid-glycoprotein) (Erhardt, J. et al., 2004).

4.4.2. Qualitative Survey

Qualitative studies complemented the quantitative survey. Some three to four focus group discussions and one to two in-depth interviews with key informants were conducted per site. Between 6 to 13 persons participated in each focus group discussion. All focus group discussion proceedings were digitally recorded and transcribed to facilitate analysis of data.

Focus group discussion guides (APPENDIX E) and in-depth interview guides (APPENDIX F) were prepared by the study investigators. The draft versions were sent to experts for comments revised as necessary and translated to the local dialect/language. These guides continuously evolved based on the results of earlier FGDs and KIIs.

Experienced focus group discussion facilitators and documenters who speak the local language were hired in each site to assist the investigators in the conduct of the various qualitative studies. The conduct of all focus group discussions was supervised by one of the project investigators. Whenever possible, the investigator herself conducted the key informant interviews.

4.5. Data Processing and Analysis

4.5.1. Quantitative Survey

Data entry of the quantitative survey data was done using the Epi Info software. A coding manual was prepared containing the variable names, variable descriptions, codes and coding instructions. Appropriate Epi Info ™ 3.5.1 (CDC Atlanta, GA) data structures were created for encoding. STATA software version 11 (StataCorp LP,College Station ,TX) was used for the analysis. Design-based analysis,

appropriate for the complex sampling design, was employed where sampling weights (APPENDIX G) were applied in the estimation of various indicators. For quantitative data, mean, median, range and standard errors were computed. For categorical data, frequencies and proportions were generated along with their 95% confidence intervals. When appropriate, results of various variables/indicators are presented in the form of tables and graphs.

4.5.2. Qualitative Survey

Focus group discussions and key informant interviews were transcribed verbatim and translated to English or Tagalog. Themes and sub-themes were manually coded then further analyzed using NVivo 9 (QSR International), a qualitative analysis software.

4.6. Ethical Issues/Considerations

This study underwent a two-level review for its scientific and ethical appropriateness first by the UNICEF Contracts Review Committee and second by the Ethics Review Committee of the College of Public Health, University of the Philippines Manila. Confidentiality of information from the respondents was upheld with utmost care throughout data collection, processing and analysis. The identity of study participants were kept confidential by assigning codes and numbers as identifiers. The proposal also underwent ethics review by the Ethics Committee in Cebu City.

4.6.1. Quantitative Survey

For the household interviews, anthropometric measurements, and blood collection from the target population, the investigators, through an assigned trained researcher, obtained signed or written informed consent of the mothers or caregivers. Depending on whether or not blood will be collected from the target children, individual Informed Consent Form and Subject Information Sheet were administered and filled-out.

Tokens of appreciation, in cash or in kind, were given to the mothers and to the children who participated in the study. For respondents who completed the interview and the anthropometry measurements, the mothers received Php150 cash or the equivalent cost of food items. Children who participated in the micronutrient determination (with blood collection) also received the same amount of token. They were also given additional Php100.00 transportation money from the blood collection center back to their homes. All the children who participated in the study were given cookies, bread and/or safe toys.

Severely anemic children were referred to the local health center for appropriate diagnosis and management of related nutrition problems. Children 6-23 months who were identified as mild or moderately anemic were provided with 60 sachets of micronutrient powder. The mothers were given oral and written instructions on how to use/administer the MNP sachets.

4.6.2. Qualitative Survey

The facilitator/interviewer explained the purpose and objectives of the study to the FGD participants or to the key informant. Verbal assent was obtained from the FGD participants by the facilitator before the start of the FGD. Verbal assent/consent was also sought by the interviewer from the key informant after he/she has explained the purpose and objectives of the interview. Consent of the respondents was obtained for photographs, audio and video recordings of the events. After each session, the participants were debriefed during which they were allowed to ask questions or clarifications about the study or any of the topics covered in the discussion/interview. The investigator or the interviewer responded to these concerns whenever possible.

Transportation allowance was given to all participants to reimburse their transportation expenses coming to and from the FGD/KII venue. Simple snacks/meals were served during the FGDs and individual interviews.

V. IMPLEMENTATION SCHEDULE

5.1. Training and Orientation of Field Staff

The training of medical technologists for Manila, Naga, and Zamboanga City was done in November 2010, and in February 21011 for Iloilo City and Cebu City. The orientation and training were conducted by the research investigators at the College of Public Health, University of the Philippines Manila and at the Outpatient Division of the Department of Pediatrics at the Philippine General Hospital (PGH-OPD) for the hands-on training.

The field supervisors, interviewers and anthropometric data collectors in each site were oriented and trained by one of the investigators and was assisted by a project research associate. The principal investigator supervised the conduct of all FGDs and KIIs in all the sites. Actual dates of training in each site are presented in APPENDIX H.

5.2. Data Collection and Processing

Data collection for the quantitative study started on February 21, 2011 in Manila and ended on April 18, 2011 in Zamboanga City. The qualitative study which was conducted in the MDGF sites between March 20, 2011 and April 6, 2011 (Table A. 2, APPENDIX H). Two weeks after data collection in Manila ended, data coding and encoding began. Data encoding was completed last week of April.

5.3. Transport and Analysis of Blood Specimen

On April 19, 2011, the last batch of blood specimens from the site was transported to the College of Public Health, the main research office. All the blood specimens were sent to DBS-Tech laboratory in Germany for further analysis. The specimens arrived in Germany on May 9, 2011. The laboratory in Germany reported that the specimens were already thawed when they were received in the lab. Results of biologic samples from Germany were returned via email on June 19, 2011. The results of the laboratory tests were submitted to the City Health Officers who asked their health center physicians to feed back the results to the mothers whose children agreed to have blood examination. Since the results of the laboratory were already outdated, the doctors were advised to have the children retested if possible or to prescribe iron supplements and to provide nutrition counseling to mothers of undernourished or anemic infants/children.

5.4. Presentation and Dissemination of Results

The preliminary results of the Baseline Study were presented by the research investigators to different audience groups on the following dates --- to the MDGF JP Partners at the UNICEF office in Makati on May 18, 2011; to the members of the NTWG at the NEDA Office in Pasig City on May 31, 2011; and to selected UNICEF and MDGF project staff at the UNICEF Office in Makati City on June 2, 2011. The first site-specific dissemination fora were held between July 19, 2011 and October 4, 2011 (Table A. 3, APPENDIX H).

VI. RESULTS OF QUANTITATIVE SURVEY

The operational definition of various variables / indicators measured by the quantitative survey are discussed in APPENDIX I.

6.1. Response Rates

There were 2189 and 912 children 0-23 months sampled from the MDGF-2030 sites and GAIN sites, respectively. Of these children, 1075 and 912 children 6-23 months were eligible for inclusion in the biochemical assessment in MDGF and GAIN sites, respectively. Among the sampled and eligible children in the MDGF sites, 2152 children 0-23 months had successful anthropometric measurements and 981 children 6-23 months gave blood samples, yielding response rates of 98.3% and 91.3%, respectively (Table A. 4, APPENDIX J). The children who participated in the MDGF sites belonged to 2152 households with 2013 mothers who were also successfully interviewed. On the other hand, in GAIN sites, there were 893 children 0-23 months who participated in anthropometric measurement and 817 children 6-23 months participated in blood collection, resulting to response rates of 97.9% and 89.6%, respectively.

6.2. Households of Children 0-23 Months

This section presents the characteristic of household respondents, type of housing construction materials, household durable goods, and the household socio-economic classification.

6.2.1. Characteristics of Household Respondents

The age of the respondents of the household interviews ranged from 15 to 75 years old and more than half of the respondents were below 30 years of age. Nine out of ten were themselves the mother of a child under two years old. Between 4% to 15% of the respondents had no formal education; 23 to 37% finished elementary education; 39% to 47% completed high school; and 4% to 23% had college/post-baccalaureate degree (Table A. 5, APPENDIX J).

6.2.2. Housing Characteristics

The household physical characteristics are important factors affecting the nutrition and health of children. Data on the following were collected: drinking water source, type of toilet facility, presence of electricity, housing materials, tenure status of lot, number of rooms used for sleeping, type of cooking fuel, place of cooking and type of fire/stove.

There were 54.5% and 80.3% of households in GAIN and MDGF-2030 sites, respectively, with improved water source. More than half of the households had non-improved drinking water source in Cebu City (62.9%) and Iloilo City (53.8%). In general, the most common non-improved drinking water source was bottled or mineral water. In Carles and Aurora, 15% and 6% of household, respectively, obtained drinking water from unprotected spring or unprotected dug well (Table A. 6, APPENDIX J).

More than half of the households in Naga City (52.6%), Zamboanga City (69.9%) and Ragay (63.9%) boiled the water to make it safe to drink. In Carles, an improvised filter made of cloth or sponge (61.2%) was commonly used (Table A. 6, APPENDIX J).

Only 57% of households in the GAIN sites and 87.1% in the MDGF sites had improved toilet facility. Toilets that flush to septic tank and pit latrine were very common in all the sites. There were only 1.8% households in the MDGF sites with no toilet facility compared with 28.1% in the GAIN sites (Table A. 7, APPENDIX J).

Three out of ten households in GAIN and four out of ten households in MDGF sites owned or amortized their lots. There were 37.4% households in GAIN and 36.5% households in MDGF sites which occupied lots for free with the owner's consent. Some 2.3% and 7.2% households in the GAIN and MDGF sites, respectively, lived in lots for free but without the owner's consent (Table A. 8, APPENDIX J).

Seven out of ten households in GAIN sites had electricity and nine out of ten households in MDGF sites (Table A. 9, APPENDIX J) had electric power. The majority of households in GAIN sites used wood planks (40.5%) while households in MDGF sites used cement (47.5%) as household flooring material (Table A. 9, APPENDIX J). Seven out of ten households in both GAIN and MFGF sites used galvanized iron or aluminum as roof material. Plywood was the most common wall material in both GAIN (43%) and MDFG (29%) sites. However, in the MDGF municipalities, cement wall was more common than the plywood material preferred in cities.

More than half of the households in GAIN sites (68.8%) but only 43% of households in MDGF sites had only one room for sleeping (Table A. 10, APPENDIX J). Two in ten households in GAIN and three in ten households in MDGF sites had two rooms for sleeping. In Aurora, half of the households (50.7%) had three or more rooms for sleeping. The most common cooking fuels in the GAIN sites were LPG or liquefied petroleum gas (32%) and wood (30.3%). In the MDGF sites, the most commonly used fuels are charcoal (55.9%) and by wood (27.8%). The majority of the households cooked food inside the house. Among those who were using solid fuels, seven out of ten households in both GAIN and MDGF sites used an open fire/stove without chimney or hood.

6.2.3. Household Durable Goods

The major possessions in GAIN and MDGF sites were electric fans, television sets, and mobile/cellular phones. The most common type of transport owned by households in GAIN sites was a bicycle; in the MDGF sites, a motorcycle was more popular (Table A. 11, APPENDIX J).

6.2.4. Socio-Economic Classification (SEC)

The households of children included in this study came from classes C to E. The socio-economic classification used in this study was adapted from the method of the Marketing and Opinion Research Society of the Philippines (MORES) where a scoring system is used to categorize households into five socio-economic classes A to E (Virola RA, Addawe MB and Querubin MIT, 2007). Classes A and B are the upper class, class C is the middle class, class D is the lower class, and E is the lowest class. In addition, the middle class is further subdivided into three subclasses ---– class C1, the upper middle class, broad C the broad middle class, and C2 the lower middle class. The SEC indicators included the following indicators --- neighborhood, home durability, outdoor quality, indoor quality, facilities in the home, household income, and the monthly electric bill.

There were no households included in the study that belonged to the upper classes. The majority of the households came from class D or E. In the GAIN sites, the City of Manila had the largest proportion of households in class E (75%) while many of the households in Cebu City sample came from class D (67.6%) (Table 2). Except for Carles, more than half of the households in the MDGF sites came from class D. In Carles, the proportion of households in classes D (47.6%) and E (49.9%) were almost the same.

Table 2. Percent Distribution of Households by Socio-economic Classification and Study Site

Socio-demographic Characteristic	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of Households	442	446	888	245	542	1,073	96	115	81	2,152
Class C	3.4	22.1	10.8	12.9	19.2	16.0	31.5	2.5	14.7	15.9
Class C1	0.0	0.1	0.1	0.4	0.4	0.0	0.0	0.0	0.6	0.2
Class Broad C	0.4	2.0	1.1	1.6	2.8	1.0	4.9	0.6	8.5	1.7
Class C2	3.0	20.0	9.7	10.8	16.0	15.0	26.6	1.8	5.6	14.1
Class D	21.6	67.6	39.8	58.1	69.2	56.5	65.3	47.6	60.4	58.9
Class E	75.0	10.3	49.4	29.1	11.6	27.5	3.2	49.9	24.9	25.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

6.3. Mothers of Children 0-23 Months

This section provides socio-demographic, history of delivery of last live birth and gifts received from milk companies. These are possible variables that can greatly affect breastfeeding status of children.

6.3.1. Socio-demographic Characteristics

The mother's age ranged from 15 to 52 years old. About half of the mothers belonged to 20-29 age group and majority (90%) were married or in a live-in relationship. Some 12% of mothers in GAIN and 10% in MDGF sites had no formal education (Table A. 12, APPENDIX J). Only 5% and 10% of mothers in GAIN and MDGF sites, respectively, finished a college or a post-baccalaureate degree. In all sites, proportionately more mothers finished high school than elementary education. Twenty nine percent of mothers in GAIN sites and 20% in MDGF sites were employed.

6.3.2. Delivery Care and Any Gift/Sample from Infant Formula Companies

Home deliveries in GAIN and MDGF sites were 22.7% and 37.8% (Table 3), respectively. Home deliveries were very common in Carles (91.4%), Ragay (61.7%), Naga City (60.8%) and Aurora (60.4%). Consequently, the proportion of mothers who were attended during deliveries by traditional birth attendants was also high in these sites – Carles (79.1%), Aurora (57.6%), Ragay (47.7%) and Naga City (32.6%).

During their last livebirth, more mothers in cities than in municipalities reportedly received gifts or milk samples from companies that manufacture formula milk. There were 7.5% mothers in GAIN and 2.8% in MDGF sites who reportedly received gifts or samples from milk companies (Table A. 13, APPENDIX J).

In the GAIN and MDGF sites, 88.9%, and 84.2% of mothers, respectively, reported that breastfeeding was discussed before and after their delivery (Table A. 13, APPENDIX J). Of these, 95.1% of mothers in GAIN and 90.7% in MDGF sites were advised to start breastfeeding immediately. There were some mothers in MDGF (6.1%) and GAIN sites (0.3%) who claimed that they were not advised to start breastfeeding immediately.

Table 3. Percent Distribution of Mothers According to Facility and Birth Attendant of Last Livebirth by Study Site

Birthing Facility and Attendant	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total GAIN	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of Mothers	433	438	871	244	516	985	89	108	71	2,013
Facility of Last Delivery										
Home Delivery	25.4	18.5	22.7	60.8	22.8	30.2	61.7	91.4	60.4	37.8
Government Facility	71.6	48.3	62.4	35.7	68.9	58.0	30.6	8.7	38.9	53.2
Government Hospital	53.0	32.3	44.8	31.8	53.2	39.9	27.3	8.0	38.9	39.5
Other Government Facility	18.6	16.1	17.6	3.9	15.7	18.1	3.4	0.7	0.0	13.7
Private Facility	3.0	32.9	14.8	3.5	8.2	11.6	7.6	0.0	0.7	8.8
Others	0.0	0.3	0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Birth Attendant										
Doctor	51.4	45.8	49.2	35.7	60.8	49.8	23.6	8.0	31.5	47.0
Midwife	29.8	48.5	37.2	31.7	26.3	25.6	23.3	12.9	10.9	26.6
Traditional Birth Attendant (TBA)	18.6	4.4	13.0	32.6	12.1	22.4	47.7	79.1	57.6	24.9
Others	0.2	1.3	0.6	0.0	0.0	2.1	5.4	0.0	0.0	1.3
No Information	0.0	0.0	0.0	0.0	0.9	0.2	0.0	0.0	0.0	0.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

6.4. Children 0-23 Months

6.4.1. Demographic and Morbidity Status

The proportions of male and female children in the MDGF sites were nearly equal at 49.8% and 50.2% (Table 4). Except for Zamboanga City where 64.2 % in the sample were less than 12 months , more than half of the children in the other sites were 12-23 months old age group while less than a quarter belonged to less than six months of age. On average, there were nearly equal proportions of male and female children although in Naga City and Carles, more than half of the children were females. Most of the children were delivered spontaneously (91.9%) while the rest were delivered by caesarian section. For Manila and Cebu, there were slightly more males (52.5%) than females (47.5%).

The frequency distribution of children by age groups is presented in Table 5. Interpretation of the percentages should be made with care. The precision of the estimates of sub-groups with very sample sizes (i.e., <50 or <25) may not be as good as estimates based on larger sample sizes.

The mother was usually the primary caregiver; she looks after and feeds the child. This is true for all study sites --- 90.3% for GAIN sites and 86.9% for the MDGF sites (Table A. 14, APPENDIX J). The father and other relatives (grandparent/other family members) make up a very small proportion of those who take care and feed the child.

Table 4. Percent Distribution of Children According to Age, Gender and Manner of Delivery by Study Site

Demographic Characteristic	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo-anga City	Ragay	Carles	Aurora	
Number of Children	447	446	893	245	542	1,073	96	115	81	2,152
Age in Months										
<6	-	-	-	16.9	25.5	34.2	19.4	16.7	16.1	28.3
6-11	15.2	30.0	21.1	29.5	25.0	27.2	27.1	33.3	29.6	27.5
12-23	84.8	70.0	78.9	53.6	49.5	38.6	53.5	50.0	54.3	44.2
6-23	100.0	100.0	100.0	83.1	74.5	65.8	80.6	83.3	83.9	71.7
Gender										
Male	53.7	50.6	52.5	46.4	51.4	50.4	52.2	45.0	57.0	49.8
Female	46.3	49.4	47.5	53.6	48.6	49.6	47.8	55.0	43.0	50.2
Manner of Delivery										
Normal Delivery	95.2	95.7	95.4	92.5	92.1	91.5	95.1	98.8	86.9	91.9
Caesarian	4.6	4.3	4.5	7.5	7.9	8.2	5.0	1.2	13.1	8.0
No information	0.2	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 5. Number (Absolute) of Children by Age Group in Months and Study Site

Age Group in Months	GAIN Site			MDGF Cities			MDGF Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo anga City	Ragay	Carles	Aurora	
<6	-	-	-	41	130	328	18	19	14	550
6-11	144	125	269	66	140	292	26	33	24	581
12-23	303	321	624	138	272	453	52	63	43	1,021
6-23	447	446	893	204	412	745	78	96	67	1,602
Total	447	446	893	245	542	1,073	96	115	81	2,152

Overall, more than a third of the children in the MDGF sites were reported to have had fever in the past two weeks prior to the interview. It was noted however that in Naga City, the incidence was 45.7% with 50.5% affecting the 6-11 months old children (Table 6). In Carles 52.7% of children 12-23 months old were reported to have had fever in the last two weeks. Likewise, almost half of the children in Ragay suffered from fever; more than half of them were 6-11 months old. Acute respiratory infection (ARI) with cough and fast breathing was also observed with varying incidence, from 12% in Zamboanga and to 39% Carles. The overall incidence was 17.8%. Around 11.1% of children were reported to have had diarrhea in the past two weeks.

About 28% of children in Manila and Cebu City had fever in the past two weeks affecting more of the 6-11 months old children. A small proportion of children (8.7%) had acute respiratory infection (ARI) with cough and fast breathing. About 16.1% of children had diarrhea in the past two weeks prior to interview (Table 6).

Table 6. Percentage of Children with Fever, Diarrhea and Acute Respiratory Infection in the Past Two Weeks According to Age Group in Months and Study Site

Age Group in Months	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Fever										
<6	-	-	-	33.1	19.2	23.4	49.8	43.3	19.9	24.5
6-23	28.7	26.7	27.9	48.2	28.7	31.3	48.8	54.6	37.0	35.9
6-11	52.7	24.0	36.5	50.5	27.8	35.1	50.6	52.4	31.8	38.1
12-23	24.4	27.8	25.6	46.9	29.2	28.6	47.8	56.1	39.9	34.5
Overall	28.7	26.7	27.9	45.7	26.3	28.6	49.0	52.7	34.3	32.6
Diarrhea										
<6	-	-	-	0.0	5.9	7.3	5.0	18.4	3.7	6.2
6-23	18.9	11.7	16.1	14.7	16.2	10.7	10.0	20.2	22.1	13.0
6-11	42.4	9.5	23.9	12.0	14.0	11.3	7.4	17.8	27.4	12.2
12-23	14.7	12.6	14.0	16.2	17.3	10.3	11.4	21.7	19.2	13.4
Overall	18.9	11.7	16.1	12.3	13.6	9.5	9.0	19.9	19.1	11.1
Acute Respiratory Infection										
<6	-	-	-	18.2	17.8	9.1	5.8	38.6	4.4	11.6
6-23	8.2	9.4	8.7	29.8	27.7	13.1	23.0	39.6	13.8	20.2
6-11	8.0	9.5	8.8	29.7	30.0	13.9	19.3	42.0	14.5	20.3
12-23	8.3	9.3	8.6	29.9	26.4	12.6	24.9	37.9	13.5	20.1
Overall	8.2	9.4	8.7	27.9	25.1	11.7	19.7	39.4	12.3	17.8

6.4.2. Anthropometric Measurement

The overall prevalence of underweight among 0-23 months old children in the MDGF sites was 16.2%. The lowest proportion of underweight was seen in Aurora, Zamboanga del Sur (12%) while the highest was found in Carles, Iloilo at 22% (Table 7). Except for Naga City, the highest proportions of children who were underweight were older (i.e., 12-23 months). This is similar to the findings in the national survey (FNRI, 2011). Ragay was found to have the highest number of underweight children in this age group. Manila and Cebu had a higher prevalence of underweight among children 6-23 months.

The length-for-age is an indicator of chronic undernutrition or stunting among children 0-23 months. The prevalence of stunting in the MDGF sites ranged from 19% in Zamboanga City to as high as 37% in Carles, Iloilo and an overall prevalence of 22.6% (Table 7). Stunting results from a long period of dietary inadequacy and is therefore more evident in the older age groups than the very young. The highest prevalence of stunting is evident among the 12-23 months children in all sites although about 16.5% of the <6 month old children were found to be short for their age.

Weight-for-length indicates current acute malnutrition where weight is not appropriate for the particular length. Thinness was observed in 3% (Ragay) and 9% (Zamboanga) of children with an average of 7% for all sites (Table 7). The proportion of thin children was seen to be highest among the under-six month old children in the different MDGF sites except for Iloilo City. In Manila and Cebu, the prevalence of thinness was 2.5% with the 6-11 months having the higher proportion of thin children at 5.5%. This

could be an indication also of the effect of dietary inadequacy as it is at this time that children are introduced to complementary foods. A similar trend is seen at the national level.

Undernutrition is considered severe if the value is below -3SD of the median value of the standard. Severe underweight and stunting appear to be higher in the GAIN sites particularly in Manila. In the MDGF sites, more than 10% of children were found to be severely stunted in Iloilo City, Ragay, Carles and Aurora (Table 7). There were less children were severely wasted in the GAIN sites with 0.3% while about 1.4% were seen in the MDGF sites.

Confidence intervals (95%) of the nutrition indicators are presented in Table A. 15, APPENDIX J.

Table 7. Percentage of Children Underweight-for-Age, Underlength-for-Age and Underweight-for-Length According to Age Group (in months) and Study Site

Age Group in Months	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Underweight-for-age										
<6	-	-	-	0.0	21.6	9.9	16.6	4.2	14.9	10.4
6-23	22.8	16.9	20.5	20.4	19.6	17.4	20.6	25.3	11.1	18.5
6-11	13.3	16.1	14.9	21.0	12.8	17.1	4.2	22.2	2.4	16.9
12-23	24.5	17.3	22.0	20.1	23.1	17.6	28.9	27.4	15.9	19.6
Overall	22.8	16.9	20.5	17.0	20.1	14.8	19.8	21.8	11.7	16.2
Underlength-for-age / Stunting										
<6	-	-	-	12.6	23.2	15.8	22.4	29.1	8.8	16.5
6-23	36.6	29.6	33.8	28.7	31.1	20.8	25.8	39.0	30.8	25.0
6-11	35.3	24.5	29.2	19.8	22.9	20.6	7.7	30.4	30.7	20.9
12-23	36.8	31.8	35.1	33.6	35.3	21.0	34.9	44.8	30.8	27.6
Overall	36.6	29.6	33.8	26.0	29.1	19.1	25.1	37.4	27.2	22.6
Underweight-for-length / Wasting										
<6	-	-	-	7.0	6.4	6.7	5.8	8.4	19.3	6.9
6-23	2.3	3.0	2.5	3.5	7.6	8.0	2.6	3.1	7.5	6.6
6-11	7.2	4.2	5.5	5.7	7.5	6.4	0.0	0.0	2.4	6.1
12-23	1.4	2.5	1.8	2.3	7.7	9.1	3.9	5.1	10.3	7.0
Overall	2.3	3.0	2.5	4.1	7.3	7.6	3.2	4.0	9.4	6.7
Severe undernutrition										
Underweight	9.6	3.0	7.0	4.3	4.0	2.4	5.5	5.5	4.2	3.2
Stunting	10.7	9.3	10.2	9.6	11.3	4.9	14.5	13.9	10.3	7.3
Wasting	0.1	0.5	0.3	1.5	1.3	1.2	1.1	1.2	3.7	1.4

6.4.3. Biochemical Measurement

Anemia, as determined by hemoglobin, remains to be a major public health problem among the very young children particularly infants. The number of sample used for the biochemical results is presented in Table A. 16, APPENDIX J. The 95% confidence intervals of micronutrient indicators are presented in Table A. 19, APPENDIX J.

The overall prevalence of anemia was 47% in the MDGF sites with the highest prevalence occurring in Zamboanga City at 51% (Table 8). It is noteworthy that the highest prevalence of anemia occurred among infants and this figure (61.5%) is much higher than that of the national prevalence for the same age group (55.1%) (FNRI, 2009). In Manila the prevalence of anemia was 65.7% among 6-23 months while for Cebu the prevalence was 47.4% with the highest found among the 6-11 month old children at 53.7%. The findings are consistent with the national survey where the highest prevalence of anemia is found among infants.

To determine iron deficiency among these children, serum ferritin levels corrected for presence of infection/inflammation was determined (Thurnham D.I. et al, 2007). The prevalence of iron deficiency in Manila and Cebu was 43.8% with the highest prevalence found among infants 6-11 months (Table 8). Again this could be a reflection of intake in this age group since iron from breastmilk decreases at three months and has to be supplied from the diet. The prevalence of iron deficiency among the MDGF sites was lower at 30.7% with the 12-23 months children being more affected than infants.

Table 8. Prevalence of Anemia, Iron Deficiency, Iron Deficiency Anemia and Vitamin A Deficiency Among Children 6-23 Months by Age Category (in Months) and Study Site

Age Group in Months	GAIN Sites			MDGF-2030 Cities				
	Manila	Cebu City	Total	Naga City	Iloilo City	Combined Naga & Iloilo Cities	Zamboanga City	Total
Anemia / Hemoglobin <110 g/L								
6-11	64.5	53.7	58.2	56.1	50.6	53.9	69.6	61.5
12-23	65.9	44.7	58.4	42.4	32.7	38.6	38.6	38.6
6-23	65.7	47.4	58.3	47.1	39.0	43.9	50.9	47.0
Iron Deficient / Ferritin <12 ug/L with correction factor based on Thurnham et al								
6-11	55.4	39.0	45.9	28.7	18.9	24.8	25.8	25.3
12-23	44.6	40.8	43.2	34.1	27.2	31.4	37.2	33.8
6-23	46.2	40.3	43.8	32.2	24.3	29.1	32.6	30.7
Iron Deficiency Anemia								
6-11	49.18	26.62	36.15	18.60	14.74	17.07	22.54	19.70
12-23	35.80	25.34	32.07	19.21	14.39	17.35	17.34	17.35
6-23	37.75	25.72	32.91	19.00	14.51	17.25	19.43	18.22
Vitamin A Deficiency with correction factor based on Thurnham et al								
6-11	13.8	35.4	26.3	37.3	30.0	34.4	35.2	34.8
12-23	35.5	21.3	30.5	26.8	19.7	24.1	11.8	18.9
6-23	32.4	25.5	29.6	30.4	23.3	27.6	21.2	24.8

Vitamin A deficiency (VAD) as determined by retinol binding protein (RBP) is also a problem among the children examined since the prevalence of low RBP was more than 10%. The levels of RBP were also corrected for the presence of inflammation (Thurnham DJ, Mc Cabe GP, Northrop-Clewes CA, Nestel P, 2003). The prevalence of VAD in Manila and Cebu was 32.4% and 25.5% respectively (Table 8). The 12-23 month olds seemed to be more affected than the 6-11 month old children. Similarly, the prevalence of VAD in the MDGF sites was 24.8%, however, the 6-11 month old children seemed to be more affected than the 12-23 month old children. Vitamin A deficiency was found to be much higher than that of the

national figure (15%) (FNRI, 2009) in all sites among children 6-23 months. This is true for all age groups except for 6-11 months in Manila (13.8%) and among children 12-23 months in Zamboanga City.

Other blood parameters were measured like transferrin receptors (sTfr) to estimate total body iron stores, while C-reactive proteins and a-1 glycoprotein were determined to correct for the effect of infection and inflammation on serum ferritin for a better estimate of the prevalence of iron deficiency. The results of these are found in the Table A. 17 and Table A. 18, APPENDIX J.

6.4.4. Breastfeeding Practices

Breastfeeding status of children was assessed based from the liquid and food intake of the child during the previous day (yesterday and the past night).

A small proportion of children was never breastfed in both MDGF (10.5%) and GAIN (2.9%) sites (Table 9). The most common reason given for never breastfeeding for both MDGF and GAIN sites was that 'there was not enough milk'. This was followed by the reason 'mother is working' in the MDGF sites while 'refusal of the child' was the next reason given in the GAIN sites. Nipple/breast problem was the third most common reason given for both MDGF and GAIN sites.

Table 9. Percentage of Children 0-23 Months With Early Initiation (Within One Hour) of Breastfeeding, Who Were Never Breastfed and the Reasons for Never Breastfeeding by Study Site

Reasons For Never Breastfeeding the Child	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
No. of Children 0-23 months	447	446	893	245	542	1,073	96	115	81	2,152
Early (within an hr) Initiation of BF	22.7	66.9	40.1	77.0	59.5	39.3	43.3	68.2	46.6	51.0
Never Breastfed	2.2	4.0	2.9	7.6	8.7	12.4	11.6	0.7	6.1	10.5
Reasons for Never Breastfeeding[1]										
Number of Children Never BF	29	17	46	15	52	131	11	1	4	214
Ill/Weak Mother	15.6	0.0	7.4	0.0	15.4	12.7	18.0	0.0	88.4	12.1
Ill/Weak Child	0.0	16.0	8.5	5.7	9.6	6.5	0.0	0.0	0.0	6.6
Nipple/Breast Problem	15.5	16.3	15.9	30.4	7.9	11.3	0.0	0.0	11.6	13.6
Not Enough Milk	29.1	50.4	40.3	53.5	27.6	36.1	35.2	0.0	0.0	37.2
Mother Working	3.3	5.0	4.2	13.9	35.7	19.0	8.9	0.0	0.0	19.9
Child Refused	24.1	16.5	20.1	3.0	2.9	14.3	28.4	100.0	0.0	11.3
Mother Was Pregnant	3.7	0.0	1.8	0.0	2.3	0.2	8.9	0.0	0.0	0.6
Mother Used Contraception	0.0	0.0	0.0	0.0	0.0	3.2	8.9	0.0	0.0	2.4

[1]Multiple answers may be given, therefore, the sum may be more than 100%

More than half of the children in Manila and Cebu (55.2%) and about two-thirds in the MDGF sites were being breastfed at the time of the interview (Table 10). Among those who have been previously breastfed but have stopped breastfeeding, the main reason given was that there was no more breast milk.

In Naga City and Aurora, more than 50% of <6month old children were exclusively breastfed while the proportion ranged from 16% to 39% for the rest of the MDGF sites (Table 11). Less than half of children

<6 months were predominantly breastfed in the MDGF sites although the proportion was much higher in the municipalities except for Ragay with only less than 50%. Meanwhile, a high proportion was seen in Naga City (70%). More than half of the children were breastfed up to one year however, this declined to 36% in the MDGF sites.

More than half of the children in GAIN sites were still breastfed at one year (53.6%) although the proportion was higher in Cebu than Manila (Table 11). Moreover, about 59% were reported to continue breastfeeding until two years of age, with two-thirds (67%) in Manila being breastfed at two years. Table A. 20 in APPENDIX J presents the 95% CIs of key breastfeeding indicators.

Table 10. Percentage of Children 0-23 Months Currently Breastfeeding and Reasons for Stopping Breastfeeding among Children Previously Breastfed

Current Breastfeeding Practice	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
No. of Children 0-23 months	447	446	893	245	542	1,073	96	115	81	2,152
Currently Breastfeeding	56.6	53.2	55.2	63.7	62.4	58.2	57.6	78.3	59.3	60.3
Reasons for Stopping Breastfeeding[1]										
No. of Children Previously BF	266	203	469	84	176	330	31	36	31	688
Breastmilk Ran Out	30.0	23.3	27.5	45.6	61.6	46.5	31.7	20.6	12.7	47.3
Child Refused Breast	5.2	22.3	11.6	19.9	8.1	22.8	10.1	8.2	17.3	19.3
Mother Went To Work	9.7	16.0	12.1	29.5	23.2	10.5	12.7	31.6	19.1	17.2
Child Old Enough	22.2	9.8	17.6	16.0	3.0	9.2	26.4	49.3	24.6	10.9
Mother Was Pregnant	21.1	14.5	18.6	4.1	4.0	6.2	6.0	5.0	1.5	5.3
Mother Went Away	0.1	5.9	2.2	1.5	3.4	1.6	9.6	0.0	7.9	2.2

Note. Current breastfeeding status was based from whether the child received breastmilk yesterday during the day or night

[1]Multiple answers may be given, therefore, the sum may be more than 100%

Table 11. Percentage of Predominant Breastfeeding <6 Months, Continued Breastfeeding at 1 Year, Continued Breastfeeding at 2 Years and Age-Appropriate Breastfeeding of Children 0-23 Months

Breastfeeding Status	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Exclusive Breastfeeding <6 months	-	-	-	50.5	22.5	16.1	23.3	39.1	56.5	22.1
Predominant Breastfeeding <6 months	-	-	-	70.8	53.1	39.4	45.7	83.5	68.9	46.1
Continued Breastfeeding at 1 Year	48.3	62.5	53.6	69.3	53.2	49.6	72.1	84.9	77.0	56.6
Continued Breastfeeding at 2 Year	67.1	42.6	59.4	38.7	42.8	33.5	27.6	44.3	29.7	36.3
Age-Appropriate Breastfeeding	56.5	52.4	54.9	54.0	42.1	35.6	46.0	66.1	51.1	41.4

Breastmilk obtained from another woman or by another mode (in bottle with nipple) was not as popular in the different sites. About 12.5% of children in Manila were given mother's milk through bottle with nipple, breastfed by another woman (6.9%) or given another woman's breastmilk through bottle with nipple (5.7%) (Table 12). The practice is less popular in the MDGF sites although a small proportion of children were breastfed by other women in Naga City and Aurora.

Table 12. Percentage of Children Who Received Breastmilk from Other Woman or Other Mode

Other Modes of Receiving Breast Milk	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
No. of Children 0-23 Months	447	446	893	245	542	1,073	96	115	81	2,152
Given Mother's Milk in Bottle With Nipple	12.5	1.7	8.2	2.8	4.6	0.6	1.1	0.0	2.4	1.7
Breastfed by Woman Other Than Mother	6.9	3.0	5.4	8.3	2.3	1.5	2.3	2.2	7.2	3.2
Given Another Woman's Breastmilk in a Bottle With Nipple	5.7	0.4	3.6	0.4	0.7	0.7	0.0	0.0	2.4	0.7

The area graph (Figure 2) shows that exclusive breastfeeding was practiced in 28.5% - 30.2% during the first three months but steeply declined to half (14.8%) during the fourth month. At six months, only 3% of the children were exclusively breastfed. Among those who were not exclusively breastfed, plain water (22.8%) and other milk (35.2%) were given as early as the first month (Table 13).

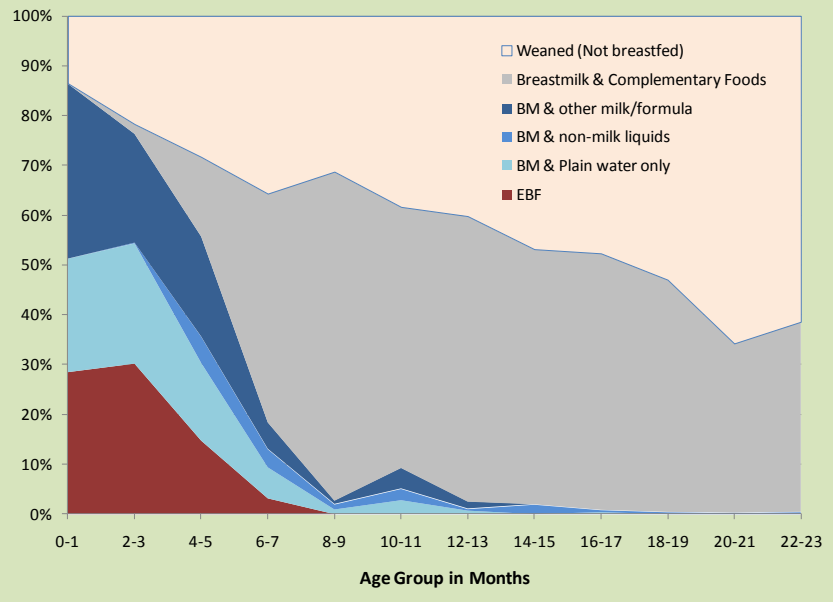

Figure 2. Breastfeeding Practices of Children 0-23 Months in MDGF-2030 Sites

6.4.5. Complementary Feeding Practices

At 6-8 months of age, majority of children receive solid, semi-solid or soft foods. This is true for children in both the GAIN sites and MDGF sites (Table 14). Foods made from grains, roots and tubers were the predominant foods given to both breastfed and non-breastfed children in both GAIN and MDGF sites (Table 15). Protein foods such as meat, eggs, seafood and beans, peas and other legumes were not often offered. At six months of age, breastmilk alone may not be sufficient to provide energy and nutrients needed for growth of the child. Grains, roots and tubers are carbohydrate sources which are the chief sources of energy from the diet. Meat, eggs, legumes and nuts are sources of protein needed for the growth and repair of tissue. It can be noted that a lower proportion of children was given these protein sources. Site-specific results are presented in Table A. 21, APPENDIX J.

Table 13. Breastfeeding Practice and Use of Bottle by Age Group

Age in Months	Not breast-feeding	Exclusively breastfed	Breastfeeding and Consuming				Total	Drank from Bottle with Nipple	Number of Children under two years
			Plain Water Only	Non-milk Liquids/ Juice	Other Milk	Complementary Foods			
MDGF-2030 Sites									
<6	24.3	22.1	20.0	2.7	22.0	8.8	99.9	54.1	550
6-11	35.2	1.4	3.6	2.5	3.9	53.6	100.0	59.9	581
12-23	52.5	0.0	0.2	0.6	0.3	46.5	100.0	64.6	1,021
0-23	39.7	6.7	6.7	1.7	7.4	37.8	100.0	60.4	2,152
GAIN Sites									
6-11	35.1	0.0	2.0	0.1	0.2	62.6	100.0	46.9	269
12-23	47.3	0.0	0.0	0.0	0.0	52.7	100.0	51.8	624
6-23	44.8	0.0	0.4	0.0	0.0	54.8	100.0	50.8	893

Table 14. Percentage of Children 6-8 Months Receiving Solid, Semi-Solid or Soft Foods by Study Site

Given Foods	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
No. of children 6-8 months	80	58	138	40	82	171	8	18	9	328
Given Foods	90.8	93.3	92.2	78.7	78.9	74.5	75.5	96.1	78.2	76.5

At six months and onwards, breastmilk alone is insufficient to provide for the needs of the child, hence appropriate complementary foods are necessary to compensate for the deficits in nutrients of breastmilk. To ensure that nutritional status of these children are not compromised, WHO has prescribed guidelines with respect to the minimum diet diversity, minimum meal frequency and minimum acceptable diet that should be achieved for both breastfed (WHO, 2002) and non-breastfed (WHO, 2004) children at six months up to two years of age. This should be provided by appropriate complementary foods.

In the MDGF sites, a little over half (54.4%) of the 6-23 months old breastfed children achieved the minimum diet diversity while about a third (65.7%) of non-breastfed children achieved the minimum diet diversity (Table 16). Compared with the national data, which is 78.7%, only the 12-23 month old children in Ragay and Aurora had a higher proportion who met the minimum diet diversity. It was noted that the 6-11 months had the least proportion of children who were given a variety of foods. A similar trend was seen in Manila and Cebu (GAIN sites). The percentages of children by diet diversity score are presented in Table A. 22, APPENDIX J.

A higher proportion of children 6-23 months in both the MDGF and GAIN sites achieved the minimum number of frequency of feeding (Table 16). Ragay, Aurora and Cebu had a higher proportion of children who met the minimum meal frequency, which was higher than that of the national data (80.7%). Again, the least proportion of children who reached the minimum meal frequency was seen among the 6-11 months old.

Table 15. Percentage of Children Who Received Foods from the Seven Specific Food Groups by Study Site

Age in Months	Number of Children	Food Groups						
		Grains, Roots, Tubers	Legumes, Nuts	Dairy Prod-ucts	Meat, fish & poultry	Eggs	Fruits & Vegeta-bles rich in Vit. A	Other Fruits & Vegeta-bles
MDGF-2030 Sites								
<6	550	15.3	0.3	49.7	2.4	1.6	3.6	2.4
6-11	581	83.1	4.5	67.7	43.8	27.2	52.8	29.2
12-17	516	98.8	11.7	80.5	67.6	39.1	72.9	43.7
18-23	505	98.2	16.7	80.4	80.0	43.7	73.4	46.3
12-23	1,021	98.5	14.2	80.4	73.9	41.4	73.2	45.1
6-23	1,602	92.6	10.5	75.6	62.4	36.0	65.4	39.0
GAIN Sites								
6-11	269	94.1	3.6	59.2	34.4	31.1	49.3	22.9
12-17	335	99.6	8.6	66.6	53.7	43.5	57.1	31.2
18-23	289	98.8	11.1	59.6	80.0	60.4	82.4	46.4
12-23	624	99.2	9.7	63.5	65.3	50.9	68.2	37.9
6-23	893	98.2	8.4	62.6	58.8	46.7	64.2	34.7

Table 16. Percentage of Children Who Received Minimum Diet Diversity, Minimum Meal Frequency and Minimum Acceptable Diet by Age Group (in months) & Study Site

Age Group in Months	GAIN Site			MDGF City			MDGF Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo anga City	Ragay	Carles	Aurora	
Minimum Diet Diversity										
6-11	24.8	41.7	34.3	27.1	43.2	48.5	49.7	16.3	63.3	42.7
12-23	61.6	71.3	68.8	53.9	75.9	74.0	85.1	75.3	97.8	88.0
6-23	56.0	62.4	58.5	44.4	64.9	63.5	73.2	51.7	85.6	59.6
Minimum Meal Frequency										
6-11	51.8	89.5	73.0	57.8	53.6	70.6	76.6	60.5	81.4	65.4
12-23	70.8	94.9	79.3	79.3	69.2	85.4	98.2	66.1	97.6	81.3
6-23	67.9	93.3	78.0	71.6	64.0	79.3	90.9	63.9	91.9	75.2
Minimum Acceptable Diet										
6-11	14.4	35.1	26.1	14.1	27.0	37.7	37.8	7.7	34.2	30.3
12-23	41.5	55.8	46.5	31.9	47.0	43.4	65.8	43.0	88.6	42.7
6-23	37.4	49.6	42.2	25.6	40.3	41.0	56.4	28.9	69.4	37.9

To achieve the minimum acceptable diet, a child should meet the minimum requirement for both diet diversity and meal frequency. It is noteworthy that only the municipality of Aurora was comparable to the national data of 68.2% of children who achieved minimum acceptable diet at 69.4% (Table 16). This is followed by Ragay with more than half of the children (56.4%) while the rest of the municipalities and cities had a lower percentages ranging from 29%-42% in the MDGF sites and 37-49% in the GAIN sites.

The 6-11 month old children had consistently the lowest proportion in achieving minimum diet diversity, meal frequency and acceptable diet.

Among those who were not breastfed, it was observed that the proportion of those who met the minimum milk feeding declined from 6 months to 23 months (Table 17). This was true for both the GAIN sites (80%) and MDGF sites (90%). This was also true for the different age categories.

Table 17. Frequency Distribution of Non-Breastfeeding Children and Percentage of Non-Breastfeeding Children Who Achieved Minimum Milk Feeding Frequency by Age Category and Study Site

Age Group in Months	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo-anga City	Ragay	Carles	Aurora	
Number of Non-Breastfeeding Children										
6-11	67	47	114	23	47	109	9	2	8	198
12-23	182	165	347	66	135	255	28	28	23	535
6-23	249	212	461	89	182	364	37	30	31	733
Percent Non-Breastfeeding Children Who Achieved Minimum Milk Feeding										
6-11	97.3	90.6	93.3	100.0	100.0	97.2	100.0	100.0	100.0	98.3
12-23	75.7	79.8	77.3	74.7	94.2	90.9	85.0	56.3	78.6	87.2
6-23	78.2	82.4	79.9	82.8	95.5	92.8	88.6	58.8	85.3	90.5

Note. Minimum Milk Feeding is defined as two or more milk feeding during the previous day

At three months of age, the iron stores begin to decrease and therefore, iron should be supplemented. The proportion of children who received iron-rich or iron fortified foods at age 6-11 months was low, with only 34.4% in the GAIN sites and 43.8% in the MDGF sites (Table 18). This increases up to65.3% and 73.9% among children 12-23 months in GAIN and MDGF sites, respectively. This may, in part, explain the high prevalence of anemia and iron deficiency among the children.

The 95% confidence intervals of the percentages of those who achieved minimum diet diversity, minimum meal frequency, minimum acceptable diet and consumption of iron-rich or iron-fortified foods are presented in Table A. 23, APPENDIX J.

Table 18. Percentage of Children Who Received Iron-rich or Iron-fortified Foods

Age Group in Months	GAIN Site			MDGF Cities			MDGF Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo anga City	Ragay	Carles	Aurora	
6-11	21.8	44.2	34.4	38.4	39.9	46.5	42.3	20.9	73.7	43.8
12-23	58.0	78.9	65.3	69.2	80.6	72.3	84.5	74.3	98.7	73.9
6-23	52.5	68.5	58.8	58.2	67.0	61.6	70.3	53.0	89.9	62.4

6.4.6. Vitamins and Mineral Supplements

Only about three fourths (73.6%) of children in the GAIN sites and only 62.2% of children in the MDGF sites reported to have received vitamin A supplements in the last six months at a clinic or health center or during a child health day (Table 19). Of interest is the low percentage of 6-11 month old children in the MDGF sites for both the cities and municipalities where only a little over 50% received the supplement.

In the MDGF sites, a high proportion of caregivers (99.2%) claimed to know that foods are full of vitamins (Table A. 24, APPENDIX J). There were less caregivers in the GAIN sites who ever heard of vitamins (86.1%) and know that foods are full of vitamins (92%). Surprisingly, Manila had the lowest proportion of caregivers who knew that foods are full of vitamins.

Table 19. Percentage of Children 6-23 months Who Received Vitamin A Drops in the Previous 6 Months at a Clinic, Health Center or During a Child Health Day According to Study Site

Age Group in Months	GAIN Site			MDGF Cities			MDGF Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
6-11	67.9	78.3	73.8	39.6	69.4	53.0	81.7	64.3	90.8	53.8
12-23	76.8	67.6	73.6	69.3	94.4	55.1	76.8	79.4	90.6	67.3
6-23	75.5	70.8	73.6	58.8	86.1	54.2	78.5	73.5	90.7	62.2

When asked whether the children are taking or have taken vitamin drops, syrups or tablets, only a small percentage of children were taking vitamin drops or syrups daily (Table 20). The most common reason for this is that they cannot afford it followed by the claim that the child no longer needs the vitamin supplement.

Table 20. Percentage of Children 0-23 Months with Vitamin Supplement Intake

Age Groups in Months	GAIN Site			MDGF Cities			MDGF Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
<6	-	-	-	46.9	84.1	66.0	71.4	61.4	79.4	66.3
6-11	59.9	70.3	65.8	58.4	85.8	60.1	58.1	40.2	85.2	63.6
12-17	50.1	70.3	56.6	39.3	86.0	49.1	47.7	29.0	52.7	53.3
18-23	43.1	59.1	49.3	32.6	83.6	54.6	43.4	40.2	72.5	53.5
12-23	47.2	64.9	53.4	35.8	84.9	51.8	45.3	35.4	64.4	53.4
6-23	49.2	66.5	56.0	43.8	85.2	55.3	49.6	37.3	71.7	57.3

On the knowledge about micronutrient powders (MNPs), only a few caregivers in the MDGF sites knew about MNP and it was only in the cities where a few caregivers have tried giving MNP (Table A. 25, APPENDIX J). More caregivers in the GAIN sites have heard and tried the MNP.

VII. RESULTS OF QUALITATIVE SURVEY

This section presents the age profile of the mothers and caregivers and the caregiver's relationship to the child. The key informants, on the other hand, are characterized in terms of their age, sex, job title and years in service. The results of the qualitative study are presented according to the major themes and sub-themes identified during the analysis of transcripts of FGDs and in-depth interviews. Thus, knowledge and beliefs of mothers/caregivers about breastfeeding and complementary feeding are presented as well as the mothers' reasons why mothers failed initiate early breastfeeding, why mothers were unable to exclusively breastfeed for six months and to gather insights why mothers engage in particular complementary feeding practices. No qualitative studies were done in the GAIN sites; thus the results are only applicable to the MDGF sites.

7.1. Respondent profiles

A mother FGD participant was 29 years old on average and had a 10-11 month old infant (Table 21). Mothers from the cities tended to be younger than mothers from the municipalities with the youngest (16 years) from Aurora and the oldest from Ragay (51 years). To ensure that accurate information on recent child feeding practices are collected, only mothers with infants and children less than two years old were invited to the FGDs (Table 21).

Some 28 mothers from Naga City, Ragay and Carles municipalities were asked questions about sources of information, preferred communication channels, and access to media facilities. They were also asked for specific IYCF messages that they reportedly received from health workers in public and private health facilities which they consulted.

Table 21. Age Profile of Mothers and Children Under Two Years Old

Site	No. of participants	Mother's age (in years)		
		Mean	Median	Range
Naga City	11	28.4	28.0	22-38
Iloilo City	13	27.8	28.0	17-41
Zamboanga City	8	28.0	27.0	23-34
Ragay	8	36.6	35.5	26-51
Carles	8	28.5	30.5	19-38
Aurora	10	29.9	30.0	16-47
All sites	58	29.6	29.0	16-51

Nine women from Zamboanga City participated in the FGD which tackled the topic on wet nursing. The practice of wet nursing appeared to be most common in this city compared with the other sites. The participants were either wet nurses themselves or mothers who had asked another lactating mother to breastfeed her baby. The participants were between 24 and 43 years old. On the average, they were 37 years old. To collect information about the how personnel of birthing facilities implement government policies/directives about early initiation of breastfeeding, 45 mothers who have delivered recently from the MDGF site were invited to FGDs whose main objective is to indirectly assess compliance to such directives. Only mothers who had delivered in the last six months were eligible to participate. The mothers were on average 25 years old and their last live birth was two months before the date of the FGD (Table 21).

Four FGDs among 36 caregivers of young children were conducted to collect information on their knowledge, perceptions and attitudes towards exclusive breastfeeding and complementary feeding.

Many of the caregivers who participated in the FGDs were grandmothers or aunts of the child; fathers, an uncle, and a grandfather came as well. Two nannies ('yayas') participated. A caregiver who joined the FGDs was 42 years old on average (Table 23).

Table 22. Age Profile of Mothers Who Recently Delivered by MDGF Site

Site	No. of participants	Mother's Age (years)		
		Mean	Median	Range
Aurora	8	26.4	23.5	20-35
Zamboanga City	6	24.8	23.0	18-38
Carles	8	24.8	24.5	19-33
Iloilo City	8	25.5	23.0	20-38
Ragay	8	28.6	28.0	18-37
Naga City	7	27.0	26.0	21-36
All sites	45	26.2	25	18-38

Table 23. Age Profile of Caregivers of Young Children by MDGF Site

Site	No. of participants	Mother's Age (years)		
		Mean	Median	Range
Zamboanga City	8	37.4	38	22-59
Iloilo City	12	37.1	31.5	21-59
Naga City	8	46.3	44.5	34-70
Ragay	8	49	51.5	22-64
All sites	36	41.8	40	21-70

To collect information about workplace policies regarding breastfeeding, working mothers who have recently delivered were invited to an FGD in Iloilo City. The original intention was to invite sales clerks who were directly employed by these big department stores. However, this was not possible because store policies dictate that they could not leave their posts for such activities. Thus, female workers of boutiques, kiosks and other mall tenants were invited to the FGDs, instead. Only contractual staff from the different stores or kiosks were able to attend the discussion. They had infants and have been employed only for 3-7 months at the time of the interview (Table 24).

Table 24. Profile of Sales Consultants in Selected Malls in Iloilo City

Establishment	No. of participants	Duration of employment (in months)		Age of youngest child (in months)	
		Mean	Range	Mean	Range
Gaisano City	3	5.7	4-7	5.3	3-8
Robinson's	1	3	-	4	-
SM Ledesma	2	7	7	5	4-6

Key informant interviews were also conducted in all six sites, with one to three health care providers or municipal officials involved in nutrition program planning --- barangay health workers, rural health midwives, public health nurse, and a Municipal Nutrition Action Officer (MNAO). To complement the information derived from working mothers, a shopping mall operations manager was interviewed to provide insights on the implementation of policies related to breastfeeding in the workplace.

7.2. Breastfeeding Practices

The following paragraphs presents data on what the mothers knew about the benefits of breastfeeding and their experiences related to early initiation of breastfeeding, exclusive breastfeeding, and continued breastfeeding. This section also presents the mothers' reasons why they were (or were not) able to initiate early breastfeeding, to exclusively breastfeed, or to continue breastfeeding after the child reaches one year old.

7.2.1. Early initiation of breastfeeding

This section of the report presents the FGD findings on the ability of the mothers to breastfeed the newborn within an hour after delivery as well as reasons why some of the mothers were unable to breastfeed soon after delivery. To better appreciate the mothers' predicament at the time of delivery, it was important to contextualize the mothers' responses by first finding out how much the mothers knew about the advantages of any kind of breastfeeding as well as the advantages of initiating breastfeeding early. Likewise, it was also necessary to ask the mother specific questions like where she delivered for her most recent pregnancy and whether or not the delivery was spontaneous (i.e., normal). The mothers who were unable to breastfeed within an hour after delivery were asked why they failed to do so.

Regardless of their own experiences with early breastfeeding, many mothers who participated in the FGDs offered insights on why they think some mothers are successful in initiating early breastfeeding while others are not. To supplement the mothers' responses, the caregivers were also asked the same question. The outcome of the FGDs was a listing of the existing knowledge, beliefs and practices on breastfeeding in general, on early initiation of breastfeeding, and perceptions why some mothers successfully breastfeed while others fail to do so. To complete the discussion, those mothers who failed to initiate breastfeeding early were asked what they did to address their problem.

Many mothers gave their babies prelacteal feeds and water, either plain or with sugar, the most commonly mentioned prelacteal feed. The practice of giving prelacteal feeds (sometimes pacifiers) to comfort the baby is an important issue since it may jeopardize the mother's ability to initiate early breastfeeding. These prelacteal feeds may satisfy the baby's sucking needs; thus the baby would no longer like to suck on the mother's breasts if they are offered afterwards. Because of the improper and unsanitary ways of preparing the prelacteal feeds, the newborns could be placed at an increased risk of infection.

7.2.1.1. Perceived benefits of early breastfeeding

According to the FGD participants, any kind of breastfeeding, not necessarily early initiation of breastfeeding, has many desirable effects not only to the baby but also to the mother. The mothers and caregivers mentioned several health, psychological and practical benefits of breastfeeding. Majority of the respondents cited the following positive health effects of breastfeeding --- provides essential 'vitamins' (nutrients) to the baby from the mother; baby gets the colostrum which is considered to be some kind of 'antibodies' and therefore, has protective effects; belief that giving colostrum is like having the baby immunized; the first milk from the mother is considered as 'medicine' which the babies need; and feeding the baby breast milk protects the baby from getting sick. The mothers also claimed that breastfeeding has some positive psychological effects such as breastfeeding promotes stronger mother-child bonding and that it gives the mother a sense of satisfaction.

Although many of the mothers were able to recognize the positive health and psychological benefits of breastfeeding, also many mothers cited the practical benefits of breastfeeding. Among these practical

benefits included the perception that breastfeeding is more economical than formula feeding. One mother from a municipality claimed that the baby will 'get used' to breastfeeding if the baby is breastfed right after birth. Many of the mothers' and caregivers' responses about the effects of early breastfeeding were very similar to the effects of any kind breastfeeding (whether immediate or late after delivery, exclusive or mixed feeding, long or short duration).

To better understand the context of the mothers' breastfeeding practices, specifically the early initiation of breastfeeding, it is helpful to initially present their perceptions about the effects of early initiation of breastfeeding. These perceptions are discussed in the succeeding paragraphs.

7.2.1.2. Mothers' perceptions and practices which may influence early initiation of breastfeeding

Some of the mothers thought that breastfeeding can be initiated anytime the mother wants and still get the benefits of mother's milk. Thus, they claimed that breastfeeding could start any time within eight hours after birth and that the baby can still get the benefits of colostrum. A few mothers thought that the 'first milk' (i.e., the colostrum) from the mother provides all the nutrients needed by the baby and this early milk is 'medicine' for the baby. Some mothers said that breastmilk has mild laxative properties and that the yellowish liquid is important because it has laxative effect on the baby. Many mothers believed that the babies need to purge whatever 'dirt' or impurities that the baby got while still inside the mother's womb.

To find out if the mothers knew when to begin breastfeeding, they were asked to describe the most common signs that they already have milk. They were also asked to enumerate common cues that indicate the baby is ready to feed. The following were some of the mothers' responses --- mother's breasts feel engorged, heavy and slightly painful; or milk drips from the mother's breasts; and baby becomes restless and cries, licks, sucks hand, salivates or roots for the mother's breast.

The mothers and caregivers who joined the FGDs also had beliefs/perceptions about early breastfeeding. For instance, some respondents in one city considered pregnancy as an illness and therefore, the mother may suffer from relapse ('*binat*'). This relapse may explain her failure to produce milk immediately after delivery. A few of them were concerned that breast milk, which is not fed right away to the baby or which is not expressed immediately, may spoil inside the mother's breasts. Thus they were likely not to give this milk to the baby. One mother believed that water, not milk, will flow from the mother's breasts when she breastfeeds the first time. 'Real milk', according to her, comes out of the breasts only two days after delivery. The mothers believed that experiencing painful breasts is common when breastfeeding the baby for the first time. Another belief among the women was that milk which stayed long in the breasts will 'harden' and this will cause the milk flow to be slow and scant. Many also believed that anxiety/depression or illnesses like asthma could be passed on to the baby through breastmilk.

These perceptions, rightly or wrongly, may affect the mothers' willingness and ability to initiate breastfeeding early. It is generally accepted that for infants to maximize the benefits of breastfeeding, newborns have to be breastfed within an hour after birth. In case the mother delivered by caesarean section, the recommended initiation of breastfeeding should be within 3-4 hours after delivery (RA 7600 Breastfeeding Promotion Act). This is to ensure that colostrum will be fed to the baby. There were various reasons why many mothers were unable to initiate breastfeeding within the prescribed time period, as described in the next section.

7.2.1.3. Reasons why mothers failed to initiate breastfeeding one hour after delivery

The most common reason why mothers were unable to breastfeed right after delivery was because they did not have milk or even if they did, the milk was insufficient to feed the baby. There was a mother, who was unable to breastfeed during her earlier pregnancy because she claimed she did not have milk (or enough milk) and she anticipated that she would also be unable to breastfeed her newborn for the same reason. Thus, this mother admitted that she brought formula milk and feeding bottles to the birthing facility.

Aside from the lack of breast milk, many mothers also claimed that they had breast abnormalities (e.g., inverted nipples) or they developed breast infection or sore that prevented them from breastfeeding the newborn. Interestingly, a few of the mothers thought the breast size is associated with the capacity to successfully breastfeed. For instance, some mothers believed that having too large breasts can cause the baby to have latching problems --- baby's mouth is too small to successfully latch to the breast. In contrast, some mothers believed that babies will also have latching problems if the mother's breasts are too small.

Many of the mothers who delivered by caesarean section were not able to breastfeed within the prescribed time. Likewise, sick mothers (e.g., those with hypertension) who were on medication were advised by their doctors not to breastfeed. Mothers who were sick or felt sick after delivery were also unable to breastfeed within the prescribed time. Although most of the mothers were able to breastfeed eventually, they missed to feed the baby within one hour after delivery (EO 51, 1986).

Another reason for failure to initiate early breastfeeding was that the baby got sick and had to be left behind in the hospital. It is recommended that babies who could not be breastfed should be given expressed breastmilk from the mother. However, only few mothers with sick babies reported being able to do this. Instead, the mothers suspected that their baby was given formula milk while in the hospital. The mothers also claimed that eventually the baby 'got used to bottle feeding' and did not want to breastfeed anymore.

There were special cases where the babies could really not breastfeed. For instance some of the babies born prematurely were too weak to suckle. Another baby born with a cleft palate could not suck. A mother who was unable to breastfeed asked a wet nurse to breastfeed her baby. However, according to the mother, the baby was unable to tolerate the breastmilk (i.e., the baby vomited); so breastfeeding by the wet nurse was stopped and the baby was instead given infant formula.

A few mothers said they were unable to breastfeed because their babies 'refused to suck on the breast'; however, some mothers did not agree with this. They reasoned that babies would suck instinctively when brought to the breast. It is difficult to say, however, if the mothers were just using this as a convenient reason to justify their failure to breastfeed right after delivery.

7.2.1.4. Prelacteal feeds

Since many of the mothers were advised by older relatives (e.g., mother, mother-in-law and grandmother), friends or neighbours, they gave their newborns prelacteal feeds. Water (plain or with sugar) or liquid vitamin supplements or even milk were given to the newborns through the use of cotton/cloth balls, droppers, or teaspoons. The practice of prelacteal feeds can jeopardize the early initiation of breastfeeding since the baby may not want to suck any longer because their 'need to suck/feed' had already been satisfied by the prelacteal feeds.

The mothers cited various reasons why they gave prelacteal feeds. Many said that babies, while inside the mother's womb could have ingested dirt/impurities. The prelacteal feeds would serve as laxative to purge the baby's digestive system. That cleansing has taken place is evidenced by the dark feces, the vomit, or the excessive saliva that the baby passes out.

7.2.1.5. What mothers did to address their lactation problems

The mothers reported resorting to some measures, some of which could be helpful, so they could breastfeed. It was not clear, however, if after resorting to these measures, the mothers were finally able to successfully breastfeed within an hour after delivery. Some of the mothers said they put the baby to their breast, even if they did not have milk, to stimulate milk production. A few of the mothers reportedly expressed breastmilk manually or with the use of a breast pump. A few mothers with inverted nipples were taught how to correct the problem by frequently 'pinching' the inverted nipple or to collect breastmilk using a syringe (Kasaree N). Some of the mothers said that they were taught by *hilots* or older family members to massage their breasts manually or with the aid of hair combs. These mothers were convinced that milk will not flow if the breasts are not massaged. Some mothers reportedly massaged blanched onion leaves on the breasts.

Many mothers said that they drank liquids or ate foods which are known to stimulate milk production. Examples of these were warm water, or warm coconut water (locally called '*tipong*'), beef/chicken/seashell soup, porridge or vegetables like *malunggay*, *alugbati* or young camote leaves. A few of the mothers were advised to take commercial herbal supplements, like *malunggay*, to stimulate breastmilk production.

There were also practices which were not at all helpful like some mothers who brought formula milk and feeding bottles to the birthing facility. To comfort the babies, they were given nipple dummies (pacifiers or pieces of cloth) to suck on.

7.2.2. Exclusive breastfeeding

Exclusive breastfeeding (or EBF) is defined as giving the baby only breastmilk for six months. Vitamin drops or medicines are allowed but nothing else including water (WHO and UNICEF, 2008). This section of the report presents the knowledge, beliefs and perceptions of EBF --- its advantages and disadvantages --- from the mothers' and caregivers' perspectives. It also discusses the reasons why mothers could and should exclusively breastfeed along with reasons why mothers could not do so.

Local studies have shown that many mothers give water or other liquids to their infants under six months of age, thus jeopardizing the practice of EBF. This section also presents the mothers' perceptions why infants are given water and other liquids aside from breast milk. The reasons why some mothers give vitamins to their infants are also presented.

7.2.2.1. Perceived advantages and disadvantages of exclusive breastfeeding

When the mothers and caregivers were asked about the advantages of exclusive breastfeeding, their answers were no different from their responses when asked for the advantages of any breastfeeding. Many of them said that breastfeeding in general promotes mother-infant bonding; that breast milk, aside from providing the complete nutrients that the baby needs, is fresh and safe (no bacteria, no harmful chemicals). Many mothers believe that breastfeeding protects the child from many diseases by boosting the child's immune system. Even if the child gets sick, these illness episodes will be mild and short if the baby is breastfed.

The majority of the mothers and caregivers agreed that breastfeeding the baby is economical since they do not need to buy the expensive milk formula. They also cited that breastfeeding is very convenient since the mothers do not need to get up at night to prepare milk formula. Thus, both mother and infant can sleep well. There is also the danger of incorrectly preparing the milk formula, as some of the FGD participants asserted.

Some mothers also believed that breastfeeding, including exclusive breastfeeding, could make the babies not only healthy and happy, but also children who will grow up intelligent and with good character.

Compared to the advantages of EBF, its perceived disadvantages were fewer but nevertheless important to the mothers. For instance, the concept of EBF for six months may not be feasible nor practical for working mothers. A few of the mothers were concerned that the poor quality of the mothers' diet may affect the quality of breast milk produced, which could jeopardize the infant's nutrition and health. (Other advantages and disadvantages of breastfeeding are also presented in other subsections of this report.)

7.2.2.2. Reasons why mothers failed to exclusively breastfeed babies up to six months

Although there were a few mothers who endorsed the practice of EBF for six months, many more doubted the merits and feasibility of this method of infant feeding. Mothers who perceived that this manner of infant feeding is feasible and appropriate, felt that babies could be exclusively breastfeed for six months because the mothers can produce enough milk for the baby's needs. They also believed that foods other than breastmilk may not be suited to the babies' underdeveloped digestive system and may put the babies at risk of infection. Although the mothers did not really disapprove of the idea of exclusive breastfeeding, they raised concerns about the merits of exclusively breastfeeding for six months, a period which many of them thought was too long.

There were two major reasons why mothers believe they could not exclusively breastfeed their babies for six months --- 1) they did not have any more milk or their milk was no longer enough for their baby's need, and 2) they needed to go back to work or to find work to augment family income. There were other but related reasons like the mothers' concern that breastmilk, even if the quantity is enough, might not be of good quality to provide the nutritional needs of the infants for what seemed to them a long period of time. The consequence of this belief is that infants tend to be exclusively breastfed for periods shorter than the prescribed six- month period.

Many of the mothers who had to go back to work were 'forced' to stop exclusive breastfeeding very early (usually after maternity leave ends --- 60 days for normal spontaneous and 78 days for ceasarean section delivery). Some of them decided to stop any breastfeeding altogether for, according to them, practical reasons. The mothers complained that they could not breastfeed (or were advised not to) when they are tired after coming home from work. Since they are away most of the day, many working mothers could only breastfeed in the evening after work. However, they were concerned that the baby could suck their 'exhaustion' (or anxiety/depression problems or infection in some cases) if they breastfeed and that this will not be good for the babies.

There were special cases where mothers who work outside their homes could still continue to breastfeed. A few who work close to home were able to go home at lunch time so they can breastfeed their baby. So they could breastfeed their baby at work, a few mothers had someone bring the baby to their place of work. A few mothers were concerned that the amount of milk they could express before leaving home for work may not be enough for a day and this forces the caregiver to give the formula

milk to the baby to supplement the expressed breast milk. Usually, most of these mothers will soon stop breastfeeding because their stop-gap measures to address the problem were inconvenient, expensive and therefore, impractical to sustain for a long period of time, say six months.

An extreme case was about a newly delivered mother in one city who had the courage to ask her employer for a flexible work schedule so that she could breastfeed her newborn. She claimed that her employer told her to bottle feed her baby if she wants to continue working. Several non-working mothers also considered exclusive breastfeeding as inconvenient during times when they get stressed and tired because of too much housework.

Many mothers believed that EBF was not enough so they started mixed feeding soon or giving complementary foods when the baby is less than six months old. An extreme case was a grandmother who introduced complementary food when the baby was only two months old. Some mothers were concerned that giving the baby nothing but breastmilk might cause the baby to become malnourished. Many of them perceived that babies are not satisfied with breastmilk alone; they also need to be given formula milk. They perceived that the quality and quantity of breastmilk might not be enough to sustain the baby's nutrition needs for six months. They claimed that they have seen posters on the 'food pyramid' at the health facility and used this as guide in selecting what food to give the baby.

There were other reasons why many of the mothers failed to breastfeed exclusively for six months. Among these were the mothers or the baby getting sick during which breastfeeding was temporarily suspended. The mothers claimed that after the illness, the baby would not like to breastfeed anymore since he/she got used to feeding formula milk from a bottle. Mothers who used breast pumps found it inconvenient to bring the pump and express milk whenever she leaves the house. Mothers said it is inconvenient when they need to leave the baby to do errands and they felt compelled to hurry home for fear that the baby will get hungry. A few of the mothers raised other perceived negative consequences of breastfeeding to the mothers themselves, like sagging breasts, looking old and unattractive and gaining weight. Others were bothered about their milk dripping, soiling clothes and smelling like spoiled milk the whole day.

Many mothers reportedly gave water, in addition to breastmilk, to babies less than six months. Thus the practice of giving water can jeopardize the positive effects of EBF. It is important to understand why mothers perceived the need to give water even if babies are exclusively breastfed.

7.2.2.3. Reasons for giving water to babies who are being breastfed

Mothers believed that babies need water to wash out the milk and clean the baby's tongue after breastfeeding and to remove the milk's 'after taste' including the feeling of '*umay*'. Many mothers thought that babies should be given water after giving breastmilk just like water is always added in preparing formula milk. Some mothers, however believe that water is necessary to purge out the 'old milk stored' (and probably spoiled) in the baby's digestive system. Many mothers also perceived that water is necessary to prevent the babies from getting dehydrated or constipated. They believe that breastmilk needs to be diluted with water so that the baby's urine will not be too concentrated which, according to them, may lead to kidney problems later in life.

Many mothers believe that since adults need water to quench their thirst, babies also get thirsty and likewise will need water. One mother thought that giving water to exclusively breastfed babies can help the child fight off infections and other illness. The mothers also believed that babies, even though they were exclusively breastfed, needed to be given water when baby is constipated, has fever (as advised by

a doctor) or hiccups. One mother said that she gave water to her infant because she felt that the infant needed water and for no apparent reason. She said she just wanted to give her baby water.

Many mothers hold on to a belief that mothers should offer both breasts when breastfeeding since one of the breasts provides milk and the other provides water. Although this is a misconception, this belief can actually support exclusive breastfeeding since the mother need not give water to the baby.

7.2.2.4. Breastfeeding in the workplace

In compliance with the directives of RA 10028 (Expanded Breastfeeding Promotion Act of 2009) which requires the establishment a lactation/breastfeeding station for lactating mothers, some of the big malls in Iloilo City have allotted a room in the mall for this purpose. We invited as FGD participants a few mothers who worked as sales clerks in these malls and who have children less than six months old. The ideal FGD participants are lactating women (e.g., sales clerks) employees of the malls. However, this was not possible since the sales clerks are not allowed to leave their post while on duty except for brief periods of time to use the bathroom or to have their lunch/snack breaks. Instead, the invitation for the FGD was extended to eligible women employees of mall tenants. These are owners of boutiques/booths inside the malls and employ one to two employees. The objective of the FGD was to assess the extent of utilization of the lactation stations among lactating women employees.

The FGD revealed that many of the women did not even know about the existence of the lactation station in their workplace. A few claimed that they heard about it from the health center staff where they live but they never had the opportunity to use the lactation stations. They claimed that they were not informed about this by the mall owners or their employers.

Many of the working mothers attempted to breastfeed their babies but many of them were unable to sustain breastfeeding for long. Before coming to work, some of the mothers express breastmilk to be given to the baby later in the day. Unfortunately, the milk is not enough for the baby's need for the day. Some of the mothers who lived near the malls went home at lunchtime to breastfeed. A few of them had the baby brought to them at workplace by relatives so they could be breastfed while at work. However, many of the mothers admitted that these stop gap measures were costly and impractical. They had to give up breastfeeding sooner than they intended. Although the mothers were employed, they usually did not enjoy the maternity leave privilege of regular employees. Thus, working mothers were very vulnerable to stopping breastfeeding early.

It is important to note that the breastfeeding mothers were unaware of the privilege afforded to them by RA 10028 Expanded Breastfeeding Promotion Act of 2009) so they used their lunch time hours to go home and breastfeed the baby. Even if the mothers were aware of this privilege, their employees will not allow them to leave their post to breastfeed. Many of the mothers said it was not possible for them to leave their post to breastfeed since no one will be left behind to man the booth/shop. One of the mothers claimed that she tried to negotiate for a flexible working hours so she could breastfeed her baby. Unfortunately, the owner did not agree to her request. The mother further claimed that her employer told her to bottlefeed the baby if she wants to continue working. Another mother was asked if she attempted to ask her employer for a flexible work hours so she can breastfeed. Being a new employee, she said she was not confident to ask for this 'privilege' from her employer.

7.2.2.5. Breastfeeding in public

How the society views the appropriateness of breastfeeding in public could largely determine whether the mother of a small child breastfeeds in public. There were some caregivers who stated that they felt

uncomfortable seeing mothers who breastfeed in public. They believed that mothers who are professionals should observe proper decorum and that exposing one's breasts in public, even if the reason is to feed the baby, is considered socially inappropriate.

During the FGDs, many mothers admitted that they were not comfortable breastfeeding in public places (e.g. church, workplace) or while in public vehicles. Sometimes, embarrassing experiences like having to breastfeed while standing in a public comfort room, can dissuade the mother from continuing breastfeeding outside the home. There were some mothers who would rather give formula milk to their children when they are outside their homes. The idea of breastfeeding in public makes many people feel uneasy.

Religion, aside from cultural beliefs, may affect community's norms of what is acceptable and what is not. Islam, for example, prohibits breastfeeding in public. It is considered a sin to expose one's body in public. Yet, a young Muslim mother who participated in the FGD felt that religious taboos become less important relative to the baby's immediate need to breastfeed.

To make breastfeeding in public more acceptable or tolerated by the community, some caregivers gave suggestions for mothers to wear clothes that would minimize breast exposure; using breastfeeding stations in the malls; expressing milk and using a feeding bottle; and, looking for a private place to breastfeed. These suggestions may help promote breastfeeding in public places including workplaces. Society's acceptance of breastfeeding, even in public, can motivate nursing mothers comfortable and confident enough to continue breastfeeding their children.

7.2.2.6. Human milk banks

The paragraphs below present the results of the focus group discussions among mothers of children under two. They were asked whether or not they were willing to donate or obtain milk from a human milk bank and their reasons for their preferences.

One of the questions asked during the FGDs was whether mothers of children under two were aware that some hospitals in large cities already have established human milk banks. Almost all FGD participants have not heard of the existence of human milk banks in their communities. There were, however, some mothers who were aware that milk banks have been established in some hospitals in other countries intended for mothers who are incapable of producing milk. One participant from Zamboanga City has heard of a hospital in the Philippines which accepts voluntary milk donations from lactating mothers.

Willingness to donate and obtain milk from human milk banks

It is interesting to note that not all the FGD participants were willing to donate their breast milk to these milk banks. Some mothers were willing to donate their milk but they were not willing to avail of milk from the milk bank for their baby's use. A few mothers preferred to donate their milk rather than serve as a wet nurse to some babies. Altruism was the main reason why some mothers were willing to donate milk. They said that they were willing to give their milk if this will help mothers who are unable to produce milk.

From the FGD results, it was apparent that there were two important factors that influence the mothers' willingness to obtain milk from breast milk banks ---- (1) the cost of donated milk; and, (2) the mothers' perception of the quality of donated milk. Most mothers, especially those coming from lower socio-

economic classes, were willing to give donated milk to their children if it will be made available for free to those who need the milk.

It was interesting to note that mothers who initially said they preferred formula milk over donated milk changed their minds when they were asked again if they would reconsider getting milk from the bank if the milk will be give free of charge. It appears that if the donated milk is not free, the main consideration for mothers would be its cost. Some FGD participants said they would prefer formula milk if the cost of donated human milk will be the same as commercially available milk substitutes.

The mothers' perception of the quality of donated milk was also an important factor that determines whether mothers would consider availing of milk from the milk bank. Some mothers believed that donated milk will be safe for consumption because of the processes (e.g., screening of donors, pasteurization of milk, etc.) that will safeguard the safety of the donated milk. Some mothers were convinced that the milk bank will not distribute contaminated milk. If this is the case, mothers would be willing to give donated milk to their children as long as the milk is guaranteed safe. On the other hand, there were a few participants who were concerned that milk from milk banks might contain preservatives or might be contaminated with hazardous substances. There was fear that the child might get sick despite the screening and other procedures that will be done on all donated milk units.

Aside from the safety of milk from human milk banks, there were other concerns which can affect the mothers' willingness to use milk from a human milk bank. For instance, a few FGD participants believed that milk from other mothers may cause the child to develop undesirable traits. Furthermore, giving the baby milk from other women may not be acceptable ("*hindi hiyang")* to the baby or the milk might not be able to satisfy the baby's needs.

Issues related to milk donation and breast milk banks

The first issue related to breast milk bank was the lack of awareness about its existence among mothers. Although a few big hospitals already have established milk banks in compliance to existing breastfeeding policies[1], not all mothers who participated in the FGDs were aware that obtaining milk from the milk bank is an option if the biological mother is incapable of producing milk or is unable to breastfeed the baby for reasons such as the baby/ mother is sick.

The mothers' willingness to obtain milk is also very much affected by cost of donated milk and their perceptions of the quality of donated milk. Although issues of safety were raised by many participants, the mothers were still willing to get donated milk from the milk bank if it is for free. Cost seems to be a major overriding concern and is more important than the perception of the quality of the donated milk. Mothers belonging to the lower socio-economic classes would prefer free donated milk over formula milk due to limited finances. On the other hand, if the price of donated breastmilk will be the same as formula milk, mothers prefer formula milk because they feel more confident about its quality and safety. Since many infectious diseases are common, mothers' fear that milk from milk banks might transmit any of these diseases. This was one major obstacle to convince mothers to use donated breast milk.

[1] Policies themselves will be discussed in a separate section entitled 'Supportive Environment

7.2.2.7. Practices regarding wet nursing

The practice of wet nursing

The focus group discussion involving wet nurses from Zamboanga City yielded important insights on why some mothers chose to wet nurse and some do not. During the FGD, most of the mothers who experienced being wet nurse themselves reportedly were approached by relatives who were unable to breastfeed their own babies or who had to leave the baby for work. Aside from relatives, their usual clients included neighbors, in-laws, and other wives if the husband is a Muslim. The duration of wet nursing varied depending on the situation of the mother. Some babies were wet nursed only for short periods of time until their biological mothers were able to produce enough breast milk since milk production is often delayed among newly delivered mothers. Another reason why the FGD participants chose to wet nurse was because they were concerned for the baby's welfare. They were sorry for the children who could not be breastfed by their mothers. Wet nurses could easily empathize with these mothers because if the situation was reversed, they would want other mothers to help them (the wet nurses) breastfeed their babies.

Many of the mothers who wet nursed did not expect to be paid for what they did. However, there were some participants who viewed wet nursing as a form of 'social investment'. Some mothers chose to breastfeed the children of relatives or neighbors who are working mothers like them. They believe that when the time comes for them (the wet nurses) to go back to work or do errands and leave the baby, she can also depend on these mothers to return the favor and breastfeed her baby in return. Being neighbours of a wet nurse offers the advantage of easy access to these wet nurses. Any time a wet nurse needs to leave behind her child, she can count on another wet nurse neighbour to feed and look after her child. Hence, it was common for wet nurses to have their own babies wet nursed by other lactating mothers.

Wet nurses also have concerns about health risks which could be associated with wet nursing. Many of the wet nurses chose to breastfeed only children of relatives, friends or neighbors. They want to protect the health of their own children so they want to ensure that they only breastfeed healthy children. Despite the fact that some wet nurses choose whom they will breastfeed, many mothers still believe that wet nursing should not be limited to babies of people they know (e.g., family members or neighbours). Many wet nurses have positive attitudes towards the practice of wet nursing and they were willing to wet nurse anyone's child who needs help.

Most mothers who participated in the FGDs value the practice of wet nursing. In Zamboanga City, wet nursing is considered a legacy – a practice passed down from mothers to daughters, from one generation to another. Muslims consider wet nursing as part of their culture and consider it as an act of kindness to others. On the other hand, the opportunity to wet nurse other women's baby provides the wet nurses the satisfaction that they are able to help other people.

Acceptability of wet nursing practice to the community

In general, wet nursing was acceptable to the community. Most mothers were willing to help other mothers overcome lactation problems. Wet nurses believed that all lactating mothers have the motivation and the capacity to wet nurse. According to the FGD participants, wet nursing offered a few but important advantages. First, wet nursing is economical since mothers need not buy expensive formula milk. The strategy can help mothers from low-income families who experience lactation problems. Second, the idea and the practice of wet nursing is appreciated by many mothers and as well as the family members. Wet nurses feel valued and trusted in their community.

7.2.3. Continued breastfeeding

Child nutrition experts recommend that breastfeeding should continue up to two years and beyond (UNICEF, 1998), (WHO and UNICEF, 2003), (WHO, 2003) . This section begins with a presentation of the mothers' perceptions about how long should breastfeeding last. It also presents the reasons why mothers continue to breastfeed as well as the reasons why they cease to breastfeed.

'Breastfeeding' in this case is defined as any breastfeeding regardless of the time of initiation, exclusivity, predominance, or duration. Most of the advantages of continued breastfeeding cited by the mothers were very similar to the advantages of any breastfeeding. Likewise, the reasons the mother gave for stopping breastfeeding were not much different from the reasons why mothers stop any breastfeeding.

7.2.3.1. Duration of breastfeeding

The mothers and caregivers who participated in the FGDs had different perceptions of how long a baby/child should be breastfed although several of them thought that babies should be breastfed until they reach the age of two years. Many had different ideas about how long babies should be breastfed ---- six months, two years, or three years. Some of the mothers even suggested that the baby should be breastfed for as long as the child wants or for as long as the mother has breastmilk. A few exceptional cases, where the mother breastfed up to five or six years, were cited. Although the mother may no longer have milk, breastfeeding this long was considered by the mothers to be 'desirable' since it will establish a very close relationship between mother and child.

7.2.3.2. Reasons for stopping breastfeeding

The reasons given by mothers for stopping any breastfeeding were more or less the same reasons given for discontinuing exclusive breastfeeding. These reasons include the absence or lack of breastmilk, the need for mothers to go back work or school or to find work; the baby got sick, hospitalized and breastfeeding was not possible; and situations where the mother got sick and took medications that could be potentially harmful to the baby.

Breastfeeding for a long time contributed to failure to establish proper eating habits among the young children and this was reason enough to stop breastfeeding. The mother can also get pregnant once again and her new pregnancy may force her to prematurely stop breastfeeding the youngest child.

Some of the FGD participants admitted that breastfeeding in public is embarrassing and bringing the baby every time the mother leaves the house is inconvenient. A mother said that this problem could be easily addressed by feeding the baby formula milk through a bottle.

There were also perceptions among the mothers which could jeopardize the practice of continued breastfeeding. Two mothers from different sites claimed that breastfeeding has to be stopped when the child reaches two years old; otherwise they said that blood or 'something else, other than milk,' will flow from the mother's breasts.

7.2.3.3. Reasons for continuing breastfeeding

Many mothers who were present during the FGDs supported the idea that breastfeeding should be continued as long as possible so that the baby can benefit from nutrients offered by breastmilk. Breastfeeding was considered as a supplement to complementary feeding. Many mothers also believe that infants and young children may not be able to digest regular table food so they need to be breastfed thus continued breastfeeding is beneficial to these infants and young children.

The mothers believed that babies need to be breastfed especially during critical stages in the baby's life, like during illness, or when they start teething. Breastfeeding is important since babies are very vulnerable to illnesses during these periods.

While the experience of painful/sore/engorged breasts was a fairly common reason cited by mothers for stopping breastfeeding, the same reason, however, was mentioned by some mothers when they were asked why they chose to continue to breastfeed. Some mothers believed that continued breastfeeding will eventually heal breast sores. Thus, breast problems could affect both breastfeeding cessation and continuation.

7.3. Complementary Feeding

This section presents the results of the FGDs with regard to complementary feeding practices which include 1) perception of child nutritional requirements; 2) perceived reasons for giving complementary foods; 3) timing of introduction of complementary food; 4) popular local complementary foods; 5) considerations in selecting complementary foods; and 6) knowledge, attitudes and beliefs regarding complementary feeding.

7.3.1. Perception of a child's nutritional requirements

Many mothers who joined the FGDs believed that at a certain age, giving breastmilk alone is no longer sufficient for the baby's nutritional needs. The mothers believed that at this stage of development, the child is no longer satisfied with just breastmilk or because the baby needs other food. The mothers, however, had different ideas when complementary food should be introduced. Many mothers believed that the baby should be given complementary food when he/she turns four months old. One caregiver said that CF should be given once the baby turns two months old; others say liquid or semi-solid food should be introduced at 3, 4 or 5 months. One mother, however, believed that since she had abundant breastmilk, she first introduced complementary food when the baby was already one year old.

When and what complementary food will be introduced depends not only on the mother but also on the influence of other members of the family, including mothers or mothers in law, or even grandmothers. Some mothers perceived that introducing complementary foods early will help prepare the child for solid foods he/she will eat later.

7.3.2. Popular complementary foods

The most commonly mentioned were carbohydrate foods (e.g., rice porridge, rice, bread, noodles or root crops) and animal protein-rich foods (milk and eggs, pork/beef/chicken, fish) or legumes (e.g., monggo, string beans). Vitamin A-rich foods like squash and carrots as well as iron-rich foods like *malunggay*, egg yolks, were popular choices. However, cereals/grains were by far the most popular complementary food.

7.3.3. Factors influencing the choice of complementary foods

It appear that cost, nutritional quality, availability and 'acceptability' of the food to the children are major factors that mothers and caregivers consider in selecting complementary foods. During the FGDs, the mothers consistently emphasized the importance of cost in the choice of complementary feeds. Although the mothers/caregivers unanimously agree that food should not only be nutritious but also affordable. Availability of the food meant whatever food is available at home should be good enough as complementary food. The food was considered acceptable to the child if the food could be adequately

digested by the baby. The mothers/caregivers were concerned that the digestive system of the infants is still not fully developed and thus may cause digestion problems.

The mother's information and/or advice regarding complementary feeding usually came from family members (e.g., mothers, mothers-in-law, grandmothers) and/or also from different health personnel. Mothers and caregivers also cited IEC materials (i.e., Go, Grow, Glow poster) in health facilities as sources of information on what food to give to children. Television and the internet were also mentioned as sources of information especially on processed/commercial complementary foods.

Caregivers claimed that they could suggest to the mothers what complementary foods could be given to the child. However, they emphasized that it was usually the mother who decides what food to give the child and they just follow the mother's instructions. . An exception to this finding was a case of a grandmother who said that she introduced complementary food to her grandchild at the age of two months. The grandmother perceived that her daughter-in-law did not know how to care for the baby.

7.4. Supportive Environment

7.4.1. Role of family in supporting good IYCF practices

Very often, family members and caregivers can, directly or indirectly, influence the child's feeding practices. Thus, representatives of family members and caregivers --- parents, grandparents, mothers-in-law, husbands, siblings and other adult relatives --- were invited to join the focus group discussions.

Support given by caregivers/family members to mothers

It was apparent during these FGDs, that there were different types of support that were extended by family members and caregivers to the mothers of infants and small children. The support included financial, moral support or just simply giving advice on many aspects of infant and child feeding (e.g., the importance of early, exclusive and continued breastfeeding; healthy diet for both mother and child; measures that can be taken when breastfeeding problems are encountered including how to increase milk production). Support also came in the way of caring for the child when the mother is sick or when she leaves for work or to do errands. Some of the caregivers reportedly provided the mothers with vitamin supplements for the baby and other 'baby stuff' including milk samples from doctors. Many caregivers believed that young and first-time mothers are inexperienced thus they need guidance in raising a child.

Expected roles of caregivers

When asked what their expected roles were as caregivers, they mentioned roles that are useful for specific stages of the mother's pregnancy. For instance, during pregnancy and right after delivery, the caregivers are there to advise mothers on the importance of having regular prenatal consultations at a health facility. After giving birth, they help care for the other children while the mother is recovering from delivery. After delivery, the caregivers' role included advising/accompanying the mother for prenatal consultations at health facility and helping care for other children while the mother is away.

Specifically, the major role of a caregiver included the following activities --- advising the mother on proper nutrition; ensuring that the baby is fed healthy food; advising the mother on the appropriate time and right kind of complementary food to introduce; feeding the child (e.g., giving infant formula) while mother is at work; preparing food for both mother and child; and in the case of parents and parents-in-laws, providing financial assistance to buy milk for the baby and food for the other members of the family.

It was quite ironic that although the mothers were fully aware of the economic benefits of breastfeeding, financial status was still a major determinant in the decision to continue breastfeeding. Work was still a priority for the mothers over staying at home to breastfeed. One caregiver said that the mother's reason for working was for her to have resources to buy milk for her child.

Unclear delineation between the role of the caregiver/family member and the mother was a common source of conflict. Many mothers during the FGDs said that family members, most especially the grandparents, give unsolicited advice or actually interfere with the child's upbringing. The mothers complained that the elders tend to presume to know better than the mother with regard to the child care. One grandparent said during the group discussion that she felt that her daughter-in-law does not know how to feed her grandchild or does not listen to her advice. Because of this the grandparent took over the role of deciding what foods are appropriate for her grandchild. Mothers, on the other hand, were worried that the grandparents will spoil the children in the process. Mothers have observed the children and the grandparents become too attached to each other when they allow the grandparents to have a direct hand in child care.

Grandparents and other family members may displace the mother in the feeding and caring for her child, replacing her as the primary caregiver. This problem is common among many Filipino mothers who still live with their parents or in-laws. According to a mother, such situations made her feel that she is 'no longer a mother'.

7.4.2. Mothers' accounts of compliance of birthing facilities and workplaces with policies/directives that support proper IYCF practices

The birthing facilities and their health workers as well as the management of workplaces can create environments that will allow nursing mothers to observe proper IYCF practices. One objective of this baseline study was to describe the health facility, community and workplace capacities, activities and structures that support proper IYCF. From across all FGD groups, information were collected that could indicate whether policies or protocols supporting IYCF practices are being implemented. However, since the information were self reports of mothers and reflect only the mothers' perspective. There were no attempts on the part of the researchers to verify whether or not the mothers' reports were valid.

This section presents FGD findings that are suggestive of compliance or non-compliance to the following policies/protocols: --- Baby-Friendly Hospital Initiative (BHFI)[i]; Essential Newborn Care Protocol[ii]; RA 7600 or the *Rooming-in and Breastfeeding Promotion*[iii]; RA 10028 or the *Expanded Breastfeeding Promotion Act of 2009*[iv]; Labor Code of the Philippines[v]; and EO 51 or the *Milk Code*[vi]. All these policies, protocols, directives, support directly or indirectly, proper infant and young child feeding practices.

According to the BFHI, all hospitals should be accredited as Mother-Baby Friendly and implement the global criteria recommended by UNICEF/WHO. The following situations/activities reported by the mothers during the FGDs imply that hospital workers comply with BFHI provisions such as:

- Compliance of hospital staff with mother-friendly labor and birthing practices such as delayed cord clamping.
- Health workers encouraged mothers to breastfeed immediately after giving birth
- Health workers and including some TBAs (*hilots)* provide mothers who had newly delivered information through seminars conducted at the hospital

- Health workers assist most mothers to initiate breastfeeding within the prescribed time
- Existence of hospital policies prohibiting bottles/pacifiers and formula milk inside the hospital premises.
- Hospital staff enforce the Milk Code, i.e., hospital staff confiscates bottles or pacifiers

It appears from the mothers' accounts that hospital physicians encouraged mothers to initiate breastfeeding early. As a policy, all health workers, in the health centers and hospitals were required to provide all pregnant women information about breastfeeding during prenatal and postpartum check-ups (WHO, 2009). According to the mothers who participated in the FGDs, the health workers (e.g. doctors, nursery staff, midwives), including some *hilots,* provided them information on the importance of early initiation of breastfeeding and the giving of colostrum; proper nutrition for mothers; and the benefits afforded by breast milk. One hospital in Bicol informed the mothers about breastfeeding, behavioral feeding cues and proper breastfeeding techniques through seminars held at the hospital.

Also in accordance with BFHI effort, mothers were taught about lactation management. In some sites, mothers with lactation problems such as inverted nipples were taught how to use a syringe to express breast milk. Policies that support breastfeeding were prominently displayed in some of the government hospitals and health units visited by the research investigators.

The hospital staff also enforced the Milk Code by confiscating bottles/pacifiers by the staff. In one city, one mother reported that she brought bottles and pacifier to the hospital and hid them from the nurses because she was aware that the staff would confiscate them if they are discovered. In another city, one mother said she was confident that her baby was not bottle fed while in the hospital nursery. These indicators suggest that most (if not all) the hospitals in the MDGF sites have their own breastfeeding policies in support of the different policies/directives of the government.

Related to BFHI and RA 7600 as well as other policies supporting breastfeeding, the Department of Health implemented the Essential Newborn Care Protocol (DOH/WHO, 2010). Just like BFHI, this protocol also advocates delayed cord clamping and early skin-to-skin contact between infant and mother at the time of delivery (Silvestre, 2010). Many mothers included in the FGDs recounted that immediately after delivery the physicians (and some *hilots* in cases of home delivery) placed their newborn infants prone on their chest or abdomen. Although these procedures were suggestive of compliance to the above policies/directives, many mothers could not accurately recall exactly how long after delivery (ideally within 30 seconds) before the birth attendant facilitated early skin-to-skin contact between mother and newborn.

Executive Order 51 or the Milk Code of the Philippines aims to promote and protect breastfeeding by regulating the marketing and distribution of breast milk substitutes (EO 51, 1986). Thus, health facilities and the workers are required to enforce/observe the Milk Code and should in no way provide mothers with promotional milk samples (EO 51, 1986). The sole indicator gathered from the FGDs that this policy was being implemented was the report of almost all mothers that they were not offered milk samples by any milk formula representative while the mothers were inside the birthing facility.

Republic Act 10028 or the Expanded Promotion Act of 2009 is an amendment of the Rooming-In and Breastfeeding Promotion Act. It mandates that all health and non-health facilities, including workplaces, should establish lactation or breastfeeding stations (RA 10028, 2009). It specifies the establishment of the station including the necessary amenities. For this study, compliance to RA 10028 was indicated by

the presence of these lactation stations in big shopping malls in two selected cities --- Iloilo City and Naga City. During the in-depth interview, the manager of a big mall in Iloilo reported that the station was not only open to their employees who are nursing mothers but also to customers who would like to use it. She added, however, that the breastfeeding station in her mall was not being used by lactating mother-employees; in fact it was mostly used by mall shoppers. She concluded that employees were not interested to use it since they ignored the invitation of the management to attend the orientation about the breastfeeding station.

In relation to the establishment of lactation stations for working mothers, the Labor Code of the Philippines Articles 130-138 specify the mandated maternity leaves for working and pregnant mothers (Labor Code 130-138). In this study, only information on maternity leaves was obtained in Iloilo City from the in-depth interview with a mall accounts manager. According to the manager, the store management observes the provisions of the Labor Code with respect to maternity leaves --- i.e., 60 days for normal and 78 days for caesarean section deliveries.

Although there were indications that suggest compliance with government policies regulating working conditions for pregnant and nursing mothers, there were also indications that compliance with such regulations was not universal. For instance, some mothers, especially those who delivered by caesarean section, were not able to initiate breastfeeding within the prescribed time period; and there were mothers who reported that were unable to breastfeed immediately and the nursery staff gave their newborns formula milk or pacifiers. One mother claimed that she was provided with bottles by a hospital staff. All these claims could not be verified by the research team, though.

7.5. Communication Environment

Health Promotion is the process of enabling people to increase control over and to improve their health (Tobacco-Free Initiative & Health Promotion Unit, WHO, 2003). This involves providing people with timely, consistent and reliable access to knowledge essential to effect change (WHO, 2009).

Different communication channels can be utilized for health education. These include the use of printed materials, electronic mass media, face-to-face interaction, group delivery and community interaction. (Sabogal, Otero-Sabogal, Pasick, Jenkins, & Perez-Stable, 1996) Studies have shown that the use of multiple communication channels with age- and context-specific messages is effective in the promotion of proper breastfeeding practices. In order to foster lasting behavioural change, these messages should be consistently delivered, mutually reinforced by health providers, communities and different types of media, and frequently provided to the target populations (UNICEF, 2010).

7.5.1. Communication channels, sources of information and messages received

The following section provides an overview of the environment through which information related to Infant and Young Child Feeding is being disseminated through different communication channels in the six study sites. It also presents the different IYCF related messages that the mothers reportedly received from the heath workers in the health centers or birthing facilities. The source of the information and the accuracy of the messages were not verified by the researchers, however.

7.5.1.1. Prenatal care

Almost all the mother who participated in the FGDs claimed that they had prenatal care. The mothers reported that they had their first prenatal consultation visit during the first to the sixth month of their most current or last pregnancy. (However, this particular information was obtained only from Aurora FGD respondents.) Information on the compliance to the scheduled visits was not obtained.

The health center was the most commonly cited health facility where mothers received prenatal care. Other facilities to which the respondents went to were private clinics, private hospitals and government hospitals. Pregnancy examinations were mostly conducted by midwives in the health centers and physicians in the hospitals.

The types of information provided to the mothers during these consultations were also determined. According to them, the importance of taking ferrous sulfate and other vitamin supplements during pregnancy was stressed during these visits. Nutrition counseling was also provided to the pregnant mothers.

Advice on the importance of early initiation of breastfeeding and the health and practical benefits of breastfeeding the child up to two years were provided to the mothers in some sites. In contrast, some mothers in one site reportedly did not receive any information during their prenatal consultations. This gap has been filled-in by the mothers themselves by reading books or materials from the internet. Some were also able to recall seeing printed IEC materials related to breastfeeding and maternal and child care posted at the health centers.

The success of channeling information from the messenger to the recipient, however, does not depend on the existence of information sources alone. Another factor to be considered is the reception of the target audience. One instance worthy of note was relayed by a mother in an FGD session in one municipality. The participant admitted that did not seek prenatal consultation for her youngest child. Although she eventually had seven children, she reportedly received prenatal care only for her first pregnancy. She reported consulting a health center for prenatal care but she visited this center only twice. The mother alluded to an unfavorable personal experience as reason for refusing to go back to the same clinic for her subsequent pregnancies. The experience seemed to be so traumatic for her. She added that she was 'too busy' as reason for not consulting. In addition to her negative experience and busy schedule, embarrassment also seemed to play a huge part on her decision not seek consultation. Although the issue was not discussed at length, the mother seemed embarrassed by the fact that she has too many children, which was perceived by others as too many even by rural standards.

7.5.1.2. Early initiation of breastfeeding

Depending on the place of delivery, birth attendants were the most commonly cited sources of information related to early initiation of breastfeeding. Mothers who gave birth in health facilities were advised mainly by doctors, nurses or midwives, while those who gave birth at home received information from *hilots* or midwives. Other less common sources of information included elders and other relatives.

Most of the participants in the FGD for newly delivered mothers were advised on the importance of early initiation of breastfeeding. One government hospital in Bicol had an innovative way of encouraging and promoting early initiation of breastfeeding among newly delivered mothers. To ensure that these mothers know how to breastfeed, they were required to attend a breastfeeding seminar and to demonstrate to the nurse-trainors firsthand that they actually breastfed their newborn. Only then were they given a "star" which served as an 'exit pass' to indicate that the mother-infant pair was ready to be discharged. Even mothers who experienced difficulty during the initial breastfeeding because of apparent low milk production were not allowed to leave until they were able to successfully breastfeed.
Another mother reported not having been advised by her obstetrician-gynecologist (OB-GYNE) about early initiation of breastfeeding. The mother figured that since he was the same doctor for her previous

three pregnancies, the doctor 'assumed' she will breastfeed her youngest child as she did with her previous children.

Similarly, deliveries at home share the same obstacles when it comes to proper newborn feeding. While some mothers were encouraged by *hilots* to put the baby to breast immediately after birth, some mothers recalled not having been able to breastfeed immediately due to apparent poor milk production. This may imply failure on the part of the birth attendant (*hilot* or midwife) to encourage the mother to let the baby continue to suckle to stimulate milk production and to impress upon the mothers that newborns do not require so much milk since their stomach is still very small.

7.5.1.3. Exclusive breastfeeding

Health centers were still the most commonly cited health facility where the mothers received information on breastfeeding, particularly on exclusive and continued breastfeeding. This time however, barangay health workers and midwives were the major channels of communication. Other sources of information mentioned were doctors, nurses and nursing students in hospitals and private clinics.

Giving of water to babies less than six months old was one of the most common obstacles to exclusive breastfeeding among the mothers included in the FGDs. Ironically, based on the account of the participants, the advise to give water to babies came from their doctors This information, however, was based on the mother's claim and could not be verified since no actual interviews were conducted with doctors in the sites. Regardless of the accuracy of the mothers' claims, what is of utmost significance is that this wrong information has been retained by the mothers.

Another popular belief among the FGD participants across the sites was that one breast of a lactating mother contained food or milk, while the other breast contained water. This belief was handed down mainly from older relatives of the mothers. While this may not have scientific evidence, this perception may facilitate proper infant and young child feeding practices as it encouraged the practice of feeding from both breasts. Another way this popular belief might be useful in the promotion of exclusive breastfeeding is that the mothers may feel that giving of water to babies less than six months old is already unnecessary since water is available already from the mother's breasts.

7.5.1.4. Continued breastfeeding and any kind of breastfeeding

The mothers and caregivers who participated in the FGDs were also able to provide other general information about breastfeeding, such as its benefits, situation where breastfeeding is not advisable, and the proper techniques in breastfeeding. The reported sources of information were health personnel, relatives and friends. Some of the participants were also able to recall information seen in posters and pamphlets.

The participants were also asked what they think is the optimal duration of breastfeeding. Most mothers thought that two years is the ideal duration of continued breastfeeding. One mother even quoted "Breastmilk is still best for babies up to two years", a popular slogan printed on boxes of formula milk.

7.5.1.5. Bottle-feeding

Since the practice of bottle feeding is a threat to breastfeeding, the factors which influence bottle feeding were also asked from the FGD participants. They said that the decision on which brand of formula milk to buy was influenced by the doctor, the husband, or other relatives. Reading materials, internet access and television advertisements were also factors affecting the mothers' decision on which particular milk formula to give their children.

7.5.1.6. Complementary feeding

The most frequently cited sources of information on complementary feeding were health centers, private clinics and the community where these mothers live. Information or advice about complementary feeding is generally received from relatives, in-laws, elders and even doctors. The participants also reported having read pointers on complementary feeding from printed IEC materials such as posters and pamphlets and from television advertisements.

The types of complementary food which could be given were mainly influenced by advice received from elders and in-laws. Television advertisements also played a role in influencing the choice of the mothers. Other mothers were able to recall seeing posters about the food pyramid and the 'Go, Grow and Glow' list of foods in private clinics.

Some participants in one site, however, brought up the issue on lack of IEC materials on complementary feeding. They felt that there was inadequate information on children's feeding needs. Most of the existing IEC materials were mostly related to breastfeeding. Likewise, only brief verbal advice on which food should not be fed to the child was given during doctor consultations.

Another major issue that was identified in the FGDs was the apparent misinformation on the proper timing of introduction of complementary foods. Some mothers were advised to start feeding the baby soft or semi-solid foods at six months, while others were informed to start as early as two months after delivery. Others were even informed by the midwife to introduce complementary food at four months.

7.5.1.7. Response to lactation problems

The mothers generally turned to relatives, in-laws and elders for advice when they encounter lactation problems. Other cited sources of information were *hilots*, doctors and friends.

The most common advice received by mothers in response to apparent poor milk production was to drink broth and other liquids, and eat *malunggay* and seafoods. Other suggestions were to use a breast pump, use the syringe technique for mothers who have inverted nipples, and to let the baby suckle to stimulate milk production. Massaging the breasts by hand or by use of a comb was also suggested to stimulate milk production. Taking medications to stimulate milk was also mentioned.

7.5.2. Potential breastfeeding advocates

Based on the responses collected during the focus group discussions, there were other persons aside from doctors and nurses who could be tapped as potential breastfeeding advocates. Among them were the barangay health workers, midwives, hilots or traditional birth attendants or even family members.

Most of the mothers go to the health centers for consultations and other medical advice, making the barangay health workers a very significant influence on proper infant and young child feeding. They were also considered as peers by the community members, therefore, making them very accessible and approachable. One mother even went on to say that the information she receives from barangay health workers and midwives are accurate and reliable since these persons work in a health facility.

However, based on the KIIs conducted among barangay health workers and midwives, it was found out that not all the health personnel were appropriately trained on lactation management. Thus many of them still had inadequate knowledge about policies supporting breastfeeding and many lacked knowledge about proper infant and young child feeding practices.

One barangay health worker felt that they needed continuing education for them to be updated with current developments in lactation management. She suggested giving refresher courses for older staff and training courses for younger health workers.

Family members are also major influencers in both breastfeeding and complementary feeding. Even when they already have families of their own, Filipinos still depend on family members and elders for advice and support. This might stem from the Filipino culture of maintaining close family ties by having extended families in one household, or at least by living in close proximity to each other. From the results of the group discussions, it can be inferred that parents and other caregivers played a role as significant influencers on the mother's decisions on her feeding her children.

Another group to whom mothers turn for advice was the local *hilots*. Three most common reasons why mothers go to *hilots* were --- '*pagpapahilot'* which is an accepted tradition; it is cheaper than going to a doctor; and the treatment is as effective as those given by a doctor.

Some participants believed that the local *hilots* had been trained in delivery and care of newborns by the health center staff. The mothers/caregivers also considered *hilots* as knowledgeable in what they do because of their long years of experience and from what they learned from more experienced *hilots*. When asked why they still prefer to consult *hilots* despite the fact that midwives are available at the health center, the participants responded that it was a more convenient arrangement for them. *Hilots* were very accessible because they live in the same community. Also, in connection with their belief that pregnant mothers have to undergo massage (*hilot)* They perceived that this massage is important to 'correct' the position of the baby to facilitate normal delivery, They doubted that nurses can perform this procedure correctly. Thus they preferred to get the services of a *hilot* at the very start than pay a nurse and later a *hilot* to do the massage.

Aside from pregnancy and breastfeeding concerns, mothers also consulted *hilots* initially before other health professionals. If their children get sick or if they have '*pilay'* (pulled muscle or tendons), the mothers would first seek a *hilot's* advice Thus, to cut down on costs, mothers generally turn to the *hilots* for medical advice, thinking that the advice/management they receive from them are as good as those given by professional health care providers.

VIII. DISCUSSION

The following paragraphs present issues and concerns that emanate from the results of the IYCF Baseline Study. These issues/concerns relate to the prevalence of underweight among under-two children and the prevalence of anemia among children six to 24 months old. It also presents concerns about the validity of the biochemical test results. Additional comments about breastfeeding --- early initiation of breastfeeding, exclusive breastfeeding for six months are discussed. Finally concerns about the quality and quantity of complementary foods given to children 6-24 months old are presented.

The problem of under nutrition among children 0-23 months

The problem of undernutrtion among children 0-23 months was high. The prevalence of underweight-for-age among children 0-23 months were between 12 to 22% in five of the six MDGF sites and slightly higher in the two GAIN sites (i.e., between 17 to 23%). Although there are no available national figures for children in the same age group, the prevalence of underweight-for-age in the study sites were almost comparable to the national prevalence of 21% among children less than five (FNRI, 2009). The

prevalence of underlength-for-age/stunting in the research sites were even higher than the figures shown above. One to two children out of five (20- 37%) in the MDGF sites were small for their age; the corresponding figure for the GAIN sites were higher. Between 30-37% of the target children in the GAIN cities were small for their age.

The most common cause of nutritional anemia is iron deficiency although it can also be caused by other nutrient deficiency (folate, vitamin B12) and other conditions (infection, inflammation). The prevalence of micronutrient deficiency in the study population was also high. The prevalence of anemia was 58% in the GAIN sites. However, the prevalence was highest in Manila (66%) compared with any of the sites. The very high prevalence of anemia among children 6-11 months infants in Zamboanga City (70%) deserves mention. Overall, the prevalence of anemia was consistently higher among the 6-11 months old infants than the 12-23 months old children. The prevalence of Iron deficiency anemia was higher in the GAIN sites (33%) compared to the MDGF sites (18%).

Vitamin A deficiency is a public health problem in both the MDGF and GAIN sites. This again may be explained by the low intake of vitamin A rich fruits and vegetables in the areas studied. Moreover, not all children were reported to have received the high dose Vitamin A capsule from a health facility or during a child health day. The prevalence of VAD was found to be higher than that of the national figure of 15% (FNRI, 2009). It should be noted that the prevalence of VAD was obtained using a correction factor taking into account the presence of inflammation which can affect the vitamin A status. There was no correction done in the national survey. Based on AGP, about 75% of children in the GAIN sites and 72% in MDGF sites had inflammation while 13.4% (GAIN sites) and 16.3% (MDGF sites) had inflammation based on CRP (Table A. 18, APPENDIX J).

Possible determinants/causes of undernutrition

Both the quantitative survey and the qualitative studies provided insights on the possible causes of this important public health problem. The most significant cause of this undernutrition problem among the target children was probably the inadequate breastfeeding that occurs in these communities. The study revealed that in some sites, as many as 12% of newborns were not breastfed at all. The data also showed that breastfeeding was often not established early after delivery, and if it was, it was often short and not exclusive. Many mothers who breastfed also gave water or formula milk to the infants less than six month-old thus are undermining the benefits of exclusive breastfeeding. In addition many mothers (and caregivers) introduced complementary foods to the baby too early and stopped breastfeeding too soon. Many of the mothers and caregivers also failed to give the young children variety of foods or feed them according to the recommended frequency appropriate for their age.

Breastfeeding Practices --- ever breastfeeding, early initiation of breastfeeding, exclusive breastfeeding, and continued breastfeeding

Interestingly, the reasons given by the mothers for their failure to ever breastfeed, or to initiate early breastfeeding, or to breastfeed exclusively for six months, or to continue breastfeeding beyond one year, were more or less the same. These reasons include the perception that the mother's milk supply was not enough for the baby's need, the mother needs to go back to work, or the mother experienced breast/nipple problems or simply that the child 'refused' the breastmilk. Unfortunately, the investigators were unable to probe deeper for the real reason why mothers perceive that their baby did not like mother's milk.

The proportion of mothers who were able to initiate early breastfeeding was lowest in Manila (23%) and in Zamboanga City (40%). It was learned during the dissemination that many physicians in Zamboanga

reportedly prescribe formula milk to mothers who delivered in private hospitals. Surprisingly, these same physicians were reported to also promote breastfeeding to mothers who deliver in government hospitals. In Naga City, three out four mothers were able to initiate breastfeeding early. This could probably be attributed to the strict hospital policy of not discharging the mother if she is unable to breastfeed her baby successfully. Many babies were given prelacteal feeds. These feeds may jeopardize the success of early breastfeeding since they may reduce the baby's suckling needs and they may also put the babies at risk of infection of these feeds were not prepared hygienically.

The quantitative survey revealed that between 53% (Cebu City) and 78% (Carles) of mothers interviewed were still breastfeeding their babies based on the 24-hour feeding recall; however, only 7% of these mothers were able to breastfeed exclusively in the last 24 hours. During the last 24 hours, almost one quarter (24%) of children less than two years were no longer breastfed and only 22% were being breastfed exclusively. Aside from receiving breastmilk, 20% of these children under two were also given plain water; 22% given formula milk, and 10% already fed complementary food. Thus the period of exclusive breastfeeding appeared to be shorter than six months and the proportion of babies being exclusively breastfed decreased markedly during the six month period after birth.

Complementary feeding --- diet diversity, meal frequency, and acceptable diet

Results of the 24-hour feeding recall showed that a large majority of children 6-8 months old in Manila, Cebu and Carles were given soft, semi-solid, or solid foods. However, 21-26% of these children were not given any complementary food during the previous day. If this practice continues for long, then these children will become undernourished.

The complementary food given to children less than two years old is assessed in terms of minimum diet diversity and minimum meal frequency scores. The WHO prescribes a minimum acceptable diet based on the diversity and frequency of meals offered for the age group included in the study for both breastfed (WHO 2002) and non-breastfed children (WHO, 2004). The proportion of children who satisfied the minimum diet diversity criteria score was 79% for the entire Philippines and only Aurora (86%) was above the national average (FNRI 2008). Although the average score for this parameter was the same for the MDGF and GAIN sites, the quantitative survey revealed that three out of five (60%) target children in both GAIN and MDGF sites satisfied the minimum diet diversity requirement for complementary foods. It is important to highlight, however, that only 16% of children 6-11 months in Carles, an MDGF site, satisfied the minimum diet diversity criterion. In Naga City, only 44% of children under two were given diets which satisfied the minimum diet diversity requirement while the corresponding figures for the rest of the sites were 50% to 86%. The diets of older children (12-23 months) were consistently more diverse than 6-11 month-old infants in all the sites.

The 24-hour food recall showed that the target children were commonly given grains, roots and tubers (93% in MDGF and 98% in the GAIN sites). Food taboos are widespread. For instance, mothers from Carles, a municipality with a long coastline, would not give seafoods to their children especially for supper for fear that the children will not be able to digest the food properly. The community also has the practice of not feeding the child supper if they sleep early, or breakfast if they wake up late in the morning. Although eggs were consumed by almost half children under two in the GAIN sites, they were not commonly given to target children in the MDGF sites.

Unlike diet diversity, proportionally more children under two were fed the minimum meal frequency. In the GAIN sites, four out of five children (78%) were given the minimum meal frequency; the corresponding figure in the MDGF sites was three out of four (75%). In two MDGF sites (Iloilo and Carles)

only 64% of the target children were fed the minimum required number of meals while in Manila, a GAIN site, the corresponding figure was slightly higher (68%) but still low, nevertheless. In the Philippines, 81% of children under two met the minimum meal frequency score. Only the target children in Aurora (92%), Cebu (93%), and Ragay (91%) were above the national average. The percent of children with minimum meal frequency was consistently lower among 6-11 months old infants than children 12-23 months old.

The parameter proportion of children who received minimum acceptable diet combines the two previous parameters --- the minimum diet diversity and the minimum diet frequency. The proportion for Aurora was 69% and which is almost equal to the national average of 68%. Among the MDGF sites, the proportion was lowest in Naga (26%) and Carles (29%). It is also important to emphasize that the figures for 6-11 months old children in Carles (8%) and in Naga and Manila (both 14%) were very low compared to the other sites and to the national average.

Relationship between under nutrition and infection

The relationship between malnutrition and infection is well known. Undernourished children are prone to infection while infection makes children susceptible to undernutrition (Katona D and Katona-Apte J, 2008). In the baseline study, two-week incidence of fever, diarrhea and acute respiratory infection (with cough and fast breathing) among the target were collected. Acute respiratory infection and diarrhea are infections while fever could be a symptom of infection. One-third of the children 0-23 months in the MDGF sample and 28% among the 6-23 months old children in the GAIN sample reportedly had fever two weeks before the date of interview. The incidence of diarrhea was 16% and 11% among the children in the GAIN and MDGF sites, respectively. Incidence of ARI was two times higher among children in the MDGF sites than in the GAIN sites (18% versus 9%).

Aside from the issues raised above, there were also a few important methodological concerns that need to be addressed. The first issue relates to the validity of the results of the biochemical assessments brought about by the breakdown in the optimal temperature of the blood specimens while in transit to the DBS-Tech in Germany. The second issue is the completeness of the sampling frame for the target children and lastly the socio-economic status of households included in the study.

Validity of results of biochemical assessments

The results of the biochemical assessment of iron and vitamin A status should be treated with caution. These parameters together with TfR, RBP, CRP, α-1GP were analyzed from serum samples. These samples were kept frozen -20^{o}C from the time they were collected until the time they were sent for analysis to Germany. It was reported that the serum samples received in the laboratory were no longer frozen. While there was assurance from the laboratory that the analytes are relatively stable even at room temperature for a few days, it is not certain to what extent the values obtained could have been affected by this temperature change. Moreover, it is not known for how long those samples have been in the thawed state and at what temperature. Proteins are relatively stable but can also deteriorate at higher temperatures. Although we were assured by Dr Juergen of DBS-Tech that the tests procedures are robust and that the specimens could remain stable at room temperature for a few days, it will be difficult to say how these suboptimal conditions affected the validity of the blood determinations.

The results of iron determination, and retinol binding protein to measure vitamin A deficiency were sent to the respective city health center physicians for feedback to the mothers of babies who had blood examination. However, the doctors were cautioned against using these blood examination results since

the results were no longer current. The physicians may order repeat tests if they want to know the current haemoglobin levels and use these results as basis for treatment. They were also encouraged to give nutritional counselling and/or to prescribe iron supplements if necessary.

Socio-economic profile of the study population

Only households from the three lowest classes, which are C, D and E were represented in the sample. The study employed a probability sampling design proportionate to population size. This uneven distribution of the sample population was largely due to the very dense populations in the depressed baragays (villages). Since the sample was drawn with probability proportionate to size, depressed barangays with relatively big populations had a higher probability of being included in the sample. It is also possible that a few children from the upper economic classes who were drawn in the sample declined to participate. Many children who were in the sample could not be located; thus the field interviewers were forced to draw substitute households in the same barangays to satisfy sample size requirements.

Completeness of the sampling frame

One of the major problems met by the research team was obtaining a complete and accurate sampling frame of children 0-23 months in the MDGF sites and of children 6-23 months in the GAIN sites. Although lists of this target population were supposed to be kept and updated by the midwives, or the barangay health workers or barangay nutrition scholars in the barangays, updated lists were not readily available from many of the barangays at the time of the survey. The lists were usually handwritten and were supposedly updated every year in time for Operation Timbang or the annual monitoring of children less than five years old. However, the lists were not updated so the field staff had update the lists themselves before they can begin the interviews. This problem delayed field work and caused additional research expense.

IX. CONCLUSIONS and RECOMMENDATIONS

The section of the report is made up of two parts. The first part presents a summary of the major findings in the study and the last part are the recommendations that emanate from the study's important findings.

1. A total of 2,013 mothers of children 0-23 months agreed to be interviewed, some 2, 152 children 0-23 months had height and weight measurements, and blood sample from 981 children 6-23 months old were examined for haemoglobin, iron, and vitamin A levels. Participation rates in the each study component were high --- 98% for anthropometry, 91% for blood collection (Tables 1 & 2).

2. Majority of the households included in the study were from depressed sections of the sampled barangays. Most of the households in the MDGF sites were from Class D socio-economic status while those in GAIN sites were from Class E.

3. Undernutrition among the target children was prevalent. The overall prevalence of underweight-for-age among children 0-23 months in the MDGF sites was 16% while the

corresponding figure among children 6-23 months in the GAIN sites was is 21%. Both figures are far from the 2015 MDG target of 13.6% prevalence of underweight among 0-5 years old (FNRI, 2011). The prevalence of underlength-for-age was also high --- 23% in the MDGF sites and 34% in the GAIN sites while underweight-for-length was almost 3% and 7% in MDGF and GAIN sites, respectively (Table 3).

4. The prevalence of micronutrient deficiencies was also high among the target children. The prevalence of anemia among children 6-23 months was 47% in the MDGF sites and 58% in the GAIN sites (FNRI, 2009). In MDGF sites, the prevalence of iron deficiency was 31% and iron deficiency anemia was 18%. In the GAIN sites, the corresponding figures were 44% and 33%, respectively. In addition, one in ten children in both the MDGF and GAIN sites was vitamin A deficient (Table 4). However, the results of these micronutrient determinations may have been affected to some degree by possible temperature changes while the specimens were in transit from Manila to the laboratory in Germany.

5. Infection such as diarrhea and ARI were common among children 0-23 months. Up to 16% and 18% of them had diarrhea and ARI, respectively two weeks before the interview. Half of children 0-23 months had fever, a sign of infection, within two week before the survey. Malnourished children are likely to develop infections and children with infections are at high risk of under nutrition.

6. In a few sites, many newborns were never breastfed and up to 77% were unable to initiate breastfeeding within an hour after birth. Only one in two newborns in the MDGF sites and two in five newborns in the GAIN sites were breastfed within an hour of birth. The most common reasons for failing to initiate early breastfeeding were due to perceived inadequacy of milk, the mother needs to work, occurrence of breast/nipple problems, and the baby's refusal to suck.

7. Exclusive breastfeeding was relatively uncommon and breastfeeding tend to be short. At the time of the survey, 24% of the of the children under 6 months in MDGF sites were no longer being breastfed and only 22% were being exclusively breastfed. Although some babies were still being breastfed at a day before the survey, 20% of them were also given plain water, 22% were fed formula milk, and 10% were already being given complementary food. The study population in the GAIN sites was made up of children 6-23 months old so the results could not be compared to the MDGF sites. The most common reasons given by mothers for stopping breastfeeding were 'no more milk', the child 'refused the breasts', the mother went back to work, the child was 'old enough' to be weaned from the breasts, or the mother was pregnant again. Many mothers also believed that the breastmilk was not sufficient to provide the nutritional needs of the baby and could jeopardize the baby's health.

8. Although many introduced complementary food too early, there were also indications that complementary foods were introduced late and they were inadequate in both quality and quantity. For instance, in the GAIN sites, barely two-thirds (63%) of babies 6-11 months were fed complementary food in the last 24 hours and less than half on children 12-23 months old were given complementary food during the previous 24 hours but already less than half of them are still being breastfed.

9. Diets of many children appeared to be restricted in terms of quality and quantity. Only three out of five children 6-23 months, in both MDGF and GAIN sites, were receiving solid, semi-solid

or soft foods from four or more food groups (minimum diet diversity). In both GAIN and MDGF sites, only three out of four target children were being fed at least the minimum number of times a day (minimum meal frequency). Less than half of the children in MDGF (37.9%) and GAIN (42.2%) sites were receiving minimum acceptable diet. A large majority of children in Carles, Naga and Manila were not being fed adequately (both in quality and quantity of their diets) as shown by the very low minimum acceptable diet scores. Only three out of five children were given iron-rich or iron-fortified foods. This problem appears to have many causes which include poverty, the mothers' inadequate knowledge about proper complementary feeding, and the relative lack of information on proper child feeding available to the community.

10. Food taboos, including misconceptions about infant and child feeding were common among the mothers and caregivers in some of the sites.

The following recommendations are directed to the MDGF program designers/developers as well as the program managers. They are also relevant to the local government officials and community leaders. Researchers will also find some of the recommendations relevant especially in measuring the outcomes and impact of the MDGF Joint Programme.

8. The problem of high prevalence of under nutrition, especially among children 6-11 months, should be addressed by promoting more aggressively exclusive breastfeeding for six months. Efforts should be made to educate and motivate the mothers to improve diet variety for children 6-23 months. Many mothers do not understand the importance of exclusive breastfeeding for six months since they think that any kind of breastfeeding will also provide the same benefits.

9. There is a need to enhance capacity of health workers in both public and private health facilities to build the mothers' confidence so they could initiate breastfeeding immediately after birth. They should also begin breastfeeding advocacy and education even during prenatal consultations of the mothers. It appears that breastfeeding advocacy work in many birthing facilities should be further strengthened.

10. More efforts should be exerted by health workers and breastfeeding advocates in the community to motivate the mothers to breastfeed exclusively for six months. This is especially important in Zamboanga City, Iloilo City and in Ragay where the practice not very common. One way to improve the practice of exclusive breastfeeding is to discourage mothers and caregivers from giving water and formula milk to infants less than six months. This measure is most needed in Carles, and Iloilo and Zamboanga cities where these practices were common.

11. The health workers, especially those who are in frequent contact with mothers, should be trained on how identify and adequately address various lactation problems so they can provide guidance to mothers who need assistance so they can breastfeed successfully. These health workers should be trained to have better communication/motivation skills so they can encourage mothers to breastfeed exclusively for six months and to continue breastfeeding up to two years.

12. It is crucial to strengthen advocacy efforts for the creation of supportive environment which will mptivate lactating working mothers to continue breastfeeding even when they go back to work. This will be possible if government policies/ directives which support breastfeeding are implemented and/or complied with by birthing facilities and by the owners and managers of workplaces. For

instance, putting up lactation rooms in workplaces, inform workers about the presence of these stations and grant 'lactation breaks' to lactating mothers.

13. Establish breastfeeding support groups and produce IEC materials and TV advertisements which will support desired IYCF practices, especially on proper complementary feeding practices to increase the number of children who are fed minimum acceptable diet. Mothers and caregivers should be trained on proper and timely complementary feeding including giving iron-rich and iron-fortified foods so as to reduce the prevalence of anemia among the target children.

14. The list of children 0-23 months who are the targets of IYCF initiatives should be computerized to facilitate regular updating. This will improve the process of identifying children who are targets for nutrition interventions. An updated list also improves the monitoring and evaluation outcomes and impact of IYCF interventions/activities.

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APPENDIX A. PROFILE OF FGD PARTICIPANTS

Table A. 1. Profile of FGD participants by Respondent Group and by MDGF Site

FGD group	Naga City	Iloilo City	Zambo City	Ragay	Carles	Aurora	Total
Mothers of U2 children	11	13	8	8	8	10	58
Other caregivers	8	12	8	8			36
Newly delivered mothers	7	8	6	8	8	8	45
Mothers of young children (comm envi)	9			9	10		28
Wet nurses			9				9
Sales ladies		6					6
Total	35	39	31	33	26	18	182

APPENDIX B. SUB-SAMPLE FORM FOR ZAMBOANGA BLOOD COLLECTION

CITY: ZAMBOANGA CITY BRGY: _____ PSU NUMBER: _____

Baseline Survey and Formative Research Ensuring Food Security and Nutrition Among Children 0-23 Months of Age in the Philippines

SUB-SAMPLE FORM (6-23 MONTHS)

Child No.	Name of Child (Last Name, First Name MI)	Date of Birth	Child for blood collection	Remarks
			YES	
			YES	
			YES	
			YES	
			YES	
			YES	
			YES	
			YES	
			YES	

APPENDIX C. SAMPLE SIZE FORMULA

$$n = DEFF \times \frac{\left[Z_{\alpha} \sqrt{2\left(\frac{p_1 + p_2}{2}\right)\left(1 - \frac{p_1 + p_2}{2}\right)} + Z_{\beta} \sqrt{p_1 q_1 + p_2 q_2} \right]^2}{(p_1 - p_2)^2}$$

where n = sample size of children
DEFF = design effect
Zα = z-score for alpha error
Zβ = z-score for beta error, (1-β) is the power
p1 = prevalence at time 1 (baseline)
q1 = 1-p1
p2 = prevalence at time 2 (endline)
q2=1-p2

APPENDIX D. SUBJECT INFORMATION SHEET, CONSENT FORM & INTERVIEW SCHEDULE

Subject Information Sheet (Children with blood sampling)

Title of study: Ensuring Food Security and Nutrition Among Children 0-2 Years of Age in the Philippines

Conducted by: Department of Epidemiology and Biostatistics, College of Public Health, University of the Philippines Manila

Principal investigator: Prof. Ofelia P. Saniel, MPH PhD

Background. We would like to invite your child to participate in the study because infant and young child feeding practices are important determinants of child health and has been shown to be associated with health in adulthood. In developing countries like the Philippines, more than 20% of children are underweight-for-age. The Philippines formed a partnership with some UN Organizations in a Joint Programme to achieve the global Millennium Development Goals of reduced hunger and reduced child mortality by 2015.

This study is being done, by the UP College of Public Health and sponsored by The UN Participating Organizations of UNICEF, GAIN and WFP, to look at how children are being fed in the community and how this relates to your child's nutritional status. We are going to find this out by asking you a series of questions, and measuring your child's weight and length. The following procedures will be conducted by qualified personnel.

Demographic interview. You will be interviewed by a trained interviewer about relevant socio-economic-demographic characteristics of your household.

Feeding practices interview. You will be interviewed by a trained interviewer about what your child was fed in the last 24 hours (i.e., previous day and night).

Length and weight measurement. A nurse or a trained personnel will measure your child's weight using a digital weighing scale and his/her length using an infantometer to determine if your child's length and weight are normal or abnormal for his/her age.

Exclusion and Inclusion Criteria

All children who are between 6 to 23 months old and whose parents signed the informed consent form to signify approval for the child to participate in the study are eligible to participate.

Blood sample collection. You will be asked to come to the health center located at **: _____** on this **date: _____** where a small amount of blood, about 0.2 mL (around 4 to 5 drops of blood), will be collected via skin puncture on a finger or heel. This blood will be used to determine the hemoglobin, iron and vitamin A status of your child. Skin puncture will be performed by experienced, licensed medical technologists using safe and sterile procedures. The medical technologists will be able to provide hemoglobin level of the child on the day of the procedure. However, the results of other biomarkers (iron and vitamin A levels) will not be immediately available because the specimen will be sent to Germany for laboratory processing. Once the results of the biomarkers are available, these will

be sent by the investigators to your respective City Health Offices or Rural Health Units where you can get them. The remaining blood sample will be kept frozen until all analysis is done. Any remaining samples will be kept in the laboratory for re-analysis/ verification of results in case any question/s arise. They will not be used for any other purpose or measurement other than those mentioned above.

SUMMARY OF RISKS AND BENEFITS:

The results of this study will help us find out how young children are being fed and its effect on nutrition. That way, scientists and program managers determine how best to prevent poor nutrition and improve health of children under two years old.

Generally, the risks involved to your child in his/her participation in this research study are very minimal and this may include discomfort during skin puncture and formation of a small bruise at the puncture site. To minimize the discomfort, the medical technologist will apply an ample amount of topical anesthesia to the skin puncture site 30-45 minutes before initiation of the procedure. The total volume of blood to be drawn during the study will be 0.2 mL or approximately 4 to 5 drops of blood with a maximum three pricks from either the heel or finger. This is a small amount and will not affect your child's health in any way.

If you decide to participate in this study, a service vehicle will be provided by the research project so that you and your child can go to the health facility where skin puncture will be performed. Moreover, transportation allowance of 150 Php will be provided to ensure your convenience in going home. A small token of appreciation, in cash or in kind, worth 100Php will be given the mother/child.

All children who will participate in the study will be given 1 to 2 boxes of micronutrient powder which contain Vitamin A, iron, folic acid, and other micronutrients. The child's caretaker will be given instructions to mix one full sachet of the powder during any mealtime each day. The child should consume not more than one sachet per day. Moderately to severely anemic children will also be referred to the City Health Office (or the Rural Health Unit) for further evaluation and management so that they can be included in the Garantisadong Pambata and Growth Monitoring Promotion Programs.

The procedure will be performed in the City Health Offices or its subcenters. In case the child might need urgent medical attention during the procedure, the medical technologist will immediately refer the child to the City Health Officer and/or to the nearest government health facility where he/she can receive the necessary care. As part of the post-procedure care, interviewers will be assigned to follow-up the condition of the puncture site and children who may experience adverse events (i.e., swelling or redness of puncture site) will be referred immediately to the nearest health center and /or government health facility where he/she can be further evaluated by a physician. There are existing policies that government hospitals cannot refuse patients, hence, this would ensure continuity of medical care in the event that adverse event/s may occur from the procedure. Medical expenses that can be directly attributed to the procedure will be borne by the research project.

Your answers will be kept confidential at all times. All results will be coded to prevent identification and access to it and will be allowed only with written consent from you.

This study is very safe and has been approved by the Research and Ethics Committee of the UP College of Public Health.

You can ask as many questions as you want about this study and you are free to choose whether or not to participate in this study. You can also choose to withdraw from the study anytime you want. If you have any problems or questions regarding this study and about you and your child's rights as a study participant, you may contact:

Prof. Ofelia P. Saniel	or	Prof. Lucila Rabuco
Principal Investigator		Co-Investigator
College of Public Health		
University of the Philippines Manila		
Contact Number: +639228633542,		02-525-5858

Thank you very much for your cooperation. Do you have any questions?

Subject Information Sheet (For Children without blood sampling)

Title of study: Ensuring Food Security and Nutrition among Children 0-23 Months of Age in the Philippines

Conducted by: Department of Epidemiology and Biostatistics, College of Public Health, University of the Philippines Manila

Principal investigator: Prof. Ofelia P. Saniel, MPH, PhD

Background. We would like to invite your child to participate in the study because infant and young child feeding practices are important determinants of child health and has been shown to be associated with health in adulthood. In developing countries like the Philippines, more than 20% of children are underweight-for-age. The Philippines formed a partnership with some UN Organizations in a Joint Programme to achieve the global Millennium Development Goals of reduced hunger and reduced child mortality by 2015.

This study is being done, by the UP College of Public Health and sponsored by The UN Participating Organizations of UNICEF, GAIN and WFP, to look at how children are being fed in the community and how this relates to your child's nutritional status. We are going to find this out by asking you a series of questions, and measuring your child's weight and length. The following procedures will be conducted by qualified personnel.

Demographic interview. You will be interviewed by a trained interviewer about relevant socio-economic-demographic characteristics of your household.

Feeding practices interview. You will be interviewed by a trained interviewer about what your child was fed in the last 24 hours (i.e., previous day and night).

Length and weight measurement. A nurse or a trained personnel will measure your child's weight using a digital weighing scale and his/her length using an infantometer to determine if your child's length and weight are normal or abnormal for his/her age.

Exclusion and Inclusion Criteria

All children who are between 6 to 23 months old and whose parents signed the informed consent form to signify approval for the child to participate in the study are eligible to participate.

SUMMARY OF RISKS AND BENEFITS:

The results of this study will help us find out how young children are being fed and its effect on nutrition. That way, scientists and program managers determine how best to prevent poor nutrition and improve health of children under two years old.

The height and weight measurements of your child will be done right in your home and children who will be found to be severely undernourished will be referred to the City Health Office or the Rural Health Unit for further evaluation and management so that they can be included in the Garantisadong Pambata and Growth Monitoring Promotion Programs. If you decide to participate in this study, a small token, in cash or in kind, worth 100Php will be given the mother/child.

Your answers will be kept confidential at all times. All results will be coded to prevent identification and access to it and will be allowed only with written consent from you.

This study is very safe and has been approved by the Research and Ethics Committee of the UP College of Public Health.

You can ask as many questions as you want about this study and you are free to choose whether or not to participate in this study. You can also choose to withdraw from the study anytime you want. If you have any problems or questions regarding this study and about you and your child's rights as a study participant, you may contact:

Prof. Ofelia P. Saniel or	Prof. Lucila Rabuco
Principal Investigator	Co-Investigator
College of Public Health	
University of the Philippines Manila	
Contact Number: +639228633542,	02-525-5858

Thank you very much for your cooperation. Do you have any questions?

Parent / Guardian Consent Form

Title of study: Ensuring food security and nutrition among children 0-2 years of age in the Philippines

Conducted by: Department of Epidemiology and Biostatistics, College of Public Health, University of the Philippines Manila

Principal investigator: Prof. Ofelia P. Saniel, MPH PhD

The Subject Information sheet has been read to me and I understood it.

I understand what participation in the study means to my child and me.

I understand that the information regarding our household and my child's health that are collected in the course of this study will remain confidential.

I understand that we are free to take part in the study or refuse and that we can withdraw from the study at any time, and without giving reason.

I have asked all the questions that I wanted to ask and they have been answered.

I agree to let my child participate in this study.

Parent /Guardian[2]

Name _____

Signature or thumb print _____

Date (Day / Month / Year) _____/_____/_____

I have read the form to:

Name of Parent/Guardian: _____, who is the parent/guardian of

Name of Child _____,

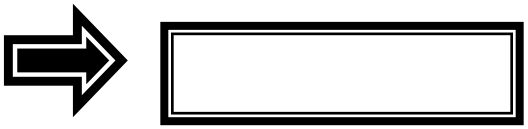
Age of Child _____ months of age with **child number** _____ and **PSU number** _____, in a language that he/she understands. I believe that he/she has been fully informed and have understood what I explained and that he/she has freely agreed to take part in the study.

Interviewer/Field Worker

Name _____

Signature _____

Date (Day / Month / Year) _____/_____/_____

[AFFIX STICKER OF LABORATORY CONTROL NUMBER] 

[2] Someone who has legal rights over an orphan/someone who protects or guards

Baseline Survey and Formative Research Ensuring Food Security and Nutrition Among Children 0-23 Months of Age in the Philippines

INTERVIEWER'S SUMMARY FORM FOR MOTHER AND HOUSEHOLD MODULES

MOTHER AND HOUSEHOLD DATA SUMMARY*					
WDS1. Study Site					
	City		**Municipality**		
Manila City	**1**				
Cebu City	**2**				
Naga City	**3**		**Ragay**	**6**	
Iloilo City	**4**		**Carles**	**7**	
Zamboanga City	**5**		**Aurora**	**8**	
WDS2. Address: Barangay		**House Number:**		**Street Name:**	
WDS3. PSU number:		___ ___			
WDS4. Mother Number:		___ ___			
WDS5. Respondent's name:			**Relationship to Child:**		
WDS6. Respondent's contact number:					
WDS7. Number of children 0-23 months old					
WDS8. Date of Interview		**m m d d y y y y**			

*For all women with children 0-23 months old.

WDS9. Result of woman's interview	Completed ☐	Partly completed ☐		
[TICK/ CHECK THE APPROPRIATE ANSWER.]	Not at home ☐	Incapacitated ☐		
	Refused ☐	Others, [*SPECIFY]* ☐ _____		

WDS10.	**Interviewer's Details**	**Name**					**Code**				
WDS11.	**Supervisor's Details (Field Editor)**	**Name**					**Code**				
		Date Edited					2	0	1	1	
			m	m	d	d	y	y	y	y	

FOR CENTRAL OFFICE USE ONLY											
WDS12.	**Data Editor (Central)**	**Name**					**Code**				
		Date Encoded					2	0	1	1	
			m	m	d	d	y	y	y	y	
WDS13.	**Computer Encoder's Details**	**Name**					**Code**				
		Date Edited					2	0	1	1	
			m	m	d	d	y	y	y	y	

Site code ☐ Barangay Name ☐ PSU number ☐☐ Mother no. ☐☐ **MHDC FORM**

Baseline survey: Mother and Household Data Collection Form

[ENTER CODES/NUMBERS IN BOXES OR MARK RESPONSE BY CIRCLING APPROPRIATE CODE.]

1) Site code ☐

2) Barangay name ☐

3) PSU number ☐☐

4) Date of interview ☐☐ (m m) ☐☐ (d d) 2011 (y y y y)

5) Supervisor code number ☐☐

6) Are you the mother of [name of child]? Yes 1 / No 2

[IF NO, ASK TO SPEAK TO THE MOTHER OF THE CHILD. IF THE CHILD'S MOTHER IS NOT AVAILABLE, RESCHEDULE THE INTERVIEW TO COMPLETE THIS MODULE.] [IF THE CHILD'S MOTHER LIVES OUT OF TOWN OR DECEASED, ASK TO SPEAK WITH FATHER OR LEGAL GUARDIAN.]

I. Household Module

A. HOUSEHOLD DATA

Now I would like to ask you some questions about your household.

HD1	How many people usually live in this household?		People

B. WATER AND SANITATION FACILITIES

HD2 What is the main source of drinking water for members of your household?

[IF R MENTIONS MORE THAN ONE SOURCE, ASK]

[ENCIRCLE ONLY ONE RESPONSE]

Piped into dwelling	1
Piped to yard/plot	2
Piped to public tap/stand pipe	3
Tubewell or borehole	4
Protected dug well	5
Semi-protected dug well	6
Unprotected dug well	7
Protected spring	8
Unprotected spring	9
Rainwater	10
Water tanker	11
Cart with small tank	12
Surface water (river, dam, etc.)	13
Bottled/mineral water	14
Other [SPECIFY] _____	15

HD3	Do you do anything to the water to make it safer to drink?	Yes 1	No 2 **[SKIP TO HD5]**	DK 9 **[SKIP TO HD5]**

HD4 What do you usually do to make the water safer to drink?

[ENCIRCLE ALL RESPONSES GIVEN BY RESPONDENT]

PROBE: Anything else?

	Method	Yes	No	DK
A	Boil it	1	2	9
B	Add bleach or chlorine	1	2	9
C	Improvised filter (cloth, sponge)	1	2	9
D	Use water filter (ceramic, sand, etc.)	1	2	9
E	Solar disinfection	1	2	9
F	Let it stand and settle	1	2	9
X	Other [SPECIFY] (_____ _____ _____)	1	2	9

HD5 What is the main source of water used by your household for other purposes, such as cooking and handwashing?

[ENCIRCLE ONLY ONE RESPONSE.]

Piped into dwelling	1	**SKIP TO HD8**
Piped to yard/plot	2	**SKIP TO HD8**
Piped to public tap/stand pipe	3	
Tubewell or borehole	4	
Protected dug well	5	
Semi-protected dug well	6	
Unprotected dug well	7	
Protected spring	8	
Unprotected spring	9	
Rainwater	10	**SKIP TO HD8**
Water tanker	11	
Cart with small tank	12	
Surface water (river, dam, etc.)	13	
Bottled/mineral water	14	**SKIP TO HD8**
Other [SPECIFY]_____	15	

HD6 Where is that water source located?

[ENCIRCLE ONLY ONE RESPONSE]

In own dwelling	1	**SKIP TO HD8**
In own yard/plot	2	**SKIP TO HD8**
Elsewhere [SPECIFY] (_____)	3	

HD7 How long does it take to go there, get water, and come back?

[IF MORE THAN ONE HOUR, CONVERT HOURS TO MINUTES]

☐☐☐ minutes	
Delivered water	000
Own Premises	996
Don't know	999

HD8	What type of toilet do your family members usually use*?* *[IF FLUSH OR POUR FLUSH TOILET, PROBE]* Do you have a septic tank*?* [*IF YES, PROBE]* Does you septic tank have concrete lining, that is, walls and flooring? *[IF NO,PROBE*]Where does your wastewater go?	Flush or pour flush toilet		
		To piped sewer system	1	
		To septic tank	2	
		To pit latrine	3	
		Flush/pour somewhere else	4	
		Flush/pour don't know where	5	
		Pit latrine		
		Ventilated improved	6	
		With slab	7	
		Without slab/open pit	8	
		Composting toilet	9	
		Bucket toilet	10	
		Drop/hanging toilet	11	
		No facility, bush, field, or river	12	**SKIP TO HD10**
		Other [SPECIFY] _____	13	

		Yes	No
HD9	Do you share this toilet facility with other households? *[ENCIRCLE ONLY ONE RESPONSE]*	1	2

C. HOUSEHOLD APPLIANCES

		Household Appliance/Facility/Personnel	Yes	No
HD10	Does your household or anyone in your household have or own [*item]?* *[READ LIST TO R AND ENCIRCLE YES OR NO FOR EACH ITEM]*	A	Electricity	1	2
		B	Radio or radio casette	1	2
		C	Television	1	2
		D	Landline telephone phone	1	2
		E	Mobile or cellular phone	1	2
		F	Personal computer or laptop, printer	1	2
		G	Washing machine	1	2
		H	Refrigerator or freezer	1	2
		I	CD or VCD or DVD player	1	2
		J	Component, stereo, karaoke, videoke	1	2
		K	Electric fan	1	2
		L	Airconditioner	1	2
		M	Gas Stove, cooking range with oven	1	2
		N	Microwave oven	1	2
		O	Floor polisher	1	2
		P	Cable subscription	1	2
		Q	Generator	1	2
		R	Household/Domestic helper	1	2

HD11	Does your household or anyone in your household have or own [*item]?* *[READ LIST to R AND ENCIRCLE YES OR NO FOR EACH ITEM.*		Type of Vehicle	Yes	No
		A	Bicycle	1	2
		B	Motorcycle, tricycle	1	2
		C	Animal-drawn cart	1	2
		D	Car, jeep, or van	1	2
		E	Tractor	1	2
		F	Boat, banca with motor	1	2

HD12	*[IF R ANSWERS YES IN HD11, ASK THE FOLLOWING INFORMATION FOR EVERY TYPE OF VEHICLE OWNED.]* *[TO DETERMINE AGE OF VEHICLE, ASK]* In what year was this *[type of vehicle]* made? What company made this *[type of vehicle]*?	**Type of Vehicle Owned**	**Age of vehicle (IN YEARS)**	**Make**

HD13	What type of fuel does your household mainly use for cooking? *[ENCIRCLE ONLY ONE RESPONSE]*			
		Electricity	1	**SKIP TO HD16**
		LPG	2	**SKIP TO HD16**
		Natural gas	3	**SKIP TO HD16**
		Biogas	4	**SKIP TO HD16**
		Kerosene	5	
		Coal, lignite	6	
		Charcoal	7	
		Wood	8	
		Straw, shrubs, grass	9	
		Agricultural crop, biomass (sawdust, hull, etc.)	10	
		Animal dung	11	**SKIP TO HD16**
		No food cooked in household	12	**SKIP TO HD17**
		Other [SPECIFY] (_____)	13	

HD14	In this household, is food cooked on an open fire, an open stove, or a closed stove? *[IF R IS NOT SURE, ASK IF YOU CAN SEE THEIR COOKING FACILITY]* *[ENCIRCLE ONLY ONE RESPONSE]*			
		Open fire	1	
		Open stove	2	
		Closed stove with chimney	3	**SKIP TO HD16**
		Other [SPECIFY] (_____)	8	**SKIP TO HD16**
		Don't know	9	**SKIP TO HD16**

HD15	Does this (fire/stove) have a chimney, a hood, or neither of these? *[ENCIRCLE ONLY ONE RESPONSE]*		
		Chimney	1
		Hood	2
		Neither	3
		Don't know	9

HD16	Is the cooking usually done in the kitchen in a separate room in the house, kitchen but no separate room in the house, kitchen separate from the house or outdoor? *[ENCIRCLE ONLY ONE RESPONSE]*	Separate room in the house	1
		No separate room in the house	2
		Separate from the house	3
		Outdoor	4

HD17	How many rooms in this household are used for sleeping?	☐☐	Rooms

D. DESCRIPTION OF HOUSEHOLD AND ITS ENVIRONMENT

HD18	Description of neighbourhood. *[OBSERVE; DO NOT ASK. ENCIRCLE ONLY ONE RESPONSE]*	Located generally in slum district	1
		Mixed neighborhood with predominantly small houses	2
		Mixed neighborhood of large and small houses	3
		Mixed neighborhood with predominantly large houses	4
		Exclusive subdivision, town houses and condominiums	5

HD19	Home durability *[OBSERVE; DO NOT ASK. ENCIRCLE ONLY ONE RESPONSE]*	Temporary structure "barong-barong"	1
		Made of light and cheap material, poorly constructed	2
		Made of light and heavy materials	3
		Made of good quality materials	4
		Made of high quality materials	5
		Other[SPECIFY] (_____)	6

HD20	*Outdoor quality of house* *[OBSERVE; DO NOT ASK. ENCIRCLE ONLY ONE RESPONSE]*	Unpainted & dilapidated/ no lawn or front yard	1
		Generally unpainted & in need of major repairs; may have or not have a front yard	2
		Painted but may need some repairs; may have a small lawn or front yard	3
		Well-painted but needs some minor repair / large enough lawn or garden	4
		Well-painted & not in need of repairs / with sprawling lawn or garden	5
		Other[SPECIFY] (_____)	6

HD21	*Indoor quality of house* *[OBSERVE; DO NOT ASK. ENCIRCLE ONLY ONE RESPONSE]*	Unpainted & Dilapidated	1
		Generally unpainted & in need of major repairs	2
		Painted but may need some repairs	3
		Well-painted but needs some minor repairs	4
		Well-painted & not in need of repairs	5
		Other[SPECIFY] (_____)	6

HD22	Main material for floor. *[OBSERVE; DO NOT ASK. ENCIRCLE ONLY ONE RESPONSE]*	Natural floor earth or sand	1
		Rudimentary floor	
		Wood planks	2
		Palm or bamboo	3
		Finished floor	
		Parquet or polished wood	4
		Vinyl, linoleum	5
		Ceramic tiles	6
		Cement	7
		Carpet	8
		Marble	9
		Other[SPECIFY] (_____)	10

HD23	Main material of roof. *[OBSERVE; DO NOT ASK. ENCIRCLE, ONLY ONE RESPONSE.]*	No roof	1
		Thatch palm leaf (nipa)	2
		Sod or grass (cogon)	3
		Palm or bamboo	4
		Makeshift or cardboard	5
		Galvanized iron or aluminum	6
		Wood	7
		Calamine or cement fiber	8
		Ceramic tiles	9
		Cement	10
		Roofing shingles	11
		Other [SPECIFY] (_____)	12

HD24	Main material of exterior walls. *[OBSERVE; DO NOT ASK. ENCIRCLE ONLY ONE RESPONSE.]*	Natural walls	
		Cane, palm, or trunks	1
		Dirt	2
		Rudimentary walls	
		Bamboo	3
		Stone with mud	4
		Uncovered adobe	5
		Plywood	6
		Makeshift (cardboard, reused material)	7
		Finished walls	
		Cement	8
		Stone with lime/cement	9
		Bricks	10
		Cement blocks	11
		Covered adobe	12
		Wood planks or shingles	13
		Galvanized iron or aluminum	14
		Other [SPECIFY] (_____)	15

HD25	What is the tenure status of your lot? *[ENCIRCLE ONLY ONE RESPONSE]*	Owned/being amortized	1
		Rented	2
		Rent-free with owner consent	3
		Rent-free without owner consent	4

HD26	Do you or anyone in your household own an agricultural land? *[ENCIRCLE ONLY ONE RESPONSE]*	Yes	1
		No	2
		Other [SPECIFY] (_____)	3

HD27	How much is your average monthly electricity bill?	Php

HD28	Do you get money/remittance regularly from a member of the family who is working abroad (OFW)?	Yes 1	No 2	DK 9

E. Mother And Husband/Partner's Background

HD29	How old are you? *[ENTER '99' IF UNKNOWN]*	☐☐ Years

HD30	What is your marital status? *[**PROBE** TO GET INFORMATION ON MARITAL STATUS.]* *[ENCIRCLE ONLY ONE RESPONSE.]*	Never Married	1
		Married	2
		Living together	3
		Separated	4
		Divorced	5
		Widowed	6
		No response	9

HD31	What is the highest grade or year of schooling did you complete? *[USE CODE BELOW. ENTER '99' IF UNKNOWN]*	☐☐

00 = No schooling
01 = Pre-school
11 = Elementary grade 1
12 = Elementary grade 2
13 = Elementary grade 3
14 = Elementary grade 4
15 = Elementary grade 5
16 = Elementary grade 6
18 = Elementary graduate
21 = High school year 1
41 = College year 1
22 = High school year 2
42 = College year 2
23 = High school year 3
43 = College year 3
24 = High school year 4
44 = College year 4
26 = High school graduate
45 = College year 5
31 = Post secondary year 1
46 = College year 6 or more
32 = Post secondary year 2 or more
47 = College graduate
51 = Post baccalaureate
99 = Don't know

HD32	What is your main occupation? *[PROBE R'S SPECIFIC JOB/TASKS, INCLUDING TYPE OF INDUSTRY.]* *[WRITE R'S VERBATIM RESPONSE IN COLLUMN A.]*	**Column A**	**FOR CENTRAL OFFICE USE ONLY**	
			Unemployed	0 (SKIP to HD36)
		_____	Professional, technical, managerial	1
		_____	Clerical	2
		_____	Sales and service	3
		_____	Skilled manual	4
		_____	Unskilled manual	5
		_____	Domestic service	6
		_____	Agriculture	7
		_____	*Other*	8

HD33	How much is your monthly salary from your regular job?		Php
HD34	*Do you have other sources of income aside from your regular job?*	Yes 1	No 2 **[SKIP TO HD36]**
HD35	How much do you earn in a month from your other sources of income?		Php

[IF R IS NEVER MARRIED, SEPARATED OR WIDOWED IN HD30, SKIP TO HD39 .]

HD36	What is the main occupation of your partner/husband? *[PROBE R'S SPECIFIC JOB/TASKS, INCLUDING TYPE OF INDUSTRY.]* *[WRITE R'S VERBATIM RESPONSE IN COLUMN A.]* *[PROBE]*	**Column A**	**FOR CENTRAL OFFICE USE ONLY**	
			Unemployed	0 **[SKIP to HD38]**
		_____	Professional, technical, managerial	1
		_____	Clerical	2
		_____	Sales and service	3
		_____	Skilled manual	4
		_____	Unskilled manual	5
		_____	Domestic service	6
		_____	Agriculture	7
		_____	*Other*	8

HD37	About how much does your partner/husband earn in a month? *[ENTER '999,999' IF UNKNOWN.]*	☐☐☐,☐☐☐	Php

HD38	What is the relationship of your partner/husband to [name sampled of child]?	Father / Mother	1
		Stepfather / Stepmother	2
		Other[*SPECIFY*] _____	3

HD39	Who are the other family members who are earning a living? Can you tell me how much is their monthly income? *[PROBE UNTIL ALL EARNING MEMBERS ARE LISTED.]* *[ENTER TOTAL MONTHLY INCOME ON THE SPACE PROVIDED.]*	Family Member	Monthly Income in Php
		TOTAL	

HD40	Total monthly income [DO NOT ENTER AMOUNT. OFFICE ENCODERS WILL FILL IN DATA.]	**FOR CENTRAL OFFICE USE ONLY** Php

[IF R IS NOT THE CHILD'S MOTHER, SKIP TO** 1**]

II. Mother's Module

A. Initiation of Breastfeeding

7)	Now I would like to ask you about your most recent delivery. Where did you give birth? *[ENCIRCLE ONLY ONE RESPONSE.]*	Your home	1
		Other home	2
		Government hospital	3
		Government clinic or health center	4
		Government health post	5
		Private hospital	6
		Private clinic	7
		Private maternity house	8
		Other *[SPECIFY]* _____	9
		Don't know	99

8)	Who assisted in your delivery? *[ENCIRCLE ONLY ONE RESPONSE.]*	Doctor or Physician	1
		Midwife	2
		Traditional Birth Attendant (Comadrona or Hilot)	3
		Other *[SPECIFY]* _____	4
		Don't Know	9

9)	While you were there both before and after the delivery, did anyone talk to you about breastfeeding?	Yes 1	No 2 **[SKIP TO 11)]**	DK 9 **[SKIP TO 11)]**

10)	What did they recommend to you about starting breastfeeding? *[ENCIRCLE ONLY ONE RESPONSE.]*	Do not breastfeed; give child formula or milk instead	1
		Start breastfeeding immediately	2
		Do not start breastfeeding immediately; start later	3
		Other *[SPECIFY]* _____	8
		Don't know or don't remember	9

11)	Did you breastfeed your youngest child?	Yes 1	No 2 **[SKIP TO 16)]**	DK 9

12)	When you were breastfeeding your youngest child, did you feed on the first side until your baby stopped suckling, then continue to feed on the other breast until he/she stopped feeding?	Yes 1	No 2	DK 9

13)	Some mothers are part of a group where sessions are held regularly to discuss topics related to breastfeeding. This is sometimes called a breastfeeding support group. Do you now participate in a breastfeeding support group?	Yes 1	No 2 **[SKIP TO 16)]**

14) [*READ FROM LIST*]
Do/ did you discuss [topic]?

[READ EACH CHOICE TO R. MULTIPLE ANSWERS, POSSIBLE.]

Topic Discussed	Yes	No	DK
Benefits of breastmilk	1	2	9
Advantages of breastfeeding	1	2	9
Correct breastfeeding techniques	1	2	9
Breastmilk expression and storage	1	2	9
Diet of a lactating mother	1	2	9
Importance of Complementary Feeding	1	2	9
Introduction of complementary feeding	1	2	9
Appropriate foods for complementary feeding	1	2	9
Preparation of complementary feeding	1	2	9
Daily frequency of complementary feeding	1	2	9

		Facilitator	Yes	No	DK
15)	Who facilitates these peer group sessions? *[READ EACH CHOICE TO R. MULTIPLE ANSWERS, POSSIBLE].*	City or Municipal Health Officer	1	2	9
		City or Municipal Health Nurse	1	2	9
		Midwife	1	2	9
		Barangay Health Worker	1	2	9
		Barangay Nutrition Scholar	1	2	9
		Other [SPECIFY] _____	1	2	9
		Don't Know	1	2	9

		Yes	No	DK
16)	Did you receive any gift or samples from a company that makes artificial infant formula] when you were pregnant with your youngest child and when he/she was 0 to 23 months old?	1	2	9

B. Children 0-23 months old

1. Please tell me the name and date of birth of each your child who is less than 2 years of age?

Child 1 Name: _____

Child 1 Date of birth: ☐☐ ☐☐ ☐☐☐☐ (d d m m y y y y)

Child 2 Name: _____

Child 2 Date of birth: ☐☐ ☐☐ ☐☐☐☐ (d d m m y y y y)

Child 3 Name: _____

Child 3 Date of birth: ☐☐ ☐☐ ☐☐☐☐ (d d m m y y y y)

[PROCEED WITH THE UNDER TWO CHILD QUESTIONNAIRE]

Baseline Survey and Formative Research Ensuring Food Security and Nutrition Among Children 0-23 Months Old in the Philippines

INTERVIEWER'S SUMMARY FORM
for the Questionnaire for Children 0-23 Months Old

UNDER-TWO CHILDREN DATA SUMMARY* **UTDS**

UTDS1. Study Site

City		Municipality	
Manila City	1		
Cebu City	2		
Naga City	3	Ragay	6
Iloilo City	4	Carles	7
Zamboanga City	5	Aurora	8

UTDS2. Address: Barangay Name: **House Number:** **Street:**

UTDS3. PSU Number: ___ ___ ___

UTDS4. Child's name (First, Last): _____

UTDS5. Child ID: ___

UTDS6. Mother's/ Caretaker's Name: _____

UTDS7. Contact Detail: _____

UTDS8. Date of interview d d m m 2011

UTDS9. INFORMED CONSENT

ANTHROPOMETRY	ANTHROPOMETERY & BLOOD COLLECTION
Yes ☐	Yes ☐
No ☐ [SPECIFY REASON FOR REFUSAL]_____	No ☐ [SPECIFY REASON FOR REFUSAL]_____

AFFIX STICKER OF LABORATORY CONTROL NUMBER

UTDS10. Result of interview [TICK/ CHECK THE APPROPRIATE ANSWER.]

Completed ☐ Partly completed ☐
Not at home ☐ Incapacitated ☐
Refused ☐ Others, [*SPECIFY]* ☐ _____

UTDS11.	**Interviewer's Details**	**Name**	**Code**	
UTDS12.	**Supervisor's Details (Field Editor)**	**Name**	**Code**	
		Date Edited m m d d 2011		

FOR CENTRAL OFFICE USE ONLY

UTDS13.	**Data Editor (Central)**	**Name**	**Code**	
		Date Encoded m m d d 2011		
UTDS14.	**Computer Encoder's Details**	**Name**	**Code**	
		Date Edited m m d d 2011		

UTCD FORM

Site code ☐ Barangay Name: ☐ PSU No. ☐☐ Mother No. ☐☐ Child ID ☐☐☐☐

Place laboratory ID sticker here

[ENTER CODES/NUMBERS IN BOXES OR MARK RESPONSE BY CIRCLING APPROPRIATE CODE]

UT1. Site code ☐

UT2. Barangay Name ☐

UT3. PSU number ☐☐

UT4. Child ID ☐☐☐☐

UT5. Mother number ☐☐

UT6. Date of interview ☐☐ ☐☐ 2011
d d m m y y y y

UT7. Supervisor code ☐☐

CHILD IDENTIFICATION AND CHARACTERISTICS

UT8. What is the name of this child?

_____
(*LAST NAME, FIRST NAME MI)*

[WRITE THE CHILD'S FULL NAME ON THE SPACE ON THE RIGHT.]

UT9. Is *[name]* a boy or a girl?	Boy	1
	Girl	2

UT10. What is *[name's]* date of birth? ☐☐ ☐☐ ☐☐☐☐
d d m m y y y y

[IF MOTHER SEEMS UNCERTAIN ABOUT SPECIFIC BIRTHDATE, ASK TO SEE DOCUMENTATION SUCH AS IMMUNIZATION CARD OR BIRTH CERTIFICATE, AND RECORD THE DATE OF BIRTH FROM THIS SOURCE.]

UT11. How was *[name]* born? *[ENCIRCLE ONLY ONE RESPONSE]*	Normal delivery	1
	Caesarean section	2
	Other [SPECIFY] _____	3
	Don't know	9

I would first like to ask you some questions about *[name]*.

UT12. How many older brothers and sisters does *[name]* have? ☐☐
[ENTER R's ANSWER IN THE BOXES AT RIGHT; '99' IF UNKNOWN]

UT13. How many younger brothers and sisters does *[name]* have? ☐☐
[ENTER R's ANSWER IN THE BOXES AT RIGHT; '99' IF UNKNOWN]

UT14. Who is the main person who looks after *[name]* during the day? *[ENCIRCLE ONLY ONE RESPONSE]*	Mother	1
	Father	2
	Grandmother/Grandfather	3
	Other family member	4
	Non-related child caretaker	5
	Other [SPECIFY] _____	6

Site code ☐ Barangay Name: ☐ PSU No. ☐☐ Mother No. ☐☐ Child ID ☐☐☐☐

UT15.	Who is the main person who routinely feeds *[name]*? *[ENCIRCLE ONLY ONE RESPONSE]*	Mother	1
		Father	2
		Grandmother/Grandfather	3
		Other family member	4
		Non-related child caretaker	5
		Other [SPECIFY] _____	6

BREASTFEEDING

UT16.	Was *[name]* ever breastfed?	Yes 1 **[SKIP TO Error!**	No 2	DK 9 **[SKIP TO 24)]**

UT17.	[IF NO] Why was *[name]* not breastfed? *[MARK ALL ITEMS MENTIONED BY R. AFTER THIS QUESTION, SKIP TO 24)]*		Reason	Yes	No	DK
		A	Mother was ill or weak	1	2	9
		B	Child was ill or weak	1	2	9
		C	Nipple or breast problem	1	2	9
		D	Mother not have enough milk	1	2	9
		E	Mother working	1	2	9
		F	Child refused	1	2	9
		G	Mother became pregnant	1	2	9
		H	Mother started contraception	1	2	9
		J	Other [SPECIFY] _____	1	2	9

UT18.	How long after birth was *[name]* first put to the breast? *(IF IMMEDIATELY AFTER BIRTH, PUT 000 HOURS)* *[IF MOTHER LIVES/WORKS OUT OF TOWN OR DECEASED, PUT 999 HOURS.]*	☐☐	☐☐	No. of hours No. of days

18)	Was *[name]* breastfed yesterday during the day or at night?	Yes 1 **[SKIP TO 20)]**	No 2	DK 9 **[SKIP TO 20)]**

19)	Why did you stop breastfeeding *[name]?* *[MULTIPLE RESPONSE POSSIBLE.]*	Child was old enough to stop breastfeeding	1
		Mother's breastmilk ran out	2
		Mother was pregnant	3
		Mother went out to work	4
		Mother went away	5
		Child refused the breast	6
		Other [SPECIFY]_____	7
		Don't know	9

20)	Sometimes babies are breastfed by another woman, or given breast milk from another woman by spoon, cup or bottle or some other way. This can happen if a mother cannot breastfeed her own baby. Did *[name]* consume breast milk in any of these ways yesterday during the day or at night?	Yes 1	No 2 **[SKIP TO 24)]**	DK 9
21)	Has *[name]* ever been given his/her own mother's breastmilk from a bottle with nipple?	Yes 1	No 2	DK 9
22)	Has *[name]* ever been breastfed by a woman who is not his/her mother?	Yes 1	No 2	DK 9
23)	Has *[name]* ever been given another woman's breastmilk using a bottle with nipple?	Yes 1	No 2	DK 9

CHILD MORBIDITY

24)	Has *[name]* had a fever on any day in the past 2 weeks?	YES 1	NO 2	DK 9
25)	Has *[name]* had been ill with a cough AND difficult or fast breathing on any day in the past 2 weeks? I do not mean a cold or a runny nose but being quite sick and having trouble breathing, as well as coughing.	Yes 1	No 2	DK 9
26)	Has *[name]* had diarrhea on any day in the past 2 weeks? Diarrhea is 3 or more watery stools per day.	Yes 1	No 2	DK 9

LIQUID AND FOOD INTAKE (LAST 24 HOURS)

27) Next I would like to ask you about some **liquids** that *[name]* may have had yesterday during the day or at night.

[READ THE LIST OF LIQUIDS STARTING WITH 'PLAIN WATER'. ENCIRCLE THE CODE CORRESPONDING TO THE R'S ANSWER.]

Did [name] have any [*item*]?

	Liquids Drank	Yes	No	DK
A	Plain water?	1	2	9
B	Infant formula such as Bona, Promil, Nestogen?	1	2	9
C	Milk such as tinned, powdered, or fresh animal milk? These might include Alaska, Bear Brand, or Magnolia.	1	2	9
D	Fresh juice or juice drinks, such as Zest-O, Funchum, Tang, Eight o'clock, Calamansi or orange juice?	1	2	9
E	Clear broth, such as am or sabaw?	1	2	9
F	Yogurt, Yakult, or Chamyto?	1	2	9
G	Thin porridge, such as lugaw?	1	2	9
H	Any other liquids such as taho, sago at gulaman?	1	2	9
I	Any other liquids?	1	2	9

28)	Did *[name]* drink anything from a bottle with a nipple yesterday during the day or night? [*IF MOTHER ASKS, INCLUDE BREASTMILK FROM A BOTTLE AND NIPPLE]*	Yes 1	No 2	DK 9

Site code ☐ Barangay Name: ☐ PSU No. ☐☐ Mother No. ☐☐ Child ID ☐☐☐☐

29) How many times yesterday during the day or night was *[name]* fed *[item]*? [*READ EACH ITEM TO R. ENCIRCLE THE CODE CORRESPONDING TO THE ANSWER*.] *[IF NOT GIVEN, ENTER '00']*	A	Breastmilk			times
	B	Commercial infant formula			times
	C	Fresh animal milk, tinned milk, or powdered milk			times

30) Did *[name]* eat any solid, semi-solid, or soft **foods** yesterday during the day or at night? [IF 'YES' PROBE] What kind of solid, semi-solid, or soft foods did *[name]* eat? *[IF FOOD NOT LISTED IN 32), ADD TO OTHER BOX (ES).]*	Yes 1	No 2 **[SKIP TO 33)]**	DK 9 **[SKIP TO 33)]**

31) How many times did *[name]* eat solid, semi-solid, or soft foods other than liquids yesterday during the day or at night? *[IF ANSWER TO 30) IS NO, PUT '00']*	☐☐	times

32) Next, I'd like to ask you about everything *[name]* ate yesterday. Please describe everything that *[name]* ate yesterday during the day or night, whether at home or outside the home. Think about when *[name]* first woke up yesterday. Did *[name]* eat anything at that time?

[IF YES] Please tell me everything *[name]* ate at [mealtime] *[SUBSTITUTE BREAKFAST, MORNING SNACK, LUNCH, AFTERNOON SNACK, SUPPER, EVENING SNACK].*

[PROBE] Anything else? *[PROBE UNTIL R SAYS NOTHING ELSE.]*

What did [*name*] do after that? Did *[name]* eat anything at that time?

[IF YES] Please tell me everything *[name]* ate at that time.

[PROBE] Anything else?

[PROBE UNTIL R SAYS NOTHING ELSE.] [REPEAT QUESTION UNTIL R SAYS THE CHILD WENT TO SLEEP UNTIL THE NEXT DAY. IF R MENTIONS MIXED DISHES SUCH AS PORRIDGE, SAUCE, OR STEW, PROBE] What ingredients were in that *[mixed dish]*?

[PROBE] Anything else? *[PROBE UNTIL R SAYS NOTHING ELSE.]*

[AS R RECALLS FOODS, UNDERLINE THE CORRESPONDING FOOD AND CIRCLE '1' IN THE COLUMN NEXT TO THE FOOD GROUP. IF THE FOOD IS NOT LISTED IN ANY OF THE FOOD GROUPS BELOW, WRITE THE FOOD IN THE BOX LABELED 'OTHER1 , OTHER 2'. IF FOODS ARE USED IN SMALL AMOUNTS FOR SEASONING OR AS A CONDIMENT, LIST THEM UNDER THE CONDIMENTS FOOD GROUP. ONCE R FINISHES RECALLING FOODS EATEN, READ EACH FOOD GROUP WHERE '1' WAS NOT CIRCLED, ASK THE QUESTION BELOW AND CIRCLE '1' IF R SAYS YES, '2' IF NO AND '8' IF DON'T KNOW]

Yesterday during the day or night, did [*name]* drink/eat any *[food group item]*?

Site code ☐ Barangay Name: ☐ PSU No. ☐☐ Mother No. ☐☐ Child ID ☐☐☐☐

32)	Food group	Example	Yes	No	DK
A	Porridge, bread, rice, noodles, or other foods **made from grains**	Kanin, Sinangag, mais, lugaw, arroz caldo, or champorado, Lucky Me, miswa, suman, pandesal	1	2	9
B	Squash, carrots, or sweet potatoes that are **yellow or orange inside**	Kalabasa, kamote, carrots,	1	2	9
C	White potatoes, white yams, manioc, cassava, or any other foods **made from roots**	Gabi, kamoteng kahoy, kamote togé, patatas, saging na saba	1	2	9
D	Any dark green leafy vegetables	Brocolli, malunggay (leaves), kangkong, camote tops, native pechay, kulitis, saluyot, bulaklak ng kalabasa, ampalaya (leaves), chinese cabbage, lettuce, dahon ng okra, seaweed, spinach	1	2	9
E	Ripe mangoes, ripe papayas, or (insert other local **vitamin a-rich fruits**)	Dark yellow or Orange: ripe, fresh or dried mango, papaya, tesa, ripe melon, tomato (dark yellow or orange)	1	2	9
F	Any other fruits or vegetables ***Fruits***: Apple, banana, coconut, durian, grapes, green papaya, guava, kiwi, lemon, pear, pineapple, raisin, rambutan, strawberry, sampaloc, watermelon	***Vegetables***: ampalaya (bunga), asparagus, bamboo shoot, cabbage (common), cauliflower, celery, corn (fresh not dried / flour/meal), sayote, eggplant, garlic, green pepper, mushroom, onion, okra (bunga), radish/labanos, tomato (red, yellow, green)	1	2	9
G	Liver, kidney, heart, or other organ meats	Atay, bato, lapay, puso, sisig, bopis	1	2	9
H	Any meat, such as beef, pork, chicken, goat or duck	Baka, baboy, manok, kambing, pato, Processed/Cured meats: hotdog, sausage, bacon, luncheon meat	1	2	9
I	Eggs	Itlog ng manok, itik, pato, pugo, balot	1	2	9
J	Fresh or dried fish, shellfish, or seafood	Tuyo, tuyong dilis, danggit, sariwang dilis, hito, galungong, kanduli, hasa-hasa, sardinas	1	2	9
K	Any foods made from beans, peas, lentils, nuts, or seeds	Sitao, abistwelas, paayap, sitsaro	1	2	9
L	Cheese, yogurt, or other milk products	Produktong may gatas, keso, taho, ice cream	1	2	9
M	Any oil, fats, or butter, or foods made with any of these	Star margarine, mantequilla, butter	1	2	9
N	Any sugary foods such as chocolates, sweets, candies, pastries, cakes, or Biscuits	Honey, jam, Marie, Stick-O, Skyflakes	1	2	9
O	Condiments for flavor, such as chillies, spices, herbs, or fish powder	Toyo, patis, bagoong, Magic Sarap, Ginisa Mix, coconut milk	1	2	9
P	Grubs, snails, or insects	Langgam, Kuhol, suso, balang, kuliglig (cricket)	1	2	9
Q	Foods made with red palm oil, red palm nut, or red palm nut pulp sauce		1	2	9
R	Other 1 [SPECIFY] _____		1	2	9
S	Other 2 [SPECIFY] _____		1	2	9

Site code ☐ Barangay Name: ☐ PSU No. ☐☐ Mother No. ☐☐ Child ID ☐☐☐☐

		Yes	No	DK
33)	Do you ever give *[name]* ready-to-eat cereals or baby cereals which you bought in a store?	1	2 **[SKIP TO 35)]**	9 **[SKIP TO 35)]**

34) How many times in the past 7 days have you given *[name]* these cereals which you bought in a store? ☐☐ times

[ENTER '99' IF UNKNOWN]

FEEDING FREQUENCY

35) Next I'm going to read you a list of foods that some mothers give their young children. For each one, please tell me whether you gave that food to the child, and how often in the last 7 days.

[READ EACH FOOD GROUP TO R AND TICK THE CORRESPONDING RESPONSE.]

	Iron-rich food	**Never**	**Once**	**Not every day, but more than once**	**Daily**	**DK**
		0	**1**	**2**	**3**	**9**
A	Chicken/Beef liver					
B	Cooked beef/pork					
C	Sardines					
D	Tuna fish in oil					
E	Cooked chicken					
F	Dark green, leafy vegetables, such as spinach, malunggay					
G	Legumes such as cooked green peas abitswelas, Baguio beans, sitao					
H	Beans like soya bean, kidney beans, dried peas, chickpeas, monggo (mung bean and cooked garbanzos)					
I	Other vegetables, such as broccoli, tomatoes, mushrooms, beetroot, pumpkin, asparagus and sweet .potato					
J	Nuts, seeds and dried fruits such as cashews, pumpkin seeds, raisins.					
K	Fruits such as watermelon, apples, bananas, oranges, and avocados.					
L	Whole grain flour and pasta, multigrain bread, oats, and rice bran.					

Site code ☐ Barangay Name: ☐ PSU No. ☐☐ Mother No. ☐☐ Child ID ☐☐☐☐

VITAMINS AND FOOD SUPPLEMENTS

36)	Nowadays a lot of people talk about vitamins. For example, you might have heard about vitamins from the well-baby clinic, from a nurse, from your friends or neighbours. Have you heard about vitamins?	Yes 1	No 2	DK 9
37)	Did you know that many foods are full of vitamins?	Yes 1	No 2	DK 9

38) Apart from foods, babies and children can also get vitamins in drops, in little pills, I'd like to ask you about whether or not the child has taken vitamin preparations. Also, for each kind, please tell me when and how often he/she has been given. *[PROBE FREQUENCY*]

	Vitamin preparations *[SHOW PHOTOS OF SPECIFIC BRANDS TO R AND TICK THE CORRESPONDING RESPONSE.]*	**Current daily**	**Current weekly**	**Past but not current**	**Never**	**DK**	**Reasons for stopping [WRITE CODE* FOR REASON IF RESPONSE IS "PAST BUT NOT CURRENT",]**
		0	**1**	**2**	**3**	**9**	
A	Vitamin drops (Ceelin, Growee, Tikitiki,Ceetrus)						
B	Vitamin syrups (Cherifer, Ceelin, Growee, Tikitiki, Children's Clusivol)						
C	Vitamin tablets (Ceelin chewables, Flinstones)						

*** CODES**: **1** = No longer needs them; **2** = Prescription ran out; **3** = Cannot afford them; **4** = Made child unwell; **8** = Other; **9** = Don't know

39)	Has the child ever been given vitamin A drops at the clinic/health center or during a child health day (i.e., Garantisadong Pambata)?	Yes 1	No 2 **[SKIP TO 41)]**	DK 9 **[SKIP TO 41)]**
40)	How many months ago did *[name]* last get vitamin A drops? *[IF UNKNOWN, ENTER 99]*	☐☐ months		

41) Another way in which mothers can give vitamins to their babies and young children is in a little package that looks like a powder. You can sprinkle the powder on top of your child's food and stir it in.

Have you ever heard of such a special powder?	Yes 1	No 2 **[SKIP TO 44)]**	DK 9 **[SKIP TO 44)]**

42)	Have you ever tried a product like this which you add to your child's food? *[SHOW PHOTO OF MICRONUTRIENT POWDER.]*	Yes 1	No 2	DK 9

Site code ☐ Barangay Name: ☐ PSU No. ☐☐ Mother No. ☐☐ Child ID ☐☐☐☐

43)	*How often was the [<u>name</u>] given this powder in the last 7 days?* *[IF UNKOWN, ENTER 99]*	☐	☐ times

ANTHROPOMETRY

[THE WEIGHT AND LENGTH OF THE CHILD UNDER TWO YEARS OLD SHOULD BE MEASURED AND RECORDED BELOW]

44)	Weight (in kg)	☐☐ • ☐	Kg
45)	Length (in cm)	☐☐ • ☐	Cm

[GIVE A COPY OF THE RESULTS OF THE ANTHROPOMETRIC MEASUREMENTS TO THE MOTHER BY FILLING OUT THE ANTHROPOMETRY FORM.]

Thank you for your participation to our research.

[IF CHILD IS FOR BLOOD COLLECTION] [INFORM THE MOTHER/CAREGIVER OF THE SCHEDULE OF THE TIME THAT THE SERVICE VEHILCE WILL COME TO FETCH THEM.]

We will advise you on the date, time, and place of the blood collection of your child. Again, thank you so much for your cooperation.

APPENDIX E. FOCUS GROUP DISCUSSION (FGD) CONSENT FORM AND FGD GUIDES

CONSENT FORM FOR FOCUS GROUP DISCUSSION
OF MOTHERS, OTHER CAREGIVERS, WET NURSES & SALES CONSULTANTS

BASELINE SURVEY AND FORMATIVE RESEARCH ON ENSURING FOOD SECURITY AND NUTRITION AMONG CHILDREN 0-23 MONTHS OF AGE IN THE PHILIPPINES

A. PURPOSE AND BACKGROUND

The University of the Philippines College of Public Health (UP-CPH) in coordination with the Nations Children's Fund (UNICEF) and MDG Partners is currently doing a study entitled Baseline Survey and Formative Research on Ensuring Food Security and Nutrition Among Children 0-23 Months of Age in the Philippines. This is in connection with the Joint Programme under the UNDP-Spain MDG Achievement Fund (MDGF) to enable the country to attain the Medium Term Plan of Action for Nutrition for 2008-2015. The objective of the study is to describe current infant and young child feeding practices (IYCF) and identify major individual, family and community factors that contribute to current breastfeeding practices, as well as to determine growth/nutritional and micronutrients status.

B. PROCEDURES

If I agree to participate in this research study, the following will occur:

1. I will be asked to participate in focus group discussion
2. I will be asked my age, gender, number of children, socio-economic status and educational background
3. I will be asked to discuss the following topics concerning infant and young child feeding:
    a. knowledge
    b. perceptions
    c. attitudes
    d. practices
4. If I agree to participate in this study, audio and video recording and photographs of this interview will be taken for research purposes.

C. RISKS

1. Risks

I will be asked questions that might be of a personal nature and I might feel uncomfortable answering these questions. I am free to decline to answer any questions that I don't wish to answer, or I may stop my participation in the discussion at any time without negative repercussions.

2. Confidentiality

The records from this FGD will be kept confidential as possible. Names of persons will not be used in any report or publication resulting from this study. All digital recordings, transcripts and summaries will be coded and stored separately from records of participants' names. Research information will be kept in locked files at all times. Only research personnel will have access to the files and digital recordings. After the study is completed, photographs, digital recordings and transcripts will be held for one year after which they will be erased or destroyed.

D. DIRECT BENEFITS

There is no direct benefit to me from participation in this research study. The anticipated benefits of this study is a better understanding of the role of the mother as an individual, as well as the influence of the family, the community and the society in influencing feeding practices for infants and young children. I will also be better informed about the opinions of others, and likewise be able to share my knowledge and opinions on infant and young child feeding practices.

E. ALTERNATIVES

I am free to choose not to participate in this research study.

F. COSTS

Except for my time, there will be no costs to me as a result of taking part in this research study.

G. COMPENSATION

I will be given modest transportation allowance in exchange for my time and participation in this study.

H. QUESTIONS

I have spoken with the investigator and her associates about this study and have had my questions answered. If I have any further questions about the study, I can contact:

Ofelia P. Saniel, MPH, PhD
Professor, Department of Epidemiology and Biostatistics
College of Public Health, University of the Philippines
Pedro Gil St., Malate, Manila
Tel: (02) 525 4239; (0922) 863 3542
E-mail: opsaniel@gmail.com

Thank you very much for your cooperation. Do you have any questions?

PARTICIPATION IN RESEARCH STUDY IS VOLUNTARY. I am free to decline to participate in this research study, or I may withdraw my participation at any point without penalty. My decision whether or not to participate in this research study will have no influence on my present or future dealings with the University of the Philippines.

Signature _____ Date _____ Province _____
FGD/KII Participant

I have read the form to:

Name of FGD/KII participant: _____ in a language that he/she understands. I believe that he/she has been fully informed and has understood what I explained and that he/she has freely agreed to take part in the study.

FGD/KII Facilitator:

Name: _____

Signature: _____

Date [mm/dd/yyyy]: _____ / _____ / _____

FGD GUIDE QUESTIONS FOR MOTHERS OF CHILDREN UNDER TWO

PARTICIPANTS: Mothers of children under 2 years old

OBJECTIVES: To understand what drives, facilitates or impedes proper IYCF including insights and level of knowledge on various feeding practices

To determine the factors that facilitate or impede the performance of exclusive breastfeeding up to 6 months and appropriate complementary feeding with continued breastfeeding after 6 months

To describe the KAP on exclusive breastfeeding up to 6 months and appropriate complementary feeding with continued breastfeeding after 6 months

QUESTIONS:

1. Who among you breastfeeds or has breastfed your child/children?
    a. Why do you breastfeed your children? What are the reasons?
    b. Would you recommend breastfeeding to other mothers? Why?

2. In your opinion, how important is it to start breastfeeding immediately after giving birth? Why?
    a. What was your experience when you gave birth to your baby? (PROBE: manner of delivery (normal/caesarean, person who delivered the baby, latching, time before first breastfeeding)
    b. How many children do you have?
        i. Can you please tell me their gender?
        ii. (IF mother has more than one child) Did you breastfeed all of your children? (If NO) Who? [PROBE] Birth order, gender? Can you remember how long you breastfed each child?

3. Do babies less than 6 months old need water? Why?
    a. Do you think breastmilk alone can give sufficient nutrition to your child? Why? (PROBE)
    b. Do you think it is possible to give breastmilk exclusively (not even water) to babies less than 6 months old? Why or why not?

4. What are the problems you encountered when breastfeeding? (e.g. work, no more milk, nipple/breast problem)
    a. Did you still continue to breastfeed despite these problems?
        i. [If NO] What did you give to your baby instead?
        ii. Why did you choose this particular kind or brand of breastmilk substitute? [PROBE] Sources of information?
        iii. What do you think are the advantages of the milk formula?
        iv. What are its disadvantages?

b. What kind of support did you get from your family members when you encountered such problems? Did you receive any type of support from other members of the family (e.g., feeding schedule, sharing of household chores, etc)? How did you manage to breastfeed your child during the first 5 months?

    i. Who are these family members?
    ii. If you were to have another child again, what kind of support do you want to receive from your family?

c. For working mothers, what is the greatest challenge that you encountered when you were breastfeeding? What kind of support would you want to get from your employer to enable you to breastfeed your child?

5. Is it still important to continue breastfeeding even if the child is already eating semi-solid or solid foods?

    a. Until what age? Why?
    b. How do you decide on what to feed your child? [PROBE] expenses, media, pamahiin

6. [FOR SITES WITH BREASTMILK BANKS) Several large hospitals have already put up human milk banks. Milk banks are facilities where mothers can purchase breastmilk produced by other women to give to their children.

    a. Have you heard of such banks? [If YES] Where?
    b. What are your opinions regarding these milk banks?
    c. Are you willing obtain milk from these banks to give to your baby?
        i. Why?
        ii. [If YES] Several hospitals charge PhP 200 per ounce (?) of breastmilk. What do you think about this price? How much are you willing to pay?
        iii. [If NO] If this service is free, would you reconsider getting your baby's breastmilk from these banks?

    d. If you have excess milk, are you willing to donate your own breastmilk to these banks? Why?
    e. What issues do you foresee regarding giving babies breast milk produced by other mothers?

FGD GUIDE QUESTIONS (COMMUNICATION ENVIRONMENT)

PARTICIPANTS: Mothers of children under 2 years old

OBJECTIVES: To determine the types of information or messages and communication channels that will convince mothers to adopt the recommended behaviours

QUESTIONS:

1. How do you learn about news, upcoming events or issues in your barangay (e.g. through media, face-to-face communication)?

2. From whom do you typically hear these news or issues?

3. From whom do you typically get information about government services like free vaccinations or free medicines?

4. Who do you usually consult regarding your children's health (e.g. if your child is sick)? How about your child's feeding needs? Who are the people you trust the most? Why?

5. Has anyone ever advised you to breastfeed your child? Who are these persons? Did you follow their advice? Why?

    a. Do you have friends or relatives who breastfeeds or has breastfed their child? For how long did they breastfeed? What are their reasons for breastfeeding their child?
    b. Who do you consult whenever you encounter problems related to breastfeeding (breast/nipple problems, milk supply, etc)?

6. Have you heard of programs here in your barangay that promote breastfeeding? What are these?
    a. Did you receive/see any posters or pamphlets about breastfeedng? [show sample IEC]
    b. What did you learn specifically about your child's nutritional needs?
    c. Do you think these information are enough to answer your questions about your child's feeding needs? Why?

7. If you were a barangay nutrition scholar, how would you promote breastfeeding to mothers in your barangay?

8. Do you have any other questions about how to feed your child? What are these?

FGD GUIDE QUESTIONS FOR OTHER CAREGIVERS

PARTICIPANTS: Other caregivers (fathers, other relatives, yayas)

OBJECTIVES: To understand what drives, facilitates or impedes proper IYCF including insights and level of knowledge on various feeding practices

To determine the factors that facilitate or impede the performance of exclusive breastfeeding up to 6 months and appropriate complementary feeding with continued breastfeeding after 6 months

To determine the KAP on exclusive breastfeeding up to 6 months and appropriate complementary feeding with continued breastfeeding after 6 months

To determine the types of information or messages and communication channels that will convince mothers to adopt recommended behaviors such as exclusive breastfeeding up to 6 months and appropriate complementary feeding with continued breastfeeding after 6 months

QUESTIONS:

1. Do all of you have children less than 2 years old living in your household? Were these children breastfed by their mother?
    a. What do you think are the benefits of breastfeeding?
    b. Where did you get such information?

2. In your opinion, how important is it to start breastfeeding immediately after giving birth?
    a. What was the mother's experience when she gave birth?
    b. What were your thoughts about breastfeeding before the mother of the child gave birth?
    c. What were your thoughts about bottle feeding before the mother of the child gave birth?
    d. When did you decide what to feed your child (e.g. breastmilk, formula, etc)? How did you decide? [PROBE] What information sources helped you decide?
    e. What should a mother do if she is not able to produce milk immediately after giving birth? Why? Where did you learn this?

3. What are your thoughts about your role in feeding the baby? [PROBE] Expectations and experiences

4. What are your thoughts about breastfeeding in public?

5. When is it advisable not to breastfeed a child? [PROBE reasons. Eg. When the mother has a cold, child is sick, small breasts/inverted nipples] Why?

6. Exclusive breastfeeding is defined as giving nothing but breastmilk, including water to your baby until after he reaches 6 months. What are your opinions on exclusive breastfeeding?
    a. Do babies less than 6 months old need water? Why?
    b. What are your concerns regarding your baby's nutritional status if only breastmilk is given? Why?
    c. Do you give advice to the mother regarding the baby's feeding needs? What kind of advice? Where did you get this information?

7. What problems related to breastfeeding did the mother encounter? (e.g. work schedule, no more milk, nipple/breast problem)
    a. Where there instances when she asked for help particularly when the baby needs to be breastfed? What kind of help?
        i. What kind of support did you give the mother when she encountered such problems?
        ii. Do you think that breastfeeding may at times be burdensome for the mother? Why?
        iii. If the mother were to have another child again, what would you have done differently in terms of providing her support?

    b. What are the possible negative effects of breastfeeding on the mother? Why? Where did you get this information?

FGD GUIDE QUESTIONS FOR SALES CONSULTANTS

For Iloilo (SM, Robinsons, Gaisano Malls)

PARTICIPANTS: Female employees with children who work in establishments with breastfeeding stations

OBJECTIVE: To describe the workplace capacities, activities and structures to support proper IYCF

QUESTIONS:

1. Did you breastfeed your youngest child?

2. Where did you hear about the breastfeeding station? Was it discussed during your job orientation? Do the management or your supervisors encourage you to utilize the breastfeeding station?

3. Have you ever used the breastfeeding station?

    a. [If YES] How frequent did you use the breastfeeding station in the past week?

    b. [If NO] Why not? How do you feed your child? [PROBE] By whom?

    c. Are these breastfeeding breaks counted as compensable hours? Or are they deducted from your leave credits? Does this affect in any way your decision or ability to continue breastfeeding your child? How?

4. Do you think the availability of a breastfeeding station in your workplace encouraged you to continue breastfeeding your child? Why?

5. Do you think it is important to continue breastfeeding even when it may be difficult for you because you are working? Why?

FGD GUIDE QUESTIONS FOR WET NURSES

PARTICIPANTS: Wet nurses (or mothers who have experienced wet nursing)

OBJECTIVE: To describe the health facility and community capacities, activities and structures to support proper IYCF

NOTES: For areas with wet nursing in the community (Zamboanga)

QUESTIONS:

1. How many children do you have? How old is your youngest child? Do you still breastfeed your youngest child?
2. When did you start wet nursing? How long have you been wet nursing?
3. Where did you learn about wet nursing? What did you learn?
4. Why do you wet nurse?
5. Who do you usually wet nurse? Why did you choose that person? Duration?
6. Are you being compensated for your time and milk? With what or how much?
7. Is this practice widely accepted in your community? Why do you think this is so?
8. What are the challenges you encounter when you wet nurse? Why?
9. Do you see any possible side effects for the wet nurse, the baby or the biological mother because of wet nursing? What are these? Why?
10. What are the advantages of being a wet nurse?
11. Are there any breastmilk banks located in your area? Where?
    a. [If YES] Do you donate breastmilk to these banks? Are you being compensated for your milk? How much?
    b. [If NO] Would you consider donating your milk to these banks?
12. Would you recommend wet nursing to other mothers? Why?

FGD GUIDE QUESTIONS FOR NEWLY DELIVERED MOTHERS

PARTICIPANTS: Newly delivered mothers

Inclusion criteria: Mothers on maternity leave or within 6 to 8 weeks post partum

OBJECTIVE: To describe the health facility capacities, activities and structures to support proper IYCF

To assess the quality of health services offered by birthing facilities

QUESTIONS:

1. Where did you give birth? (Classify after: govt/priv hosp, priv clinic, lying-in, RHU)
    a. When did you give birth?
    b. Who assisted in your delivery?(physician, midwife, TBA)
    c. What was the mode of delivery? (normal, caesarean)

2. How many children do you have?

3. How old is the youngest? Sex? Multiple birth or single birth?

4. Did you receive prenatal care for this pregnancy?
    a. Where did you go for consultation? (Were you prescribed/advised to take iron tablets (ferrous sulfate) when you were pregnant?)
    b. What information did you receive during these consultations?

5. During this last delivery, can you remember about how long after giving birth were you able to hold your baby?
    a. How was your baby positioned when your baby was given to you? (Show photos to facilitate discussion)

6. During your pregnancy, were you encouraged by any health personnel inside the hospital/clinic/RHU (e.g. OB, pedia, nurse, RHU) to breastfeed immediately after giving birth? By whom?
    a. Did you breastfeed your baby immediately? About how long after delivery?
        i. [If NO] What food/drink did you give your newborn (e.g. formula, sugar water, evaporated milk, etc)?
            1. Did you bring bottles or pacifiers to the hospital?
            2. [If YES] Were the nurses, doctors, or midwives aware that you brought feeding bottles? What did they say?
            3. Were you offered milk samples when you were in the hospital/lying-in clinic? By whom?

ii. [If YES] When you held your newborn baby for the first time, how did you know s/he was ready to feed? How did you know these feeding cues (e.g. tonguing, licking, rooting)?
    1. What other information did you receive regarding breastfeeding when you were still in the birthing facililty? [PROBE] Techniques
        a. Counsel on positioning?
            i. Newborn's neck is not flexed nor twisted
            ii. Newborn is facing the breast
            iii. Newborn's body is close to mother's body
            iv. Newborn's whole body is supported
        b. Counsel on attachment and suckling
            i. Mouth wide open
            ii. Lower lip turned outwards
            iii. Baby's chin touching breast
        c. Suckling is slow and deep with some pauses

7. [FOR COMMUNITIES WITH BREASTFEEDING SUPPORT GROUP] Some mothers are part of a group where sessions are held regularly to discuss topics related to breastfeeding. This is sometimes called a breastfeeding support group. Do you now participate in a breastfeeding support group? Do you participate regularly? [PROBE] Frequency

    a. [If YES] Where are these groups based? Who are the organizers?
    b. [If NO] Are you willing to join a breastfeeding support group? Why or why not?
    c. What do you think are the benefits of joining such a group?

APPENDIX F. KEY INFORMANT CONSENT FORM& INTERVIEW GUIDES

CONSENT FORM FOR KEY INFORMANT INTERVIEW OF HEALTH CARE PROVIDERS

BASELINE SURVEY AND FORMATIVE RESEARCH ON ENSURING FOOD SECURITY AND NUTRITION AMONG CHILDREN 0-23 MONTHS OF AGE IN THE PHILIPPINES

A. PURPOSE AND BACKGROUND

The University of the Philippines College of Public Health (UP-CPH) in coordination with the United Nations Children's Fund (UNICEF) and MDG Partners is currently doing a study entitled Baseline Survey and Formative Research on Ensuring Food Security and Nutrition Among Children 0-23 Months of Age in the Philippines. This is in connection with the Joint Programme under the UNDP-Spain MDG Achievement Fund (MDGF) to enable the country to attain the Medium Term Plan of Action for Nutrition for 2008-2015. The objective of the study is to describe current infant and young child feeding practices (IYCF) and identify major individual, family and community factors that contribute to current breastfeeding practices, as well as to determine growth/nutritional and micronutrients status.

B. PROCEDURES

If I agree to participate in this research study, the following will occur:

1. I will be asked to participate in a key informant interview
2. I will be asked my age, gender, occupation and years of service in the health facility
3. I will be asked to discuss the following topics:
    a. knowledge, attitudes and practices on IYCF
    b. IYCF-related programs in the health facility
    c. trainings on IYCF
4. If I agree to participate in this study, audio and video recording and photographs of this interview will be taken for research purposes.

C. RISKS

1. Risks

I will be asked questions that might be of a personal nature and I might feel uncomfortable answering these questions. I am free to decline to answer any questions that I don't wish to answer, or I may stop my participation in the discussion at any time without negative repercussions.

2. Confidentiality

The records from this KII will be kept confidential as possible. Names of persons will not be used in any report or publication resulting from this study. All digital recordings, transcripts and summaries will be coded and stored separately from records of participants' names. Research information will be kept in locked files at all times. Only research personnel will have access to the files and digital recordings. After the study is completed, photographs, digital recordings and transcripts will be held for one year after which they will be erased or destroyed.

D. DIRECT BENEFITS

There is no direct benefit to me from participation in this research study. The anticipated benefits of this study is a better understanding of the role of the mother as an individual, as well as the influence of the family, the community and the society in influencing feeding practices for infants and young children. I will also be better informed about the opinions of others, and likewise be able to share my knowledge and opinions on infant and young child feeding practices.

E. ALTERNATIVES

I am free to choose not to participate in this research study.

F. COSTS

Except for my time, there will be no costs to me as a result of taking part in this research study.

G. COMPENSATION

I will be given modest transportation allowance in exchange for my time and participation in this study.

H. QUESTIONS

I have spoken with the investigator and her associates about this study and have had my questions answered. If I have any further questions about the study, I can contact:

Ofelia P. Saniel, MPH, PhD
Professor, Department of Epidemiology and Biostatistics
College of Public Health, University of the Philippines
Pedro Gil St., Malate, Manila
Tel: (02) 525 4239; (0922) 863 3542
E-mail: opsaniel@gmail.com

Thank you very much for your cooperation. Do you have any questions?

PARTICIPATION IN RESEARCH STUDY IS VOLUNTARY. I am free to decline to participate in this research study, or I may withdraw my participation at any point without penalty. My decision whether or not to participate in this research study will have no influence on my present or future dealings with the University of the Philippines.

Signature _____ Date _____ Province _____
KII/FGD Participant

I have read the form to:

Name of KII/FGD participant: _____ in a language that he/she understands. I believe that he/she has been fully informed and has understood what I explained and that he/she has freely agreed to take part in the study.

KII/FGD Facilitator:

Name: _____

Signature: _____

Date [mm/dd/yyyy]: _____ / _____ / _____

CONSENT FORM FOR KEY INFORMANT INTERVIEW OF EMPLOYERS AND/OR MANAGERS

BASELINE SURVEY AND FORMATIVE RESEARCH ON ENSURING FOOD SECURITY AND NUTRITION AMONG CHILDREN 0-23 MONTHS OF AGE IN THE PHILIPPINES

A. PURPOSE AND BACKGROUND

The University of the Philippines College of Public Health (UP-CPH) in coordination with the United Nations Children's Fund (UNICEF) and MDG Partners is currently doing a study entitled Baseline Survey and Formative Research on Ensuring Food Security and Nutrition Among Children 0-23 Months of Age in the Philippines. This is in connection with the Joint Programme under the UNDP-Spain MDG Achievement Fund (MDGF) to enable the country to attain the Medium Term Plan of Action for Nutrition for 2008-2015. The objective of the study is to describe current infant and young child feeding practices (IYCF) and identify major individual, family and community factors that contribute to current breastfeeding practices, as well as to determine growth/nutritional and micronutrients status.

B. PROCEDURES

If I agree to participate in this research study, the following will occur:

1. I will be asked to participate in a key informant interview
2. I will be asked my age, gender, occupation and educational attainment
3. I will be asked to discuss the following topics:
    a. knowledge, attitudes on IYCF
    b. day care or breastfeeding facilities for women employees
4. If I agree to participate in this study, audio and video recording and photographs of this interview will be taken for research purposes.

C. RISKS

1. Risks

I will be asked questions that might be of a personal nature and I might feel uncomfortable answering these questions. I am free to decline to answer any questions that I don't wish to answer, or I may stop my participation in the discussion at any time without negative repercussions.

2. Confidentiality

The records from this KII/FGD will be kept confidential as possible. Names of persons will not be used in any report or publication resulting from this study. All digital recordings, transcripts and summaries will be coded and stored separately from records of participants' names. Research information will be kept in locked files at all times. Only research personnel will have access to the files and digital recordings. After the study is completed, photographs, digital recordings and transcripts will be held for one year after which they will be erased or destroyed.

D. DIRECT BENEFITS

There is no direct benefit to me from participation in this research study. The anticipated benefits of this study is a better understanding of the role of the mother as an individual, as well as the influence of the family, the community and the society in influencing feeding practices for infants and young children. I will also be better informed about the opinions of others, and likewise be able to share my knowledge and opinions on infant and young child feeding practices.

E. ALTERNATIVES

I am free to choose not to participate in this research study.

F. COSTS

Except for my time, there will be no costs to me as a result of taking part in this research study.

G. COMPENSATION

I will be given modest transportation allowance in exchange for my time and participation in this study.

H. QUESTIONS

I have spoken with the investigator and her associates about this study and have had my questions answered. If I have any further questions about the study, I can contact:

Ofelia P. Saniel, MPH, PhD
Professor, Department of Epidemiology and Biostatistics
College of Public Health, University of the Philippines
Pedro Gil St., Malate, Manila
Tel: (02) 525 4239; (0922) 863 3542
E-mail: opsaniel@gmail.com

Thank you very much for your cooperation. Do you have any questions?

PARTICIPATION IN RESEARCH STUDY IS VOLUNTARY. I am free to decline to participate in this research study, or I may withdraw my participation at any point without penalty. My decision whether or not to participate in this research study will have no influence on my present or future dealings with the University of the Philippines.

Signature _____ Date _____ Province _____
KII/FGD Participant

I have read the form to:

Name of KII/FGD participant: _____ in a language that he/she understands. I believe that he/she has been fully informed and has understood what I explained and that he/she has freely agreed to take part in the study.

KII/FGD Facilitator:

Name: _____

Signature: _____

Date [mm/dd/yyyy]: _____ / _____ / _____

KII GUIDE QUESTIONS FOR BNS AND BHWS

PARTICIPANTS: Barangay Nutrition Scholars (BNS) or Barangay Health Workers (BHW)

OBJECTIVE: To describe the health facility and community capacities, activities and structures to support proper IYCF

To assess the KAP on IYCF among BNS/BHS

QUESTIONS:

1. Do you have children? How many? How old is your youngest child?

    a. [If YES] Do you remember if you have ever breastfed your youngest child?
    b. Until what age? Why?

2. Have you ever received training on current and updated lactation management? When were you last trained? Where? What is the average number of lactation management trainings you receive in one year?

3. Do you conduct breastfeeding lectures or seminars here in your barangay? How frequent?

    a. What were the topics included in your lecture? [PROBE] Importance of exclusive breastfeeding, complementary feeding, techniques?

    b. If your participants were to ask the following questions, what would you answer?

        i. What should I feed my baby from 0 to 6 months? What else? Why?
        ii. Do I need to give water to my baby less than 6 months old? Why?
        iii. Are breastmilk and formula milk equally beneficial to my baby? Why?
        iv. At what age should I give my baby formula milk?
        v. At what age should I introduce semi-solid foods? Is it still important to give milk? What kind of milk?

4. What are the most common breastfeeding issues/complaints experienced by the mothers here in your barangay? What kind of advice do you provide these mothers?

KII GUIDE QUESTIONS FOR HEALTH CARE PROVIDERS

PARTICIPANTS: Health care providers from public and private mother/baby-friendly hospitals or lying-in clinics

OBJECTIVE: To describe the health facility activities and structures to support proper IYCF

QUESTIONS:

1. Kindly describe this health facility's protocol on newborn care and infant feeding practices?
    a. [PROBE] Approximately how long after drying is the baby returned to the mother?
        i. What position is the baby in when placed with the mother?
        ii. Do you cover the baby with anything? What?
        iii. Is early skin-to-skin contact practiced even if the mode of delivery is caesarean section?
    b. Breastfeeding
        i. What is your protocol on breastfeeding? [PROBE] Approximate time to initial breastfeeding?
        ii. Are you aware of the existence of a written policy on breastfeeding routinely communicated to all health care staff? Are there existing patient education guidelines particularly on breastfeeding? Who carries out this patient education? [PROBE] When and where (e.g. delivery room, recovery room)? Is this routinely done? What are these instructions?

2. What breastfeeding programs are being implemented in this health facility? How frequent? What IEC materials are being used? [PROBE] Exclusive breastfeeding and complementary feeding

3. Are there breastfeeding support groups? Who is the organizer? How frequent are the meetings? What are discussed during these meetings? Number of members?

4. Are there trainings on current and updated lactation management and infant care for the hospital staff? When was the last training? Who was last trained?

5. Does this health facility plan on putting up a breastmilk bank*?
    a. [PROBE] Issues on practicality and feasibility?
    b. Issues on operations?

* Breastmilk Bank – facility in a health institution for storage of breastmilk donated by mothers which have undergone pasteurization. The stored breastmilk will primarily be given to children in the neonatal intensive care unit whose own mothers are seriously ill (Republic Act No. 10028 – Expanded Breastfeeding Act of 2009)

APPENDIX G. SAMPLING WEIGHTS

CITY OF MANILA

PSU No.	Barangay	Household	Mother	Child
1	Barangay 702, Malate	791.33	791.33	791.33
2	Barangay 743, Malate	299.87	299.87	299.87
3	Barangay 823, Paco	399.83	799.66	799.66
4	Barangay 844, Pandacan	774.67	774.67	774.67
5	Barangay 649, Port Area	48079.27	48079.27	48079.27
6	Barangay 309, Quiapo	358.18	358.18	358.18
7	Barangay 429, Sampaloc	445.64	891.28	891.28
8	Barangay 480 + Barangay 481, Sampaloc	183.25	183.25	183.25
9	Barangay 525, Sampaloc	449.81	449.81	449.81
10	Barangay 570, Sampaloc	133.28	133.28	266.55
11	Barangay 598, Sampaloc	2090.77	2090.77	2090.77
12	Barangay 628 , Sampaloc	1399.40	1399.40	1399.40
13	Barangay 275, San Nicolas	624.73	624.73	624.73
14	Barangay 774, Santa Ana	1182.82	1182.82	1182.82
15	Barangay 798, Santa Ana	499.78	499.78	499.78
16	Barangay 900, Santa Ana	2507.25	2507.25	2507.25
17	Barangay 325, Santa Cruz	324.86	324.86	324.86
18	Barangay 368, Santa Cruz	591.41	591.41	591.41
19	Barangay 20, Tondo	1640.96	1640.96	1640.96
20	Barangay 33, Tondo	549.76	549.76	549.76
21	Barangay 58, Tondo	1082.87	541.43	1082.87
22	Barangay 87, Tondo	549.76	549.76	549.76
23	Barangay 104, Tondo	1466.04	1466.04	1466.04
24	Barangay 117, Tondo	674.71	674.71	674.71
25	Barangay 103, Tondo	775.95	775.95	775.95
26	Barangay 159, Tondo	308.20	308.20	308.20
27	Barangay 185, Tondo	266.55	266.55	266.55
28	Barangay 212, Tondo	333.19	333.19	333.19
29	Barangay 248 + Barangay 245, Tondo	88.85	266.55	266.55

CEBU CITY

PSU No.	Barangay	Household	Mother	Child
1	Apas	2175.47	2175.47	2175.47
2	Basak Pardo	1824.84	1824.84	1824.84
3	Basak San Nicolas	910.43	910.43	910.43
4	Bulacao	3697.50	3697.50	3697.50
5	Busay (Pob.)	1215.23	1215.23	1215.23
6	Carreta	2745.23	2745.23	2745.23
7	Cogon Pardo	1310.86	1310.86	1310.86
8	Ermita (Pob.)	1151.48	1151.48	1151.48
9	Guadalupe	1183.36	1183.36	1183.36

10	Hippodromo	1087.73	1087.73	1087.73
11	Inayawan	1322.81	1322.81	1322.81
12	Camputhaw (Pob.)	1956.33	1956.33	1956.33
13	Kinasang-an Pardo	2486.25	2486.25	2486.25
14	Labangon	1470.23	1470.23	1470.23
15	Lahug (Pob.)	2143.59	2143.59	2143.59
16	Lorega (Lorega San Miguel)	1486.17	1486.17	1486.17
17	Mabolo	1541.95	1541.95	1541.95
18	Mambaling	1613.67	1613.67	1613.67
19	Pardo (Pob.)	1466.25	1466.25	1466.25
20	Pulangbato	502.03	502.03	502.03
21	Quiot Pardo	3502.27	3502.27	3502.27
22	Sambag II (Pob.)	3111.80	3111.80	3111.80
23	Santa Cruz (Pob.)	282.89	282.89	282.89
24	T. Padilla	482.11	482.11	482.11
25	Talamban	346.64	346.64	346.64
26	Tinago	972.19	972.19	972.19
27	Tisa	2633.67	2633.67	2633.67

NAGA CITY

PSU No.	Barangay	Household	Mother	Child
1	Abella	285.05	285.05	285.05
2	Balatas	179.76	179.76	179.76
3	Cararayan	674.10	674.10	674.10
4	Concepcion Grande	471.23	471.23	471.23
5	Concepcion Pequeño	1105.52	1105.52	1105.52
6	Del Rosario	249.10	249.10	249.10
7	Mabolo	269.64	269.64	269.64
8	Sabang	349.25	349.25	349.25
9	San Felipe	609.90	609.90	609.90
10	Tabuco	243.96	243.96	243.96

ILOILO CITY

PSU No.	Barangay	Household	Mother	Child
1	Santa Cruz	130.79	130.79	130.79
2	Bakhaw	223.88	223.88	223.88
3	Baldoza	202.67	202.67	202.67
4	Benedicto (Jaro)	113.12	113.12	113.12
5	Bonifacio Tanza	177.93	177.93	177.93
6	Caingin	108.41	108.41	108.41
7	Calumpang	155.54	155.54	155.54
8	Concepcion-Montes	185.00	185.00	185.00
9	Desamparados	70.70	70.70	70.70

10	East Baluarte	54.20	54.20	54.20
11	Gustilo	103.69	103.69	103.69
12	Ingore	142.58	142.58	142.58
13	Lanit	144.93	144.93	144.93
14	Lopez Jaena Sur	25.92	25.92	25.92
15	Mansaya-Lapuz	180.28	180.28	180.28
16	Molo Boulevard	229.77	229.77	229.77
17	Oñate de Leon	124.90	124.90	124.90
18	Rizal Palapala I	111.94	111.94	111.94
19	Quintin Salas	124.90	124.90	124.90
20	San Antonio	84.84	84.84	84.84
21	San Juan	397.10	397.10	397.10
22	Santo Niño Norte	197.96	197.96	197.96
23	So-oc	374.71	374.71	374.71
24	Tabuc Suba (Jaro)	129.62	129.62	129.62
25	Tap-oc	28.28	28.28	28.28
26	Villa Anita	24.74	24.74	24.74
27	Nabitasan	88.37	88.37	88.37

ZAMBOANGA CITY

PSU No.	Barangay	Household	Mother	Child
1	Ayala	305.80	305.80	305.80
2	Baliwasan	275.58	275.58	275.58
3	Boalan	437.48	437.48	437.48
4	Cabaluay	115.13	115.13	115.13
5	Calarian	65.48	65.48	65.48
6	Campo Islam	177.01	177.01	177.01
7	Canelar	103.61	103.61	103.61
8	Cawit	316.60	316.60	316.60
9	Curuan	518.76	518.76	518.76
10	Divisoria	320.91	320.91	320.91
11	Guiwan	751.19	751.19	751.19
12	Limpapa	125.09	62.54	125.09
13	Lunzuran	227.37	227.37	227.37
14	Malagutay	74.83	74.83	74.83
15	Mercedes	397.18	397.18	397.18
16	Pasonanca	394.31	394.31	394.31
17	Patalon	201.29	201.29	201.29
18	Barangay Zone IV (Pob.)	71.95	71.95	71.95
19	Putik	649.02	649.02	649.02
20	Rio Hondo	93.35	46.68	93.35
21	San Jose Cawa-cawa	109.37	109.37	109.37
22	San Jose Gusu	118.00	118.00	118.00

23	San Roque	212.26	212.26	212.26
24	Santa Catalina	120.16	60.08	120.16
25	Santa Maria	185.64	185.64	185.64
26	Santo Niño	240.32	120.16	240.32
27	Sinunoc	313.72	313.72	313.72
28	Talisayan	48.79	48.79	48.79
29	Tetuan	287.81	287.81	287.81
30	Tugbungan	409.42	409.42	409.42
31	Tumaga	828.90	828.90	828.90
32	Camino Nuevo	86.34	86.34	86.34
33	Kasanyangan	277.74	277.74	277.74

RAGAY, CAMARINES SUR

PSU No.	Barangay	Household	Mother	Child
1	Apad	106.88	106.88	106.88
2	Godofredo Reyes Sr. (Catabangan Crossing)	97.88	97.88	97.88
3	Poblacion Ilaod	91.13	91.13	91.13

CARLES, ILOILO

PSU No.	Barangay	Household	Mother	Child
1	Abong	101.50	101.50	101.50
2	Barangcalan	46.40	23.20	46.40
3	Cabuguana	40.60	40.60	40.60
4	Nalumsan	40.60	40.60	40.60

AURORA, ZAMBOANGA DEL SUR

PSU No.	Barangay	Household	Mother	Child
1	Balide	64.00	64.00	64.00
2	Lantungan	75.85	37.93	75.85
3	Poblacion	257.19	128.59	257.19

APPENDIX H. ACTUAL DATES OF RESEARCH IMPLEMENTATION

The dates of orientation and training of the data collection team are listed below. Formal orientation of FGD facilitators, FGD documenters and key informant interviewers were done a day before the actual FGD session.

- Manila: February 14-19, 2001
- Iloilo City and Carles: February 21-25, 2011
- Zamboanga City and Aurora: February 28-March 4, 2011
- Cebu City: March 07-12, 2011
- Naga City and Ragay: March 09-13, 2011

Table A. 2. Data Collection Period by Study Site and Type of Study

	Qualitative Study[a]		Quantitative Study	
Site	Date Started	Date Ended	Date Started	Date Ended
Manila	-----	-----	February 21, 2011	March 24, 2011
Iloilo City	March 29, 2011	March 30, 2011	March 1, 2011	April 7, 2011
Carles	March 27, 2011	March 28, 2011	March 4, 2011	March 24, 2011
Zamboanga City	March 20, 2011	March 21, 2011	March 5, 2011	April 18, 2011
Aurora	March 22, 2011	March 23, 2011	March 8, 2011	March 25, 2011
Cebu City	------	------	March 14, 2011	April 5, 2011
Naga	April 3, 2011	April 4, 2011	March 14, 2011	March 29, 2011
Ragay	April 5, 2011	April 6, 2011	March 15, 2011	March 27, 2011

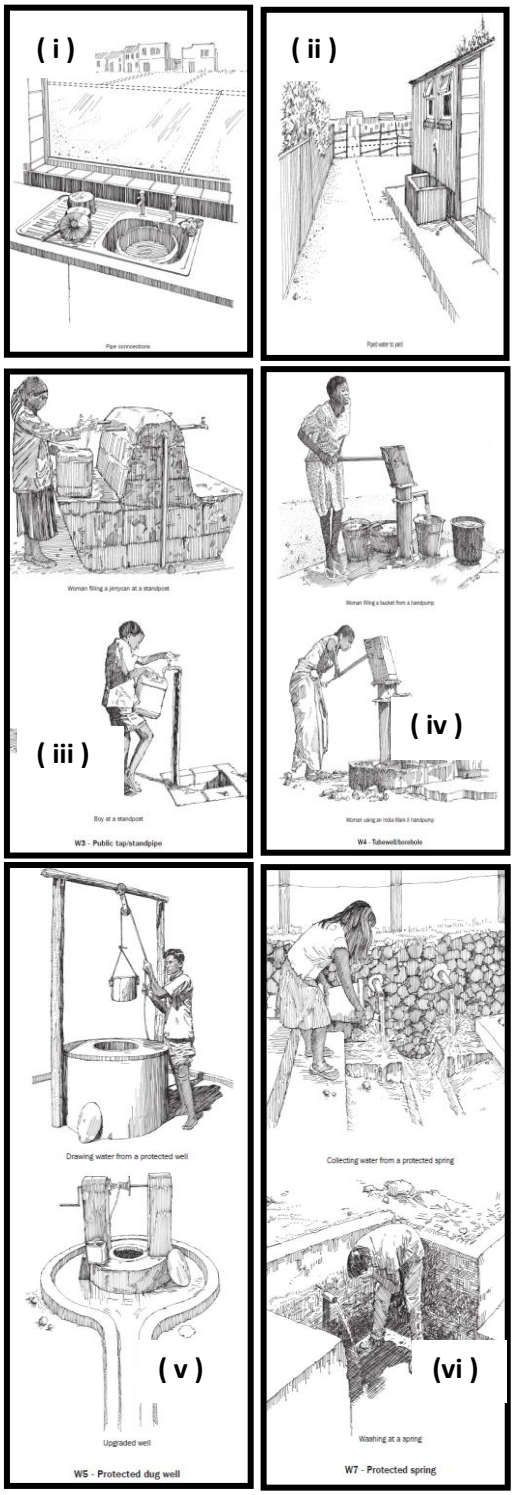
[a]Qualitative research was undertaken in MDGF areas only

Table A. 3. Schedule of Result Dissemination by Research Site

Site	Date
Naga City	July 19, 2011
Ragay	July 20, 2011
Zamboanga City	July 26, 2011
Cebu City	August 5, 2011
Iloilo City	August 16, 2011
Carles	August 18, 2011
Aurora	September 22, 2011
Manila	October 4, 2011

APPENDIX I. OPERATIONAL DEFINITION OF VARIABLES

1. **DRINKING WATER SOURCE** – the main type/method of water supply for drinking broadly classified into improved and non-improved (NSO [Philippines] and ICF Macro, 2009)



a. Improved drinking water source

i. **Piped water into dwelling** - also called a house connection, is defined as water service connected by pipe with in-house plumbing to one or more taps, for example, in the kitchen and/or bathroom.

ii. **Piped water to plot or yard** - also called a yard connection, a piped water connection to a tap placed in the yard or plot outside the house.

iii. **Public tap/standpipe** - a water point from which the public may collect their water. A standpipe may also be known as a public fountain or public tap. Public standpipes can have one or more taps and are typically made of brickwork, masonry or concrete.

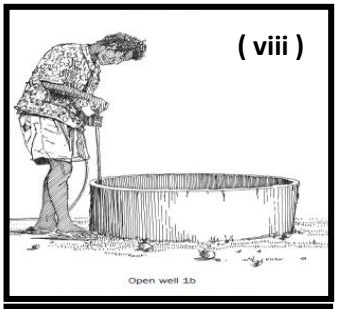
iv. **Tube well / borehole** - a deep hole that has been driven, bored or drilled with the purpose of reaching groundwater supplies. It is constructed with casing, or pipes, which prevent the small-diameter hole from caving in and provide protection from infiltration of run-off water. Water is delivered from a tube-well or borehole through a pump that may be powered by humans, animals, wind, electricity, diesel fuel or solar energy.

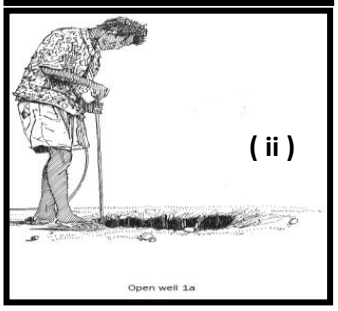
v. **Protected dug well** - a dug well protected from run-off water through a well lining or casing that is raised above ground level and a platform that diverts spilled water away from the well. Additionally, it is covered so that bird droppings and animals cannot fall down the hole.

vi. **Protected spring** - a spring that is free from run-off and from bird droppings and animals. A spring is typically protected by a 'spring box' that is constructed of brick, masonry or concrete and is built around the spring so that water flows directly out of the box into a pipe without being exposed to outside pollution

vii. **Rainwater collection** - rain that is collected or harvested from surfaces by roof or ground catchment and stored in a container, tank or cistern until used.

viii. **Semi-protected dug well** - a dug well that is protected from run-off water only or is protected from bird droppings and animals only. Not both protections are present.





b. Unimproved drinking water source

i. **Unprotected dug well** - a dug well not protected from run-off water and is not protected from bird droppings and animals.

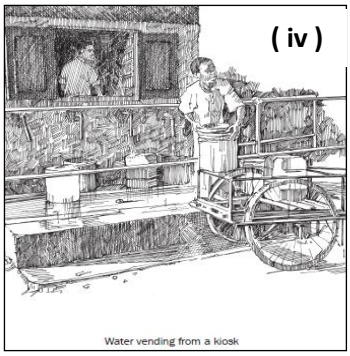
ii. **Unprotected spring** - a spring that is subject to run-off or bird droppings or animals. Unprotected springs typically do not have a 'spring box'.

iii. **Cart with small tank / drum** - used by a water provider who transports water into a community and then sells the water. Types of transports may include donkey cart, motorized vehicle or other means.

iv. **Tanker truck** - water source transports and sells water by means of a tanker truck.

v. **Surface water** (river, dam, lake, pond, stream, canal, irrigation channel) - water located above ground and includes rivers, dams, lakes, ponds, streams, canals and irrigation channels from which water is taken directly.

vi. **Bottled water** - purchased water sold in bottles. Note that the code refers only to bottled water that is commercially available. Sometimes household members may store water from other sources in bottles – this should not be coded as bottled water.



2. **WATER TREATMENT –** method to make water safer to drink

a. **Boil** - heating water with fuel until it boils.

b. **Add bleach / chlorine** - using chlorine bleach or bleaching powder to treat drinking water.

c. **Improvised filter** (cloth, sponge) - pour water through a cloth acting like a filter for collecting particles from the water.

d. **Use water filter** - water is passed through a filter made of ceramic, sand or a combination of materials to remove particles and some microbes from the water.

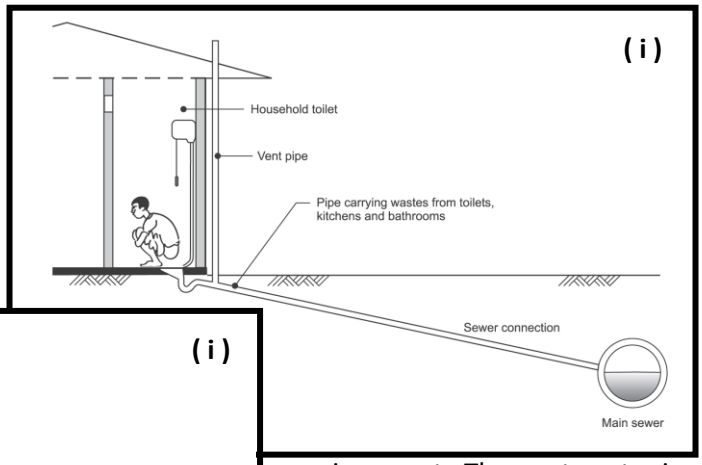
e. **Solar disinfection** - exposing water stored in buckets, containers or clear vessels to sunlight.

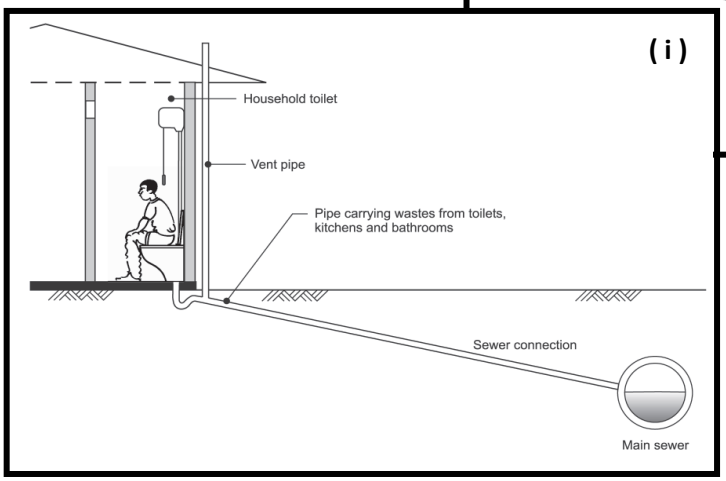
f. **Let it stand and settle** - water is stored undisturbed and without mixing long enough for larger particles to settle down due to gravity. Water is carefully removed by carefully decanting in order not to disturb settled particles.

3. **TOILET FACILITY –** method or facility for excreta collection and disposal.

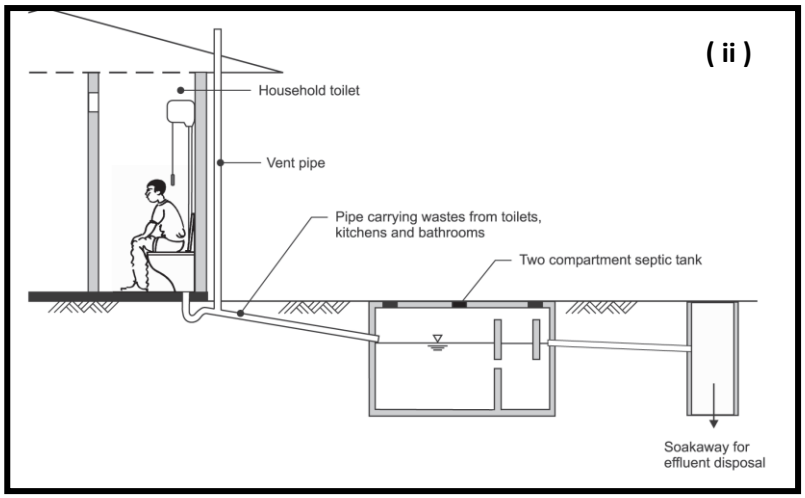
a. Improved facility

i. **Flush/pour to piped sewer system** - a system of sewer pipes (sewerage) designed to collect human excreta (feces and urine) and wastewater and remove them from the household environment. The wastewater is treated in treatment plants. It has a toilet pan with a water seal. Modern toilets incorporate an 'S','U', 'J', or 'P' shaped bend that causes the water in the toilet bowl to collect and act as a seal against sewer gases.





ii. **Flush/pour to septic tank** - an excreta collection device and is a water-tight settling tank (i.e., cemented floors and walls) normally located underground, away from the house or toilet. It has a toilet pan with a water seal.



iii. **Flush/pour flush to pit latrine** - a system that flushes excreta to a hole in the ground. It has a toilet pan with a water seal.

iv. **Ventilated improved pit latrine** (VIP) - a type of pit latrine that is ventilated by a pipe extending above the latrine roof. The open end of the vent pipe is covered with gauze mesh or fly-proof netting and the inside of the superstructure is kept dark. No toilet pan with water seal.

v. **Pit latrine with slab** - uses a hole in the ground for excreta collection and has a squatting slab, platform or seat that is firmly supported on all sides, easy to clean and raised above the surrounding ground level to prevent surface water from entering the pit. No toilet pan with water seal.

vi. **Composting toilet** - a toilet into which excreta and carbon-rich material are added (vegetable wastes, straw, grass sawdust, ash), which is periodically removed for treatment or disposal.

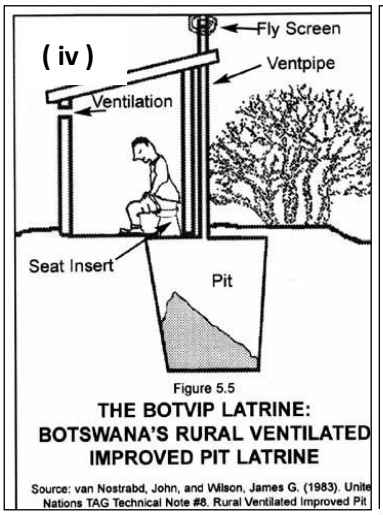
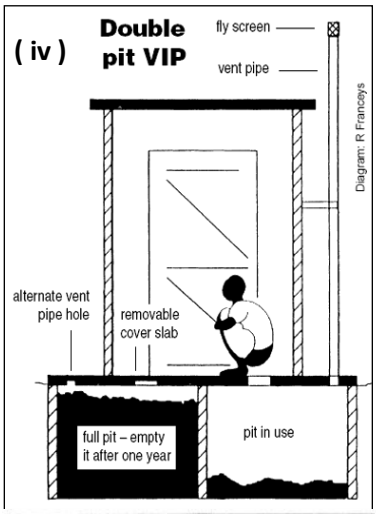
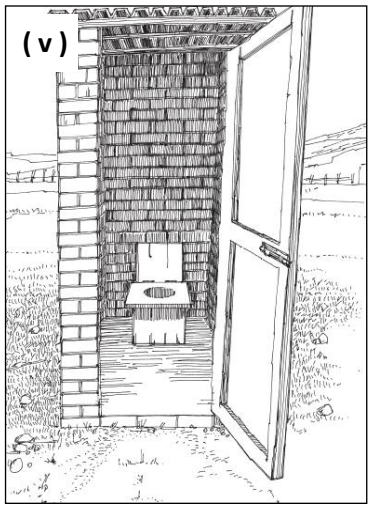
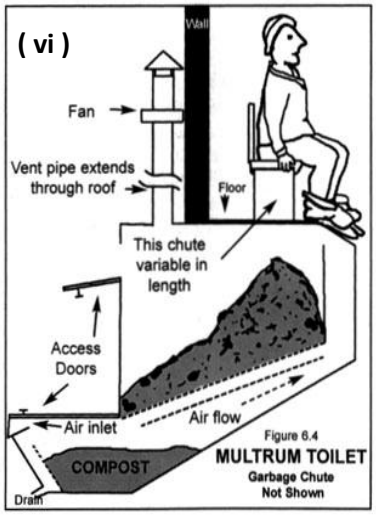


Figure 5.5
THE BOTVIP LATRINE:
BOTSWANA'S RURAL VENTILATED IMPROVED PIT LATRINE
Source: van Nostrabd, John, and Wilson, James G. (1983). United Nations TAG Technical Note #8. Rural Ventilated Improved Pit





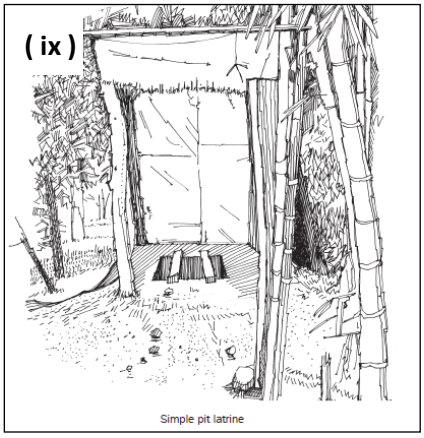


Unimproved facility

vii. **Flush/pour to elsewhere** – excreta are flushed to street, yard or plot, open sewer, ditch, drainage way, channel river or stream.

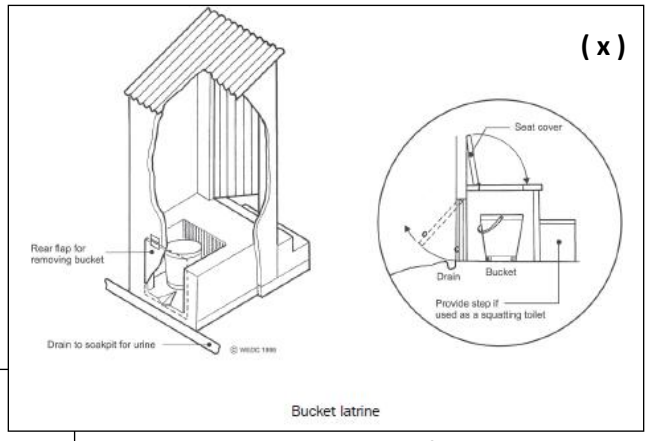
viii. **Flush/pour to don't know where** – respondent knows that the toilet is a flush/pour toilet but does not know where it flushes to.

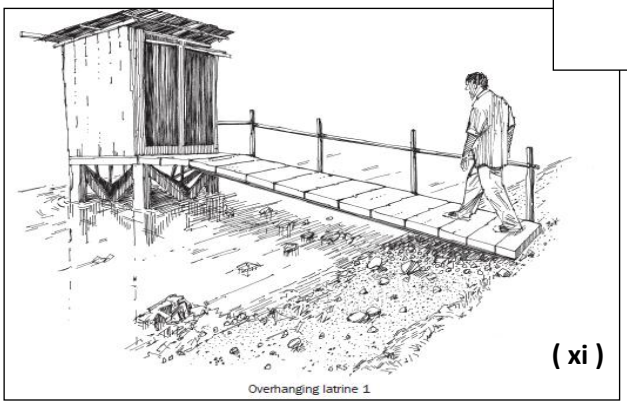
ix. **Pit latrine without slab/open pit** - uses a hole in the ground for excreta collection and does not have a squatting slab, or seat. No toilet pan with water seal.



x. **Bucket toilet** - use of a bucket or other container for the retention of feces (and sometimes urine and anal cleaning material), which is periodically removed for treatment or disposal.

xi. **Hanging toilet/latrine** – also called drop toilet is a toilet built over the sea, a river, or other body of water into which excreta drops directly.





xii. **No facility or bush/field or wrap-and-throw** - includes excreta wrapped or thrown with garbage, the; 'cat' method of burying excreta in dirt, defecation in the bush or field or ditch, and defecation into surface water (drainage channel, beach, river, stream or sea).

4. **SOCIO-ECONOMIC CLASSIFICATION** - Households are groups into 6 main socio-economic classes based in a scoring system adapted from MORES (Virola RA, Addawe MB and Querubin MIT, 2007) from the interviewer observation of neighborhood, home durability, outdoor quality and indoor quality and from the respondent interview regarding ownership of facilities, monthly household income and monthly electric bill.

    i. **Class AB** –Upper class; total SEC score of above 30 points and must have a new car, i.e., year model of 5 years ago or less
    ii. **Class C1** –Upper middle class; total SEC score of 26 to 30 points and must have a car
    iii. **Broad C** –Broad middle class; total SEC score of 21 to 25 points and must have a washing machine and air conditioner
    iv. **Class C2** –Lower middle class; total SEC score of 16 to 20 points and must have a washing machine
    v. **Class D** –Lower class; total SEC score of 10 to 15 points and must have electricity/plumbing
    vi. **Class E** –Extremely low class; total SEC score of below 10 points

a. Neighborhood scoring

1 -Located generally in slum district

2 -Mixed neighborhood with predominantly small houses

3 -Mixed neighborhood of large and small houses

4 -Mixed neighborhood with predominantly large houses

5 -Exclusive subdivision, town houses and condominiums

b. Home durability

1 -Temporary structure “barong-barong”
2 -Made of light and cheap material, poorly constructed
3 -Made of light and heavy materials
4 -Made of good quality materials
5 -Made of high quality materials

c. Outdoor quality

1 -Unpainted & dilapidated/ no lawn or front yard
2 -Generally unpainted & in need of major repairs; may have or not have a front yard
3 -Painted but may need some repairs; may have a small lawn or front yard
4 -Well-painted but needs some minor repair / large enough lawn or garden
5 -Well-painted & not in need of repairs / with sprawling lawn or garden

d. Indoor quality

1 -Unpainted & Dilapidated
2 -Generally unpainted & in need of major repairs
3 -Painted but may need some repairs
4 -Well-painted but needs some minor repairs
5 -Well-painted & not in need of repairs

e. Ownership of facilities – possession of the appliances (one point for each), vehicle and having the household facility below.

Appliances

i. Television
ii. Refrigerator/freezer
iii. Air conditioner
iv. Component, stereo, karaoke, videoke
v. CD/VCD/DVD player
vi. Electric fan
vii. Personal computer or laptop, printer
viii. Microwave oven
ix. Washing machine
x. Gas stove, cooking range with oven
xi. Floor polisher

Household facility

xii. Electricity
xiii. Landline telephone
xiv. Mobile or cellular phone
xv. Cable subscription
xvi. Generator
xvii. Car, jeep or van

1 – 0-1 facility
2 – 2-4 facilities
3 – 5-7 facilities, w/ or w/o car
4 – 8-10 facilities, w/ new car (5 years or less)
5 – more than 10 facilities, w/ new car (5 years or less)

f. Average monthly household income

1 – PhP 20,000 or less
2 – PhP 20,001 to 40,000
3 – PhP 40,001 to 60,000
4 – PhP 60,001 to 80,000
5 – Over PhP 80,000

g. **Average monthly electric bill**

1 – PhP 1,000 or less
2 – PhP 1,001 to 3,000
3 – PhP 3,001 to 5,000
4 – PhP 5,001 to 7,000
5 – Over PhP 7,000

5. **AGE IN DAYS OF CHILDREN** – computed as the number of days from the date of birth to the date of interview (Interview date – Date of birth)
6. **DIARRHEA STATUS** (UNICEF / WHO, 2009)
    a. With – had passage of 3 or more loose or liquid stools per day, or more frequently than is normal for the child within the past two weeks of the interview.
    b. Without – did not have 3 or more loose or liquid stools per day, or just the normal bowel movement for the child within past two weeks of the interview
7. **ACUTE RESPIRATORY INFECTION** (NSO [Philippines] and ICF Macro, 2009) **-** symptoms of cough, accompanied by short, rapid breathing as a result of a problem in the chest; time reference is within two weeks before the date of the interview.
8. **Nutritional Status Indicators** – assessment of nutritional status of children 0-23 months old is based on the WHO 2006 growth standards (WHO, 2006) of children with respect to the weight-for-age, weight-for-height and length-for-age.
    a. **WEIGHT-FOR-AGE**: the age appropriate weight of children measured in kilograms
        i. Underweight-for-age – below -2 SD weight-for-age cut-off
        ii. Normal weight-for-age – from -2 SD to + 2 SD weight-for-age
        iii. Overweight-for-age – above +2 SD weight-for-age cut-off
    b. **LENGTH-FOR-AGE**: the age appropriate length of children
        i. Underheight-for-age or Stunted – below -2 SD length-for-age cut-off
        ii. Normal height-for-age – from -2 SD to +2 SD length-for-age
        iii. Tall-for-age – above +2 SD length-for-age cut-off
    c. **WEIGHT-FOR-HEIGHT**: the height appropriate weight of children
        i. Underweight-for-height or Wasted – below -2 SD weight-for-height cut-off
        ii. Normal weight-for-height - from -2 SD to +2 SD weight-for-height
        iii. Overweight-for-height – above +2 SD weight-for-height cut-off
9. **Micronutrient Status Indicators** – assessment of micronutrient status of children 6-23 months old with respect to the anemia and vitamin A status.
    a. **ANEMIA STATUS**: based on hemoglobin measurement using HaemoCue
        i. No anemia – hemoglobin value of 110 grams per liter (g/L) and above
        ii. Mild iron deficiency anemia – hemoglobin value of 100 to 109 g/L
        iii. Moderate iron deficiency anemia – hemoglobin value of 70 to 99 g/L
        iv. Severe iron deficiency anemia – hemoglobin value of less than 70 g/L
    b. **ACUTE INFLAMMATION STATUS -** based on C-reactive protein (CRP) measurement (Thurnham D.I. et al, 2007)
        i. With inflammation - cut-off of > 5 mg/L was used to categorize participants as suffering from inflammation

ii. Normal – if CRP was 5 mg/L and below

c. **CHRONIC INFLAMMATION STATUS –** based on alpha-1 acid glycoprotein (AGP) measurement (Thurnham D.I. et al, 2007)
   i. With inflammation – if AGP > 1 g/L
   ii. Normal – if AGP is 1 g/L and below
   i. definitions above

d. **VITAMIN A STATUS**: based on serum retinol-binding protein (RBP) measurements. Results were adjusted for inflammation measured using C-reactive protein and AGP (Thurnham D.I. et al, 2007). RBP value is multiplied by 0.81 if AGP is elevated and multiplied by 0.74 if CRP is elevated.
   i. High – if RBP $\geq$ 1.75 µmol/L
   ii. Acceptable – RBP of 0.70 to 1.74 µmol/L
   iii. Deficient /Low – RBP of below 0.70 µmol/L

e. **IRON DEFICIENCY STATUS** - based on serum ferritin (ug/L) measurement adjusted for inflammation measured using C-reactive protein and AGP (Thurnham D.I. et al, 2007). Serum ferritin value is multiplied by 0.73 if AGP is elevated and multiplied by 0.67 if CRP is elevated.
   i. Iron deficient – if <12 ug/L
   ii. Not deficient – 12 ug/L and above

f. **IRON DEFICIENCY ANEMIA** (WHO, 2001)
   ii. IDA – children that are anemic and at the same time iron deficient based on the definitions above
   iii. No IDA – children that are not both anemic and iron deficient based on the definitions above

10. **INITIATION OF BREASTFEEDING** among children under 2 years of age (WHO, 2010)

    a. **Early initiation** – if the child was put to breast within one hour of birth

    b. **Late initiation** – if the child was not put to breast within one hour of birth

11. **EXCLUSIVE BREASTFEEDING STATUS** among infants 0-5 months based (WHO, 2010)

    a. **Exclusive breastfeeding –** feeding of infants with only breast milk until 6 months of age based on the foods/liquids taken on the previous day of interview. This includes breastfeeding by a wet nurse and feeding expressed breast milk. This allows infants to receive oral rehydration solution (ORS), drops, syrups (vitamins, minerals, medicines) but does not allow anything else

    b. **Non-exclusive breastfeeding** - feeding of infants 0-6 months with breast milk in combination with other foods or liquids of the previous day. Other liquids include water.

12. **CONTINUED BREASTFEEDING STATUS AT 1 YEAR**, children 12-15 months, 365 day-old to 486 (WHO, 2010)

    a. **Continued –** children 12–15 months of age who were fed breastmilk the previous day

    b. **Discontinued –** children 12-15 months who did not take breastmilk the previous day

13. **INTAKE OF SOLID, SEMI-SOLID OR SOFT FOODS AMONG INFANTS 6-8 MONTHS** (WHO, 2010)

a. **Introduced –** feeding of infants 6–8 months of age solid, semi-solid or soft foods the previous day
b. **Not introduced**: not feeding infants 6–8 months of age solid, semi-solid or soft foods the previous day

14. **MINIMUM DIETARY DIVERSITY** among children 6-23 months classified whether or not they received foods the previous day from 4 or more food groups. (WHO, 2010)
    a. **Achieved**: if child 6-23 months received foods from 4 or more food groups
    b. **Not achieved**: if child 6-23 months received foods from less than 4 food groups

The seven food groups are:

Food Group	Examples in Philippine Setting
Grains, roots and tubers	gabi, kamoteng kahoy, kamote togé
Legumes and nuts	sitao, abistwelas, paayap, sitsaro
Dairy products (milk, yogurt, cheese)	gatas, keso, taho
Flesh foods (meat, fish, poultry and liver/organ meats)	karne ng baka, karne ng baboy, isda, atay, laman loob
Eggs	itlog ng manok, itik, pato, balot
Vitamin A rich fruits and vegetables	carrots, tesa, malunggay (leaves), camote tops, kangkong, native pechay, kulitis, saluyot, bulaklak ng kalabasa, ampalaya (leaves), tomato (dark yellow or orange), mango (ripe - fresh or dried), papaya (ripe – fresh or dried)
Other fruits and vegetables	Fruits: Apple, banana, coconut, durian, grapes, green papaya, guava, kiwi, lemon, pear, pineapple, raisin, rambutan, strawberry, sampaloc, watermelon Vegetable: ampalaya (bunga), asparagus, bamboo shoot, cabbage (common), cauliflower, celery, corn (fresh not dried/flour/meal), sayote, eggplant, garlic, green pepper, mushroom, onion, okra (bunga), radish/labanos, tomato (red, yellow, green)

15. **MINIMUM MEAL FREQUENCY** among children 6-23 months classified whether or not they received solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times. "Meals" include both meals and snacks (other than trivial amounts), and frequency is based on caregiver report. (WHO, 2010)
    a. **Achieved**: if children 6-23 months received solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times during the previous day which are
        — 2 times or more for breastfed infants 6–8 months

— 3 times or more for breastfed children 9–23 months

— 4 times or more for non-breastfed children 6–23 months

b. Not achieved: if children received solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) below the minimum number of times during the previous day

16. **MINIMUM ACCEPTABLE DIET:** classification of children 6–23 months of age as to whether or not they receive a minimum acceptable diet (apart from breast milk). (WHO, 2010)
    a. Achieved: if children 6-23 months received the minimum acceptable diet during the previous day which are
        For breastfed children: having minimum dietary diversity and minimum meal frequency
        For non-breastfed children: receiving at least 2 milk feedings and having minimum dietary diversity, not including milk feeds, and minimum meal frequency
    b. Not achieved: if children 6-23 months did receive a minimum diet diversity or minimum meal frequency during the previous day
17. **EVER BREASTFEEDING STATUS** of children 6-23 months classified as whether or not they were ever breastfed (WHO, 2010)
    a. Ever breastfed: received breastmilk at least once
    b. Never breastfed: never received breastmilk
18. **CONTINUED BREASTFEEDING STATUS AT 2 YEARS**, children 20-23 months or 608 days to 729 days (WHO, 2010)
    a. Continued: if children 20-23 months were fed breastmilk (either by breastfeeding of the mother or other women or by some other ways like by spoon or bottle) during the previous day
    b. Discontinued: if children 20-23 months were not fed breastmilk during the previous day
19. **BOTTLE FEEDING STATUS** of children 0–23 months of age classified as whether or not they are fed with a bottle. (WHO, 2010)
    a. Bottle-fed: drank anything from a bottle with a nipple the previous day
    b. Not bottle-fed: did not drink anything from a bottle with a nipple the previous day

20. **MINIMUM MILK FEEDING FREQUENCY FOR NON-BREASTFED CHILDREN:** classification of non-breastfed children 6–23 months of age as to whether or not they receive at least 2 milk feedings during the previous day. Milk feedings include liquid milk products such as infant formula, cow milk or other animal milk. The specific products to be included need to be defined for each target population, to take into account local milk products that are commonly fed to young children in substantial quantities (e.g. fermented dairy products) (WHO, 2010)
    a. Achieved – received at least 2 milk feedings during the previous day
    b. Not achieved – received less than 2 milk feedings during the previous day

APPENDIX J. TABLES OF RESULTS

Table A. 4. Results of Household and Mother Interviews, Anthropometric Measurement of Children 0-23 Months and Blood Collection in Children 6-23 Months

Result	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Anthropometric Measurement of Children										
Sampled Children	464	448	912	250	567	1,075	96	120	81	2,189
Refused	17	2	19	5	25	2	-	5	-	37
Participated	447	446	893	245	542	1,073	96	115	81	2,152
Response Rate (%)	**96.3**	**99.6**	**97.9**	**98.0**	**95.6**	**99.8**	**100.0**	**95.8**	**100.0**	**98.3**
Blood Collection Among Children 6-23 Months										
Eligible Children	464	448	912	204	414	457	-	-	-	1,075
Refused	88	7	95	19	43	32	-	-	-	94
Participated	376	441	817	185	371	425	-	-	-	981
Response Rate (%)	**81.0**	**98.4**	**89.6**	**90.7**	**89.6**	**93.0**	**-**	**-**	**-**	**91.3**
Mother and Household Interview										
Mothers	433	438	871	244	516	985	89	108	71	2,013
Households	442	446	888	245	542	1,073	96	115	81	2,152

Table A. 5. Percent Distribution of Household Respondents According to Age (Years), Relationship to Child, Marital Status, Highest Educational Attainment and Employment Status by Study Site

Characteristics of Household Respondents	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of HH Respondents	442	446	888	245	542	1,073	96	115	81	2,152
Age										
15-19	11.3	7.4	9.8	3.9	6.9	6.6	4.2	4.3	11.4	6.1
20-24	21.9	28.9	24.7	24.6	23.0	22.1	26.1	26.0	16.0	22.8
25-29	31.1	27.4	29.6	24.4	23.4	23.1	24.2	21.1	24.0	23.4
30-34	17.9	17.6	17.8	25.8	20.6	23.0	14.8	20.6	18.3	23.0
35-39	16.2	11.9	14.5	15.3	14.5	16.3	11.2	11.6	8.7	15.5
40-44	0.9	4.3	2.3	4.3	7.0	5.0	10.3	9.7	18.9	5.6
45-76	0.7	2.5	1.4	1.6	4.6	3.7	9.2	5.2	2.7	3.5
No Information	0.0	0.0	0.0	0.2	0.0	0.1	0.0	1.5	0.0	0.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Relationship of Respondent to Child										
Mother	98.0	93.9	96.4	95.9	93.7	91.4	90.8	93.2	85.3	92.6
Others	2.0	6.1	3.6	4.1	6.4	8.6	9.2	6.8	14.7	7.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Highest Educational Attainment										
None	14.6	8.6	12.2	7.1	3.7	12.9	4.3	15.0	13.0	10.1
Elementary	37.3	35.9	36.7	26.1	24.8	36.7	32.4	33.2	22.6	32.2
High School	44.0	46.9	45.1	57.7	63.4	38.7	44.8	44.9	41.6	46.8
College/Post-Baccalaureate	4.0	8.6	5.8	8.9	8.2	11.7	18.5	5.4	22.9	10.8
No Information	0.2	0.0	0.1	0.2	0.0	0.1	0.0	1.5	0.0	0.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A. 6. Percent Distribution of Households According to Source of Drinking Water and Treatment Employed to Make Water Safer To Drink by Study Site

Drinking water source / Water Treatment Method	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of households	442	446	888	245	542	1,073	96	115	81	2,152
Source of Drinking Water										
Improved Source	*65.9*	*37.1*	*54.5*	*87.7*	*46.2*	*86.1*	*93.6*	*78.9*	*87.7*	*80.3*
Piped into Dwelling	14.6	16.0	15.1	50.9	21.9	48.2	72.3	0.0	52.2	44.6
Piped into Yard/Plot	10.7	4.2	8.1	24.5	5.4	24.5	3.0	0.0	28.1	20.9
Piped to Public Pipe	40.5	11.9	29.2	5.7	10.0	10.6	4.9	1.5	5.3	9.1
Tubewell or Borehole	0.1	3.1	1.3	6.7	7.3	2.5	3.1	48.1	0.0	4.7
Protected Dug Well	0.0	0.2	0.1	0.0	1.2	0.3	3.1	24.6	0.7	0.8
Semi-Protected Dug Well	0.0	0.8	0.3	0.0	0.3	0.0	6.2	4.0	0.0	0.2
Protected Spring	0.0	0.8	0.3	0.0	0.2	0.0	1.0	0.7	1.4	0.1
Non-improved Source	*34.1*	*62.9*	*45.5*	*12.3*	*53.8*	*13.9*	*6.3*	*21.1*	*12.3*	*19.7*
Unprotected Dug Well	0.0	0.1	0.1	0.0	0.3	0.1	0.0	2.8	3.8	0.2
Unprotected Spring	0.0	0.2	0.1	0.6	0.0	0.0	1.0	12.7	2.5	0.4
Water Tanker	0.0	0.0	0.0	0.0	2.5	0.6	0.0	0.0	2.4	0.8
Cart with Small Tank	4.3	0.0	2.6	0.0	0.2	0.0	0.0	0.0	0.0	0.1
Surface Water (River, Dam, etc.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Bottled/Mineral Water[1]	29.3	62.4	42.4	11.6	50.8	11.8	5.3	4.3	3.6	17.4
Others	0.5	0.1	0.4	0.0	0.0	1.3	0.0	0.0	0.0	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Water treatment[2]										
No treatment	88.9	69.6	81.3	40.8	54.6	28.3	32.1	15.9	57.8	35.6
Boiled	5.6	29.4	15.0	52.6	43.0	69.9	63.9	33.4	32.3	60.7
Bleach/chlorine	0.0	0.4	0.1	0.0	0.6	0.1	0.0	1.8	0.7	0.2
Improvised filter (cloth/sponge)	4.8	0.3	3.0	2.9	3.2	5.6	15.5	61.2	10.6	5.7
Water filter (ceramic, sand, etc.)	0.9	0.4	0.7	0.0	0.2	0.5	1.1	1.5	0.0	0.4
Solar disinfection	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Let it stand and settle	0.0	0.4	0.2	5.1	0.1	0.0	43.9	2.2	0.0	2.0

[1] Bottled/mineral water considered as non-improved because quality is not known (NDHS, 2008)

[2] Multiple answers possible so the sum may exceed 100 percent

Table A. 7. Percent Distribution of Households According to Type of Toilet Facility by Study Site

Toilet Facility	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of Households	442	446	888	245	542	1,073	96	115	81	2,152
Toilet Sharing	28.0	44.2	36.6	40.5	21.8	36.0	24.2	30.7	19.6	34.3
Type of Toilet										
Improved facility	*36.8*	*87.9*	*57.0*	*97.3*	*88.4*	*83.2*	*90.3*	*74.0*	*88.5*	*87.1*
Flush to Septic Tank	35.5	80.7	53.4	88.0	84.3	69.0	90.3	51.3	52.5	75.2
Flush to Sewer	0.4	0.5	0.4	0.0	0.8	0.5	0.0	0.0	0.0	0.4
Flush to Pit Latrine	1.0	6.0	3.0	6.6	3.1	10.0	0.0	8.8	29.0	8.4
Pit Latrine Ventilate	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.3
Pit Latrine With Slab	0.0	0.0	0.0	0.0	0.2	3.2	0.0	13.8	7.0	2.2
Composting	0.0	0.7	0.3	2.7	0.0	0.1	0.0	0.0	0.0	0.6
Non-improved facility	*63.2*	*12.1*	*43.0*	*2.7*	*11.5*	*16.7*	*9.7*	*26.1*	*11.5*	*12.8*
Flush to Somewhere Else	1.2	4.8	2.6	0.4	2.8	8.2	0.0	0.0	0.0	5.3
Flush to Don't Know Where	0.3	0.6	0.4	0.2	0.2	3.8	0.0	0.0	0.0	2.2
Pit Latrine Without Slab	4.3	0.1	2.7	0.9	0.7	0.9	0.0	1.3	0.0	0.8
Bucket	0.1	1.2	0.5	1.2	0.2	0.4	0.0	0.0	0.0	0.5
Drop/Hanging Toilet	13.2	1.7	8.6	0.0	2.5	3.0	0.0	0.0	0.0	2.1
No Facility	44.1	3.8	28.1	0.0	5.2	0.4	9.7	24.7	11.5	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A. 8. Percent Distribution of Households According to Tenure Status of Lot by Study Site

Tenure Status of Lot	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Owned / Amortized	34.0	31.5	33.0	44.5	33.8	42.1	25.6	40.4	57.7	41.3
Rented	23.6	32.9	27.3	8.1	6.0	20.1	22.5	3.4	11.7	15.0
Rent-free w/ consent	41.6	31.0	37.4	41.5	43.4	32.3	45.4	55.0	28.2	36.5
Rent-free w/o consent	0.8	4.6	2.3	5.9	16.8	5.4	6.5	1.2	2.4	7.2
No Info	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A. 9. Percent Distribution of Households According to Presence of Electricity and Housing Materials by Study Site

Housing Material	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of households	442	446	888	245	542	1,073	96	115	81	2,152
With Electricity	63.9	90.3	74.3	85.0	94.5	93.0	83.3	58.6	75.2	90.5
Flooring Material										
Cement	19.4	43.0	28.8	59.5	51.8	41.7	68.0	32.2	45.3	47.5
Wood planks	55.6	17.4	40.5	2.5	4.9	27.4	3.2	1.3	5.7	17.4
Natural floor earth or sand	9.3	5.3	7.7	13.5	5.4	14.1	19.9	28.8	8.8	12.8
Palm or bamboo	8.7	11.1	9.6	7.8	25.0	7.4	4.1	37.1	27.4	11.0
Ceramic tiles	2.4	11.2	5.9	9.7	6.0	3.5	4.9	0.6	12.7	5.4
Vinyl, linoleum	4.0	7.0	5.2	6.6	3.5	4.5	0.0	0.0	0.0	4.6
Parquet or polished wood	0.4	4.3	1.9	0.0	1.2	1.3	0.0	0.0	0.0	0.9
Marble	0.1	0.3	0.2	0.4	0.7	0.1	0.0	0.0	0.0	0.3
Carpet	0.0	0.5	0.2	0.0	1.5	0.0	0.0	0.0	0.0	0.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Roof Material										
Galvanized iron/aluminum	50.1	96.1	68.3	62.9	84.2	75.0	67.4	40.1	81.3	73.4
Thatch palm leaf (nipa)	0.0	0.6	0.2	27.2	11.6	17.5	32.6	51.3	12.3	19.2
Makeshift or cardboard	44.0	1.7	27.3	5.3	0.1	0.8	0.0	0.0	0.0	1.6
Palm or bamboo	0.0	0.0	0.0	0.5	0.9	2.2	0.0	4.2	1.3	1.6
Cement	0.6	0.4	0.5	2.1	2.0	0.5	0.0	1.5	2.7	1.2
Wood	4.7	0.9	3.2	0.3	0.1	1.7	0.0	0.0	0.0	1.1
Sod or grass (cogon)	0.0	0.0	0.0	0.0	0.2	1.5	0.0	2.8	0.0	0.9
Others	0.6	0.1	0.4	1.5	0.8	0.8	0.0	0.0	2.4	0.9
None	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wall Materials										
Plywood	43.2	42.6	43.0	18.6	39.6	32.2	3.0	7.2	4.8	29.0
Cement	17.1	14.8	16.2	37.3	25.4	17.2	59.4	17.5	45.4	24.1
Cane, palm, or trunks	0.0	7.0	2.8	3.9	3.4	21.6	4.2	58.2	5.4	14.8
Bamboo	8.7	3.5	6.6	14.0	21.8	11.6	31.3	14.5	11.5	14.1
Makeshift/cardboard	29.9	5.7	20.3	18.8	0.7	3.8	2.1	1.2	24.4	6.9
Cement blocks	0.5	0.4	0.5	4.4	6.1	2.9	0.0	0.0	0.0	3.5
Wood planks or shingles	0.0	0.9	0.4	0.3	0.9	4.4	0.0	0.0	4.0	2.9
Covered adobe	0.0	11.1	4.4	0.2	0.5	4.2	0.0	0.0	0.0	2.6
Uncovered adobe	0.5	13.0	5.4	0.0	0.9	1.2	0.0	0.0	4.4	0.9
Bricks	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.4
Others	0.1	0.9	0.4	0.7	0.8	0.9	0.0	1.3	0.0	0.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A. 10. Percent Distribution of Households According to Number of Rooms Used for Sleeping, Type of Cooking Fuel, Place of Cooking and Type of Fire/Stove

Housing Characteristic	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of Households	442	446	888	245	542	1,073	96	115	81	2,152
Rooms Used for Sleeping										
One	76.5	57.1	68.8	54.8	31.5	42.5	46.0	45.7	19.1	43.0
Two	15.7	26.2	19.8	30.1	33.8	32.7	36.9	39.7	30.2	32.4
Three or more	7.9	16.7	11.4	15.1	34.3	24.4	17.2	14.6	50.7	24.2
No info	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cooking Fuel										
Charcoal	13.1	37.9	23.0	58.6	79.7	51.2	49.0	15.8	12.0	55.9
Wood	35.2	22.9	30.3	21.3	9.6	31.9	33.7	83.0	78.3	27.8
LPG	32.2	31.6	32.0	19.3	9.5	14.1	17.3	1.2	9.7	14.3
Electricity	1.8	1.8	1.8	0.8	1.0	1.2	0.0	0.0	0.0	1.0
Straw, shrubs, grass	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.3
Agricultural crop, biomass	0.0	0.4	0.2	0.0	0.0	0.4	0.0	0.0	0.0	0.2
Kerosene	17.0	3.0	11.4	0.0	0.0	0.2	0.0	0.0	0.0	0.1
Others	0.6	1.5	1.0	0.0	0.2	0.4	0.0	0.0	0.0	0.3
No food cooked in household	0.1	0.9	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Place for Cooking										
No. of HH that cook food	440	442	882	245	542	1,072	96	115	81	2,151
Separate room in the house	21.2	38.2	27.9	47.0	21.5	40.1	52.3	79.1	22.3	39.0
No separate room in the house	49.6	22.0	38.7	36.0	58.8	31.2	19.8	0.0	53.6	36.3
Separate from the house	15.1	19.8	17.0	2.6	11.7	13.2	27.9	18.1	15.3	11.1
Outdoor	14.1	19.9	16.4	14.4	8.0	15.4	0.0	2.7	8.7	13.4
No info	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Type of Fire/Stove Among Households Using Solid Fuel										
No. of HH Using Solid Fuel	38	265	303	100	265	530	23	59	74	1,051
Closed stove	0.0	0.0	0.0	0.0	0.0	0.2	4.3	0.0	0.0	0.1
Open with chimney	0.0	1.2	0.7	2.5	0.8	1.0	0.0	0.0	15.9	1.8
Open with hood	0.0	51.4	29.5	44.3	1.3	17.3	0.0	0.0	19.9	19.1
Open without chimney/hood	100.0	47.4	69.9	50.5	76.6	69.2	95.7	98.9	64.3	67.6
Open Missing	0.0	0.0	0.0	1.1	21.4	12.3	0.0	0.0	0.0	11.0
Others/Missing	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.1	0.0	0.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A. 11. Percent Distribution of Households Possessing Various Household Effects and Means of Transportation by Study Site

Possession	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of households	442	446	888	245	542	1,073	96	115	81	2,152
Household Effects[1]										
Television	53.1	76.6	62.4	81.7	76.8	79.5	65.2	38.6	64.8	78.5
Electric fan	55.8	80.9	65.7	75.4	84.2	72.5	73.8	26.4	43.9	73.7
Mobile or cellular phone	51.9	77.0	61.8	76.3	74.7	61.4	81.1	58.2	78.9	67.3
Radio or radio casette	26.8	54.7	37.9	65.9	59.8	55.3	57.2	41.9	43.8	57.9
CD, VCD or DVD player	21.3	55.0	34.6	47.9	51.0	44.1	50.1	32.2	47.8	46.0
Refrigerator or freezer	10.8	28.7	17.9	22.4	28.4	27.0	29.7	7.7	44.6	26.4
Gas Stove, cooking range with oven	50.9	39.0	46.2	28.5	15.0	15.8	27.6	1.8	20.6	18.5
Component, stereo, karaoke, videoke	8.0	28.8	16.2	11.6	19.5	18.7	24.7	13.5	26.1	17.5
Washing machine	13.5	16.4	14.7	22.7	17.1	14.7	27.8	1.2	34.1	17.2
Cable subscription	4.7	4.5	4.6	4.7	17.4	5.7	39.2	0.0	10.8	8.0
Computer or laptop, printer	5.0	10.7	7.2	8.1	9.8	6.6	12.9	1.2	17.0	7.7
Airconditioner	2.9	6.4	4.3	6.9	4.0	4.9	6.1	0.0	10.8	5.3
Landline telephone	4.5	12.9	7.8	4.2	8.3	3.0	0.0	0.0	7.2	4.1
Microwave oven	2.3	4.2	3.1	4.7	5.4	3.4	6.2	0.0	3.0	4.0
Household/Domestic Helper	0.9	2.0	1.3	3.2	4.1	2.3	9.9	0.0	8.4	3.0
Floor polisher	0.5	1.1	0.7	1.8	1.0	2.3	5.1	0.0	0.0	2.0
Generator	0.0	0.0	0.0	1.6	0.4	0.6	5.0	4.3	0.0	0.9
Means of Transport[1]										
Motorcycle / Tricycle	6.3	13.6	9.2	18.3	12.7	20.8	26.7	18.1	43.4	19.5
Bicycle	16.2	17.2	16.6	13.1	22.3	9.2	27.2	15.7	10.2	12.5
Car, jeep, or van	1.1	3.4	2.0	2.1	2.9	3.0	1.9	0.6	5.5	2.8
Boat, banca with motor	0.0	0.0	0.0	1.3	0.2	0.2	12.1	20.4	3.8	1.2
Animal-drawn cart	0.0	0.4	0.1	0.0	0.0	0.3	9.2	0.0	2.0	0.4
Tractor	0.0	0.0	0.0	0.0	0.0	0.1	1.0	0.0	0.0	0.1

[1] Multiple answers possible, the sum may exceed 100 percent

Table A. 12. Percent Distribution of Mothers According to Age (Years), Marital Status, Highest Educational Attainment and Employment Status by Study Site

Characteristics of Mothers	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total GAIN	Naga City	Iloilo City	Zambo-anga City	Ragay	Carles	Aurora	
Number of Mothers	433	438	871	244	516	985	89	108	71	2,013
Age										
15-19	11.3	7.5	9.8	4.0	7.0	7.0	4.5	3.4	13.5	6.4
20-24	21.8	28.7	24.5	24.4	23.5	23.4	28.1	27.8	19.0	23.7
25-29	31.0	26.2	29.1	23.1	24.2	23.9	26.1	22.0	21.6	23.7
30-34	17.7	16.9	17.4	25.6	21.0	24.6	14.9	22.0	20.9	24.0
35-39	16.1	11.3	14.2	13.3	14.8	15.8	12.1	12.5	9.4	14.8
40-44	1.0	3.7	2.1	4.3	6.3	3.9	7.9	10.4	13.2	4.7
45-52	0.1	1.4	0.6	1.6	1.4	0.5	4.4	0.7	2.4	1.0
No Information	1.1	4.2	2.3	3.9	1.9	0.9	2.1	1.3	0.0	1.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Marital Status										
Never Married	7.4	9.2	8.1	4.8	4.5	2.1	3.4	3.1	5.1	3.2
Married	42.6	36.5	40.2	50.0	62.3	62.4	52.4	72.6	67.5	59.7
Living Together	48.1	49.3	48.6	35.3	29.0	32.4	41.1	20.6	27.4	32.5
Separated	0.6	0.9	0.7	5.9	1.9	2.0	0.0	0.8	0.0	2.8
Widow ed	0.2	0.0	0.1	0.0	0.4	0.1	1.0	0.0	0.0	0.1
No Information	1.1	4.2	2.3	3.9	1.9	0.9	2.1	3.0	0.0	1.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Highest Educational Attainment										
None	14.7	8.7	12.4	7.1	3.5	12.7	3.6	12.7	13.8	9.9
Elementary	37.2	34.5	36.1	24.5	24.4	36.4	31.4	32.8	23.1	31.4
High School	43.3	45.2	44.0	55.9	63.3	38.8	47.3	47.4	38.8	46.8
College/Post-Baccalaureate	3.7	7.4	5.2	8.5	6.9	11.1	15.7	5.8	24.3	10.1
No Information	1.1	4.2	2.3	3.9	1.9	0.9	2.1	1.3	0.0	1.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Employment Status										
Unemployed	67.5	71.9	69.2	63.0	74.2	84.4	66.1	90.8	71.3	77.5
Employed	31.4	23.9	28.5	33.1	23.9	13.4	31.8	7.9	28.7	20.1
No Information	1.1	4.2	2.3	3.9	1.9	2.2	2.1	1.3	0.0	2.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A. 13. Percent Distribution of Mothers Who Received Samples from Infant Formula Companies Discussion on Breastfeeding Before and After Delivery and Breastfeeding Recommendations Given by Study Site

Birthing Facility and Attendant	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total GAIN	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of Mothers	433	438	871	244	516	985	89	108	71	2,013
Received Samples from Infant Formula Companies	5.2	11.2	7.5	6.4	5.6	0.7	0.0	2.2	1.7	2.8
Discussed BF before & after delivery	86.9	92.0	88.9	79.5	82.5	86.8	60.6	91.0	92.1	84.2
No. Mothers Given BF Discussion	374	405	779	206	425	844	54	98	63	1,690
Breastfeeding Recommendations										
Don't BF	0.1	1.0	0.4	3.1	0.2	0.4	1.7	0.8	0.0	1.0
Start BF immediately	93.8	97.0	95.1	87.2	99.3	92.5	64.8	74.0	38.0	90.7
Start BF later	0.4	0.2	0.3	9.6	0.5	5.4	33.5	25.2	0.0	6.1
Others	0.0	1.6	0.6	0.0	0.0	1.4	0.0	0.0	62.0	2.1
Don't Remember	5.8	0.2	3.5	0.0	0.0	0.3	0.0	0.0	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A. 14. Percent Distribution of Children According to Main Person Looking After and Feeding the Child by Study Site

Person Responsible	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zamboanga City	Ragay	Carles	Aurora	
Number of Children	447	446	893	245	542	1,073	96	115	81	2,152
Main Person Looking After Child										
Mother	93.8	84.8	90.3	86.4	89.7	86.9	83.6	92.5	69.1	86.9
Grandparent	3.2	5.7	4.2	8.1	5.3	7.7	12.5	6.1	11.0	7.6
Other Family Members	1.5	5.3	3.0	1.1	2.1	2.4	0.0	0.7	12.0	2.2
Father	0.9	3.4	1.9	4.0	1.1	1.5	0.0	0.6	3.1	2.0
Non-related Caretakers	0.5	0.8	0.6	0.3	1.8	1.2	3.9	0.0	4.8	1.2
No information	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Main Person Feeding the Child										
Mother	94.3	87.2	91.5	86.4	88.7	87.9	83.5	92.5	70.8	87.3
Grandparent	3.1	5.9	4.2	7.7	5.8	7.1	11.4	6.2	8.6	7.1
Other Family Members	1.1	2.9	1.8	1.1	2.6	2.3	1.1	0.0	12.7	2.3
Father	0.8	3.4	1.9	4.0	1.1	1.6	0.0	1.3	3.1	2.0
Non-related Caretakers	0.6	0.7	0.7	0.8	1.8	1.1	3.9	0.0	4.8	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A. 15. Confidence Intervals (95% CI) of the Prevalence of Undernutrition by Site

Indicators	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo-anga City	Ragay	Carles	Aurora	
Underweight-for-Age										
Overall	19.5 - 26.4	13.3 - 21.3	16.6 - 25.0	10.9 - 25.4	15.8 - 25.2	12.7 - 17.2	16.0 - 24.2	15.2 - 30.2	10.2 - 13.4	14.1 - 18.6
<6	-	-	-	-	10.9 - 38.2	7.0 - 13.8	13.8 - 19.8	0.4 - 29.9	4.0 - 42.1	7.6 - 14.0
6-11	6.6 - 24.9	9.7 - 25.6	9.7 - 22.3	16.0 - 27.1	8.5 - 18.7	13.2 - 21.8	0.5 - 25.7	9.8 - 42.8	0.2 - 24.9	14.1 - 20.1
12-23	21.0 - 28.3	12.8 - 22.8	17.3 - 27.4	11.0 - 33.9	19.3 -27.4	13.8 - 22.2	23.2 - 35.3	16.7 - 41.6	10.5 - 23.2	16.0 - 23.7
6-23	19.5 - 26.4	13.3 - 21.3	16.6 - 25.0	13.5 - 29.7	16.5 - 23.1	14.6 - 20.6	15.7 - 26.5	16.7 - 36.4	7.1 - 16.9	15.9 - 21.5
Underheight-for-Age (Stunting)										
Overall	27.0 - 47.4	25.2 - 34.5	25.8 - 42.9	20.5 - 32.3	24.0 - 34.8	16.2 - 22.3	16.8 - 35.8	28.2 - 47.6	24.8 - 29.8	20.4 - 25.0
<6	-	-	-	6.4 - 23.4	14.2 - 35.5	9.8 - 24.3	17.4 - 28.4	10.9 - 58.0	0.7 - 58.3	11.8 - 22.6
6-11	9.1 - 74.8	16.6 - 34.6	14.4 - 50.4	12.4 - 30.1	14.7 - 33.8	17.1 - 24.5	2.4 - 22.3	26.2 - 34.9	18.8 - 45.9	17.7 - 24.4
12-23	31.8 - 42.1	25.8 - 38.5	29.8 - 40.7	27.1 - 40.6	30.9 - 39.9	17.0 - 25.6	22.1 - 50.2	29.0 - 61.7	23.2 - 39.7	24.3 - 31.2
6-23	27.0 - 47.4	25.2 - 34.5	25.8 - 42.9	22.2 - 36.1	26.0 - 36.7	17.7 - 24.3	15.9 - 38.9	26.8 - 52.8	28.2 - 33.5	22.4 - 27.9
Underweight-for-length (Wasting)										
Overall	0.5 - 9.4	1.6 - 5.5	1.0 - 6.3	1.3 - 12.4	4.4 - 11.9	6.3 - 9.0	1.1 - 9.1	1.1 -13.7	6.1 - 14.4	5.5 - 8.1
<6	-	-	-	1.31 - 30.2	2.6 - 14.5	4.7 - 9.6	2.2 - 14.7	0.8 - 49.8	9.9 - 34.1	4.9 - 9.6
6-11	3.5 - 14.5	1.5 - 10.9	3.1 - 9.5	2.4 - 13.2	3.9 - 14.0	3.4 - 11.8	-	-	0.2 - 24.9	3.9 - 9.4
12-23	0.3 - 7.0	1.2 - 5.3	0.6 - 5.3	0.6 - 8.5	3.8 - 14.8	7.2 - 11.5	0.6 - 20.2	2.0 - 12.6	4.9 - 20.4	5.5 - 8.8
6-23	0.5 - 9.4	1.6 - 5.5	1.0 - 6.3	1.2 - 9.8	4.3 - 13.1	6.3 - 10.1	0.4 - 14.2	0.9 - 10.1	3.2 - 16.6	5.3 - 8.2
Severe Undernutrition										
Underweight	6.1 - 14.7	1.6 - 5.5	3.5 - 13.4	2.0 - 9.1	2.2 - 7.0	1.5 - 4.0	1.3 - 20.6	2.9 - 10.4	1.8 - 9.3	2.2 - 4.5
Stunting	8.2 - 13.7	6.3 - 13.7	7.9 - 12.9	6.9 - 13.3	8.0 - 15.6	3.4 - 7.1	10.0 - 20.6	7.1 - 25.4	7.1 - 14.7	5.9 - 9.0
Wasting	0.0 - 1.1	0.1 - 2.1	0.1 - 1.1	0.5 - 4.5	0.4 - 4.0	0.8 - 1.9	0.2 - 7.2	0.1 - 10.4	3.7 - 3.7	0.9 - 2.0

Table A. 16. Frequency Distribution of Children 6-23 Months by Blood Test Done, Age Group and Study Site

Age Group in Months	GAIN Site			MDGF City				
	Manila	Cebu City	Total	Naga City	Iloilo City	Combined Naga & Iloilo Cities	Zambo anga City	Total
Hemoglobin								
6-11	125	123	248	55	128	183	157	340
12-23	251	318	569	130	243	373	268	641
6-23	376	441	817	185	371	556	425	981
Other Biochemical Measurements								
6-11	125	122	247	55	128	183	154	337
12-23	251	318	569	130	242	372	256	628
6-23	376	440	816	185	370	555	410	965

Table A. 17. Mean and Standard Error of Hemoglobin, Ferritin, sTFR and Body Iron Stores According to Age Group in Months and Study Site

Age Group in Months	GAIN Sites			MDGF-2030 Cities				
	Manila	Cebu City	Total	Naga City	Iloilo City	Combined Naga & Iloilo Cities	Zambo-anga City	Total
Hemoglobin (g/dL)								
6-11	10.7 ± 0.10	10.7 ± 0.10	10.7 ± 0.07	10.7 ± 0.17	11.0 ± 0.10	10.8 ± 0.13	10.4 ± 0.13	10.6 ± 0.10
12-23	10.6 ± 0.13	11.0 ± 0.08	10.8 ± 0.15	11.1 ± 0.11	11.4 ± 0.10	11.3 ± 0.08	11.3 ± 0.09	11.3 ± 0.06
6-23	10.7 ± 0.13	10.9 ± 0.07	10.8 ± 0.12	11.0 ± 0.08	11.3 ± 0.07	11.1 ± 0.07	10.9 ± 0.08	11.0 ± 0.05
Ferritin (ug/L)								
6-11	25.5 ± 5.1	31.1 ± 3.5	28.7 ± 3.4	38.6 ± 1.9	41.6 ± 3.5	39.8 ± 1.8	35.3 ± 3.1	37.6 ± 1.9
12-23	30.0 ± 0.7	25.2 ± 1.4	28.3 ± 1.3	31.6 ± 2.7	34.3 ± 2.2	32.7 ± 1.8	28.7 ± 1.4	31.0 ± 1.2
6-23	29.4 ± 0.6	26.9 ± 1.57	28.4 ± 0.8	34.0 ± 2.1	36.9 ± 2.4	35.1 ± 1.5	31.3 ± 1.2	33.4 ± 1.1
Corrected Ferritin (ug/L) values based on Thurnham et al								
6-11	19.4 ± 4.0	22.9 ± 2.3	21.4 ± 2.4	30.5 ± 1.5	32.1 ± 2.5	31.1 ± 1.3	27.0 ± 2.7	29.1 ± 1.6
12-23	22.8 ± 0.5	19.4 ± 1.2	21.6 ± 1.0	23.8 ± 2.1	26.5 ± 1.9	24.8 ± 1.5	23.2 ± 1.5	24.1 ± 1.1
6-23	22.3 ± 0.4	20.4 ± 1.1	21.5 ± 0.6	26.1 ± 1.6	28.5 ± 2.0	27.0 ± 12	24.7 ± 1.0	26.0 ± 0.9
sTFR (ug/L)								
6-11	6.8 ± 0.79	7.4 ± 0.53	7.2 ± 0.43	5.9 ± 0.32	7.1 ± 0.15	6.4 ± 0.27	8.0 ± 0.48	7.2 ± 0.36
12-23	6.6 ± 0.13	7.4 ± 0.21	6.8 ± 0.11	6.2 ± 0.25	7.3 ± 0.14	6.6 ± 0.19	7.3 ± 0.20	6.9 ± 0.17
6-23	6.6 ± 0.21	7.4 ± 0.21	6.9 ± 0.10	6.1 ± 0.26	7.2 ± 0.10	6.5 ± 0.20	7.6 ± 0.18	7.0 ± 0.17
Body Iron Stores (mg/kg body w eight)								
6-11	2.1 ± 1.03	2.4 ± 0.39	2.3 ± 0.51	4.7 ± 0.55	4.0 ± 0.29	4.4 ± 0.37	2.8 ± 0.48	3.7 ± 0.38
12-23	2.9 ± 0.06	1.8 ± 0.24	2.5 ± 0.21	3.5 ± 0.49	3.2 ± 0.31	3.3 ± 0.33	2.4 ± 0.23	3.0 ± 0.23
6-23	2.7 ± 0.13	2.0 ± 0.23	2.4 ± 0.13	3.9 ± 0.48	3.5 ± 0.27	3.7 ± 0.32	2.6 ± 0.18	3.2 ± 0.23

Table A. 18. Percent Distribution of Children 6-23 Months with Inflammation

Age Group in Months	GAIN Site			MDGF City				
	Manila	Cebu City	Total	Naga City	Iloilo City	Combined Naga & Iloilo Cities	Zambo anga City	Total
AGP								
6-11	86.1	83.0	84.3	65.8	76.3	69.9	73.2	71.9
12-23	69.1	77.8	72.2	70.9	73.6	71.9	70.8	71.3
6-23	71.6	79.3	74.7	69.2	74.5	71.2	71.8	71.6
CRP								
6-11	14.7	16.8	15.9	32.5	16.5	26.2	19.2	21.9
12-23	13.4	11.4	12.7	20.0	16.3	18.5	8.3	13.0
6-23	13.6	13.0	13.4	24.3	16.3	21.2	12.7	16.3

Table A. 19. Confidence Intervals (95% CI) of Biochemical Indicators by Site

Indicators	GAIN Sites			MDGF-2030 Cities				Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Naga & Iloilo Cities	Zambo-anga City	
Anemia								
Overall	50.8 - 78.1	41.6 - 53.2	43.4 - 71.9	38.7 - 55.6	33.6 - 44.6	37.5 - 50.5	45.1 - 56.8	43.9 - 52.0
6-11	38.5 - 84.1	46.1 - 61.2	45.5 - 69.9	36.5 - 73.9	42.3 - 58.9	40.8 - 66.6	60.9 - 77.1	55.9 - 70.4
12-23	53.0 - 79.9	37.6 - 51.9	42.6 - 72.6	34.4 - 50.8	25.5 - 40.8	32.5 - 45.1	31.3 - 45.5	33.7 - 43.7
Iron Deficiency (corrected)								
Overall	40.1 - 52.3	36.3 - 44.3	38.1 - 49.6	22.5 - 43.8	18.0 - 31.8	22.4 - 36.9	28.6 - 36.9	26.4 - 35.3
6-11	27.3 - 80.4	30.8 - 47.8	31.2 - 61.3	12.1 - 54.1	10.9 - 30.7	13.5 - 41.2	19.1 - 34.0	19.0 - 33.1
12-23	40.7 - 48.6	35.3 - 46.6	39.0 - 47.6	26.7 - 42.3	19.2 - 36.9	25.6 - 37.8	32.5 - 42.2	30.6 - 38.7
Iron Deficiency Anemia								
Overall	29.2 - 47.1	22.2 - 29.6		11.8 - 29.1	10.2 - 20.2	12.2 - 23.8	15.6 - 23.9	
6-11	20.5 - 78.4	20.4 - 33.9	21.0 - 54.6	8.1 - 37.3	8.4 - 24.6	9.5 - 28.8	15.6 - 31.4	14.8 - 27.4
12-23	29.1 - 43.1	21.4 - 29.7	24.4 - 40.9	12.8 - 27.7	9.3 - 21.6	12.7 - 23.3	13.5 - 22.1	
Vitamin A deficiency (corrected)								
Overall	25.2 - 40.5	20.9 - 30.7	23.0 - 37.3	21.2 - 41.4	17.6 - 30.1	21.0 - 35.4	16.6 - 26.6	20.2 - 30.0
6-11	6.8 - 25.9	27.9 - 43.7	19.0 - 35.2	27.8 - 47.8	20.6 - 41.3	27.0 - 42.5	26.8 - 44.6	29.2 - 40.8
12-23	28.6 - 43.2	15.7 - 28.3	21.4 - 41.4	16.8 - 40.0	14.2 - 26.5	16.9 - 33.1	6.7 - 19.9	13.4 - 25.9
AGP > 5								
Overall	66.7 - 76.0	74.3 - 83.6	68.7 - 79.9	57.8 - 78.6	66.2 - 81.4	63.1 - 78.2	68.3 - 75.1	67.7 - 75.2
6-11	70.5 - 94.1	75.0 - 88.9	76.7 - 89.8	55.4 - 74.9	70.6 - 81.1	62.1 - 76.8	66.0 - 79.3	66.4 - 76.8
12-23	64.8 - 73.2	72.5 - 82.3	65.8 - 77.8	57.8 - 81.3	61.7 - 82.8	62.5 - 79.8	65.9 - 75.3	66.5 - 75.7
CRP > 1								
Overall	11.7 - 15.7	10.1 - 16.6	11.8 - 15.1	14.6 - 37.6	11.7 - 22.3	14.7 - 42.3	8.8 - 17.9	12.0 - 21.9
6-11	6.8 - 29.2	9.9 - 27.1	10.2 - 24.0	16.4 - 54.3	11.5 - 23.0	13.3 - 25.2	12.0 - 29.1	15.0 - 30.9
12-23	12.5 - 14.3	7.8 - 16.3	11.0 - 14.6	13.3 - 28.9	10.0 - 25.2	14.2 - 30.5	5.1 - 13.4	9.3 - 17.9

Table A. 20. Confidence Intervals (95% CIs) of Breastfeeding Indicators

Indicators	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo-anga City	Ragay	Carles	Aurora	
Early initiation of BF	17.3 - 29.1	60.7 - 72.6	24.2 - 58.5	62.3 - 87.2	56.1 - 62.9	33.5 - 45.4	30.2 - 57.4	52.5 - 80.6	41.2 - 52.0	45.8 - 56.3
Exclusive BF under 6	-	-	-	37.5 - 63.4	15.5 - 31.4	11.6 - 22.1	8.0 - 51.6	17.7 - 65.8	24.4 - 83.9	17.5 - 27.5
Continued BF at 1	44.3 - 52.4	51.2 - 72.5	47.9 - 59.2	53.2 - 81.8	39.7 - 66.1	38.0 - 61.2	26.9 - 94.8	46.6 - 97.3	31.8 - 96.0	47.6 - 65.2
Continued BF at 2	43.7 - 84.2	32.0 - 53.9	36.4 - 78.9	22.5 - 57.8	31.7 - 54.8	22.0 - 47.4	21.5 - 34.5	33.1 - 56.1	18.7 - 43.6	28.2 - 45.3
Bottle-feeding	40.2 - 63.8	43.9 - 53.5	44.3 - 57.2	52.2 - 70.6	54.1 - 64.4	56.8 - 66.2	29.0 - 68.9	17.2 - 42.3	29.5 - 68.4	56.8 - 63.8

Table A. 21. Percentage of Children who Received Foods from the Seven Food Groups

Age in Months	Number of Children	Food Groups						
		Grains, Roots, Tubers	Legumes, Nuts	Dairy Prod-ucts	Meat, fish & poultry	Eggs	Fruits & Vegeta-bles rich in Vit. A	Other Fruits & Vegeta-bles
Naga City								
<6	41	10.7	0.0	29.3	0.0	0.0	1.0	0.0
6-11	66	81.7	0.8	71.1	38.4	10.5	38.3	9.7
12-23	138	99.7	8.6	72.4	69.2	31.7	60.6	25.0
6-23	204	93.3	5.8	72.0	58.2	24.2	52.7	19.6
Iloilo City								
<6	130	8.0	0.0	44.9	2.7	3.8	6.9	5.9
6-11	140	83.5	0.6	67.5	39.9	23.8	59.4	33.9
12-23	272	96.9	9.2	86.5	80.6	44.8	74.2	52.9
6-23	412	92.4	6.3	80.1	67.0	37.7	69.3	46.5
Zamboanga City								
<6	328	17.4	0.1	55.1	2.4	1.4	3.2	1.9
6-11	292	82.8	7.0	66.9	46.5	35.6	57.1	34.2
12-23	453	98.4	19.0	83.1	72.3	45.9	79.0	48.5
6-23	745	91.9	14.0	76.4	61.6	41.6	69.9	42.6
Ragay								
<6	18	31.9	15.3	48.5	20.2	9.9	10.3	10.3
6-11	26	92.3	0.0	61.6	42.3	34.4	45.7	57.9
12-23	52	100.0	19.4	79.3	84.5	53.8	63.7	70.2
6-23	78	97.4	12.9	73.4	70.3	47.3	57.7	66.1
Carles								
<6	19	9.2	0.0	16.5	0.0	0.0	0.0	0.0
6-11	33	86.5	1.8	47.3	20.9	10.4	43.2	29.7
12-23	63	96.3	2.6	63.0	74.3	33.0	73.8	63.5
6-23	96	92.4	2.3	56.7	53.0	24.0	61.6	50.0
Aurora								
<6	14	16.9	0.0	27.4	8.8	0.0	8.8	8.8
6-11	24	91.9	6.8	74.7	73.7	11.6	58.8	47.1
12-23	43	100.0	14.2	78.2	98.7	21.8	84.5	92.1
6-23	67	97.1	11.6	77.0	89.9	18.2	75.4	76.2
Manila								
6-11	144	94.0	4.4	57.6	21.8	26.2	24.9	11.2
12-23	303	99.7	12.7	57.4	57.9	56.8	64.7	33.1
6-23	447	98.8	11.4	57.4	52.4	52.1	58.6	29.8
Cebu City								
6-11	125	94.2	3.0	60.3	44.2	34.8	68.1	32.0
12-23	321	98.4	4.1	74.9	78.9	40.1	74.8	46.8
6-23	446	97.1	3.8	70.5	68.5	38.5	72.8	42.3

Table A. 22. Percent Distribution of Children 6-23 Months by Diet Diversity Score and Study Site

Score	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo-anga	Ragay	Carles	Aurora	
0	0.1	1.1	0.5	1.2	3.7	3.5	0.0	2.6	0.0	2.8
1	10.6	2.2	7.3	10.8	5.5	9.1	4.0	13.2	2.9	8.8
2	18.0	10.8	15.2	14.3	9.3	10.9	13.8	15.1	6.4	11.5
3	15.3	23.5	18.5	29.3	16.5	13.1	9.0	17.3	5.1	17.4
4	28.5	26.1	27.5	29.0	21.1	22.2	24.3	23.1	30.8	24.0
5	11.5	23.4	16.2	9.9	23.8	20.0	27.0	20.6	38.5	18.7
6	15.8	12.6	14.5	5.5	18.3	9.5	19.3	7.2	15.5	10.2
7	0.4	0.3	0.4	0.0	1.8	11.8	2.7	0.8	0.8	6.6
No. of Children	447	446	893	204	412	745	78	96	67	1602

Note. Maximum total score is 7 points where a children receives one point for each food group

Table A. 23. Confidence Interval (95% CIs) of Major Diet Indicators by Site and Age Group

Indicators	GAIN Sites			MDGF-2030 Cities			MDGF-2030 Municipalities			Total MDGF-2030
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo-anga City	Ragay	Carles	Aurora	
Children 6-8 months Given solid, semi-solid or soft foods										
Overall	79.8 - 96.1	83.6 - 97.4	86.0 - 95.8	67.8 - 86.7	60.5 - 90.1	66.4 - 81.2	61.9 - 85.4	72.4 - 99.6	48.7 - 93.1	70.5 - 81.6
Achieved Minimum Diet Diversity (At least 4 out of the seven food groups)										
Overall	54.6 - 57.5	57.6 - 66.9	55.8 - 61.2	33.7 - 55.6	57.8 - 71.5	57.3 - 59.2	70.4 - 75.8	33.2 - 69.8	75.3 - 92.1	53.9 - 65.0
6-11	12.6 - 43.0	33.5 - 50.4	24.8 - 45.3	15.7 - 42.6	34.6 - 52.3	38.5 - 58.7	36.3 - 63.1	6.5 - 35.2	47.3 - 76.7	34.9 - 51.0
12-23	58.4 - 64.8	67.0 - 75.2	59.6 - 70.1	43.6 - 63.9	69.3 - 81.4	68.9 - 78.5	70.2 - 93.3	67.5 - 81.8	74.9 - 99.9	64.9 - 74.7
Achieved Minimum Meal Frequency										
Overall	59.3 - 75.5	90.3 - 95.4	62.4 - 88.3	60.6 - 80.6	54.0 - 72.9	74.3 - 83.5	80.9 - 96.0	42.6 - 80.8	90.0 - 93.4	70.7 - 79.3
6-11	23.4 - 79.1	84.2 - 93.2	51.5 - 87.4	49.9 - 65.3	40.4 - 66.2	65.6 - 75.0	56.0 - 89.3	48.3 - 71.5	65.4 - 91.0	60.9 - 69.7
12-23	63.5 - 77.2	92.2 - 96.7	63.9 - 89.2	65.1 - 88.6	58.9 - 77.9	78.4 - 90.5	88.0 - 99.8	37.7 - 86.3	84.3 - 99.7	75.8 - 85.8
Achieved Minimum Acceptable Diet										
Overall	35.7 - 39.2	44.8 - 54.4	37.8 - 46.8	21.8 - 29.8	31.2 - 50.1	35.7 - 46.6	50.7 - 62.0	15.5 - 47.3	63.8 - 74.4	34.1 - 42.0
6-11	6.7 - 28.2	27.2 - 44.0	18.3 - 35.8	9.1 - 21.4	18.5 - 37.7	29.5 - 46.7	25.5 - 51.9	1.3 - 34.0	17.9 - 55.3	24.0 - 37.3
12-23	38.2 - 45.0	50.5 - 60.9	39.7 - 53.5	25.0 - 39.7	36.6 - 57.6	36.5 - 50.4	51.0 - 78.1	23.9 - 64.4	74.2 -95.4	38.0 - 47.5
Consumption of Iron-rich and Iron-fortified Foods										
Overall	48.7 - 57.2	62.5 - 73.9	50.9 - 66.2	38.4 - 75.7	59.5 - 73.8	55.4 - 67.5	65.4 - 74.8	38.3 - 67.2	82.3 - 94.4	56.0 - 68.4
6-11	10.9 - 38.7	33.0 - 56.0	24.2 - 46.3	19.9 - 60.9	30.8 - 49.9	37.4 - 55.8	33.8 - 51.2	12.6 - 32.5	51.6 - 88.1	36.2 - 51.8
12-23	50.3 - 65.2	74.7 - 82.6	52.5 - 76.2	48.5 - 84.3	72.8 - 86.6	66.9 - 77.1	78.2 - 89.2	68.3 - 79.5	84.7 - 99.9	67.7 - 79.3

Note. Minimum meal frequency for breastfeeding 6-8 months is 2 times a day, for breastfeeding 9-23 months is 3 times a day, for non-breastfeeding children is 4 times a day.

Table A. 24. Percentage of Children's Caregivers Who Knew that Foods are Full of Vitamins According to Study Site

Know ledge on Vitamins	GAIN Site			MDGF City			MDGF Municipality			Total for MDGF Sites
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo anga City	Ragay	Carles	Aurora	
No. of caretakers	376	426	802	236	514	1,037	87	106	78	2,058
Know that Foods are Full of vitamins	86.8	98.6	91.9	100.0	99.1	99.0	98.8	98.5	100.0	99.2

Table A. 25. Percentage of Children's Caregivers Who Have Heard of MNPs

MNP Know ledge and Practice	GAIN Site			MDGF Cities			MDGF Municipalities			Total for MDGF Sites
	Manila	Cebu City	Total	Naga City	Iloilo City	Zambo anga City	Ragay	Carles	Aurora	
No. of children	447	446	893	245	542	1,073	96	115	81	2,152
Mothers/Caregiver Who Heard of MNPs	28.3	4.1	18.8	1.8	7.5	2.3	6.4	2.2	1.3	3.1
Children Who Have Tried Special Pow der	26.1	0.4	16.0	0.0	0.3	0.1	0.0	0.0	0.0	0.1
No. of Children Given MNP in Past 7 Days	3	0	3	-	1	1	-	-	-	2

APPENDIX K. KNOWLEDGE IN GAPS OBTAINED DURING THE FGDS

1.1 Gaps in knowledge

At the end of some of the FGD sessions, the participants were asked on what other issues or questions they have on infant and young child feeding. These questions are summarized as follows:

Breastfeeding

- Breastfeeding after a long interval between pregnancies (e.g. 7 years)
- Different breastfeeding techniques (e.g. positioning of both mother and child)
- Recommendations if the mother is unable to breastfeed regularly
- Techniques on expressing and storing expressed breastmilk
- Shelf life of expressed milk
- Positive effect of breastfeeding on the healing time of a mother who underwent Caesarean Section
- Possible side effects of wet nursing
- Transmission of illness from a mother to her breastfeeding child
- Reasons why the mother is aware of her child's feeding cues even if they are apart (e.g. tightening in breasts)

Complementary feeding

- Food restrictions (e.g. can cause indigestion) for the baby
- Proper timing of introduction to complementary foods
- Recommended foods (e.g. fruits) to give to the child
- Nutritional requirements of children 6 months old and up
- Quality and sufficiency of nutrients found in commercial complementary food products (e.g. Cerelac)

Continued breastfeeding

- Positive and negative implications if breastfeeding is continued beyond 6 months
- When to start mixed feeding

Medications

- Medications (e.g. antibiotics) to avoid if a mother is breastfeeding
- Appropriate cough and cold medicines for very young children
- Possible effects of oral contraceptives on breastfeeding babies

Lactation problems

- Possible effects on the child if breastfeeding is continued even if the mother experiences nipple bleeding
- Breast and nipple problems related to wet nursing (e.g. enlargement, pain)
- Implications if the mother has lumps or boils in her breasts

Beliefs/misconceptions

- Why the is baby not satisfied with the mother's breastmilk
- Possibility of lactation among women who are not mothers

- Spoilage of milk inside the mother's breasts
- Side effects of breastfeeding if the mother is tired or got wet in rain

Breastfeeding for working mothers

- Working mothers' right to breastfeed
- Mixed feeding as an alternative to exclusive breastfeeding
- Recommendations on infant and young child feeding if the mother has work

Exclusive breastfeeding

- Necessity of giving vitamins to children under 6 months old
- Implications of giving honey to children under 6 months old
- Nutritional requirements (early introduction of complementary food) for children under 6 months old
- Adequacy of nutrients from breastmilk if babies less than 6 months old are breastfed exclusively
- Advantages and disadvantages of exclusive breastfeeding
- Importance of giving water to children less than 6 months

Mothers' diet

- Foods a lactating mother should avoid (e.g. banana, fried rice, coconut milk, colas/softdrinks, coffee)

Early initiation of breastfeeding

- Use of prelacteal feeds (e.g. *ampalaya* as a laxative)
- Water as substitute for breastmilk if the mother is unable to breastfeed immediately right after delivery

Breastfeeding stations

- Intended users of breastfeeding stations in malls
- Physical lay-out of a breastfeeding station (e.g. privacy)

APPENDIX L. RESEARCH TEAM

Principal Investigator: Ofelia P. Saniel, MPH, PhD
Co-Investigators: Lucila B. Rabuco, MSPH (Nutrition), PhD
May Antonnette O. Lebanan, MSPH (Biostatistics)

Consultants
Dr. Ma. Victoria Rondaris
Dr. Carol Lourdes Carabaña
Dr. Crisol Tabarejo
Ms. Ver Luanni Bilano
Ms. Ma. Elma Mirandilla

	Name	Position
Central Staff		
1.	Blanco, Rosario Y.	Research Assistant
2.	Delos Reyes, Sarah J.	Research Manager
3.	Obsequio, Sheila L.	Admin Assistant
4.	Amparo, Anna Charina	Research Assistant-Qualitative
5.	Mondres, Teddy Rowell	Research Assistant-Quantitative
6.	Amit, Jansil	Research Assistant-Qualitative
7.	Mercado, Chris Erwin G.	Research Assistant / Coder
8.	Medina, Ma. Victoria	Coder/Encoder
9.	Segovia, Ruth Joy	Coder/Encoder
10.	Chua, Nikita Valerie C.	Coder/Encoder
11.	Villagen, Bonna	Coder/Encoder
12.	Ocampo, Maria Lourdes Ann	Coder/Encoder
Field Staff - Manila		
1.	Quiambao, Arlene	Field Supervisor
2.	Bacani, Ronald	Interviewer
3.	Cleofas, Maria Nesa C.	Interviewer
4.	Laysa, Geromyr Miguel	Interviewer
5.	Rivera, Rubiereen	Anthro Data Collector, Coder/Encoder
6.	Dabuet, John Reyman S.	Anthro Data Collector, Coder/Encoder
7.	Silbol, Merlex Joy	Anthro Data Collector, Coder/Encoder
8.	Acacio, Edezsa Jae	Anthro Data Collector, Coder/Encoder
Field Staff - Iloilo		
1.	John Piermont Montilla	Field Supervisor, FGD Coordinator & Facilitator
2.	Nathaniel Sugino	Field Assistant/Helper

3.	Alfredo Marcelo Jr.	Field Assistant/Helper
4.	May Liza A. Junio	Interviewer
5.	Jessie Marie Padernal	Interviewer
6.	Filomena Arroyo	Interviewer
7.	Rona Herrera	Interviewer
8.	Maribel L. Baco	Anthropometry Data Collector
9.	Revelyn T. Cabras	Anthropometry Data Collector
10.	Michelle Azucena	Medical Technologist
11.	Junalie Katalbas	FGD Documenter
12.	Melody Gem Billones	FGD Documenter
13.	Kristel Antonano	FGD Documenter

Field Staff - Zamboanga

1.	Dr. Carol Lourders Carabaña	Field Supervisor 1
2.	Hazel R. Manalang	Field Supervisor 2, FGD Coordinator
3.	Joan Luna	MedTech
4.	Mary Ann Ocalinas	Interviewer
5.	Junpicar Dalus	Interviewer
6.	Jemar Samson	Interviewer
7.	Jefrey Somera	Interviewer
8.	Maria Christine A. Manog	Interviewer
9.	Meliza Angela L. Del Castillo	Interviewer
10.	Jenereach S. Dalus	Interviewer
11.	Arian L. Chiong	Interviewer
12.	Hidayatulla A. Uddin	Anthropometry
13.	Eliazar Umlanis	Anthropometry
14.	Mary Ann Tingcoy	Anthropometry
15.	Nene Joy Ledesma	Anthropometry
16.	Khaiyum Albani	Key Informant Interviewer
17.	Sherwin Aputin	FGD Facilitator and Documenter
18.	Arnie Bantoto	FGD Facilitator and Documenter
19.	Allan Tahamid	FGD Facilitator and Documenter

Field Staff - Cebu

1.	Avergonzado, Noemi S.	Field Supervisor
2.	Bacalla, Alpheca Marie M.	Field Supervisor
3.	Fernandez, Arianne R.	Interviewer
4.	Jugalbot, Clyvee R.	Interviewer
5.	Parama, Joan Mica T.	Interviewer
6.	Valmoria, Matelle Iris A.	Interviewer
7.	Abarico, Eddierez V.	Anthropometry
8.	Olores, Mae T.	Anthropometry
9.	Cases, Cresilda T.	Medtech

Field Staff - Naga City

1.	Borja, Mark Kevin D.	Field Supervisor
2.	Camalla, Joanne Kristel T.	Interviewer
3.	Rentoy, Reo	Interviewer
4.	Imperial, Cindy Ruth A.	Anthro Data Collector
5.	Alvarez, Rezy C.	MedTech
6.	Guevarra, Ma. Grace	MedTech
7.	Elma Lim-Mirandilla	FGD Facilitator (also in Ragay)
8.	Joanne Kristel Camalla	FGD Documenter (also in Ragay)
9.	Yvete Marie Sola	FGD Documenter (also in Ragay)
10.	Cindy Ruth Imperial	FGD Documenter (also in Ragay)
11.	Jose Paolo Estrellado	FGD Documenter (also in Ragay)

Field Staff - Ragay

1.	Arzobal, Paul John C.	Field Supervisor
2.	Literal Clark Robin	Interviewer

Field Staff - Carles

1.	Harold Sausa	Field Supervisor, Anthro Data Collector, FGD Coordinator & Facilitator
2.	Jose Jorge	Interviewer, Key Informant Interviewer
3.	Michael Rogales	FGD Documenter

Field Staff - Aurora

1.	Arlene Aragones	Field Supervisor, Key Informant Interviewer, FGD Coordinator & Facilitator
2.	Nelda A. Sajulan	Anthro Data Collector
3.	Kecy Ararao	FGD Documenter

[i] The Mother-Baby Friendly Hospital Initiative (BFHI) advocates the incorporation of specific mother-friendly labor and birthing practices into the health facility's standard operation procedures for a health facility to become mother-friendly, it must comply with the UNICEF/WHO Global Criteria.

[ii] The Essential Newborn Care Protocol outlines the proper birthing practices that all health professionals should implement. These include, among others, delayed cord clamping, early skin-to-skin contact, early initiation of breastfeeding. Continuing education and re-training of health personnel are required so they can properly implement the protocol. Under guidelines, counseling, support and education programs should be available to mothers to ensure proper lactation management.

[iii] Republic Act 7600, also known as the *"Rooming-In and Breastfeeding Act of 1992*", adopts rooming-in as a national policy to support the practice of breastfeeding. It acknowledges the importance of timely initiation of breastfeeding. It mandates that newborn infants of good health regardless of age of

gestation, and infants with low birth weights but able to suck, should be put to the breast of the mother immediately after birth and forthwith roomed-in within 30 minutes for normal spontaneous deliveries and within 3-4 hours after birth for deliveries by caesarean [RA 7600]. Section 10 of RA 7600 directs the provision of facilities for breastmilk collection and storage by the health facilities based on the standards defined by the Department of Health [RA7600].

[iv] Republic Act 10028 or the *"Expanded Breastfeeding Promotion Act of 2009"* addresses the need for human milk banks in health institutions. This act amends section 10 of RA 7600 by adding that health institutions are encouraged not only to provide equipment and supplies for breastmilk collection but to also set up milk banks for storage of breastmilk donated by mothers and which have undergone pasteurization [RA 10028]. Furthermore, under the Lactation Station Chapter, it stipulates that all health and non-health facilities, establishments or institutions should create lactations stations with the necessary equipment and facilities including lavatory for hand-washing, refrigeration for storage of expressed milk, electrical outlets for breast pumps, comfortable seats and other items to be defined by the Department of Health.

[v] Under the Labor Code of the Philippines, work establishments should provide lactation stations and nurseries for their nursing employees to ensure the continuance of breastfeeding. Also included in this Code are specifications on the standard maternity leave benefits of working mothers.

[vi] The *Expanded Breastfeeding Promotion Act* also supports the *Milk Code of the Philippines* or Executive Order 51. All health and non-health facilities are required to take strict measures to prevent any direct or indirect form of promotion, marketing, and/or sales of breastmilk substitutes within the health facility and lactation stations. The aim of the Milk Code is to ensure the provision of safe and adequate nutrition for infants by protecting and promoting breastfeeding, and ensuring the proper use of breastmilk substitutes and supplements only when necessary.