CARE International, Ghana

THE GOOD GROWTH PROJECT

BASELINE SURVEY

Final Report

December 2016

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<div align="center">Executive summary</div>

Background

The lack of district-level health and nutrition data on children less than 2 years of age in the Northern Region makes nutrition programming and planning for this target group difficult for stakeholders working in the region.

Objective

CARE International in Ghana sought to collect information on the background socio-demographic characteristics and nutritional status of children 0-24 mo of age in selected communities in the East Mamprusi District of the Northern Region, where the organization intended to implement its Good Growth Project with the view to improving health and nutrition of children in the district.

Methods: This was a cross-sectional descriptive study. In a two-stage cluster sampling procedure, 15 communities (clusters) were selected from 60 communities in the East Mamprusi District, and then a probability proportional to size (PPS) sampling was used to select 676 children less than 2 years of age. To ensure proportionate distribution of children from 0-2 years of age, the children were selected such that approximately 25% were 0-5 mo of age, approximately 25% were 6-11 mo of age, and approximately 50% were 12-24 mo of age. Data on children's demographic and socio-economic background, dietary intakes and morbidity were collected as well as theirs mothers' dietary intakes and participation in the Village Savings and Loans Associations of their communities by using a questionnaire, which was administered on electronic tablets. Children's weigh, length, and mid upper arm circumference (MUAC) were measured, and the blood hemoglobin concentration of those between 6 mo and 2 years from finger-prick blood was determined by using a HemoCue. Sample size was based on Z statistic = 1.96 for 95% level of confidence; expected prevalence of stunting = 30%; allowable error = 5%; design effect = 2.0; and 5% addition for missing data. Data collection was carried out in October-November 2016. Summary statistics were calculated by using SAS for Windows, Version 9.4 (SAS Institute. Inc., Cary, NC). The study protocol was approved by the Ethical Review Committee of the Ghana Health Service (ERC-GHS).

Key results

Background characteristics

- A total of 676 children aged 0-24 mo participated in the study.
- Mean ± SD age of the children was 11.5 ± 6.9 mo.
- In households, the mean number of children aged between 5 and 14 years was 2.4, and the mean number of children aged less than 5 years was 2.
- Only 3 in 10 of the study children had mothers who had completed at least primary school.
- About 8 in 10 of the study children had mothers who were Muslims.

Household water and sanitation characteristics
- Households of about 8 in 10 of the study children had electricity.
- Nearly all (99.9%) of these household usually use wood for cooking**.**
- Households of 45% of the children use water from unsafe sources such as unprotected dug wells, unprotected springs, river or streams, dams, lakes or ponds, as their main source of drinking water.
- Households of 8 in 10 (78%) of the children engage in open defecation.

Ownership of durable and non-durable items
- Households of 7 in 10 children (73%) owed a phone that works
- Only a small percentage of the households owned expensive items such as a car, truck or tractor.

Dietary diversity and Dietary Diversity Score of children and their mothers
- Nearly all mothers (97.5%) and a vast majority of children 6-24 mo of age (82.3%) consumed cereals or food made with cereals during the 24 hours prior to the interview.
- A relatively large percentage of mothers (81%) and children (64.5 %) consumed fish during the period.
- Approximately one-half of the mothers, and one-third of the children consumed Vitamin A-rich fruits and vegetables and other fruits and vegetables
- Egg and milk consumption was low for both the mothers and the children.
- Mean ± SD dietary diversity score (DDS) of the women (4.3 ± 1.6) was low, and the DDS of nearly 4 in 10 women (38.9%) was below the mean DD (4.3) of the sample.
- One-half (53.2%) of the children 6-24 mo of age were fed foods from at least four groups.

Infant and Young Child Feeding (IYCF) Practices
- 53.2% of the children 6-24 mo of age were fed foods from at least four food groups during the 24 h preceding the interview.
- 62.3% of the children received at least the minimum meal frequency.
- 53.1% received both 4+ food groups and at least the minimum frequency.
- These percentages were slightly greater for males than females, and substantially greater for older children than younger children.

Prevalence of child morbidity symptoms
During the 2 week preceding the interview,
- 72% of the children under 2 y of age had diarrhea,
- 56% had severe diarrhea
- 82% had illnesses with fever
- 67% had respiratory tract infections including cough and difficulty breathing.

Knowledge about Koko Plus
Among mothers in the sample whose children were 6-24 mo of age and were receiving complementary foods:

- Nearly two-thirds (61%) reported having heard about any nutritional products that can be added to complementary foods for young children.
- Only 1 in 4 (24%) said they had used any such nutritional products in food for their children.
- About one-third (35%) of the mothers said they had heard or seen Koko Plus, mainly through village entrepreneurs (45%); relative, friend or neighbors (32%); and Community Health Volunteer or Health Worker (20%).

Use of Koko Plus
- Only 59 (12%) of the women with children 6-24 mo of age reported that their children had taken Koko Plus before.
- The mothers fed Koko Plus to children mostly (88% of the 55 women) as part of breakfast, and usually (63%) mixed with koko.
- Main reasons most of the children had not taken Koko Plus before were: Koko Plus being too expensive (7%), Koko Plus not available on the market (11%) and the fact that some women had not seen Koko Plus before (11%).

Village Savings and Loans Association (VSLA) transactions
- At least 8 in 10 women reported having heard about the VSLA, but only 19% said they were members of the associations in their communities.
- Among women who were members of the VSLA in their communities, about 6 in 10 said they made the minimum deposit to the association at every meeting of the association.
- About a third of the women said they had never taken a loan from their associations.
- Nearly one half of those who took loans in the past from their VSLAs said they had repaid the loans to the associations.

Anthropometric status, blood hemoglobin concentration and anemia
- Among children 0-24 mo of age in the selected communities in the East Mamprusi District, 21% were stunted, 22% were underweight, 13% were wasted, 8% had small BMI and 1.4% had small mid upper arm circumference.
- In addition, 6.3% of the children had severe stunting, 4% had severe underweight, 2.1% severe wasting, 1.9% severely small BMI and nearly 1% severely small mid upper arm circumference.
- When using the same blood hemoglobin cut-off points used in the Ghana DHS 2015 report, 86% of children 6-24 mo of age in the selected communities in the East Mamprusi District were found to be anemia.

Summary, implications and conclusion
Among the generally rural households of children 0-24 mo of age in 60 communities in the East Mamprusi District, wood is the main source of fuel for cooking, many households depend on unprotected sources of water for drinking water, and an overwhelming majority engage in open defecation. Many mothers have appropriate complementary feeding practices likely depending on seasonal food availability. The prevalences of malnutrition and morbidity among children 0-24 of age, and of anemia among children 6-24 mo of age are high. Currently, only a small percentage of women with children 6-26 mo of age have used the Koko Plus nutritional supplement to enrich the diets of their children, and similarly, only a small percentage of women participate in the VSLA of their communities.

These results have several implications. We suggest that the results:
a. Can serve as baseline for future studies in the 60 communities where CARE International intends to implement its Good Growth Project. At the time of the study, food was generally not scare, watermelons and dark green leafy vegetables were available for consumption, and the rate of infectious morbidity including diarrhea and malaria was high, likely because during the rainy season, untreated human and animal wastes flow into nearby water bodies, some of which served as sources of drinking water, and mosquito bites are more common. Thus, unless a future study is conducted around the same time of the year as this study, it will be difficult to compare results.
b. Can be used to guide nutrition programming in the study area. The high prevalence of malnutrition and infections among children 0-24 mo of age in the 60 communities suggests that nutrition-specific interventions alone may not produce the desired impact, unless they are accompanied by other nutrition-sensitive interventions such as improvement in Water, Sanitation and Hygiene (WASH) conditions, and the prevention and treatment of common illnesses such as malaria and diarrhea.
c. May be used as the basis to intensify efforts to address anemia and possibly micronutrient deficiencies among young children 6-24 mo of age in the 60 communities. It is not known what proportion of the burden of anemia among children 6-24 mo of age in the 60 communities is due to iron deficiency or inadequate iron intake, but it is logical that interventions to increase iron (and other micronutrients) intakes, such as home fortification of complementary foods and increased consumption of animal-source foods, will contribute to reducing the prevalence of anemia in the target group in these communities.
d. Should be interpreted with caution. Because the data were collected only in a relatively small part of the Northern Region and during a relatively small part of the year, the results may be heavily influenced by seasonal variation in food availability and occurrence of infectious illnesses. Therefore, the findings of the study may be applicable only in the 60 communities where the study was conducted.

In conclusion, the prevalence of malnutrition, infectious morbidity, and anemia are high among children 0-24 mo of age in the East Mamprusi District. Intervention to reduce these conditions should be a priority.

1.0 BACKGROUND

The Northern Region lags behind most of the other regions in Ghana in many health and nutrition indicators. The Ghana Multiple Indicator Cluster Survey (MICS) report of 2011 (1) and Ghana Demographic and Health Survey report of 2015 (2) provide data on various nutrition indicators for children under 5 years of age in the, these regional averages mask disparities within the region. In general, there is no information on nutrition indicators for children less than 2 years for districts within the Northern Region. This lack of this information is a major impediment to the proper programming and planning of nutrition-related activities of a large non-governmental organization (NGO) such as CARE International working in districts across the Northern Region.

CARE International in Ghana has operated in Ghana, since 1994. Its main priority is with the rural and vulnerable poor, particularly women and youth. It organizes its work around agriculture, nutrition, governance, sustainable livelihoods and education, and focuses on a participatory approach, working in partnership with civil society organizations, the government and the private sector. The East Mamprusi District of the Northern Region is one of the main program districts of CARE International.

2.0 OBJECTIVE AND METHODS

2.1 Objective

The main objective of the study was to collect nutrition-related information on children less 0 - 24 mo of age and their mothers in the East Mamprusi District of the Northern Region to inform CARE International's programming and planning in the district.

Specific objectives were to collect information on the following:
  i.   Selected household characteristics of children 0 – 24 mo of age.
  ii. Dietary intakes of children 0 – 24 mo of age and their mothers.
  iii. Infant and Young Child Feeding (IYCF) practices of mothers of children 0 -24 mo of age.
  iv. Food availability Household in households of children 0 – 24 mo of age.
  v.   Prevalence of morbidity symptoms among children 0 – 24 mo of age
  vi. Knowledge about, and use of Koko Plus among mothers of children 0 – 24 mo of age.
  vii. Mothers' participation and transactions in the Village Savings and Loans Associations.
  viii. Prevalence of malnutrition in children 0 – 24 mo, and of anemia in children 6 – 24 mo.

2.2 Methods
2.2.1 Study design
This was a cross-sectional descriptive study; it was not intended to test any specific hypothesis. In a two-stage cluster sampling procedure, 15 communities (clusters) were first selected from 60 communities where CARE International intended to launch community-based program called Good Growth. Second, a probability proportional to size (PPS) sampling was used to select a target number of 679 children 0 – 24 mo of age from the selected communities to participate in the study.

Inclusion criteria were:
a. Child aged between 0 and 24 mo.
b. Child and mother had lived in the study community in the past 6 months or since the child was born.
c. Mother or caregiver was willing to participate in the study together with the child.

 Exclusion criteria were:
a. Any condition in the child that interfered with anthropometric measurements (e.g. kyphosis),
b. Any illness in the child requiring immediate hospital visit.

We intended to select children proportionately across the 3 commonly identified age sub-categories, namely 0-5 months, 6-11 months and 12-24 months of age. In each of the selected communities, approximately 25% of children selected were in the 0-5 mo age category, approximately 25% were in the 6-11 mo age category, and approximately 50% were in the 12-24 mo age category.

2.2.2 Sample size
 Sample size for the study was based on determining the prevalence of stunting in children under the age of two years in the 60 communities in the East Mamprusi Districts where CARE International intended to launch the Good Growth Project. The following formula was used (3):

$$n = \frac{Z^2 P(1 - P)}{d^2}$$

Where:
n = Sample size,
Z = Z statistic for a level of confidence: Z=1.96 for level of confidence of 95%
P = Expected prevalence or proportion: Assume 30% based on the stunting rate of 33% among children < 5 y, according the 2014 Ghana DHS report.
d = Allowable error: 5 %.

Substituting:

Z	Z^2	P	1-P	P(1-P)	d	d^2	$(Z^2 P(1-P))$	$(Z^2 P(1-P))/d^2$
1.96	3.8416	0.3	0.7	0.21	0.05	0.0025	0.806736	322.6944

To correct for the difference in design as a result of the cluster sampling, the sample size above was multiplied by the Design Effect (Deff) of 2, which is a typical value for nutrition surveys using cluster-sampling methodology (4). Finally, an additional 5% of the sample was added to account for missing data. Thus, the final target sample size was (322.7 x 2)/(1.0 - 0.05) = 645.4/0.95 ≈ 679.

2.2.3 Sampling procedure
i. Selection of communities

A planned number of 15 communities (clusters) were selected from the 60 communities by using a cluster sampling procedure (5). To determine the number of children to be selected from each community, we divided the population of each community by the total population of the 15 selected communities, and then multiplied the results by the target sample size. Within each community, the random-walk method (5) was used to select the target number of children. This procedure involved: (a) randomly choosing a starting point and a direction of travel within a community, (b) identifying a study participant in the "nearest" or "next nearest" household, and (c) continuously choosing the "next nearest" household until the target number of participants had been recruited. Because there were no available maps for the communities, field workers determined the starting point for identifying the study participants (5).

2.2.4 Data collection
a.   Field Enumerators used a questionnaire interview with mothers or caregivers to collect data on:
   i.   Background demographic and socioeconomic characteristics of children 0 – 24 mo of age and their mothers or caregivers
   ii. Children's morbidity in the 2-wk period preceding the survey.
   iii. Children's dietary intakes (Food Frequency Questionnaire) and those of their mothers.
   iv. Infant and Young Child Feeding (IYCF) of mothers of children 0 – 24 mo of age.
   v.   Knowledge about, and use of Koko Plus among mothers of children 0 – 24 mo of age.
   vi. Mothers' participation and transactions in the Village Savings and Loans Associations
b.   Trained anthropometrists measured children's length (Seca 417), weight (Seca 354), and mid upper arm circumference, MUAC (insertion tape) by using procedures described by the World Health Organization (6):
c.   Trained Biomedical Scientists determined the blood hemoglobin (Hb) concentration of children in the sample who were between 6 and 24 mo of age (7) by using a Hemocue photometer (HemoCue AB, Angelholm, Sweden).
d.   All data were recorded using electronic tablets.

2.2.5 Quality assurance

All research personnel were adequately trained prior to data collection. Quality checks were inputted into the tablets used to record the data, in order to reduce the number of potential errors. In addition, data were manually checked each day during data collection, and any errors identified were resolved with the help of the field workers.

2.3 Ethics

Ethical approval for the study was obtained from Ethic Review Committee of the Ghana Health Service (ERC-GHS). The Regional (Northern) and District (East Mamprusi) Directors of Health were informed about this study before data collection begins. In addition, permission to carry out the study in the East Mamprusi District was obtained from the traditional rulers (Chiefs and Elders) of all the 60 communities before 15 of those communities were selected for the study. Written informed consent was sought from mothers or caregivers of children before any study procedures are initiated.

2.4 Data analysis

Data were analyzed by using SAS for Windows, Version 9.4 (SAS Inst. Cary, NC, USA). Continuous variables were summarized as Mean ± SD, and categorical variables as frequency (%). The WHO 2006 Child Growth Standards were used to calculate age- and -sex standardized z-scores for length-for-age, weight-for-age, weight-for-length, body mass index (BMI)-for-age, and MUAC-for age. We considered < -2 of these indices as indicating stunting, underweight, wasting, small BMI and small MUAC, respectively, and < -3 as indicating severe stunting, severe underweight, severe wasting, severely small BMI and severely small MUAC, respectively. For children 6-24 mo of age, the Hb cut-offs for determining the presence of anemia were: $Hb < 7$ g/dl for severe anemia; < 10 g/dl for moderate anemia; and <11 g/dl for mild anemia.

3.0 RESULTS AND DISCUSSION

Data collection took place from October 26 to November 2, 2016. In all, 676 children aged 0 – 24 mo of age were involved in the study, including 172 (25%) aged 0-5 mo, 183 (27%) aged 6-11 mo, and 321 (48%) aged 12-24 mo.

3.1 Background characteristics of children
Table 1 shows selected background characteristics of the children who took part in the study. These background characteristics may be important for interpreting the findings of the study.

Table 1: Children's background characteristics

Background characteristics	Mean ± SD or n (%)
Age of children, mo	11.5 ± 6.9 (676)
Males, n (%)	351 (51.9)
Females, n (%)	325 (48.1)
Number of children between 5 and 14 years in household	2.4 ± 1.8 (676)
Number of children less than 5 y in household	1.9 ± 1.1 (676)
Mother finished primary school, n (%)	198 (29.3)
Mother is Muslim, n (%)	556 (82.2)
Mother is Christian, n (%)	115 (17.0)

The mean age of the children was 11.5 mo. Approximately 52% were males and 48% were females. In the households of the study children, the mean number of children aged between 5 and 14 years was 2.4, and the mean number of children aged less than 5 years was 2. Thus, on average, each mother in the sample was faced with the task of having to take care of 2 children less than 5 years at the same time, which might mean quite a lot of workload for the mother. Only 3 in 10 of the study children had mothers who had completed at least primary school, which suggested that illiteracy among mothers in the study area was high. About 8 in 10 of the study children had mothers who were Muslims.

3.2 Household water and sanitation
Selected data on household water and sanitation among the study participants are shown in **Table 2**. Households of about 8 in 10 of the study children had electricity, and nearly all of these household usually use wood for cooking. The implication for the overwhelming use of wood for cooking among the households is that the smoke that emanates from the burning wood during cooking may be a major source of indoor air pollution in the households. Indoor air pollution has been found to be associated with a high incidence of anemia, stunting and respiratory disease (8).

Table 2 Household water and sanitation characteristics

		Number (%)
Does the household have electricity?	Yes	558 (82.5)
	No	118 (17.5)
Fuel use for cooking	Wood	675 (99.9)
	Kerosene	1 (0.1)
Main material of floor of dwelling	Cement or tiles	639 (94.5)
	Dirt/earth or dung	37 (5.5)
Main source of drinking water for mother[1]	Safe source	370 (54.7)
	Unsafe source	305 (45.1)
	Other	1 (0.1)
Usually do to make water safer to drink	Nothing	629 (93.0)
	Solar disinfection	41 (6.1)
	Don't know	6 (0.9)
Toilet facility for household members	Bush or field	527 (78.0)
	Composting Toilet	149 (22.0)
Do you share your toilet facility	Yes	497 (73.5)
	No	179 (26.5)
What did to dispose of stool of child	Nothing/Left in the open	584 (86.4)
	Buried	76 (11.2)
	Other	12 (1.8)
	Don't know	4 (0.6)

[1]Safe source of drinking water include: piped water, public tap, borehole, protected dug well, protected spring, rain collection system, and bottled/sachet water. Unsafe sources include: unprotected dug well, unprotected spring, river or stream, dam, lake or pond, and canal or irrigation channel.

The households of 95% of the children had the floor of their dwellings made mainly with cement, and more than one-half of the households (54.7%) obtain their drinking water mainly from safe sources including piped water, public tap, boreholes, protected dug wells, protected springs, rain collection systems, and bottled/sachet water. However, the households of 45% of the children use water from unsafe sources such as unprotected dug wells, unprotected springs,

rivers or streams, dams, lakes or ponds, as their main source of drinking water. This is a major concern, as the households of 93% of the children reportedly did nothing to make their water safer to drink, and at the same time, 8 in 10 (78%) households of the children engage in open defecation.

3.3 Ownership of durable and non-durable items

The study included questions on households' ownership of items such as radio, television set, car, truck, etc, as well as farm animals (**Table 3**). These items serve as an indicator of the general socio-economic status of the households of the study participants.

Table 3: Ownership of durable and non-durable items

Item	n (%) of households
Radio	313 (46.3)
Television	325 (48.1)
Mobile or Non-Mobile Phone that works	493 (72.9)
Bicycle	334 (49.4)
Motorcycle or Scooter	230 (34.0)
Boat with motor	1 (0.1)
Refrigerator or fridge	60 (8.9)
Car, Truck, or Tractor	19 (2.8)
Donkey, Mule, Cow or Horse	100 (14.8)
Goats, Sheep, or Pigs	336 (49.7)
Computer	9 (1.3)

The main household items owned by the households of the study children were radio (46% of households), television (48%), mobile phones (73%) and bicycle (49%), as well as goats, sheep or pigs (50%). Only a small percentage of the households owned expensive items such as a car, truck or tractor. These results are not surprising, given that the communities were mainly rural, and the level of poverty in these communities was known to relatively high (2). Given the low literacy among mothers of the children, it is also not surprising that computer ownership was very low.

3.4 Dietary diversity and Dietary Diversity Score of children and their mothers

Using a 24 hour recall, field workers collected information on the consumption of the following 15 food groups among children 6-24 mo of age and their mothers during the 24 hours preceding the survey: (i) Cereals/grains; (ii) Vitamin A rich fruits, vegetables, and tubers; (iii) White roots and tubers; (iv) Dark green leafy vegetables; (v) Other fruits and vegetables; (vi) Organ meat;

(vii) Flesh meat; (viii) Eggs; (ix) Fish; (x) Legumes, nuts and seeds; (xi) Milk; (xii) Milk products; (xiii) Oils and fats; (xiv) Red palm oil; (xv) Sweets; (xvi) Sweetened beverages or alcohol.

First, the proportion of subjects (women or children 6-24 mo of age) who consumed these food groups was calculated. Next, dietary diversity score (DDS), defined as the number of food groups consumed over a period of 24 h (9), was calculated as follows:

a.   For children 6-24 mo of age, the food groups were re-classified into 7 food groups, as described by the WHO (10). These 7 food groups were (i) Grains, roots and tubers; (ii) Legumes and nuts; (iii) Dairy (milk/yogurt/cheese); (iv) Flesh foods (meat/fish/ poultry/organ meats); (v) Eggs; (vi) Vitamin A-rich fruits/vegetables; and (vii) Other fruits/vegetables. Individual DDSs (potential score range: 0-7) were calculated. The proportion of children (6-24 mo of age) who consumed foods from 4 or more food groups (10) was used to define Minimum dietary diversity (MDDS).

b.   For women, the 15 food groups were re-classified into 9 food groups as described by FAO (11). These were: (i) Starchy staples (combination of cereals and white roots and tubers); (ii) Dark green leafy vegetables; (iii) Other vitamin A rich fruits and vegetables (combination of vitamin A rich vegetables and tubers and vitamin A rich fruit); (iv) Other fruits and vegetables (combination of other fruit and other vegetables); (v) Organ meat; (vi) Meat and fish; (vii) Eggs; (viii) Legumes, nuts and seeds; and (ix) Milk and milk products. Women's individual DDSs (potential score range: 0-9) were calculated. There are no established cut-off points for determining adequate or inadequate dietary diversity for women (11). Consequently, the mean $\pm$ SD DDS for women in the sample and the percentage of women whose DDSs were below the sample mean were calculated.

Table 4: Consumption of food from various food groups by women and children 6-24 mo of age during the 24 h preceding the interview

Food groups and dietary indices	Mother (n = 676)	Child (n = 504)
Cereals, n (%)	659 (97.5)	415 (82.3)
Vitamin A rich fruits, vegetables and tubers, n (%)	354 (52.4)	184 (36.5)
White roots and tubers, n (%)	154 (22.8)	60 (11.9)
Dark green leafy vegetables, n (%)	314 (46.4)	181 (35.9)
Other fruits and vegetables, n (%)	400 (59.2)	251 (49.8)
Organ meat, n (%)	61 (9.0)	43 (8.5)
Flesh meat, n (%)	124 (18.3)	56 (11.1)
Eggs, n (%)	63 (9.3)	58 (11.5)
Fish, n (%)	549 (81.2)	325 (64.5)
Legumes, nuts and seeds, n (%)	423 (62.6)	254 (50.4)
Milk, n (%)	52 (7.7)	109 (21.6)

Food groups and dietary indices	Mother (n = 676)	Child (n = 504)
Milk products, n (%)	53 (7.8)	45 (8.9)
Red palm oil, n (%)	68 (10.1)	44 (8.7)
Dietary diversity score, Mean ± SD	4.3 ± 1.6	3.4 ± 1.8
Women with DDS > Sample mean, n (%)	263 (38.9)	

3.5 Infant and Young Child Feeding (IYCF) Practices
According to the World Health Organization (12), appropriate infant and child feeding (IYCF) practices should include (a) exclusive breastfeeding for the first six months of life, (b) age-appropriate complementary feeding from 6 months of age, and (c) continued breastfeeding for two years or beyond.

In accordance with the WHO recommendations (12), we assessed the feeding practices of mothers in the sample based on the ages of the children:
   a. For children in their first 6 mo of life, they were categorized as being exclusively breastfed if they were reported to be (i) currently being breastfed; (ii) not taking any other food or drink apart from breast milk; and (iii) did not receive any plain water, food or beverage during the 24 hours preceding the interview.
   b. For children 6-8 mo of age who were currently being breastfed, they were classified as being appropriately fed if they were (i) fed mashed or pureed food or solid or semi-solid food as a meal or snack 2 or more times and (ii) fed food from 3 or more food groups during the 24 h preceding the interview. If such children (6-8 mo of age) were *not* currently being breastfed, then they were classified as being appropriately fed if they were (i) fed mashed or pureed food or solid or semi-solid food as a meal or snack 2 or more times and (ii) fed food from 4 or more food groups during the 24 h preceding the interview.
   c. For children 9-23 mo of age who were currently being breastfed, they were classified as being appropriately fed if they were (i) fed mashed or pureed food or solid or semi-solid food as a meal or snack 3 or more times and (ii) fed food from 3 or more food groups during the 24 h preceding the interview. If such children (9-23 mo of age) were *not* currently being breastfed, they were classified as being appropriately fed if they were (i) fed mashed or pureed food or solid or semi-solid food as a meal or snack 4 or more times and (ii) fed food from 4 or more food groups during the 24 h preceding the interview.

Table 5 shows that one-half (53.2%) of the children 6-24 mo of age were fed foods from at least four food groups during the 24 h preceding the interview. The percentage was slightly greater in males (55%) than in females (51%), and substantially greater for older children than younger children. Similar observations were made for percentage of children who received at least the minimum meal frequency, and both 4 or more food groups and minimum frequency.

Table 5: Percentage of children age 6-24 mo of age who are fed according to IYCF feeding practices based on breastfeeding status, number of food groups, and times they are fed during the 24 h preceding the interview, by background characteristics,

Children 6-24 mo	4+ food groups[1]	Minimum meal frequency[2]	Both 4+ food Groups and minimum frequency
Males	141 (55.3)	165 (64.7)	195 (55.6)
Females	127 (51.0)	149 (59.8)	172 (52.9)
6-8 mo	24 (24.2)	56 (56.6)	26 (26.3)
9-11 mo	38 (45.2)	38 (45.2)	32 (38.1)
12-24 mo	206 (64.2)	220 (68.5)	192 (59.8)
All	268 (53.2)	314 (62.3)	367 (53.1)

[1]Food groups: (i) Grains, roots and tubers; (ii) Legumes and nuts; (iii) Dairy (milk/yogurt/cheese); (iv) Flesh foods (meat/fish/ poultry/organ meats); (v) Eggs; (vi) Vitamin A-rich fruits/vegetables; and (vii) Other fruits/vegetables
[2]For breastfed children, minimum meal frequency is receiving solid or semi-solid food at least twice a day for infants 6-8 months and at least three times a day for children 9-23 months. For non-breastfed children, minimum meal frequency is receiving solid or semi-solid food at least twice a day for infants 6-8 months and at least four times a day for children 9-23 months

3.6 Household food availability
This study assessed the level of food availability among the households in the sample by asking the mothers questions related to food during the last one mo (**Table 6**).

Table 6: State of food availability in households during one month preceding the interview

	Days in the last one month[1]
Days household had no food to eat because of lack of resources	1.8 ± 3.3 (676)
Days mother slept at night hungry for lack of food	1.6 ± 2.6 (676)
Days mother went whole day and night without eating	0.8 ± 1.8 (676)

[1]Values are Mean ± SD (n).

Table 3.6 shows that for nearly 2 days on average during the one month preceding the interview, households of the children in the study reportedly had no food because of lack of resources, or mothers reportedly went to bed at night hungry because of lack of food. Also, mothers reported going nearly one whole day on average without eating during the mo preceding the survey because of lack of resources. These result suggest high food unavailability in the communities as the time of the study. The three northern regions is known to be affect by food insecurity (13), so these results are probably not surprising.

3.7 Child morbidity

We assessed child morbidity by asking mothers if their children 0-24 mo-old children had various morbidity symptoms during the 2 weeks preceding the interview. The responses of the mothers have been summarized in **Table 7**.

Table 7: Number (percentage) of children who had common morbidity symptoms during the 2 weeks preceding the interview

Morbidity symptoms	n = 676
Three or more loose or watery stools	488 (72.2)
Mother thinks child had diarrhea	485 (71.7)
Bloody, pussy or mucoid stools	378 (55.9)
Illness with fever	549 (81.2)
Cough or difficulty in breathing	455 (67.3)

According to maternal reports, during the 2 weeks preceding the interview, 72% of the children under 0 – 24 mo of age had 3 more loose or watery stools (which suggested the presence of diarrhea) or were actually thought by their mothers to have diarrhea (71.7%), whilst 56% of the children had bloody or mucoid stools suggesting severe diarrhea. A vast majority (82%) of the children were reported to have had illnesses with fever during the period, whilst 67% had respiratory tract infections including cough and difficulty breathing. It is possible that these prevalences were overestimated, for example as a result of recall errors by respondents, but with such numbers and percentages there is little doubt that the extent of child morbidity in the study area is a source of great concern.

Morbidity symptoms commonly arise in children as a result of pathogenic infections. Thus, these results suggest an extremely high prevalence of infections in the study communities, and are consistent with the widespread open defecation or lack of appropriate toilet facilities in the communities (See above). It is well known that infections make malnutrition worse and vice versa. Nutrition-specific interventions the study communities can make the most impact only if they are accompanied by assessment and treatment of common infections.

3.8 Knowledge about Koko Plus

Mothers in the sample whose children were 6-24 mo of age and were receiving complementary foods were asked questions pertaining to knowledge about Koko Plus (**Table 8**).

Nearly a third (61%) of the women reported having heard about any nutritional products that can be added to complementary foods for young children. However, only 1 in 4 (24%) said they had used any such nutritional products, and a still smaller percentage (18%) said they had actually used any such products in the last one month.

Table 8: Aspects of maternal knowledge about Koko Plus

Aspects of knowledge about Koko Plus	n/N (%)[1]
Heard of any nutrition product that can be added to food for young children	307/504 (60.9)
Used any nutrition product to put in the food for child	121/504 (24.0)
Used nutrition product for child's food in the last month	89/504 (17.7)
Can you show product or tell me the name	73/504 (14.5)
Ever heard of or seen Koko Plus	178/504 (35.3)
Where mother heard about Koko Plus	
Male Champions	4/178 (2.2)
Cooking Demonstration	1/178 (0.6)
Mother Facilitators	4/178 (2.2)
Village based entrepreneur	81/178 (45.5)
Community Leaders -chief or elders	11/178 (6.2)
Poster or Printed Material	0
Field Officer	27/178 (15.2)
Relative/Family/Friend/Neighbor	57/178 (32.0)
Community Health Volunteer/Health Worker	36/178 (20.2)
Church Meetings	0
Community Theater	0
Koko Plus Day	0

[1]Values are number of mothers whose responses were "yes"/total number of mothers interviewed for the variable in question (% of women whose response was "yes")

Regarding Koko Plus itself, only about one-third (35%) of the mothers said they had heard or seen the product. Among these women, the main channels through which they heard or saw Koko Plus were village entrepreneurs (45%); relative, friend or neighbors (32%); and Community Health Volunteer or Health Worker (20%). None of the women reported having heard about Koko Plus through printing materials, Church meetings, Community Theater or Koko Plus Day. It would be useful to identify a few possible key channels, and use these channels more efficiently Table 8: Knowledge about Koko Plus among mothers of children

3.9 Use of Koko Plus

The mothers with children 6-24 mo who were asked about their knowledge of Koko Plus were also asked if their children had ever taken Koko Plus, In all, only 59 (12%) of the women responded "yes" to the question.

Table 9: Level of usage of Koko Plus and mothers' reasons for not using Koko Plus

Level of usage and reasons for not using Koko Plus	n/N (%)
Child ever taken Koko Plus	59/504 (11.7)
Mothers' reasons for not feeding Koko Plus to their children	
Too expensive	31/445 (7.0)
Not available in the market	49/445 (11.0)
Advised not to use it	0
Not seen other mothers use it	5/445 (1.1)
Do not trust the product	0
Do not see a need for the product	4/445 (0.9)
Using another product	1/445 (0.2)
Have not seen it	49/445 (11.0)
Child does not take koko	3/445 (0.7)
Child too young	5/445 (1.1)
Bad experience of someone else	0

Of the 445 women who responded in the negative, the main reasons their children had never taken Koko Plus included Koko Plus being too expensive (7%), Koko Plus not available on the market (11%) and the fact that they had not seen Koko Plus before. This calls for more efforts to expose women to Koko Plus, to promote its utilization

3.10 Mothers' ways of using Koko Plus
Among the 59 women who reported having fed their 6-24 mo-old children with Koko Plus, **Table 10** summarizes how those women said they used Koko Plus to feed their children. The women reported having used Koko Plus mostly (88%) in the breakfasts of their children, and sometimes (35%) as morning snack. In most cases, mothers mixed Koko Plus to koko for their children.

Table 10: Mothers' methods of using Koko Plus

Methods	n/N (%)
Time of day Koko Plus fed on last occasion	
Dinner	13/59 (22.0)
Breakfast	52/59 (88.1)
Lunch	11/59 (18.6)
Evening snack	4/59 (6.8)
Afternoon snack	17/59 (28.8)
Morning snack	21/59 (35.6)
Food Koko Plus was added to on last occasion	
Rice Water	0

Mashed Tuo Zaafi	4/59 (6.8)
Mashed Shea Fruit	0
Koko	37/59 (62.7)
Water	4/59 (6.8)
Oatmeal	0
Tom Brown	15/59 (25.4)
Soup (with or without T Zed)	1/59 (1.7)
Mashed Kenkey	5/59 (8.5)
Others in the house who share Koko Plus	
No one else use Koko Plus	48/59 (81.4)
Other children	12/59 (20.3)
Other adults	0
Other adolescents	0
Mother or caregiver	1/59 (1.7)

3.11 Mothers' reasons for liking or disliking Koko Plus

Table 11 summarizes attributes of Koko Plus which were liked by mothers whose children had taken the product before, and those attributes they said they did not like. For the most part, the women said they liked the taste and the price. One thing that many women did not like was the fact Koko Plus was not easily available.

Table 11 Mother's reason for liking or disliking Koko Plus

Reasons	n/N (%)
Reasons for liking Koko Plus	
Like easy availability	0
Like having trustworthy source	0
Like packaging	2/59 (3.4)
Like taste	16/59 (27.1)
Like price	12/59 (20.3)
Reasons for disliking Koko Plus	
Packaging	2/59 (3.4)
Taste	2/59 (3.4)
Price	5/59 (8.5)
Nothing	28/59 (47.5)
Not easily accessible	25/59 (42.4)
How Koko Plus is being promoted/advertised	0
Untrustworthy source	1/59 (1.7)

3.12 Mothers' perception of the health and nutritional benefits of Koko Plus
Mothers would patronize Koko Plus because of their perceived nutritional and health benefits their children would derived from consuming the product. As shown in **Table 12,** the main perceived benefits from consuming Koko Plus, according to the women, include Koko Plus being "good for the health of children" (69% of 59 women), and Koko Plus bringing about "increased weight" of children (51% of 59 women) and increased appetite.

Table 12 Mother's perception of health benefits of Koko Plus

Perception	n/N (%)
Good for the health of the child	41/59 (69.5)
Nothing	2/59 (3.4)
How promoted/advertised	2/59 (3.4)
Nothing observed	3/59 (5.1)
Increased height/length	8/59 (13.6)
Increased weight	30/59 (50.8)
Child falls sick less	9/59 (15.3)
Increased appetite	16/59 (27.1)
Child is more active	10/59 (16.9)
Child has less diarrhea	2/59 (3.4)
Child cries less often	3/59 (5.1)
Child sleeps well	2/59 (3.4)

3.13 Mothers' Village Savings and Loans Association (VSLA) membership and meeting
Mothers were asked questions about their participation in the Village Savings and Loans Associations (VSLA), and their responses are presented in **Table 13**. At least 8 in 10 women reported having heard about the VSLA, but only 132 (24%) women said they were members of the associations in their communities. Most of the women in the VSLA said their associations meet once every week (4 times per mo), whilst a majority (67%) said they attended each of their meetings.

Table 13: Mothers' Village Savings and Loans Association (VSLA) membership and meetings

Heard of the VSLA	Yes	545 (80.6)
	No	131 (19.4)
Are you a member of a VSLA in your community	Yes	132 (24.2)
	No	413 (75.8)
Times VSLA meet in a month?	Every Week	127 (96.2)
	Every Two Weeks	3 (2.3)
	Every Three Weeks	2 (1.5)
Number of times VSLA meets in a month	4	125 (98.4)
	2	2 (1.6)
How often do you attend meetings?	Every Meeting	89 (67.4)
	Most Meetings	33 (25.0)
	Rarely	9 (6.8)
	Never	1 (0.8)

3.14 Mothers' Village Savings and Loans Association (VSLA) transactions

For the 132 women who said they were members of the VSLA in their communities, the mean ± SD reported minimum deposit which women were supposed to make at each meeting was 2.6 ± 1.9 Ghana cedis (results not shown). About 6 in 10 (62%) said they made the minimum deposit at every meeting of the association. Most (77%) of these women said they had made deposits with their associations during the one week preceding the interview (**Table 14**). The mean ± SD reported amount deposited at the last meeting was 4.0 ± 2.5 Ghana cedis. About a third of the women said they had never taken a loan from their associations. For those had taken loans in the past, their main reasons for taking the loans were to pay for medical treatment (26%), purchase food (14%), and purchase inputs or animals. Nearly one half of those who took loans said they had repaid to their association.

Table 14: Mothers' Village Savings and Loans Association (VSLA) transaction[1]

Transactions		n (%)
How often make minimum deposit	Every Meeting	82 (62.1)
	Most Meetings	41 (31.1)
	Rarely	9 (6.8)
When women made last deposit	Last week	101 (76.5)
	Two weeks ago	18 (13.6)
	More than one month ago	6 (4.5)
	Three weeks	6 (4.5)
	Never made a deposit	1 (0.8)
When woman last took a loan	Never taken a loan	89 (67.4)

Transactions		n (%)
	More than one month ago	17 (12.9)
	Last month	8 (6.1)
	Last week	7 (5.3)
	Two weeks ago	7 (5.3)
	Three weeks	4 (3.0)
Main thing woman did with money borrowed	Money used for medical/health	11 (25.6)
	Purchased food	6 (14.0)
	Purchased farming supplies or animals	5 (11.6)
	Money used for social activities	4 (9.3)
	Purchased material goods	2 (4.7)
	Other	15 (34.9)
Has woman repaid the loan to VSLA?	Payed the loan back already	19 (44.2)
	Will pay the loan back in the next month	17 (39.5)
	Will pay the loan back in more than a month	7 (16.3)
Last time VSLA was shared out?	Have not shared out yet	103 (78.0)
	More than 4 months ago	12 (9.1)
	Don't Know	8 (6.1)
	Within the last 3 months	5 (3.8)
	Within the last 2 months	3 (2.3)
	Within the last 4 months	1 (0.8)

[1]Women involved in this analysis are those (n = 132) who said they were members of a VSLA in their communities

3.15 Anthropometric status of children less than 2 years of age

The mean ± SD of continuous anthropometric outcomes for the children 0 – 24 mo of age, by sex and age category, are presented in **Table 15**, and the number (%) for the binary anthropometric outcomes (by sex and age category) are shown in **Table 16**. For children 6 – 24 mo of age, the mean ± SD blood hemoglobin concentration and prevalence of anemia, by sex and age category, are shown in **Table 17**.

These results show that among children 0 –24 mo of age in the selected communities in the East Mamprusi District, 21% were stunted, 22% were underweight, 13% were wasted, 8% had small BMI and 1.4% had small mid upper arm circumference (Table15). In addition, 6.3% of the children had severe stunting, 4% had severe underweight, 2.1% severe wasting, 1.9% severely small BMI and nearly 1% severely small mid upper arm circumference (Table 16). These

percentages were slightly greater in males than in females, and substantially greater in older children (12-24 mo of age) than in younger children (0-5 mo of age). This wide variation by age was expected, since it is well known that malnutrition is more pronounced during the ages 12 – 24 mo old, compared to the ages before (14).

Table 17 shows that among children 6-24 mo of age, 86% were anemic when using the same blood hemoglobin cut-off points used in the Ghana DHS 2015 report (2). Anemia and malnutrition have major negative consequence for children in terms of growth, development and survival, and efforts to reduce these condition among children in the East Mamprusi District should be a priority.

Table 15: Continuous anthropometric indices (Mean ± SD) of children 0-24 who participated in a cross-sectional study in selected communities in the East Mamprusi District of the Northern Region

	Number of participants	Weight, kg	Weight-for-age z-score	Length, cm	Length-for-age z-score	Weight-for-length z-score	BMI-for-age z-score	Arm circumf. cm	Arm circumf-for-age z-score
Child sex									
Males	351	7.8 ± 1.9	-1.2 ± 1.3	70.5 ± 8.7	-1.1 ± 1.6	-0.9 ± 1.1	-0.8 ± 1.1	14.0 ± 1.5	-0.3 ± 1.0
Females	325	7.6 ± 2.0	-0.9 ± 1.3	69.9 ± 8.9	-0.8 ± 1.8	-0.6 ± 1.1	-0.6 ± 1.1	13.9 ± 1.4	-0.0 ± 0.9
Age, mo									
0-5	172	5.5 ± 1.4	-0.4 ± 1.6	59.2 ± 6.1	-0.1 ± 2.2	-0.4 ± 1.1	-0.5 ± 1.1	13.1 ± 1.9	0.2 ± 1.1
6-11	183	7.6 ± 1.2	-1.1 ± 1.2	69.2 ± 4.3	-0.7 ± 1.6	-0.9 ± 1.3	-0.9 ± 1.2	14.1 ± 1.2	-0.2 ± 1.0
12-24	321	9.0 ± 1.3	-1.4 ± 1.0	76.7 ± 4.9	-1.5 ± 1.2	-0.9 ± 1.0	-0.7 ± 1.0	14.4 ± 1.1	-0.3 ± 0.9
All	676	7.7 ± 1.9	-1.1 ± 1.3	70.2 ± 8.8	-0.9 ± 1.7	-0.8 ± 1.1	-0.7 ± 1.1	14.0 ± 1.4	-0.2 ± 1.0

Table 16: Binary anthropometric indices [n (%)] of children 0-24 who participated in a cross-sectional study in selected communities in the East Mamprusi District of the Northern Region[1]

Age category	Number of participants	LAZ < -2	LAZ < -3	WAZ < -2	WAZ < -3	WLZ < -2	WLZ < -3	BMIZ < -2	BMIZ < -3	ACZ < -2	ACZ < -3
Child sex
Males	351	84 (24.3)	23 (6.6)	90 (26.0)	15 (4.3)	51 (14.8)	10 (2.9)	46 (13.3)	8 (2.3)	14 (4.7)	3 (1.0)
Females	325	56 (17.3)	19 (5.9)	56 (17.3)	12 (3.7)	34 (10.5)	4 (1.2)	27 (8.3)	5 (1.5)	4 (1.4)	1 (0.4)
Age, mo
0-5	172	12 (7.1)	3 (1.8)	13 (7.7)	4 (2.4)	15 (8.9)	4 (2.4)	15 (8.9)	3 (1.8)	2 (2.6)	1 (1.3)
6-11	183	29 (15.9)	9 (4.9)	42 (23.1)	9 (4.9)	31 (17.0)	4 (2.2)	31 (17.0)	7 (3.8)	7 (3.8)	1 (0.5)
12-24	321	99 (31.0)	30 (9.4)	91 (28.5)	14 (4.4)	39 (12.2)	6 (1.9)	27 (8.5)	3 (0.9)	9 (2.8)	2 (0.6)
All	676	140 (20.9)	42 (6.3)	146 (21.8)	27 (4.0)	85 (12.7)	14 (2.1)	73 (10.9)	13 (1.9)	18 (3.1)	4 (0.7)

[1]ACZ, Arm Circumference-for-age z-score; BMIZ, Body Mass Index-for-age z-score; LAZ, Length-for-age z-score; WAZ, Weight-for-age z-score; WLZ, Weight-for-length z-score. LAZ, WAZ, WLZ, BMIZ and ACZ < -2 were considered indicative of stunting, underweight, wasting, small BMI and small arm circumference, respectively. LAZ, WAZ, WLZ, BMIZ and ACZ < -3 were considered indicative of severe stunting, severe underweight, severe wasting, severely small BMI and severely small arm circumference, respectively.

Table 17: Mean ± SD blood hemoglobin concentration an anemia status, by sex and age category, of children 6-24 mo of age who participated in a cross-sectional study in selected communities in the East Mamprusi District of the Northern Region[1]

Age category	Number of participants	Mean ± SD blood Hb	Severe anemia	Moderate anemia	Mild anemia	Any anemia
Child sex						
Males	253	9.2 ± 1.9	98 (27.9)	151 (43.0)	62 (17.7)	311 (88.6)
Females	251	9.6 ± 2.0	76 (23.4)	111 (34.2)	84 (25.8)	271 (83.4)
Age, mo						
6-11	183	9.2 ± 2.5	15 (8.2)	82 (44.8)	62 (33.9)	159 (86.9)
12-24	321	9.6 ± 1.6	9 (2.8)	174 (54.2)	79 (24.6)	262 (81.6)
All	504	9.4 ± 2.0	174 (25.7)	262 (38.8)	146 (21.6)	582 (86.1)

4.0 SUMMARY, IMPLICATIONS AND CONCLUSION

4.1 Summary

This study found that, among the generally rural households of children 0-24 mo of age in 60 communities in the East Mamprusi District, wood is the main source of fuel for cooking, many households depend on unprotected sources of water for drinking water, and an overwhelming majority engage in open defecation. Poverty (less common ownership of expensive items) is high, and many mothers have appropriate complementary feeding practices likely depending on seasonal food availability. The prevalences of malnutrition and morbidity among children 0-24 of age, and of anemia among children 6-24 mo of age are high. Currently, only a small percentage of women with children 6-26 mo of age have used the Koko Plus nutritional supplement to enrich the diets of their children, and similarly, only a small percentage of women participate in the VSLA of their communities. However, the potential for these two interventions to improve nutrition and household resources, respectively, is encouraging.

4.2 Implications

The results of this study provide knowledge of the nutritional situation of children 0-24 mo old in the study area, as well as some of the household, maternal and child characteristics affecting the nutrition of the children in the communities. These results have several implications. We suggest that the results:

a. Can serve as baseline for future studies in the 60 communities where CARE International intends to implement its Good Growth Project. In this regard, we take note that the study was conducted during the time of the year (October-November) when the rainy season was in place. At the time of the study, food was generally not scare, watermelons and dark green leafy vegetables were available for consumption, and the rate of infectious morbidity including diarrhea and malaria was high, likely because during the rainy season, untreated human and animal wastes flow into nearby water bodies, some of which served as sources of drinking water, and mosquito bites are more common. The usual seasonal pattern of food availability and prevalence of infectious morbidity in the northern region likely affected the results of the present study. Thus, unless a future study is conducted around the same time of the year as this study, it will be difficult to compare results.
b. Can be used to guide nutrition programming in the study area. The results show that both malnutrition and infections are common among children 0-24 mo of age in the 60 communities, which suggests that nutrition-specific interventions alone may not produce the desired impact, unless they are accompanied by other nutrition-sensitive interventions such as improvement in Water, Sanitation and Hygiene (WASH) conditions, and the prevention and treatment of common illnesses such as malaria and diarrhea.
c. May be used as the basis to intensify efforts to address anemia and possibly micronutrient deficiencies among young children 6-24 mo of age in the 60 communities. Anemia is known to have several negative consequences in children, including increasing the risk of permanent

cognitive damage and death. The extremely high prevalence of anemia among the children in the study is consistent with DHS and MICS reports, and should motivate nutrition programmers to take action. It is not known what proportion of the burden of anemia among children 6-24 mo of age is due to iron deficiency or inadequate iron intake, but it is logical that interventions to increase iron (and other micronutrients) intakes, such as home fortification of complementary foods and increased consumption of animal-source foods, will contribute to reducing the prevalence of anemia in the target group in the communities.

d. Should be interpreted with caution. Because the data were collected only in a relatively small part of the Northern Region (for 60 communities in the East Mamprusi District) and during a relatively small part of the year (Oct 26-Nov 2, 2016), the results may be heavily influenced by seasonal variation in food availability and occurrence of infectious illnesses. Therefore, the findings of the study may be applicable only in the 60 communities where the study was conducted, and we discourage extending these findings to include other parts of the Northern Region or periods of the year other than between October and November.

4.3 Conclusion
The prevalence of infections, malnutrition and anemia are high among children less than 2 year of age in the East Mamprusi District. Both nutrition-specific and nutrition-sensitive intervention to reduce these conditions should be a priority.

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