Technical Report: Assessment of Quality of Nutrition Services

Empowering New Generations to Improve Nutrition and Economic Opportunities

ENGINE: *A project supported by the Feed the Future and Global Health Initiatives*

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Acronyms

ANC	Antenatal care
BF	Breastfeeding
BMI	Body Mass Index
CHD	Child/community health day
EBF	Exclusive breastfeeding
ENGINE	Empowering New Generations to Improve Nutrition and Economic opportunities
EDHS	Ethiopian Demographic and Health Survey
EPI	Expanded Program on Immunization
FGD	Focus group discussions
GoE	Government of Ethiopia
HCs	Health centers
HEWs	Health extension workers
IEC	Information, Education and Communication
IFA	Iron folic acid
IRT	Integrated refresher training
IYCN	Infant and young child nutrition
MAM	Moderate acute malnutrition
MDG	Millennium Development Goal
MUAC	Mid-upper arm circumference
NGOs	Non-governmental organizations
OTP	Outpatient therapeutic program
PMTCT	Prevention of mothers-to-child transmission
PNC	Postnatal care
QI	Quality improvement
RUTF	Ready-to-use therapeutic food
SAM	Severe acute malnutrition
SC	Save the Children
TSF	Therapeutic supplementary feeding
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

Executive summary

Background

To support the efforts of the Government of Ethiopia (GoE) in addressing high rates of childhood stunting, Save the Children (SC) is implementing a five year (2011-2016), USAID-funded multi-sector nutrition project, in 100 *woredas* covering four regions. The project, called Empowering New Generations to Improve Nutrition and Economic opportunities (ENGINE), aims to improve the nutritional status of women and young children, especially during the first 1,000 days from the start of pregnancy until the child's second birthday. The project components include capacity building and institutionalization of nutrition programs and policies; quality and delivery of nutrition and health care services; prevention of under-nutrition through community-based nutrition care practices; and operations research. In partnership with the health sector, ENGINE has implemented capacity building interventions to bring about improvements in the quality and delivery of nutrition and health care services**.** This assessment was designed to examine availability and utilization of equipment and materials, determine the competency of nutrition service providers, assess client satisfaction and perception of nutrition services and use the results to develop a Quality Improvement (QI) model to improve the quality of nutrition services at health facility and community levels in ENGINE target *woredas*.

Methods

The assessment was conducted in eight health centers (HCs) and 16 health posts. These facilities were selected within eight *woredas* in Tigray, Amhara, Oromia and SNNP regions where ENGINE project activities are being implemented. The study subjects were: mothers from beneficiary households, postnatal care services users, pregnant women, mothers of children under-5 and health care providers. Primary and secondary data sources included focus group discussions (FGDs), in-depth interviews, case management observations, document reviews and inventories of the health facilities. Semi-structured questionnaires and checklists were used to guide the discussions, interviews and observations. Thematic analysis techniques were used to analyze the data.

Results

Inputs: Direct observations of equipment, nutrition supplies and teaching/demonstration materials both at health centers and health posts revealed that basic items like scales and height boards, lab equipment, and child and family health cards were not available. Nutritional supplements such as iron, zinc and deworming medicine were also not available at the majority of health facilities. Most of the health facilities (mainly health posts) did not have a suitable counseling room and lacked counseling materials on micronutrients, complementary feeding (6 months to 2 years), family planning methods and Water, Sanitation and Hygiene (WASH). There was a also a poor recording system for counseling and nutrition service provision. Some of the respondents were reluctant to go to the health posts due to frequent shortages of medication and equipment. The practice of using available and functional equipment, supplies and materials for nutrition services was good. In all of the health posts and some of health centers, there was no water. There were underutilized toilets for men and women and no hand washing stations due to the shortage of water.

Over the past two years, ENGINE and government counterparts have provided nutrition-related trainings to health workers in the selected facilities. However, some of the health care providers interviewed were not trained on nutrition and the few who were trained were not working where the nutrition services were being provided. In some cases, the trained professionals had been assigned to offices where they were engaged in administrative work rather than providing direct nutrition services at the facilities. Most of the respondents were glad to have supportive supervision from the Ministry of Health (MoH) at regional, zonal and *woreda* levels and from partner non-government organizations (NGOs). However, lack of follow-up and refresher training, problems in screening relevant staff for training and limited supportive supervision were all reported as constraints.

Processes: Direct observations and feedback from clients and FGD participants revealed that service providers were performing well in interpersonal communication, use of local language and transferring key nutrition messages to clients. However, encouraging clients to ask questions, checking clients' understanding, counseling antenatal care (ANC) clients about the importance of using iodized salt and promoting optimal hygiene and sanitation behaviors were observed as unsatisfactory. Assessing the health and nutritional status of ANC clients through examining, weighing and taking blood pressure measurements; assessing sick children through weighing, mid-upper arm circumference (MUAC); and identifying signs of illnesses were reported as successful. However, practices of identifying signs of anemia, hemoglobin testing at health centers and discussing possible side effects of iron folic acid (IFA) were not common. Service providers were not reviewing health cards, were not measuring height and not taking the temperature of sick babies. They were not explaining nutrition assessment results to clients and not recording these findings in their log books. Even though the health workers were able to describe basic nutrition issues, their understanding of stunting as a major nutritional issue was limited.

The assessment revealed that breastfeeding (BF) was not counseled adequately. Even though the clients interviewed had some knowledge of exclusive breastfeeding (EBF) and the importance of giving the infant colostrum, the frequency of BF only ranged from three to five times a day. Night feeds were not known to most of the service users (clients). Some of the respondents were aware that EBF also excluded water, but they still practiced giving water to their babies because they thought they were thirsty and needed additional fluids. Mothers were giving gruel from the bottle as a complementary food for infants from 6–9 months and porridge after 9 months. Some of the service users understood diversified food to be food prepared from different cereals. Generally, nutritional counseling was given by health extension workers (HEWs) during household visits rather than at the health posts. Most of the respondents requested pictorial tools.

Service users and service providers reported that cooking demonstrations using locally available foods were helpful in promoting dietary diversity. Most said the ingredients were available in their areas, but that they did not know how to prepare the diverse meals.

Outcome: Feedback and perceptions of ANC and post-natal care (PNC) clients as well as FDG participants on the ongoing nutrition service was positive because of good access to services and ongoing counseling and education provided by the health workers. Caring practices, use of local languages and good interpersonal communication skills of health workers as well as free service delivery were also mentioned as reasons for client satisfaction. The extent of the clients' knowledge on nutrition was reported to have improved, which was demonstrated through the key messages they remembered. Major

sources of nutrition information mentioned were the health workers, women's development groups, radio and information, education and communication (IEC) materials.

Conclusions and Recommendations

The findings revealed gaps related to quality nutrition services and these gaps were variable across facilities. Shortage of basic nutrition equipment, supplies, medicine, IEC materials including pictorial tools, demonstration materials, guidelines and trained staff were observed in all facilities. There is an urgent need to address the supply and training shortages. The recording system also needs to be improved.

Counseling has to be provided at the appropriate time and age. The results showed that BF was not counseled properly and this needs to be improved. Adequate nutritional counseling is not being provided at the health posts and is usually given during household visits. However, it would be better if key nutritional advice was communicated to clients when they visited the health posts for care and reinforced during the home visits. Inadequate consumption of diversified food products was attributed not only to the lack of adequate food supply, but also to misunderstanding food diversity and lack of skills in preparing varieties of food from the available food sources. Therefore, improving the awareness of the community on the benefits of diversified feeding, supported by practical food demonstrations using locally available ingredients and increasing the frequency of the cooking demonstrations in each *kebele* are key. The leaders of women development groups are well informed and could potentially be used for future promotional interventions. This indicates the need for trained and empowered women in the community.

In general, there is a need to establish a system for continuous measurement and improvement of quality nutrition services through establishing QI teams at the facilities, applying models for improvement and conducting constructive supportive supervision with immediate oral and written feedback and close follow-up. Nutrition service quality improvement needs to be viewed as an important component of a health worker's responsibilities. Better coordination is required by all stakeholders to provide the highest possible quality nutrition services to women and children.

1. Background

According to the SC 'State of the World's Mothers 2013' report[1], poor health among mothers contributes to high rates of infant mortality. In the same report, maternal under-nutrition is mentioned as one of the underlying causes of maternal and child mortality. Ten to 20 percent of women in sub-Saharan Africa are found to be underweight due to under-nutrition. Like many countries in the region, under-nutrition remains one of the main public health concerns of Ethiopia. Based on the latest Ethiopian Demographic Health Survey (EDHS 2011)[2], 27 percent of women in the reproductive age group (15-49) are thin and fall below the 18.5 body mass index (BMI) and 9 percent are moderately or severely thin. Twenty-four percent of the mothers are underweight. Usually, underweight mothers give birth to underweight children. According to the 2011 EDHS, 44 percent of children under-5 are stunted, of which 21 percent are severely stunted. Overall, 10 percent of children are wasted with 3 percent being severely wasted and 29 percent of all children are underweight with 9 percent of children being severely underweight.

Nutrition interventions are among the most important and cost effective interventions that save the lives of mothers and young children, especially during the first 1,000 days from the start of pregnancy until the child is 2 years of age. This period is critical for the future well-being and success of the child. Proper nutrition during this window of opportunity can have a profound impact on a child's ability to grow stronger, be intelligent and maximize education performance. It also benefits society, by boosting productivity and improving economic prospects for families and communities.

ENGINE aims to improve the nutritional status of women and young children, with a focus on the first 1,000 days. It is a five-year (2011-2016) USAID-funded multi-sector nutrition project which supports capacity for and institutionalization of nutrition programs and policies; quality and delivery of nutrition and health care services and prevention of under-nutrition through community-based nutrition care practices. ENGINE operates in 100 *woredas* in four regions (Tigray, Amhara, Oromia and SNNP).

To improve the quality and delivery of nutrition services, ENGINE hired a consulting firm to conduct an assessment to identify key challenges and bottlenecks in the provision of high quality nutrition services, which will then be used by the project to develop a QI model to improve the quality of services at the community and facility levels (primarily health posts and health centers). Accordingly, this report presents the findings of the QI assessment that covers 24 facilities from eight intervention *woredas* in four regions.

2. Objectives

The main objective of the assessment is to assess the barriers for the provision of quality nutrition services in selected intervention *woredas*.

Specific objectives are:

1. To assess availability and utilization of equipment and materials that can be used for provision of quality nutrition services.

[1] Save the Children (2013 : Surviving the First Day: State of the World's Mothers report. May 2013.

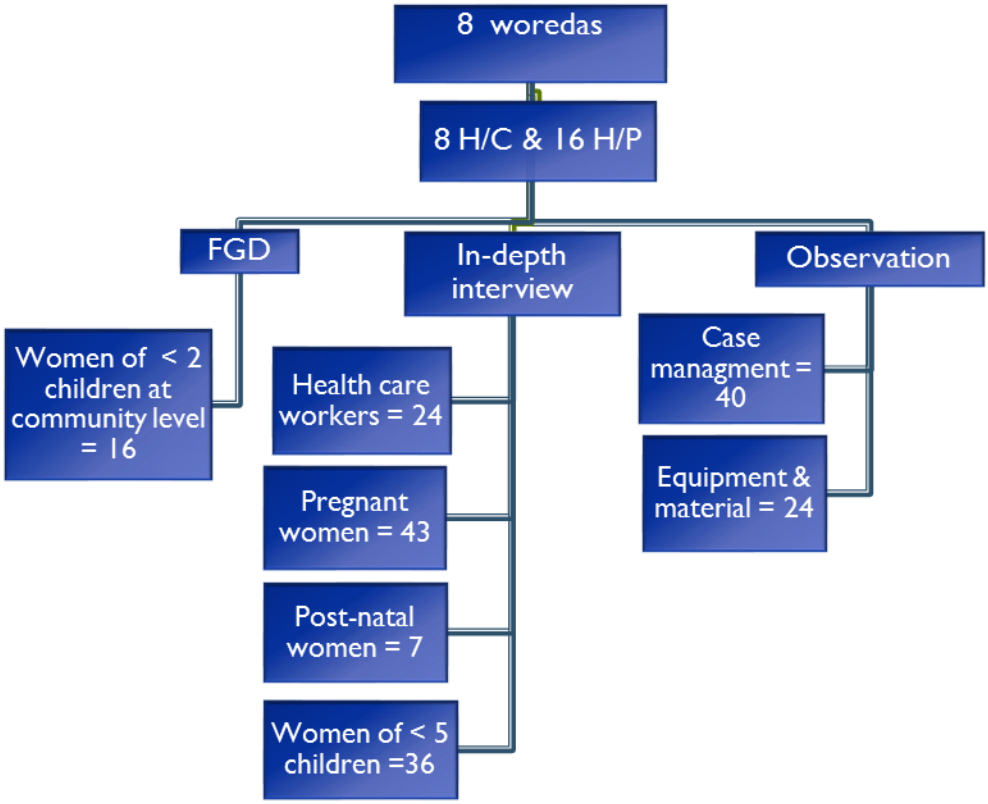
[2] Central Statistical Agency (2011): Demographic and Health Survey. Addis Ababa, Ethiopia.

2. To determine competency of nutrition service providers for provision of quality nutrition services at health facilities.
3. To assess client satisfaction and perception of the nutrition services offered by service providers.
4. To further utilize information in applying the QI model to improve quality of nutrition services at health facility and community levels.

3. Methods

The assessment was conducted in a sample of health centers, health posts and communities from a total of eight *woredas*, selected from the Tigray, Amhara, Oromia and SNNP regions where the ENGINE project is being implemented. It was based on the performance of nutrition services (good and poor). Criteria to identify good and poor performing *woredas* and facilities were: prevalence of severe acute malnutrition (SAM); coverage of micronutrient supplementation, coverage and quality of nutrition counseling services; availability of adequate and trained manpower; performance in managing SAM or moderate acute malnutrition (MAM) cases; and availability/strength of referral systems. These were selected by proportionally allocating the number of intervention *woredas* per region. The subjects of the assessment were: mothers from the beneficiary communities; postnatal care services users; pregnant women; mothers of children under-5; and health care service providers.

Fig1: Graph shows how sampling was conducted for this assessment



The research team used primary and secondary data sources to collect information including FGDs, in-depth interviews, case management observations and inventories of the health facilities.

FGDs: Focus group discussions were conducted using a structured checklist. The target groups were mothers of children under-5 in the communities. Each focus group consisted of between 8 and 12 women. The participants were identified using the purposive method with the assistance of a local key informant that was conversant with the project and communities. The FGDs were carried out by experienced facilitators. Every FGD was audio recorded to facilitate transcription, translation and analysis of the data collected.

In-depth interviews: Women exiting the facility after receiving ANC, PNC, expanded program on immunization (EPI) and sick child services on the survey day were randomly selected to assess satisfaction of clients on the nutrition services offered by each health center and health post. In-depth interviews were also conducted with health workers providing nutrition services at health centers and health posts to determine the competency of service providers offering nutrition services. Clients were interviewed using a semi-structured questionnaire.

Observations: The assessment included observation of counseling sessions at EPI, ANC and sick child rooms. The case management observers documented their findings using a checklist based on the national nutritional guidelines. Feedback on the case management observation was not given to the providing facility. A nutritional inventory was conducted to assess the availability of basic equipment and materials at each health center and health post.

Ten data collectors with backgrounds in health (MPH and MA/BA degree) and proven experience in nutritional counseling and facilitating discussions were recruited and trained. Data collectors were divided into five groups of two people each and then assigned to specific geographic areas. Supervision support was provided in the field by the team that designed the data collection tools and by ENGINE technical advisors. The complete transcripts were analyzed by the consulting team using thematic techniques with ENGINE support.

4. Findings

4.1 Availability and utilization of equipment and materials for nutrition services

Direct observations of equipment, nutrition supplies and teaching/demonstration materials were conducted at the 24 health facilities identified for the assessment. The observed gaps are presented in the sub-sections below.

4.1.1 Equipment

Thermometers, infant weight scales, adult weight scales, tape measures, MUAC measuring tapes, infant length measuring devices, child height measuring devices, adult height measuring devices, blood testing materials and urine testing materials are necessary equipment for the assessment of the nutritional status of children and mothers. Direct observation of equipment at the health facilities was made in three areas: availability, functionality and quantity.

With the exception of MUAC tape and the adult scale, lack of the required nutrition equipment was observed in all facilities. The type of missing or non-functioning equipment varied from region to region. For instance, lack of infant scales was observed most frequently in the health facilities in Amhara. The key findings are summarized in Table 1.

In all of the health posts and some of the health centers there was no water. While there were toilets for men and women, no hand washing stations were available due to the shortage of water.

Table 1: Observed gaps in equipment by facility type and region

Equipment missing and/or not functional	Facility type		Regions			
	Health center=8	Health post=16	Tigray = 3	Amhara=6	Oromia=9	SNNPR=6
Benches for people to sit on	1	2	0	1	0	2
Thermometer	1	3	0	1	2	1
Infant scale	2	6	0	6	1	1
Adult scale	0	3	0	0	2	1
Tape measure	2	6	2	2	2	2
Infant height measuring device	3	12	1	5	5	4
Child height measuring device	2	9	1	4	2	4
Adult weight measuring device	1	7	2	2	3	1
Blood testing materials	1	NA	0	0	0	1
Urine testing materials	1	NA	0	0	0	1

4.1.2 Nutrition supplements

Observation of nutrition supplements and related materials were made in terms of availability and condition of the items. In terms of availability, the study team observed VA capsules at the majority of health facilities. However, the service providers indicated that VA is usually distributed through campaigns. Most of the health facilities had IFA supplements, yet none of them had iron syrup. In terms of the condition of the nutrition supplements and related materials, some of the available items were about to expire during the fieldwork. In fact, some of the respondents were reluctant to go to the health posts due to frequent shortages of medication.

Lack of available nutrition supplements was observed in all facilities, though the nature of the gaps varied from region to region (Table 2). There were also differences between the well and poor performing health facilities with the observed gap being higher for poor performing facilities.

Table 2: Observed gaps in supplements and related materials by facility type and region

Materials missing and/or not functioning	Facility Type		Regions			
	Health center=8	Health post=16	Tigray=3	Amhara=6	Oromia=9	SNNPR=6
Child health card	4	4	0	4	1	3
Family health card	4	7	1	3	1	6
Registers	2	5	0	0	1	6
VA capsules	3	5	0	2	0	6
IFA supplements	2	5	0	1	1	5
Iron syrup	8	NA	1	2	3	2
ORS packages	3	7	0	1	3	6
Parasite control treatment	2	10	0	1	5	6
Antibiotics	3	11	1	4	4	5

4.1.3 Teaching and demonstration materials

Observations on teaching and demonstration materials were made by grouping the materials into two – counseling cards and posters. Gaps in this category are reflected in tables 3 and 4 below. Observation of the teaching and demonstration materials revealed that in some health facilities one reference document communicated all the necessary information for all nutrition areas: VA deficiency, iron deficiency, iodine deficiency, BF, complementary feeding, women's nutrition, general nutrition, HIV/AIDS and hygiene and sanitation. As shown in table 3, there were observed gaps related to counseling cards for issues such as VA deficiency, anemia/iron deficiency and iodine deficiency.

Table 3: Observed gaps in counseling cards by facility type and region

Counseling cards missing and/or no longer functional	Facility Type		Regions			
	Health center=8	Health post=16	Tigray=3	Amhara=6	Oromia=9	SNNPR=6
VA deficiency	4	12	1	1	8	6
Anemia/iron deficiency	5	11	0	1	9	6
Iodine deficiency	5	12	0	2	9	6
BF	2	9	0	2	3	6
Complementary feeding	2	10	0	2	4	6
Women's nutrition	3	10	0	2	5	6
General nutrition	4	12	0	2	8	6
Hygiene and sanitation	4	12	0	2	8	6
Family planning	4	11	0	2	7	6
Malaria prevention	6	12	0	3	9	6
HIV and AIDS	5	12	0	3	8	6

The observations also showed that posters were not available in the majority of health facilities for topics such as VA deficiency, anemia/iron deficiency, iodine deficiency, HIV/AIDS and family planning.

Furthermore, the existing posters were damaged or old and did not clearly convey the required messages.

Table 4: Observed gaps regarding posters by facility type and region

Posters missing and/or no longer functional	Facility Type		Regions			
	Health center=8	Health post=16	Tigray=3	Amhara=6	Oromia=9	SNNPR=6
VA deficiency	8	15	3	6	8	6
Anemia/iron deficiency	7	15	1	6	9	6
Iodine deficiency	7	16	2	6	9	6
BF	6	11	0	5	6	6
Complementary feeding	6	9	0	5	4	6
Women's nutrition	6	13	0	5	8	6
General nutrition	6	12	0	5	7	6
Hygiene and sanitation	6	11	0	4	7	6
Family planning	6	12	1	4	7	6
Malaria prevention	7	16	2	6	9	6
HIV and AIDS	6	15	1	6	8	6

Finally, though in many cases available equipment and materials were not functional and some of the nutrition supplements were about to expire during the assessment period, the practice of using the functional ones by health workers for the provision of nutrition services was observed as good.

4.2 Competency of health workers

Competency of health workers was assessed based on:

- Counseling and communication skills
- Practice of nutrition service delivery and training
- Awareness of nutritional problems and causes
- Understanding of quality nutrition services
- On the job training
- Supportive supervision

4.2.1 Communication and counseling skills

4.2.1.1 Communication skills

Direct observation of the communication skills of health workers (tables 5, 6 and 7) and clients exit interview feedback indicated that the health workers at the health facilities showed good interpersonal skills. Direct observations of ANC, sick child and well child sessions indicated that there was good communication from the health workers in greeting the clients, inviting them to sit down, making eye contact with the clients, asking clients the reason for the visit and how they feel and use of local

languages. There was similar feedback from clients in this regard. For example, a woman with a 5-month-old sick child visiting *Gunchre* health center in SNNPR explained the interaction she had with the health care providers as follows:

> *"The communication with the nurses is very good. They greeted us first and invited us to sit down to make us feel comfortable. Since there was no queue, they [health service providers] performed the examination immediately. They also explained the problem with simple language that I could easily understand. I was very happy with the service provided at the health center."*

Almost all service providers at both the health centers and health posts were seen explaining and presenting ideas in a language that the clients could easily understand. In an interview held with health workers at the health facilities, a health worker stated,

> *"As much as possible we try to use simple language while communicating with our clients".*

However, their efforts in encouraging the clients to ask questions, checking for clients' understanding of the advice given were not satisfactory, particularly at health posts. Only a few of the service providers were seen giving adequate attention to the concerns of clients. They were also not seen using verbal and non-verbal words, phrases, voice tones, facial expressions, gestures and body language in their interaction with clients. The study team also observed that inadequate attention was given to hearing clients' feelings and interests.

Table 5: Direct observation of health workers' communication skills during antenatal service by facility type (total observations: 8 at health centers and 9 at health posts)

Observation Topics	Health Center	Health Post	Total
The provider greets the clients	6	7	13
The provider looks at the clients	5	8	13
The provider asks the client to sit down	8	9	17
The provider asks for the client's name	6	8	14
The provider asks how the client is feeling	7	7	14
The provider asks about the purpose of the visit	6	4	10
The provider uses language easy to understand throughout the whole consultation	8	8	16
The provider encourages questions from the client throughout the whole consultation	5	1	6
The provider checks for understanding throughout the whole consultation	6	4	10

Table 6: Direct observation of health workers' communication skills during sick child consultation by facility type (total observations: 8 at health centers and 5 at health posts)

Observation Topics & Response	Health Center	Health Post	Total
The provider greets the client	4	4	8
The provider looks at the client	8	4	12
The provider asks the client to sit down	6	3	9
The provider asks for the client's name	6	3	9
The provider asks how the client is feeling	6	4	10
The provider asks about the purpose of the visit	7	1	8
The provider uses language easy to understand	8	4	12
The provider encourages questions from the client	4	2	6
The provider checks for understanding	4	0	4

Table 7: Direct observation of health workers' communication skills during well child counseling by facility type (total observations: 7 at health centers and 4 at health posts)

Observation topics & response	Health Center	Health Post	Total
The provider greets the client	6	4	10
The provider looks at the client	7	4	11
The provider asks the client to sit down	7	4	11
The provider asks for the client's name	5	3	8
The provider asks how the client is feeling	5	4	9
The provider asks about the purpose of the visit	6	3	9
The provider uses language easy to understand	7	3	10
The provider encourages questions from the client	3	2	5
The provider checks for understanding	4	1	5

4.2.1.2 Counseling practices

During observations of ANC counseling sessions, health workers were seen administering nutritional advice on the need to eat one extra meal and diversified food during pregnancy, explaining the importance of resting, engaging in light jobs, and not to carrying heavy loads. However, gaps were observed both at health centers and health posts regarding the counseling provided to ANC clients on the early initiation of BF within one hour of birth, the importance of EBF until six months, use of iodized salt and hygiene and sanitation (table 8).

Table 8: Direct observation of health workers' counseling processes during nutritional counseling of pregnant women by facility type (total observations: 8 at health centers and 9 at health posts)

Observation topics	Health Center	Health Post	Total
Recommend eating one extra meal during her pregnancy	7	6	13
Recommend eating diverse foods available in the household (iron rich and/or vitamin A rich foods)	5	7	12
Explain the importance of using iodized salt	1	3	4
Explain the importance of resting	7	6	13
Explain the importance of not carrying heavy loads	5	5	10
Promote hygiene and sanitation	2	4	6
Explain importance of EBF until 6 months	5	3	8
Promote early initiation of BF within one hour of birth.	4	3	7
Discuss coping mechanism for possible IFA side effects	1	4	5

A summary of direct observations of sick baby counseling sessions (table 9) revealed that better counseling services were observed at health centers regarding topics such as explaining the need for a child to eat often and discussing the consistency (regularity) of the food the child needs to eat. The study team observed gaps in explaining the need to feed increased quantities and more often during sickness; importance of EBF up to six months and complementary feeding afterwards; importance of hygiene; causes of growth faltering; asking about the food frequency and active feeding; as well as counseling on vitamin A supplementation.

Table 9: Direct observation of health workers' counseling processes during sick child counseling by facility type (total observations: 8 at health centers and 5 at health posts)

Observation topics	Health Center	Health Post	Total
Explain that the child needs to eat more during illness: importance of feeding child often	4	4	8
Explain the importance of EBF up to 6 months and continuing BF up to 2 years	4	5	9
Discuss the importance of complementary feeding starting at 6 months	3	4	7
Explain that the child needs to eat often (discuss frequency based on age of child)	6	1	7
Explain the importance of eating diverse foods, locally available	4	3	7
Discuss with the mother to identify causes for growth and weight faltering	4	2	6
Discuss the consistency of the food the child needs to eat	6	0	6
Suggest ways to feed the child (responsive feeding)	3	2	5
Importance of hand washing, safe preparation, storing cooked foods	2	3	5
Counsel on VA supplementation	2	2	4
Ask how often the child is fed	4	2	6
Ask about the consistency of the food given to the child	5	2	7
Ask about food preparation and storage	3	3	6

Summary of direct observations of the well-baby counseling sessions (table 10) also showed that efforts were being made in counseling on the importance of complementary feeding and the importance of eating locally available, diverse foods. Overall, the study team observed gaps on issues like explaining

importance of EBF for up to six months and continuing breastfeeding afterwards, importance of hygiene, causes of growth faltering, consistency of the food the child needs to eat and suggesting ways to feed and counseling on vitamin A supplementation. Respondents were giving gruel from the bottle as complementary food for infants from 6–9 months and after nine months giving porridge. Some of the respondents understood diversified food as a meal prepared from different cereals (one food group) rather than from a variety of food groups (cereals, animal source foods, fruits, vegetables).

Table 10: Direct observation of health workers' counseling processes during well child counseling by facility type (total observations: 7 at health centers and 4 at health posts)

Observation topics	Health center	Health post	Total
Discuss with mother to identify causes for growth and weight faltering	3	2	5
Explain the importance of EBF up to 6 months and continuing BF up to 2 years	3	3	6
Discuss the importance of complementary feeding starting at 6 months	5	3	8
Explain that the child needs to eat often (discuss frequency based on age of child)	6	1	7
Explain the importance of eating locally available, diverse foods	7	3	10
Discuss the consistency of the food the child needs to eat	4	2	6
Suggest ways to feed the child (responsive feeding)	4	2	6
Counsel or give VA depending on the age of child	4	2	6
Counsel or give de-worming depending on the age of child	2	0	2
Hygiene: importance of hand washing, safe preparation, storing cooked foods	3	2	5

The interviewed health workers claimed that they were providing good nutrition counseling for pregnant women, lactating mothers and mothers with sick and well children, supported by counseling cards and food demonstrations. Through this, they were helping to build the awareness of the community and initiating change for better nutrition practices. Feedback from service users also supports this claim. The following feedback from pregnant mothers on nutrition counseling and education received during ANC visits illustrates this:

> *"When we come for an ANC visit, the health workers bring us together and give us health education and advise us on the importance of taking rest and having extra and diversified food during pregnancy. Education is also given on the importance of consuming vegetable and animal products such as red meat to prevent anemia. In addition, they urge us not to carry heavy loads and maintain our personal hygiene like washing hands before preparing food and after using the toilet. Health workers advise us to minimize risk and danger. When we are in need of them, they provide timely support. The nutrition counseling they provide us with during our ANC visit is also good for our own health, strength and for the development of a healthy fetus. In addition it will help the child to have a better future. When both of us (mother and fetus) are well nourished and get appropriate medication and follow up, it will help ensure our wellbeing."*

In this regard, messages retained by ANC clients include eating diversified and additional foods, avoidance of heavy labor jobs and taking enough rest, taking IFA, the importance of eating foods rich in iron, use of

iodized salt and BF after child birth. The importance of safe drinking water, keeping personal hygiene and sanitation and the use of latrines were the other key messages pregnant women detailed in interview sessions. Additional advice on the need to revisit health facilities at least four times before delivery was also mentioned. The importance of consuming extra meals during pregnancy for the health of the mother, as well as the physical and mental growth of the child was reported by some of the mothers. Education on the prevention of communicable diseases such as malaria and HIV testing were also mentioned by ANC visitors. However, the recall on advice received to avoid de-worming pills was less apparent.

The feedback from ANC clients showed that counseling also involved giving advice regarding delivery preparedness, reserving adequate food and preparing clean clothes for the new baby. Pregnant mothers also spoke of discussions about the importance of institutional delivery, early recognition of labor and EBF practices. The importance of arranging a transportation mechanism was rarely mentioned during ANC exit interviews.

During postpartum visits, the interviewed mothers reported that they had received advice on the importance of EBF for the first six months and the importance of having adequate and safe complementary food for their babies after six months with continued breastfeeding up to two years. Health workers indicated that they recently started to give nutrition counseling on the importance of early initiation, EBF and complementary feeding to infants and young children. Immediately after giving birth, the health workers remind the mothers to EBF and not to give water or milk to the baby. For example, a health worker at Altufa health post in the Oromia region said:

> *"A woman who gave birth recently needs to replace the nutrients lost during delivery and should eat a healthy diet and see health professional for the postpartum medical checkup. I advise the mothers to eat diversified foods to keep them healthy and strong. I believe the nutritional advice should depend on what is available at home and on what they eat as part of their staple diet".*

The health worker went on to say that the most important thing is to tell them that they need to eat more than their usual intake. Mothers are also advised to take micronutrient supplementation regularly to prevent other deficiency disorders and anemia and continued use of prophylaxis like IFA supplementation. Women who have given birth recently were advised to use contraceptives for birth spacing and delaying the next pregnancy. But the study team noticed a postnatal case where the mother became pregnant due to a lack of injectable contraception in nearby health facilities.

Key messages remembered from PNC services include the importance of colostrum, EBF, the right time to start additional feeding (complementary feeding), the need to eat two additional meals per day for lactating mothers, the need for regular visits to a health facility for immunization and strictly following the schedules. Common advice recalled by most mothers was the need for EBF for up to six months, introduction of complementary feeding and the use of thick porridge made from a variety of foods. The use of iodized salt was also remembered by some of the mothers. The importance of completing immunization and keeping personal and food hygiene was also mentioned. For example, a mother at Meswaeti health center in Tigray region explained that she had been strongly advised to feed her child only breast milk and start additional food when the child reached six months. She said the health worker demonstrated to her how to prepare a thick porridge using a grain powder, oil, vegetables, eggs, iodized

salt and milk. She said "*These are ingredients that make children grow as he gets a balanced diet from different types of food.*" She was told about latrine use and hand washing methods using water and soap where possible, or as an alternative, using ash. Another mother who came to the Altufa health post in the Oromia region with her child was quoted as saying: "*We should exclusive breastfeed an infant who is less than six months age. After six months, we should start providing additional food for the child like porridge and provide milk, fruits and vegetables. They also told us about feeding the child with his/her own plate and helping the child to eat*". Another mother whose child was treated for malnutrition mentioned that the health worker gave her advice on improving feeding and giving her son diversified food.

However, there was less evidence of mothers receiving information about increasing children's intake of food when sick; the importance of giving children VA every six months (from six months upwards); and the importance of sleeping under an insecticide treated net.

The study team observed that there were no suitable counseling places at the health facilities. There were interruptions and noises while counseling was being provided. The allocated counseling places were also not appropriate for proper counseling of issues that required privacy.

4.2.2 Competency in nutrition service delivery

During direct ANC service observations, good practices of the health workers in weighing the clients and taking blood pressure measurement were recorded, but there were gaps in assessing the condition of the client with regard to feeding and appetite, MUAC measurement, checking for signs of micronutrient deficiencies like anemia, taking hemoglobin tests and discussing possible side effects of IFA (table 11).

Table 11: Direct observation of health workers' assessment processes during antenatal service by facility type (total observations: 8 at health centers and 9 at health posts)

Observation topics	Health Center	Health Post	Total
Ask about her appetite	5	4	9
Ask about the food she ate in the last few days	4	2	6
Ask if she has difficulties seeing at dusk	2	2	4
Ask if she is taking IFA supplements	3	4	7
Ask if she has experienced side effects with IFA Supplements	4	1	5
Ask if she is using iodized salt	4	2	6
Weigh the woman	7	7	14
In cases of suspected low weight, use the MUAC for nutritional assessment	0	4	4
Check blood pressure	8	7	15
Check for signs of anemia (eyelids and palms)	6	4	10
Check for signs of malnutrition using MUAC	0	1	1
Check for signs of edema	5	2	7
Test for hemoglobin level	3	NA	3

According to the responses from the pregnant women contacted, step-by-step actions taken by the health workers during ANC visits were: asking how the mother feels; reviewing the health card of the

mother; weighing; checking blood pressure; looking for signs of malnutrition; examination of the condition of the fetus; providing IFA pills; and reminders about next visit. HIV counseling and testing was also reported to be part of the services received.

The majority of the pregnant women interviewed also said they received iron tablets and explained that they were informed about the reasons why these pills were prescribed for them. However, most of them mentioned that they were not told about any possible side effects of the pills and the coping mechanisms they should apply if they should occur. For example, a woman interviewed in one of the health facilities indicated that she was instructed to take a single iron pill every day after dinner, but she was not informed how long she should continue to take the pill. The following comments are from pregnant women attending the health centers.

> *"They took my weight and recorded it on paper…. asked me the reason for the visit and I told them that I was not feeling good and I needed to get a medical checkup. Then they sent me to the examination room and conducted a medical check-up. After that, they gave me syrup and a red tablet. They ordered me to take one pill after dinner."*
>
> (A six-month pregnant woman at Gaca Wude health post, SNNPR)

> *"She asked me how I feel about the pregnancy and did an examination of the fetus; she took my weight, blood pressure and recorded it on the report card. She also took a blood sample to test for HIV. Based on the results, she provided me with a red tablet, which I continued for one month. She also advised me to use iodized salt. A vaccine was given to me as well. She told me that the fetal heartbeat was audible on the first visit and she said that she listened to the fetus moving on my second ANC visit. Before I left the health post, the health extension worker (HEW) told me how much I weighed and the increment expected on my next visit."*
>
> (A six-month pregnant woman at Altufa health post, Oromia)

> *"… When I came here for the first time, the HEW greeted me and invited me to sit. She asked me about my problem. I told her the date of my last visit. It was eight months ago. I came to see her when I felt pain. She told me that I am now seven and a half months pregnant. Then, she listened to my heartbeat with a device, measured my weight and recorded it on the file. However, she did not check my blood pressure or examine my eyes. She also did not ask me whether or not I used iodized salt."*
>
> (Mother interviewed at Amo Gara health post, SNNPR)

Direct observation of sick child assessments showed good practices in weighing the child, checking for signs of illnesses such pneumonia and diarrhea, and checking for signs of malnutrition. Nevertheless, gaps were identified in the following areas: asking about EBF for a child less than six months old; asking if traditional medicine had been given to the child in addition to breast milk; asking about active feeding of the child; asking about VA supplementation for children from 6-59 months; asking if the household is

using iodized salt (table 12); reviewing the child's health card; measuring the child's height and temperature; as well as explaining the diagnosis to the clients and recording the assessment findings.

Table 12: Direct observation of health workers' assessment processes during sick child consultations by facility type (total observations: 8 at health centers and 5 at health posts)

Observation topics	Health Center	Health Post	Total
Ask mother how child is going (active, listless, tired)	4	4	8
Review the child's health card	5	1	6
Weigh the child	6	4	10
Measure the child' s height	4	3	7
Take the child's temperature	5	1	6
Record weight and height on family health card as well as temperature and symptoms	4	3	7
Check for signs of illnesses such pneumonia, diarrhea	7	3	10
Check for signs of malnutrition. Look at child's palms or eyelids	7	2	9
Look at child's feet or legs (check for oedema)	4	3	7
Ask mother/caregiver about feeding practices	5	5	10
Ask about child's appetite	6	4	10
Ask if the child is vomiting	4	3	7
Ask if the child has diarrhea	5	5	10
Ask about exclusive breastfeeding if child is under 6 months	2	2	4
Ask if traditional medicine has been given to the child in addition to breast milk	3	2	5
Ask about active feeding of the child	5	3	8
Ask about VA supplementation status when child under 6 months	2	2	4
Ask if household is using iodized salt	2	3	5
Share results of nutritional assessment with mother	3	2	5
Explain diagnosis	4	2	6
Administer a dose of VA if child is VA deficient	4	2	6
Prescribe iron syrup or tablets in case of anemia	0	0	0
Prescribe ORT with zinc	0	0	0
Prescribe ORT	3	1	4
Explain to the caregiver how to make ORT at home	3	1	4
Prescribe RUTF	2	0	2
Refer the child to a nutrition rehabilitation center	0	0	0
Schedule a follow up visit.	4	3	7
Provide de-worming tablets	1	0	1

Direct observation of well child assessments showed that better practices were seen in weighing the child, checking for signs of illnesses such pneumonia and diarrhea and checking for signs of malnutrition, but there were gaps in asking about EBF for children less than six months of age, asking if traditional medicine has been given to the child in addition to breast milk, asking about active feeding of the child, asking about VA supplementation status of children above six months and asking if a household was using

iodized salt (table 13).

Table 13: Direct observation of health workers' assessment processes during well child counseling by facility type (total observations: 7 at health centres and 4 at health posts)

Observation topics & response	Health center	Health post	Total
Ask mother/caregiver about feeding practices	7	4	11
Ask about child's appetite	5	3	8
Ask about EBF if child under 6 months of age	3	1	4
Ask if anything has been given to the child in addition to breast milk if child under 6 months	3	1	4
Ask if traditional medicine has been given to the child in addition to breast milk	0	1	1
Ask how often the child is fed	3	2	5
Ask about the consistency of the food given to the child	3	2	5
Ask about food preparation and storage	3	3	6
Ask about active feeding of the child	3	2	5
Ask about VA supplementation status when child under 6 months	3	3	6
Ask if household is using iodized salt.	2	2	4
Share results of nutritional assessment with mother	4	3	7
Congratulate mother when child is doing well	2	2	4

4.2.3 Health workers' awareness of nutrition and service quality

The health workers were able to clearly describe the community nutritional problems and related causes. Based on their awareness, experience and observation, they tried to indicate significant nutritional problems and changes observed in the community. In general, reported nutritional problems were: child malnutrition (moderate and some severe forms), low maternal nutritional condition and deficiency of iron. They also expressed comprehensively how nutritional problems are manifested in their area and described signs and symptoms like thinness, edema, brownish hair and night blindness etc. However, their awareness of chronic nutritional problems such as stunting appeared limited.

Some of the major nutritional problems the health workers tried to identify in their locality are summarized below:

> *"The noticeable nutritional problems in the community are sporadic cases of severely malnourished and moderate cases of malnutrition among children, iron deficiency in mothers and a few cases of malnourished mothers. Screening for malnutrition is being made every quarter and nutritional problems are decreasing. This is largely due to the continuous awareness creation and attempts made to improve access to health care services."*
>
> (Koma Kataraa health post, Oromia)

> *"In the recent past there was a problem of malnutrition with children and pregnant women. Pregnant women used to eat once a day. But after we [HEWs] started to work in the kebeles, the problem has been reduced. Particularly since the last year, though the problem is not totally solved, there have been very few cases of malnourished pregnant women. Currently the mothers are taking care of themselves. Giving birth to low weight children used to be common in this area. Nowadays,*

the minimum birth weight is 2.5 kg and the average is reaching 3 kg. The problems of wasting and micronutrient deficiencies were not seen in this area."

(Sheda health post, SNNPR)

"The major nutrition problem is lack of skill on how to prepare nutritious food and feed young children. With the available resource, they [mothers] do not prepare diversified or give fortified foods to their young children. There is also limited understanding on the importance of nutritious food for physical and mental development. We are teaching them how they can cultivate their backyard/kitchen garden. However, there is insufficient water in the area to grow vegetables. We tried to plant different vegetables on demonstration sites and showed women to do the same in their plot. Limited access to safe water is the biggest challenge to cultivate and diversify adequate food supply in this locality. In relation to that, there is also limited understanding of the importance of using safe water for drinking and sanitation and hygienic purposes".

(Sheda health post, SNNPR)

"The most common nutrition related problems are anemia in pregnant mothers and malnutrition in under-5 children. Marasmus, a form of severe malnutrition in children, is the most common problem. There are children born who only weigh 2.5 KG. So far, we did not encounter any low birth weight deliveries."

(Mehan health post and Meswaeit health center, Tigray)

The health workers also pointed to a range of possible causes for the identified nutritional problems that include inadequate feeding practices; gaps in awareness of the community on child feeding, care and eating diversified food; early initiation of complementary feeding and poor quality of weaning food for children; bad child-feeding practices like giving water after birth; and poor maternal feeding practices. Other related causes mentioned included lack of birth spacing or limiting, infections resulting from diseases like diarrhea and parasites in relation to WASH conditions. According to health care providers, inadequate consumption of diversified food products occurs not only because of a lack of adequate food supply, but also due to lack of skills in preparing varieties of items from the available food sources.

The health workers also expressed their views on what nutrition service means and indicated three broad areas: assessment, counseling and intervention. Almost all of them mentioned the provision of ready-to-use therapeutic food (RUTF) or Plumpy Nut. Some included the provision of micronutrient supplementation, whereas others mentioned periodic nutritional assessment and nutritional counseling activities as nutrition services. For example, a health worker at Gaca Wude health post in the SNNPR region explained:

"It means giving advice to pregnant women such as the need for extra meals. It includes nutrition assessments like MUAC and BMI are used and counseling is given to a malnourished child and mother to use a diversified and balanced diet. Sometimes visits are made to households to see how the child eats and to give feedback on the child's eating habits as well as provide advice on eating what is available around their vicinity. If the MUAC for a child is below 11 centimeters, the child will be identified as malnourished and for the pregnant woman the minimum is 21 centimeters."

When defining quality nutrition service, the interviewed health workers listed the following key points:

- Decrease in the nutritional problems
- Extent of change in the awareness and practice of the community
- Increase in health and nutrition service-seeking demand of the community
- Effective management of cases of malnutrition and client follow-up, client satisfaction and increase of clients using the service
- Effectiveness of education in changing practices and improving nutrition
- Effectiveness of health education methods in creating demand and bringing behavior change
- Availability of nutritional supplements and supplies
- Improved awareness and practice (i.e. feeding)
- Trained and skilled health workers
- Provision and access to supplies for the client
- Demand created for services in the community and their participation
- Service provided by capable and skilled providers

This is illustrated by a health worker at Mesewati health center in Tigray, who defined quality nutritional service in this manner:

> *"To ensure the quality of services, the health care provider should respect the client and give an immediate response for their specific concerns. S/he is expected to give advice/counseling based on the actual scenario and if there is a need, prescribe drugs and iron supplements."*

4.2.4 Training and supervision received

Most of the health workers reported that they had received nutrition related training at different times during the last two years. Topics covered include Infant and Young Child Nutrition (IYCN), complementary food cooking demonstrations and neonatal care and BF. Some indicated that they just participated in Integrated Refresher Training (IRT) and review meetings and did not receive nutrition training. However, the majority indicated that their counseling skills had improved after they received training. The quality of the training was generally rated as good. For example, a health worker at the Gobessa health center in Oromia mentioned that they had received training three months ago on IYCN. The training was good and helped them to provide better services to clients. Another health extension worker at the Koma Kataraa health post in Oromia mentioned that she had received training two years ago on complementary food demonstration, neonatal care, breastfeeding and hygiene. The training was good and helped her in advising pregnant mothers and counseling on child feeding.

However, some gaps reported by the health workers were: inadequacy of the trainings, lack of follow-up and refresher training and that the training did not reach some of relevant staff working on nutrition

services. One health worker commented, *"Yes, I attended training in relation to nutrition for one day. The training was **not** adequate because it was given only for one day. The training content did not go into depth about the importance of nutrition, but it gave us some clues on the nutritional needs of clients."*

Most of the respondents were glad to have supportive supervision from MoH (regional, zonal and *woreda* levels) and from partner NGOs. However, they felt that supportive supervision should not be seen as an investigation to find mistakes. It should be constructive to help improve the quality of service provided in the respective institutions. Follow-up visits, especially after training, were viewed as necessary to monitor whether the implementation has reached the target community. The respondents complained that no one had been looking at what they are doing, especially regarding nutrition.

4.3 Client satisfaction and perception of nutrition services

4.3.1 Client satisfaction

ANC clients were asked to rate the level of satisfaction of nutrition service as poor, just ok, good and very good based on the services they received. Out of the 43 pregnant women interviewed in 24 health facilities, 29 (67.40 percent) of them rated the services as good, while 13 (30.20 percent) of them rated it as very good. The clients were asked to describe the reasons for their ratings and the following are among the reasons given:

> *"They encourage me to give suggestions and ask questions on whatever I don't understand about the examination and so on. In addition, the reason why I said 'very good' is that they don't let us wait for a long period of time, the waiting area is not crowded, they allow us to visit free of charge, explain clearly what was being done in terms of tests and during counseling and invite us to ask questions. All in all, they are very good for me. I always get advice from them. They know everything about a pregnant woman. They care for me and keep my privacy during examinations and also privacy of records. But there is not enough medicine at the health post. Only IFA is available. The compound looks quiet and good. There are also many posters on the walls that teach the community about different things, including nutrition."*
>
> (A pregnant women at Gunchere health center, SNNPR)

> *"The health care providers here are very good, hardworking, friendly and treat us in a good manner. They speak the language that we understand easily. The waiting time is not too long, that is why I said the service is very good."*
>
> (A pregnant women at Bilo health post, Oromia)

> *"Because I benefited from the counseling service she provided in terms of birth spacing, feeding of children, hygiene and sanitation, I am very happy with the service provided by the health worker. She respects us, she does not get angry with us, invites us to sit down, and provides the service immediately with no waiting time. Due to these reasons, I am satisfied with the advice being given by the health worker. The services are provided free of cost. We get vaccination services for our children from the health post but we take children to other health facilities when the child is sick in order to get the appropriate medication."*
>
> (A pregnant women at Gaca Wude health post, SNNPR)

"The professionals here are very friendly and give me whatever service I seek in a short period and I can have the medicines they prescribe here at a reasonable price. They teach through the use of pictures which makes things more clear than it used to be and invite me to ask any questions I have, that's why I said the service is good."

(A pregnant women at Meswaeti health center, Tigray)

"The reason why I said the service is good is because the service area is not crowded, the health worker explains everything clearly, keeps privacy of examination and records, and above all cares for me. There is no service fee. The waiting areas are attractive and informative posters are found on the walls. The only complaint I have is that the waiting time is too long because there is only one health worker at the health post."

(A pregnant women at Chachina Ludi health post, Amhara)

Similarly, clients of postnatal care services were asked about their level of satisfaction and reasons for their ratings. The clients interviewed at the health centers in Tigray, Amhara and SNNPR all rated the service as good, while those of Oromia rated it as very good. The mothers pointed out the following reasons for their ratings: there is not a prolonged waiting time; the rooms are clean; the health workers use easily understandable words supported by demonstration materials like BF techniques; the health workers are caring towards both mothers and babies; they respect privacy of clients and give clear advise on next steps. Though these are constructive reasons, the consulting team talked to a woman at the Altufa health center in the Oromia region who had given birth to her fourth baby. The woman and her husband said that they were satisfied with the services received at the health center. However, they complained that the health center did not have electricity or water supplies. The husband also said that, had there been provision of family planning services at the health facility, his wife would not have been pregnant. One of the HEWs in the *woreda* confirmed that the husband had come repeatedly and asked if the health post had resumed provision of family planning services. Unfortunately, *Implanon*[3] was out of stock and its provision was discontinued at that time.

In regards to services related to under-5 children, one interviewee (a mother of an under-5 child) from SNNPR rated the service she received as poor (which was not indicated for ANC and PNC). Overall, the respondents that said the service given was below their expectations were the minorities (4 out of 36 or 11.1 percent) as compared to those that said good or very good (32 out of 36 or 88.9 percent).

FGD participants at health posts were also asked to rate their level of satisfaction on the nutrition counseling services they had received regarding BF, complementary feeding and maternal nutrition. The services were rated as very good in more than 60 percent of the discussion sessions for each type of counseling services. Reasons mentioned for the ratings included advice/counseling being understandable, very important, and that it helped them to gain adequate knowledge. They indicated that the advice given had influenced them to modify their traditional practices like early initiation of BF, inadequate attention to hygiene and poor child caring practices. Feedback from the following participants illustrates the reasons for the ratings:

[3] Implanon is a soft rod-shaped implant contraceptive that is inserted under the skin.

"When we evaluate the advice we received from the health worker about breastfeeding, it is very good. This is because previously our children were suffering from different diseases because we did not breastfeed them well but now after the advice, we strictly breastfeed our children and they have become active and healthy."

(FGD participant at Mehan health post, Tigray)

"Mothers would not have gathered if it was not for them. They would not have shown up for vaccination. Regarding feeding, in the past no one cared whether the children were breastfed or not. But now everyone is curious about when and what to feed their children."

(FGD participant at Sabadar health post, Amhara)

4.3.2 Clients' nutrition awareness

The nutrition awareness of the community was assessed through FGDs during which the participants were asked to explain what is meant by nutrition and balanced diet. There were broad and varied responses in different FDG sessions and individual interviews. Some of the responses were:

- *Food for one's survival - without eating, human beings cannot survive*
- *It is about eating balanced diet that helps to provide energy and power. It also helps towards the physical and mental development of a child*
- *It refers to both solid and liquid foods*
- *Eating meat, milk, fruits and vegetables*
- *It refers to the consumption of pulses, grains and legumes*
- *It is about how to feed a baby, by maintaining cleanliness*
- *It is about keeping the cleanliness of feeding utensils and eating in clean way, I think this is what nutrition refers to*
- *Eating a nutritious diet prevents disease and its adverse effects. It also helps to maintain the body*
- *A balanced diet is any diet which contains different forms of foods like green leafy vegetables, porridge, eggs, wheat, barley, and butter*
- *A balanced diet is food that includes three forms of foods including vitamins, body maintaining and energy providing diet*

FGD participants mentioned that they had been receiving nutrition-related information from health workers during the past year. In the FGD, some of the participants understood food diversity to mean eating food prepared form different cereals. Very few of the FGDs included animal products and fruits and vegetables as diversified food. In most cases participants were not aware of the use of iodized salt. They recalled the key messages and advice they had received from health service providers as follows.

Regarding breastfeeding:

- *Colostrum or the first milk should not be thrown as it brings great benefits for the new born baby*
- *Early initiation of breastfeeding within the first hour of giving birth*

- *EBF for up to six months age of the child*
- *BF over 10 times per day and giving care to children*
- *Proper breastfeeding methods (like completing feeding from one breast before moving on to the next)*
- *The importance of breastfeeding for physical and mental development of a child*
- *Before the baby reaches six months, avoid giving water and other prelactal feeds*
- *BF helps prevent pregnancy, enables child spacing*
- *Continue BF for up to two years (some mothers say up to one year and others up to two years, few of them mentioned that there is nothing wrong with giving breast milk beyond that)*

Regarding complementary feeding:

- *Provide additional food after six months like porridge (locally known as "Genfo" or "Merka") prepared from mixed grain, pulses, crushed dried meat and use milk*
- *Preparing a child's food after six months from varieties of food grains (maize, sorghum, wheat, barely), pulses, egg, butter, etc. and other supplies*

However, some women mentioned receiving the following messages:

"I was told to feed breast milk three times a day." (A mother from Ambo)
"I was told to give boiled milk with sugar after the child is six months old." (A mother from Decha Health Center)
"The HEWs taught us to give gruel from a bottle." (FGD in Sheda)

Regarding maternal nutrition:

- *Increasing the frequency of meals to meet the daily energy needs of pregnant women and lactating mothers*
- *Regular intake of iron supplements daily for one month and in rare cases consumption of iodized salt*
- *Getting enough rest and identifying early symptoms of labor*
- *Maternal nutrition helps to replace blood lost and should be adequate*

FGD participants were also asked to explain what they understood about hygiene and sanitation; responses included, "*It is about keeping cleanliness of food, water and clothing, cleanliness of children, use of latrine and environmental cleanliness", as well as, "It helps people to be healthy and prevents them from contracting different diseases."* They also explained that hygiene mainly covers the cleanliness of the overall human body. Some of the respondents described hand washing with soap or ash. In most cases the respondents were associating it with the cleanliness of the body. According to FGD participants, keeping good hygiene and sanitation at the household level helps to prevent children and adults from diseases like diarrhea. They were also asked to recap some of the key messages that they remember regarding these topics. Use of latrine and preparing hand washing facilities after using the toilet was described as well as washing hands with soap or ash.

Feedback from some community members revealed that there is much to do in building their awareness. This is expressed in the comments from a mother at the Zembaba Hella health post of Oromia region,

"Some of the women mentioned that the education and advice provided is very good but I have the feeling that it is not enough and there are still issues that have not been fully covered regarding child nutrition and understanding the concept of nutrition itself. We need the education and awareness creation on nutrition to be increased." A mother from Gunchre HC described her knowledge of nutrition, *"I don't think we know much about nutrition. The HEWs have to teach us about nutrition, we still don't know anything about how to cook and what to feed."* On the other hand, some of the FGD participants have the view that they had already undergone enough awareness-creation sessions on nutrition. FGD participants that attended the session held at the same health post responded by saying, *"The education we got was very good; it is helping us to maintain our health and that of our children. We are taking health education sessions organized for the health development army. Some might say the education is inadequate because they were not attending the education sessions, but for us there is nothing that remained un-discussed, we have learned quite a lot and have benefited from it."*

4.3.3 Sources of information on nutrition

Mothers who were interviewed and took part in the FGD sessions stated that they received nutrition related information from different sources that include interpersonal channels (IPC) and mass media sources. Prominent sources that were indicated included health workers who communicate and counsel during community meetings and home visits (nutritional counseling is not provided at the health posts in most cases). At some places, the communities receive health related information from the Health Development Army - a structure set up by local governments that organize communities into small groups to bring behavioral change and disseminate information in areas of maternal and child health. A mother at the *Zembaba Hella* health post in the Oromia region stated that, *"Women are organized into groups of five to form a development army and receive education on different topics of health and nutrition. We received education on child feeding, maternal health, sanitation and other health related topics. We then share the education we received at the group meetings and coffee ceremonies."*

Health education methods used by the health workers involve mass education at community meetings and counseling in one-on-one meetings. Oral communication was the dominant method used by health workers to communicate nutrition related information. Recently, IEC materials (teaching aids) like posters and flipcharts that focus on infant and young child feeding were disseminated to health workers. The consulting team also observed the presence of flip charts with nutrition related messages at health posts and health centers.

In some cases, households are provided with family health guidelines that illustrate messages with pictures and demonstrate topics covered in health extension packages. However, most of the respondents were asking for pictorial tools. For example, illiterate mothers said that they do not understand the messages presented in the guidelines due to their literacy level, whereas the pictorial illustrations help them to understand the key health messages. The mothers who were provided with these illustrations valued the importance of health communication materials. In relation to this, a mother at the Mehan health post in the Tigray region stated, *"They gave me a poster which tells me how to feed my baby and shows good positions for breastfeeding. The poster they gave me is simple to understand because it has illustrations and pictures to demonstrate the message".* In Amo Gara health post, a mother mentioned, *"It would be better to see some pictures rather than listening to what someone is telling you. You will not forget what you see in pictures."*

Radio is reported to be the mass media channel identified by most of the FGD participants that informs them about nutrition related information. Nevertheless, there were participants who did not get any nutrition related messages from any of the mass media channels. The health workers interviewed at different health posts and health centers commented on the importance of mass media in creating awareness about maternal and child health. They said mass media intervention particularly complements their work in meeting MNCH targets set in the MDGs and other policy commitments of the country. They also indicated that mass media programs reinforce the nutrition-related messages that they teach household members during their regular home visits and mentioned that mass media campaigns support their work and help to build trust.

5. Discussion

5.1 Provision of equipment, materials and supplies

There were observed gaps in the availability of some equipment and supplies. Lack of equipment such as infant weighing and height measuring devices, child height measuring devices and adult weighing scales affect the nutritional assessments. Lack of iron syrup, shortages of parasite control treatment and antibiotics are also concerns for quality nutrition service delivery. Lack of antibiotic medicine like amoxicillin for treating severe cases of malnutrition and other child illnesses was the major problem indicated by the health workers. Additionally, toilets (for men and women) were not functional due to the shortage of water in the health facilities.

Recently, IEC materials that focus on infant and young child feeding were disseminated to health facilities. The consulting team also found flip charts (counseling cards) with nutrition related messages, though some of them were old and did not clearly convey the required messages. There were gaps in all educational and counseling materials on different topics, particularly the availability of counseling cards and posters on different topics. This has a big implication on nutrition and other related health prevention and promotion topics. These teaching and demonstration materials are very important to bring about community behavioral changes regarding nutrition. As the health workers mentioned during the assessment, the challenge was not only the absence of these teaching materials that constrained the quality of services, but also the absence of demonstration materials that affected their efforts to illustrate different nutrition issues to mothers during health education.

The study team observed an adequate supply of micronutrient supplementation. On the other hand, the interviewed health workers mentioned a shortage of therapeutic foods for treating severe cases of malnourished children. The only therapeutic food accessible at health posts and health centers that the consulting team observed was Plumpy Nut. Some of the respondents were reluctant to go to the health posts due to the frequent shortage of medication and equipment.

From the above, the strengths of the nutrition services are clearly visible, but some areas need further attention to increase the quality of nutrition services. Some of the areas for improvement (as summarized in table 17) are:

- Counseling and nutritional assessment skills of service providers;
- Promotion of community-based nutrition; and

- On-the-job training, supportive supervision and coaching for health providers.

Overall, clients' and community members' satisfaction of the ongoing nutrition services is rated as good as explained through their perceptions of improved access to services; the caring nature of health workers; use of local language and interpersonal communication of health workers. In addition, the fact that the service is being provided free of charge was also mentioned as one of the reasons for good satisfaction ratings.

5.2 Competency of nutrition service providers

To provide nutrition services to clients, counseling and communication are two of the key tasks for the health workers. In this regard, direct observations and clients' and FGD participants' feedback revealed that the health workers were performing well in interpersonal communications, interpersonal skills, use of local languages and transferring nutrition messages. However, practices in listening and encouraging clients to ask questions and checking clients' understanding were not common, particularly at health posts. Transferring advice to ANC clients on the importance of using iodized salt, avoiding harmful practices such as smoking, drinking alcohol, chewing chat, as well as hygiene and sanitation advice were not being practiced satisfactorily at health centers and health posts. There was no clear understanding of food diversity and food groups in the community. The majority of pregnant women interviewed received iron tablets for varying durations (2 – 6 months). They were able to explain the reason why the pills were prescribed for them, but were not counseled about possible side effects.

The practice of health workers in assessing health and nutritional status of ANC clients through examining, weighing and blood pressure measurements was reported as good. Similarly, their practice in assessing sick children through weighing, MUAC measurement, identifying signs of illnesses and asking about child feeding and appetite was also reported as good. However, it was noticed through direct observations that there were gaps in assessing the feeding practices, making and identifying signs of micronutrient deficiencies like night blindness and anemia, administering hemoglobin tests and discussing possible side effects of IFA. Regarding sick baby consultations, the health workers were **not** seen properly reviewing child health cards, measuring child height and temperature, explaining the results of the assessment with clients and recording the findings.

Concerning their level of awareness about nutrition, the health workers contacted were able to describe basic issues about nutrition but their understanding of stunting as a major nutritional issue was limited. As far as capacity building interventions are concerned, the interviewed health workers indicated that they had received nutrition-related training during the past two years and rated the quality of the training as good. They confirmed that the training considerably helped them to deliver better services to clients. However, lack of follow-up and refresher training, problems in screening relevant staff for the training and limited supportive supervision by the MoH (at regional, zonal and *woreda* levels) and NGOs were reported as constraints in this regard.

5.3 Service strategy

The strategy of promoting maternal and young child nutrition through ANC services is an important entry point for the provision of integrated care and addressing the vicious cycle of chronic as well as acute nutritional problems and micronutrient deficiencies such as anemia. Daily prenatal uptake of IFA is recommended throughout pregnancy and is particularly important through the first three months of

pregnancy. This assessment showed some variation on how the IFA supply services were being provided at facilities. Some mothers were given IFA for only two months while others received them for three to six months. The period of supplying pills during pregnancy also varied. Informing clients about possible side effects was also reported to be low. In addition to IFA, antenatal services can also include nutrition counseling on breastfeeding practices, childcare practices and nutrition supplementation. PNC nutrition service provision offers another window of opportunity to promote extra meals for the lactating mother, promotion of breastfeeding and optimal complementary feeding practices. However, both ANC and PNC coverage rates were observed to be low in the assessment.

5.4 Clients' satisfaction and feedback

Overall, clients' and community members' satisfaction of the ongoing nutrition services is rated as good as explained through their perceptions on improved access to services; the caring nature of health workers; use of local language and interpersonal communication of the health workers. In addition, the fact that the service is being provided free of charge was also mentioned as one of the reasons.

5.5 Community awareness about nutrition

In general, community feedback revealed that the nutrition awareness of the community has improved, though there was variation in how much individuals knew among the community members. Leaders of women's development groups and those in similar positions were well informed and could potentially serve for future promotional interventions. This emphasizes the need to have similarly trained and empowered women in the community.

However, risk perception, attitude factor, social norms, ability and self-regulation factors were reported to affect the awareness of the community. Analysis of these factors and designing effective methods of promotion plays great role in influencing these factors. For instance, the experiences of recognizing a model family who implemented the health extension packages could promote a social norm. Distribution of IEC materials, such as posters with key messages on child feeding and caring for households could facilitate understanding and retaining information good practices.

Table 14: Summary of strengths and areas for improvement

Services	Strengths	Areas to be Improved
1 Counseling		
• Communication • Advice • Use of communication materials	• Good interpersonal skills • Proper use of local languages • Good practices in nutrition message transfer to clients visiting for different reasons; • Promising efforts in counseling supported by IEC cards; • Initiation of involving men in ANC counseling.	• Service providers to give more attention to client inquiries and confirming client's understanding • Improve counseling skills of service providers on breastfeeding & usage of iodized salt • Inform about possible side effects of IFA and coping mechanisms • Increase male involvement in ANC counseling • Optimize opportunities for nutrition counseling at health facilities • Develop properly organized counseling venues & allocating appropriate time for adequate counseling
2 Assessment		
• Anthropometric • Clinical • Client information • ANC visits	• Use of MUAC and weighing of children • Weighing ANC clients taking and blood pressure • Investigating signs of illness for children • Maintaining up to five ANC visits	• Review child health card, measure child height and temperature regularly • Investigate micronutrient deficiencies • Conduct hemoglobin tests • Explain diagnosis and share results of the assessment with clients • Guidance on iron supplementation protocol
3 Promotion		
• Nutrition awareness • Behavioral change • IEC materials • Food demonstrations	• Presence of nutrition awareness and some knowledge within the community	• Strengthen behavioral change communication & food demonstrations within the community • Need for increased availability of IEC materials including pictorial tools • Promotion of nutrition services through organized women development group networks • Strengthen sanitation & hygiene promotion
4 Logistics and Supply of Equipment and Medicine		
• Logistics • Equipment • Supplements	• Presence of IEC materials focusing on infant and young child feeding • Adequate supply of micronutrient supplementation	• Water supply needed within health facilities • Supply of weighing scales, iron/folate tablets or zinc supplements

In addition to the areas for improvement indicated in the above table, the study team observed that there were poor recording systems of the services being provided.

6. Conclusion

This assessment has examined the quality of nutrition services provided for pregnant women, postnatal women and under-5 children. It highlights barriers to the provision of quality nutrition services in the intervention areas. The overall findings showed gaps in providing quality nutrition services. In each area studied, the gaps varied from facility to facility and from region to region. Moderate and severe malnutrition among children, low maternal nutritional conditions and anemia in pregnant women were the major nutritional problems highlighted by health workers.

Inputs that are required to provide quality nutrition services are not being fulfilled as specified in the national guideline recommendations. Shortage of basic nutrition equipment, supplies and communication materials were observed in all facilities and the type of shortage varied from facility to facility. Some of the available equipment was not functional and some of the supplements were about to expire. Some households were provided with family folders but did not understand the contents of the folder. Poor recording of nutrition activities were observed in most of the facilities. Shortage of safe water was also observed in all health posts, and some of the health centers. This inhibits good hand-washing practices and causes underutilization of toilets in the facilities. Shortage of water is also a problem in the community, resulting in difficulties developing hand-washing practices as well as presenting a challenge to cultivating and diversifying the food supply in those areas. The gaps seem to be more pronounced in the health posts.

Inadequate nutritional training, lack of follow-up and refreshment training and lack of appropriate supportive supervision for nutrition all result in shortfalls in providing nutritional services. Though most of the health facilities got supportive supervision from the Federal Ministry of Health, Regional Health Bureau, the World Health Organization and other partners, supervision efforts were perceived as investigations to find mistakes instead of helping to improve the quality of services.

In addition to this, inadequate attention was given to nutrition. Nutritional counseling helps women choose what is best for them from various options and health workers help them have the confidence to carry out their decisions. The study revealed that the health workers were not giving nutritional counseling as expected. Lack of a health worker's counseling skills can affect women's knowledge and skills, whereby women do not properly understand the advantage of EBF, night breastfeeding, appropriate complementary feeding, hygiene and sanitation, iodized salt and drug side effects. This means they cannot properly benefit from their prescriptions or be able to decide what is best in their own situation. Inadequate consumption of diversified food products was attributed to not only lack of adequate food supply, but also to misunderstanding of what food diversity is and a lack of skill in preparing varieties of food from the available food sources. Nutritional counseling provided in most of the health posts was found to be poor. The observed gaps were higher in the facilities showing poor performance.

Major sources of nutrition information mentioned were the health workers, women development army members, radio and IEC materials. The level of client satisfaction in this regard was quite good. The reasons for the good ratings were: access to services, ongoing counseling and education provided by the health workers, attentive practices of the health workers, use of local languages and good interpersonal

communication and free service delivery. There were clients who claimed that they had experienced longer waiting periods than expected. Other areas in which clients experienced dissatisfaction were shortages of medicine and no electricity and water supplies in health posts and health centers.

Recommendations

1. Develop a comprehensive nutrition quality improvement plan to assess the causes for gaps identified in this assessment. Apply a quality improvement model for nutrition services.
2. Nutrition service quality improvements need to be addressed as a major component of a health care professional's responsibilities.
3. Strengthen performance monitoring teams and established quality improvement sub-teams comprised of ANC, delivery, postnatal, under-5 children, laboratory and pharmacy units, senior management and outpatient department case team lead at health centers and involve health extension supervisors in the QI process.
4. Provide basic refresher nutrition training and on-the-job coaching for health workers in nutrition assessment, feedback, therapeutic measures and related nutrition counseling services on a regular basis and strengthen clinical mentorship and laboratory supported nutritional assessments.
5. Provide nutritional counseling services when clients come to the health posts for care on a regular basis.
6. Develop experiences of making constructive supportive supervision by the concerned institutions. Include nutrition assessment tools in the routine integrated supportive supervision checklist and improve close follow up visits.
7. Nutrition examination equipment, supplies, medicines and IEC materials including pictorial tools, formats, registers and guidelines need to be available on a regular basis.
8. Establish properly organized counseling amenities within the health facilities.
9. Promote awareness within the community of the benefits of diversified feeding supported by practical food demonstrations from locally available ingredients. Increase the frequency of the cooking demonstrations in each *kebele*.
10. Promote WASH, male involvement and key nutrition behaviors to clients. Strengthen community based nutrition promotion and behavioral change communication through women development team leaders, radio and IEC materials. Enhance the awareness of the community on the immediate and underlying causes of malnutrition including prevention and control of infectious diseases both during home visits and service delivery at health facilities.
11. Strengthen the monitoring and evaluation system of the nutrition service. Establish nutritional counseling tracking mechanisms for recording and tracking changes.
12. Measure and improve nutrition services by conducting periodic quality assessments and filling the gaps regularly.
13. Further coordination is required by all stakeholders to improve nutrition service quality.

Limitations: Service providers were used as translators in one surveyed *woreda* where translation (other than Amharic, Tigrigna and Afan Oromo) became necessary when it was not possible to find competent translators other than the service providers. In some cases, the FDGs were organized near to where the health workers were giving services. These instances could have some impact on the overall findings of the assessment especially client satisfaction ratings.

Annexes

Table 1: List of *woredas,* health centers and health posts considered for the assessment

Region	Number of woredas covered	Woreda name	Health center name	Health post name
Oromia	3	Ambo	Altufa	Altufa
				Bilo
		Limmuna Bilbilo	Meraro	Qoma Katara
				Qoma Kaara
		Shirka	Gobessa	Zembaba Hella Hella
				Sore
Amhara	2	Womberima	Woynima	Sabadar
				Jambye
		Takussa	Delgi	Chachina Ludi
				Mekonta
SNNP	2	Gurage	Gunchere	Gaca Wude
				Amo Gara
		Decha	Goba Chara (Dishi)	Sheda
				Ofa
Tigray	1	Endamehoni	Meswaeti	Mehan
				Simret
Total	8	8	8	16

Table 2: Planned vs coverage

No.	Data collection tasks	Planned	Coverage
1.	Focus group discussions (FGDs)	16	16
2.	In-depth interviews (IDFs) with health workers	24	24
3.	IDFs with postnatal women	8	7
4.	IDFs with pregnant women	48	43
5.	IDFs with mothers of under-five children	48	36
6.	Nutrition counseling observations	40	40
7.	Observation of equipment & materials	24	24

Table 3: Number of respondents by facility type and region

Respondent category	Respondents by facility		Respondents by region			
	Health center	Health post	Tigray	Amhara	Oromia	SNNPR
IDI with health worker	8	16	3	6	9	6
Observation checklist	24	16	5	10	15	10
Supply checklist	8	16	3	6	9	6
IDI with postnatal women	7	0	1	1	3	2
FDG with women of <2 children at community level	0	16	2	4	6	4
IDI with pregnant woman	15	28	6	12	15	10
IDI with mothers of <5 children	13	23	6	10	13	7
Coverage	75	115	26	49	70	45
Planned	80	128	26	52	78	52