

NUTRITION CORE COMPETENCIES FOR HEALTH SCIENCE CADRES AND UNDERGRADUATE NUTRITIONISTS IN ETHIOPIA

December 2012

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**Empowering New Generations to Improve Nutrition and
Economic Opportunities (ENGINE) - A Project of the US Global
Health Initiative and Feed the Future Initiative**

December 2012

The development of this nutrition core competency document for different levels of health cadres and undergraduate nutritionists was made possible by the support of the American people through the United States Agency for International Development (USAID) under Agreement No. AID-663-A-11-00017. The contents of this document are the sole responsibility of Jhpiego and Save the Children and do not necessarily reflect the views of USAID or the United States Government.

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ACKNOWLEDGMENTS

Jhpiego and Save the Children would like to thank all the respondents, university and college faculty, consultants and nutrition experts who gave us their precious time and literature and enthusiastically expressed their views and shared their experiences.

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
BCC	Behavior Change Communication
BFHI	Baby-Friendly Hospital Initiative
BMI	Body-Mass Index
EDHS	Ethiopia Demographic and Health Survey
ENGINE	Empowering New Generations to Improve Nutrition and Economic Opportunities
EHNRI	Ethiopian Health and Nutrition Research Institute
GATHER	Greet, Ask, Tell, Help, Explain, Reassure
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IYCF	Infant and Young Child Feeding
IYCN	Infant and Young Child Nutrition
MAM	Moderate Acute Malnutrition
MGRS	Multicenter Growth Reference Study
MOH	Ministry of Health
NGO	Nongovernmental Organizations
NGT	Nasogastric Tube
PLWHA	People Living with HIV and AIDS
PSE	Pre-Service Education
SAM	Severe Acute Malnutrition
TVET	Technical and Vocational Education and Training
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WFP	World Food Program
WHO	World Health Organization

EXECUTIVE SUMMARY

Human nutrition is a complex, multifaceted scientific domain indicating how substances in food provide essential nourishment for the maintenance of life. It is an integral discipline that promotes good health and wellbeing, prevents ill health and treats diseases.¹ Ethiopia is known for its high rate of undernutrition among children and women of reproductive age, which in turn predisposes these segments of the population for increased morbidity and mortality. Undernutrition is caused by multiple and interwoven factors. Among others, high-incidence illnesses, poor maternal and child care practices, household food insecurity, poor environmental hygiene, and poor access and utilization of health services are important causes of undernutrition in Ethiopia. Moreover, evidence is accumulating for increased incidence of diet-related, chronic non-communicable diseases in low-and middle-income countries.

Hence, the aim of health and nutrition professionals is to apply nutrition principles to promote health and wellbeing, prevent disease and/or restore health (treat disease) in individuals, families, communities and the population at large. To achieve these goals, health and nutrition professionals should be competent to carry out essential tasks in the promotion of health and prevention and treatment of nutrition-related diseases. Competency-based education and training is a worldwide movement to improve the quality of services. . This movement is based on the premise that people need to be taught and assessed for the knowledge, skills and attitudes required for effective performance of the tasks they are assigned. This notion is supported by an argument that competency-based training enhances the education sector's responsiveness to the economy and production of competent graduates.²

Under the PSE component of the Empowering New Generations to Improve Nutrition and Economic Opportunities (ENGINE) Project, Jhpiego conducted a baseline assessment on the nutrition pre-service education (PSE) in various health science colleges. Accordingly, a clear gap in terms of competency-based nutrition education for health cadres and nutritionists was observed. The curricula and syllabi for the health cadres were similar and not tailored to specific disciplines based on nutrition-related roles and responsibilities. Nutrition courses were delivered using only the traditional lecture-style teaching/learning methods. The skill and attitude domains are mostly not addressed in class, as there are no facilities or opportunities for demonstration and assessment. The baseline assessment also pointed out that students lack the essential knowledge and skill attributes necessary to carry out nutrition-related services. In general, the curricula already designed for the health cadres are not competency based and need urgent revision in line with equipping graduates with the knowledge, skills and attitudes needed to deliver essential nutrition-related services in the country.

This nutrition core competency framework document was prepared for medical doctors, health officers, nurses, midwives, pharmacists, nutritionists and technical and vocational education and training (TVET)-level nurses and midwives by employing in-depth interviews with key informants from relevant professional associations, health institutions, public universities and nongovernmental organizations (NGOs). Moreover, a desk review of published articles, standard text books, National Nutrition Strategy (NNS) and National Nutrition Program (NNP) documents, curricula and job descriptions of health cadres and nutritionists, and policy documents was undertaken.

Findings from the key informant interviews and the desk review of relevant documents indicated that the current pre-service nutrition education is deficient in terms of equipping graduates with the knowledge, skills and attitudes needed for the implementation of the NNP. Additional training is required after graduation for the health cadres to be able to perform specific tasks needed in addressing nutritional problems of mothers and children—the targets of the NNS and NNP. The key informants expressed that task-oriented nutrition education urgently needs to equip health cadres and nutritionists with the necessary nutrition competency in order for them to play an active role in the realization of the NNP. The undergraduate courses they took did not help them carry out nutrition-related tasks in their work places; they had to take tailored training courses.

Therefore, health science colleges should organize nutrition skill training facilities to create opportunities for instructors and students to include practical sessions in the nutrition courses that are tailored to the training of different health cadres to make it competency based.

INTRODUCTION

NUTRITION AND HEALTH

The science of human nutrition deals with all the effects of any food component on human beings. Human nutrition starts with the physiological and biochemical processes involved in nourishment; how nutrients in food provide energy or convert into body tissues; and the diseases that result from insufficient or excess essential nutrients.³ Nutrition is widely recognized as an integral part of overall health care and disease management. In addition to many other lifestyle and environmental factors, nutrition is also considered the major malleable and powerful factor in promoting health, preventing and treating disease, and improving quality of life.⁴

Malnutrition has continued to be one of the major public health problems globally and in Ethiopia. More than one-third of child deaths and 11% of the total disease burden worldwide are due to maternal and child undernutrition. More than 3.5 million mothers and children under five die due to preventable causes of undernutrition. Millions suffer from permanent disabilities as a result of undernutrition experienced in early life.⁵ According to the 2000 Ethiopia Demographic and Health Survey (EDHS), 58% of children under five years of age were stunted,⁶ and no significant change was made in 2005 (i.e., proportion of stunted, wasted and underweight were 51%, 12% and 33%, respectively).⁷ The 2011 EDHS showed the rate of stunting to be one of the highest in the world (44%).⁸ Ethiopia is also among the nations with the highest under-five mortality rate; at least 53% of mortality can be attributed directly or indirectly to malnutrition.⁹

The causation of malnutrition is a complex phenomenon that stems from various underlying determinants, including a lack of optimal feeding practices for infants and young children. Women of child-bearing age (especially pregnant or lactating women), infants and young children are in the most nutritionally vulnerable stages of the life cycle. This vulnerability is due to higher nutritional requirements because of physiological changes during pregnancy, lactation and growth.¹⁰ On the other hand, one of the most neglected aspects of overall health care delivery is nutrition care to patients who are admitted to health institutions due to various communicable and non-communicable conditions.

Effective interventions are available to reduce the burden of maternal and child undernutrition.¹¹ These interventions include: promotion of exclusive breastfeeding up to six months with continuation of breastfeeding to 24 months; strategies to promote complementary feeding, with or without provision of food supplements; micronutrient interventions; general supportive strategies to improve family and community nutrition; and reduction of disease burden (e.g., promotion of handwashing and strategies to reduce the burden of malaria in pregnancy).

NATIONAL EFFORTS IN ADDRESSING MALNUTRITION

In January 2008, the Government of Ethiopia released the National Nutrition Strategy (NNS) to comprehensively address malnutrition and ensure sustainable human and economic development.¹² To guide the implementation of the NNS, the National Nutrition Program (NNP) was developed with the aims of reducing the magnitude of malnutrition; coordinating, harmonizing and scaling up current nutrition interventions with a greater focus on community-based and high-impact interventions; and harmonizing government strategies and various donors programs.¹³ The NNS primarily targets mothers and children in the implementation of cost-effective and sustainable interventions.

As part of the implementation of the NNP, a baseline assessment, conducted by the Ethiopian Health and Nutrition Research Institute (EHNRI), found that 38%, 12% and 34% of children six to 59 months of age were stunted, wasted and underweight, respectively. Among non-pregnant women, 29% were thin (body-mass index [BMI] below 18.5 kg/m²).¹⁴ A nutrition training needs assessment was also conducted by the same organization. This needs assessment documented: 1) a lack of capacity and structure to provide desired leadership for nutrition services in Ethiopian health systems and, 2) the food security

sector focuses only on emergency circumstances and is not linked to mainstream nutrition. In training institutions, the assessment noted limited capacity, basic nutrition courses, and an absence of well-organized laboratory, computer and skill training facilities. Furthermore, the existing curricula are not competency based and need immediate revision. Nutrition is not considered as an important discipline; as such, there were limited training facilities to fill the gap for human resources for nutrition need to implement the NNP.¹⁵

Among others, revising the curriculum to address needs for NNP implementation, equipping training facilities, and creating partnerships among training and research institutions, nutrition service providers and related professionals in line with improving the nutrition pre-service education (PSE) were important recommendations in the document on nutrition training needs assessment and curriculum revision.¹⁵

Jhpiego conducted a baseline assessment as part of the PSE component of ENGINE. This assessment involved higher-education institutions that train various health cadres and found a clear gap in terms competency-based nutrition education.¹⁶ Only instructors in few institutions had a chance to attend training to update their nutrition knowledge. Almost all of the institutions do not have skill training opportunities for students; hence, the courses become mainly theoretical. Absence of uniformity of nutrition course syllabi was also observed (e.g., some were tailored and others used the same course syllabus across all health science disciplines).

The same assessment also observed that the curricula and syllabi are not competency based and instructors teach mainly the knowledge part. Thus, skill and attitude domains have been by largely overlooked. The syllabi appeared comprehensive according to observations made on the syllabi for midwifery training. Nutrition courses are considered supportive, and competency gaps were not identified during the design of the curricula. Furthermore, instructors themselves lack the appropriate competency to teach nutrition-related skills to their students, and there was minimal involvement of the instructors in community-based education activities.

During the baseline assessment, students were interviewed to identify gaps in nutrition education. Most students indicated that the commonest teaching/learning method was lecture and the nutrition courses lacked skill teaching and assessment. Students do not feel that they are competent to provide nutrition-related services when they graduate. A knowledge assessment of final-year midwifery students showed unsatisfactory results. Absence of dedicated skill training facilities and opportunities for skill learning were identified as important gaps in the health science colleges of higher-education institutions. Hence, the health cadres assessed were deficient in critical nutrition skills related to conducting nutritional assessment, managing nutritional disorders, monitoring growth, promotion of nutrition, applying infant and young child feeding (IYCF) principles and preparing complementary foods from local food items.

RATIONALE FOR DEFINING NUTRITION CORE COMPETENCIES FOR HEALTH CADRES AND UNDERGRADUATE NUTRITIONISTS

There is a general consensus among professionals to change the current curricula to competency based in order for the graduates to become more competent at the work place.¹⁵ As a result of competency-based curriculum, professionals will have the necessary knowledge, skills and abilities to perform desired tasks. Identification and defining of core competencies contribute to the development of competent health cadres and nutritionists by providing a basis for training needs, staff development, job descriptions, performance assessment and planning for human resources needs.

OBJECTIVES

GENERAL OBJECTIVES

The main aim of this competency document is to identify and define the nutrition core competencies needed by undergraduate nutritionists, medical doctors, health officers, nurses, midwives and pharmacists to provide nutrition-related services at different levels of nutrition service delivery.

SPECIFIC OBJECTIVES

- To identify nutrition competencies for undergraduate nutritionists, medical doctors, health officers, nurses, midwives and pharmacists, and to define the knowledge, skills and attitudes with respect to each competency domain
- To guide institutional training of undergraduate nutritionists, medical doctors, health officers, nurses, midwives and pharmacists to make their training competency based in relation to nutrition service
- To guide stakeholders providing in-service nutrition training in selecting appropriate participants for area(s) of competency(ies) they intended to use to fill observed gaps
- To guide employers of undergraduate nutritionists, medical doctors, health officers, nurses, midwives and pharmacists to develop their staff to meet nutrition service needs

METHODS

DATA COLLECTION METHODS

In-depth interviews and a desk review were undertaken to gather information on the specific knowledge, skills and attitudes needed by different health cadres and human nutritionists to render nutrition services at different levels of service delivery (Annexes 1–14).

In-depth interview: A total of 23 participants (without the two service users) of various backgrounds and experiences from government universities, health institutions, Ministry of Health, EHNRI and NGOs working on nutrition and professional associations were interviewed. These professionals were nutritionists, medical doctors, health officers, nurses, midwives, pharmacists and food and nutrition professionals (Annex 16).

Document review: Various publications on nutrition education; NNS and NNP documents; job descriptions of the different health cadres; national guidelines, protocols and curricula of health science cadres; and job descriptions of human nutrition graduates were reviewed based on the document review guidelines (Annex 15).

DATA COLLECTION TOOLS

- In-depth interview guides for different health cadres and stakeholders with different backgrounds and experiences
- Document review guide; different type of documents were identified for review

TARGETS TO IDENTIFY AND DEFINE NUTRITION-RELATED CORE COMPETENCIES

Professionals and practitioners who work within the health system of Ethiopia at different levels of health care delivery were targets for defining nutrition core competencies. These include medical doctors, health officers, nurses, midwives, pharmacists, graduates from technical and vocational education and training (TVET) (e.g., nurses, midwives) and undergraduate nutritionists.

ASSESSMENT FINDINGS

A total of 23 professionals from various sectors participated in the in the key informant interviews. Two mothers of severely malnourished children (service users) were also interviewed from inpatient and outpatient therapeutic programs based on the semi-structured in-depth interview guides.

Most of the key informants expressed the need to have task-oriented nutrition education in the health science and nutritionist training colleges in the country. Based on the type of nutrition-related services they are providing, most key informants in various NGOs, health science colleges and health facilities expressed the desired nutrition-related roles and responsibilities (competencies) for health cadres at different levels.

The core competencies desired for health cadres were mostly overlapping; however, the specific knowledge, skills and attitudes needed were found to be different for the varying disciplines. Nutrition-service related roles and responsibilities for medical doctors and health officers were similar, according to the key informants and the curricula reviewed. The nutrition course credit hours for medical doctors was three hours previously, but with the current “standardized” curriculum, both medical and health officer students are offered a two-credit-hour nutrition course with identical content.

The key informants working in various NGOs and health facilities expressed that the nutrition course they had taken with two or three credits did not provide them the competency needed to carry out nutrition-related services in their work places. They had to take tailored training after graduation to be able to perform specific nutrition-related tasks, such as nutritional assessment, nutrition counseling and managing of severe acute malnutrition (SAM) both in the inpatient and outpatient settings.

As expressed by most key informants, pre-service nutrition education needs to incorporate skill training in addition to the theoretical discussion. It was emphasized that the current modular approach can be instrumental in integrating skill training with the course. Teaching learning materials and equipment, including text books, also need to be availed to strengthen nutrition pre-service training.

The current pre-service nutrition education is deficient in terms of equipping graduates with the knowledge, skills and attitudes needed for the implementation of the NNP. Additional training is required after graduation for the health cadres to be able to perform specific tasks needed to address nutrition problems of mother and children, the targets of the NNS and NNP.

COMPETENCY-BASED NUTRITION EDUCATION

Nutrition education of health cadres and nutritionists at higher-education institutions should be strengthened in order to equip graduates with the knowledge, attitudes and skills needed to promote appropriate nutrition behaviors, prevent and manage nutrition-related disorders, and engage in nutrition rehabilitation services as part of the overall health care rendered to individuals and communities.¹⁷

For the health cadres and nutritionists to achieve the above goal, the training at colleges and universities should shift to competency-based training so the graduates become competent before graduation in order to perform the desired tasks. Competency refers to the ability to perform a task or a job if necessary. Core or basic competencies are a set of essential knowledge, skills and attitudes necessary for the broad practice of nutrition as an essential component of health care service. Core competencies transcend the boundaries of specific disciplines within the health care delivery system.¹⁸ Moreover, competency-based training goes with the outcomes and it requires that educators identify the necessary knowledge, skills and behaviors as applied in real working conditions and settings.¹⁷ However, it is assumed that all competencies are not acquired only in the class; they can also be acquired in the work place. Some competencies can be cross-cutting and, depending on the need, can be specified according to functional level. Depending on the desired outcome, competency sets could be core, technical, function specific, discipline and subject specific. Once competency statements are written, they should be updated as science and health care practice evolves.^{17,19}

Based on the key informant interviews and a desk review of relevant documents, the following cross-cutting and discipline-specific nutrition competencies were identified for the health cadres and undergraduate nutritionists:

- Cross-cutting competencies:
 - Community mobilization
 - Nutrition counseling
- Discipline-specific competencies:
 - Assessment of nutritional status of individuals or groups
 - Prevention and control of major micronutrient deficiencies
 - Promotion of appropriate infant and young child nutrition (IYCN)
 - HIV and nutrition

- Prevention and dietary management of diet-related, non-communicable diseases
- Nutrition information system—maintaining records, compiling and reporting
- Undertaking of rapid assessment and management of nutritional problems in emergencies
- Nutrition program planning (nutrition intervention planning)
- Application of life-cycle approach in addressing nutrition problems (address nutritional problems in a life-cycle perspective)
- Conducting nutritional surveillance
- Conducting nutrition-related operational research
- Nutrition-related capacity-building (participate in nutrition training)

CROSS-CUTTING NUTRITION COMPETENCIES

COMMUNITY MOBILIZATION

Desired Competence

The provider will be able to enhance awareness, encourage positive changes in nutrition and health-related behavior, and create a community that supports good health practices and empowers individuals and groups to take action to facilitate change.

To achieve this cross-cutting competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Discuss the principle behind community mobilization
- Describe the conceptual framework for the causation of malnutrition
- Describe the community mobilization steps or phrases, such as planning, raising awareness, building coalition, taking appropriate action, and monitoring and evaluation
- Discuss role of community members and community-based organizations in community mobilization
- Describe the role of group dynamics in community mobilization

Skills

- Identify the nutritional problems that affect the larger community
- Develop criteria to select one problem to mobilize the community, such as poor infant and young child feeding (IYCF)
- Apply good communication skills, especially listening, and good facilitation skills to enable communities to conduct their own analysis of their lives and situations
- Identify capacity-building needs in the community
- Conduct community assessment in terms of community capacity, existing resources, etc.
- Build greater community participation, commitment and capacity for improving nutritional status of the population
- Make use of different methods to raise awareness on sensitive issues in addressing nutrition problems, such as harmful infant-feeding practices
- Identify and make use of existing community-based organizations in reaching the wider population and in addressing nutritional problems
- Work with the community to identify and mobilize resources
- Define team roles, such as mobilizers, to direct nutrition service providers and advocates
- Develop a monitoring and evaluation plan with community members

Attitudes

- Follow ethical procedures in community mobilization
- Show respect for all community members in all aspects

- Motivate the community to take effective action, following local cultures and approaches to running group meetings in the community
- Respect others in terms of social, cultural and religious differences
- Demonstrate openness to learn life experiences of community members
- Respect opinions of others and follow a non-judgmental approach in group meetings with community members

NUTRITION COUNSELING

Desired Competence

The provider will be able to offer client counseling with respect to individual values, personal resources and right to self-determination.

Sub-competencies

The graduate will provide effective counseling on:

- IYCF, particularly optimal breastfeeding, complementary feeding practices and feeding of sick child
- Appropriate diet and lifestyle changes for clients with chronic non-communicable diseases, such as diabetes and hypertension
- Nutrition in the life-cycle perspective (i.e., nutrition during pre-pregnancy and pregnancy periods, infant and young child nutrition [IYCN], nutrition during the postpartum period and adolescence)
- Food/nutrient and drug interaction
- Appropriate diet for people living with HIV and AIDS (PLWHA) on antiretroviral therapy (ART)

To achieve these cross-cutting competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Define communication
- Describe the importance of basic communication skills
- Describe the principles of counseling
- Describe different types of counseling, such as individual, group and couples counseling
- Explain the different stages of counseling
- Describe steps in counseling clients with various problems
- Explain the importance of counseling on important nutrition problems, such as IYCF and feeding in the context of HIV
- Identify important steps of counseling (e.g., GATHER method)
- Explain the importance of building confidence and giving support to clients during counseling
- Describe factors affecting counseling outcomes, such as quality of counseling and client situation

Skills

- Apply GATHER (greet, ask, tell, help, explain, reassure) technique during client counseling

- Apply appropriate communication skills in counseling, such as active listening, asking questions, answering questions, checking understanding and offering support where necessary

Attitudes

- Respect privacy and confidentiality of clients
- Demonstrate ethical standards of practice during counseling
- Conduct counseling sessions using sincerity, compassion and kindness
- Demonstrate commitment to follow up with the client with intractable problem
- Provide support to clients in difficult circumstances

DISCIPLINE-SPECIFIC NUTRITION CORE COMPETENCIES

NUTRITION CORE COMPETENCIES FOR MEDICAL DOCTORS AND HEALTH OFFICERS

Assessment of Nutritional Status of Individuals or Groups

Desired Competence

A medical doctor or a health officer will be able to conduct nutritional assessment that takes into account health status, food consumption, assimilation and utilization of nutrients.

Sub-competencies

- Conduct anthropometric assessment
- Undertake dietary assessment of nutritional status
- Perform clinical assessment of nutritional status
- Interpret nutrition-related biochemical data

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Identify the necessary equipment and materials needed for anthropometric measurement
- Identify the various anthropometric measurements according to their relevance (e.g., weight, height, length, skin-fold thicknesses, and head, waist, hip and mid-upper arm circumference)
- Explain the different indices derived from anthropometric measurements
- Describe the importance of standardization exercises prior to undertaking nutrition assessment
- Describe the reference population with which calculated anthropometric indices are compared (World Health Organization [WHO] Multicenter Growth Reference Study [MGRS] standard)
- Explain the advantages and limitations of anthropometric measurement of nutritional status or growth

- Identify anthropometric indicators of the nutritional status for children, adults and pregnant women
- Identify children and adults with malnutrition by comparing their measurements to cut-off values
- Describe direct methods of assessment of food intake (qualitative and quantitative)
- Explain indirect methods of assessment of food intake, such as food balance sheet and household expenditure survey
- Identify different locally made recipes
- Describe the advantages and limitations of dietary method nutritional assessment
- Describe common micronutrient deficiencies in terms of signs, symptoms and risk factors
- Explain how to take patient medical history
- Describe information needed from medical history in relation to nutrition
- Identify signs of malnutrition severity
- Describe the advantages and limitations of clinical assessment of nutritional status
- Describe the biochemical method of nutritional assessment
- Describe key biomarkers of nutrient deficiency
- Interpret the results of biochemical analysis of nutritional status

Skills

- Calibrate instruments before each measurement
- Properly place the individual on the measuring equipment considering their condition, age, etc.
- Design locally applicable technique of estimating age of children especially in rural settings
- Make use of simple computer programs to calculate Z-scores of various anthropometric indices
- Compare an individual's measurements with that of a reference population
- Compare anthropometric indices of groups with that of a reference population
- Plot points for growth indicators on line graphs to monitor growth of young children
- Interpret trends on growth charts and identify whether a child is growing normally, has a growth problem or is at risk of a growth problem
- Take appropriate action according to the growth trend observed from the growth chart
- Design locally appropriate methods of quantifying food intake
- Relate food intake data with other data collected with clinical, anthropometric or biochemical methods
- Make use of the food table depending on the region from which food intake assessment is made
- Compare the quantitatively collected food intake data with that of dietary reference values
- Identify sources of errors in the process of collecting food consumption data
- Take appropriate medical history considering the patient's age and relevant environmental, socioeconomic and household factors
- Carry out physical examination to identify signs of specific nutritional deficiency

Attitudes

- Explain the procedures prior to taking anthropometric measurement
- Strictly follow guidelines in anthropometric measurement
- Secure consent prior to taking any measurement or physical examination
- Respect patient privacy while taking medical history
- Demonstrate ethical standards of anthropometric/physical examination
- Respect social and cultural values of food and eating
- Maintain confidentiality of personal information on medical history or consumption
- Respect cultural values while doing physical examination
- Use culturally appropriate communication methods
- Demonstrate empathy and compassion during clinical examination

Prevention and Control of Micronutrient Deficiencies

Desired Competence

The medical doctor or health officer will be able to prevent and control common micronutrient deficiencies of public health importance.

Sub-competencies

- Prevent micronutrient deficiencies through application of different public health methods
- Control micronutrient deficiencies through application of sound nutrition interventions

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe essential micronutrients in human nutrition in terms of classification and importance
- Explain the biochemical properties, biological/physiological roles, food sources and daily requirements for major micronutrients
- Describe the health effects and symptoms of both inadequate and toxic intakes of some major micronutrients
- Describe key nutritional problems of public health importance, their epidemiology, underlying metabolism and consequences for health
- Describe the major causes or risk factors of micronutrient deficiencies
- Describe the population at risk of micronutrient deficiencies
- Explain the manifestations of deficiency of each micronutrient
- Explain the economic and human cost of major micronutrient deficiencies
- Describe the indicators for monitoring micronutrient prevention and control programs
- Describe the population-level strategies for prevention and control of micronutrient deficiencies
- Describe the threshold levels of public health importance for common micronutrient deficiencies

- Explain supportive activities in preventing and controlling micronutrient deficiencies of public health importance

Skills

- Apply the national guidelines for the prevention and control of micronutrient deficiencies
- Undertake clinical assessment of micronutrient deficiency in the community using various clinical indicators
- Design, implement and monitor micronutrient supplementation program at population level based on findings of community assessment
- Identify the targets in the control and prevention of micronutrient deficiencies
- Counsel on major food sources of micronutrients whose deficiency disorders are common
- Counsel individuals to diversify their diets in line with prevention of micronutrient deficiencies
- Prescribe appropriate supplementary nutrients for individuals with specific micronutrient deficiency or physiologic condition
- Promote and support exclusive breastfeeding up to six months of age
- Design, implement, monitor and evaluate universal iodization of salt at the population level in collaboration with various sectors
- Advise on the appropriate utilization of iodized salt at the household level
- Train health workers and community-based agents to give iron supplements to infants and pregnant women in all areas where anemia is present
- Train health workers and community-based agents on deworming and vitamin A supplementation for children and lactating mothers
- Train community workers to test salt supplies regularly for iodine
- Use various indicators to monitor and evaluate the outcome of the micronutrient supplementation program in the population

Attitudes

- Strictly follow the national guidelines for the prevention and control of micronutrient deficiencies
- Respect cultural values in food choices and consumption while designing and implementing micronutrient supplementation programs

Promote Appropriate Infant and Young Child Nutrition

Desired Competence

The medical doctor or health officer will be able to promote optimal infant and young child nutrition (IYCN) through promotion of optimal breastfeeding and complementary feeding practices.

Sub-competencies

- Promote optimal breastfeeding practices
- Promote optimal complementary feeding practices

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe conditions for optimal growth of young children
- Describe the nutritional requirements of infants and young children
- Explain the anatomy of the breast and physiological basis of breastfeeding
- Describe the importance of colostrum feeding for newborns
- Explain the importance of proper positioning and attachment to the breast on the impact of milk production and continuation of breastfeeding for the first two years of IYCF
- Describe the composition of breast milk and dietary factors affecting its composition
- Explain the mechanism and rate of transmission of HIV via breast milk
- Describe the factors for successful breastfeeding
- Explain feeding options in the context of HIV
- Describe code of marketing breast milk substitutes
- Describe the global and national strategy for IYCF
- Describe the optimal complementary feeding practices, including variety, amount and density of foods given, frequency of feeding and feeding style
- Describe the Essential Nutrition Actions to improve nutritional status of children and women

Skills

- Undertake assessment of feeding practices at individual and population levels
- Apply the national strategies for IYCF, including feeding in the context of HIV and emergency situations
- Demonstrate proper positioning and attachment for the mother
- Assist the mother to initiate early and maintain breastfeeding
- Counsel on appropriate feeding style for IYCF, such as responsive feeding
- Apply appropriate counseling skills in promoting recommended IYCN practices
- Assess and manage breastfeeding and complementary feeding problems that the mother or caregiver is experiencing
- Assess and manage breast conditions and other breastfeeding difficulties, such as breast abscess, mastitis, engorged breast, and inverted, flat, large or long nipples
- Manage common problems of perceived insufficiency and low breast-milk production
- Counsel on feeding options in the context of HIV and guide the mother to adopt the best option
- Assist the mother to feed expressed breast milk when she is unable to breastfeed the child
- Assist a mother or caregiver to maintain appropriate feeding practices in exceptionally difficult circumstances, such as emergency
- Demonstrate locally available and affordable complementary feeding options for the mother or caregiver of the child

- Counsel on the consumption of locally available variety of foods for the mother and young children
- Counsel the mother or caregiver to increase feeding the child during and after illness
- Administer micronutrient supplements to the mother and young children according to the national guidelines for the supplementation of vitamins and minerals

Attitudes

- Strictly follow national guidelines, particularly infant feeding in the context of HIV
- Maintain privacy and confidentiality of mothers or caregivers during counseling on feeding
- Provide a conducive environment for mothers to breastfeed
- Use culturally appropriate strategies to assess infant-feeding practices and beliefs
- Apply ethical standards in counseling

HIV and Nutrition

Desired Competence

The medical doctor or health officer will be able to provide assessment and management of people living with HIV and AIDS (PLHIV) by applying the national guideline for the clinical nutrition care of children and adults living with HIV in the assessment and management.

Sub-competencies

- Conduct nutrition and food security assessment in children and adults living with HIV
- Provide nutritional management of HIV symptoms and drug side effects

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe basics of HIV
- Describe factors affecting disease progression, including nutritional factors
- Describe the WHO clinical staging of confirmed HIV infection in adults and children
- Explain the role of nutritional factors in HIV progression and transmission
- Explain the role of micronutrients in HIV progression and transmission
- Describe the energy and nutrient requirements for HIV-infected adults and children
- Describe effect of HIV on nutrition and vice versa
- Describe the nutritional management of HIV symptoms
- Explain the effect of ART side effects on food intake, nutrient absorption and compliance
- Explain why nutrition management of drug and food interactions is important in HIV/AIDS therapy
- Cite the common drugs taken by PLHIV, drug-food interactions, nutritional implications and appropriate dietary measures
- Discuss the impact of HIV and food security and vice versa

- Describe the components of food security in the context of HIV
- Describe the seven critical nutrition practices for PLHIV
- Describe HIV and IYCF
- Discusses ways to implement nutritional care and support in the face of food insecurity
- Describe the Essential Nutrition Actions in the care and support of PLHIV
- Explain factors to consider when planning nutritional care and support interventions for PLHIV
- Describe the management algorithm for HIV patients with malnutrition

Skills

- Apply the national guidelines to clinical nutrition care for children and adults living with HIV
- Assess nutritional status of PLHIV
- Design and implement appropriate nutritional interventions
- Apply Essential Nutrition Actions in HIV/AIDS toward preventing weight loss, improving body composition and immunity, and preventing infections
- Counsel on appropriate diet, depending on the condition
- Nutritionally manage HIV symptoms and drug side effects
- Counsel on critical nutrition practices based on the national guidelines
- Make use of the algorithm and nutrition care plans for the management of malnutrition in PLHIV for children and adults
- Undertake assessment of food security status of PLHIV and coping strategies
- Counsel PLHIV on available options to increase food intake, such as safety net, livelihood programs and food aid
- Counsel PLHIV on different desirable coping strategies in line with prevention of re-infection, disease progression and fueling HIV transmission

Attitudes

- Strictly follow the national guide for the clinical care of PLHIV
- Show empathy while counseling
- Avoid discrimination of individuals based on HIV status
- Follow ethical standards of patient counseling, such as privacy and confidentiality
- Show willingness to support PLHIV in finding options for improved nutritional status
- Demonstrate willingness to learn and keep up-to-date on new developments in clinical nutrition care for PLWHA

Management of Undernutrition

Desired Competence

The medical doctor or health officer will be able to assess and manage malnutrition using the national protocol for the management of acute malnutrition and micronutrient deficiency disorders.

Sub-competencies

- Assess and manage children with acute malnutrition
- Set up a system for the management of acute malnutrition for facility-based and outpatient settings

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe biochemical characteristics of major nutrients and their metabolism
- Discuss the biological roles, food sources and requirements of essential nutrients
- Describe the digestion and absorption of macronutrients
- Explain factors affecting absorption and metabolism of essential nutrients
- Discuss the patho-physiology of nutritional disorders, including severe and moderate acute malnutrition
- Describe the epidemiology of common nutritional deficiencies of public health importance in Ethiopia
- Describe the population at risk of nutritional deficiency disorders
- Explain dietary and other risk factors of nutritional deficiency
- Describe the classification of malnutrition based on anthropometric measurement
- Discuss the clinical features of disorders of specific nutrients of public health significance in Ethiopia
- Describe the algorithm for patient screening and admission to therapeutic feeding at inpatient or outpatient level
- Classify children according to severity of malnutrition
- Describe the types of supplementary and therapeutic foods and micronutrient supplements used in the management of nutritional disorders
- Describe the routine medicine used for the management of severe acute malnutrition (SAM)
- Describe factors affecting outcome of management of nutritional disorders
- Explain complications of malnutrition

Skills

- Apply the national protocols and guidelines for the management of severe and moderate malnutrition and/or micronutrient deficiency disorders
- Perform nutritional assessment and classification by the type and degree of malnutrition
- Make appropriate diagnosis of nutritional disorders (undernutrition) using the national protocol
- Decide on the management modality for children admitted to therapeutic feeding (inpatient or outpatient)
- Calculate the dose of therapeutic food and/or micronutrient supplements needed to treat the nutritional disorder
- Prepare and administer therapeutic foods orally or via nasogastric tube (NGT)

- Monitor the condition of the individual under therapeutic supplementation using different indicators of outcome either at inpatient or outpatient settings
- Assess progress and decide on the outcome of the treatment (treatment failure/discharge)
- Perform follow-up measurements and make decision on next steps
- Maintain regular recordkeeping, data compilation and reporting of the activities at inpatient and outpatient therapeutic units
- Manage nutrition rehabilitation units in terms of logistics, personnel and nutrition information system
- Manage complications of malnutrition

Attitudes

- Follow ethical standards in patient assessment and management
- Explain the problem to patients or immediate caregivers in clear terms that can be understood by them
- Adhere to the national protocol for the management of acute malnutrition and micronutrient deficiency disorders
- Demonstrate respect and empathy in the process of management of nutritional disorders
- Respect local values and beliefs with respect to food and eating

Prevention and Dietary Management of Diet-Related Non-Communicable Diseases

Desired Competence

The medical doctor or health officer will be able to provide nutritional management of chronic non-communicable diseases and promote healthy eating and lifestyle.

Sub-competencies

- Apply nutritional management of diet-related chronic diseases
- Promote healthy eating and lifestyle to prevent diet-related, chronic non-communicable diseases

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Define the terms used in energy metabolism and explain how energy expenditure is measured
- Explain the significance of dietary reference values
- Describe the sources of metabolic fuels in the fed and fasting states
- Describe the components of energy expenditure
- Explain the relationship among energy intake, energy expenditure and body weight
- Describe the different pathways of energy metabolism
- Describe factors affecting energy intake and expenditure
- Describe the consequences of excess accumulation of fat in the body

- Explain how to measure weight, height, waist circumference, hip circumference and skin-fold thickness
- Define and classify overweight and obesity
- Discuss the role of processed foods or drinks (“unhealthy diet”) and insufficient physical activity in the development of overweight and obesity
- Discuss other style factors affecting the development of chronic diseases, such as physical inactivity, alcohol consumption and smoking
- Discuss the role of nutrition transition in the development of overweight and obesity in developing countries
- Discuss the epidemiology of diet-related non-communicable diseases
- Describe the principles and approaches of nutrition education

Skills

- Adhere to the global recommendation for the prevention and control of diet-related chronic non-communicable diseases
- Perform anthropometric nutritional assessment for individuals attending health institutions
- Classify patients based on BMI calculation
- Counsel individuals who are at risk of overweight and obesity on healthy diet, physical exercise and reduction of alcohol consumption and smoking
- Make use of the dietary guidelines to advise patients with chronic diseases, such as consumption of whole meal cereals, vegetables and fresh fruits and restricted use of animal fats, and encourage the use of fish and vegetables
- Incorporate dietary management as part of the overall management of chronic non-communicable diseases in health institutions
- Design and carryout nutrition education program on diet-related non-communicable diseases
- Take a leadership role in community mobilization to advocate healthy eating, physical exercise and reduction of alcohol consumption and smoking

Attitudes

- Show commitment and enthusiasm to address diet-related non-communicable disease, a neglected problem
- Demonstrate empathy to those already affected by chronic non-communicable disease
- Avoid stigma and discrimination based on physical appearance or body habits
- Respect cultural values in food consumption in terms of types and sources

Conduct Rapid Assessment and Manage Nutritional Problems in Emergency

Desired Competence

The medical doctor or health officer will be able to undertake rapid assessment to identify the needs and existing capacities of the affected population in emergencies and be able to manage nutritional problems in emergency.

Sub-competencies

- Undertake rapid assessment
- Manage nutritional problems in emergency

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe the different forms of nutrition or public health emergency
- Describe the steps in approaching nutritional problems in emergency situations, such as situational analysis and rapid assessment
- Describe type of target population, sampling, indicators and materials that are needed for rapid assessment
- Describe different sources of information in rapid assessment
- Define criteria for selecting secondary information
- Describe the sampling procedure for the rapid assessment
- Describe data collection procedures used in rapid assessments
- Discuss the different data collection methods and their merits and demerits in rapid assessment
- Explain the different methods of analysis of data collected from rapid assessment
- Describe the contents of a report of a rapid assessment of nutrition situation
- Describe the four phases of emergency management
- Outline key nutrition interventions during emergency, including management of SAM, micronutrient supplementation and other nutrition and health interventions
- Identify key players in the rapid assessment of the nutrition situation
- Explain the importance of an early warning system in preventing the occurrence of excess mortality in emergencies
- Describe the standardized ration scales in emergency situations
- Describe the importance of targeting in an emergency
- Discuss option for the management of acute malnutrition and micronutrient deficiencies in emergency
- Describe the importance of giving attention to the most vulnerable population (children, women, PLHIV) during emergency
- Discuss the options for IYCF in emergencies
- Explain the need for extra health care for those affected by emergency to prevent excess mortality and morbidity
- Discuss the different supplementary feeding options for population affected by emergency
- Identify appropriate indicators for monitoring and evaluation of outcomes of the nutrition and health intervention

Skills

- Design tools and methods for information collection in rapid assessment
- Apply standardized nutritional assessment methods appropriate for detection of acute malnutrition in a population
- Undertake detailed review of secondary data
- Utilize the existing nutrition surveillance information to plan for rapid response
- Design data collection procedure that can be adapted quickly
- Make use of basic computer programs (such as Microsoft Excel) to manage data collected from the field
- Apply simple statistical techniques to analyze data generated from rapid assessment
- Develop a report that enables decision-making for rapid action
- Disseminate the information generated to appropriate audiences, such as managers, health workers and affected community, via workshops and public meetings
- Involve various sectors in addressing the problem (exercise multi-sectoral approach)
- Estimate nutritional needs based on the assessment results
- Design and implement nutritional support, such as general food distribution, supplementary feeding or micronutrient supplementation
- Assess the need for therapeutic feeding for children and adults
- Apply the national protocol for the management of severe malnutrition and micronutrient supplementation in emergencies
- Assess the need for additional health support for the population affected by emergency
- Create linkage with other sectors to institution livelihood support for the affected population

Attitudes

- Create common understanding with community members in undertaking rapid assessment
- Respect the confidentiality of information obtained from the vulnerable population
- Conform with standard procedures of rapid assessment of nutrition and health situation of a population
- Show empathy to those affected by emergency situations
- Demonstrate readiness to intervene in emergency situations
- Demonstrate interest and capacity to work in difficult circumstances
- Respect the rights and dignity of the vulnerable population
- Strictly follow standard protocols for the management of severe malnutrition and other illness in emergency

Application of Life-Cycle Approach in Addressing Nutrition Problems (Address Nutritional Problems in a Life-Cycle Perspective)

Desired Competence

The medical doctor or health officer will be able to apply the life-cycle approach in addressing nutritional problems (malnutrition) in order for nutrition interventions to have maximum benefits.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe what is meant by a life-cycle approach in addressing nutritional problems
- Define fetal or nutritional programming
- Describe the potential impact of nutritional programming in early life
- Describe the association between risk factors operating in fetal life and disease during adulthood
- Discuss the epidemiological evidence that suggests maternal nutrition during pregnancy may program the risk of major disease later in life
- Discuss the factors that contribute to malnutrition in the life-cycle perspective
- Discuss the physiological processes that determine requirements for energy, macronutrients and micronutrients during adolescence
- Describe how nutritional status is influenced by the stage of life due to the variation in specific factors controlling nutrient availability and requirements
- Discuss the need for dietary standards in making assessments of the quality of diet or dietary provision in individuals or populations
- Describe the physiological adaptations that occur during pregnancy
- Explain the additional nutritional requirements during pregnancy
- Describe the importance of iron and folate supplementation during pregnancy
- Explain the endocrine control of lactation and factors affecting lactation
- Discuss the extra nutrient demands that are imposed by lactation
- Explain the importance of breastfeeding both for the health and wellbeing of mothers and their infants
- Describe the national strategy for IYCF
- Discuss the effect of maternal nutritional status on nutrient composition of breast milk
- Explain the effect of growth on the nutritional requirements of children
- Describe the importance of energy-dense complementary food for the normal growth of young children
- Describe how infectious disease and catch-up growth can increase the risk of micronutrient deficiencies among children
- Discuss the appropriate timing of initiation of breastfeeding and complementary feeding
- Describe the patterns of growth that are seen during the adolescent period
- Discuss the impact of early undernutrition and other endocrine factors on adolescent growth and sexual maturation

- Discuss factors affecting nutrient intake and utilization among elderly population
- Discuss common nutritional problems in elderly people

Skills

- Apply methods of nutritional status assessment in measuring growth and nutritional status of individuals and populations
- Apply the principles of life-cycle approach in addressing nutritional problems of the most vulnerable stages in the life cycle (i.e., pregnancy, infancy, early childhood, adolescence)
- Apply Essential Nutrition Actions to address undernutrition in women and children
- Demonstrate counseling skills on feeding of young children and appropriate diet for pregnant and lactating women
- Apply the behavior change communication (BCC) strategy to enforce appropriate behaviors for IYCF
- Treat children with diarrhea and other illness and counsel mothers or caregivers to give more food during and after illness
- Strictly follow the national guidelines for the management of acute malnutrition
- Provide micronutrient supplementation according to the national guidelines for the prevention and control of micronutrient deficiencies
- Promote utilization of iodized salt at the household level
- Promote appropriate food and environmental hygiene to prevent parasitic and other infections
- Promote increased food intake by adolescents to ensure adequate growth and energy reserves for subsequent pregnancy and lactation
- Prevent and treat micronutrient deficiencies among adolescents
- Mobilize the community toward delaying the first pregnancy to ensure full growth of adolescents
- Promote adequate dietary intake by the elderly population
- Manage nutrition problems in elderly people

Attitudes

- Apply ethical standards while counseling individuals
- Respect cultural values in food choices and consumption
- Build upon the knowledge base existing in the population
- Demonstrate enthusiasm to approach nutritional problems in the life-cycle perspective
- Show empathy and follow guidelines in the management of childhood illnesses

NUTRITION CORE COMPETENCIES FOR NURSES AND MIDWIVES

Conduct Assessment of Nutritional Status

Desired Competence

The nurse or midwife will be able to conduct nutritional assessment that takes into account the health condition of an individual as influenced by food consumption and assimilation and utilization of nutrients.

Sub-competencies

- Conduct anthropometric assessment
- Undertake dietary assessment of nutritional status
- Perform clinical assessment of nutritional status

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Identify different methods of nutritional assessment
- Identify the necessary equipment and materials needed for anthropometric measurement and proper use of the equipment
- Identify the various anthropometric measurements
- Explain the different indices derived from anthropometric measurements
- Describe the importance of standardization exercises prior to undertaking nutritional assessment
- Identify the reference population with which calculated anthropometric indices are compared (WHO MGRS standard)
- Explain the advantages and limitations of anthropometric measurement of nutritional status or growth
- Identify anthropometric indicators of the nutritional status for children, pregnant women, adolescents, adults and elders
- Identify children and adults with malnutrition by comparing their measurements to cut-off values
- Explain indirect methods of food intake assessment, such as food balance sheet and household expenditure survey
- Describe direct methods of food intake assessment (qualitative and quantitative)
- Explain the different techniques of food intake assessment to detect specific nutrient intake
- Identify different locally made recipes and their nutritional value
- Describe the advantages and limitations of dietary methods of nutritional assessment
- Describe common micronutrient deficiencies in terms of signs, symptoms and risk factors
- Explain how to take patient medical history related to nutritional status
- Describe information needed from medical history related to nutritional status
- Describe the advantages and limitations of clinical assessment of nutritional status

Skills

- Calibrate instruments before each measurement
- Place the individual properly on the measuring equipment, considering their condition, age, etc.
- Design locally applicable techniques of estimating age of children especially in rural settings
- Make use of simple computer programs to calculate Z-scores of various anthropometric indices

- Compare an individual's measurements with that of a reference population
- Compare anthropometric indices of groups with that of a reference population
- Plot points for growth indicators on line graphs to monitor growth of young children
- Interpret trends on growth charts and identify whether a child is growing normally, has a growth problem, or is at risk of a growth problem
- Take appropriate action according to the growth trend observed from the growth chart
- Design locally appropriate methods of quantifying food intake
- Take appropriate medical history considering patient age and relevant environmental, socio-economic and household factors
- Undertake physical examination to identify signs of specific nutrient deficiency
- Assess micronutrient deficiencies using clinical signs and symptoms

Attitudes

- Secure consent prior to taking any measurement
- Explain the procedures prior to physical examination
- Demonstrate ethical standards during anthropometric/physical examination
- Respect cultural values while taking measurements, including clothing
- Respect social and cultural values of food and eating
- Maintain confidentiality of personal information on consumption
- Respect patient privacy while taking medical history
- Demonstrate empathy and compassion during clinical examination

Prevention and Control of Micronutrient Deficiencies

Desired Competence

The nurse or midwife will be able to prevent and control common micronutrient deficiencies of public health importance.

Sub-competencies

- Prevent micronutrient deficiencies through application of different public health methods
- Control micronutrient deficiencies through application of sound nutrition interventions

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe essential micronutrients in human nutrition in terms of classification and importance
- Describe the functions and routes of metabolism of essential micronutrients within the body
- Explain the biochemical properties, biological/physiological roles, food sources and daily requirements for major micronutrients

- Describe the dietary requirements and dietary sources for micronutrients
- Describe the health effects and symptoms of inadequate and toxic intakes of some major micronutrients
- Describe key micronutrient deficiencies of public health importance, their epidemiology, underlying causes and consequences for health
- Describe the methods of assessing the body status for major micronutrient deficiencies
- Describe the major causes or risk factors of micronutrient deficiencies
- Describe the population at risk of micronutrient deficiencies
- Explain the manifestations of deficiency of each micronutrient
- Explain the economic and human cost of major micronutrient deficiencies
- Describe the indicators for monitoring micronutrient prevention and control programs
- Describe the population-level strategies for prevention and control of micronutrient deficiencies
- Describe the threshold levels of public health importance for common micronutrient deficiencies
- Explain supportive activities, such as deworming and immunization, in preventing and controlling micronutrient deficiencies of public health importance

Skills

- Make use of the national guidelines for the prevention and control of micronutrient deficiencies
- Undertake clinical assessment of micronutrient deficiency in the community using various clinical indicators
- Assess dietary intake of micronutrient sources in the community using qualitative techniques of nutrient consumption assessment
- Counsel on major food sources of micronutrients whose deficiency disorders are common
- Counsel individuals to diversify their diets in line with prevention of micronutrient deficiencies
- Promote and support exclusive breastfeeding up to six months of age
- Actively participate in micronutrient supplementation program including supplementation of children and postpartum women with vitamin A
- Counsel on importance and frequency of deworming
- Actively participate in children-deworming activities
- Advise on the appropriate utilization of iodized salt at the household level
- Train health workers and community-based agents to give iron supplements to infants and pregnant women in all areas where anemia is present
- Demonstrate skills in materializing Essential Nutrition Actions in the health institutions and community

Attitudes

- Strictly follow the national guidelines for the prevention and control of micronutrient deficiencies
- Respect privacy, confidentiality and ethical standards in counseling

Promote Appropriate Infant and Young Child Nutrition

The nurse or midwife will be able to promote optimal IYCN through promotion of exclusive breastfeeding for the first six months with continued breastfeeding for at least two years along with complementary feeding.

Sub-competencies

- Promote optimal breastfeeding practices
- Promote optimal complementary feeding practices

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe conditions for optimal growth of young children
- Describe the nutritional requirements of infants and young children
- Explain the anatomy of the breast and physiological basis of breastfeeding
- Describe the importance of colostrum feeding for newborns
- Explain the importance of proper positioning and attachment to the breast for the first two years of IYCF
- Describe the composition of breast milk and dietary factors affecting its composition
- Explain the mechanism and rate of transmission of HIV via breast milk
- Describe the factors for successful breastfeeding
- Explain feeding options in the context of HIV
- Describe code of marketing breast milk substitutes
- Describe the global and national strategy for IYCF, including policy instruments to promote, protect and support optimal IYCF practices
- Describe the Essential Nutrition Actions to improve nutritional status of children and women
- Describe common food taboos for infants, young children and pregnant women

Skills

- Undertake assessment of feeding practices at individual and population levels
- Apply the national strategies for IYCF, including feeding in the context of HIV and emergency situations
- Demonstrate proper positioning and attachment for the mother
- Assist the mother to initiate breastfeeding on time and maintain breastfeeding for the required period
- Promote exclusive breastfeeding up to the age of six months
- Counsel on appropriate feeding style for IYCF, such as responsive feeding
- Assess and manage breastfeeding and complementary feeding problems that the mother or caregiver is experiencing

- Assess and manage breast conditions and other breastfeeding difficulties, such as breast abscess, mastitis, engorged breast, and inverted, flat, large or long nipples
- Manage common problems of perceived insufficiency and low breast-milk production
- Counsel on feeding options in the context of HIV and guide the mother to adopt the best option
- Assist the mother to feed expressed breast milk when she is unable to breastfeed the child
- Assist a mother or caregiver to maintain appropriate feeding practices in exceptionally difficult circumstances, such as emergency
- Demonstrate locally available and affordable complementary feeding options for the mother or caregiver of the child
- Counsel on the consumption of locally available nutritious foods for the mother and young children
- Counsel the mother or caregiver to increase feeding the child during and after illness
- Demonstrate skills in materializing Essential Nutrition Actions in the health institutions and community

Attitudes

- Maintain privacy and confidentiality of mothers or caregivers during counseling on feeding
- Provide a conducive environments for mothers to breastfeed
- Use culturally appropriate strategies to assess infant-feeding practices and beliefs

HIV and Nutrition (Nutritional Management of HIV)

The nurse or midwife will be able to provide assessment and management of people living with HIV and AIDS (PLWHA) by applying the national guideline for the clinical nutrition care of children and adults living with HIV in the assessment and management of cases.

Sub-competencies

- Conduct assessment in children and adults living with HIV
- Provide nutritional management of HIV symptoms and drug side effects

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe the energy and nutrient requirements at different stages in the life cycle
- Explain the importance of dietary diversity and its role in promoting good nutrition
- Describe factors affecting disease progression in PLWHA, including nutritional factors
- Describe the energy and nutrient requirements for HIV-infected adults and children
- Describe the nutritional management of HIV symptoms
- Explain the effect of ART drug side effects on food intake, nutrient absorption and compliance
- Cite the common drugs taken by PLWHA, drug-food interactions, nutrition implications and appropriate dietary responses

- Describe approaches to help PLWHA identify and implement appropriate actions to promote response to treatment and manage nutrition implications
- Explain why nutrition management of drug and food interactions is important in HIV/AIDS therapy
- Discuss the impact of HIV/AIDS on food and nutritional security and vice versa
- Describe the components of food security in the context of HIV
- Describe the seven critical nutrition practices for PLWHA
- Discuss key messages to communicate the critical nutrition practices for PLWHA
- Discuss the recommended therapeutic and supplementary food for the management of acute malnutrition in PLWHA
- Describe HIV and IYCF
- Describe the Essential Nutrition Actions in the care and support of PLWHA
- Explain factors to consider when planning nutritional care and support interventions for PLWHA
- Describe the management algorithm for HIV patients with malnutrition

Skills

- Apply the national guide to clinical nutrition care for children and adults living with HIV
- Correctly take weight, height, length and mid-upper arm circumference measurements necessary to compute the indicators
- Counsel PLWHA using basic principles of counseling about nutrition and health status
- Demonstrate preparation of F-75 and F-100
- Design and implement appropriate nutritional interventions
- Apply critical nutrition practices in HIV/AIDS toward preventing weight loss, improving body composition and immunity, and preventing infections
- Counsel on appropriate diet depending on the condition
- Nutritionally manage HIV symptoms and drug side effects
- Demonstrate appropriate communication skills for nutrition counseling
- Take part in the nutritional management of HIV using the management algorithm
- Undertake assessment of food security status of PLWHA and coping strategies
- Based on the assessment, counsel on available options to increase food intake by PLWHA, such as safety net, livelihood programs and food aid
- Counsel PLWHA on different desirable coping strategies in line with prevention of re-infection, disease progression and fueling HIV transmission
- Record data analyze and interpret indicators at facility level

Attitudes

- Strictly follow the national guidelines for the clinical care of PLWHA
- Follow ethical standards of patient counseling, such as privacy and confidentiality
- Avoid discrimination of individuals based on HIV status

- Demonstrate willingness to learn and keep up-to-date on new developments in the clinical nutrition care for PLWHA

Application of Life-Cycle Approach in Addressing Nutrition Problems (Address Nutritional Problems in a Life-Cycle Perspective)

Desired Competence

The nurse or midwife will be able to apply life-cycle approach in addressing nutritional problems (malnutrition) for nutrition interventions to have maximum benefits.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Explain how malnutrition continues in human life and across generations
- Describe what is meant by a life-cycle approach in addressing nutritional problems
- Describe the potential impact of nutritional programming in early life
- Describe the association between risk factors operating in fetal life and disease during adulthood
- Discuss the factors that contribute to malnutrition in the life-cycle perspective
- Discuss the physiological processes that determine requirements for energy, macronutrients and micronutrients during adolescence
- Describe how nutritional status is influenced by the stage of life
- Describe the physiological adaptations that occur during pregnancy
- Explain the additional nutritional requirement during pregnancy
- Describe the importance of iron and folate supplementation during pregnancy
- Explain the endocrine control of lactation and factors affecting lactation
- Discuss the extra nutrient demands that are imposed by lactation
- Explain the importance of breastfeeding both for the health and wellbeing of mothers and their infants
- Discuss the effect of maternal nutritional status on nutrient composition of breast milk (in terms of quality and quantity)
- Explain the effect of growth on the nutritional requirements of children
- Describe the importance of energy-dense complementary foods for the normal growth of young children
- Describe how infectious disease and catch-up growth can increase the risk of micronutrient deficiencies among children
- Discuss the appropriate timing of initiation of breastfeeding and complementary feeding
- Describe the patterns of growth that are seen during the adolescent period
- Discuss the impact of early undernutrition and other endocrine factors on adolescent growth and sexual maturation
- Discuss factors affecting nutrient intake and utilization among elderly population
- Describe the national strategy for IYCF

Skills

- Apply methods of nutritional status assessment in measuring growth and nutritional status of individuals and populations
- Apply the principles of life-cycle approach in addressing nutritional problems of the most vulnerable stages in the life cycle (i.e., pregnancy, infancy, early childhood, adolescence)
- Use Essential Nutrition Actions to address malnutrition among women and children
- Demonstrate counseling skills on feeding of young children and appropriate diet for pregnant and lactating women
- Apply the BCC strategy to enforce appropriate behaviors IYCF
- Treat children with diarrhea and other illness and counsel mothers or caregivers to give more food during and after illness
- Strictly follow the national guidelines for the management of acute malnutrition
- Provide micronutrient supplementation according to the national guidelines for the prevention and control of micronutrient deficiencies
- Promote utilization of iodized salt at the household level
- Promote appropriate environmental hygiene to prevent parasitic and other infections
- Promote increased food intake in terms of amount and frequency by adolescents to ensure adequate growth and energy reserves for subsequent pregnancy and lactation
- Prevent and treat micronutrient deficiencies among adolescents
- Mobilize the community toward delaying the first pregnancy to ensure full growth of adolescents
- Promote adequate dietary intake and diversity by the elderly population

Attitudes

- Apply ethical standards while counseling individuals
- Respect cultural values in food choices and consumption
- Build upon the knowledge base existing in the population
- Demonstrate enthusiasm to approach nutritional problems in the life-cycle perspective
- Show empathy and follow guidelines in the management of childhood illnesses

Management of Malnutrition

Desired Competence

The nurse or midwife will be able to conduct nutrition screening, assessment, classification and management of malnutrition.

Sub-competencies

- Assess and manage children and adults with malnutrition
- Set up a system for the management of acute malnutrition for facility or outpatient settings

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Discuss the biological roles, food sources and requirements of essential nutrients
- Describe the digestion and absorption of macronutrients
- Explain factors affecting absorption and metabolism of essential nutrients
- Describe individuals at risk of nutritional deficiency disorders
- Explain dietary and other risk factors of nutritional deficiency
- Describe the classification of malnutrition based on anthropometric measurement
- Discuss the clinical features of disorders of specific nutrients of public health significance
- Describe the algorithm for patient screening and admission to therapeutic feeding at inpatient or outpatient levels
- Describe the management principles of SAM
- Describe the national protocol for the management of SAM and other nutritional disorders
- Describe the types of supplementary and therapeutic foods and micronutrient supplements used in the management of nutritional disorders
- Describe re-feeding syndrome during treatment of SAM
- Describe the routine medicine used for the management of SAM
- Describe factors affecting outcomes of management of nutritional disorders

Skills

- Apply the national protocol and guidelines for the management of severe and moderate malnutrition and/or micronutrient deficiency disorders
- Perform nutrition screening, assessment and classification by the type and degree of malnutrition
- Make appropriate diagnosis of malnutrition using the national protocol
- Classify children according to severity of malnutrition
- Decide on the management modality for children admitted to therapeutic feeding (inpatient or outpatient)
- Calculate the dose of therapeutic food and/or micronutrient supplements needed to treat the nutritional disorder
- Administer therapeutic foods orally or via NGT
- Monitor the condition of the individual under therapeutic supplementation using different indicators of outcome either at inpatient or outpatient settings
- Assess progress and decide on the outcome of the treatment (treatment failure/discharge)
- Perform follow-up measurements and make decision on next steps
- Maintain regular recordkeeping, data compilation and reporting of the activities at inpatient and outpatient therapeutic units
- Manage nutrition rehabilitation units in terms of logistics, personnel and nutrition information system

Attitudes

- Follow ethical standards in patient assessment and management of nutritional disorders
- Explain the problem to patients or immediate caregivers in terms that can be understood by them
- Adhere to the national protocol for the management of acute malnutrition and micronutrient deficiency disorders
- Demonstrate respect and empathy in the process of managing nutritional disorders

Prevention and Dietary Management of Diet-Related Non-Communicable Diseases

Desired Competence

The nurse or midwife will be able to carry out dietary counseling for clients with chronic non-communicable diseases and promote healthy eating and favorable lifestyles.

Sub-competencies

- Apply nutritional management of diet-related chronic diseases
- Promote healthy eating and lifestyle to prevent diet-related, chronic non-communicable diseases

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe the sources of metabolic fuels in the fed and fasting states
- Explain the relationship among energy intake, energy expenditure and body weight
- Describe the different pathways of energy metabolism
- Describe factors affecting energy intake and expenditure
- Describe the consequences of excess accumulation of fat in the body
- Explain how to measure weight and height, waist circumference, hip circumference and skin-fold thickness
- Define and classify overweight and obesity
- Discuss the role of processed foods or drinks (“unhealthy diet”) and insufficient physical activity in the development of overweight and obesity
- Discuss other lifestyle factors affecting the development of chronic disease, such as physical inactivity, alcohol consumption and smoking
- Discuss the role of early undernutrition in the development of adult chronic diseases
- Describe the principles and approaches of nutrition education

Skills

- Perform nutritional assessment for individuals attending health institutions, including anthropometric and food intake assessment
- Classify patients based on BMI calculation

- Counsel individuals who are at risk of overweight and obesity on healthy diet, physical exercise, and reduction of alcohol consumption and smoking
- Make use of the dietary guidelines to advise patients with chronic diseases
- Actively participate in the dietary management as part of the overall management of chronic non-communicable disease in health institutions
- Design and carryout nutrition education program on diet-related non-communicable diseases
- Take a leadership role in community mobilization to advocate healthy eating, physical exercise, and reduction of alcohol consumption and smoking

Attitudes

- Demonstrate empathy to those affected by chronic non-communicable disease
- Avoid stigma and discrimination based on physical appearance or body habits
- Respect cultural values in food consumption in terms of types and sources
- Apply ethical standards while counseling clients with chronic diseases

NUTRITION CORE COMPETENCIES FOR PHARMACISTS

Regulate Quality and Safety Nutrition-Related Products

Desired Competence

The pharmacist will be able to regulate the safety and quality of breast milk substitutes (baby foods), therapeutic and supplementary foods and processed complementary foods used in the prevention and treatment of malnutrition.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Define food safety and food quality
- Explain the different methods of ensuring food safety and quality
- Describe indicators of food safety and quality
- Explain the importance of optimal IYCF practices
- Describe the national guidelines for IYCF
- Describe the international code of marketing breast milk substitutes
- Describe the importance of food additives and preservatives in food processing
- Describe the importance of functional food supplements
- Discuss the public health importance of ensuring food safety and quality in terms of protection from microbiological hazards, pesticide residues, misuse of food additives, chemical contaminants, biological toxins (natural toxins in foods) and adulteration

Skills

- Verify nutrient content of food products and supplements

- Conduct post-marketing surveillance of processed food products, baby foods (breast milk substitutes) and micronutrient supplements using various techniques
- Monitor community pharmacies (supermarkets) involved in marketing supplements and baby foods
- Monitor the quality and safety of imported nutrition-related products
- Carry out regular monitoring and supervision of pharmaceutical companies producing micronutrient supplements and food processing factories
- Actively participate in ensuring the quality and safety of micronutrients starting from production to consumption at the household level
- Collaborate with other professionals from public health, microbiology, food science and chemistry fields to ensure food safety and quality

Attitudes

- Demonstrate high professional integrity in ensuring food safety and quality
- Follow ethical standards of assessment of food safety and quality
- Keep up-to-date on emerging safety and quality issues of manufactured food products and supplements
- Avoid transferring of responsibilities to other professionals when it comes to protecting the health of the public

Prevention and Control of Major Micronutrient Deficiencies

Desired Competence

The pharmacist will be able to play an active role in the prevention and control of common micronutrient deficiencies of public health importance.

Sub-competencies

- Prevent micronutrient deficiencies through participation in micronutrient supplementation programs and control of common infections, such as malaria and helminthiasis
- Control micronutrient deficiencies through proper therapeutic supplementation with micronutrients

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Explain the biochemical properties, biological/physiological roles, food sources and daily requirements for major micronutrients
- Describe the epidemiology of common micronutrient deficiencies
- Describe the major causes or risk factors of micronutrient deficiencies
- Describe the population at risk of micronutrient deficiencies
- Explain the economic and human cost of major micronutrient deficiencies
- Describe the monitoring indicators for micronutrient prevention and control programs
- Describe the population-level strategies for prevention and control of micronutrient deficiencies

- Describe the threshold levels of common micronutrient deficiencies for public health importance
- Explain supportive activities in preventing and controlling micronutrient deficiencies of public health importance
- Describe storage conditions of micronutrient supplements and other nutrition-related products

Skills

- Maintain adequate supply of micronutrient supplements in stocks
- Ensure appropriate storage conditions for micronutrient supplements
- Monitor the micronutrient supplementation program with other health professionals
- Counsel on prescribed supplementary nutrient for individuals with specific micronutrient deficiency
- Provide vitamin A supplement to target population
- Counsel on prescribed medication for the prophylaxis and treatment of malaria and helminthiasis for children and women
- Train health workers to provide iron supplements to infants and pregnant women

Attitudes

- Strictly follow the national guidelines for the prevention and control of micronutrient deficiencies
- Respect cultural values in food choices and consumption while designing and implementing micronutrient supplementation programs
- Demonstrate professional integrity in managing food and micronutrient supplements
- Participate in micronutrient supplementation programs

Promotion of Appropriate Infant and Young Child Nutrition

Desired Competence

The pharmacist will be able to play a key role in ensuring optimal IYCN through promotion of breastfeeding and ensuring appropriate complementary foods for young children.

Sub-competencies

- Promote breastfeeding as sole source of nutrients for the first six months life
- Promote optimal complementary feeding practices

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe the nutritional requirements of infants and young children
- Describe the goals of the Baby-Friendly Hospital Initiative (BFHI)
- Describe the global and national strategy for IYCF, including policy instruments to promote, protect and support optimal IYCF practices

- Describe classic indication for use of breast milk substitutes for an infant and young child other than HIV
- Describe the optimal complementary feeding practices including variety, amount and density of foods given, frequency of feeding and feeding style
- Describe the Essential Nutrition Actions to improve nutritional status of children and women

Skills

- Counsel on appropriate use of micronutrient supplements to young children according to the national guidelines for the supplementation of vitamins and minerals
- Perform quality control of breast milk substitutes and processed complementary foods

Attitudes

- Maintain privacy and confidentiality of mothers or caregivers during counseling on feeding
- Provide a conducive environment for mothers to breastfeed
- Apply ethical standards in counseling
- Demonstrate professional integrity in promoting breastfeeding
- Play active role in the development of processed complementary foods for infant feeding
- Play active role in the implementation of BFHI in health institutions

Nutritional Care and Support for PLWHA

Desired Competence

The pharmacist will be able to play an active role in the clinical management of HIV diseases based on the national guidelines for HIV/AIDS and nutrition care of children and adults living with HIV.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe basics of HIV
- Describe the WHO clinical staging of confirmed HIV infection in adults and children
- Explain the role of nutritional factors in HIV progression and transmission
- Explain the role of micronutrients in HIV progression and transmission
- Describe the energy and nutrient requirements for HIV-infected adults and children
- Describe the nutritional management of HIV symptoms
- Explain the effect of ART drug side effects on food intake, nutrient absorption and compliance
- Mention the common drugs taken by PLWHA, drug-food interactions, nutrition implications and appropriate dietary responses
- Explain why nutrition management of drug and food interactions is important in HIV/AIDS therapy
- Describe the seven critical nutrition practices for PLWHA

- Describe the role of pharmacists in the management algorithm for HIV/AIDS patients with malnutrition

Skills

- Apply the national guidelines to clinical nutrition care for children and adults living with HIV
- Counsel on appropriate diet depending on the condition
- Advise on meal time and intake of ART drugs
- Manage HIV symptoms and drug side effects nutritionally
- Demonstrate appropriate communication skills for nutrition counseling
- Make use of the algorithm and nutrition care plans for the management of malnutrition in PLWHA for children and adults

Attitudes

- Strictly follow the national HIV/AIDS and nutrition guidelines for the clinical care of PLWHA
- Show empathy while counseling
- Avoid discrimination of individuals based on HIV status
- Follow ethical standards of patient counseling, such as privacy and confidentiality
- Demonstrate willingness to learn and keep up-to-date on new developments in the clinical nutrition care for PLWHA

Management of Severe Malnutrition

Desired Competence

The pharmacist will be able to participate in the management of SAM.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Discuss the biological roles, sources and requirements of essential nutrients
- Describe the digestion and absorption of macronutrients
- Describe the epidemiology of common nutritional deficiencies of public health importance
- Describe population at risk of nutritional deficiency disorders
- Explain dietary and other risk factors of nutritional deficiency
- Describe the classification of malnutrition based on anthropometric measurement
- Discuss the clinical features of disorders of specific nutrients of public health significance
- Describe the management principles of nutritional disorders
- Describe the national protocol for the management of SAM and other nutritional disorders
- Describe the types of supplementary and therapeutic foods and micronutrient supplements used in the management of nutritional disorders

- Describe the routine medicine used for the management of SAM

Skills

- Apply the national protocol and guidelines for the management of severe and moderate malnutrition and/or micronutrient deficiency disorders
- Calculate the dose of therapeutic food and/or micronutrient supplements needed to treat the nutritional disorder
- Interpret data from different nutritional assessment methods for management of malnutrition
- Plan and monitor the supply of therapeutic foods and nutritional supplements
- Maintain the storage conditions of therapeutic foods and supplements
- Maintain records of the therapeutic and supplementary foods needed in therapeutic units (inpatient and outpatient)

Attitudes

- Adhere to the national protocol for the management of acute malnutrition and micronutrient deficiency disorders
- Respect local values and beliefs with regard to food and eating
- Collaborate with other health professionals in management of malnutrition

Prevention and Dietary Management of Diet-Related Non-Communicable Diseases

Desired Competence

The pharmacist will be able to provide appropriate counseling on drug-food interaction for clients with chronic non-communicable diseases and promote healthy eating and favorable lifestyle.

Sub-competencies

- Advise clients with chronic non-communicable disease on drug and food interaction
- Promote healthy eating and lifestyle to prevent diet-related, chronic non-communicable diseases

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe characteristics, biological roles, dietary sources, digestion and absorption of energy-dense foods
- Define the components of energy expenditure
- Describe factors affecting energy intake and expenditure
- Describe and explain the relationship among energy intake, energy expenditure and body weight
- Describe the consequences of excess accumulation of fat in the body
- Define and classify overweight and obesity
- Discuss the role of processed foods or drinks (“unhealthy diet”) and insufficient physical activity in the development of overweight and obesity

- Discuss other lifestyle factors affecting the development of chronic disease, such as physical inactivity, alcohol consumption and smoking
- Discuss the role of early undernutrition in the development of adult chronic diseases
- Describe the principles and approaches of nutrition education to prevent chronic diseases
- Describe common drug-food interaction in patients with chronic diseases, such as diabetes and hypertension

Skills

- Counsel clients with chronic disease on drug-food (nutrient) interaction and lifestyle modification
- Counsel client on dietary management of chronic non-communicable disease

Attitudes

- Show commitment and enthusiasm to address diet-related non-communicable diseases, a neglected problem
- Demonstrate empathy to those already affected by chronic non-communicable disease
- Avoid stigma and discrimination based on physical appearance or body habits
- Respect cultural values in food consumption in terms of types and sources
- Apply ethical standards while counseling clients with chronic diseases
- Participate in education and community mobilization to advocate healthy eating, physical exercise, and reduction of alcohol consumption and smoking

NUTRITION CORE COMPETENCIES FOR TVET NURSES AND MIDWIVES

Assessment of Nutritional Status of Individuals

Desired Competence

The TVET nurse or midwife will be able to conduct nutritional assessment that takes into account the health condition of an individual as influenced by food consumption and assimilation and utilization of nutrients.

Sub-competencies

- Conduct anthropometric assessment
- Undertake simple dietary assessment
- Perform clinical assessment of nutritional status

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Identify the necessary equipment and materials needed for anthropometric measurement
- Identify the various anthropometric measurements according to their relevance
- Identify anthropometric indicators of the nutritional status for children, adults and pregnant women

- Identify children and adults with malnutrition by comparing their measurements to cut-off values
- Explain how to plot growth chart during growth monitoring of young children
- Describe classification of malnutrition based on anthropometric assessment
- Describe how to conduct qualitative food intake assessment
- Identify different locally made recipes for dietary measurement
- Describe in terms of signs and symptoms of common micronutrient deficiencies
- Explain how to take patient medical history related to nutritional status
- Describe information needed from medical history related to nutritional status

Skills

- Calibrate instruments before each measurement
- Place the individual properly on the measuring equipment considering their condition, age, etc.
- Design locally applicable technique of estimating age of children especially in rural settings
- Compare an individual's measurements with that of a reference population
- Plot points for growth indicators on line graphs to monitor growth of young children
- Interpret trends on growth charts and identify whether a child is growing normally, has a growth problem, or is at risk of a growth problem
- Counsel mothers or caregivers on optimal young child feeding practices based on results of growth monitoring
- Conduct qualitative food intake assessment
- Identify clinical signs of common nutritional disorders

Attitudes

- Explain procedures prior to taking anthropometric measurement or physical examination
- Demonstrate ethical standards of anthropometric or physical assessments
- Secure consent prior to taking any measurement

Prevention and Control of Major Micronutrient Deficiencies

Desired Competence

The TVET nurse or midwife will be able to prevent and control common micronutrient deficiencies of public health importance.

Sub-competencies

- Prevent micronutrient deficiencies through application of different public health methods
- Control micronutrient deficiencies through application of sound nutrition interventions, such as micronutrient supplementation

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe essential micronutrients in human nutrition
- Describe the requirements for major micronutrients in general terms
- Describe the dietary sources for micronutrients
- Describe key nutritional problems of public health importance in terms of consequences for health
- Describe the population at risk of micronutrient deficiencies
- Describe the population-level strategies for prevention and control of micronutrient deficiencies
- Describe the signs and symptoms of common micronutrient deficiencies
- Explain supportive activities in preventing and controlling micronutrient deficiencies
- Describe the major causes/risk factors of micronutrient deficiencies

Skills

- Make use of the national guideline for the prevention and control of micronutrient deficiencies
- Counsel on major food sources of micronutrients whose deficiency disorders are common
- Counsel individuals to diversify their diets in line with the prevention of micronutrient deficiencies
- Promote and support exclusive breastfeeding up to six months of age
- Participate actively in micronutrient supplementation program such as vitamin A, iodine and iron supplementation
- Advise on the appropriate utilization of iodized salt at the household level
- Actively participate in the control of malaria and helminthiasis
- Demonstrate skills in materializing Essential Nutrition Actions in the health institutions and beyond

Attitudes

- Strictly follow the national guidelines for the prevention and control of micronutrient deficiencies
- Respect privacy, confidentiality and ethical standards in counseling

Promotion of Appropriate Infant and Young Child Nutrition

Desired Competence

The TVET nurse or midwife will be able to promote optimal IYCN through promotion of exclusive breastfeeding for the first six months and continued breastfeeding for at least two years along with appropriate complementary feeding.

Sub-competencies

- Promote optimal breastfeeding practices
- Promote optimal complementary feeding practices

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Explain the anatomy of the breast and physiological basis of breastfeeding
- Explain the importance of breast milk
- Explain early initiation and exclusive breastfeeding for the first six months
- Describe the importance of colostrum feeding for newborns
- Explain the importance of proper positioning and attachment to the breast for the first two years of IYCF
- Explain the mechanism and rate of transmission of HIV via breast milk
- Describe the factors for successful breastfeeding
- Explain feeding options in the context of HIV
- Describe the optimal complementary feeding practices, including type, amount and density of foods given, frequency of feeding and feeding style
- Describe the Essential Nutrition Actions to improve nutritional status of children and women

Skills

- Demonstrate proper positioning and attachment for the mother
- Assist the mother to initiate and maintain breastfeeding
- Counsel on appropriate feeding style for IYCF, such as responsive feeding
- Assess and manage breastfeeding and complementary feeding problems that the mother or caregiver is experiencing
- Assess and manage breast conditions and other breastfeeding difficulties, such as breast abscess, mastitis, engorged breast, and inverted, flat, large or long nipples
- Counsel on feeding options in the context of HIV and guide the mother to adopt the best option
- Assist the mother to feed expressed breast milk when she is unable to breastfeed the child
- Counsel on the consumption of locally available nutritious foods for the mother and young children
- Counsel the mother or caregiver to increase feeding the child during and after illness
- Administer micronutrient supplements to the mother and young children according to the national guidelines for the supplementation of vitamins and minerals
- Demonstrate skills in materializing Essential Nutrition Actions in the health institutions and community

Attitudes

- Maintain privacy and confidentiality of mothers or caregivers during counseling on feeding
- Provide a conducive environment for mothers to breastfeed
- Use culturally appropriate strategies to assess infant-feeding practices and beliefs
- Apply ethical standards in counseling

Management of Malnutrition

Desired Competence

The TVET nurse or midwife will be able to conduct nutrition screening, assessment, classification and management of malnutrition.

Sub-competencies

- Assess and manage children and adults with malnutrition

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Discuss the biological roles, food sources and requirements of essential nutrients
- Describe the digestion and absorption of macronutrients
- Describe the classification of malnutrition based on anthropometric measurement
- Describe the algorithm for patient screening and admission to therapeutic feeding at inpatient or outpatient levels
- Describe the management principles of SAM
- Describe the national protocol for the management of SAM and other nutritional disorders
- Describe the types of supplementary and therapeutic foods and micronutrient supplements used in the management of nutritional disorders
- Describe re-feeding syndrome for treatment of SAM
- Describe the routine medicine used for the management of SAM
- Describe factors affecting outcomes of management of nutritional disorders

Skills

- Apply the national protocol and guidelines for the management of severe and moderate malnutrition and/or micronutrient deficiency disorders
- Perform nutrition screening, assessment and classification by the type and degree of malnutrition
- Calculate the dose of therapeutic food and/or micronutrient supplements needed to treat the nutritional disorder
- Administer therapeutic foods orally or via NGT
- Monitor the condition of the individual under therapeutic supplementation using different indicators of outcome either at inpatient or outpatient settings
- Assess progress and decide on the outcomes of the treatment (treatment failure/discharge)
- Perform follow-up measurements and make decisions on next steps
- Maintain regular recordkeeping, data compilation and reporting of the activities at inpatient and outpatient therapeutic units

Attitudes

- Follow ethical standards in patient assessment and management of nutritional disorders
- Explain the problem to patients or immediate caregivers in terms that can be understood by them
- Adhere to the national protocol for the management of acute malnutrition and micronutrient deficiency disorders
- Demonstrate respect and empathy in the process of management of nutritional disorders

Clinical Nutrition Care for PLWHA

Desired Competence

The TVET nurse or midwife will be able to provide assessment and management of PLWHA by applying the national guideline for the clinical nutrition care of children and adults living with HIV.

Sub-competencies

- Conduct nutritional assessment in children and adults living with HIV
- Provide nutritional management of HIV symptoms and drug side effects

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe factors affecting HIV disease progression including nutritional factors
- Describe the energy and nutrient requirements for HIV-infected adults and children
- Describe the nutritional management of HIV symptoms
- Describe approaches to help PLWHA identify and implement appropriate actions to promote response to treatment and manage nutrition implications
- Describe the seven critical nutrition practices for PLWHA
- Describe HIV and IYCF
- Describe the Essential Nutrition Actions in the care and support of PLWHA
- Describe the management algorithm for HIV patients with malnutrition

Skills

- Apply the national guide to clinical nutrition care for children and adults living with HIV
- Assess nutritional status of PLWHA
- Counsel on appropriate diet depending on the condition
- Nutritionally manage HIV symptoms and drug side effects
- Demonstrate appropriate communication skills for nutrition counseling
- Take part in the nutritional management of HIV using the algorithm of management of severe malnutrition in PLWHA
- Undertake assessment of food security status of PLWHA and coping strategies

- Based on the assessment, counsel on available options to increase food intake by PLWHA, such as safety net, livelihood programs and food aid
- Counsel PLWHA on different desirable coping strategies in line with prevention of re-infection, disease progression and fueling HIV transmission

Attitudes

- Strictly follow the national guideline for the clinical care of PLWHA
- Show empathy while counseling
- Avoid discrimination of individuals based on HIV status
- Follow ethical standards of patient counseling, such as privacy and confidentiality
- Show willingness to support PLWHA in finding options for improved nutritional status

NUTRITION CORE COMPETENCIES FOR UNDERGRADUATE NUTRITIONISTS

Assessment of Nutritional Status of Individuals or Groups

Desired Competence

The nutritionist will be able to conduct nutritional assessment of individuals and groups to evaluate growth, changes in body composition and food consumption.

Sub-competencies

- Conduct anthropometric assessment
- Conduct dietary assessment of nutritional status
- Conduct clinical assessment of nutritional status
- Recognize biochemical assessment of nutritional status

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Identify the necessary equipment and materials needed for anthropometric, dietary, clinical and biochemical assessment of nutritional status
- Explain the clinical and biochemical assessment methods for the most important nutrients
- Identify the clinical signs and symptoms of different nutrient deficiency diseases
- Identify the various anthropometric measurements according to their relevance (such as weight, height, length, skin-fold thicknesses and head, waist, hip and mid-upper arm circumference)
- Explain the different indices derived from anthropometric measurements
- Describe the importance of standard measurement exercises prior to undertaking nutrition assessment
- Describe the reference population with which calculated anthropometric indices are compared (WHO MGRS standard)

- Explain the advantage and limitation of anthropometric measurement of nutritional status or growth
- Identify anthropometric indicators of the nutritional status for children, adults and pregnant women
- Identify children and adults with malnutrition by comparing their anthropometric and biochemical measurements to cut-off values
- Describe the advantages and limitations of clinical methods of nutritional assessment
- Describe the advantages and limitations of biochemical methods of nutritional assessment
- Describe direct methods of assessment of food intake (qualitative and quantitative) with advantages and disadvantages of each method
- Explain indirect methods of assessment of food intake, such as food balance sheet and household expenditure survey
- Explain assessment of adequacy of food intake
- Identify locally available recipes
- Identify sources of errors in the process of collecting food consumption data
- Describe the limitations of dietary method nutritional assessment
- Compare the quantitatively collected food intake data with that of dietary reference values

Skills

- Calibrate instruments before each measurement
- Conduct standard measurement exercises to detect the precision and accuracy of anthropometric and biochemical measurements
- Conduct clinical assessment
- Properly place the individual on the measuring equipment, considering their condition, age, etc.
- Design locally applicable technique of estimating age of children, especially in rural settings
- Make use of simple computer programs to interpret the outcomes of the nutritional assessment
- Compare an individual's measurements with that of a reference population
- Compare an anthropometric indices of groups with that of a reference population
- Plot points for growth indicators on line graphs to monitor growth of young children
- Interpret trends on growth charts and identify whether a child is growing normally, has a growth problem, or is at risk of a growth problem
- Take appropriate action according to the growth trend observed from the growth chart
- Design locally appropriate methods of quantifying food intake
- Relate food intake data with other data collected with clinical, anthropometric or biochemical methods
- Make use of the food composition table depending on the region from which food intake assessment is made

Attitudes

- Explain the procedures prior to taking anthropometric measurement
- Strictly follow ethical guidelines in anthropometric, clinical and dietary assessment

- Secure consent prior to taking any measurement
- Respect social and cultural values of food and eating
- Use culturally appropriate communication methods

Management of Undernutrition

Desired Competence

The nutritionist will be able to conduct nutrition screening, assessment, classification and management of undernutrition (moderate acute malnutrition [MAM] and severe acute malnutrition [SAM]).

Sub-competencies

- Assess and manage target group (children, adolescent, adults, elderly) with undernutrition
- Set up a system for the management of acute malnutrition both for facility or outpatient settings

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Discuss the biological roles, food sources and requirements of essential nutrients
- Describe the digestion and absorption of macronutrients
- Explain factors affecting absorption and metabolism of essential nutrients
- Describe individuals at risk of nutritional deficiency disorders
- Explain dietary and other risk factors of nutritional deficiency
- Describe the classification of malnutrition based on anthropometric measurement
- Discuss the clinical features of disorders of specific nutrients of public health significance
- Describe the algorithm for patient screening and admission to therapeutic feeding at inpatient or outpatient levels
- Describe the management principles of SAM
- Describe the national protocol for the management of SAM and other nutritional disorders
- Describe the types of supplementary, therapeutic foods and micronutrient supplements used in the management of nutritional disorders
- Describe the routine medicine used for the management of SAM
- Describe re-feeding syndrome
- Describe factors affecting outcome of management of nutritional disorders

Skills

- Apply the national protocol and guidelines for the management of severe and moderate malnutrition and/or micronutrient deficiency disorders
- Perform nutrition screening, assessment and classification by the type and degree of malnutrition
- Make appropriate diagnosis of malnutrition using the national protocol

- Classify children according to severity of malnutrition
- Decide on the management modality for children admitted to therapeutic feeding (inpatient or outpatient)
- Calculate the dose of therapeutic food and/or micronutrient supplements needed to treat the nutritional disorder
- Administer therapeutic foods
- Monitor the condition of the individual under therapeutic supplementation using different indicators of outcome either at inpatient or outpatient settings
- Assess progress and decide on the outcome of the treatment (treatment failure/discharge)
- Perform follow-up measurements and make decisions on next steps
- Maintain regular recordkeeping, data compilation and reporting of the activities at inpatient and outpatient therapeutic units
- Manage nutrition rehabilitation units in terms of logistics, personnel and nutrition information system

Attitudes

- Follow ethical standards in assessment and management of nutritional disorders
- Explain the problem to patients or immediate caregivers in terms that can be understood by them
- Adhere to the national protocol for the management of acute malnutrition and micronutrient deficiency disorders
- Demonstrate respect and empathy in the process of management of nutritional disorders

Prevention and Control of Micronutrient Deficiencies

Desired Competence

The nutritionist will be able to prevent and control common micronutrient deficiencies of public health importance.

Sub-competencies

- Contribute in prevention efforts of micronutrient deficiencies through application of different public health methods
- Participate in the control of micronutrient deficiencies through the application of sound nutrition interventions

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe essential micronutrients in human nutrition in terms of classification and importance
- Describe the functions and routes of metabolism of essential micronutrients within the body
- Explain the biochemical properties, biological/physiological roles, food sources and daily requirements for major micronutrients

- Describe the dietary requirements and dietary sources for micronutrients
- Describe the health effects and symptoms of both inadequate and toxic intakes of major micronutrients
- Describe key nutritional problems of public health importance, their epidemiology, underlying metabolism and consequences for health
- Describe the methods of assessing the body status of major micronutrients
- Describe the major causes or risk factors of micronutrient deficiencies
- Describe the population at risk of micronutrient deficiencies
- Explain the manifestations of deficiency of each micronutrient
- Explain the economic and human cost of major micronutrient deficiencies
- Describe the monitoring indicators of micronutrient prevention and control programs
- Describe the population-level strategies for prevention and control of micronutrient deficiencies
- Describe the threshold levels of public health importance for common micronutrient deficiencies
- Explain supportive activities in preventing and controlling micronutrient deficiencies of public health importance
- Explain the importance of folate supplementation during the preconception period

Skills

- Make use of the national guidelines for the prevention and control of micronutrient deficiencies
- Assess dietary intake of micronutrient sources in the community using qualitative and quantitative techniques of assessment of nutrient consumption
- Design, implement and monitor micronutrient supplementation program at population level based on community assessment findings
- Identify the targets in the control and prevention of micronutrient deficiencies
- Counsel on major locally available food sources of micronutrients whose deficiency disorders are common
- Counsel individuals to diversify their diets in line with prevention of micronutrient deficiencies using locally available food items
- Plan, implement, monitor and evaluate vitamin A supplementation program at the population level
- Plan, implement, monitor and evaluate universal iodization of salt at the population level, in collaboration with various sectors
- Implement, monitor and evaluate iron supplementation for pregnant women, in collaboration with various sectors
- Use various indicators to monitor and evaluate the outcome of micronutrient supplementation program in the population
- Train health workers and community-based agents to give iron and folate supplements to infants and pregnant women in all areas where anemia is present
- Train community workers to test salt supplies regularly for iodine at the household level

Attitudes

- Strictly follow the national guidelines for the prevention and control of micronutrient deficiencies
- Respect cultural values in food choices and consumption while designing and implementing micronutrient supplementation programs

Promote Appropriate Infant and Young Child Nutrition

Desired Competence

The nutritionist will be able to promote optimal IYCN through promotion of optimal breastfeeding and complementary feeding practices.

Sub-competencies

- Promote optimal breastfeeding practices
- Promote optimal complementary feeding practices

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe conditions for optimal growth of young children
- Describe the nutritional requirements of infants and young children
- Explain the anatomy of the breast and physiological basis of breastfeeding
- Describe the importance of colostrum feeding for newborns
- Explain the importance of proper positioning and attachment to the breast for the first two years of IYCF
- Describe the composition of breast milk and dietary factors affecting its composition
- Explain the mechanism and rate of transmission of HIV via breast milk
- Describe the factors for successful breastfeeding
- Explain feeding options in the context of HIV
- Describe the BFHI
- Describe code of marketing breast milk substitutes
- Describe the global and national strategy for IYCF, including policy instruments to promote, protect and support optimal IYCF practices
- Describe classic indication for use of breast milk substitutes for an infant and young child other than HIV
- Describe the optimal complementary feeding practices, including appropriate time of initiation, variety, amount and density of foods given, frequency of feeding and feeding style
- Describe the Essential Nutrition Actions to improve nutritional status of children and women
- Describe the different food taboos and pre-lacteal feeding practices in Ethiopia

Skills

- Apply global and national strategies for IYCF, including feeding in the context of HIV and emergency situations
- Counsel on the consumption of locally available nutritious foods for the mother and young children
- Counsel the mother or caregiver to increase feeding the child during and after illness
- Administer micronutrient supplements to the mother and young children according to the national guidelines for the supplementation of vitamins and minerals
- Monitor and evaluate programs targeting IYCF

Attitudes

- Work with other stakeholders to provide a conducive environment for mothers to breastfeed
- Use culturally appropriate strategies to assess infant-feeding practices and beliefs
- Apply ethical standards in counseling

HIV and Nutrition

Desired Competence

The nutritionist will be able to provide nutrition care and support for PLWHA, including nutrition and food security assessment, nutritional management of HIV symptoms, and additional support in line with improving food and nutrition security of PLWHA.

Sub-competencies

- Conduct nutrition and food security assessment in children and adults living with HIV
- Provide nutritional support to children and adults with HIV

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe factors affecting disease progression, including nutritional factors
- Describe the nutritional management of HIV symptoms
- Describe approaches to help PLWHA identify and implement appropriate actions to promote response to treatment and manage nutrition implications
- Discuss the impact of HIV on food security and vice versa
- Describe the impact of HIV on nutrition and vice versa
- Describe the components of food security in the context of HIV
- Describe the seven critical nutrition practices for PLWHA
- Describe HIV and IYCF
- Discuss ways to implement nutritional care and support in the face of food insecurity
- Describe the Essential Nutrition Actions in the care and support of PLWHA
- Explain factors to consider when planning nutritional care and support interventions for PLWHA

- Describe the management algorithm for HIV patients with severe malnutrition

Skills

- Assess nutrition and food security status of PLWHA
- Apply the national guidelines to clinical nutrition care for children and adults living with HIV
- Design and implement appropriate nutritional interventions
- Apply Essential Nutrition Actions in HIV/AIDS toward preventing weight loss, improving body composition and immunity, and preventing infections
- Manage HIV symptoms and drug side effects nutritionally
- Counsel on appropriate diet, depending on the condition
- Counsel on critical nutrition practices based on the national guidelines
- Demonstrate appropriate communication skills for nutrition counseling
- Make use of the algorithm and nutrition care plans for the management of malnutrition in PLWHA for children and adults
- Counsel PLWHA on available options to increase food intake by PLWHA, such as safety net, livelihood programs and food aid
- Counsel PLWHA on different desirable coping strategies in line with prevention of re-infection, disease progression and fueling HIV transmission

Attitudes

- Strictly follow the national guidelines for the clinical care of PLWHA
- Show empathy while counseling
- Avoid discrimination of individuals based on HIV status
- Follow ethical standards of patient counseling, such as privacy and confidentiality
- Show willingness to support PLWHA in finding options for improved nutritional status
- Demonstrate willingness to learn and keep up-to-date on new developments in the clinical nutrition care for PLWHA

Prevention and Dietary Management of Diet-Related Non-Communicable Diseases

Desired Competence

The nutritionist will be able to counsel on chronic non-communicable diseases and promote healthy eating practices and lifestyle.

Sub-competencies

- Apply nutritional management of diet-related chronic diseases
- Promote healthy eating practices and lifestyle to prevent diet-related, chronic non-communicable diseases

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Explain the nutritional management of chronic diseases
- Describe characteristics, biological roles, dietary sources, digestion and absorption of energy-containing foods, such as carbohydrates and lipids
- Describe the components of energy expenditure
- Describe factors affecting energy intake and expenditure
- Describe and explain the relationship among energy intake, energy expenditure and body weight
- Explain the significance of dietary reference values
- Describe the sources of metabolic fuels in the fed and fasting states
- Describe the different pathways of energy metabolism
- Describe the consequences of excess accumulation of fat in the body
- Explain how to measure weight and height, waist circumference, hip circumference and skin-fold thickness
- Define and classify overweight and obesity
- Discuss the role of processed foods or drinks (“unhealthy diet”) and insufficient physical activity in the development of overweight and obesity
- Discuss other lifestyle factors affecting the development of chronic disease, such as physical inactivity, alcohol consumption and smoking
- Discuss the role of nutrition transition in the development of overweight and obesity in developing countries
- Discuss the role of early undernutrition in the development of adult chronic diseases
- Explain the pathophysiological processes involved in the development of diet-related, chronic non-communicable diseases, such as diabetes mellitus, coronary heart diseases and cancer
- Discuss the epidemiology of diet-related non-communicable diseases
- Describe the principles and approaches of nutrition education

Skills

- Apply the global recommendations for the prevention and control of diet-related, chronic non-communicable diseases
- Perform nutritional assessment for all individuals attending health institutions, including anthropometric and food intake assessment
- Classify patients based on BMI calculation
- Counsel individuals who are at risk of overweight and obesity on healthy diet, physical exercise, and reduction of alcohol consumption and smoking
- Make use of the dietary guidelines to advise patients with chronic diseases
- Design and carryout nutrition education program on dietary-related non-communicable diseases
- Take a leadership role in community mobilization to advocate healthy eating, physical exercise and reduction of alcohol consumption

Attitudes

- Show commitment and enthusiasm to address diet-related non-communicable diseases, a neglected problem
- Demonstrate empathy to those already affected by chronic non-communicable disease
- Avoid stigma and discrimination based on physical appearance or body habits
- Respect cultural values in food consumption in terms of types and sources

Nutrition Information System – Maintaining Records, Compiling and Reporting

Desired Competence

The nutritionist will be able to collect, analyze and interpret nutrition-related data on a continuous basis in order to track changes in the nutritional status of the population and to evaluate the effectiveness of nutrition intervention programs.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe basic descriptive statistics, such as measures of central tendency and dispersion in statistics
- Describe the requirements for effective nutrition information system
- Describe the key indicators and data sources for the nutrition information system
- List the type of data you need to record and report regularly to generate these indicators at local and national levels
- Describe the methods of information processing and reporting to end users (either managers or frontline health workers)
- Describe the demand dimensions of nutrition information system, such as determinates of nutritional status, inputs in the system, performance, nutrition outcomes and inequalities in nutritional status
- Discuss the different indicators of health outcomes
- Describe ways of data presentation that are tailored to a recipient

Skills

- Develop a system for initiating and maintaining records of ongoing activities in the health system
- Calculate basic descriptive statistics
- Identify sources of data for nutrition information system
- Make use of the ongoing data collected in the health system, such as data from nutrition rehabilitation unit and supplementation with micronutrients
- Derive nutrition information system indicators based on components of Essential Nutrition Actions, community-based nutrition, therapeutic feeding programs and child health days
- Demonstrate ability prepare reporting formats tailored to each recipient
- Prepare and present information tailored to several recipients, such as health system managers and frontline health workers

- Make use of the routinely collected data to track the nutrition situation regarding micronutrient coverage, growth of young children, prevalence acute malnutrition, birth weight, maternal nutritional status during pregnancy and lactation
- Apply triple A cycle (assessment, analysis and action) in addressing nutrition-related problems of the community
- Make use of basic computer applications to enter, compile, analyze and write report of information generated from nutrition information system data

Attitudes

- Demonstrate favorable attitude toward maintaining records and data compilation
- Express interest report regularly and promptly
- Demonstrate a very high level of commitment toward sharing of information to end user (either lower-level nutrition service providers or managers)

Undertake Rapid Assessment and Manage Nutritional Problems in Emergency

Desired Competence

The nutritionist will be able to undertake rapid assessment to identify the needs and existing capacities of the affected population in emergencies and be able to manage nutritional problems in emergency.

Sub-competencies

- Undertake rapid assessment in emergency
- Manage nutritional problems in emergency

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe the different forms of nutrition or public health emergency
- Describe the steps in approaching nutritional problems in emergency situations, such as situational analysis and rapid assessment
- Describe type of target population, sampling, indicators and materials that are needed for rapid assessment
- Describe different sources of information in rapid assessment
- Define criteria for selecting secondary information
- Describe the sampling procedure for the rapid assessment
- Describe data collection procedures used in rapid assessments
- Discuss the different data collection methods and their merits and demerits in rapid assessment
- Explain the different methods of analysis of data collected from rapid assessment
- Describe the contents of a report of a rapid assessment of nutritional situation
- Describe the four phases of emergency management

- Outline key nutrition interventions during emergency, including management of SAM, micronutrient supplementation, and other nutrition and health interventions
- Identify key players in the rapid assessment of the nutritional situation
- Discuss the development of emergency and phases of emergency management
- Explain the importance of early warning system in preventing the occurrence of excess mortality in emergencies
- Describe the standardized ration scales in emergency situations
- Describe the importance of targeting in the emergency
- Discuss option for the management of acute malnutrition and micronutrient deficiencies in emergency
- Describe the importance of giving attention to most vulnerable population (e.g., children, women, PLWHA) during emergency
- Discuss the options for IYCF in emergencies
- Explain the need for extra health care for those affected by the emergency to prevent excess mortality and morbidity
- Discuss the different supplementary feeding options for population affected by emergency
- Identify appropriate indicators for monitoring and evaluation of outcomes of the nutrition and health intervention

Skills

- Design tools and methods for information collection in rapid assessment
- Apply standardized nutritional assessment methods appropriate for detection of acute malnutrition in a population
- Undertake detailed review of secondary data
- Utilize the existing nutrition surveillance information to plan for rapid response
- Design data collection procedure that can be adapted quickly
- Make use of basic computer programs (such as Microsoft Excel) and emergency data assessment software programs (Epi Info and Essential Nutrition Actions for SMART) to manage data collected from the field
- Apply simple statistical techniques to analyze data generated from rapid assessment
- Develop a report that enables decision-making for rapid action
- Disseminate the information generated to appropriate audiences, such as managers, health workers and the affected community, via workshops and public meetings
- Involve various sectors in addressing the problem (exercise multi-sectoral approach)
- Estimate nutritional needs based on the assessment results
- Design and implement nutritional support, such as general food distribution, supplementary feeding or micronutrient supplementation
- Assess the need for therapeutic feeding for children and adults
- Apply the national protocol for the management of severe malnutrition and micronutrient supplementation in emergencies
- Assess the need for additional health support for the population affected by emergency

- Create linkage with other sectors to institution livelihood support for the affected population

Attitudes

- Create common understanding with community members in undertaking rapid assessment
- Respect the confidentiality of information obtained from vulnerable population
- Conform with standard procedures of rapid assessment of nutrition and health situation of a population
- Show empathy to those affected by emergency situations
- Demonstrate readiness to intervene in emergency situations
- Demonstrate interest and capacity to work in difficult circumstances
- Respect the rights and dignity of vulnerable population
- Strictly follow standard protocols for the management of severe malnutrition and other illness in emergency

Nutrition Program Planning (Nutrition Intervention Planning and Management)

Desired Competence

The nutritionist will be able to plan effective nutrition interventions based on scientifically sound evidence to address nutritional problems of most nutritionally at-risk population (i.e., young children and women)

Sub-competencies

- Plan effective nutrition intervention
- Manage nutrition intervention program

To achieve these competencies, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe the functions and principles of health service management
- Describe the conceptual framework for the causation of malnutrition (over-nutrition or undernutrition)
- Describe common nutritional problems of public health importance based on the available evidence for action
- Determine the underlying and immediate causes of malnutrition or nutritional problems under consideration
- Explain the intergenerational link of malnutrition
- Describe steps in nutrition or health planning
- Define program goals and objectives in addressing the problem
- Describe the targets for the implementation of nutrition programs, depending on their vulnerability and effectiveness of available nutrition interventions
- Describe existing health and nutrition services in the community

- Describe the development window of opportunity for intervention
- Describe the constraints involved in program implementation for addressing a given nutritional problem of public health importance

Skills

- Gather and synthesize information on the nutrition situation
- Identify the major nutritional problems of public health importance to underserved populations
- Use sources of data for nutrition planning, including results of Demographic and Health Surveys; Multiple Indicator Cluster Survey; Knowledge, Attitude and Practice Survey; and health management information systems (HMIS) in the community
- Synthesize anthropometric, IYCF, maternal nutrition and micronutrient status data obtained from different sources
- Prioritize nutrition problems based on set criteria
- Select sound nutrition intervention based the priority nutritional problems of most-at-risk populations (i.e., children and women)
- Mobilize the community in addressing the identified nutritional problem
- Evaluate the advantages and disadvantages of options for combating specific nutritional problems
- Design an evaluation plan of a nutrition intervention

Attitudes

- Demonstrate motivation in the planning and programming exercise
- Respect ethical practices while gathering information from various sources
- Maintain confidentiality of information gathered for planning and programming

Application of Life-Cycle Approach in Addressing Nutrition Problems (Address Nutritional Problems in a Life-Cycle Perspective)

Desired Competence

The nutritionist will be able to apply a life-cycle approach in addressing nutritional problems (malnutrition) in order for nutrition interventions to have maximum benefits.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe what is meant by a life-cycle approach to the study of nutrition and health
- Describe the basic nutritional needs during the preconception period
- Define fetal or nutritional programming
- Describe the potential impact of nutritional programming in early life
- Describe the association between risk factors operating in fetal life and disease during adulthood
- Discuss the epidemiological evidence that suggests maternal nutrition during pregnancy may program the risk of major disease later in life

- Discuss the factors that contribute to malnutrition in the life-cycle perspective
- Discuss the physiological processes that determine requirements for energy, macronutrients and micronutrients during adolescence
- Describe how nutritional status is influenced by the stage of life due to the variation in specific factors controlling nutrient availability and requirements
- Discuss the need for dietary standards in making assessments of the quality of diet or dietary provision in individuals or populations
- Describe the physiological adaptations that occur during pregnancy
- Explain the additional nutritional requirements during pregnancy
- Describe the importance of iron and folate supplementation during pregnancy
- Explain the endocrine control of lactation and factors affecting lactation
- Discuss the extra nutrient demands that are imposed by lactation
- Explain the importance of breastfeeding for the health and wellbeing of mothers and their infants
- Describe the national strategy for IYCF
- Discuss the effect of maternal nutritional status on nutrient composition of breast milk
- Explain the effect of growth on the nutritional requirements of children
- Describe the importance of energy-dense complementary food for the normal growth of young children
- Describe how infectious disease and catch-up growth can increase the risk of micronutrient deficiencies among children
- Discuss the appropriate timing of initiation of breastfeeding and complementary feeding
- Describe the patterns of growth that are seen during the adolescent period
- Discuss the impact of early undernutrition and other endocrine factors on adolescent growth and sexual maturation
- Discuss factors affecting nutrient intake and utilization among elderly population

Skills

- Apply methods of nutritional status assessment in measuring growth and nutritional status of individuals and populations
- Apply the principles of a life-cycle approach in addressing nutritional problems of the most vulnerable stages in the life cycle (i.e., preconception, pregnancy, infancy, early childhood, adolescence)
- Use Essential Nutrition Actions to address undernutrition in women and children
- Demonstrate counseling skills on feeding of young children and appropriate diet for pregnant and lactating women
- Apply the BCC strategy to enforce appropriate behaviors in IYCF
- Strictly follow the national guidelines for the management of acute malnutrition
- Provide micronutrient supplementation according to the national guidelines for the prevention and control of micronutrient deficiencies
- Promote utilization of iodized salt at the household level

- Promote appropriate environmental hygiene to prevent parasitic and other infections
- Promote increased food intake by adolescents to ensure adequate growth and energy reserves for subsequent pregnancy and lactation
- Prevent and treat micronutrient deficiencies among adolescents
- Mobilize the community toward delaying the first pregnancy to ensure full growth of adolescents
- Promote adequate dietary intake by the elderly population

Attitudes

- Apply ethical standards while counseling individuals
- Respect cultural values in food choices and consumptions
- Build upon the knowledge base existing in the population
- Demonstrate enthusiasm to approach nutritional problems with the life-cycle perspective
- Show empathy and follow guidelines in the management of childhood illnesses

Conducting Nutritional Surveillance

Desired Competence

The nutritionist will be able to gather information on a continuous basis on the current and future magnitude, distribution and causes of malnutrition in populations for policy formulations, program planning management and evaluation.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Understand the basics of epidemiology and biostatistics
- Describe major nutritional problems of public health importance
- Explain the different methods of nutritional assessment
- Discuss the type and characteristics of public health surveillance
- Describe the objectives of nutritional surveillance system in a given country
- Describe characteristics of nutrition surveillance
- Discuss requirements for successful nutritional surveillance in term of logistics, personnel and expertise
- Identify appropriate indicators for tracking changes in the nutrition and health situation of the population
- Identify different data sources for sources for nutrition surveillance
- Describe the challenges and limitations of a nutritional surveillance system
- Describe what computer applications are needed to manage and analyze data generated from nutritional surveillance system
- Describe information dissemination techniques

Skills

- Involve important players in the establishment of nutritional surveillance system
- Develop a proposal for nutritional surveillance system in collaboration with other stakeholders
- Mobilize the community to build sense of ownership for successful generation of continued data
- Train and supervise primary data collectors
- Make use of different criteria to select surveillance sites
- Make use of basic computer applications for analysis of surveillance data
- Generate a simple and continued report tailored to end users
- Identify and establish a mechanism for data usage and feedback

Attitudes

- Follow ethical standards when conducting assessment
- Respect the privacy and confidentiality of information obtained from surveillance

Conducting Nutrition-Related Operational Research

The nutritionist will be able to carry out operational research that can be used in improving nutrition-related program implementation.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Discuss the basic statistical tools used in research undertaking
- Describe the different types of research, including operational research
- Describe epidemiological designs by category and application in operational research
- Describe the basic steps in research undertaking including literature review, sampling and preparation for data collection
- Identify different source of information for literature review
- Describe methods of research protocol development
- Explain the different methods used to assess nutritional status of the population
- Describe the different methods of communicating research findings

Skills

- Review and appraise the relevant literature on a topic of interest
- Formulate a research question based on literature review
- Design appropriate method of sample size calculation, data collection and monitoring
- Collaborate with other stakeholders in the management of a research study, in monitoring its progress, and in ensuring the quality of data collected

- Ensure the implementation of ethical standards while collecting biological samples, conducting physical examination and interviewing human subjects
- Perform data entry using simple computer applications
- Make use of computer applications (statistical program) in data management and analysis
- Undertake data cleaning and management using computer applications
- Analyze data based on the pre-defined research questions
- Produce a statistical analysis of the data collected during a research project and provide a reasoned interpretation of the results
- Produce written reports of research findings

Attitudes

- Demonstrate capacity to keep up-to-date on new scientific knowledge and practices in the area of nutrition and related fields
- Collaborate with other stakeholders in operational research undertaking
- Follow ethical standards in undertaking research on human subjects

Nutrition-Related Capacity-Building (Participate in Nutrition Training)

The nutritionist will be able to involve in nutrition-related capacity-building process of other nutrition and health professionals, along with addressing common nutritional problems of the population.

To achieve this competency, the graduates are expected to have the following knowledge, skills and attitudes:

Knowledge

- Describe the different teaching/learning methods used in capacity-building of health and nutrition professionals
- Describe the different methods of training of other health professionals on nutrition
- Describe common nutritional problems of the population
- Describe the requirements for the preparation of training materials and packages

Skills

- Identify the existing protocols and guidelines in the prevention, control and management of nutritional disorders
- Actively participate in the design of educational materials for other health and nutrition professionals
- Design tailored training package for lower-level health and nutrition practitioners based on existing guidelines and protocols
- Conduct training by employing various teaching/learning methods
- Design simple techniques to evaluate learning outcomes

Attitudes

- Keep up-to-date on the changing environment in terms of nutrition competencies
- Take part in continuing education programs in the areas of health and nutrition
- Demonstrate interest and capacity to share knowledge and experience gained through practices to other colleagues and professionals

REFERENCES

1. Gibney MJ et al. 2009. *Introduction to Human Nutrition; Second Edition*. The Nutrition Society Textbook Series.
2. Hughes R. 2004. Competencies for effective public health nutrition practice: a developing consensus. *Public Health Nutr*, 7(5): 683–91.
3. Mann J and Truswell (ed). 2002. *Essentials of Human Nutrition; Second Edition*. Oxford University Press.
4. Oyewole OE and Atinmo T. 2008. Nutrition education in medical training: The need to reconsider the sacrosanctity of medical education in Nigeria. *Afr J Med Med Sci*, 37(3): 219–24.
5. Victora CG et al. 2008. Maternal and child undernutrition: Consequences for adult health and human capital. *The Lancet*, 371(9,609): 340–357.
6. Central Statistical Authority (CSA) [Ethiopia] and ORC Macro. 2001. *Ethiopia Demographic and Health Survey 2005*. CSA and ORC Macro: Addis Ababa, Ethiopia, and Calverton, Maryland, USA
7. Central Statistical Authority (CSA) [Ethiopia] and ORC Macro. 2001. *Ethiopia Demographic and Health Survey 2000*. CSA and ORC Macro: Addis Ababa, Ethiopia, and Calverton, Maryland.
8. Central Statistical Authority (CSA) [Ethiopia] and ORC Macro. 2006. *Ethiopia Demographic and Health Survey 2005*. CSA and ORC Macro: Addis Ababa, Ethiopia, and Calverton, Maryland, USA.
9. Joan J and Mesfin BH. 2008. *Report on Review of Incorporation of Essential Nutrition Actions into Public Health Programs in Ethiopia; Food and Nutrition Technical Assistance (FANTA) Project*. Academy for Educational Development (AED): Addis Ababa, Ethiopia.
10. Labadarios D and Steyn NP. 2005. Nutritional disorders in Africa: The triple burden. *Nutrition*, (1): 2–3.
11. Bhutta ZA et al. 2008. What works? Interventions for maternal and child undernutrition and survival. *The Lancet*, 371(9,610): 417–440.
12. Federal Ministry of Health (FMoH). 2008. *National Nutrition Strategy*. FMoH: Addis Ababa, Ethiopia.
13. Federal Ministry of Health (FMoH). 2008. *Program Implementation Manual of National Nutrition Program (NNP) I; July 2008 –June 2013*. FMoH: Addis Ababa, Ethiopia.
14. Ethiopian Health and Nutrition Research Institute. 2009. *Nutrition baseline survey report for the National Nutrition Program of Ethiopia, 2009/10*.
15. Wolde-Gebriel Z and Belete S. 2009. *Nutrition Training Needs Assessment and Curriculum Review*. Ethiopian Health and Nutrition Research Institute: Addis Ababa.
16. Save the Children/Jhpiego. 2012. *Empowering New Generations to Improve Nutrition and Economic Opportunities (ENGINE) Nutrition Pre-service Education (PSE), Baseline Assessment Report*.
17. Association for Prevention Teaching and Research and Columbia School of Nursing Center for Health Policy. 2008. *Competency-to-Curriculum Toolkit*.
18. Public Health Research Education and Development (PHRED) Program. 2006. *Public Health Core Competencies: A Discussion Paper*.
19. International Confederation of Midwives. 2010. *Essential Competencies for Basic Midwifery Practice*.

ANNEX 1: GENERAL INTRODUCTION FOR ALL IN-DEPTH INTERVIEWS

Thank you so much for your willingness to take part in this interview! My name is [NAME]. I am a consultant for Jhpiego working to define nutrition competencies for undergraduate nutritionists, medical doctors, health officers, nurses, midwives and pharmacists. This work is part of “Empowering New Generations to Improve Nutrition and Economic Opportunities (ENGINE)” Project, which is a Cooperative Agreement funded by USAID. The overall goal of the project is to decrease maternal, neonatal and child mortality by improving the nutritional status of women and children less than five years of age through sustainable, comprehensive and coordinated evidence-based interventions. As an ENGINE partner, Jhpiego is currently working with 12 higher teaching institutions to strengthening competency-based nutrition pre-service education.

We are interested in hearing your views about specific nutrition-related tasks expected to be performed by medical doctors, health officers, nurses, midwives and undergraduate nutritionists. We then want to know from you what knowledge, skills and attitudes are needed for these professionals to carry out these tasks.

We will record our discussion on tape and take notes to enable us capture all that we shall be discussing—we want to be sure we don’t miss anything. Is that alright? [If the respondent is not comfortable with audio recording, confirm that she is okay with hand-written notes and proceed as such.]

Before we start, I just want to emphasize that everything we talk about today is confidential. No one will have access to the tape or notes that I am taking except myself when working on this assignment.

Is there anything you would like to ask me at this point?

ANNEX 2: IN-DEPTH INTERVIEW GUIDE FOR MEDICAL DOCTORS/HEALTH OFFICERS (SENIOR MEDICAL DOCTOR)/PEDIATRICIAN AND/OR HEALTH OFFICER AT A UNIVERSITY AND HEALTH INSTITUTION)

In-depth interview is designed to identify and define nutrition competencies of medical doctors and health officers in the provision of nutrition service at the community and individual level.

1. General information:

Date of interview: _____

Name of institution: _____

Year of graduation: _____

Years of experience nutrition-related services: _____

2. What is the contribution of nutrition-related competencies for medical doctors and health officers to discharge responsibilities expected from them?
3. What are the roles and responsibilities of medical doctors and health officers in the provision of nutrition service?

Probes:

- Promotion and prevention roles and responsibilities?
- Nutritional assessment roles and responsibilities?
- Counseling roles and responsibilities?
- Therapeutic roles and responsibilities?
- Nutrition support roles and responsibilities?
- Rehabilitation roles and responsibilities?

4. Do you think your pre-service education has enabled you to carry out nutrition services at individual and community levels as part of the overall health care?

If no, what could have been done (in terms of teaching methods) to enable you carry out those responsibilities?

5. Which aspects of the nutrition service were easy for you to provide when you started the service?
6. Which were difficult when you started the service?
7. Can you tell us the knowledge, skills and attitudes/behaviors needed from a medical doctor and health officer in relation to provision of nutrition service?

Probes:

- Assessment of nutritional requirement?
- Nutritional assessment?
- Nutrition screening?
- Interpretation of measurement of nutritional assessment and screening?
- Carrying out nutrition counseling?

- Use the national protocols and guidelines to treat individuals with nutritional deficiencies?
 - Nutrition intervention at the population level?
 - Promotion and prevention?
8. What do you think are missed and should be included in the pre-service education curriculum to improve nutrition-related service provision at individual and community level?

Probes:

- In terms of knowledge?
 - In terms of skills?
 - In terms of attitude, values and behavior?
9. What additional roles and responsibilities do you think are expected from a medical doctor and health officer in relation to provision of nutrition service?
10. What kinds of training did you have so far in relation to nutrition? Would you please mention the specific areas?
11. Do you think further training is required to execute those tasks? Can you mention specific areas for training?
12. Any other opinions?

Thank you!!

ANNEX 3: IN-DEPTH INTERVIEW GUIDE FOR NURSES (SENIOR NURSE AND AT A UNIVERSITY AND HEALTH INSTITUTION)

In-depth interview is designed to identify and define nutrition competencies of nurses in the provision of nutrition service at the individual and community levels.

1. General information:

Date of interview: _____

Name of institution: _____

Year of graduation: _____

Years of experience nutrition-related services: _____

2. What is the contribution of nutrition-related competencies for nurses to discharge responsibilities expected from them?

3. Do you believe nutrition service is part of the overall health care provision to individuals and communities? Why or why not?

4. What are the roles and responsibilities of nurses in the provision of nutrition service?

Probes:

- Promotion and prevention roles and responsibilities?
- Nutritional assessment roles and responsibilities?
- Counseling roles and responsibilities?
- Therapeutic roles and responsibilities?
- Support roles and responsibilities?
- Rehabilitation roles and responsibilities?

5. Do you think your pre-service education has enabled you to carry out nutrition services at individual and community levels as part of the overall health care?

- If no, what could have been done to enable you carry out those responsibilities?

6. Which aspects of the nutrition service were easy for you to provide when you started the service as a nurse?

7. Which were difficult when you started the service?

8. Can you tell us the knowledge, skills and attitudes/behaviors needed from a nurse in relation to provision of nutrition service?

Probes:

- Nutritional requirement?
- Nutritional assessment?
- Nutrition screening?
- Interpretation of measurement of nutritional assessment and screening?
- Carrying out nutrition counseling?
- Use the national protocols and guidelines to treat individuals with nutritional deficiencies?
- Nutrition care for patients with various conditions including diet-related disorders?

- Promotion and prevention?
9. What do you think are missed and should be included in the pre-service education curriculum to improve nutrition-related service provision at individual and community level?
Probes:
 - In terms of knowledge?
 - In terms of skills?
 - In terms of attitude, values and behavior?
 10. What additional roles and responsibilities do you think are expected from a nurse in relation to provision of nutrition service?
 11. What kinds of training did you have so far in relation to nutrition? Would you please mention the specific areas?
 12. Do you think further training is required to execute those tasks as a nurse? Can you mention specific areas for training?
 13. Any other opinions?

Thank you!!

ANNEX 4: IN-DEPTH INTERVIEW GUIDE FOR MIDWIVES (SENIOR MIDWIFE AT A SELECTED UNIVERSITY AND HEALTH INSTITUTION)

In-depth interview is designed to identify and define nutrition competencies of midwives in the provision of nutrition service to women during pregnancy, labor and the postpartum period.

1. General information:

Date of interview: _____

Name of institution: _____

Year of graduation: _____

Years of experience nutrition-related services: _____

2. What is the contribution of nutrition-related competencies are required in to discharge responsibilities expected from a midwife?

3. What are the roles and responsibilities of midwives in the provision of nutrition service?

Probes:

- Promotion and prevention roles and responsibilities?
- Nutritional assessment roles and responsibilities?
- Counseling roles and responsibilities?
- Therapeutic roles and responsibilities?
- Support roles and responsibilities?
- Rehabilitation roles and responsibilities?

4. Do you think your pre-service education has enabled you to carry out nutrition services at individual and community levels as part of the overall health care rendered for women?

- If no, what could have been done to enable you carry out those responsibilities?

5. Which aspects of the nutrition service were easy for you to provide when you started the service?

6. Which were difficult when you started the service?

7. Can you tell us the knowledge, skill and attitudes/behaviors needed from a midwife in relation to provision of nutrition service?

Probes:

- Nutritional requirement?
- Nutritional assessment?
- Nutrition screening?
- Interpretation of measurement of nutritional assessment and screening?
- Carrying out nutrition counseling?
- Promotion and prevention?

8. What do you think are missed and should be included in the pre-service education curriculum to improve nutrition-related service provision at individual and community level?

Probes:

- In terms of knowledge?

- In terms of skills?
 - In terms of attitude, values and behavior?
9. What additional roles and responsibilities do you think are expected from a midwife in relation to provision of nutrition service?
 10. What kinds of training did you have so far in relation to nutrition? Would you please mention the specific areas?
 11. Do you think further training is required to execute those tasks? Can you mention specific areas for training?
 12. Any other opinions?

Thank you!!

ANNEX 5: IN-DEPTH INTERVIEW GUIDE FOR PHARMACISTS (SENIOR PHARMACIST AT A SELECTED UNIVERSITY AND HEALTH INSTITUTION)

In-depth interview is designed to identify and define nutrition competencies of pharmacy graduates in the provision of nutrition service at individual and community levels.

1. General information:

Date of interview: _____

Name of institution: _____

Position of respondent: _____

Profession: _____

Years of experience: _____

Area of responsibility related to nutrition services: _____

2. What is the contribution of nutrition-related competencies for pharmacy graduates to discharge responsibilities expected from a pharmacist or pharmacy technician?
3. What are the roles and responsibilities of pharmacist or pharmacy technician in the provision of nutrition service?

Probes:

- Therapeutic roles and responsibilities?
- Counseling roles and responsibilities?
- Support roles and responsibilities?

4. Do you think your pre-service education has enabled you to carry out nutrition services at individual level as part of the overall health care?

- If no, what could have been done (in terms of teaching methods) to enable you carry out those responsibilities?

5. Can you tell us the knowledge, skill and attitudes/behaviors needed from a pharmacist or pharmacy technician in relation to provision of nutrition service?

Probes:

- Infant and young child feeding?
- Treatment of severe malnutrition?
- Food/nutrient-drug interaction?
- Treatment of patients with various conditions (e.g., HIV/AIDS) including diet-related disorders?
- Counseling on food/nutrient-drug interaction?
- Food quality and safety control?
- Promotion and prevention?

6. What do you think are missed and should be included in the pre-service education curriculum to improve nutrition-related service provision at individual level?

Probes:

- In terms of knowledge?
- In terms of skills?

- In terms of attitude, values and behavior?
7. What additional roles and responsibilities do you think are expected from pharmacist or pharmacy technician in relation to provision of nutrition service?
 8. What kinds of training did you have so far in relation to nutrition? Would you please mention the specific areas?
 9. Do you think further training is required to execute those tasks? Can you mention specific areas for training?
 10. Any other opinions?

Thank you!!

ANNEX 6: IN-DEPTH INTERVIEW GUIDE FOR STAKEHOLDERS (EMA, MOH, FONSE, EHNRI)

In-depth interview is designed to define desired nutrition competencies of medical doctors, health officers, midwives and nurses in Ethiopia.

1. General information:

Date of interview: _____

Name of institution: _____

Position of respondent: _____

Profession: _____

Years of experience: _____

Area of responsibility related to nutrition services: _____

2. What are the roles and responsibilities of medical doctors, health officers, midwives and nurses in nutrition-related services?

Probes for each type of cadre (medical doctors/health officers/nurses/midwives):

Medical doctors and health officers:

- Nutritional assessment roles and responsibilities?
- Nutrition care roles and responsibilities?
- Treatment of severe malnutrition roles and responsibilities?
- Nutritional management of patients with various conditions (e.g. HIV/AIDS), including diet-related diseases?
- Nutrition intervention at the population level roles and responsibilities?
- Nutrition counseling roles and responsibilities?
- Promotion and prevention roles and responsibilities?
- Support roles and responsibilities?
- Rehabilitation roles and responsibilities?

Nurses and midwives:

- Promotion and prevention roles and responsibilities?
- Nutritional assessment roles and responsibilities?
- Counseling roles and responsibilities?
- Therapeutic roles and responsibilities?
- Support roles and responsibilities?
- Rehabilitation roles and responsibilities?

3. What are the roles and responsibilities of medical doctors, health officers and nurses in nutrition-related services in line with the implementation of the National Nutrition Program (NNP)?

4. What knowledge, skills, attitudes, values and behaviors must medical doctors and health officers have to fulfill those roles and responsibilities?

5. What are the gaps you observe in terms of nutrition knowledge, skills and attitude among medicine, public health and nursing graduates in Ethiopia?

6. What is your suggestion to fill those gaps at the pre-service education level to improve graduates' competence?
7. Any other suggestions?

Thank you!!

ANNEX 7: IN-DEPTH INTERVIEW GUIDE FOR STAKEHOLDERS (RELEVANT PERSONNEL AT SAVE USA, UNICEF, CONCERN, ENGINE, ALIVE AND THRIVE, AND WFP)

In-depth interview is designed to identify and define desired nutrition competencies of medical doctors and health officers in Ethiopia.

1. General information:

Date of interview: _____

Name of institution: _____

Position of respondent: _____

Profession: _____

Years of experience: _____

Area of responsibility related to nutrition services: _____

2. What are the roles and responsibilities of medical doctors, health officers and midwives and nurses in nutrition-related services?

Probe for each type of cadre (medical doctors/health officers/nurses):

Medical doctors and health officers:

- Nutritional assessment roles and responsibilities?
- Nutrition care roles and responsibilities?
- Treatment of severe malnutrition roles and responsibilities?
- Nutritional management of patients with various conditions (e.g. HIV/AIDS), including diet-related diseases?
- Nutrition intervention at the population level roles and responsibilities?
- Nutrition counseling roles and responsibilities?
- Promotion and prevention roles and responsibilities?
- Support roles and responsibilities?
- Rehabilitation roles and responsibilities?

Nurses and midwives:

- Nutritional assessment roles and responsibilities?
- Counseling roles and responsibilities?
- Therapeutic roles and responsibilities?
- Support roles and responsibilities?
- Rehabilitation roles and responsibilities?
- Promotion and prevention roles and responsibilities?

3. What are the roles and responsibilities of medical doctors, health officers and nurses in nutrition-related services in line with the implementation of the National Nutrition Program (NNP)?

4. What knowledge, skills, attitudes, values and behaviors must medical doctors and health officers have to fulfill those roles and responsibilities?

5. What are the gaps you observe in terms of nutrition knowledge, skills and attitude among medicine, public health and nursing graduates in Ethiopia?
6. What is your suggestion to fill those gaps at the pre-service education level to improve graduates' competence?
7. Any other suggestions?

Thank you!!

ANNEX 8: IN-DEPTH INTERVIEW GUIDE FOR STAKEHOLDERS (ETHIOPIAN NURSES ASSOCIATION)

In-depth interview is designed to identify and define desired nutrition competencies of nurses in Ethiopia.

1. General information:

Date of interview: _____

Name of institution: _____

Position of respondent: _____

Profession: _____

Years of experience: _____

Area of responsibility related to nutrition services: _____

2. What are the roles and responsibilities of nurses in nutrition-related services?

Probes:

- Nutritional requirement at various life stages?
- Nutritional assessment roles and responsibilities?
- Nutrition care roles and responsibilities?
- Treatment of severe malnutrition roles and responsibilities?
- Treatment of various conditions, including diet-related diseases?
- Nutrition counseling roles and responsibilities?
- Promotion and prevention roles and responsibilities?
- Rehabilitation roles and responsibilities?

3. What are the roles and responsibilities of nurses in nutrition-related services in line with the implementation of the National Nutrition Program (NNP)?

4. What knowledge, skills, attitude, values and behavior must nurses have to fulfill those roles and responsibilities?

5. What are the gaps you observe in terms of nutrition knowledge, skills and attitude among nursing graduates in Ethiopia?

6. What is your suggestion to fill those gaps at the pre-service education level to improve graduates' competence?

7. Any other suggestion you have?

Thank you!!

ANNEX 9: IN-DEPTH INTERVIEW GUIDE FOR STAKEHOLDERS (ETHIOPIAN MIDWIVES ASSOCIATION)

In-depth interview is designed to identify and define desired nutrition competencies of midwives in Ethiopia.

1. General information:
Date of interview: _____
Name of institution: _____
Position of respondent: _____
Profession: _____
Years of experience: _____
Area of responsibility related to nutrition services: _____
2. What are the roles and responsibilities of midwives in nutrition-related services?
 - Nutritional requirement at various life stages?
 - Nutritional assessment roles and responsibilities?
 - Nutrition care roles and responsibilities?
 - Management of nutritional problems during pregnancy, delivery and postnatal period roles and responsibilities?
 - Nutrition counseling roles and responsibilities?
 - Promotion and prevention roles and responsibilities?
 - Rehabilitation roles and responsibilities?
3. What are the roles and responsibilities of midwives in nutrition-related services in line with the implementation of the National Nutrition Program (NNP)?
4. What knowledge, skills, attitude, values and behavior midwives must have to fulfill those roles and responsibilities?
5. What are the gaps you observe in terms of nutrition knowledge, skills and attitude among midwifery graduates in Ethiopia?
6. What is your suggestion to fill those gaps at the pre-service education level to improve graduates' competence?
7. Any other suggestions?

Thank you!!

ANNEX 10: IN-DEPTH INTERVIEW GUIDE FOR STAKEHOLDERS (ETHIOPIAN PHARMACEUTICAL ASSOCIATION)

In-depth interview is designed to identify and define nutrition competencies for nurses in Ethiopia

1. General information:
Date of interview: _____
Name of institution: _____
Position of respondent: _____
Profession: _____
Years of experience: _____
Area of responsibility related to nutrition services: _____
2. What are the roles and responsibilities of medical doctors, health officers, general nurses and midwives in nutrition-related services?
 - Infant and young child feeding?
 - Treatment of severe malnutrition roles and responsibilities?
 - Nutrition care for patients with various conditions (e.g. HIV/AIDS) and diet-related condition?
 - Counseling on food/nutrient-drug interaction roles and responsibilities?
 - Food quality and safety control roles and responsibilities?
3. What are the roles and responsibilities of nurses in nutrition-related services in line with the implementation of the National Nutrition Program (NNP)?
4. What knowledge, skills, attitude, values and behavior nurses must have to fulfill those roles and responsibilities?
5. What are the gaps you observe in terms of nutrition knowledge, skills and attitude among medicine, public health, nursing and midwifery graduates in Ethiopia?
6. What is your suggestion to fill those gaps at the pre-service education level to improve graduates' competence?
7. Any other suggestions?

Thank you!!

ANNEX 11: IN-DEPTH INTERVIEW GUIDE FOR STAKEHOLDERS (MEDICAL DOCTOR/NURSE INVOLVED IN THE MANAGEMENT OF SAM)

In-depth interview is designed to identify and define desired nutrition competencies of medical doctors, health officers and nurses in Ethiopia.

1. General information:

Date of interview: _____

Name of institution: _____

Position of respondent: _____

Profession: _____

Years of experience: _____

Area of responsibility related to nutrition services: _____

2. What are the roles and responsibilities of medical doctors, health officers and nurses in the management of severe acute malnutrition (SAM)?

Probe for each type of cadre (medical doctors and health officers/nurses):

Medical doctors and health officers:

- Nutritional assessment and interpretation roles and responsibilities?
- Treatment of severe malnutrition roles and responsibilities?
- Follow up roles and responsibilities?
- Nutrition counseling roles and responsibilities?
- Promotion and prevention roles and responsibilities?
- Rehabilitation roles and responsibilities?
- Monitoring and evaluation roles and responsibilities?

Nurses:

- Nutritional assessment and interpretation roles and responsibilities?
- Treatment of severe malnutrition roles and responsibilities?
- Follow-up roles and responsibilities?
- Nutrition counseling roles and responsibilities?
- Promotion and prevention roles and responsibilities?
- Rehabilitation roles and responsibilities?

3. What knowledge, skills, attitudes, values and behaviors must medical doctors and health officers have to fulfill those roles and responsibilities?

4. What are the gaps you observe in terms of nutrition knowledge, skills and attitude among medicine, public health and nursing graduates in the management of severe malnutrition in Ethiopia?

5. What is your suggestion to fill those gaps at the pre-service education level to improve graduates' competence in the management of severe malnutrition?

6. Any other suggestions?

Thank you!!

ANNEX 12: IN-DEPTH INTERVIEW GUIDE FOR UNDERGRADUATE NUTRITIONIST (SENIOR NUTRITIONISTS AT HAWASA UNIVERSITY, SELECTED NGO)

In-depth interview is designed to identify and define nutrition competencies of medical doctors and health officers in the provision of nutrition service at the community and individual level.

1. General information:

Date of interview: _____

Name of institution: _____

Year of graduation: _____

Years of experience in nutrition-related services: _____

2. What are the roles and responsibilities of undergraduate nutritionists in the provision of nutrition service?

Probes:

- Promotion and prevention roles and responsibilities?
- Nutritional assessment roles and responsibilities?
- Interpretation of measurements of nutritional status?
- Counseling roles and responsibilities?
- Food analysis role and responsibilities?
- Food safety and quality control roles and responsibilities?
- Nutrition planning and intervention roles and responsibilities?
- Rehabilitation roles and responsibilities?
- Research roles and responsibilities?

3. What are the roles and responsibilities of undergraduate nutritionists in the implementation of the National Nutrition Program (NNP)?

4. What knowledge, skills, attitudes, values and behaviors must undergraduate nutritionists have to fulfill those roles and responsibilities?

5. What are the gaps you observe in terms of nutrition knowledge, skills and attitudes among undergraduate nutrition graduates in Ethiopia?

6. What is your suggestion to fill those gaps at the pre-service education level to improve graduates' competence?

7. Any other opinions?

Thank you!!

ANNEX 13: IN-DEPTH INTERVIEW GUIDE FOR MOTHERS/CAREGIVERS OF CHILDREN WITH SEVERE MALNUTRITION AT INPATIENT OR OUTPATIENT SITES

In-depth interview is designed to identify and define nutrition competencies for health cadres in Ethiopia.

1. General information:

Date of interview: _____

Duration of treatment: _____

2. What do you think about the service given to your child in this center by the health care providers?

Probes:

■ Things you like?

■ Things you don't like?

3. What do you expect the health care providers to do in relation to the management of the nutritional problem your child has?

4. What were the problems you encountered in the care of your child here in the center?

5. What knowledge, skills, attitude, values and behaviors must health care providers have for improved nutrition services?

6. Any other opinions?

Thank you!!

ANNEX 15: DESK REVIEW

Document review guidelines:

- What is the contribution of nutrition care as a component of a comprehensive health care?
- What is the nutrition situation of the country (Ethiopia)?
- What are the National Nutrition Strategies?
- What are the components of National Nutrition Program of Ethiopia?
- What is expected from the different cadres in line with the national nutrition communication framework?
- What are the nutrition core competencies for health cadres?
- What are the nutrition-related graduate profiles/job descriptions for each health cadre?
- What are the overall core competencies each health cadres in the provision of comprehensive health care?

Materials reviewed:

- Standard text books on human nutrition
- Published materials related to nutrition education and nutrition core competencies
- National Nutrition Strategy
- National Nutrition Program
- National Nutrition Training Needs Assessment
- Protocol for the Management of Severe Acute Malnutrition (2007)
- National Nutrition Communication Framework (2009)
- Nutrition baseline survey for the NNP (2010)
- Job description/graduate profile of medical doctors, health officers, nurses, midwives (FMOH)
- Core competencies document for medical doctors
- Core competencies document for medical, midwives and laboratory technologist in the care for HIV/AIDS
- Graduate profiles/job descriptions of undergraduate human nutrition graduates (*Hawassa University College of Agriculture, Institute of Human Nutrition, BSc in Human Nutrition*)

ANNEX 16: PROFILE OF STAKEHOLDERS/ INDIVIDUALS WHO PARTICIPATED IN THE IN-DEPTH INTERVIEWS*

S.N	NAME OF THE STAKEHOLDERS	THE	QUALIFICATION OF RESPONDENTS	NUMBER
1.	Ministry of Health		Senior nutritionist (MD, PhD)	1
2.	UNICEF		Nutrition specialist, Advisor on CMAM, NIE, and Nutrition and HIV (MD, MPH)	1
3.	Alive and Thrive		Senior nutrition advisor (PhD)	1
4.	WFP		Nutritionist (TSF team leader)	1
5.	CONCERN worldwide		Senior nutrition researcher (Health officer, MSc in social work)	1
			IYCN nutritionist (BSc Nurse/MPH)	1
6.	Save USA/ENGINE		Pediatrician, nutritionist (MD, MSc)	1
			Senior Nutrition and HIV advisor (MPH)	1
7.	EHNRI		Health officer (MPH)	1
8.	Jimma University Specialized Hospital		Consultant pediatrician and researcher in clinical nutrition	1
9.	Jimma University, Department of Pediatrics and Child Health		Pediatrician	1
10.	Jimma Health Center		Health officer	1
11.	Jimma University, Department of Pharmacy		Senior pharmacist (PhD)	1
12.	Jimma University, Department of Nursing and Midwifery		Senior midwife (MSc)	1
13.	Jimma University, Department of Nursing and Midwifery		Senior nurse (MSc)	1
14.	Harmaya University		Nutritionist (MSc)	1
15.	Food and Nutrition Society		Food Science and Nutrition researcher (MSc)	1
16.	Ethiopian Medical Association		MD, MPH (Chief Executive Officer)	1
17.	Ethiopian Nurses Association		Senior nurses at different positions in the association (Secretary, nursing issues, and membership)	3
18.	Ethiopian Midwives Association		Senior midwife/nurse (MPH)	1
19.	Ethiopian Pharmaceutical Association		Project coordinator in the association (MSc)	1
Total number of participants				23

*Additional two service users (inpatient and outpatient therapeutic programs) were interviewed in Jimma.

ANNEX 17: NUTRITION CORE COMPETENCIES IDENTIFIED THROUGH INTERVIEWS

HEALTH CADRE	NUTRITION CORE COMPETENCIES IDENTIFIED THROUGH INTERVIEWS
Medical doctors/ health officers	Assessment of nutritional status of individuals or groups
	Prevention and control of malnutrition (macronutrient and micronutrient deficiencies)
	Promote appropriate infant and young child nutrition (IYCN)
	HIV and nutrition
	Management of malnutrition (MAM and SAM)
	Prevention and dietary management (by nutritional counseling) of diet-related non-communicable diseases
	Conduct rapid assessment and manage nutritional problems in emergency
	Application of life cycle approach in addressing nutrition problems (Address nutritional problems in a life-cycle perspective)
	Nutrition Information System – maintaining records, compiling and reporting
	Nutrition program planning (nutrition intervention planning)
	Conduct nutrition-related research
	Nutrition-related capacity building (participate in nutrition training)
	Nurses
Prevention and control of micronutrient deficiencies	
Promote appropriate infant and young child nutrition (IYCN)	
HIV and nutrition (nutritional management of HIV)	
Management of malnutrition	
Prevention and dietary management of diet-related non-communicable diseases	
Nutrition information System – maintaining records, compiling and reporting	
Application of life-cycle approach in addressing nutrition problems (Address nutritional problems in a life-cycle perspective)	
Conduct nutrition-related operational research	
Nutrition-related capacity building (participate in nutrition training)	
Midwives	
	Prevention and control of micronutrient deficiencies
	Promote appropriate infant and young child nutrition (IYCN)
	HIV and nutrition (nutritional management of HIV)
	Nutrition information System – maintaining records, compiling and reporting
	Application of life-cycle approach in addressing nutrition problems (address nutritional problems in a life-cycle perspective)
	Nutrition-related capacity building (participate in nutrition training)

HEALTH CADRE	NUTRITION CORE COMPETENCIES IDENTIFIED THROUGH INTERVIEWS
Pharmacists	Regulate the quality and safety nutrition-related products
	Prevention and control of major micronutrient deficiencies
	Promotion of appropriate infant and young child nutrition (IYCN)
	Nutritional care and support for PLWHA
	Management of severe malnutrition
	Prevention and dietary management of diet-related non-communicable diseases
TVET-level nurses (diploma in nursing)	Assessment of nutritional status of individuals
	Prevention and control of major micronutrient deficiencies
	Promotion of appropriate infant and young child nutrition (IYCN)
	Clinical nutrition care for PLWHA
	Nutrition information system
TVET-level midwives (diploma midwifery) in	Assessment of nutritional status of individuals
	Prevention and control of major micronutrient deficiencies
	Promotion of appropriate infant and young child nutrition (IYCN)
	Clinical nutrition care for PLWHA
	Nutrition information system
Undergraduate nutritionists	Assessment of nutritional status of individuals or groups
	Prevention and control of major micronutrient deficiencies
	Promote appropriate infant and young child nutrition (IYCN)
	HIV and nutrition
	Prevention and dietary management of diet-related non-communicable diseases
	Nutrition information system – maintaining records, compiling and reporting
	Undertake rapid assessment and manage nutritional problems in emergency
	Nutrition program planning (nutrition intervention planning)
	Application of life-cycle approach in addressing nutrition problems (address nutritional problems in a life-cycle perspective)
	Conducting nutritional surveillance
	Conduct nutrition-related operational research
	Nutrition-related capacity building (participate in nutrition training)