

MATERNAL CHILD HEALTH

TEACHER'S GUIDE

SENIOR SIX

ASSOCIATE NURSING PROGRAM

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FOREWORD

Dear Teacher,

Rwanda Basic Education Board is honoured to present teacher's guide for associate nursing program which assists the teacher as guidance to the competence-based teaching and learning to ensure consistence in the learning of Maternal child health subject.

The Rwandan educational philosophy is to ensure that student-associate nurses achieve full potential at every level of education which will prepare them to be able to respond to the community health needs and exploit employment opportunities.

In line with efforts to improve the quality of education, the government of Rwanda emphasizes the importance of aligning teaching and learning materials with the syllabus to facilitate their learning process. Many factors influence what they learn, how well they learn and the competences they acquire. Those factors include the relevance of the specific content, the quality of teacher's pedagogical approaches, the assessment strategies and the instructional materials available.

We paid special attention to the activities that facilitate the learning process in which student-associate nurse can develop ideas and make new discoveries during concrete activities carried out individually or with peers. With the help of the teacher, student-associate nurse will gain appropriate skills and be able to apply what they have learnt in real life situations.

Hence, they will be able to develop certain values and attitudes allowing them to make a difference not only to their own life but also to the nation. This is in contrast to traditional learning theories which view learning mainly as a process of acquiring knowledge from the more knowledgeable who is mostly the teacher.

In competence-based curriculum, learning is considered as a process of active building and developing of knowledge and understanding, skills and values and attitude by the student-associate nurses where concepts are mainly introduced by an activity, situation or scenario that helps the student-associate nurses to construct knowledge, develop skills and acquire positive attitudes and values.

In addition, such active learning engages student- associate nurses in doing things and thinking about the things they are doing and they are encouraged to bring their own real experiences and knowledge into the learning processes.

In view of this, your role is to:

- Plan your lessons and prepare appropriate teaching and learning materials.
- Organize group discussions for student-associate nurse considering the importance of social constructivism suggesting that learning occurs more

effectively when the student-associate nurses works collaboratively with more knowledgeable and experienced people.

- Engage student-associate nurses through active learning methods such as inquiry methods, group discussions, research, investigative activities, group and individual work activities.
- Provide supervised opportunities for student-associate nurses to develop different competences by giving tasks which enhance critical thinking, problem solving, research, creativity innovation, communication and cooperation.
- Support and facilitate the learning process by valuing student-associate nurses' contributions in the class activities.
- Guide student-associate nurses towards the harmonization of their findings.
- Encourage individual, peer and group evaluation of the work done in the classroom and use appropriate competence-based assessment approaches and methods.

To facilitate you in your teaching activities, the content of this teacher's guide is self-explanatory so that you can easily use it. It is divided in 3 parts:

- **The part 1:** Explains the structure of this teacher's guide and gives you the methodological guidance;
- **The part 2:** Gives the sample lesson plans as reference for your lesson planning process;
- **The part 3:** Provides the teaching guidance for each concept given in the student book.

Even though this teacher's guide contains the Answers to all activities given in the Student book, you are requested to work through each question and activity before judging the student's findings. I wish to sincerely extend my appreciation to the people who contributed towards the development of this Teacher's Guide, the Ministry of Health, Human Resource for Health Secretariat (HRHS), University of Rwanda, School of Nursing and Midwifery, Higher Learning Institutions and Rwanda Basic Education Board.

Special gratitude goes to University faculty, Nurses, Midwives, Teachers, illustrators, designers. HRH Secretariat Staff and REB Staff who diligently worked to successful completion of this book.

DR. MBARUSHIMANA Nelson

Director General of Rwanda Basic Education Board

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PART I. GENERAL INTRODUCTION

1.0 About the teacher's guide

This book is a teacher's guide for Maternal and Child Health subject, for senior six in Associate Nursing program. It is designed to accompany student book and intends to help teachers in the implementation of competence-based curriculum specifically Maternal and Child Health syllabus.

As the name says, it is a guide that teachers can refer to when preparing their lessons. Teachers may prefer to adopt the guidance provided but they are also expected to be more creative and consider their specific classes' contexts and prepare accordingly.

1.1 The structure of the guide

This section presents the overall structure, the unit and sub-heading structure to help teachers to understand the different sections of this guide and what they will find in each section.

Overall structure

The whole guide has three main parts as follows:

❖ **Part I: General Introduction.**

This part provides general guidance on how to develop the generic competences, how to integrate cross cutting issues, how to cater for students with special educational needs, active methods and techniques of Maternal and Child Health and guidance on assessment.

❖ **Part II: Sample lesson plan**

This part provides a sample lesson plan, developed and designed to help the teacher develop their own lesson plans.

❖ **Part III: Unit development**

This is the core part of the guide. Each unit is developed following the structure below. The guide ends with references.

Each unit is made of the following sections:

- **Unit title:** from the syllabus
- **Key unit competence:** from the syllabus
- **Prerequisites (knowledge, skills, attitudes and values)**

This section indicates knowledge, skills and attitudes required for the success of the unit. The competence-based approach calls for connections between units/topics within a subject and interconnections between different subjects. The teacher will find an indication of those prerequisites and guidance on how to establish connections.

– **Cross-cutting issues to be addressed**

This section suggests cross cutting issues that can be addressed depending on the unit content. It provides guidance on how to come up with the integration of the issue. Note that the issue indicated is a suggestion; teacher are free to take another cross-cutting issue taking into consideration the learning environment.

– **Guidance on the introductory activity**

Each unit starts with an introductory activity in the teacher’s book. This section of the teacher’s guide provides guidance on how to conduct this activity and related answers. Note that students may not be able to find the right solution but they are invited to predict possible solutions or answers. Solutions are provided by students gradually through discovery activities organized at the beginning of lessons or during the lesson.

– **List of lessons/sub-heading**

This section presents in a table suggestion on the list of lessons, lesson objectives copied or adapted from the syllabus and duration for each lesson. Each lesson / subheading is then developed.

– **End of each unit**

At the end of each unit the teacher provides the following sections:

- Summary of the unit which provides the key points of content developed in the teacher’s book.
- Additional information which provides additional content compared to the student book for the teacher to have a deeper understanding of the topic.
- End unit assessment which provides answers to questions of the end unit assessment in the teacher’s book and suggests additional questions and related answers to assess the key unit competence.
- Additional activities: (remedial, consolidation and extended activities). The purpose of these activities is to accommodate each student (slow, average and gifted) based on the end of unit assessment results.

Structure of each sub heading

Each lesson/sub-heading is made of the following sections:

Lesson /Sub heading title 1:

- **Prerequisites/Revision/Introduction:**

This section gives a clear instruction to teacher on how to start the lesson.

- **Teaching resources**

This section suggests the teaching aids or other resources needed in line with the activities to achieve the learning objectives. Teachers are encouraged to replace the suggested teaching aids by the available ones in their respective schools and based on learning environment.

- **Learning activities**

This section provides a short description of the methodology and any important aspect to consider. It provides also answers to learning activities with cross reference to student's book.

- **Exercises/application activities**

This provides questions and answers for exercises/ application activities.

1.2 Methodological guidance

1.2.1 Developing competences

Since 2015 Rwanda shifted from a knowledge based to a competence based curriculum for pre-primary, primary and general secondary education. For TTCs, it is in 2019 that the competence based curriculum was embraced. This called for changing the way of learning by shifting from teacher centered to a learner centered approach. Teachers are not only responsible for knowledge transfer but also for fostering teacher's learning achievement, and creating safe and supportive learning environment. It implies also that a student has to demonstrate what he/she is able to do using the knowledge, skills, values and attitude acquired in a new or different or given situation.

The competence-based curriculum employs an approach of teaching and learning based on discrete skills rather than dwelling on only knowledge or the cognitive domain of learning. It focuses on what learner can do rather than what learners know. Students develop basic competences through specific subject unit competences with specific learning objectives broken down into knowledge, skills and attitudes. These competences are developed through learning activities disseminated in

learner-centered rather than the traditional didactic approach. The students are evaluated against set standards to achieve before moving on.

In addition to specific subject competences, students also develop generic competences which are transferable throughout a range of learning areas and situations in life. Below are examples of how generic competences can be developed in Maternal Child Health:

Generic competence	Examples of activities that develop generic competences
Critical thinking	<ul style="list-style-type: none"> – Describe the relationship and interdependence of sciences – Observe, record, interpret data recorded during experiments – Identify and use the applications of Maternal and Child Health concepts to solve problems of life and society
Research and Problem solving	<ul style="list-style-type: none"> – Research using internet or books from the library – Design a project for making bioplastics – Design a questionnaire for data collection during field visit
Innovation and creativity	<ul style="list-style-type: none"> – Create an experiment procedure to prove a point – Develop a graph to illustrate information – Design a data collection survey/questionnaire – Conduct experiments with objectives, methodology, observations, results, conclusions – Identify local problems and ways to resolve them
Cooperation, Personal and Interpersonal management and life skills	<ul style="list-style-type: none"> – Work in Pairs – Small group work – Large group work
Communication	<ul style="list-style-type: none"> – Organise and present in writing and verbally a complete and clear report of an experiment – Observe, record, interpret the results of a measurement accurately. – Select and use appropriate formats and presentations, such as tables, graphs and diagrams.
Lifelong learning	<ul style="list-style-type: none"> – Exploit all opportunities available to improve on knowledge and skills. Reading scientific journals to keep updated.

1.2.2. Addressing cross cutting issues

Among the changes in the competence based curriculum is the integration of cross cutting issues as an integral part of the teaching learning process-as they relate to and must be considered within all subjects to be appropriately addressed. The eight cross cutting issues identified in the national curriculum framework are: genocide studies, environment and sustainability, gender, Comprehensive Sexuality Education (CSE), Peace and Values Education, Financial Education, standardization Culture and Inclusive Education.

Some cross cutting issues may seem specific to particular learning areas or subjects but the teacher needs to address all of them whenever an opportunity arises. In addition, student should always be given an opportunity during the learning process to address these cross cutting issues both within and out of the classroom so as to progressively develop related attitudes and values.

Below are examples on how crosscutting issues can be addressed in Maternal Child Health:

Cross-cutting issues	Examples on how to integrate the cross-cutting issues
Inclusive education	Involve all students in all activities without any bias. Eg: Allow a student with physical disability (using wheelchair) to take notes or lead the team during an experiment.
Gender	Involve both girls and boys in all activities: No activity is reserved only to girls or boys. Teacher should ensure equal participation of both girls and boys during experiments as well as during cleaning and tidying up related activities after experiments.
Peace and Values Education	During group activities, debates and presentations, the teacher will encourage students to help each other and to respect opinions of colleagues.
Standardization culture	<ul style="list-style-type: none">– Some lessons involve carrying out experiments. Instruction should be clear for students to always check if they are not using expired chemicals or defective apparatus.– In addition, when performing experiments students have to record data accurately.– For tasks involving calculations, they have to always present accurate results.

Environment and sustainability	<ul style="list-style-type: none"> - In order to avoid the environment pollution, before, during or after experiments students avoid throwing away chemicals anywhere; special places or appropriate containers should be used. - Students also have to be aware of the impacts of the use of hydrocarbons as fuels, halogenoalkanes, and plastics on the environment.
Financial Education	<p>When performing experiments, students are encouraged to avoid wasting chemicals by using the quantities that are just required. They are required to also avoid spoiling equipment and other materials...</p>

1.2.3 Attention to special educational needs specific to each subject

In the classroom, students learn in different way depending to their learning pace, needs or any other special problem they might have. However, the teacher has the responsibility to know how to adopt his/her methodologies and approaches in order to meet the learning needs of each student in the classroom. Also teacher must understand that students with special needs need to be taught differently or need some accommodations to enhance the learning environment. This will be done depending on the subject and the nature of the lesson.

In order to create a well-rounded learning atmosphere, teacher needs to:

- Remember that students learn in different ways so they have to offer a variety of activities (e.g. role-play, music and singing, word games and quizzes, and outdoor activities).
- Maintain an organized classroom and limits distraction. This will help students with special needs to stay on track during lesson and follow instruction easily.
- Vary the pace of teaching to meet the needs of each student-teacher. Some students process information and learn more slowly than others.
- Break down instructions into smaller, manageable tasks. Students with special needs often have difficulty understanding long-winded or several instructions at once. It is better to use simple, concrete sentences in order to facilitate them understand what you are asking.
- Use clear consistent language to explain the meaning (and demonstrate or show pictures) if you introduce new words or concepts.
- Make full use of facial expressions, gestures and body language.
- Pair a student who has a disability with a friend. Let them do things together and learn from each other. Make sure the friend is not over protective and does not do everything for the student-teacher. Both students will benefit from this strategy

- Use multi-sensory strategies. As all students learn in different ways, it is important to make every lesson as multi-sensory as possible. Students with learning disabilities might have difficulty in one area, while they might excel in another. For example, use both visual and auditory cues.

Below are general strategies related to each main category of disabilities and how to deal with every situation that may arise in the classroom. However, the list is not exhaustive because each student is unique with different needs and that should be handled differently.

Strategy to help students with developmental impairment:

- Use simple words and sentences when giving instructions.
- Use real objects that the student can feel and handle, rather than just working abstractly with pen and paper.
- Break a task down into small steps or learning objectives. The student should start with an activity that s/he can do already before moving on to something that is more difficult.
- Gradually give the student less help.
- Let the student work in the same group with those without disability.

Strategy to help students with visual impairment:

- Help students to use their other senses (hearing, touch, smell and taste) to play and carry out activities that will promote their learning and development.
- Use simple, clear and consistent language.
- Use tactile objects to help explain a concept.
- If the students have some sight, ask them what they can see. Get information from parents/caregivers on how the student manages their remaining sight at home.
- Make sure the student has a group of friends who are helpful and who allow the students to be as independent as possible.
- Plan activities so that students work in pairs or groups whenever possible.

Strategy to help students with hearing impairment:

- Strategies to help students with hearing disabilities or communication difficulties
- Always get the students attention before you begin to speak.
- Encourage the student to look at your face.
- Use gestures, body language and facial expressions.
- Use pictures and objects as much as possible.

- Ask the parents/caregivers to show you the signs they use at home for communication use the same signs yourself and encourage other students to also use them.
- Keep background noise to a minimum.

Strategies to help children with physical disabilities or mobility difficulties:

- Adapt activities so that student who use wheelchairs or other mobility aids, or other students who have difficulty moving, can participate.
- Ask parents/caregivers to assist with adapting furniture e.g. The height of a table may need to be changed to make it easier for a student to reach it or fit their legs or wheelchair under.
- Encourage peer support friends can help friends.
- Get advice from parents or a health professional about assistive devices.

1.2.4 Guidance on assessment

Each unit in the teacher's guide provides additional activities to help students achieve the key unit competence. Results from assessment inform the teacher which student needs remedial, consolidation or extension activities. These activities are designed to cater for the needs of all categories of learners; slow, average and gifted learners respectively.

Assessment is an integral part of teaching and learning process. The main purpose of assessment is for improvement. Assessment for learning/ Continuous/ formative assessment intends to improve student-teachers' learning and teacher's teaching whereas assessment of learning/summative assessment intends to improve the entire school's performance and education system in general.

Continuous/ formative assessment

It is an ongoing process that arises out of interaction during teaching and learning process. It includes lesson evaluation and end of sub unit assessment. This formative assessment plays a big role in teaching and learning process. The teacher should encourage individual, peer and group evaluation of the work done in the classroom and uses appropriate competence-based assessment approaches and methods.

In Year two textbook, formative assessment principle is applied through application activities that are planned in each lesson to ensure that lesson objectives are achieved before moving on. At the end of each unit, the end unit assessment is formative when it is done to give information on the progress of students and from there decide what adjustments need to be done. Assessment standards are taken into consideration when setting tasks.

Summative assessment

The assessment done at the end of the term, end of year, is considered as summative. The teacher, school and parents are informed on the achievement of educational objectives and think of improvement strategies. There is also end of level/ cycle assessment in form of national examinations.

1.2.5. Student teachers' learning styles and strategies to conduct teaching and learning process

There are different teaching styles and techniques that should be catered for. The selection of teaching method should be done with the greatest care and some of the factors to be considered are: the uniqueness of subjects, the type of lessons, the particular learning objectives to be achieved, the allocated time to achieve the objective, instructional available materials, the physical/sitting arrangement of the classroom, individual student teachers' needs, abilities and learning styles.

There are mainly four different learning styles as explained below:

a) Active and reflective learners

Active learners tend to retain and understand information best by doing something active with it, discussing or applying it or explaining it to others. Reflective learners prefer to think about it quietly first.

b) Sensing and intuitive learners

Sensing learners tend to like learning facts while intuitive learners often prefer discovering possibilities and relationships. Sensors often like solving problems by well-established methods and dislike complications and surprises; intuitive learners like innovation and dislike repetition.

c) Visual and verbal learners

Visual learners remember best what they see (pictures, diagrams, flow charts, time lines, films, demonstrations, etc.); verbal learners get more out of words (written and spoken explanations).

d) Sequential and global learners

Sequential learners tend to gain understanding in linear steps, with each step following logically from the previous one. Global learners tend to learn in large jumps, absorbing material almost randomly without seeing connections, and then suddenly "getting it."

1.2.6. Teaching methods and techniques that promote the active learning

The different student learning styles mentioned above can be catered for, if the teacher uses active learning whereby students are really engaged in the learning process.

What is Active learning?

Active learning is a pedagogical approach that engages students in doing things and thinking about the things they are doing. In active learning, learners are encouraged to bring their own experience and knowledge into the learning process.

The role of the teacher in active learning

- The teacher engages students through active learning methods such as inquiry methods, group discussions, research, investigative activities and group and individual work activities.
- He/she encourages individual, peer and group evaluation of the work done in the classroom and uses appropriate competence-based assessment approaches and methods.
- He provides supervised opportunities for students to develop different competences by giving tasks which enhance critical thinking, problem solving, research, creativity and innovation, communication and cooperation.
- Teacher supports and facilitates the learning process by valuing student-teachers' contributions in the class activities.

The role of learners in active learning

Learners are key in the active learning process. They are not empty vessels to fill but people with ideas, capacity and skills to build on for effective learning. A learner engaged in active learning:

- Communicates and shares relevant information with other learners through presentations, discussions, group work and other learner-centred activities (role play, case studies, project work, research and investigation)
- Actively participates and takes responsibility for their own learning
- Develops knowledge and skills in active ways
- Carries out research/investigation by consulting print/online documents and resourceful people, and presents their findings
- Ensures the effective contribution of each group member in assigned tasks through clear explanation and arguments, critical thinking, responsibility and confidence in public speaking
- Draws conclusions based on the findings from the learning activities.

Some active techniques that can be used in Maternal Child Health

The teaching methods strongly emphasised in the competence Based Curriculum (CBC) are active methods. Below are some active techniques that apply in sciences:

a) Practical work/ experiments:

Many of the activities suggested in Maternal and Child Health curriculum as well as in the teacher's book are practical works or experiments.

Practical work is vital in learning Maternal Child Health; this method gives the student the opportunity to implement a series of activities and leads to the development of both cognitive and hands-on skills. The experiments and questions given should target the development of the following skills in student-teachers: observation, recording and report writing, manipulation, measuring, planning and designing.

A practical lesson/Experiment is done in three main stages:

- **Preparation of procedure:** Checking materials to ensure they are available and at good state; try the procedure before the lesson; think of safety rules and give instructions to lab technician if you have any.
- **Performance of procedure:** Sitting or standing arrangement of student-teachers; introduction of the procedure: aims and objectives; setting up the apparatus; performing the procedure; write and record the data.
- **Discussion:** Observations and interpreting data; make generalisations and assignment: writing out the procedure report and further practice and research.

In some cases, demonstration by the teacher is recommended when for example the experiment requires the use of sophisticated materials or very expensive materials or when safety is a major factor like dangerous experiments and it needs specific skills to be learnt first.

In case your school does not have enough laboratory materials and chemicals, experiments can be done in groups but make sure every student participates. You can also make arrangements with the neighbouring science school and take your students there for a number of experiments.

b) Research work

Each student or group of students is given a research topic. They have to gather information from internet, available books in the library or ask experienced people and then the results are presented in verbal or written form and discussed in class.

c) Project work

Maternal and Child Health teachers are encouraged to sample and prepare project works and engage their students in, as many as possible. Students in groups or

individually, are engaged in a self-directed work for an extended period of time to investigate and respond to a complex question, problem, or challenge. The work can be presented to classmates or other people beyond the school. Projects are based on real-world problems that capture learners' interest. This technique develops higher order thinking as the students acquire and apply new knowledge in a problem-solving context.

d) Field trip/industrial attachment

One of the main aims of teaching Maternal and Child Health in Rwanda is to apply its knowledge for development. To achieve this aim we need to show to students the relationship between classroom science lessons and clinical practice. This helps them see the link between theory and practice.

To be successful, the field visit/clinical placement should be well prepared and well exploited after the visit:

Before the visit, the teacher and student:

- agree on aims and objectives
- gather relevant information prior to visit
- brainstorm on key questions and share responsibilities
- discuss materials needed and other logistical and administrative issues
- discuss and agree on accepted behaviours during the visit
- Visit the area before the trip if possible to familiarise yourself with the place

After the visit

When students come back from trip, the teacher should plan for follow-up. The follow-up should allow students to share experiences and relate them to the prior science knowledge. This can be done in several ways; either: Students write a report individually or in groups and give to the teacher for marking. The teacher then arranges for discussion to explain possible misconceptions and fill gaps. Or students write reports in groups and display them on the class notice board for everyone to read.

Main steps for a lesson in active learning approach

All the principles and characteristics of the active learning process highlighted above are reflected in steps of a lesson as displayed below. Generally, the lesson is divided into three main parts whereby each one is divided into smaller steps to make sure that students are involved in the learning process. Below are those main parts and their small steps:

1) Introduction

Introduction is a part where the teacher makes connection between the current and previous lesson through appropriate technique. The teacher opens short discussions to encourage students to think about the previous learning experience and connect it with the current instructional objective. The teacher reviews the prior knowledge, skills and attitudes which have a link with the new concepts to create good foundation and logical sequencings.

2) Development of the new lesson

The development of a lesson that introduces a new concept will go through the following small steps: discovery activities, presentation of student-teachers' findings, exploitation, synthesis/summary and exercises/application activities, explained below:

❖ Discovery activity

Step 1

- The teacher discusses convincingly with students to take responsibility of their learning
- He/she distributes the task/activity and gives instructions related to the tasks (working in groups, pairs, or individual to instigate collaborative learning, to discover knowledge to be learned)

Step 2

- The teacher let the students work collaboratively on the task.
- During this period the teacher refrains to intervene directly on the knowledge
- He/she then monitors how the students are progressing towards the knowledge to be learned and boost those who are still behind (but without communicating to them the knowledge).

❖ Presentation of student-teachers' productions

- In this episode, the teacher invites representatives of groups to present the student-teachers' productions/findings.
- After three/four or an acceptable number of presentations, the teacher decides to engage the class into exploitation of the student-teachers' productions.

❖ Exploitation of student-teachers's productions

- The teacher asks the students to evaluate the productions: which ones are correct, incomplete or false

- Then the teacher judges the logic of the student-teachers' products, corrects those which are false, completes those which are incomplete, and confirms those which correct.

❖ **Institutionalization (summary/conclusion/ and examples)**

- The teacher summarises the learned knowledge and gives examples which illustrate the learned content.

❖ **Exercises/Application activities**

- Exercises of applying processes and products/objects related to learned unit/sub-unit
- Exercises in real life contexts
- Teacher guides students to make the connection of what they learnt to real life situations. At this level, the role of teacher is to monitor the fixation of process and product/object being learned.

3) Assessment

In this step the teacher asks some questions to assess achievement of instructional objective. During assessment activity, students work individually on the task/activity. The teacher avoids intervening directly. In fact, results from this assessment inform the teacher on next steps for the whole class and individuals. In some cases, the teacher can end with a homework assignment.

PART II: SAMPLE LESSON PLAN

Subject: Calendar method of natural family planning

School Name:

Teacher's name:

Term	Date	Subject	Class	Unit N°	Lesson N°	Duration	Class size
1	Not determined	Maternal and Child Health	S6	1	4 of 11	40min	30 students
Type of Special Educational Needs to be catered for in this lesson and number of learners in each category				Two students with moderate visual impairments (short sightedness) The teacher has to take care of their sitting position to ensure that they are capable of seeing any demonstrations and/or writing that will be performed in the classroom.			
Unit title	Natural Family Planning						
Key Unit Competence	Provide natural family planning services						
Title of the lesson	Calendar method of natural family planning						
Instructional Objective	<ul style="list-style-type: none"> • Explain the mode of action of calendar method of natural family planning. • Describe indications and contraindications of calendar method of natural family planning. • Explain the effects of calendar method of natural family planning to individuals and couples. • Explain indications and contraindications of calendar method of natural family planning to individuals and couples. • Provide calendar method of natural family to individuals and couples effectively. • Use appropriate language while providing calendar method of natural family planning to individuals and couples. • Respect rights, privacy and confidentiality of individuals and couples when providing calendar method of natural family. 						
Plan for this Class (location: in / outside)	Inside the class						

Learning Materials (for all learners)	Video, Calendars, illustrations, books about family planning methods, internet resources
References	WHO, U., & Hopkins, J. (2018). Family Planning: Global Handbook for Providers. World Health Organization, USAID and Johns Hopkins University. http://www.unfpa.org/public/publications/pid/397 . Kloser, N. jayn., & Hatfield, N. T. (2010). Introductory Maternity and Pediatric Nursing. China. Edition 2

Timing for each step	Description of teaching and learning activity		Generic competences and Cross cutting issues to be addressed + a short explanation
	Teacher activities	Learner activities	
Introduction 5min	<ul style="list-style-type: none"> Through questioning techniques, asks whether students have experienced on using the calendar method. Let learners think individually, share their points of view two by two and therefore involve other students. Ask students to identify indications and contraindications. 	<p>Student link individually about the use of calendar thereafter they share their ideas in the class.</p> <p>Volunteers describe the use of calendar method.</p>	<p>Critical thinking as Learners think about the use of calendar method.</p> <p>Communication skill as volunteers describe the use of calendar method and convince the remaining of the class.</p>
Development of the lesson 25 minutes Discovering Activity	<p>Follow up the students on how they answer questions that have been asked.</p> <p>Through inquiry technique, help students to identify the use of calendar method.</p>	<p>Follow up the students and orient them, in order to elaborate more on how calendar method is used appropriately.</p>	

		Give complements on ideas to brainstorm the indications and contraindications of calendar method of family planning.	Learners reflect on the role of family planning methods as a way of ensuring sustainable development and well being of individuals, families and the country as a whole.
b) Exploitation	Through problem solving approach, asks learners to explain how to use calendar method.	By using logical reasoning, the students will explain how calendar method is used to prevent unwanted pregnancy.	Practical skills are enhanced as students use calendar method to prevent unwanted pregnancy.
Synthesis	The teacher summarizes the lesson of calendar method to students for better understanding.	Ask some students to summarize what they have learned in the lesson taught.	Critical thinking and logical reasoning is developed by learners.
Conclusion and Assessment 10 min	<p>The teacher asks some students to summarise the calendar method as a lesson.</p> <p>The teacher will ask some questions to students to clarify the lesson, some questions are:</p> <p>What are indications of using calendar method?</p> <p>What are contra indications of using calendar method?</p>	The students will answer the questions that has been asked by the teacher in relation to calendar method.	Appreciation of individuals' and couples' choices and preferences regarding the use of natural family planning.
Teacher self-evaluation	The lesson was well conducted since every student was involved and was capable to achieve the key competence set for this lesson and all learning objectives have been achieved.		

PART III. UNIT DEVELOPMENT

1.1. Key Unit Competence

Provide natural family planning services.

1.2. Prerequisite

This unit requires that students get equipped with a range of knowledge, attitudes, and competences required to provide natural family planning to individuals and couples. The teacher should make sure that at the end of the unit, students are capable to facilitate health education sessions covering different methods of natural family planning, offer counselling to individuals and couples, appreciate individuals' and couples' choices of and preferences for different natural family planning methods.

For this unit to be taught successfully, students must have prior knowledge of the Human Anatomy and Physiology, and Pharmacology. Students must also have studied reproductive system, and fertilisation process. The students should also have knowledge of elementary mathematics. During the teaching-learning process, the teacher needs to link the content on natural family planning to the above mentioned subjects.

As for attitudes and skills, students must have studied about counselling and communication techniques applied to nursing care provision, and must have studied nursing ethics and professional code conduct.

1.3. Cross-cutting issues to be addressed

The teacher needs to ensure that when engaging students into activities set in this unit include the acknowledgement of diversity, inclusion, and gender. As for inclusive education, the teacher has to make sure that students with special learning needs are grouped with others and are assigned roles basing on their abilities. The teacher has to make sure that students special needs have all necessary teaching-learning materials required for them to get knowledge, skills, and attitudes needed for the provision of natural family planning. In addition to this, the teacher needs to cultivate positive attitudes about sexual and reproductive health practices and issues pertaining to the Rwandan context and culture. The teacher has to ensure that students are competent and fluent in languages spoken in Rwanda.

1.4. Guidance on the Introductory Activity 1

Using pictures of two families illustrated in the Student Textbook, the teacher tests the students' analytical capacity regarding what Family B needs to do, so that they can achieve the milestones of Family A in terms of family wellbeing.

The teacher groups students in pairs and requests them to open the Student' Textbook, page 1 to 5 to attempt answering the questions. The teacher moves around the class to support students who may need clarifications on the questions. After students' discussion, the teacher calls each group to present their work. Each pair of students presents their work. After presentation, the teacher summarises shared ideas and encourage students to ask questions regarding the points they have discussed. The ideas shared in the class will serve as the introduction of the lesson about natural family planning.

Tentative answers for the Introductory Activity 1

- a) The teacher should expect that students will provide many answers regarding what Family B needs to do in order to achieve Family wellbeing. I can advise the family to use one of the long-term family planning methods.
- b) The teacher would expect students to know at least one of the methods that can be used in family planning plan such as coitus interruptus, calendar, basal body temperature, cycle beads, cervical mucus, oral contraceptive pills, injectables, implants and Intra uterine device.
- c) The teacher would expect students to answer that natural family planning methods can be easily used without visiting the health facilities. Students will be able to provide examples of natural family planning methods such as calendar method, lactational amenorrhea method, basal body temperature,....

1.5. Teaching learning resources

Illustrations, banners, copies of the Student Textbooks, YouTube videos, pictures displaying natural family planning methods, different books about family planning, markers, laptops ,projector, internet, whiteboard, blackboard, flipchart.

1.6. List of lessons of Unit One

Nº	Lesson title	Learning objectives	Number of periods
1	Introduction to family planning	At the end of this lesson, students should be able to define key concepts of family planning.	2
2	Principles of family planning	At the end of this lesson, students will be able to describe principles of family planning.	2
3	Fertility awareness and calendar methods	<ul style="list-style-type: none"> • Explain the mode of action of calendar method of natural family planning. • Describe indications and contraindications of calendar method of natural family planning. • Explain the effects of calendar method of natural family planning to individuals and couples. • Explain indications and contraindications of calendar method of natural family planning to individuals and couples. • Provide calendar method of natural family to individuals and couples effectively. • Use appropriate language while providing calendar method of natural family planning to individuals and couples. • Respect rights, privacy and confidentiality of individuals and couples when providing calendar method of natural family to them. 	2
4	Basal Body Temperature	<ul style="list-style-type: none"> • Explain the mode of action of Basal Body Temperature method of natural family planning. • Describe indications and contraindications of Basal Body Temperature method of natural family planning. • Explain the effects of Basal Body Temperature method of natural family planning. 	2

		<ul style="list-style-type: none"> • Explain indications and contraindications of Basal Body Temperature of natural family planning to individuals and couples. • Provide Basal Body Temperature method of natural family to individuals and couples effectively. • Use appropriate language while providing Basal Body Temperature method of natural family planning to individuals and couples. • Respect rights, privacy and confidentiality of individuals and couples when providing Basal Body Temperature method of natural family to them. 	
5	Cervical Mucus Method	<ul style="list-style-type: none"> • Explain the mode of action of Cervical Mucus Method of natural family planning. • Describe indications and contraindications of Cervical Mucus Method method of natural family planning. • Explain the effects of Cervical Mucus method of natural family planning. • Explain indications and contraindications of Cervical Mucus Method of natural family planning to individuals and couples. • Provide Cervical Mucus method of natural family to individuals and couples effectively. • Use appropriate language while providing Cervical Mucus method of natural family planning to individuals and couples. • Respect rights, privacy and confidentiality of individuals and couples when providing Cervical Mucus method of natural family to them. 	2
6	Standards Days Method	<ul style="list-style-type: none"> • Explain the mode of action of Standards Days Method of natural family planning. • Describe indications and contraindications of Standards Days Method of natural family planning. • Explain the effects of Standard Days method of natural family planning. 	2

		<ul style="list-style-type: none"> • Explain indications and contraindications of Standard Days Method of natural family planning to individuals and couples. • Provide Standard Days Method of natural family to individuals and couples effectively. • Use appropriate language while providing Standard Days Method of natural family planning to individuals and couples. • Respect rights, privacy and confidentiality of individuals and couples when providing Standard Days Method of natural family to them. 	
7	Lactational Amenorrhoea Method	<ul style="list-style-type: none"> • Explain the mode of action of Lactational Amenorrhoea Method of natural family planning. • Describe indications and contraindications of Lactational Amenorrhoea Method of natural family planning. • Explain the effects of Lactational Amenorrhoea Method of natural family planning. • Explain indications and contraindications of Lactational Amenorrhoea Method of natural family planning to individuals and couples. • Provide Lactational Amenorrhoea Method of natural family to individuals and couples effectively. • Use appropriate language while providing Lactational Amenorrhoea Method of natural family planning to individuals and couples. • Respect rights, privacy and confidentiality of individuals and couples when providing Lactational Amenorrhoea Method of natural family to them. 	2
8	Withdrawal Method or Coitus Interruptus	<ul style="list-style-type: none"> • Explain the mode of action of withdrawal method of natural family planning. • Describe indications and contraindications of withdrawal method of natural family planning. 	2

		<ul style="list-style-type: none"> • Explain the effects of withdrawal method of natural family planning. • Explain indications and contraindications of withdrawal method of natural family planning to individuals and couples. • Provide withdrawal method of natural family to individuals and couples effectively. • Use appropriate language while providing withdrawal method of natural family planning to individuals and couples. • Respect rights, privacy and confidentiality of individuals and couples when providing withdrawal method of natural family planning to them. 	
9	Summary of the module	<p>At the end of this lesson, students should be able to:</p> <ul style="list-style-type: none"> • Explain the effects of natural family planning. • Explain the advantages and disadvantages of natural family planning. • Acknowledge the effects and disadvantages of natural family planning methods while providing services to clients. • Use appropriate language while counseling individuals and couples about the advantages, disadvantages, and effects of natural family planning. 	2
10	Practical session of providing health education about natural family planning in the community	<ul style="list-style-type: none"> • Explain the effects of natural family planning. • Explain the advantages and disadvantages of natural family planning. • Acknowledge the effects and disadvantages of natural family planning methods while providing services to clients. • Use appropriate language while counseling individuals and couples about the advantages, disadvantages, and effects of natural family planning. 	4

11	End unit assessment unit one	To evaluate the knowledge, skills, attitudes and values regarding unit one content.	2
12	Remedial activities	To evaluate the knowledge, skills, attitudes and values regarding unit one content.	2

Lesson 1: Introduction to family planning

a) Learning objective

To define key concepts of family planning.

b) Teaching resources

Student Textbook, illustrations, flipcharts, and internet

c) Prerequisites/revision/introduction

The teacher asks students to think about and attempt explaining what family planning means to them and how family planning can be achieved in order to test students' knowledge on these prerequisites. Students should have prior knowledge of anatomy and physiology of the reproductive system.

d) Learning activity 1.1

The teacher uses interactive teaching approach asks students to group themselves in pairs. The teacher provides Student Books to help students do Activity 1.1. The teacher checks with each pair to stimulate students who may be passive to answer questions. After their discussion, the teacher gives students the opportunity to present their answers. The teacher takes notes of each group presentation. Based on students' findings, the teacher compiles the content of the lesson and concludes it.

Answers to learning activity 1.1

a.

Family planning refers to individual's or couple's' conscious and informed decision to decide *when to become or not to become pregnant* throughout the reproductive years.

Contraception is defined to the intentional use of artificial methods and/ or other techniques to prevent pregnancy as a result of doing sexual intercourse.

- b. Family planning is important because it enables women and couples to avoid unwanted pregnancies, attain the desired number of births, and control the intervals between births.

e) Self-Assessment 1.1

Ask students to work individuals to answer questions of application activity 1.1 in the classroom.

Answers to Self-Assessment 1.1

- i. a. Family planning refers to individual's or couple's' conscious and informed decision to decide when to become or not to become pregnant throughout the reproductive years.
- b. Contraception is defined to the intentional use of artificial methods and/or other techniques to prevent pregnancy as a result of doing sexual intercourse.
- ii. Family planning is advantageous to women in their reproductive age because of the following reasons:
- It may prevent pregnancies among older women who can be at increased risk of pregnancy related complications.
 - It enables girls to achieve their educational goals,
 - It fosters women's empowerment within the community.
- iii. The benefits of family planning for young adolescents include those mentioned in answer b above. Family planning also enables young adolescents to reduce teen pregnancies.

Homework

The teacher gives students a homework to read about principles of family planning. The teacher guides students to make groups of five students each.

Lesson 2: Principles of Family Planning

a) Learning objective

To describe principles of family planning.

b) Teaching resources

Books about family planning, whiteboard, blackboard, chalks, duster, flipchart, pictures.

c) Prerequisites/revision/Introduction

Begin this lesson asking students to brainstorm what they have read about principles of family planning. Use students' ideas and then proceed with the learning activity provided in the Student Textbook. Students should have prior knowledge of family planning definition.

d) Learning Activity 1.2

The teacher guides students in making groups. The teacher should ensure that group composition is diverse and that every student from different groups gets the opportunity to give his/her opinion about the principles of family planning. Make sure all groups have books about family planning methods. After students have discussed the topic in their groups, the teacher moderates the group presentations. If a point has been covered by the previous groups, the teacher requests the next groups to only present what other groups have not covered. At the end of all presentations, the teacher gives a summarised content.

Answers to Learning Activity 1.2

The principles of family planning that can be considered in providing quality services to the clients are: accessibility, autonomy, availability, acceptability, quality, equity and non-discrimination, empowerment and informed consent.

e) Self-Assessment 1.2

Questions in this activity will be asked to students as the lesson wrap-up. The teacher asks students to group in pairs. The teacher guides students to debate on the case given to them. The teacher moderates group presentations. The teacher has to encourage students to elaborate more on mentioned principles through linking them to the case given to them.

Answers to Self-Assessment 1.2

- i) Based on the principles of family planning, Mother X can be helped to choose a contraceptive suitable for her by respecting the principles of family planning such as equity and non-discrimination, autonomy, quality, acceptability and informed consent.

Lesson 3: Fertility awareness and calendar methods

a) Learning objective

- Explain the mode of action of fertility awareness and calendar methods.
- Explain the effects of fertility awareness and calendar methods.
- Provide fertility awareness and calendar methods effectively.
- Explain indications and contraindications of fertility awareness and calendar methods to individuals and couples.
- Use appropriate language while providing health education to individuals and couples about fertility awareness and calendar methods
- Respect rights, privacy, and confidentiality when providing health education to individuals and couples about fertility awareness and calendar methods.

b) Teaching resources

Videos from internet, projector, laptops, flipchart, whiteboard, blackboard, markers, pieces of chalk and duster.

c) Prerequisites/Revision/Introduction

Introduce the lesson by showing a video about different natural family planning methods to students (see YouTube video: How one can use natural family planning to prevent pregnancy).

d) Learning activity 1.3.1

The teacher asks each individual student to report what they have heard from the video. Encourage all students to participate in answering questions related to the video. The teacher compiles students' answers and harmonises them into the content for the lesson.

Answers to learning activity 1.3.1

1. Fertility awareness methods (FAM) also known as the rhythm method, encompass all methods that are used based on the fertile and infertile phases of a woman's menstrual cycle.
2. Calendar and basal body temperature method.

a) Self-Assessment 1.3.1

- i. A woman keeps track of the length of her menstrual cycles for at least 6 months. Then she calculates her fertile window by subtracting 18 days from her shortest cycle and 11 days from her longest cycle. For a woman whose shortest cycle is 24 days and longest cycle is 28 days.

- ii. The woman's fertile window would be days from 6th to 17th day of her menstrual cycle.
- iii. During these days, the woman and her male partner should abstain from sexual intercourse or else use a condom to avoid pregnancy in this period.

a) Practical session



IMPORTANT

To enhance students' practical skills, the teacher has to engage students in creating a case scenario involving them in providing health education talks about calendar method to individuals and couples. The teacher guides students in making five groups of six students each. The teacher asks students to draft a case scenario to act about calendar method. In their respective groups, students start drafting their case scenario. The teacher guides each group to present their scenario. Ask students from other groups to provide feedback before the teacher's.

Lesson 4: Basal Body Temperature

a) Learning objectives

- Explain the mode of action of Basal Body Temperature method of natural family planning.
- Describe indications and contraindications of Basal Body Temperature method of natural family planning.
- Explain the effects of Basal Body Temperature method of natural family planning.
- Explain indications and contraindications of Basal Body Temperature of natural family planning to individuals and couples.
- Provide health education to individuals and couples about Basal Body Temperature method of natural family planning effectively.
- Use appropriate language while providing health education to individuals and couples about Basal Body Temperature method of natural family planning.
- Respect rights, privacy and confidentiality of individuals and couples when providing Basal Body Temperature method of natural family to them.

b) Teaching resources

Books about family planning, thermometers, illustrations

c) Prerequisites/Revision/Introduction

Students will learn better basal body temperature if they understand better the physiological changes occurring during menstruation.

d) Learning activity 1.3.2

The teacher asks students to sit in pairs. He further requests them to keep away their students' textbooks. In ten minutes, students discuss about the questions given to them. The teacher facilitates students' presentation. The teacher encourages students from other groups that are not presenting to ask questions. After the presentation, the teacher summarises students' discussion and further clarify on some issues from the students' presentation.

Answers to Learning Activity 1.3.2

- i) The term '**basal body temperature**' refers to the lowest normal temperature of a person, measured immediately after waking up and earlier after getting out of the bed. The basal body temperature depends on the woman's recognising the shift in her body temperature around the time of ovulation.
- ii) Factors that can affect basal body temperature include fever caused by infections, stress, shift work, interrupted sleep cycles or oversleeping, alcohol, travel and time zone differences, and gynaecologic disorders.

e) Self-Assessment 1.3.2

This activity will be given as a homework to be marked.

Answers to Self-Assessment 1.3.2

- i. The basal body temperature normally ranges from 36.2°C to 36.2°C during menses, and for about 5 to 7 days after. At about the time of ovulation, a slight drop in temperature may occur, followed by a slight rise (approximately 0.4°C – 0.4°C) after ovulation, in response to increasing progesterone levels. This temperature elevation may last between 2 and 4 days before menstruation.
- ii. The basal body temperature likely rises (approximately 0.4°C – 0.4°C) during ovulation. This temperature elevation may last between 2 and 4 days before menstruation because the response to increasing progesterone levels.
- iii. The couple using basal body temperature should avoid unprotected sexual intercourse at slight rise temperature (approximately 0.4°C – 0.4°C).

Lesson 5: Cervical Mucus Method

a) Learning objectives

- Explain the mode of action of Cervical Mucus Method of natural family planning.
- Describe indications and contraindications of Cervical Mucus method of natural family planning.
- Explain indications and contraindications of Cervical Mucus Method of natural family planning to individuals and couples.
- Provide health education to individuals and couples about Cervical Mucus method of natural family planning effectively.
- Use appropriate language while providing Cervical Mucus method of natural family planning to individuals and couples.
- Respect rights, privacy and confidentiality of individuals and couples when providing Cervical Mucus method of natural family to them.

b) Teaching resources

Illustrations, pictures, textbooks, laptop, internet, thermometer, whiteboard, markers, blackboards, pieces of chalk and duster.

c) Prerequisites/Revision/Introduction

Students will learn better the lesson about cervical mucus method if they have learnt physiological changes during ovulation in the biology lesson and fertility awareness. Therefore, the teacher has to ask students what they know about ovulation and what changes can be found during that period.

d) Learning activity 1.3.3

The teacher shows student a picture displaying how the mucus changes throughout the woman's menstrual cycle. The teacher asks students to report what they have observed about it. The teacher proceeds by asking students to answer the introductory questions found in the students' textbook individually.

Answer to Learning Activity 1.3.3

The cervical mucus test can help the woman to predict the time of her ovulation. The cervical mucus method refers to the recognition and interpretation of changes in the amount and consistency of cervical mucus through the menstrual cycle. Before ovulation, cervical mucus is thick and does not stretch easily. During the fertility days, the cervical mucus becomes more abundant and thinner with an elastic quality. After ovulation, cervical mucus becomes thick or may disappear completely.

e) Self-Assessment 1.3.3

This activity will be given to students as a five minutes quiz.

Answers to Self-Assessment 1.3.3

- i. Cervical mucus method is contraindicated to all women who feel uncomfortable touching their genitals. Moreover, this method is not allowed to all women with vaginal infections, sexual transmitted infections, and hormonal imbalances should also not use cervical mucus method.
- ii. A woman should be cautious while tracking her fertile period using cervical mucus method. She should be aware that when the cervical mucus becomes more abundant and thinner with an elastic quality, she may likely become pregnant if she does unprotected sex.

Lesson 6: Standards Days Method

a) Learning objectives

- Explain the mode of action of Standards Days Method of natural family planning.
- Describe indications and contraindications of Standards Days Method of natural family planning.
- Explain indications and contraindications of Standard Days Method of natural family planning to individuals and couples.
- Provide health education to individuals and couples about Standard Days Method of natural family planning effectively.
- Use appropriate language while providing Standard Days Method of natural family planning to individuals and couples.
- Respect the rights, privacy and confidentiality of individuals and couples when providing Standard Days Method of natural family.

b) Teaching resources

Cycle beads, Student Textbooks, flipcharts, markers, projector, laptops, pictures, whiteboard, blackboard.

c) Prerequisites/Revision/Introduction

For this lesson to be taught effectively, students must have studied calendar method if natural family planning. The teacher needs to remind students about the woman's menstrual cycle and the woman can track its patterns using calendar or cycle beads.

d) Learning activity 1.3.4

The teacher demonstrates the cycle bead to students and briefly asks them to say something about it.

The teacher organizes students in pairs, distributes samples of cycle beads to the students. The teacher asks students to answer questions about the activity found in the Student Textbook. The teacher facilitates students' presentations. Encourage students not presenting to add on what the preceding groups have presented. The teacher summarises students' answers and can students further probing questions.

Answers to Learning Activity 1.3.4

- i) The days which will be safe for Mrs. Lina to do sexual intercourses with her partner is from 31st July to 6th August, from 19th August to 4 September.
- ii) Mrs. Lina cannot do unprotected sexual intercourses with her partner from 7th August (day 8) to 18th August (day 19).



IMPORTANT

The teacher has to also remind students about the use of Standard Days Method after abortion or miscarriage.

e) Self-Assessment 1.3.4

This activity will be given to students as an end lesson quiz.

Answers to Self-Assessment 1.3.4

- i) I can advise Mrs. Dana to explore the use of Standard Days Method on the date of 22nd June (day 8) day to 3rd July (Day 19).
- ii) Mrs. Dana needs to first check her menstrual cycle and ascertain that it is normal before deciding to use a cycle beads. She first needs to consider using cycle beads after she has seen 3 menstrual cycles after child birth, with the last one recording 26 to 32 days.

f) Homework

The teacher assigns students the task to go to the library and read about breastfeeding and contraception.

Lesson 7: Lactational Amenorrhea Method

a) Learning objectives

- Explain the mode of action of Lactational Amenorrhea Method of natural family planning.
- Describe indications and contraindications of Lactational Amenorrhea Method of natural family planning.
- Explain the effects of Lactational Amenorrhea Method of natural family planning.
- Explain indications and contraindications of Lactational Amenorrhea Method of natural family planning to individuals and couples.
- Provide health education to individuals and couples on Lactational Amenorrhea Method natural family effectively.
- Use appropriate language while providing Lactational Amenorrhea Method of natural family planning to individuals and couples.
- Respect the rights, privacy, and confidentiality of individuals and couples when providing health education about Lactational Amenorrhea Method of natural family to them.

b) Teaching resources

Textbooks about family planning, pictures, illustrations, whiteboards, markers, blackboard, chalks.

c) Prerequisites/Revision/Introduction

This lesson requires students to have knowledge about the function of prolactin and oxytocin hormones.

d) Learning activity 1.3.5

The teacher asks students if they have done the homework given to them. Engage students to answer questions about what they have read about Lactational Amenorrhea. Note of whiteboard/blackboard the students' ideas. Harmonise and conclude students' answers.

Answers to Learning Activity 1.3.5

- i) Breastfeeding can delay ovulation after the birth of the baby when the woman breastfeeds regularly (every two to three hours) without interruption in the first six months after delivery. When the woman breastfeeds consistently, prolactin levels become elevated and suppress ovulation.
- ii) Lactational amenorrhea is used by the following:

- A woman who has not exceeded 6 months after delivery.
- The mother who has not had menstruation since the time of birth.
- The mother who is able to breastfeed her baby at least every 2 to 3 hours regularly without stopping within six months.

c) Practical session

- Guide students to organize themselves in groups
- Facilitate students to think about case scenarios on the provision of Lactational Amenorrhea Method.
- Guide and monitor students while they are preparing their case scenarios
- Invite them to present their case scenarios
- Award marks to each group as they present their scenarios about Lactational amenorrhea.

Answers to Self-Assessment 1.3.5

- i) a. They have to make sure the baby is regularly breastfed at least 3 hourly and the baby has not exceeded 6 months post birth.
 - b. Make sure the mother has not had the return of menstrual period.
- ii) Factors influencing LAM include breastfeeding interval, work, and return of menstruations...

Lesson 8: Withdrawal Method or Coitus Interruptus

a) Learning objectives

- Explain the mode of action of coitus interruptus (withdrawal method).
- Describe indications and contraindications of coitus interruptus (withdrawal method).
- Explain indications and contraindications of coitus interruptus (withdrawal method) to individuals and couples.
- Provide health education to individuals and couples about coitus interruptus (withdrawal method) effectively.
- Use appropriate language while providing health education to individuals and couples about coitus interruptus (withdrawal method).
- Respect rights, privacy and confidentiality of individuals and couples when providing health education about coitus interruptus (withdrawal method).

b) Teaching resources

Books about family planning, flipcharts, markers, whiteboard, manila papers, blackboard and chalk.

c) Prerequisites/Revision/Introduction

The students are required to know the male and female sexual response cycle.

d) Learning activity 1.3.6

- The teacher guides students to form groups of five students each.
- Distribute copies of the text books containing information about coitus interruptus.
- Supervise students as they read the book.
- Invite students to present what they have read.
- Encourage other groups not presenting to ask questions.
- The next groups, when presenting can provide additional information that other groups have not covered in order to save time.

Answers to learning activity 1.3.6

- i) The male partner pulls his penis out of the vagina before ejaculation occurs to avoid depositing sperm in or near the vagina. In so doing, he must keep his semen away from the female partner's external genitalia.
- ii) Coitus interruptus can be used by couples with religious or philosophical reasons for not using other methods of contraception. It is also a method of choice for couples who are waiting to get another alternative method immediately but finding themselves in need of sexual intercourse without having obtained that method. Couples who need a temporary method while they wait to start using another method may choose to use coitus interruptus. Couples who do sex infrequently can choose coitus interruptus method.
- iii) No. Coitus interruptus should not be recommended as a first choice of family planning method because it requires much attention during the sexual act. At times the man may reach climax and releases the pre-ejaculate fluid that may contain sperm before withdrawing his penis to ejaculate outside.

d) Self-Assessment 1.3.6

The self-assessment activity is an individual work.

Answers to Self-Assessment 1.3.6

- i) The coitus interruptus method work by the male partner pulls his penis out of the vagina before ejaculation occurs to avoid depositing sperm in or near the vagina. In so doing, he must keep his semen away from the female partner's external genitalia.
- ii) A male partner may pull out his penis from the vagina if the couple is using coitus interruptus before ejaculation occurs to avoid depositing sperm in or near the vagina. In so doing, he must keep his semen away from the female partner's external genitalia.

Lesson 9: Summary of the module

Family planning refers to individual's or couple's' conscious and informed decision to decide when to become or not to become pregnant throughout the reproductive years. There are two types of family planning: Natural family planning includes abstinence, coitus interruptus, lactation amenorrhea, and fertility awareness methods and Modern family planning method includes oral contraceptive pills, injectable, implants and intrauterine device. Some benefits of family planning include Family planning can lead to sustainable development. It enables women and couples to avoid unwanted pregnancies, attain the desired number of births, and control the intervals between births. Family planning can benefit the education of girls and lead to women's empowerment within the community. By providing the family planning services the healthcare providers have to respect the following principals like: autonomy, accessibility, acceptability, equity and non-discrimination, quality, availability, empowerment and informed consent.

In natural Family planning there are Fertility awareness methods (calendar method, basal body temperature method, cervical mucus method, standard days method), Lactational amenorrhea and coitus interruptus or withdrawal method. This natural family planning methods can be quite effective in reducing the unwanted pregnancy, it is almost cost-free except for a basal body thermometer and perhaps a menstrual calendar, this method do not need the attendance by users to the health facilities and they do not involve the use of any medication so no side-effects occur.

The teacher also summarizes the effectiveness of natural family planning.

1.7. Answers to end unit assessment 1

Section One: Open questions

1. Principles of family planning are the following:

Autonomy: Providers should enable the women and individual couples to exercise free and informed decision-making whilst choosing among a full range of safe, effective, and possible family planning methods.

Accessibility: Family planning providers need to ensure that women and couples have the ability to access accurate, clear and readily understood information about a variety of family planning methods and how they are used. Health care facilities have to ensure that contraceptive methods, trained providers, and contraceptive methods are accessible to women and couples.

Acceptability: By acceptability, health care facilities, trained providers, and available family planning options must be acceptable by women and couples. They must also meet the medical standards, and individual preferences. Services provided and available family planning methods must be sensitive to gender, life-cycle requirements, dignity, and culture.

Equity and non-discrimination: Quality family planning services should be provided to women and couples free from any form of discrimination such as age, gender, language, ethnicity, religion, sexual orientation, income, and race. Women and couples must not be coerced and/or violated when they seek family planning services from a healthcare provider.

Quality: Services and information provided to women and couples should be of good quality, and should be based on the best available evidence. Quality encompasses a full range of choices including quality contraceptive methods, accurate information, and presence of technically competent providers, client-provider interactions that respect the clients', confidentiality, and preferences.

Availability: By availability, family planning enabling environment with the following is ensured:

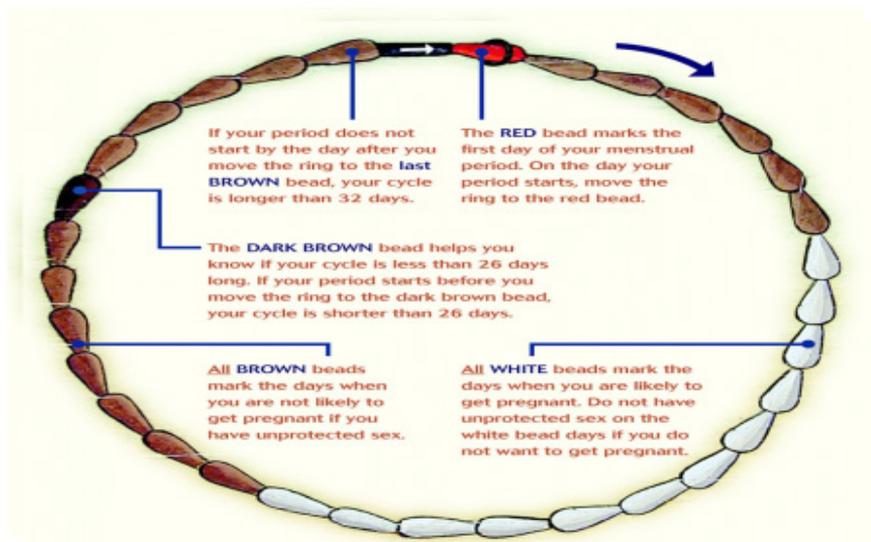
- a) Health care facilities,
- b) trained providers;
- c) Counselling information
- d) contraceptive methods are available to ensure that individuals can exercise full choice from a full range of contraceptive methods
- e) Availability of follow-up and removal services for implants whenever necessary and needed.

Empowerment: Women and individual couples are empowered as principle actors and agents to decide on their family planning needs. They are also empowered to implement these decisions through seeking information about family planning, seeking services, and choosing a family planning method suitable for them.

Informed consent: When providing family planning services, the provider needs to always seek the woman's and/or the couple's informed consent and offer her comprehensive.

2. A woman using cervical mucus should be cautious she sees her the cervical mucus is more abundant and thinner with an elastic quality. She has to avoid doing unprotected sex.
3. Factors to consider when advising Mrs. Lina's to use cycle bead successfully include having a regular menstrual cycle, and having three menstrual cycles after child birth with the last one recording 26 to 32 days.
4. The factors that can influence the use of Lactational Amenorrhea Method are the following:
 - a. To be used within the period of 6 months after delivery,
 - b. The mother must have not had menstruation since the time of birth,
 - c. The mother is able to breastfeed her baby at least every 2 to 3 hours regularly without stopping within six months.
5. The coitus interruptus method works effectively when the male partner pulls his penis out of the vagina before ejaculation occurs to avoid depositing sperm in or near the vagina.
6. Cycle bead

How to use cycle bead?



The fertile days are from 12th April (day 8) to 23rd April (19 day) and guide this couple on how they can use this method to avoid unplanned pregnancy.

- The provider needs to give information to the client about all natural family planning method available, how these methods work, their indications, contraindications, and advantages as well as disadvantages of using them.

Types	Method used	Effectiveness	Advantages	Disadvantages
NATURAL FAMILY PLANNING METHODS	Fertility awareness methods	Fertility awareness methods are about 76-88% effective: that means 12-24 out of 100 couples who use FAMS will get pregnant each year	Fertility awareness helps women and men better understand when the fertile period is, how contraceptives affect menstrual cycles and ovulation (e.g., hormonal contraceptive-induced amenorrhea), and the effects of contraception on other aspects of health, and to be better able to recognize changes that may indicate.	High failure rate if not used consistently and correctly. Fewer “safe” days to have intercourse each month. Training is essential. Breast feeding, illness and other factors can obscure fertility signs. No protection from STIs. If periods are not regular, may not be as effective.
	Calendar method	calendar rhythm method is 86% effective	Calendar do not cause side effects; They do not require any special devices or procedures and do not cost anything; Women become more knowledgeable about their menstrual cycle when they use the method.	Many women are not all that regular, and even those who are regular sometimes have irregular months. When that happens, an unintended pregnancy can result.

Basal body temperature method	99% effective in the first year of use.	It does not cause side effects; Women become more knowledgeable about their body changes which occur during their menstrual cycle when they use the method; Correctly used, it provides highly effective contraceptive protection.	The basal body temperature method may not accurately predict ovulation in all women, including those with irregular menstrual cycles. It offers no protection from sexually transmitted diseases.
Cervical mucus method	23 out of 100 women practicing the cervical mucus method for birth control will get pregnant in the first year of typical use	Cervical mucus monitoring is free and safe and does not require a visit to the doctor's office. There are no side effects. You are not taking any medicine or doing anything that your body would not normally do.	The cervical mucus method is the patience required to really know your cycle. It may take more than a few months of consistent record keeping. The users have to use backup forms of birth control, such as a condom, to protect yourself from conceiving a child.
Standard Days Method	standard days method is 88% effective	The Standard Days Method® is an effective modern FABM that is easy to teach and learn. It is low cost and has no side effects. In addition, the method helps women learn about	As with most family planning methods, Standard Days Method® does not provide protection against STDs. Standard Days Method® requires abstinence during fertile days.

			their menstrual cycle and involves men in family planning, as the couple must discuss and decide how to manage the fertile days.	
Lactational amenorrhea	98% effective against pregnancy for the first 6 months after giving birth.	Universally available. Begins immediately postpartum. Health benefits for mother and infant. No commodities/ supplies required. Bridge to other contraceptives. Builds on established cultural and religious practices. Improves breastfeeding and weaning patterns.	Full or nearly full breastfeeding may be difficult for some women to maintain due to social circumstances. There is no protection against sexually-transmitted diseases, including HIV infection.	
Coitus Interruptus or withdrawal method	78% effective against pregnancy	Immediate availability, no devices, no cost, no chemical involvement.	It takes a lot of control for the man to pull out before ejaculation. The woman has no control over it at all. You may feel that it gets in the way of sexual pleasure. Even if they pee before sex, the man can still release fluid before they ejaculate.	

1.8. Remedial activities

1. One of the following is not included in the principles of family planning.
 - A. Accountability**
 - B. Acceptability
 - C. Autonomy
 - D. Equity and non-discrimination
2. The following are included in the fertility awareness methods except one:
 - A. Calendar
 - B. Basal body temperature
 - C. Coitus interruptus or withdrawal method**
 - D. Cervical mucus
3. One of the following the statements is not contraindications of calendar method.
 - A. Calendar method is allowed to psychotic women.**
 - B. Calendar method is not allowed to non-cooperative couples.
 - C. Calendar method cannot be used by a couple who is not ready to abstain from sex during the woman's fertile period.
 - D. Calendar method is contraindicated to women who have irregular menstrual cycle.
4. One of the following is not indication of Basal body temperature method
 - A. To all women who are capable of reading the thermometer measurements.
 - B. To all women who are capable to know that their temperature has risen from their normal temperature.
 - C. To all women with infection.**
 - D. To all women with no infection.
5. One of the following is not include in indications of cervical mucus method:
 - A. To women who are capable of abstaining from coitus during ovulation.
 - B. To all couples who are capable of recognizing the changes in appearance of cervical mucus during the fertile period.
 - C. To all couples who are capable of being cooperative during the ovulation time.
 - D. To women who are not capable of abstaining from coitus during ovulation**

6. The following statements are advantages of standard days method except one:
 - A. It is easy to teach and learn
 - B. It is difficult to teach and learn**
 - C. It is low cost and has no side effects.
 - D. It helps women learn about their menstrual cycle and involves men in family planning
7. Explain the mode of action for Lactational amenorrhea (LAM) as a family planning method?

ANSWER: Lactational Amenorrhea Method is a type of natural family planning which depends on the woman's breastfeeding regularly (every two to three hours) without interruption in the first six months after delivery. When the woman breastfeeds consistently, prolactin levels become elevated and suppress ovulation. Breast feeding stimulates prolactin hormone which is responsible for breast milk production. This hormone further hinders gonadotropin hormone which is responsible for ovulation to be produced. Thus, when the woman does sexual intercourse she will not likely become pregnant.

8. Explain how to use the calendar method in family planning?

ANSWER: Using a calendar, the woman monitors her menstrual cycle to track down her fertility days starting from the first day of her menstrual period. The commencement of the fertile period is determined by deducting or subtracting 18 days from the length of the shortest cycles. The termination of the fertile days is determined by subtracting 11 days from the extent of the longest cycle

1.9. Consolidation activities

True or false questions

1. It is possible to get pregnant on any day of the cycle.
2. Family planning refers to individual's or couple's conscious and informed decision to decide when to become or not to become pregnant throughout the reproductive years.
3. Contraception is defined to the unintentional use of artificial methods and/or other techniques to prevent pregnancy as a result of doing sexual intercourse.
4. Natural family planning refers to the methods of contraception which use hormones and/or other devices to stop pregnancy.

5. Family planning benefits young adolescents because it empowers them and helps them to realise their educational aspirations.
6. The cervical mucus method refers to the recognition and interpretation of changes in the amount and consistency of cervical mucus throughout the menstrual cycle.
7. Basal body temperature method works effectively if the woman has a temperature which does change.
8. Using a calendar, the woman monitors her menstrual cycle to track down her fertility days starting from the first day of her menstrual period.
9. A woman who used cycle beads has to know that the red bead marks the first day of her period, Brown beads correspond to safe days when she may not likely become pregnant if she does sexual intercourse without protection.
10. Lactational Amenorrhea Method is a type of natural family planning which is not influenced by the woman's breastfeeding frequency.

ANSWERS

1: False, 2: True, 3: False, 4: False, 5: False, 6: True, 7: False 8: True, 9: True, 10: False

Multiple choice questions

1. One of the following is an explanation of using the cycle beads as natural method:
 - A. All brown beads mark the days when you are not likely to get pregnancy if you have unprotected sex.
 - B. All white beads mark the days when you are not likely to get pregnancy if you have unprotected sex.
 - C. All dark brown beads mark the days when you are not likely to get pregnancy if you have unprotected sex.
 - D. A and C are correct
2. One of the following is not included in the benefits of family planning:
 - A. Family planning can lead to sustainable development.
 - B. Family planning can benefit the education of girls and lead to women's empowerment within the community.
 - C. It allows women and couples to avoid unwanted pregnancies.
 - D. Family planning cannot contribute to delaying pregnancy in young girls.

3. One of the following is not included in the indications of calendar method:
 - A. To all women in reproductive age and with regular menstrual cycle.
 - B. To all women who are not capable of reading and not able to chart properly.
 - C. To all women who are capable of abstaining from sexual intercourse during the fertile period.
 - D. To all couples ready to use calendar method along with method with barrier method during the fertile period to make it more effective.
4. One of the following is not included in the contraindications of basal body temperature method:
 - A. The women who cannot read measurements on the thermometer.
 - B. To all women with infection. e. g. vaginitis, malaria etc.
 - C. To all women who are not using warm blankets.
 - D. To all women who are capable of reading the thermometer measurements.
5. All of the following are indications of the cervical mucus method except one:
 - A. To women who are capable of abstaining from coitus during ovulation.
 - B. To all couples who are capable of recognizing the changes in appearance of cervical mucus during the fertile period.
 - C. To all women who feel uncomfortable when touching their genitals
 - D. To all couples who are capable of being cooperative during the ovulation time.
6. The following are indications of Lactational Amenorrhea Method except one:
 - A. This method not to be practiced after 4 months postpartum.
 - B. This method can be operational within 6 months after delivery.
 - C. If the mother has not had menstruation since the time of birth.
 - D. When the mother is able to breastfeed her baby at least every 2 to 3 hours regularly without stopping within six months.
7. One of the following sentences is not included in disadvantages of Coitus Interruptus or withdrawal method:
 - A. It takes a lot of control for the man to pull out before ejaculation.
 - B. The woman has control over it at all.
 - C. May feel that it gets in the way of sexual pleasure.
 - D. The man can still release fluid before they ejaculate.

8. The following are disadvantages of the fertility awareness method except one:
- A. Many “safe” days to have sexual intercourse each year.
 - B. Breast feeding, illness and other factors can unclear fertility signs.
 - C. No protection from STIs.
 - D. If periods are not regular, may not be as effective

ANSWERS

- | | |
|------|------|
| 1. A | 5. C |
| 2. D | 6. A |
| 3. B | 7. B |
| 4. D | 8. A |

Matching the concepts in Colum A with their correct explanations in Colum B

Column A	Column B
1. Autonomy	a. When providing family planning services, the provider needs to always seek the woman’s and/or the couple’s informed consent and offer her comprehensive information about the services provided as shown figure
2. Accessibility	b. By availability, family planning enabling environment with the following is ensured like health care facilities, trained providers and counselling information.
3. Acceptability	c. Services and information provided to women and couples should be of good quality, and should be based on the best available evidence. Quality encompasses a full range of choices including quality contraceptive methods, accurate information, and presence of technically competent providers, client-provider interactions that respect the clients’, confidentiality, and preferences.
4. Equity and non-discrimination	d. Quality family planning services should be provided to women and couples free from any form of discrimination such as age, gender, language, ethnicity, religion, sexual orientation, income, and race. Women and couples must not be coerced and/or violated when they seek family planning services from a healthcare provider.

5. Quality	e. By acceptability, health care facilities, trained providers, and available family planning options must be acceptable by women and couples. They must also meet the medical standards, and individual preferences. Services provided and available family planning methods must be sensitive to gender, life-cycle requirements, dignity, and culture.
6. Availability	f. Family planning providers need to ensure that women and couples have the ability to access accurate, clear and readily understood information about a variety of family planning methods and how they are used. Health care facilities have to ensure that contraceptive methods, trained providers, and contraceptive methods are accessible to women and couples.
7. Informed consent	g. Providers should enable the women and individual couples to <i>exercise free and informed decision-making</i> whilst choosing among a full range of safe, effective, and possible family planning methods.

ANSWERS:

1=G

2=F

3=E

4=D

5=C

6=B

7=A

2.1. Key Unit competence

Provide modern family planning methods.

2.2. Prerequisite

This unit requires that students get equipped with a range of knowledge, attitudes, and competences required to provide modern family planning to individuals and couples. The teacher should make sure that at the end of this unit students are capable to facilitate health education sessions to enable individuals and couples decide on which modern family planning method to use, offer health education talks to individuals and couples about modern family planning, provide different methods of modern contraceptives, and further acknowledge individuals' and couples' choices of preferences for different modern family planning methods.

For this unit to be taught successfully, students must have studied biology especially anatomy and physiology of human reproductive system, Students must have studied fundamentals of nursing, and pharmacology. During the teaching learning process, the teacher needs to link the content about natural family planning to these above mentioned subjects.

Students must possess knowledge about counselling and communication techniques applied to nursing care provision, and must have studied the principles of nursing ethics and codes of conduct.

2.3. Cross-cutting issues

The teacher needs to consider diversity, inclusion, and gender while teaching lessons set for Unit One. As for inclusive education, the teacher has to make sure that students with special education are integrated into all learning activities with other without any disability. The teacher has to make sure that all necessary teaching-learning materials required for students with special education are available to facilitate them acquire skills to apply in providing modern family planning. In addition to this, the teacher needs to cultivate positive attitudes about sexual and reproductive health practices, and further appreciate sociocultural issues that may underlie the individuals' and couples' decisions about modern contraceptive methods. The teacher has to ensure that students have a mastery of Kinyarwanda language applied to the provision of modern family planning methods.

2.4. Guidance of the Introductory Activity 2

The teacher stimulate students to name each modern family planning method displayed on the banner. The teacher proceeds by asking students what they have heard about each method. In pairs, the teacher asks students to report about what they can consider if individuals or couples seek their assistance in choosing any modern contraceptive method suitable to them.

The teacher summarises what students have shared about the activity presented. The teacher further introduces the concept of modern family planning methods.

Tentative answers for the Introductory Activity 2

- i) The teacher needs to expect more answers from students. These are modern family planning methods including oral contraceptive pills, injectables and IUDs.
- ii) I will explain her/them different mode action, indications, contra-indications, advantages and disadvantages and help them to choose the family planning method suitable for her/them.

2.5. Teaching resources

Reproductive health models, projectors, screen, computer and video CD, Oral contraceptives, injectable contraceptive, male and female condom, IUDs, Flip chart of FP, Skills lab, and skills lab equipment and materials. The teacher will also need illustrations, banners, copies of the Student Textbooks, YouTube videos, and pictures displaying modern contraceptive methods, different books about family planning, markers, internet, whiteboard, chalkboard, chalks and dusters.

2.6. List of lessons of Unit Two

Nº	Lesson title	Learning objectives	Number of periods
1	Introduction to Oral contraceptives	<ul style="list-style-type: none">• Explain the mode of action of oral contraceptive pills to individuals and couples seeking family planning services.	2
2	Progestin-only contraceptive pills	<ul style="list-style-type: none">• Explain the mode of action of progestin-only contraceptive pills to individuals and couples.• Describe indications and contraindications of progestin-only contraceptive pills.	2

		<ul style="list-style-type: none"> • Explain the effects of progestin-only pills to individuals and couples. • Provide progestin-only contraceptive pills effectively to individuals and couples. • Use appropriate language while providing progestin-only contraceptive pills • Respect rights, privacy and confidentiality when providing progestin-only contraceptive pills. • Demonstrate professionalism while providing progestin-only contraceptive pills. • Appraise the effects of progestin-only contraceptive pills 	
3	Combined oral contraceptive pills	<ul style="list-style-type: none"> • Explain the mode of action of combined oral contraceptive pills to individuals and couples. • Describe indications and contraindications of combined oral contraceptive pills. • Explain the effects of combined oral contraceptive pills to individuals and couples. • Provide combined oral contraceptive pills effectively to individuals and couples. • Use appropriate language while providing combined oral contraceptive pills. • Respect rights, privacy and confidentiality when providing combined oral contraceptive pills. • Demonstrate professionalism while providing combined oral contraceptive pills. • Appraise the effects of combined oral contraceptive pills. 	2

4	Emergency contraceptive pills	<ul style="list-style-type: none"> • Explain the mode of action of Emergency contraceptive pills to individuals and couples. • Describe indications and contraindications of Emergency contraceptive pills. • Explain the effects of Emergency contraceptive pills to individuals and couples. • Provide Emergency contraceptive pills effectively to individuals and couples. • Use appropriate language while providing Emergency contraceptive pills. • Respect rights, privacy and confidentiality when providing Emergency Contraceptive pills. • Demonstrate professionalism while providing Emergency Contraceptive pills. • Appraise the effects of Emergency Contraceptive pills 	2
5	Injectables	<ul style="list-style-type: none"> • Explain the mode of action of injectables to individuals and couples. • Describe indications and contraindications of injectables. • Explain the effects of injectables to individuals and couples. • Provide injectables effectively to individuals and couples. • Use appropriate language while providing injectables. • Respect rights, privacy and confidentiality when providing injectables. • Demonstrate professionalism while providing injectables. • Appraise the effects of injectables. 	2

6	Implants	<ul style="list-style-type: none"> • Explain the mode of action of implants to individuals and couples. • Describe indications and contraindications of implants. • Explain the effects of implants to individuals and couples. • Provide implants effectively to individuals and couples. • Use appropriate language while providing implants. • Respect rights, privacy and confidentiality when providing implants. • Demonstrate professionalism while providing implants. <p>Appraise the effects of implants.</p>	2
7	Non-hormonal IUDs (copper IUD)	<ul style="list-style-type: none"> • Explain the mode of action of non-hormonal IUD (Copper IUD) to individuals and couples. • Describe indications and contraindications of non-hormonal IUD (Copper IUD). • Explain the effects of non-hormonal IUD (Copper IUD) to individuals and couples. • Provide non-hormonal IUD (Copper IUD) effectively to individuals and couples. • Use appropriate language while providing non-hormonal IUD (Copper IUD). • Respect rights, privacy and confidentiality when non-hormonal IUD (copper IUD). • Demonstrate professionalism while providing non-hormonal IUD (copper IUD). <p>Appraise the effects of non-hormonal IUD (Copper IUD).</p>	2

8	Hormonal Intrauterine Device (Mirena)	<ul style="list-style-type: none"> • Explain the mode of action of hormonal Intrauterine Device (Mirena) to individuals and couples. • Describe indications and contraindications of hormonal Intrauterine Device (Mirena). • Explain the effects of hormonal Intrauterine Device (Mirena) to individuals and couples. • Provide hormonal Intrauterine Device (Mirena) effectively to individuals and couples. • Use appropriate language while providing hormonal Intrauterine Device (Mirena). • Respect rights, privacy and confidentiality when providing hormonal Intrauterine Device (Mirena). • Demonstrate professionalism while providing hormonal Intrauterine Device (Mirena). • Appraise the effects of hormonal Intrauterine Device (Mirena). 	2
9	Skills lab practice on oral contraceptive pills	<ul style="list-style-type: none"> • To provide all information to the client/ couple about oral contraceptive pills. 	2
10	Skills lab practice on injectables	<ul style="list-style-type: none"> • To provide all information to the client/ couple about injectables. 	2
11	Practical session in the health facility	<ul style="list-style-type: none"> • To provide contraceptive family planning to individuals and couples in the health facility setting. 	4
12	Summary of Unit 2		2
13	End Unit assessment		2
14	Remedial activities		2

Lesson 1: Introduction to oral contraceptive methods

a) Learning objectives

- Explain the mode of action of oral contraceptive methods to individuals and couples.
- Use appropriate language while providing oral contraceptive methods.
- Respect rights, privacy and confidentiality when providing oral contraceptive methods.

b) Teaching resources

Videos, laptop, projector, Student Textbook, and internet resources about oral contraceptives, packets of oral contraceptive pills, and family planning books.

c) Prerequisites/Revision/Introduction

Students will learn better oral contraception if they have prior knowledge of drug administration in pharmacology, and fundamentals of nursing.

d) Learning activity 2.1.1

The teacher shows a video about oral contraceptive pills. After showing the video, the teacher asks students to group in pairs and answer the questions about oral contraceptive pills. Students present their work and teacher facilitates and records of students' ideas about oral contraceptive pills.

Answers to learning activity 2.1.1

- i) Oral contraceptive pills include Progestin only pills, combined oral contraceptive pills (oestrogen and progestin combined pills).
- ii) The student should attempt to explain the mode of action for any oral contraceptive pills in the Student Book.
 - **Progestin-only pills** act by inhibiting follicular development and preventing ovulation. Progesterone negative feedback signals the hypothalamus to decrease the pulse frequency of gonadotropin releasing hormone, which in turn decrease the secretion of follicle-stimulating hormone (FSH) and the secretion of Luteinizing Hormone (LH).
 - **The combined oral contraceptive pill** works by stopping the ovaries from releasing an egg each month (ovulation). It also thickens the mucus from the cervix which makes it difficult for sperm to move through it and reach a matured egg.
- iii) The progestin only pills contain a low dose of a progestin similar to the natural hormone progesterone in a woman's body. These pills do not contain oestrogen hormones. The pills come in packs of 28 pills and

women take one every day. Women eligible are: breastfeeding mothers, nulliparous, adolescent when they know that they are not pregnant.

e) Self-Assessment 2.1.1

Let students attempt this activity in groups. Students can do this activity in class if there is still time and continue this activity as a homework.

Answers to Self-Assessment 2.1.1

- i. These pills contain hormones that are similar to those of the woman's reproductive hormones which act by changing the woman's body hormone balance and this prevents the ovaries from releasing an egg each month (ovulation).
- ii. Oral contraceptive methods include progestin only pills, combined oral contraceptive pills (oestrogen and progestin combined pills), and emergency contraceptive pills.

Lesson 2: Progestin-only contraceptive pills

a) Learning objectives

- Explain the mode of action of progestin-only pills to individuals and couples.
- Describe indications and contraindications of progestin-only pills.
- Explain the effects of progestin-only pills to individuals and couples.
- Provide progestin-only pills effectively to individuals and couples.
- Use appropriate language while providing progestin-only pills.
- Respect rights, privacy and confidentiality when providing progestin-only pills.
- Demonstrate professionalism while providing progestin-only pills.
- Appraise the effects of progestin-only pills.

b) Teaching resources

Videos, laptop, projector, Student Textbook, and internet resources about oral contraceptives, packets of oral contraceptive pills, and family planning books.

c) Prerequisites/Revision/Introduction

Students will learn better oral contraception if they have prior knowledge of drug administration in pharmacology, and fundamentals of nursing.

d) Learning activity 2.1.2

The teacher encourage the learners to use internet and library (Read chapter two of the 'Family Planning: A Global Handbook for Providers, edition 2018') to answer the given learning activity 2.1.2. After reading, the teacher asks students to group in pairs and answer the questions about oral contraceptive pills. Students present their work and teacher facilitates records of students' ideas about oral contraceptive pills.

Answers to learning activity 2.1.2

- i. The progestin only pills contain a low dose of a progestin similar to the natural hormone progesterone in a woman's body.
- ii. Clients not advised to take PoP are:
 - Women with pre-existing breast cancer, cervical cancer, endometrial cancer, ovarian cancer, uterine cancer, and vaginal cancer,
 - Women with uncontrolled hypertension
 - Women who smoke
 - Women with pre-existing anaemia or who had anaemia in the past,
 - Women who have varicose veins,
 - Women living with HIV, whether or not on antiretroviral therapy.

e) Self-Assessment 2.1.2

Let students attempt this activity in groups. Students can do this activity in class if there is still time and continue this activity as a homework.

Answers to Self-Assessment 2.1.2

- i) Progestin-only pills act by inhibiting follicular development and preventing ovulation. Progesterone negative feedback signals the hypothalamus to decrease the pulse frequency of gonadotropin releasing hormone, which in turn decrease the secretion of follicle-stimulating hormone (FSH) and the secretion of Luteinizing Hormone (LH). When the follicle is not developing, the estradiol levels increase. When there is no development of the follicle and no LH work, the ovulation is prevented. The pill also thickens cervical mucus (this blocks sperm from meeting an egg). As the woman keeps taking progestin-only pills regularly as prescribed, they cause menstrual cycle change and this prevents the release of eggs from the ovaries (ovulation).
- ii) Some advantages of using the progestin only pills include the following:
 - The pill is more effective for lactating mothers and can be 99% effective if used correctly and consistently by breastfeeding mothers.

- Do not interfere with breastfeeding and they are safe for breastfeeding women and their babies because they do not affect milk production.
- The user can stop using progestin-only pills at any time without any help of the provider.
- Do not interfere with sexual intercourse;
- Progestin-only pills use is controlled by the woman;
- Progestin-only pills cannot cause women infertile;
- Progestin-only pills do not cause diarrhoea in breastfeeding babies.

iii) The indications for PoP are:

- A woman can start using the progestin only pills (POPs) any time she knows that she is not pregnant.
- A woman can use progestin-only pills if she is breastfeeding.
- Women with or without children are eligible to use progestin-only pills.
- Progestin-only pills can also be the method of choice for even adolescent girls who may need to use contraception to prevent unwanted pregnancies.

Lesson 3: Combined oral contraceptive pills

a) Learning objectives

- Explain the mode of action of combined oral contraceptive pills to individuals and couples.
- Describe indications and contraindications of combined oral contraceptive pills.
- Explain the effects of combined oral contraceptive pills to individuals and couples.
- Provide combined oral contraceptive pills effectively to individuals and couples.
- Use appropriate language while providing combined oral contraceptive pills.
- Respect rights, privacy and confidentiality when providing combined oral contraceptive pills.
- Demonstrate professionalism while providing combined oral contraceptive pills.
- Appraise the effects of combined oral contraceptive pills.

b) Teaching resources

Family planning textbooks, illustrations, whiteboards, markers, packets of combined oral contraceptive pills, and student textbooks.

c) Prerequisites/Revision/Introduction

To facilitate the lesson of combined oral contraceptive successfully, students must remember the progestin-only contraceptive pills. As the facilitator, the teacher needs to ask students to recall the content about progestin-only pills. Based on progestin-only pills, ask students to brainstorm about the mode of action, indications, contraindications, advantages, and effects of combined oral contraceptive pills.

d) Learning activity 2.1.3

- The teacher guides students in making six groups.
- Ask students to answer questions for activity 2.1.3
- Facilitate students to present their work.
- Ensure that a point which was presented in one group is not discussed by another group.
- Summarise the points shared by students.

Answers to learning activity 2.1.3

- i) Combined oral contraceptive methods are pills that a woman can use to prevent pregnancy. These pills contain hormones that are similar to those of the woman's reproductive hormones which act by changing the woman's body hormone balance and this prevents the ovaries from releasing an egg each month (ovulation).
- ii) If a woman misses a tablet, she has to take the missed tablet as soon as she remembers and further progress taking the next tablet at the usual time (taking two tablets in one day). If the woman misses two tablets in a row in the first or second week, she should take two tablets the day she remembers and two tablets the next day, then she resumes one tablet per day.

e) Self-Assessment 2.1.3

Items in this activity will guide students in their practice of the lesson.

Answers to Self-Assessment 2.1.3

- i) The combined oral contraceptive pill Works by stopping the ovaries from releasing an egg each month (durig ovulation). It also thickens the mucus from the cervix which makes it difficult for sperm to move through it and reach a matured egg. It also makes the lining of the uterus (womb) thinner, it is less likely to accept a fertilised egg.

ii) The following are the advantages of combined oral contraceptive pills:

- Women have control over their use and they can be stopped at any time without a provider's help.
- Do not interfere with sex and this method is easy to use. Reduce also the risk of having anaemia.
- Combined oral pills may protect against pelvic inflammatory disease,
- Combined oral pills may protect against endometrial cancer and can also reduce symptoms of premenstrual syndrome (PMS).
- Combined oral pills can reduce the risk of cancer of the ovaries, womb and colon for women.
- Combined oral pills can be used in the post-abortion and postpartum period by woman who desire a fast return to fertility.

Lesson 4: Emergency contraceptive pills

a) Learning objectives

- Explain the mode of action of Emergency contraceptive pills to individuals and couples.
- Describe indications and contraindications of Emergency contraceptive pills.
- Explain the effects of Emergency contraceptive pills to individuals and couples.
- Provide Emergency contraceptive pills effectively to individuals and couples.
- Use appropriate language while providing Emergency contraceptive pills.
- Respect rights, privacy and confidentiality when providing Emergency Contraceptive pills.
- Demonstrate professionalism while providing Emergency Contraceptive pills.
- Appraise the effects of Emergency Contraceptive pills

b) Teaching resources

Videos, laptop, projector, oral combined contraceptive pills, whiteboard, markers and dusters.

c) Prerequisites/Revision/Introduction

Ask students to brainstorm what emergency contraception means and how it works basing on what they have heard about emergency contraceptive pills. The student needs prior knowlegde on administration of drugs in pharmacology

d) Learning activity 2.1.4

- The teacher asks learners to write down what they know about the picture in the learning activity 2.1.4 in the student book.
- Harmonise and summarise students' answers.

Answers to learning activity 2.1.4

Emergency Contraceptive Pills (ECPs) also called “morning after” pills or “postcoital contraceptives” prevent the release of an egg from the ovary or can act by delaying it to be released by the 5th to 7th days. If ovulation has occurred and the egg is fertilised, the Emergency Contraceptive Pills cannot prevent implantation or disrupt an already established pregnancy.

e) Self-Assessment 2.1.4

This self-assessment activity will be given as a quiz after the lesson taught to students.

Answers to Self-Assessment 2.1.4

- i) The emergency contraceptive pill works by preventing or delaying ovulation. It also inhibits an egg from being released from the ovary when taken before ovulation. It thickens the cervical mucus making it not to allow the sperm to meet the egg.
- ii) a. The following are indications of emergency contraceptives pills:
 - It is recommended for women who experience sexual assault
 - When current contraceptive method has failed (for example when the condom breaks).
 - Unprotected sexual intercourse
 - Missed or late doses of hormonal contraceptives.b. Emergency Contraceptive Pills are not advised for use among women with the following cases:
 - A history of thrombosis,
 - Current severe liver disease,
 - Focal migraine at the time of presentation
 - Breastfeeding women.

f) Homework 2.1.4

Read about injectable family planning methods found on this link: <https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=141&printable=1#maincontent>. You are going to present the information you read before the start of the next lesson.

Lesson 5: Injectables

a) Learning objectives

- Explain the mode of action of injectables to individuals and couples.
- Describe indications and contraindications of injectables.
- Explain the effects of injectables.
- Provide injectable as a method of family planning effectively.
- Use appropriate language while providing injectables.
- Respect rights, privacy and confidentiality when providing injectables.
- Demonstrate professionalism while providing injectables.
- Appraise the effects of injectables.

b) Teaching resources

Family planning books, injectables to show students in the classroom, whiteboard, markers, student textbooks, laptop, projector, skill lab,

c) Prerequisites/Revision/Introduction

This lesson requires prior knowledge of pharmacology, fundamentals of nursing, and reproductive system.

d) Learning activity 2.2

- The teacher asks the class to report what they have read about injectable contraceptive methods.
- While facilitating the session, the teacher must ensure that all students are given chances to report what they know about this contraceptive method.
- The teacher provides a summary of what students have shared.

Answers to learning activity 2.2

- i) Injectable contraceptive methods constitute of the intramuscular injection administration into the muscle of the arm or buttock. This injection provides to the body sufficient levels of hormones to provide contraception for one to three months. Injectable contraceptive methods consist of progesterone-only preparations.
- ii) There are two types of hormonal injectables: Depo-Provera, and Noristerat. Hormonal injectables once administered to the woman, it slowly releases hormone progesterone into the bloodstream which prevents ovulation from taking place each month. It also thickens the cervical mucus, which makes difficult for sperm to sail through the cervix.

Depo-Provera further thins the lining of the womb to prevent a fertilised egg from implanting to the uterus.

iii) Depo-Provera is used for three months, and noristretat is used for every two months.

e) Self-Assessment 2.2

This activity will be given to students as an end lesson quiz.

Answers to Self-Assessment 2.2

- i) Changes in the woman's monthly bleeding from irregular to no monthly bleeding. Can occur as side effects. The advice to be give is that, the client should visit a health facility to switch to another method of choice.
- ii) The progestin only injectable may cause side effects among women using it including the following:
 - Changes in the woman's monthly bleeding from irregular to no monthly bleeding;
 - Weight gain
 - Headaches
 - Dizziness
 - Abdominal bloating and discomfort
 - Mood changes

Lesson 6: Implants

a) Learning objectives

- Explain the mode of action of implants to individuals and couples.
- Describe indications and contraindications of implants.
- Explain the effects of implants to individuals and couples.
- Provide implants effectively to individuals and couples.
- Use appropriate language while providing implants.
- Respect rights, privacy and confidentiality when providing implants.
- Demonstrate professionalism while providing implants.
- Appraise the effects of implants.

b) Teaching resources

Laptop, videos, projector, implants, skills lab, whiteboard/or blackboard, markers, chalk, dusters, family planning books, and student textbooks

c) Prerequisites/Revision/Introduction

The students are required to know pharmacology, first Aid and fundamentals of nursing. They also need to know how different reproductive system hormones function.

d) Learning activity 2.3

- The teacher shows students a video about implants.
- The teacher guides to make groups students of six students each
- Ask them to answer questions about implants outlined in the Student Book.
- Students present their work and the teacher moderates these discussions.
- Consolidate and summarise students' ideas.

Answers to learning activity 2.3

i) Implants are modern family planning that has progesterin hormone. Implants are plastic rods that are small, flexible about as size of match stick. The health professional inserts the rod using local anaesthesia just under the skin on the inside of the upper arm. Insertion takes place approximately one minute. Removal requires a small incision and takes about three minutes. They are two types of Implants in modern family planning which are currently known but one is short term acting (Implanon) and another is long term acting (Jadelle). They are both hormonal methods of modern family planning. The implant should be removed after 3 or 5 years depending on the type.

The implants work by releasing slowly amount of progesterin hormone which suppresses ovulation and it thickens the cervical mucus which stops sperms from penetrating through to reach the mature egg to be fertilised. It also prevents pregnancy to take place by thinning the endometrium which makes the implantation not to take place.

ii) Provide long-term pregnancy protection. Very effective for up to 3 to 5 years, depending on the type of implant. Immediately reversible.

e) Self-Assessment 2.3

This activity will be given as a homework.

Answers to self-Assessment activity 2.3

- i) The implants work by releasing slowly amount of progestin hormone which suppresses ovulation and it thickens the cervical mucus which stops sperms from penetrating through to reach the mature egg to be fertilised. It also prevents pregnancy to take place by thinning the endometrium which makes the implantation not to take place.
- ii) These are some of the indications of implants in modern family planning:
 - Women with normal menstrual bleeding cycle.
 - Women with no breast cancer and with no history of breast cancer in their family.
 - Women with no history of allergic reactions to implants.
 - Women with no high blood pressure.
 - Women with no liver disease or tumour.

The Contraindication of the implants as follows:

- Women with excessive weight.
 - Women with heavy menstrual bleeding.
 - Women with breast cancer or history of breast cancer in the family.
 - Women with liver diseases e.g. liver tumour.
 - Allergy to implants.
 - Mood swings and depression.
- iii) Benefits of implants:
 - It provides long-term pregnancy protection.
 - It is Very effective for up to 3 to 5 years, depending on the type of implant.
 - It is immediately reversible.
 - It returns fertility in a short period.

Lesson 7 : Non-hormonal Intrauterine Devices

a) Learning objectives

- Differentiate the types of intrauterine devices.

b) Teaching resources

Textbooks about family planning, IUDs, whiteboard, markers, blackboard, chalks and dusters.

c) Prerequisites/Revision/Introduction

Begin this lesson by asking students to report what they have read about IUDs in the homework given to them. Use their answers and then move to learning activity provided in the Student Book.

d) Learning activity 2.4.1

- Ask students to group in pairs.
- Request them to answer questions about IUDs
- Pass around the class to facilitate any group that may need support
- Identify three or four pairs to present their answers to the whole class by requesting the group representative to write on the flipchart
- Ask other groups to add any ideas on what other groups have presented if they have them.
- Enable the class to ask questions related to the presented findings.
- Summarise the students' ideas and conclude the lesson.

Answers to learning activity 2.4.1

- i) Intra-uterine device, also known as intrauterine contraceptive device or coil, is a small, often T-shaped birth control device that is inserted into the uterus to prevent pregnancy. IUDs are one form of long acting reversible birth control. These intrauterine devices are in two types, hormonal and non-hormonal.
- ii) The intra uterine devices are contraceptive methods that help the population from unwanted pregnancy and they are long term method which are hormonal and non-hormonal, this helps the client to have choice on what he wants.

e) Self-Assessment 2.4.1

are the misconceptions on intra uterine devices have you ever heard in modern family planning.

Answers to Self-Assessment 2.4.1

- i. Advantages of copper IUD are:
 - It is a long-term method used for 6 to 12 years.
 - It is safe to use this method if the woman is breastfeeding.
 - Prevents pregnancy very effectively.
 - Has no further costs after the IUD is inserted.

ii. Copper IUD is indicated in women who:

- Have or have not had children,
- Are married or are not married,
- Are of any age, including adolescents and women over 40 years old,
- Have just had an abortion or miscarriage,
- Are breastfeeding

Copper IUD is contra-indicated in women:

- With a history of pelvic inflammatory disease (PID),
- When pregnancy is suspected,
- With a history of ectopic pregnancy,
- Having uterine abnormalities or benign tumour in the uterus,
- With Gynaecologic bleeding disorders,
- Having suspected cancer of the genital tract
- With known current cervical, endometrial, or ovarian cancer; gestational trophoblastic disease; pelvic tuberculosis
- Who are diagnosed with sexually transmitted infections, they should not have an IUD inserted.

Lesson 8: Hormonal Intrauterine Device (Mirena)

Learning objectives

- Explain the mode of action of hormonal Intrauterine Device (Mirena) to individuals and couples.
- Describe indications and contraindications of hormonal Intrauterine Device (Mirena).
- Explain the effects of hormonal Intrauterine Device (Mirena) to individuals and couples.
- Provide hormonal Intrauterine Device (Mirena) effectively to individuals and couples.
- Use appropriate language while providing hormonal Intrauterine Device (Mirena).
- Respect rights, privacy and confidentiality when providing hormonal Intrauterine Device (Mirena).

- Demonstrate professionalism while providing hormonal Intrauterine Device (Mirena).
- Appraise the effects of hormonal Intrauterine Device (Mirena).

a) Teaching resources

Textbooks about family planning, IUDs, whiteboard, markers, blackboard, chalks and duster.

b) Prerequisites/Revision/Introduction

The student must have prior knowledge about pharmacology, fundamentals of nursing, and reproductive system.

c) Learning activity 2.4.2

- As a facilitator, guide student to group themselves in pairs.
- Ask students to brainstorm what they know about hormonal IUD (Mirena) guided by the questions in Activity 2.4.2.
- Have a sample of groups to present to the others what they know about hormonal IUDs
- Encourage the rest of the class to follow the presentations and ask them to ask questions and provide additional information
- The teacher provides a summary of what students have shared.

Answers to learning activity 2.4.2

i) Intra uterine device (Mirena) is a hormonal intrauterine device (IUD) that can provide long-term birth control (contraception). The device is a T-shaped plastic frame that's inserted into the uterus.

ii) The advantages of hormonal intrauterine devices (Mirena) are as follows:

Mirena helps protect against the risk of pregnancy, and iron deficiency anaemia.

It can also help protect against pelvic inflammatory disease and can reduce menstrual cramps and symptoms of endometriosis.

Mirena does not delay fertility return if a woman stops using it.

Mirena can be used up to five years and it is safe for breastfeeding women.

d) Self-Assessment 2.4.2

The teacher will guide students to answer these questions individually to summarise the lesson.

Answer to Self-Assessment 2.4.2

- i) Mirena Can be inserted any time if the woman is certain that she is not pregnant. However, she will need to a backup method for the first seven days after insertion.

Is indicated to women with heavy menstrual bleeding.

- ii) During the first days after insertion of Mirena, some users have periodic cramping that may usually settle after a few days.

Some users may report other side effects including:

- Headaches,
- Mood changes
- Breast tenderness or pain
- Nausea
- Dizziness
- Ovarian cysts

Lesson 9: Skills lab session on oral contraceptive pills

a) Learning objectives

- To provide all information to the client/couple oral contraceptive pills
- Describe indications and contraindications of oral contraceptive pills.
- Use appropriate language while providing oral contraceptive pills.
- Explain the effects of oral contraceptive pills.

b) Teaching resources

Clean and fitting uniform, closed shoes with short heel, hair tied back, head cap, Disinfectant, vital signs materials and all materials for provision of oral contraceptive pills.

c) Pre requisites/Revision/Introduction

Students need to have knowledge about anatomy and physiology of the reproductive system, pharmacology, fundamental of nursing. The student needs prior knowledge on waste management. To practice the insertion of IUDs in the skills lab, students must understand the theory about modern family planning methods especially mode of action, indication, and contraindications so that they assess the client effectively.

d) Learning activity

- The teacher guides students to make groups of 5 students each

- Ask each group to write down what they remember about the indications and contra-indications different modern family planning methods.
- Ask the representative of each group to present and others put additions according to the content presented.
- Check if students have respected professional dressing for the lab activity
- Wash hands
- Put personal protective equipment
- Check if the environment is safe
- Show the student the video about the provision of oral contraceptive pills.
- Ask student to simulate a scenario of welcoming and explaining to the client oral contraceptive pills
- Guide students to practice the provision of oral contraceptive pills

e) Application Activity

The teacher observe students practicing the provision of oral contraceptive pills. Provide feedback to students after they finish the procedure.

Lesson 10: Skills lab session on injectables.

a) Learning objectives

- To provide all information to the client/couple injectables.
- Describe indications and contraindications of injectables.
- Use appropriate language while providing injectables.
- Explain the effects of injectables.

b) Teaching resources

Clean and fitting uniform, closed shoes with short heel, hair tied back, head cap, Disinfectant, injectables, personal protective equipments, Tray or trolley cleaned and disinfected, material for waste management and all materials for the provision of injectables.

c) Pre requisites/Revision/Introduction

Students need to have knowledge about anatomy and physiology of the reproductive system, pharmacology, fundamental of nursing. The student needs prior knowledge on waste management. To practice the provision of injectables in the skills lab, students must understand the theory about injectables especially mode of action, indication, and contraindications so that they assess the client effectively.

d) Learning activity

- The teacher guides students to make groups of 5 students each
- Ask each group to write down what they remember about the indications and contra-indications of injectables.
- Ask the representative of each group to present and others put additions according to the content presented.
- Check if students have respected professional dressing for the lab activity
- Wash hands
- Put personal protective equipment
- Check if the environment is safe
- Show the student the video about the provision of modern family planning methods (injectables)
- Ask student to simulate a scenario of welcoming and explaining to the client (in this case the mannequin is necessary) about the injectables.
- Guide students to practice the provision of injectables.

e) Application Activity

The teacher observe students practicing the provision and injectables. Provide feedback to students after they finish the procedure.

Lesson 11: Practical session in the health facility

a) Learning objectives

To provide family planning services to individuals and couples in the health facility setting.

b) Teaching Resources

Tables, chairs, pictures of different family planning methods, injectables, pills, disinfectants, personal protective equipments,...

c) Prerequisites/Revision/Introduction

Students must have knowledge about both natural and modern family planning methods. For this reason, using the theory learnt in class, the teacher must engage students in practical session involving education of individuals and couples about family planning methods. Students will also have to provide available methods at the facilities (natural family planning, contraceptive pills, and injectables). During this practical activity, the teacher has to encourage students to **work in an interactive way with women and their partners while discuss their family planning needs and preferences.**

d) Learning activity

- Guide students to organise themselves in 6 groups each composed of 5 students in order to assess their knowledge, skills, attitude and values about the preparation and conducting the health education on natural family methods and how to administer the modern contraceptive methods (pills and injectable).
- Assign each group the task to do at the family planning clinic.
- The first group explain to the clients about natural family planning methods.
- Second group explains to the clients on oral contraceptive pills.
- Group three provides health education about injectables.

After moderating health education sessions to the clients, each group works with skilled nurse/midwife to provide family planning methods for a period of 80 minutes. Students being shadowed by a skilled nurse/midwife from the health facility will perform the following procedures:

- i) Help the clients to understand the nature family planning methods.
- ii) Administration of oral contraceptive pills (progestin pills and combined oral pills)
- iii) Administration of contraceptive injectable (ex: Depo-Provera).

d) Application Activity

The teacher observe students practicing the provision of pills and injectables. Provide feedback to students after they finish the procedure.

2.7. Summary of Unit 2

Modern family planning refers to all products and/ or medical procedures that interfere with reproduction whenever there is sexual act. Some of the products act by preventing ovulation from occurring and others may inhibit sperms from fertilising the matured egg.

There are different methods used in modern family planning like oral contraceptives pills (progestin only pills and combined oral pills), injectables, implants, and IUDs.

The benefits of modern contraceptive methods include longer spacing between pregnancies, preventing unplanned pregnancies, delay in births, and improved survival rates of neonates and children as there will be more time for quality parenting and care of children. Modern family planning also reduces pregnancy-related morbidity and mortality, reduces the risk of developing certain reproductive cancers, and can be used to treat many menstrual related symptoms and disorders.



The teacher needs to remember to also say something about the following key components for the success of family planning provision:

- i) Men involvement in family planning
- ii) Brief overview of the medical eligibility criteria for family planning (for both individuals and couples)
- iii) Client assessment for contraception
- iv) Postpartum and post-abortion IUD provision.

2.8. Answers to the End Unit Assessment 2

A. Open questions

- 1) Modern family planning refers to all products or medical procedures that interfere with reproduction whenever there is sexual act. Some of the products act by preventing ovulation from occurring and others may inhibit sperms from fertilising the matured egg.
- 2) Progestin-only pills act by inhibiting follicular development and preventing ovulation. Progesterone negative feedback signals the hypothalamus to decrease the pulse frequency of gonadotropin releasing hormone, which in turn decrease the secretion of follicle-stimulating hormone (FSH) and the secretion of Luteinizing Hormone (LH). When the follicle is not developing, the estradiol levels increase. When there is no development of the follicle and no LH work, the ovulation is prevented. The pill also thickens cervical mucus (this blocks sperm from meeting an egg). As the woman keeps taking progestin-only pills regularly as prescribed, they cause menstrual cycle change and this prevents the release of eggs from the ovaries (ovulation). The combined oral contraceptive pill Works by stopping the ovaries from releasing an egg each month (ovulation). It also thickens the mucus from the cervix which makes it difficult for sperm to move through it and reach a matured egg. It also makes the lining of the uterus (womb) thinner, it is less likely to accept a fertilised egg.
- 3) Individuals' and couples' preferences can be influenced by a number of factors such as beliefs, medical eligibility criteria, demographic factors, parity, ease of use, duration of use, frequency of sexual intercourse, reliability, and the side effects.

- 4) The Indications of progestin oral contraceptives are as follows:
 - A woman can start using the progestin only pills (POPs) any time she knows that she is not pregnant.
 - A woman can use progestin-only pills if she is breastfeeding.
 - Women with or without children are eligible to use progestin-only pills.
 - Progestin-only pills can also be the method of choice for even adolescent girls who may need to use contraception to prevent unwanted pregnancies.
- 5) The advantages of using emergency contraceptives:
 - Emergency contraceptive pills (ECPs) help a woman to avoid pregnancy after she has had sex without contraception.
 - Emergency contraceptive pills also prevents pregnancy when taken up to 5 days after unprotected vaginal sex.

The side effects of emergency contraceptives:

- Changes in bleeding patterns (Slight irregular bleeding for 1–2 days after taking emergency contraceptive pills,
 - Monthly bleeding that starts earlier or later than expected especially in the first several days after taking the pills
 - Nausea,
 - vomiting,
 - Fatigue,
 - Abdominal pain,
 - Headache,
 - Dizziness,
 - Breast tenderness.
- 6) What is the mechanism of action of copper intra uterine device and its side effects?

Copper IUDs do not contain hormones. They work by using the properties of copper to affect sperm motility and egg survival. The copper IUD causes a chemical change that damages sperm and egg before they can meet to fertilize.

Other actions of Copper IUD include inhibiting the sperm ability to swim through the uterine cavity and further inhibit the transport of the ovum. When the uterus is exposed to a foreign body, a sterile inflammatory reaction occurs, which is toxic to sperm and ovum and this impairs implantation.

- 7) Changes in the woman's monthly bleeding from irregular to no monthly bleeding

Can occur as side effects. The advice to be given to the client is that, should visit a health facility to switch to another method of choice.

- 8) Provide long-term pregnancy protection. Very effective for up to 3 to 5 years, depending on the type of implant. Immediately reversible.
- 9) Modern family planning refers to all products and/ or medical procedures that interfere with reproduction whenever there is sexual act. Some of the products act by preventing ovulation from occurring and others may inhibit sperms from fertilising the matured egg. They include oral contraceptive, injectables, Implants and IUDs.

And natural family planning refers to the methods of contraception which do not use hormones and devices. Natural family planning includes abstinence, coitus interruptus, lactational amenorrhea, and fertility awareness methods.

2.9.1. Remedial activities

A. Answer the following question with true or False

1. Natural family planning use both progestin and oestrogen hormone?

True

False

2. Oral contraceptives (pills) uses progestin only hormone?

True

False

3. All intra uterine devices are hormonal methods?

False

True

B. Multiple choice questions

4. Among the types of family planning listed below, which is long term acting than others?

a) Implants

b) Combined oral contraceptives

c) Intra uterine devices

d) Injectables

5. Emergency oral contraceptive is used to prevent pregnancy in the following conditions except.

a) Emergency contraception is given to women who had sexual assault.

- b) Emergency contraception is given to couples who had unprotected with no wish to be pregnant.
- c) Emergency contraceptive is given as the best choice of Modern family planning advised by the health care providers.
- d) Emergency contraceptives prevents pregnancy when taken up to 5 days after unprotected vaginal sex.

2.9.2 Consolidation activities

A. True or False questions

1. All modern family planning method use both progestin and oestrogen hormone.
2. Oral contraceptives (pills) uses progestin only hormone.
3. All intra uterine devices are hormonal methods.
4. Emergency Contraceptive Pills do not prevent or affect implantation.
5. Implants are modern family planning methods that has progestin and estrogen hormone.
6. Administration of injectable (depo provera) to the woman, it slowly releases hormone progesterone into the bloodstream which prevents ovulation from taking place each month.
7. Hormonal IUD (Mirena) helps protect against the risk of pregnancy, iron deficiency anemia and can reduce menstrual cramps.
8. Combined oral contraceptive pills help a woman to avoid pregnancy after she has had sex without contraception.
9. The progestin only pills contain a low dose of oestrogen similar to the natural hormone progesterone in a woman's body

ANSWERS:

- | | | |
|-----------------|-----------------|-----------------|
| 1. False | 2. False | 3. False |
| 4. False | 5. False | 6. True |
| 7. True | 8. False | 9. False |

B. MULTIPLE CHOICE QUESTIONS

1. Among the types of family planning listed below, which is long term acting than others?
 - A. Implants
 - B. Combined oral contraceptives

- C. Intra uterine devices
 - D. Injectables
2. Emergency oral contraceptive is used to prevent pregnancy in the following conditions except.
 - A. Emergency contraception is given to women who had sexual assault.
 - B. Emergency contraception is given to couples who had unprotected with no wish to be pregnant.
 - C. Emergency contraceptive is given as the best choice of Modern family planning advised by the health care providers.
 - D. Emergency contraceptives prevents pregnancy when taken up to 5 days after unprotected vaginal sex.
 3. One of the following is not a contraindication for women to use IUDs.
 - A. Women with high, lower and normal blood pressure
 - B. Women who have extremely heavy menses
 - C. Women who are severely anemic
 - D. Women who have been treated more than twice for pelvic inflammatory diseases (PID)
 4. What are the health benefits associated with oral contraception?
 - A. Reduction of severe menstrual cramps
 - B. Clearing up acne and improving bone density
 - C. Prevention of certain cancers
 - D. All of the above
 5. Emergency contraceptive pills (ECPs) can prevent pregnancy if taken within:
 - A. 3 to 5 days of intercourse
 - B. 24 hours of intercourse
 - C. 1 to 3 days of intercourse
 - D. 36 hours of intercourse
 6. Which type of intrauterine device (IUD) is available?
 - Copper
 - Titanium
 - Hormonal
 - A and C

7. Which of these is a possible side effect of birth control pills?
- A. Nausea
 - B. Irregular bleeding
 - C. Headaches
 - D. All of the above.
8. One of the following is not included in advantages for women who use progestin only pills.
- A. it does interrupt sex.
 - B. It can be used when breastfeeding.
 - C. it's useful if you cannot take the hormone oestrogen.
 - D. you can use it at any age.
9. The following are advantages of Depo-Provera except one
- A. Does not require daily action
 - B. Does not affect breastfeeding
 - C. Does interfere with sex
 - D. Protects against the uterine fibroids
10. One of the following is not included in the contraindications of hormonal IUD (Mirena)
- A. Breast cancer,
 - B. Renal functional
 - C. Uterine or cervical cancer
 - D. Uterine abnormalities (fibroids)

ANSWERS:

- | | | | | |
|-------------|-------------|-------------|-------------|--------------|
| 1. C | 2. C | 3. A | 4. D | 5. A |
| 6. D | 7. D | 8. A | 9. C | 10. B |

2.9.3 Extended activities

1. The following methods are used as modern family planning **except one**:
 - A. Progestin only pills
 - B. Copper IUD
 - C. Fertility awareness
 - D. Implant
2. One of the following statements is not included in contra indications of progestin only pills:

Women with uncontrolled hypertension

Women who smoke

Women with pre-existing anemia or who had anemia in the past

Women without varicose veins.
3. The following are advantages of using the progestin only pills except one:

The pill is more effective for lactating mothers if used correctly and consistently by breastfeeding mothers.

Interfere with breastfeeding and they are safe for breastfeeding women and their babies because they do not affect milk production.

The user can stop using progestin-only pills at any time without any help of the provider.

Do not interfere with sexual intercourse
4. The following are advantages of combined oral contraceptive pills except one:
 - A. Women have control over their use and they can be stopped at any time without a provider's help.
 - B. Do not interfere with sex and this method is easy to use. Reduce also the risk of having anemia.
 - C. Combined oral pills may not protect against pelvic inflammatory disease
 - D. Combined oral pills can reduce the risk of cancer of the ovaries, womb and colon for women.
5. One of the following statements is not included in the Side Effects of emergency contraceptive

Changes in bleeding patterns (Slight irregular bleeding for 1–2 days after taking emergency contraceptive pills,

Daily and weekly bleeding that starts earlier or later than expected especially in the first several days after taking the pills

Nausea, Abdominal pain vomiting, Fatigue

6. One of the following statements is not included in the indications of Copper IUDs
- A. Have or have not had children,
 - B. Are married or are not married,
 - C. Have a pelvic infection called pelvic inflammatory disease (PID)
 - D. Have just had an abortion or miscarriage
7. Explain the mode of action for emergency contraceptive pills.

ANSWER: The emergency contraceptive pill works by preventing or delaying ovulation .It also inhibits an egg from being released from the ovary when taken before ovulation .it thickens the cervical mucus making it not to allow the sperm to meet the egg.

8. Briefly explain mode of action for Copper IUDs

ANSWER: Copper IUDs do not contain hormones. They work by using the properties of copper to affect sperm motility and egg survival. The copper IUD causes a chemical change that damages sperm and egg before they can meet to fertilize. Other actions of Copper IUD include inhibiting the sperm ability to swim through the uterine cavity and further inhibit the transport of the ovum. When the uterus is exposed to a foreign body, a sterile inflammatory reaction occurs, which is toxic to sperm and ovum and this impairs implantation.

Answers multiple choice

1. C 2. D 3. B 4. C 5. B 6. C

3.1. Key Unit Competence

Provide barrier and permanent family planning services

3.2. Prerequisite

This unit requires that students get equipped with a range of knowledge, attitudes, and competences required to provide barrier and permanent family planning services to individuals and couples. The teacher should make sure that at the end of the unit, students are capable to provide barrier and permanent family planning services to individuals and couples, appreciate individuals' and couples' choices for barrier and permanent family family planning methods.

For this unit to be taught successfully, students must have prior knowledge of the Human Anatomy and Physiology, Pharmacology and Fundamentals of Nursing. Students must also have studied reproductive system. During the teaching-learning process, the teacher needs to link the content on natural family planning to the above mentioned subjects.

As for attitudes and skills, students must have studied about counselling and communication techniques applied to nursing care provision, and must have studied nursing ethics and professional code conduct.

3.2. Cross-cutting issues to be addressed

The teacher needs to ensure that when engaging students into activities set in this unit include the acknowledgement of diversity, inclusion, and gender. As for inclusive education, the teacher has to make sure that students with special learning needs are grouped with others and are assigned roles basing on their abilities. The teacher has to make sure that students special needs have all necessary teaching-learning materials required for them to get knowledge, skills, and attitudes needed for the provision of natural family planning.

3.3. Guidance on the Introductory Activity 3

Using pictures illustrated in the Student Textbook, the teacher asked the questions to the students . The teacher groups students into the group and requests them to open the Student' Textbook. The teacher try to give the students the clarifications about the questions that they have. After students' discussion, each group must

present their work. After presentation, the teacher has to summarise the content and encourage the students to ask questions regarding the lesson that they have discussed.

Tentative answers for the Introductory Activity 3

- a) These pictures show different family planning methods which are condom (male and female condom), diaphragm, vasectomy and tubal ligation.
- b) Condoms can prevent pregnancy and sexual transmitted infections, vasectomy and tubal ligation are permanent family planning methods.
- c) Condoms and diaphragm are used before each sexual intercourse to prevent pregnancy and protect against sexual transmitted infections and for vasectomy and tubal ligation are used when a couple/client doesn't wish to have children.

3.4. Teaching learning resources

Illustrations, banners, copies of the Student Textbooks, YouTube videos, pictures displaying barriers and permanent of family planning methods, different books about family planning, markers, laptops ,projector, internet, whiteboard, blackboard, flipchart.

3.5. List of lessons of Unit three

N^o	Lesson title	Learning objectives	Number of periods 16
1	Introduction to barrier family planning methods	At the end of this lesson, students should be able to classify the types barrier contraceptives.	1
2	Male condom	At the end of this lesson, students will be able to: Describe indications and contraindications of male condom. Explain advantages and disadvantages of male condom.	2
3	Female condom	At the end of this lesson, students should be able to: • Explain the mode of action, advantages and disadvantages of female condom.	2

		<ul style="list-style-type: none"> • Describe indications and contraindications of female condom. • Provide health education to individuals and couples on female condom. 	
4	Diaphragm	<ul style="list-style-type: none"> • Describe indications and contraindications of female condom. • Explain advantages and disadvantages of diaphragm as a barrier method of family planning • Clarify the effect of using diaphragm 	1
5	Cervical caps	<ul style="list-style-type: none"> • Explain advantages and disadvantages of cervical caps as a barrier method of family planning. • Describe indications and contraindications of female condom. • Discuss the use of Cervical caps 	1
6	Permanent contraceptive methods: Vasectomy	<ul style="list-style-type: none"> • Discuss the use of Vasectomy as a permanent family planning methods. • Provide effectively information related to permanent family planning methods. 	2
7	Tubal ligation	<p>Discuss the use of tubal ligation as a permanent family planning</p> <p>Provide effectively information related to permanent family planning methods.</p>	2

8	Summary of the module	<ul style="list-style-type: none"> • Provide effectively barrier family planning methods • Provide effectively information related to permanent family planning methods. • Explain the mode of action of barrier family planning methods • Explain the effects of barrier family planning methods • Discuss the use of permanent contraceptive methods. • Use appropriate language while providing care • Respect rights, privacy and confidentiality when providing care • Demonstrate professionalism • Appraise the effects of family planning methods. 	1
9	Practical session of providing health education about barriers family planning methods	<ul style="list-style-type: none"> • Explain the effects of barriers family planning methods • Explain the advantages and disadvantages of barriers family planning methods. • Use appropriate language while counseling individuals and couples about the advantages, disadvantages, and effects of barriers family planning methods. 	2
12	End unit assessment	To evaluate the knowledge, skills, attitudes and values regarding unit three content.	1
13.	Remedial activities	To evaluate the knowledge, skills, attitudes and values regarding unit three content.	1

Lesson 1: Introduction to barrier family planning methods

a) Learning objective

To classify the types barrier contraceptives.

b) Teaching resources

Student Textbook, illustrations, flipcharts, and internet

c) Prerequisites/revision/introduction

The teacher asks students to think about and attempt explaining what barrier family planning methods means to them and the students have to clasfy the types of barriers family planning methods. Students should have prior knowledge of anatomy and physiology of the reproductive system and fundamentals of nursing.

d) Learning activity 3.1

The teacher uses interactive teaching approach asks students to group themselves in pairs. The teacher provides Student Books to help students do Activity 3.1. The teacher checks with each pair to stimulate students who may be passive to answer questions. After their discussion, the teacher gives students the opportunity to present their answers. After presentation the teacher try to summarize and to clarify the content.

Answers to learning activity 3.1

- i. Barrier methods include either physical devices that prevent sperm from reaching an egg or chemicals that kill or damage sperm in the vaginal canal.
- ii. Barrier contraceptives are classified into two main types: mechanical barriers and chemical barriers.

e) Self-Assessment 3.1

Ask students to work individuals to answer questions of the learning activity 3.1 in the classroom.

- i. Barrier methods prevent sperm from reaching an egg or chemicals that kill or damage sperm in the vaginal canal.
- ii. Barrier contraceptives are classified into two main types: mechanical barriers (condoms, diaphragm, cervical cap and sponge) and chemical barriers (spermicides)
- iii. Barrier methods' success is highly dependent on people's ability to use them correctly every time they do sexual intercourses.

Lesson 2: Male condom

a) Learning objectives

- i) Students should know what is a male condom
- ii) Which situations can one use a male condom
- iii) Students should be able to enumerate advantages and disadvantages of a male condom.

b) Teaching resources

Student Textbooks, pictures showing male condom, computer, internet, flip charts, markers, projectors, white board, black board and dusters.

c) Prerequisites, revision, and introduction

The teacher asks students to what they know on male condom, in which situations to use a male condom and the advantages and disadvantages of a male condom. Students should also have prior knowledge of anatomy and physiology of the reproductive system, fundamentals of nursing, family planning in general.

d) Learning activity 3.1.1

The teacher uses interactive teaching approach to introduce this activity. The teacher shows students a video on how to use a male condom and how one wears it before sexual intercourse, also the teacher displays the pictures of male condom, the teacher will ask students what they know about a male condom, advantages and disadvantages. The teacher will encourage active participation and ask questions to passive students to encourage them. The teacher notes down the answers of each group presentation on the flipchart. Based on students' findings, the teacher compiles the content of the lesson and concludes it.

Answers to learning activity 3.1.1

- i. A male condom is a covering that unrolls over a man's erect penis and is usually made of thin latex rubber. It keeps a man's sperm from getting into a woman's vaginal canal. It can also prevent the partner from becoming infected with the microorganisms that cause various Sexually Transmitted diseases (STIs) and Human Immune Deficiency Virus (HIV).
- ii. For each sex act, one new condom must be used. Before using a condom, the package must be checked to see if the condom is not torn or damaged. Expired condom should not be used except only if a newer condom is not available. Other directions on the use of the condom are outlined in the box below.

iii. Advantages and disadvantages of a male condom

Advantages

- No medical prescription
- Cheap
- Easy to teach/use
- Can be used while waiting to use another method
- Encourages male participation in FP program
- No systematic side effects
- Does not interfere with breastfeeding
- The only reversible method for men

Disadvantages

- Require partner motivation
- Possibility of condom damage
- Must immediately be available)
- Possibility of allergy on latex
- The couple may stop use it or forget

e) Self-assessment 3.1.1

i) *Who should use a male condom as a family planning method?*

- a. If the couple chooses that as their preferred,
- b. If an individual man or woman engages in occasional sexual intercourse,
- c. discordant couples,
- d. If a man has premature ejaculation problems.

ii) *Who should not use male condom as a family planning method?*

- If the individual male partner is allergic to latex manifested through swelling or difficulty breathing,
- If the individual male partner cannot maintain erection,
- For some people (both male and female) who may develop a mild, local irritation or a rash after using a male condom.

iii) *Explain step by step how a condom is used.*

1. Tear and open the package carefully. Do not use fingernails, teeth, or anything that can damage the condom.
2. Before any physical contact, place the condom on the tip of the erect penis with the rolled side out. For the best protection, put the condom on before the penis makes any genital contact.

3. Unroll the condom all the way to the base of the erect penis. The condom should unroll easily. Forcing it on could cause it to break during use. If the condom does not unroll easily, it may be on backwards, be damaged, or be too old. Throw it away and use a new condom. If the condom is on backwards and another one is not available, turn it over and unroll it onto the penis.
4. Immediately after ejaculation, hold the rim of the condom in place and withdraw the penis while it is still erect.
5. Withdraw the penis. Slide the condom off, avoiding spilling semen. If having sex again, use a new condom. Dispose of the used condom safely. Wrap the condom in its packaging and put it in the rubbish or latrine. Keep it away from the reach of children.

Lesson 3: Female condom 3.1.2

a) Learning objectives

- students should know what is a female condom
- who should use a female condom as a family planning method
- who should not use female condom as a family planning method

b) Teaching resources

Student Textbooks, pictures showing female condom, computer, internet, flip charts, markers, projectors, white board, black board and dusters.

c) Prerequisites, revision, and introduction

The teacher asks students to what they know about female condom, who should use a female condom and who should not use a female condom as a family planning method. Students should also have prior knowledge of anatomy and physiology of the female reproductive system, fundamentals of nursing, family planning in general.

Answers to Learning activity 3.1.2

- a) A female condom is a lubricated pouch made of thin, soft plastic that fits loosely inside vagina used during sexual intercourse to reduce the probability of pregnancy and/or sexually transmitted infections
- b) The following can use a female condom:
 - Individual's or couple's choice
 - If an individual engages in occasional sexual intercourse,

- If the couple is discordant,
 - Genital tract infection, including active sexually transmitted infection including vaginitis under treatment,
 - If the female partner desires assurance that semen was not released into her vagina,
- c) The following can not use a female condom:
- Being allergic to latex,
 - When it is impossible for the female partner to maintain erection,
 - Cannot be used as a replacement for the long-term methods of contraception,
 - Women who have sex three or more times a week

Self-assessment 3.1.2

- a) A female condom is a lubricated pouch made of thin, soft plastic that fits loosely inside vagina used during sexual intercourse to reduce the probability of pregnancy and/or sexually transmitted infections. A female condom can be put into the vagina before sex, but make sure the penis does not come into contact with the vagina before the condom has been inserted. Semen can still come out of the penis even before a man has had an orgasm (fully ejaculated).
- b) How the female condom is used:
- Open the packet and remove the female condom, taking care not to tear it.
 - Squeeze the smaller ring at the closed end of the condom and put it into the vagina.
 - Make sure the large ring at the open end of the condom covers the area around the opening of the vagina.
 - Make sure the penis goes in the female condom, not between the condom and the side of the vagina.
 - After sex, remove the female condom immediately by gently pulling it out. You can twist the large ring to prevent semen leaking out.
 - Throw away the condom in a bin, not the toilet.

Lesson 4: Diaphragm

a) Learning objectives

- Describe indications and contraindications of a diaphragm
- Explain advantages and disadvantages of diaphragm as a barrier method of family planning.
- Clarify the effect of using diaphragm

b) Teaching resources

Student Textbooks, pictures showing female condom, computer, internet, flip charts, markers, projectors, white board ,black board and dusters.

c) Prerequisites, revision, and introduction

The teacher asks students to what is a diaphragm contraception, how to use a diaphragm contraception, and the advantages of diaphragm as a barrier method of family planning. Students should also have prior knowledge of anatomy and physiology of the female reproductive system, fundamentals of nursing, family planning in general.

Answers to Learning activity 3.1.3

- a) Diaphragm is a dome-shaped bowl made of thin, flexible silicone that sits over the cervix, it covers the cervix before sex and left in place of at least six hours after sex and prevents sperm passing through the cervix so sperm can't get in and fertilize an egg.
- b) Advantages of diaphragm include:
 - it provides continuous protection for up to 24 hours.
 - non-hormonal method of contraception.

Self-assessment 3.1.3

- a. Some contraindications to diaphragm use include of the following: allergy to rubber or latex, repeated urinary tract infections, lack of personnel trained in fitting diaphragms or of time for proper fitting and instruction, some physical abnormalities, inability to understand the technique.
- b. Side effects associated with the use of the diaphragm are:
 - Irritation of the vagina and surrounding skin or an allergic reaction,
 - strong odors or vaginal discharge if the diaphragm is left in too long,

- an allergic reaction to the material in the diaphragm,
 - a higher risk for urinary tract infections (UTIs).
 - Risk of toxic shock syndrome if the diaphragm is left in too long.
- c. Disadvantages of using diaphragm as a barrier method:
- Not as effective as other types of contraception as it depends on how the person using it remembers to use it and using it correctly.
 - Does not provide reliable protection against STIs.

Lesson 5: Cervical Caps. 3.1.4

a) Learning objective

- students should know what is a cervical
- to know the circumstances when a cervical cap should not be used as a contraceptive method,
- To describe the process involved in inserting the cervical cap into a woman's vagin

b) Teaching resources

Student Textbooks, pictures showing female condom, computer, internet, flip charts, markers, projectors, white board, black board and dusters.

c) Prerequisites, revision, and introduction

The teacher asks students to what is a cervical cap contraception, in which circumstances a cervical cap should not be used as a contraceptive method and to describe the process involved in inserting the cervical cap into the woman's vagina. Students should also have prior knowledge of anatomy and physiology of the female reproductive system, fundamentals of nursing, family planning in general.

Answers to Learning activity 3.1.4

a) The cervical cap is a one of the temporary birth controls (contraceptive) devices that prevents sperm from entering the uterus.

b) The following can not use a cervical cap:

Current history of pelvic, cervical, vaginal, or urinary traction infection;

- intermenstrual bleeding;
- medical procedures to the cervix;
- Recently gave birth or had a miscarriage or an abortion
- Recently had cervical surgery

- Have a history of pelvic inflammatory disease, toxic shock syndrome, cervical cancer, third-degree uterine prolapse, uterine tract infections, or vaginal or cervical tissue tears
- Have vaginal or cervical abnormalities that interfere with the fit, placement or retention of the cervical cap.
- Women who have sex three or more times a week.
- Are allergic to spermicide or silicone.

Self-assessment 3.1.4

a) How a cervical cap is removed from the woman's vagina after sexual intercourse:

- Gently remove the cervical cap. After sex, leave the cervical cap in place for at least six hours and up to two days. To remove the cervical cap, squat, bear down and rotate the cap. Relax your muscles and push up on the dome of the cervical cap to break the seal.
- Grasp the removal strap and gently pull. Be careful not to scratch your vagina. After removal, wash the cervical cap with mild soap and warm water and let it air-dry. Store the cervical cap in its provided container.

b) Possible side effects associated with using a cervical cap as a contraceptive method may include: from the spermicide, irritation of the vagina and surrounding skin or an allergic reaction, strong odors or vaginal discharge if the cap is left in too long, an allergic reaction to the material in the cap and changes in the cervix because of irritation.

Lesson 6: Permanent family planning methods: Vasectomy

a) Learning objective

- Discuss the use of permanent family planning methods.
- Provide effectively information related to permanent family planning methods.
- Classify the types permanent contraceptives method.

b) Teaching resources

Student Textbook, illustrations, flipcharts, and internet

c) Prerequisites/revision/introduction

The teacher asks students to think about and attempt explaining what permanent family planning methods means to them and the students have to clasfy the types of permanent family planning methods. Students should have prior knowledge of

anatomy and physiology of the reproductive system and fundamentals of nursing and family planning in general.

d) Learning activity 3.2.1

The teacher uses interactive teaching approach asks students to group themselves in pairs. The teacher provides Student Books to help students do Activity 3.2.1. The teacher checks with each pair to stimulate students who may be passive to answer questions. After their discussion, the teacher gives students the opportunity to present their answers. After presentation the teacher try to summarize and to clarify the content.

Answers to learning activity 3.2.1

- a. Types of permanent family planning methods are vasectomy and tubal ligation.
- b. A vasectomy also called male sterilization or male surgical contraception, it is a permanent family planning method which is irreversible, it is a simple surgery done by a doctor in a hospital or clinic.

Self-Assessment 3.2.1

- a) A vasectomy blocks or cuts each vas deferens tube, keeping sperm out of the semen. Sperm cells stay in the testicles and are absorbed by the body. Starting about 3 months after a vasectomy, the semen won't contain any sperm, so it can't cause pregnancy. But a men will still have the some amount of semen that he did before.
- b) Some indications are: for men who do not want more children, transection and occlusion of the vas deferens, no interference with sexual performance. There are some contra indications for vasectomy like active STIs, swollen and tender testes, scrotal skin infection, and bilateral un-descended testes.
- c) The following are the advantages of using vasectomy like Safer and more effective than tubal ligation, Vasectomies don't change the way having an orgasm or ejaculating (cumming) feels, Failure is less than 1%.

Lesson 7: Tubal ligation

a) Learning objectives

- Discuss the use of tubal ligation as a permanent family planning
- Provide effectively information related to tubal ligation.

b) Teaching resources

Student Textbooks, pictures showing tubaligation, computer, internet, flip charts, markers, projectors, white board, black board and dusters.

c) Prerequisites, revision, and introduction

Students should also have prior knowledge of anatomy and physiology of the female reproductive system, fundamentals of nursing, family planning in general.

d) Learning activity 3.2.2

The teacher asks students to respond to questions in the student book on the learning 3.2.2.

Answers to Learning activity 3.2.2

- a. A tubal ligation (also known as 'having your tubes tied') is a procedure to close both fallopian tubes which means that sperm cannot get to an egg to fertilize it.
- b. The tubal ligation is indicated for women who want a permanent method of contraception and are free of any gynaecologic pathology that would otherwise dictate an alternate procedure. It is also indicated for women in whom a pregnancy could represent a significant clinical and medical risk.
- c. Tubal ligation' advantages are the following: permanently prevents pregnancy, so she no longer need any type of birth control and it does not protect against sexually transmitted infections. Tubal ligation may also decrease the risk of ovarian cancer, especially if the fallopian tubes are removed.

Self-assessment 3.2.2

- a) This procedure works cutting both fallopian tubes and tie them, which does not allow the sperm to penetrate through to fertilize the mature egg.
- b) The tubal ligation is indicated for women who want a permanent method of contraception and are free of any gynecologic pathology that would otherwise dictate an alternate procedure. It is also indicated for women in whom a pregnancy could represent a significant clinical and medical risk
- c) The tubal ligation is contraindicated in indecisive patients, very young age, incapable of making a medical decision, the presence of gynecological malignancy, and morbidly obese patient.

3.6 Answer to end unit assessment 3

I. True (T) or false (F) questions

1. Barrier methods exist only for males. **False**
2. Condoms should be worn after ejaculation. **False**
3. Barrier methods are safe and have no systemic effects. **True**

II. Multiple choice questions

Choose the correct answer

1. Which methods of birth control needs a prescription?
 - A. Birth control pill
 - B. Contraceptive patch
 - C. Cervical cap
 - D. all of the above**
2. What do male condoms offer that other forms of birth control do not?
 - A. Least chance of failure
 - B. Best protection against STIs**
 - C. Cheapest to use
 - D. All of the above
3. Which type of intrauterine device (IUD) IS available?
 - A. Copper
 - B. Titanium
 - C. Hormonal
 - D. A and C**
4. Which of these methods of sterilization is permanent?
 - A. Tubal sterilization
 - B. Implants
 - C. Vasectomy
 - D. A and C**

III. Open questions

1. Who should use the male condom as a family planning method?

For each sex act, one new condom must be used. Before using a condom, the package must be checked to see if the condom is not torn or damaged.

1. Enumerate advantages and disadvantages of male Condom?

Advantages

- No medical prescription
- Cheap
- Easy to teach/use
- Can be used while waiting to use another method
- Encourages male participation in FP program
- No systematic side effects
- Does not interfere with breastfeeding
- The only reversible method for men

Disadvantages

- Require partner motivation
- Possibility of condom damage
- Must immediately be available)
- Possibility of allergy on latex
- The couple may stop use it or forget

2. Who should not use female condom in family planning method?

- Being allergic to latex,
- When it is impossible for the female partner to maintain erection,
- Cannot be used as a replacement for the long term methods of contraception,
- Women who have sex three or more times a week.

3. Enumerate advantages and disadvantages of female Condom?

Advantages

- Protect agnaist HIV/STIs.
- Prevent pregnancy.
- No side effects(only when damaged or poor hygiene)

Disadvantages

- Expensive(around 1USD)
- Cultural Barrier
- Must be immediately available
- Uncomfortable when inserting the female condom

- Some women may not reach orgasm

4. What is diaphragm as barrier method?

Diaphragm is a dome-shaped bowl made of thin, flexible silicone that sits over the cervix, it covers the cervix before sex and left in place of at least six hours after sex and prevents sperm passing through the cervix so sperm can't get in and fertilize an egg.

3.7 Additional activities

3.7.1 Remedial activities

True (T) or false (F) questions

1. Use of barrier methods never requires partner cooperation. False
2. Barrier methods are a good choice for women who cannot use hormonal methods, young adults and anyone with an increased STD risk. True
3. Most male and female condom breakage is due to human error. True

Multiple choice questions

4. Diaphragms and cervical caps are used to cover
 - A. Penis
 - B. Cervix
 - C. Vaginal
 - D. Scrotum
5. What part of male genitalia is covered by a condom?
 - A. Penis
 - B. Scrotum
 - C. Testis
 - D. Fallopian tube

Open questions

1. What are Disadvantages of diaphragm as a barrier method

Answer: Disadvantages

- Not as effective as other types of contraception as it depends on how the person using it remembers to use it and using it correctly.
- Does not provide reliable protection against STIs.
- It can also take a time to learn how to use it.

2. What do you understand by permanent contraceptive methods

Answer: Permanent contraception involves making a person incapable of reproduction. Disrupting the tubes that carry sperm or the egg ends the ability to reproduce.

3. What is vasectomy as a permanent contraceptive methods?

Answer: A vasectomy also called male sterilization or male surgical contraception, it is a permanent family planning method which is irreversible, it is a simple surgery done by a doctor in a hospital or clinic. The small tubes in the scrotum that carry sperm are cut or blocked off, so sperm can't leave the body and cause pregnancy.

3.7.2. Consolidation activities

Multiple choice questions

1. The cervical cap has approximately the same effectiveness as the:
 - A. Mini pill
 - B. Combination pill
 - C. Diaphragm**
 - D. Condom
2. Which of the following is typically associated with having a vasectomy?
 - A. Decreased testosterone production
 - B. Reduced rigidity of erections
 - C. Decreased sperm production
 - D. Normal orgasm**
3. Female fertilization inhibits -----production
 - A. Egg
 - B. Oestrogen
 - C. Progesterone
 - D. None of the above**

Open questions

4. What are indication and contra indication of using the vasectomy?

Answer:

Indications

Some indications are: for men who do not want more children, transection and occlusion of the vas deferens, no interference with sexual performance

Contraindications

There are some contra indications for vasectomy like active STIs, swollen and tender testes, scrotal skin infection, and bilateral un-descended testes

5. What are the disadvantages of vasectomy?

Answer:

Disadvantages of Vasectomy

- Does not protect against sexually transmitted infections
- Need use of other contraceptives for 8-12weeks after operation.
- Does not use general Anesthesia.
- It's non-reversible.

6. What is tubal ligation as a permanent contraceptive methods?

Answer: A tubal ligation (also known as 'having your tubes tied') is a procedure to close both fallopian tubes which means that sperm cannot get to an egg to fertilize it.

7. How tubal ligation works as a permanent contraceptive methods?

Answer: It works immediately and can be performed after childbirth, it doesn't cause hormonal imbalance like other contraceptives, Eliminates the need to monitor schedules for pills or cycles and it may lower the risk of ovarian cancer.

Case study

1. The client is a 20-year-old man who has 3 children, and his partner supports his decision to have a vasectomy.

a. Is the client making a well-considered decision?

Yes, in general it is a good decision if he already has 3 children and has discussed this with his partner.

b. As a provider, what questions would you want to ask?

This client is young to make this lifelong decision. The provider might want to ask if he would regret this decision if his wife died and he had another partner/wife who wanted more children, or if one or more of his children were sick and died. However, there is no reason to deny the procedure.

4.1. Key Unit competence

Provide promotional activities for the wellbeing of a child

4.2. Prerequisite

Health assessment (History taking, Vital signs taking, Physical examination); Communication skills; human anatomy, immediate care of the newborn.

4.3. Cross-cutting issues

a. Gender

With a good understanding of the principles of Gender Equality, it is intended that future generations will ensure that the potential of the whole population is realized. Involve both girls and boys in all activities: No activity is reserved only to girls or boys. Teachers should ensure equal participation of both girls and boys during learning activities

b. Peace and Values

Peace and values are crucial to the success of the nation. It is important for learners to have the knowledge, skills and abilities to better avoid, address and manage conflicts and prevent violence. During group activities, debates and presentations, the teacher will encourage learners to help each other and to respect opinions of colleagues.

c. Inclusive education

The issue of inclusive education will be addressed through activities that will be conducted. As a facilitator, involve every individual regardless of gender or ability including those with learning difficulties and disabilities and ensure they participate in different given activities. Learners with different learning styles and other difficulties can achieve their potential when the teacher has a positive attitude, by adapting the learning resources, differentiation of teaching and learning methods and working together.

d. Environment and sustainability

Because Environment and Sustainability is a very important cross-cutting issue, learners have to be helped to know maximum skills and attitudes on the environmental sustainability and to be responsible in caring for student's environment. Learners

also need knowledge, skills and attitudes that will enable them in their everyday life to avoid the environment pollution before, during or after labor monitoring like avoid throwing away hazards anywhere; special places or appropriate containers should be used.

e. Standardization Culture

Standardization Culture develops learners' understanding of the importance of standards as a pillar of economic development and in the practices, activities and lifestyle of the citizens. It is intended that the adoption of standardization culture should have an impact upon health improvement, economic growth, industrialization, trade and general welfare of the people. While education is the foundation and strength of our nation, standards are one of the key pillars of sustainable economic development.

4.4. Guidance on the introductory activity 4

This introductory activity helps you to engage learners in the introduction of the unit 4 “promotion of health in children” and invite the learners to follow the next lessons after considering their ideas and inform what they will learn in the unit.

- Ask students to read the scenario and answer the asked question.
- Allow students to have pair discussion about the given questions
- Help students with different problems.
- Ask and allow students to present their findings while others are following.
- Consider their ideas and then give the expected answers:

ANSWER

Based on the above case scenario the child has problem in developmental milestones because of some possible problems with his gestational age, delayed in crying after birth, being feed with the cow's milk which may lead to nutritional deficiency, and not being able to stand nor walk at 24 months. Therefore, the child is not in the normal way of growth and development. In the gross motor a 24 months child should be able to stand without support, walks independently, pulls toys while walking, runs with wide stance, jumps in places with both feet, climbs, begins to stand on one foot momentarily.

4.5. List of lessons

No	Lesson title	Learning objectives	Number of periods
1	Concepts of child health care	Define common concepts used in pediatrics	1
2	Monitoring of growth and development	<ul style="list-style-type: none"> – Use appropriate language while assessing children – Monitor child's growth on growth monitoring charts 	2
3	Nutrition in children		2
4	Assessment of a child: History taking	<ul style="list-style-type: none"> – Determine key elements for child assessment. – Use appropriate language while assessing children – Respect clients' rights and confidentiality – Show empathy when handling children – Demonstrate professionalism while providing care to children 	2
5	Assessment of a child: Review of systems	<ul style="list-style-type: none"> – Determine key elements for child assessment. – Use appropriate language while assessing children – Respect clients' rights and confidentiality – Show empathy when handling children <p>Demonstrate professionalism while providing care to children</p>	2

6	Assessment of a child: Physical examination	<ul style="list-style-type: none"> – Determine key elements for child assessment. – Use appropriate language while assessing children – Respect clients' rights and confidentiality – Show empathy when handling children – Demonstrate professionalism while providing care to children 	2
7	Skills lab	<p>Determine key elements for child assessment.</p> <ul style="list-style-type: none"> – Use appropriate language while assessing children – Respect clients' rights and confidentiality – Show empathy when handling children – Demonstrate professionalism while providing care to children 	2
8	Beliefs that affect child health	Explain beliefs and Practices that affect Child Health	1
9	Practices that affect child health	Explain beliefs and Practices that affect Child Health	1
10	Assessment		1

Lesson 1: Concepts of child health care

a) Learning objectives

Define common concepts used in pediatrics.

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the first lesson of the 4th unit: Promotion of health in children. In this lesson

you will be dealing with the meaning of concepts of child health care. The first thing to do before starting teaching is to remind students that they have learnt about the assessment and immediate care of the newborn and invite them to the lesson 1.

d) Learning activity 4.1

Guidance

- Ask learners to do individually **activity 4.1** in their student book
- Provide the necessary materials to the learners or allow them to go to computer lab and library.
- Move around in silence to monitor if they are having some problems.
- Assist those who are weak but without giving them the knowledge.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations.
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to the learning activity 4.1

1. **Pediatric** is a branch of medicine that deals specifically with children, their development, childhood diseases and their treatment.
2. **Child** is a human being between the stages of birth and puberty, or between the developmental period of infancy and puberty.
3. **Adolescent** is a human in the phase of life between childhood and adulthood, from ages 10 to 19.

Answer to the self assessment 4.1

– Identify the difference between pediatric and pediatric nursing

Pediatrics is a branch of medicine that deals specifically with children, their development, childhood diseases and their treatment then pediatric nursing is the art and science of giving nursing care to children from birth through adolescent with emphasis on the physical growth, mental, emotional and psychosocial and spiritual development of the child. It focuses on providing holistic care to infants, children and adolescent.

– Describe infant, toddler and adolescent periods.

Infant is defined as a child under the age of 1 year; a toddler is a child approximately 12 to 36 months old and adolescence is the phase of life between childhood and adulthood, from ages 10 to 19.

Lesson 2: Monitoring of growth and development

a) Learning objectives

- Use appropriate language while assessing children
- Monitor child's growth on growth monitoring charts

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the second lesson of the 4th unit: Promotion of health in children. In this lesson you will be dealing with monitoring of growth and development of children. The first thing to do before starting teaching is to remind students that they have learnt about the assessment and immediate care of the newborn and invite them to the lesson 2.

d) Learning activity 4.2

Guidance

- Ask learners to do individually activity 4.2 in their student book
- Provide the necessary materials to the learners or allow them to go to computer lab and library.
- Move around in silence to monitor if they are having some problems.
- Assist those who are weak but without giving them the knowledge.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations.
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to the learning activity 4.2

Using different sources of information describe the growth monitoring.

Growth monitoring is a process of following the growth of a child compared with a standard by periodic frequent anthropometric measurements and assessments.

Growth monitoring and promotion is a preventive and promotional activity.

It facilitates communication and interaction between health care providers and care givers so as to encourage appropriate timely intervention to promote optimal child development and growth.

Answer to the self-assessment 4.2

There are 5 major steps in growth monitoring

Step 1: Determining correct age of the child

Step 2: Accurate weighing of the child

Step 3: Plotting the weight accurately on a growth chart of appropriate gender

Step 4: Interpreting the direction of the growth curve and recognizing if the child is growing properly.

Step 5: Discussing the child's growth and follow up action needed with the mother.

2. Oral stage of Freud's Psychosexual Developmental Theory

The infant is fixated on oral curiosity (whatever he can put in the mouth).

The infant derives pleasure from and relieves anxiety through oral sensations; for example, the infant sucks on his mother's breast or his bottle and is fed and pleased. The infant puts his first in his mouth, or uses a teething ring. Children at this stage often use pacifiers or thumbs to decrease anxiety and increase comfort.

3. There 5 stages of Erikson's Psychosocial Developmental Theory which are:

A. Trust versus Mistrust

Trust versus mistrust occurs between birth and 1 year. The task of this stage is for the baby to recognize that there are people in his life, generally parents that can be trusted to take care of basic needs. The baby's struggle becomes evidenced in the recognition that not everyone or every situation is "safe." Through trust the baby learns to have confidence in personal worth and well-being along with connectedness to others. Failure to master this stage leaves a sense of hopelessness and disconnectedness.

B. Autonomy versus Shame and Doubt

Autonomy versus Shame and Doubt occurs between 1 and 3 years. The task of this stage is for the child to balance independence and self-sufficiency against the predictable sense of uncertainty and misgiving when placed in life's

situations. It is the time for the child to establish willpower, determination, and a can-do attitude about self. An example of this stage happens when the toddler wants to choose clothing and dress independently. The struggle happens when the parents allow the child to make personal choices yet expect the choices to be socially acceptable.

C. Initiative versus Guilt

Initiative versus guilt occurs between 3 and 6 years. The child's task during this stage is to develop the resourcefulness to achieve and learn new things without receiving self-reproach. It is difficult for a young child to resolve the conflict between wanting to be independent and needing to stay attached to parents. The child's writing plays or new songs, games, or jokes are good examples of initiative.

The child feels confident to try new ideas. It is important that parents and teachers encourage this initiative to help the child develop a sense of purpose. If initiative is discouraged or ignored, the child may feel guilt and lack of resourcefulness.

D. Industry versus Inferiority

Industry versus inferiority occurs between the ages of 6 and 12. In this stage, the child develops a sense of confidence through mastery of tasks. This sense of accomplishment can be counterbalanced by a sense of inadequacy or inferiority that comes from not succeeding. The realization that the child is competent is one of the important building blocks in the development of self-esteem. Industry is evident when the child is able to do homework independently and regulate social behavior. Performing the prescribed tasks at school or home also show industry. If the child cannot accomplish realistic expected tasks, the feeling of inferiority may result.

E. Identity versus Role Confusion

Identity versus role confusion occurs between the ages of 12 and 18. This is a time of forging ahead and acquiring a clear sense of self as an individual in the face of new and at times conflicting demands or desires. During this stage the adolescent wants to define "what to be when I grow up." She begins to concentrate on goals and life plans separate from those of peers and family. At this point, the child has the ability to think about self as well as others and proceeds accordingly.

Lesson 3: Nutrition in children

a) Learning objectives

- Explain importance of nutrition in children
- Describe nutrition assessment in children

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 3rd lesson of the 4th unit: Promotion of health in children. In this lesson you will be dealing with nutrition in children. Before teaching this unit, remind students what they have learnt in previous lesson about monitoring of growth and development, and then help them to enter to the lesson 3.

d) Learning activities:

Guidance

- Ask learners to do individually activity 4.3 in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 4.3

Identify the differences between the two babies on the picture below.

- One child has low body weight is very skinny. Another child looks well has good body composition has healthy skin.

Answer to self-assessment 4.3

- Discuss various forms of malnutrition.
- What are the elements of nutritional clinical assessment?

Various forms of malnutrition:

- Under nutrition
- Micronutrient related malnutrition
- Overweight and obesity

Elements of nutritional clinical assessment:

- Anthropometric is the measurement of the size, weight and proportion of the body.
- Biochemical: checking level of nutrients in a child's blood, urine or stools.
- Clinical assessment includes checking for visible signs of nutritional deficiencies such as bilateral pitting edema, emaciation, ...
- Dietary: assessing food and fluid intake is an essential part of nutrition assessment.

Lesson 4: Assessment of a child: History taking

a) Learning objectives:

- Determine key elements for child assessment.
- Use appropriate language while assessing children
- Respect clients' rights and confidentiality
- Show empathy when handling children
- Demonstrate professionalism while providing care to children

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 4th lesson of the 4th unit: Promotion of health in children. In this lesson you will be dealing with assessment of a child. Before teaching this unit, remind students what they have learnt in previous lesson about nutrition in children, and then help them to enter to the lesson 4.

d) Learning activities:

Guidance

- Ask learners to do individually activity 4.4 in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 4.4:

Describe what you are seeing on the chart

A mother holding a baby, the baby looks like he/she has fear and a health care provider who is sitting in front of them, may be she is asking information to the mother.

Answer to self-assessment activity 4.4:

- **Identify elements to include in pediatric history taking:**
 - Chief complaints, history of present history, past history, pregnancy and birth history, growth history, developmental history, medical history, immunization history, feeding history, family history, social history
- **Why do we need to know prenatal history of pediatric patients?**
 - It will help to know if there were any abnormal results or concerns identified on routine screening for infections and chronic diseases in ultrasounds.

Lesson 5: Assessment of a child: Review of systems

a) Learning objectives:

- Determine key elements for child assessment.
- Use appropriate language while assessing children.
- Respect clients' rights and confidentiality.
- Show empathy when handling children.
- Demonstrate professionalism while providing care to children

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 5th lesson of the 4th unit: Promotion of health in children. In this lesson you will be dealing with assessment of a child: review of systems. Before teaching this unit, remind students what they have learnt in previous lesson about Assessment of a child: History taking, and then help them to enter to the lesson 5.

d) Learning activities:

Guidance

- Ask learners to do individually **activity 4.5** in their student book
- Provide clear and appropriate guidelines
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 4.5:

- **Observe the following picture and identify different human body system illustrated**

Circulatory system, skeletal system , nervous system , respiratory system, digestive system

Answer to self-assessment 4.5

- Describe the constitutional symptoms in the review of systems.
Fever, weight loss, vital signs, ears, nose, mouth, throat, ...
- Explain any 4 systems that can be reviewed during history taking.
Respiratory system, cardiac, genito_urinary, gastro_intestinal, musculoskeletal, integumentary, ...

Lesson 6: Assessment of a child: Physical examination

a) Learning objectives:

- Determine key elements for child assessment.
- Use appropriate language while assessing children
- Respect clients' rights and confidentiality
- Show empathy when handling children
- Demonstrate professionalism while providing care to children

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 6th lesson of the 4th unit: Promotion of health in children. In this lesson you will be dealing with assessment of a child: Physical examination. Before teaching this unit, remind students what they have learnt in previous lesson **Assessment of a child: Review of systems**, and then help them to enter to the lesson 6.

d) Learning activities:

Guidance

- Ask learners to do individually activity 4.6 in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 4.6:

- **What should be done during pediatric physical examination?**

In physical examination, medical examination or clinical examination, a medical practitioner examines a patient for any possible medical signs or symptoms of a medical condition. It generally consists of a series of questions about the

patient's medical history followed by an examination based on the reported symptoms.

- **Why is it relevant to perform pediatric physical examination?**

Physical examination helps to determine a diagnosis and revise the treatment plan.

Answer to self-assessment 4.6:

- Enumerate sites for measuring body temperature.
Oral, rectal, armpit, ear.
- Describe any 3 differences in physical examination of a child and adult.

Gather as much data as possible by observation first

Position of child: parent's lap vs. exam table

Stay at the child's level as much as possible. Do not tower!!

Order of exam: least distressing to most distressing

Rapport with child:

- Include child - explain to the child's level
- Distraction is a valuable tool

Examine painful area last-get general impression of overall attitude

Be honest. If something is going to hurt, tell them that in a calm fashion. Don't lie or you lose credibility!

Understand developmental stages' impact on child's response. For example, stranger anxiety is a normal stage of development, which tends to make examining a previously cooperative child more difficult.

Lesson 7: Beliefs that affect child health

a) Learning objectives

Explain beliefs that affect Child Health.

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 7th lesson of the 4th unit: Promotion of health in children. In this lesson you will be dealing with **the beliefs that affect child health**. The first thing to do before

starting teaching is to remind students what they have learnt about the assessment of a child in the previous lessons of this unit and invite them to the lesson 7.

d) Learning activities 4.7

Guidance

- Ask learners to do individually **activity 4.7** in their student book
- Provide the necessary materials to the learners or allow them to go to computer lab and library
- Move around in silence to monitor if they are having some problems.
- Assist those who are weak but without giving them the knowledge.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to the learning activity 4.7

Different beliefs in the community are:

The teacher will expect many answers from learners about different beliefs in their community including putting on the child a bracelet on his/her arm to prevent the child from being poisoned; when a female hold a newborn during menstruation the baby will develop skin rashes...

Answer to self-assessment 4.7

Concepts affected by the culture are:

Cultural practices affect children's and families' conceptions of health, as well as children social development, attitudes towards health problems they experience, conception of illness, reactions to illness and therapy.

Religion is a concept that may affect individuals' and society's philosophy of life, conceptions of health and illness, types of food consumed, rituals of birth and death, and healthcare practices. Societies are found.

Lesson 8: Practices that affect child health

a) Learning objectives

Explain practices that affect Child Health.

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 8th lesson of the 4th unit: Promotion of health in children. In this lesson you will be dealing with the practices that affect child health. The first thing to do before starting teaching is to remind students what they have learnt about the beliefs that affect child health in the previous lessons of this unit and invite them to the lesson 8.

d) Learning activities 4.8

Guidance

- Ask learners to do individually **activity 4.8** in their student book
- Provide the necessary materials to the learners or allow them to go to computer lab and library
- Move around in silence to monitor if they are having some problems.
- Assist those who are weak but without giving them the knowledge.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to the learning activity 4.8

1. On the image there are 3 people sitting in the dirty yard. 1 child is sitting and there is a woman who is introducing something in the child's mouth and she is holding a knife in the other hand. There is a basin close to them and another woman sitting behind them and observing what she is doing.

Different practices in the community are: Milk teeth extraction (Gukura ibyinyo); Uvulectomy (Guca ikirimi); Tonsilectomy (Gukata ibirato); Extracting millet (Gukura uburo)
2. These practices are the source of infection, transmission of HIV, bleeding that can lead to shock later on anemia and even death.

Answer to self-assessment 4.8

1. Traditional practices have different complications such as loss of blood that may lead to shock later on Anaemia, blood infections, tetanus, HIV/AIDS (because the materials used are not sterilized), facial disfigurement and can be fatal. The underlying permanent tooth buds can be damaged or eradicated, causing malformations and long-term crowding in the anterior region of the maxilla and mandible.
2. The prevention of traditional practices involves a multidisciplinary team. This goes beyond changing particular beliefs and behaviors within communities and societies: it is about fundamental social change. There is need of increased, access especially for poor and vulnerable people, to all essential services, including health and education, social welfare and legal services. The community needs a sound understanding of the importance of religion, faith and other belief systems: how they can support work to end traditional practices that are harmful to children.

Lesson 9: Skills lab

a) Learning objectives

- Determine key elements for child assessment.
- Use appropriate language while assessing children
- Respect clients' rights and confidentiality
- Show empathy when handling children
- Demonstrate professionalism while providing care to children

b) Learning activities:

Guidance

- Prepare skills lab demonstrations and simulated learning activities
- Provide resources in skills lab to help students to master psychomotor skills
- Monitor and supervise students to ensure that lab experiences meet courses outcomes
- Provide feedback and evaluate students' skills
- Mentor and help students who have problems and who are weak in performance.
- Maintain records on students' attendance and performance
- Rearrange the skills lab.

4.6. Summary of the unit

The early years of a child's life lay the foundation for future physical, cognitive, emotional, and social development. Children's health and well-being is influenced by a variety of factors, including family characteristics, community dynamics, and other social determinants of health (SDOH). These include systems, policies, and environmental conditions in which children are born and grow up.

Growth monitoring is a process of following the growth of a child compared with a standard by periodic frequent anthropometric measurements and assessments.

Growth monitoring and promotion is a preventive and promotional activity. It facilitates communication and interaction between health care providers and care givers so as to encourage appropriate timely intervention to promote optimal child development and growth.

Proper nutrition supports normal growth, development and aging. It also helps to maintain a healthy body weight and reduces the risk of chronic diseases.

For children, adequate nutrition is one of the most important factors influencing growth and immunity. A balanced diet must contain the proper amount of protein, carbohydrate, fats, calcium, iron, vitamins and fiber. The foundation for lifelong health is largely set during the first 1,000 days (this is the most critical developmental period of brain growth and function).

4.7. Additional information for the teachers

Rwanda's principal health problems are **Kwashiorkor, infectious hepatitis, dysentery, malaria and tuberculosis**. Only 50% of the population has access to safe drinking water. The spread of HIV/AIDS has become a further health problem. Health promotion programs aims to engage and empower individuals and communities to choose healthy behaviors and make changes that reduce the risk of developing chronic diseases and other morbidities. Health promotion and disease prevention programs often address social determinants of health which influence modifiable risk behaviors. Social determinants of health are the economic, social, cultural, and political conditions in which people are born, grow and live that affect health status.

Health promotion lays out five key action areas for health promotion:

- Reorient health services
- Create a supportive environment
- Develop personal skills
- Strengthen community action
- Build healthy public policy.

4.8. Answers to End unit assessment

1. What is health Promotion?
 - Health promotion is the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions.
2. Which children should we monitor their growth? Why?
 - Every child
 - Because it helps to assess growth adequacy and identify changes at early stages before the child reaches the status of under nutrition.
 - Weight gain is the most important sign that a child is healthy and is growing and developing well. Also, a health checkup can detect if a child is gaining weight too fast or too slow in comparison to his/her age.
3. What does the psychosexual development theory of Sigmund Freud say about the development of personality which is different from what is said by other theorist?
 - Freud believed that it was early experiences that played the greatest role in shaping development. According to Freud, personality is largely set in stone by the age of five.
4. Describe different types of nutritional assessment
 - Types of nutrition assessment are remembered with mnemonics ABCD:
 - A:** Anthropometric is the measurement of the size, weight and proportion of the body. Common anthropometric measurement include weight, height, MUAC (Mid Upper Arm Circumference), head circumference and skin folds. Body mass index (BMI) and weight-for-height are anthropometric measurements presented as indexes.
 - B:** Biochemical means checking level of nutrients in a child’s blood, urine or stools. Lab tests results can give useful information about medical problems that may affect appetite or nutritional status.
 - C:** Clinical assessment includes checking for visible signs of nutritional deficiencies such as bilateral pitting edema, emaciation (a sign of wasting, which is a loss of muscle and fat tissue as a result of low energy intake and/or nutrients loss from infection), hair loss, and change in hair color. It also includes taking a medical history to identify co-morbidities with nutritional implications, opportunistic infections, other medical complications, usage of medications with nutritional related side effects, food and drug interactions and risk factors for disease, inability to suck and ineffective breastfeeding.

Bilateral pitting edema also called nutritional edema is a swelling in both feet or legs (bilateral) caused by accumulation of excess fluid under the skin in the spaces within tissues. It is a sign of severe malnutrition on its own regardless of the results of anthropometric assessment. Any child with severe bilateral pitting edema (grade+++), even with appetite and no medical complications should be admitted for inpatient management. A child with bilateral pitting edema Grade+ or ++ with appetite and no medical complications should be treated for severe acute malnutrition.

D: Dietary: assessing food and fluid intake is an essential part of nutrition assessment. It provides information on dietary quantity and quality, changes in appetite, food allergies and intolerance, and reasons for inadequate food intake during and after illness. To counsel the parents how to improve their diet to prevent malnutrition or treat conditions affected by food intake and nutritional status example cardiovascular disease, cancer, obesity, diabetes and hyperlipidemia.

5. Describe the elements assessed during the pediatric physical assessment.
 - Vitals signs
 - General
 - Skin and lymphatic
 - Head

4.9. Additional activities

4.9.1. Remedial activities:

What is the difference between psychosexual theory of Sigmund Freud and psychosocial development of Erick Erikson?

Answer: Psychosexual theory emphasizes the importance of basic needs and biological forces, while Erikson's psychosocial theory is more focused upon social and environmental factors. Erickson expands his theory into adulthood, while Freud's theory ends at an earlier period.

4.9.2. Consolidation questions

A mother brought a baby of 5 months in consultation room, complaining of fever, inability to breastfeed, crying all time. The mother informs you that the traditional healers removed ibyinyo: "Milk teeth extraction" a week ago.

a. Define milk teeth extraction

Milk teeth extraction is a process of gouging out an infant's healthy baby canine buds imbedded underneath the gums, using unsterile tools such as a hot or sharpened nail, a bicycle spoke or knitting needle, with no anesthesia.

b. What are possible consequences of milk teeth extraction on child?

Sometimes to extract milk teeth, they use no sterile material which can cause infection and tetanus.

This is done by non-professionals, sometimes the extraction is followed by bleeding, pain because traditional healers don't provide anesthesia.

As they remove prematurely teeth this can cause permanent damage of the child.

a. Explain to the mother what traditional healers did and they are calling 'ibyinyo'.

They remove infant's healthy baby canine buds imbedded underneath the gums.

What they call "ibyinyo" in reality, this so-called disease is the natural teething stage that all babies go through, beginning at around 6 months of age. Teething in babies causes mouth pain, fever and sometimes even vomiting or diarrhea, prematurely extracting the teeth is not a cure, and causes serious permanent damage of the child.

4.9.3. Extended activities

b. Name traditional practices that can affect child's health.

- **Uvulectomy (Guca ikirimi)**
- **Tonsilectomy (Gukata ibirato)**
- **Extracting millet (Gukura uburo)**

c. As health professional, what can you do to prevent those practices?

The prevention of traditional practices involves a multidisciplinary team. This goes beyond changing particular beliefs and behaviors within communities and societies: it is about fundamental social change. There is need of increased, access especially for poor and vulnerable people, to all essential services, including health and education, social welfare and legal services. The community needs a sound understanding of the importance of religion, faith and other belief systems: how they can support work to end traditional practices that are harmful to children.

5.1. Key unit competence

Provide the disease prevention services to the children.

5.2 Prerequisite (knowledge, skills, attitudes and values)

The student should have studied immediate new born care, new born danger signs and the promotion of health in children in the maternal and child health syllabus.

For the knowledge and understanding; the students should know the Explanation of the principles of early childhood development, determine the steps of child developmental monitoring and outline the uses of vaccines in children according to the National Expanded Program of Immunization.

For the skills; the students have to perform the Screen the child growth and development, discuss the growth development of a child and administer the vaccines according to Expanded Program of Immunization.

For the attitudes and values; the students should recognize the principles of early childhood development, use the appropriate language while providing care to children, respect clients' rights and privacy, show empathy when handling the children and demonstrate the professionalism while providing care to children.

5.3 Cross-cutting issues to be addressed

a) Inclusive education

This unit includes the collection of the materials used for measuring the growth and development of the children and requires the observation of images illustrating the principles of early child hood development. This may be a challenge to students with special educational needs especially children with visual impairment.

However, the teacher can make some arrangements like:

Grouping the students; Students with special educational needs are in the group with others and assigned roles basing on individual student's abilities.

Provision of materials for the care of the new born before the practice may help the students to be familiar with them. They can be drowned on the whiteboard or printed images depending on available resources. If you have children with low vision remember to print well visible images.

Every important point is written and spoken. The written points help students with visual impairment and speaking aloud helps students with hearing impairment. Remember to repeat the main points of the lessons.

b) Gender education

Instruct the students that during the presentation of the assigned tasks, boys and girls should share and participate equally. At the time of practice of assessing and providing the care of the new born, all students have to practice irrespective of gender.

c) Environment and sustainability

Learners get basic knowledge from the procedure of assessing and providing the care to the new born through the practice in the skills lab; learners understand and interpret the principles of early childhood development. They also get skills and attitudes that will enable them in their everyday life to recognize the principles of early childhood development, use the appropriate language while providing care to children and demonstrate professionalism while providing care to children.

The students are encouraged to clean, prepare and arrange the skills lab before the practice of assessing and providing the care to the children. After the procedure, the skills lab has also to be rearranged and the displaced materials should be repositioned to their previous positions.

5.4 Guidance on the introductory activity 5

This introductory activity helps the teacher to engage learners in the introduction of the prevention of diseases in the children and invite the learners to follow the next lessons.

Teacher's activity:

- Ask students to visualize the images and discuss the given questions.
- Engage students in working collectively the activity.
- Help students with different problems.
- Ask any five students to present their findings while others are following.

The expected answers:

- a) She is administering rotarix vaccine.
- b) The child is receiveing an injection vaccine.
- c) The child is coughing while covering the mouth.
- d) It is the vaccination card for the child girl.
- e) Hand washing prevents the spread of microorganism.

- f) The children are playing foot ball.
- g) Image G illustrates some elements of the fruits.
- h) The baby is receiving the oral polio vaccine.
- i) The child is brushing the teeth in order to maintain the oral hygiene.
- j) The health care providers are providing a health education to the mother in the vaccination service.

5.5 List of lessons/sub-heading

Lesson title		Learning objectives (from the syllabus including knowledge, skills and attitudes)	Number of periods
1	Preventive measures for common childhood illnesses.	<ul style="list-style-type: none"> – To define the term immunization. – To enumerate the different measures used to prevent the childhood illnesses. 	1
2	Principles of early child hood development.	<ul style="list-style-type: none"> – To explain the principles of child development. 	2
3	Types of child development.	<ul style="list-style-type: none"> – To discuss about the types of development. 	2
4	Factors influencing the child development.	<ul style="list-style-type: none"> – To develop the factors influencing the child development. 	2
5	Promotion of child health	To enumerate the elements of child health promotion.	2
6	Developmental monitoring and screening	<ul style="list-style-type: none"> – To identify the stages of child development. 	2
7	Developmental monitoring	<ul style="list-style-type: none"> – To define the term developmental monitoring. – To determine the risk factors for developmental disabilities. 	2
8	Developmental screening	To explain the importance of developmental screening. <ul style="list-style-type: none"> – To identify the signs of developmental delay. 	2

		<ul style="list-style-type: none"> - To list the risk factors for hearing impairment. - To discuss on the development screening tests. 	
9	Immunization according to expanded program of immunization.	<ul style="list-style-type: none"> - To explain the Expanded Program on immunization - To distinguish the types of immunity. 	1
10	National expanded program of immunization vaccine.	<ul style="list-style-type: none"> - To explain the routine immunization schedule used in Rwanda. - To discuss about the vaccination for special cases. - To develop the main types of vaccines that act in different ways. 	2
11	Behavior change communication and social mobilization.	<ul style="list-style-type: none"> - To explain the communication of the key messages about immunization to a group. - To provide the strategies to trace dropouts. - To demonstrate the preparation of the equipment for vaccination. 	2
12	Vaccination cold chain	<ul style="list-style-type: none"> - To define the term cold chain. - To explain the cold chain monitoring equipment. - To identify the precautions to be considered while administering the vaccines. 	2
13	Skills lab	<ul style="list-style-type: none"> - Developmental monitoring and screening of the children. - Demonstrate practical skills for providing health education to the mothers with children during the vaccination. - Completion of the immunization cards and plotting of the growth charts. 	2
14	End unit assessment	The lesson was conducted very well and all students were involved and they are capable to achieve the key competences of the lesson.	2

Lesson 1: Preventive measures for common childhood illnesses.

a) Learning objectives:

- To define the term immunization.
- To enumerate the different measures used to prevent the childhood illnesses.

b) Teaching resources

Student's book and teacher guide of the unit, mannequin, weighing machine and tape measure, white board, computer, projector, flipcharts, marker, papers and pens.

c) Prerequisites/Revision/Introduction:

This is the first lesson of the fifth unit of prevention of diseases in children. In this lesson, the teacher will deal with different preventives measures used to prevent the childhood illness. The first thing to do before starting teaching is to remind students that they have learnt about immediate care of the new born, new born danger signs and promotion of health in children in maternal and child health (S4 & S5), and let them discuss the methods which can be used in order to prevent the spread of micro-organisms among the children and this can prepare themselves for this lesson.

d) Learning activities 5.1

Guidance:

- Provide an activity 5.1 given in student teacher textbook and ask them to do the related questions, attributed to each group,
- Provide the necessary materials.
- Move around in silence to monitor if they are having some problems
- Remember to assist those who are weak but without giving them the knowledge.
- Invites any five students to present their findings to the rest of students.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and still engage students in making that conclusion.

Answers for learning activity 5.1

- a) The vaccines dropout
- b) The intervention to prevent diseases mentioned in scenario is vaccination.
- c) The different childhood illnesses are caused by a variety of parasites, viruses and bacteria.

Answers for self-assessment 5.1

Expected answers are:

1. **Vaccination** is the term used for getting a vaccine that is, actually getting the injection or taking an oral vaccine dose.
2. Vaccination refers to the term used for getting a vaccine while immunization is the process by which a person becomes protected against a disease through vaccination.
3. The actions aimed at reducing the incidence of diseases in children; these actions include the provision of information on behavioral and medical health risks, nutritional and food supplementation; oral and dental hygiene education, clinical preventive services such as vaccination of children, adults and the elderly according to expanded program of immunization.
4. Get vaccination: one of the most powerful ways to prevent childhood illness is to get vaccines; they are proven to be safe and most effective.
 - Wash hands regularly: Getting children into the habit of washing their hands is one of the most powerful ways to prevent illness.
 - Cover coughs and sneezes: Teach children to help prevent the spread of illness by covering coughs and sneezes with a tissue or elbow and remember to wash hands after.
 - Eat healthy and exercise regularly,
 - Start good habits early.
 - Disinfect toys, electronics, and communal objects.

Lesson 2: Principles of early child hood development.

a) Learning objectives:

To explain the principles of child development.

b) Teaching resources

Student's book and teacher guide of the unit, a watch, mannequin, white board, computer, projector, flipcharts, marker, papers and pens.

c) Prerequisites/Revision/Introduction:

This is the second lesson of the fifth unit for prevention of disease in children. In this lesson you will be dealing with the principles of early child hood development. The first thing to do before starting teaching is to remind students that they have learnt about elements of the new born assessment in the immediate care of the new and new born danger signs in maternal and child health, and let them discuss the principles of child development so that they can prepare themselves for this lesson.

d) Learning activities 5.2

Guidance:

- Ask students to work in pair and do the activity 5.2 in student's book.
- Provide the necessary materials to the learners.
- Move around in silence to monitor if they are having some problems, sharing ideas in pairs.
- Assist those who are weak but without giving them the knowledge.
- Invite any of the three pairs to present their findings to the rest of students.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Encourage the students to have more practice on the assessment of the mother.
- Harmonize and conclude on the learned knowledge and still engage students in making their own conclusion.

Answers of learning activity 5.2

- a) Early childhood development starts from conception until age of 5 years.
- b) Child development refers to the sequence of physical, language, thought and emotional changes that occur in a child from birth to the beginning of adulthood.
- c) Child Growth is the progressive increase in the size of a child or parts of a child.

Answers for self-assessment 5.2

1. The principles of child development.
 - Growth and Development are interrelated
 - Child development occurs in an orderly sequence,
 - Child development is Directional.
 - Child development is individualized and it is unique,
 - Child development becomes increasingly integrated and complex.
2. Physical growth (Height, weight, head & chest circumference) and physiological growth (vital signs).
3. Refers to the fact that development (as well as growth) always proceeds directionally from head to foot.

Lesson 3: Types of child development

a) Learning objectives

To discuss about the types of development.

b) Teaching resources

Student's book and teacher guide of the unit, white board, computer, projector, flipcharts, marker, papers and pens.

c) Prerequisites/Revision/Introduction

The students already know about the principles of early child development learnt in the previous lesson, the teacher is also recommended to help the students to work on this activity of assessing the types of child development as it is in the student book and the teacher will use the student's ideas through the practice and student's presentations hence preparing for the next lesson.

d) Learning activities 5.3

Guidance:

- Tell the students to go to the class room.
- Ask the students to collect the necessary materials.
- Ask the students to brainstorm on the types of the child development.
- Supervise the practice how it is being conducted and give the students' opportunity to work in their respective groups
- Ask students to record findings on the paper sheet
- Help the students to summarize what they have learnt.
- Ask the students to present what they have done.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and still engage students in making that conclusion.

Answers of learning activity 5.3

- a) Katia's memory is good as she usually sings to her mum songs that taught by her teacher.
- b) Her motor skills is good as she is able to ride a bike with training wheels, loves jumping, running with her friends, loved to help self-bath, feeds herself with a small spoon and fork. She can zip, unzip and button her coat without assistance. She draws circle and heart shapes. She is able to twist and partially braid her doll's hair.
- c) She has numerous friends and likes playing with them.

Answers for self-assessment 5.3

- 1) The types of child development: Cognitive and intellectual development, gross motor and fine motor development, speech and language development, social and emotional development.
- 2) Cognitive and intellectual development in children is the development of the skills and knowledge that helps them understand their environment. Examples are thinking, remembering, counting or identifying shapes.
- 3) These refer to a child's ability to interact with others, to understand and manage feelings and emotions. Examples of socioemotional skills are empathy, sympathy, recognizing and expressing feelings, and the ability to relate to others.

Lesson 4: Factors influencing the child development.

a) Learning objective

To develop the factors influencing the child development.

b) Teaching resources

Student's book and teacher guide of the unit, mannequin, white board, computer, projector, flipcharts, marker, papers and pens.

c) Prerequisites/Revision/Introduction

The teacher makes a revision on the assessment of the new born immediately after birth, the activity in student book create the clear connection to the measurements that could be based on for further assessment of the factors influencing the child development. The teacher will ask the learners some questions related to the measurements which may help to assess the child appropriately.

d) Learning activities 5.4

Teacher's activities

- Ask the students to read the case study from the activity 5.4 found in the student book.
- Ask the students to brainstorm the factors influencing the child development.
- Supervise the task how it is being conducted and give the students' opportunity to work in their respective groups.
- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and still engage students in making that conclusion.

Answers for learning activity 5.4

- a) Developmental delay.
- b) Environment, genetics, nutrition issues cause delayed speaking and walking.

Answers for self-assessment 5.4

- 1) Children inherit much genetically aside from physical appearance they also inherit things like attitude an extent, inherit traits like intelligence, abilities, and attitude. So what inherited from family can influence child's development.
- 2) The factors influencing child development:
 - i. Genetic
 - ii. Health and nutrition
 - iii. gender,
 - iv. environment
 - v. family

Lesson 5: Promotion of child health

a) Learning objectives

To enumerate the elements of child health promotion.

b) Teaching resources

Student's book and teacher guide of the unit, mannequin, and materials for measuring the weight and height, immunization cards and growth charts, white board, computer, projector, flipcharts, marker, papers and pens.

c) Prerequisites/Revision/Introduction

The students already learned the anthropometric measurement during the assessment of the child and they are given enough time to practice by measuring the weight and height of children, completion of the immunization cards and plotting on the growth charts and the teacher will ask different questions on how they understand the health promotion and the materials to be used for practicing the elements of the health promotion. From the answers provided by the learners, the teacher gives the progress of the lesson.

d) Learning activities 5.5

Guidance:

- Ask the students to observe the images from the activity 5.5 showing the health promotion of the children located in student book.
- Ask the students to work in groups.
- Ask the students to brainstorm on the elements of the health promotion.

- Supervise the work how it is conducted and give the students' opportunity to work in their respective groups.
- Remember to assist those who are weak but without giving them the knowledge.
- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Invites any five students to present their findings to the rest of students.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and engage the students in making that conclusion.

Answer for learning activity 5.5

- a. Health promotion is the process of enabling people to increase control over, and to improve their health.
- b. Image C and D show growth monitoring in the community
- c. Image A illustrates nutrition and health foods as part of health promotion among children.

Answers for self-assessment 5.5

Question 1:

1. The nursing roles in child health promotion:

Health educator: Nurses provide anticipatory guidance about:

- Immunizations, nutrition, dietary, medications, and safety.
- Nurses are consistently working to prevent illnesses, risk factors prevention, and the monitoring of safety hazards either in the workplace, community, or home.
- Nurses provide practical guidance on everyday health issues such as preventing obesity, dental health, skin care and prevention of diseases and infections.
- Nurses explore best practice gives guidance on promoting the health of adolescents looking at issues of sexual health, smoking, drugs and alcohol. Each chapter discusses key health promotion messages, relevant government policy and health promotion.

2. programs that focus on influencing and modifying certain health behaviors among children for better health:
 - Childhood obesity, especially programs in early childhood education settings
 - Healthy food options and nutrition
 - Physical activity like exercises
 - Chronic disease in childhood prevention
 - Oral health.
 - Prevention of drug use among children

Lesson 6: Developmental monitoring and screening

a) Learning objectives

To identify the stages of child development.

b) Teaching resources

A projector, machine (Laptop), white board/wall, flipchart, markers, mannequin, student books for this unit and teacher's guide book.

c) Prerequisites/Revision/Introduction

The teacher introduces the lesson by showing the case study for the child with the problems of development and ask different questions such as what do you think about the situation of Iriza? What do you think about parents attitudes towards this child? What should the associate nurse and parents do to help their child? From the answers provided by the learners, give you the progress of the lesson.

d) Learning activities 5. 6

Guidance:

- Give the students the materials to be used and guide them.
- Ask the students to read the case study from the activity 5.6 found in the student book.
- Supervise the work how it is conducted and give the students' opportunity to work in their respective groups.
- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.

- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and engage the students in making that conclusion.

Answer for learning activity 5.6

- a. Cyiza is a child with disabilities
- b. Bad attitudes
- c. To take the child to the health facility for monitoring and screening.
- d. Iriza is a 3 years child, so she is a toddler

Answers for self-assessment 5.6

1. When the child has similar behaviour and skills compared to his or her peers of the same age
2. Talking to children with warmth and sensitivity, sharing books and supporting health and safety, using appropriate discipline without harshness
3. First, new circumstances may interfere with development.
Second, one cannot usually detect isolated language delays in children younger than 18 to 24 months, which is the period at which children begin to develop language skills).

Lesson 7: Developmental monitoring

a) Learning objectives:

- To define the term developmental monitoring.
- To determine the risk factors for developmental disabilities.

b) Teaching resources

A projector, machine (Laptop), white board, flipchart, markers, mannequin, student books for this unit and teacher's guide book.

c) Prerequisites/Revision/Introduction

The teacher introduces this lesson by demonstrating some images showing the developmental monitoring of the child and the teacher may ask the learners some different question like which domain does explicit picture A? Which domain does show Picture D? From the answers provided by the students, give the teacher the progress of the lesson.

d) Learning activities 5.7

Guidance:

- Give the students the materials to be used and guide them.
- Ask the students to observe the images showing the developmental screening of the child from the activity 5.7 found in the student book.
- Ask the students to brainstorm on the risk factors for developmental disabilities in children.
- Supervise the work how it is conducted and give the students' opportunity to work in their respective groups.
- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and engage the students in making that conclusion.

Answer for learning activity 5.7

- a. Cognitive
- b. Cognitive
- c. Motor

Answers for self-assessment 5.7

1. Developmental monitoring is checking whether a child reaches the skills and behaviors that are expected by his or her age or those of likelihood.
2. History taking, attaining milestones, physical examination, screening.
3. Developmental milestones (how a child plays, learns, speaks, acts, or moves) are behaviors or skills most children can do by a certain age

Lesson 8: Developmental screening

a) Learning objectives:

- To explain the importance of developmental screening.
- To identify the signs of developmental delay.
- To list the risk factors for hearing impairment.

- To discuss on the development screening tests.

b) Teaching resources

A projector, machine (Laptop), weighing machine, growth charts, white board, flipchart, markers, mannequin, student books for this unit and teacher's guide book.

c) Prerequisites/Revision/Introduction

The teacher introduces the lesson by showing some pictures of development screening of the child and the teacher ask some different questions like what do you think about developmental screening in children? According to your understanding whom do you think can do developmental screening? What do you think that could be the risk factors of hearing impairment in children? From the answers provided by the learners, the teacher gives the progress of the lesson.

d) Learning activities 5.8

Guidance:

- Give the students the materials to be used and guide them.
- Ask the students to observe the pictures showing the developmental screening of the children from the activity 5.8 located in the student book.
- Ask the students to brainstorm on the risk factors for hearing impairment in children.
- Supervise the work how it is conducted and give the students' opportunity to work in their respective groups.
- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and engage the students in making that conclusion.

Answer for learning activity 5.8

- a. Developmental screening consists of thorough exam to assess the child's development using appropriate tools.
- b. Developmental screening can be done by skilled care providers such as a doctor or nurse, but also by other professionals in healthcare, early childhood education, community, or school settings.

- c. Family history of deafness, Congenital TORCH infections: toxoplasmosis, other infections, rubella, cytomegalovirus, and herpes simplex. Congenital malformation of the head and neck.

Answers for self-assessment 5.8

1. The signs of developmental delay at 18 months.
 - Not walking
 - Not speaking 15 words
 - Does not understand function of common household items
2. Autism refers to a broad range of conditions characterized by challenges with social skills, repetitive behaviors, speech and nonverbal communication.
3. The signs of autism:
 - Avoiding eye contact.
 - Delayed speech and communication skills.
 - Reliance on rules and routines.
 - Being upset by relatively minor changes.
 - Unexpected reactions to sounds, tastes, sights, touch and smells.
 - Difficulty understanding other people's emotions.

Lesson 9: Immunization according to expanded program of immunization.

a) Learning objectives:

- To explain the Expanded Program on immunization
- To distinguish the types of immunity.

b) Teaching resources

A projector, machine (Laptop), white board, flipchart, markers, mannequin, sample of the vaccines if possible, student books for this unit and teacher's guide book.

c) Prerequisites/Revision/Introduction

The teacher introduces this lesson by presenting a case study showing the advantages of immunization and the teacher asks some different questions such as how do you understand by term immunization? What is the meaning of the term polydactyl? When a vaccine is introduced into the body, it produces the

protection from a specific disease, according to your understanding, what is the name for that protection? Every country has immunization program, what do you think about its aim? From the answers provided by the learners, the teacher offers the progress of the lesson.

d) Learning activities 5.9

Guidance:

- Give the students the materials to be used and guide them.
- Ask students to read the case scenario demonstrating the advantages of expanded program of immunization.
- Ask the students to brainstorm about the diseases that the Expanded Program on Immunization (EPI) plans to vaccinate children aged 0 to 15 months.
- Supervise the work how it is conducted and give the students' opportunity to work in their respective groups.
- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and engage the students in making that conclusion.

Answer for learning activity 5.9

- a. Immunization is process by which a person becomes protected against a disease through vaccination.
- b. The name is Immunity,
- c. This program aims to control, and eventually eradicate these infections with a special focus on decreasing the incidence of these infectious diseases and its associated deaths.

Answers for self-assessment 5.9

1. The types of immunity:
 - Active immunity results when exposure to a disease organism triggers the immune system to produce antibodies to that disease. Active immunity can be acquired through natural immunity or vaccine-induced immunity.

- Passive immunity is provided when a person is given antibodies to a disease rather than producing them through his or her own immune system.
2. The Expanded Program on Immunization (EPI) plans to vaccinate children aged 0 to 15 months.
 3. The vaccinated diseases among children: Tuberculosis, polio, diphtheria, tetanus, pertussis/ whooping cough, hepatitis B, infections with haemophilus influenza type b, pneumonia, measles, rubella, and rotavirus infections.

Lesson 10: National expanded program of immunization vaccine.

a) Learning objectives:

- To explain the routine immunization schedule used in Rwanda.
- To discuss about the vaccination for special cases.
- To develop the main types of vaccines that act in different ways.

b) Teaching resources

A projector, machine (Laptop), samples of the vaccines if possible, white board/ wall, flipchart, markers, mannequin, student books for this unit and teacher's guide book.

c) Prerequisites/Revision/Introduction

The teacher introduces this lesson by explaining the characteristics of the skin of the new born and how it differs from that of the adults and the teacher will ask some questions such as which elements do you think that the nurse will assess on the newborn's skin? From the answers provided by the learners, give the teacher the progress of the lesson.

d) Learning activities 5.10

Guidance:

- Give the students the materials to be used and guide them.
- Ask the students to observe the images showing the child receiving the vaccines from the activity 5.10 located in the student book.
- Ask the students to brainstorm on the routine immunization schedule used in Rwanda.
- Supervise the work how it is conducted and give the students' opportunity to work in their respective groups.

- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and engage the students in making that conclusion.

Answer for learning activity 5.10

- a. Tuberculosis and poliomyelitis are the diseases vaccinated at birth
- b. Those vaccines are DPT3- HepB-Hib3, OPV3, IPV, Pneumo3.
- c. The vaccines are measles and rubella.

Answers for self-assessment 5.10

1. DPT1- HepB-Hib1, OPV1, Pneumo1, Rota1
2. BCG is administered Intradermal, above the left upper arm.
3. The MR vaccine is administered Subcutaneous on the right upper arm.

Lesson 11: Behavior change communication and social mobilization

a) Learning objectives:

- To explain the communication of the key messages about immunization to a group.
- To provide the strategies to trace dropouts.
- To demonstrate the preparation of the equipment for vaccination.

b) Teaching resources

A projector, machine (Laptop), white board, flipchart, markers, mannequin, student books for this unit and teacher's guide book.

c) Prerequisites/Revision/Introduction

The teacher introduces the lesson by demonstrating some pictures of the health care providers providing health education to the mothers with the children in the vaccination service and the teachers asks different questions such as what do you think that the healthcare provider in image a is doing? where else do you think that behavior change communication can be carried out? What are stapes could you

think to be followed during vaccination session? From the answers provided by the learners, give the teacher the progress of the lesson.

d) Learning activities 5.11

Guidance:

- Give the students the materials to be used and guide them.
- Ask the students to observe the images of the health care providers providing the health education to the mothers with children during vaccination and there are located in the student book.
- Ask the students to brainstorm on the communication of the key messages about immunization to a group.
- Supervise the work how it is conducted and give the students' opportunity to work in their respective groups.
- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and engage the students in making that conclusion.

Answer for learning activity 5.11

- a. The healthcare provider in image A is providing behaviour change communication.
- b. It's necessary to Consider associations (Umugoroba w'ababyeyi, umuganda, amarerero (ECD), different clubs.
- c. The stapes followed during vaccination session:
 - From Home
 - Registration and Sorting
 - Growth monitoring
 - Group IEC
 - Vaccination

Answers for self-assessment 5.11

1. strategies to trace the dropout:
 - Identify drop-outs and localise them in folders or vaccination register.
 - Communicate the names of identified children to the community health worker within their radius of action
 - The community health worker, during home visits, retrieves these children and brings them to the health center for immunization.
 - During the same visit, the community health worker registers newborns and educates their mothers about their vaccination.
2. The materials needed during vaccination session:
 - Vaccination card (children, teenage girls aged 12 and pregnant women)
 - Immunization registry for immunization of children, teenage girls aged 12 and pregnant women
 - Calendar to determine dates of appointments (RDV)
 - Score cards for vaccination
 - IEC message books
 - Posters and brochures and tables, chairs, benches, baby scales, Panties, height, MUAC, scissors, kidney basins, pens, DVD and television.
3. They can no longer be considered as effective. They become damaged and must be thrown away.

Lesson 12: Vaccination cold chain

a) Learning objectives:

- To define the term cold chain.
- To explain the cold chain monitoring equipment.
- To identify the precautions to be considered while administering the vaccines.

b) Teaching resources

A projector, machine (Laptop), white board, flipchart, markers, mannequin, student books for this unit and teacher's guide book.

c) Prerequisites/Revision/Introduction

The teacher introduces the lesson by demonstrating the pictures for ice packs, cold boxes, different types of vaccines and the teacher will ask some different questions such as what do you think about cold chain in immunization? What do you think could be the use of boxes in image A? What do you think could be the purpose of cold chain monitoring equipment? From the answers provided by the learners, give the teacher the progress of the lesson.

d) Learning activities 5.12

Guidance:

- Give the students the materials to be used and guide them.
- Ask the students to observe the images of cold boxes, ice packs and different types of vaccines from the activity 5.12 found in the student book.
- Ask the students to brainstorm on the different monitors used in the cold chain monitoring.
- Supervise the work how it is conducted and give the students' opportunity to work in their respective groups.
- Ask the students to present what they have done
- Help the students to summarize what they have learnt.
- Ask other students to follow carefully the presentations
- Note on white board / paper the student's ideas.
- Tick the correct findings and correct those ones which are incorrect and try again to complete those which are incomplete.
- Harmonize and conclude on the learned knowledge and engage the students in making that conclusion.

Answer for learning activity 5.12

- a) The cold chain is the system used for keeping and distributing vaccines in good conditions.
- b) They are used to maintaining cold boxes and to carry vaccines.
- c) The purpose of cold chain monitoring equipment is to keep track of the temperature to which vaccines and diluents are exposed during transportation and storage.

Answers for self-assessment 5.12

1. The different monitors used in cold chain monitoring:
 - Vaccine vial monitors
 - Vaccine cold chain monitor card
 - Thermometers
 - Freeze indicator
2. Answers on the true or false:
 - False
 - True
 - False
 - False
3. Diarrhoea

5.7 Additional information

The activity requires the teacher to take students inside the skills lab and the class room and help them to do it. As teacher, you have to divide the students into groups, provide necessary materials to be used and guide them accordingly. Remember to call student for presentation of their results.

5.8 End unit assessment 5

SECTION A. MULTIPLE CHOICE QUESTIONS

1. Which statement defines Primary prevention?
 - a) Refers to the actions aimed for early detection and treatment of the disease.
 - b) Refers to actions aimed at reducing the incidence of diseases in children
 - c) Simply means immunisation.
 - d) Refers to the actions aimed at sensitisation.
2. Which of the following statements that define (s) the immunization circle?
 - a) Refers to the process of becoming immune to the disease.
 - b) Refers to the process of getting vaccination.
 - c) Refers to the process of both getting the vaccine and becoming immune to the disease following vaccination.
 - d) Refers to the action of vaccinating the population.

3. The increase in size, length, height and weight refers to one of the following term.
 - a) Development
 - b) Growth
 - c) Cognitive milestone
 - d) Communication milestone
4. The improvement in the body functioning and behaviour refers also to one of the following elements.
 - a) Development
 - b) Growth
 - c) Cognitive milestone
 - d) Communication milestone
5. One of the following principle refers to the fact that development (as well as growth) always proceeds directionally from head to foot.
 - a) Integration
 - b) Individual difference
 - c) Interrelation
 - d) Cephalo-caudal
6. Choose the correct features that are associated with many genetic syndromes that may cause mental retardation or learning disabilities.
 - a) Congenital anomalies
 - b) Head circumference
 - c) Dermal Lesions of neuro-cutaneous Syndromes
 - d) Muscle tone problems
7. The Expanded Program on immunization (EPI) plans to vaccinate children aged 0 to 15 months, against the following diseases except:
 - a) Tuberculosis
 - b) Polio,
 - c) Diabetes mellitus
 - d) Tetanus
8. One of these types of immunity results when exposure to a disease organism triggers the immune system to produce antibodies to that disease and this can be acquired through natural immunity or vaccine-induced immunity.
 - a) Passive immunity
 - b) Active Immunity
 - c) Innate immunity
 - d) Immunodeficiency

9. One of these types of immunity is provided when a person is given antibodies to a disease rather than producing them through his or her own immune system.
- a) Passive immunity
 - b) Active Immunity
 - c) Innate immunity
 - d) Immunodeficiency
10. These are the preventive measures used to prevent the childhood illnesses except:
- a) Getting the vaccinations
 - b) Washing the hands regularly
 - c) Eat healthy and exercise regularly
 - d) Receiving the medication due to the disease that the child is suffering from.

Answers

- | | | |
|------|------|-------|
| 1. B | 5. D | 8. B |
| 2. C | 6. A | 9. A |
| 3. B | 7. C | 10. D |
| 4. A | | |

SECTION B: SHORT ANSWER QUESTIONS AND TRUE OR FALSE

11. The combined vaccine against diphtheria, tetanus and pertussis (whooping cough) and the vaccine against poliomyelitis cause sudden infant death syndrome.
12. Vaccines have several damaging and long-term side-effects that are yet unknown. Vaccination can even be fatal.
13. Better hygiene and sanitation will make diseases disappear and vaccines are not necessary.
14. It is better to be immunized through disease than through vaccines.
15. It is necessary to take children for vaccination as it is the most useful way of preventing childhood illnesses.

Answers

- 11. FALSE
- 12. FALSE
- 13. FALSE
- 14. FALSE
- 15. TRUE

16. How vaccines work: Vaccines contain either much weakened form of the virus or bacteria that causes a disease, or a small part of it. When the body detects the contents of the vaccine, its immune system will produce the antibodies required to fight off infection and eliminate the disease-causing virus or bacteria.
17. 5 activities to trace dropout of immunization:
 - Identify drop-outs and localise them in the folders or vaccination register at every visit.
 - Communicate the names of identified children to the community health worker within their radius of action
 - The community health worker, during home visits, retrieves these children and brings them to the health center for immunization
 - During the same visit, the community health worker registers newborns and educates their mothers about their vaccination
 - When monitoring children's growth at the community level, the ASC should check the immunization status of children and remind parents to respect future appointments.

5.9. Additional activities

5.9.1 Remedial Activities:

1. The increase in size, length, height and weight refers to one of the following term.
 - a) Development
 - b) Growth
 - c) Cognitive milestone
 - d) Communication milestone
2. The improvement in the body functioning and behavior refers also to one of the following elements.
 - a) Development
 - b) Growth
 - c) Cognitive milestone
 - d) Communication milestone

Answer: B

Answer: A

3. List 5 types of development.

Answers:

- Cognitive and intellectual development in children
- Gross motor skills development
- Fine motor skills development
- Speech and language development
- Social and emotional skills development

5.9.2 Consolidation activities

1. Discuss the nursing role in promotion of child health.

Answer: The nursing role in promotion of child health:

- Health educator: Nurses provide anticipatory guidance about immunizations, nutrition, dietary, medications, and safety.
- Nurses can inspire those to engage in healthy lifestyles through education, mentorship, and leadership.
- They are able to perform health promotion tasks by enhancing the quality of life for all people through assessment of individual and community needs, education, identification of resources, evaluation and implementation of programs to help reduce premature deaths.
- Provides the practical guidance on everyday health issues such as preventing obesity, dental health, skin care and prevention of diseases and infections.
- They explore the best practice for nursing children with chronic illnesses such as asthma, cancer, diabetes and disabilities, and gives guidance on promoting the health of adolescents looking at issues of sexual health, smoking, drugs and alcohol.

2. State different preventive measures for prevention of common childhood illnesses?

Answer; The preventive measures for prevention of common childhood illnesses:

- Get vaccination: one of the most powerful ways to prevent childhood illness is to get vaccines; they are proven to be safe and most effective.
- Wash hands regularly: Getting children into the habit of washing their hands is one of the most powerful ways to prevent illness.

- Cover coughs and sneezes: Teach children to help prevent the spread of illness by covering coughs and sneezes with a tissue or elbow and Remember to wash hands after.
- Eat healthy and exercise regularly:
- Start good habits early.
- Disinfect toys, electronics, and communal objects.

3. List 5 principles of early childhood development.

Answer: 5 principles of early childhood development:

- Growth and development is interrelated
- Development proceeds from general to specific
- Development proceeds directionally
- Development is individualized
- Development continues throughout life.

5.9.3 Extended activities

1. Explain the routine immunization schedule used in Rwanda.

Answer: Routine immunization schedule used in Rwanda.

Age	Vaccines
At birth	BCG, OPV0
6 Weeks	DPT1- HepB-Hib1, OPV1, Pneumo1, Rota1
10 Weeks	DPT2- HepB-Hib2, OPV2, Pneumo2, Rota2
14 Weeks	DPT3- HepB-Hib3, OPV3,IPV, Pneumo3
9 Months	MR1
15 Months	MR2
12years (girls)	HPV1 and HPV 2

2. Explain the stages of child development

Answer: Stages of child development

- New-born** refers to the stage immediately after birth until 1 month.
- Infant** is a child in the period from 1 month until 12 months.
- Toddler stage** is from 12 months until approximately 3 years.
- Early childhood** or **Pre-schooler** are children in 3- to 6-year-olds.

e. **School-age children** are 6 to 12 years old.

f. **Adolescence** begins around 12 or 13 to adulthood

3. Distinguish primary prevention from secondary prevention:

Answer:

Primary prevention refers to actions aimed at reducing the incidence of diseases in children; these actions includes the provision of information on behavioural and medical health risks, nutritional and food supplementation; oral and dental hygiene education, clinical preventive services such as vaccination of children, adults and the elderly according to expanded program of immunisation.

Secondary prevention: deals with early detection and treatment of diseases this comprise activities such as evidence-based screening programs for early detection of diseases or for prevention of congenital malformations; preventive drug therapies of proven effectiveness when administered early the chances for positive health outcomes is evident.

6.1. Key Unit competence:

Provide care to children

6.2. Prerequisite

Health assessment (History taking, Vital signs taking, Physical examination); Communication skills; human anatomy, immediate care of the newborn, pharmacology.

6.3. Cross- cutting issues

a) Gender

With a good understanding of the principles of Gender Equality, it is intended that future generations will ensure that the potential of the whole population is realized. Involve both girls and boys in all activities: No activity is reserved only to girls or boys. Teachers should ensure equal participation of both girls and boys during learning activities.

b) Peace and Values

Peace and values are crucial to the success of the nation. It is important for learners to have the knowledge, skills and abilities to better avoid, address and manage conflicts and prevent violence. During group activities, debates and presentations, the teacher will encourage learners to help each other and to respect opinions of colleagues.

c) Inclusive education

The issue of inclusive education will be addressed through activities that will be conducted. As a facilitator, involve every individual regardless of gender or ability including those with learning difficulties and disabilities and ensure they participate in different given activities. Learners with different learning styles and other difficulties can achieve their potential when the teacher has a positive attitude, by adapting the learning resources, differentiation of teaching and learning methods and working together.

d) Environment and sustainability

Because Environment and Sustainability is a very important cross-cutting issue, learners have to be helped to know maximum skills and attitudes on the environmental sustainability and to be responsible in caring for student's environment. Learners

also need knowledge, skills and attitudes that will enable them in their everyday life to avoid the environment pollution before, during or after labor monitoring like avoid throwing away hazards anywhere; special places or appropriate containers should be used.

e) Standardization Culture

Standardization Culture develops learners' understanding of the importance of standards as a pillar of economic development and in the practices, activities and lifestyle of the citizens. It is intended that the adoption of standardization culture should have an impact upon health improvement, economic growth, industrialization, trade and general welfare of the people. While education is the foundation and strength of our nation, standards are one of the key pillars of sustainable economic development.

6.4. Guidance on the introductory activity 6

This introductory activity helps you to engage learners in the introduction of the unit 6 “Child health care” and invite the learners to follow the next lessons after considering their ideas and inform what they will learn in the unit.

- Ask students to observe the picture and answer the asked question.
- Allow students to have pair discussion about the given questions
- Help students with different problems.
- Ask and allow students to present their findings while others are following.
- Consider their ideas and then give the expected answers:

ANSWER

On the provided picture there is a baby of approximately 6 months who is lying down on the mat with flexion of the right leg and arm and vomitus from mouth. The facial expression shows the baby was crying and in distress.

6.5. List of lessons

No	Lesson title	Learning objectives	Number of periods
1	Introduction to Integrated Management of Childhood Illnesses (IMCI)	<ul style="list-style-type: none"> – Explain IMCI – Describe principles of IMCI 	1
2	Components of Integrated Management of Childhood Illnesses (IMCI)	<ul style="list-style-type: none"> – Explain components of Integrated Management of Childhood Illness (IMCI) – Explain IMCI strategy in the management of childhood illness. – Describe the key requirements for IMCI strategy in management of childhood illness. 	2
3	Specific assessment of children under five years	<ul style="list-style-type: none"> – Identify children with danger signs and main symptoms 	2
4	General assessment of children under five years	Identify, assess and classify main symptoms in children using IMCI strategy	2
5	Assessment of children aged below 2 months	Describe the assessment of children aged below 2 months	2
6	Assessment of children aged from 2 months to 5 years.	Perform the assessment of children aged from 2 months to 5 years.	2
7	Management of the child with COUGH OR DIFFICULT BREATHING using IMCI strategy	<ul style="list-style-type: none"> – Identify and classify cough or difficulty breathing. – Discuss the management of the child with cough or difficulty breathing using IMCI strategy 	2
8	Management of the child with DIARRHEA using IMCI strategy	Determine the management of a child with diarrhea using IMCI strategy	2
9	Management of the child with FEVER using IMCI strategy	Determine the management of a child with fever using IMCI strategy	2

10	Management of the child with EAR PROBLEM using IMCI strategy.	Determine the management of a child with EAR PROBLEM using IMCI strategy	2
11	Management of the child with NUTRITIONAL PROBLEM AND ANEMIA using IMCI strategy	<ul style="list-style-type: none"> – Determine the management of a child with nutritional problem using IMCI strategy – Identify a child with anemia. 	2
12	Management of the child with HIV using IMCI strategy	Determine the management of a child with HIV using IMCI strategy	2
13	Follow up care using IMCI strategy	Determine the follow up care using IMCI strategy	2
14	End unit assessment		1
15	Skills lab 1	<ul style="list-style-type: none"> – Determine key elements for child assessment. – Use appropriate language while assessing children – Respect clients' rights and confidentiality – Show empathy when handling children – Demonstrate professionalism while providing care to children 	2
16	Skills lab 2	<p>Determine key elements for child assessment.</p> <ul style="list-style-type: none"> – Use appropriate language while assessing children – Respect clients' rights and confidentiality – Show empathy when handling children – Demonstrate professionalism while providing care to children. 	2

Lesson 1: Introduction to Integrated Management of Childhood Illnesses (IMCI)

a) Learning objectives

- Explain IMCI
- Describe principles of IMCI

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 1st lesson of the 6th unit in child health care. In this lesson you will be dealing with **Introduction to Integrated Management of Childhood Illnesses (IMCI)**. Before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually activity 6.1 in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.1

Children are not small adults and they face multiple diseases that affect their health. In developing countries, there is a high burden of diseases affecting under five children requiring early detection of those diseases and management.

Based on your clinical exposure and meeting patients of different ages, what should be prioritized when managing sick young children in low resource settings?

- Re-enforcement of health care systems

- Improving referral systems and availing all necessary resources
- Training of health care professionals and to be able to identify danger signs in neonates and infants
- Community sensitization and mobilization to participate actively in the healthcare

Answer to self-assessment 6.1

A. Describe three (3) principles of IMCI

- All sick young infants up to two months must be assessed for **bacterial infection/jaundice and major symptoms of diarrhea**
- All sick children 2months to 5 years must be examined for **general danger signs** which indicate the need for referral or admission to a hospital
- All young infants and child 2months-5years of age must be routinely assessed for **nutritional status and immunization status, feeding problems** and other **potential problems**.

B. What are the major facilitators of IMCI in low resource settings?

Due to its appropriateness, the IMCI facilitates the

- accurate identification at first contact
- appropriate combined treatment of all major illnesses,
- speeds –up referral of the severely ill child
- improves the quality of care of sick children at the first referral level.

Lesson 2: Components of Integrated Management of Childhood Illnesses (IMCI)

a) Learning objectives:

- Explain components of Integrated Management of Childhood Illness (IMCI)
- Explain IMCI strategy in the management of childhood illness
- Describe the key requirements for IMCI strategy in management of childhood illness

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 2nd lesson of the 6th unit in child health care. In this lesson you will be dealing with **Components of Integrated Management of Childhood Illnesses (IMCI)**

Before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually **activity 6.2** in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.2

In your opinion, what should be the involvement of families and community during the patient care?

- families and community should be actively involved in patients care to facilitate speedy recovery
- it helps them to determine how they will participate in care and decision -making
- it helps to promote the health and well-being of individuals and families and to maintain their control

Answer to self-assessment activity 6.2

A. Mention three components of IMCI Strategy.

- Improvements in the case-management skills of health staff through the provision of locally adapted guidelines on IMCI and through activities to promote their use
- Improvements in the health system required for effective management of childhood illness
- Improvements in family and community practices

B. Discuss the major determinants of effective implementation of IMCI.

- Political leadership to ensure an enabling environment
- Strengthened health systems based on empowerment, recognized, motivated, supplied and supported frontline health workers
- Empowered communities that can hold systems accountable and utilize IMCI services

Lesson 3: Specific assessment of children under five years

a) Learning objectives:

- Identify children with danger signs and main symptoms

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 3rd lesson of the 6th unit in child health care. In this lesson you will be dealing with **Specific assessment of children under five years**. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities

Guidance

- Ask learners to do individually activity 6.3 in their student book
- Provide clear and appropriate guidelines
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations.
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.3

- Describe what you see on the picture above.

Signs of convulsions which may include:

- Lack of awareness, loss of consciousness
- Eyes rolling back in the head
- Changes to breathing
- Stiffening of arms, legs, body and head
- Jerky movements of arms, legs, body and head
- Lack of control over movements

Answer for self-assessment activity 6.3

A) Enumerate the general danger signs that a child may present using IMCI Strategy.

- The child is not able to drink or breastfeed
- The child vomits everything
- The child has had convulsion
- The child is lethargic or unconscious

B) What are the four main symptoms assessed using IMCI Strategy?

- cough or difficult breathing,
- diarrhea,
- fever
- ear problem

Lesson 4: General assessment of children under five years

a) Learning objectives:

Identify, assess and classify main symptoms in children using IMCI strategy

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 4th lesson of the 6th unit in child health care. In this lesson you will be dealing with **General assessment of children under five years**. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities

Guidance

- Ask learners to do individually **activity 6.4** in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.4

Describe what you see on the picture above.

- The picture above shows children who were victims of poliomyelitis
- Complications arising from poliomyelitis
- Syringe and needle
- Virus

Answer for self-assessment 6.4

1. If a child has pallor of the palms when performing your assessment, what does it indicate.
 - Anaemia
2. In a tabulated format, describe the Rwanda national immunisation calendar.

IMMUNIZATION SCHEDULE

VACCINE	AGE AND INTERVAL	TOTAL DOSES	SITE & ROUTE
BCG	BIRTH	1	0,05 ml Intra dermal, external upper arm
OPV	BIRTH, 6, 10, 14 WEEKS	4	2 oral drops
Parenteral polio vaccine	14 weeks	1	0.5 ml IM
DPT or DTP-HEPB-Hib	6, 10, 14 weeks	3	IM
Pneumococcal conjugate vaccine	6, 10, 14 weeks	3	0.5 ml IM on vastus lateralis
Rotavirus vaccine	6, 10, 14 weeks	3	oral
Vitamin A	6 months	1	100000 IU oral
Rotavirus vaccine	6, 10, 14 weeks	3	oral
Measles- rubella (MR Vaccine)	9 months, 15 months	2	0,5 ml subcutaneous right arm

Lesson 5: Assessment of children aged below 2 months

a) Learning objectives

Describe the assessment of children aged below 2 months

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 5th lesson of the 6th unit in child health care. In this lesson you will be dealing with **assessment of children aged below 2 months**. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually **activity 6.5 in** their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.5

A 20 days' sick infant is brought to the health post by her mother complaining of inability to breastfeed and change of the infant's skin color. From your previous knowledge and experiences, what questions would you ask the mother to explore more the problem?

- When did the sick start
- What type of method of infant feeding are you practicing
- Does the child have diarrhea?
- Is the baby's body temperature high?
- Have you given any medications?
- Was the child immunized at birth?

Answer to self-assessment 6.5

Compare and show in a tabulated format the signs of a serious bacterial infections and local bacterial infection in sick children below 2 months and propose the appropriate treatment using IMCI strategy.

SIGNS	CLASSIFY AS	IDENTIFY TREATMENT (Urgent pre-referral treatments are in bold print.)
<ul style="list-style-type: none"> ● Convulsions or ● Fast breathing (60 breaths per minute or more) or ● Severe chest indrawing or ● Nasal flaring or ● Grunting or ● Bulging fontanelle or ● Pus draining from ear or ● Umbilical redness extending to the skin or ● Fever (37.5 °C* or above or feels hot) or low body temperature (less than 35.5 °C* or feels cold) or ● Many or severe skin pustules or ● Lethargic or unconscious or ● Less than normal movement. 	<p style="text-align: center;">POSSIBLE SERIOUS BACTERIAL INFECTION</p>	<ul style="list-style-type: none"> ▶ Give first dose of intramuscular antibiotics. ▶ Treat to prevent low blood sugar. ▶ Advise mother how to keep the infant warm on the way to hospital. ▶ Refer URGENTLY to hospital
<ul style="list-style-type: none"> ● Red umbilicus or draining pus or ● Skin pustules. 	<p style="text-align: center;">LOCAL BACTERIAL INFECTION</p>	<ul style="list-style-type: none"> ▶ Give an appropriate oral antibiotic. ▶ Teach the mother to treat local infections at home. ▶ Advise mother to give home care for the young infant. ▶ Follow-up in 2 days.

Lesson 6: Assessment of children aged from 2 months to 5 years

a) Learning objectives

Perform the assessment of children aged from 2 months to 5 years

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 6th lesson of the 6th unit in child health care. Perform the assessment of children aged from 2 months to 5 years. In this lesson you will be dealing with before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually activity 6.6 in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.

- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.6

A 48 months old child was admitted to the hospital for having bacterial infection. He looks to be afraid of facility's environment and healthcare team. What strategies will the nurse use to get permission from the child and administer injectable medication as prescribed?

- Take time to explain to the parents and child and be honest
- Use clear and simple language that is tailored to the child's developmental level
- Ensure the child is positioned comfortable
- Distraction and therapeutic play, paired with appropriate analgesia will assist to minimize emotional distress and negative responses to the procedure
- Distractions such as toys, books, music, cartoon games, etc. will help the child to relax

Answer to self-assessment 6.6

What are key points to consider for effective communication when caring for sick children.

- Active listening
- Empathizing with the child's point of view
- Developing trusting relationships
- Understanding non-verbal communication
- Building rapport
- Explaining, summarizing and providing information
- Giving feedback in clear way
- Understanding and explaining the boundaries of confidentiality

Lesson 7: Management of the child with COUGH OR DIFFICULT BREATHING using IMCI strategy

a) Learning objectives

Identify and classify cough or difficulty breathing

Discuss the management of the child with cough or difficulty breathing using IMCI strategy.

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 7th lesson of the 6th unit in child health care. In this lesson you will be dealing with management of the child with **COUGH OR DIFFICULT BREATHING using IMCI strategy**. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually **activity 6.7** in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer learning activity 6.7

Describe what you see on the picture.

- The picture shows a young boy who is coughing and closed his mouth with his hand and left hand gripping the chest.

Answer to self-Assessment 6.7

You receive a 46 months old child in consultation at the health center with cough for the past 4 days. On assessment, you notice a respiratory rate of 42 breaths per minute with chest indrawing and fast breathing but blood smear shows HIV negative. Please make a classification of this child and identify related management basing on IMCI strategy.

This is classified as **pneumonia** on the yellow part of the chart

Treatment:

- Give oral amoxicillin for 5 days
- If wheezing, give an inhaled bronchodilator for 5 days
- If chest indrawing give first dose of amoxicillin and refer
- Soothe the throat and relief the cough with a safe remedy
- If coughing for more than 14 days or recurrent wheeze, refer for possible TB or asthma assessment
- Advice mother when to return immediately
- Follow up in three days

Lesson 8: Management of the child with DIARRHEA using IMCI strategy

a) Learning objectives

Determine the management of a child with diarrhea using IMCI strategy

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 8th lesson of the 6th unit in child health care. In this lesson you will be dealing with management of the child with DIARRHEA using IMCI strategy. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually activity 6.8 in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.8

a. Describe what you see on the picture above.

A school child drinking water with the hands from an open running tap

b. What are the dangers of drinking from an open tap.

- Water maybe contaminated
- Hands may be dirty
- Risk to get waterborne diseases

Answer to self-Assessment 6.8

A mother brought a 36 months old child to the health post complaining of diarrhea since the last 15 days. You make an assessment and do not notice any danger sign or sign of dehydration. Asking for the history, blood was not reported to be in the stool. Classify and identify appropriate management of this child using IMCI strategy

The child is classified in **yellow with persistent diarrhea**.

Management:

- Advise the mother to feed the infant
- Give multivitamins and minerals including zinc for 14 days
- Follow up in 5 days

Lesson 9: Management of the child with FEVER using IMCI strategy

a) Learning objectives

Determine the management of a child with fever using IMCI strategy

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 9th lesson of the 6th unit in child health care. In this lesson you will be dealing with **management of the child with fever using IMCI strategy**. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually activity 6.9 in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.9

- Describe what you see on the picture above.
 - On the picture, there is a child lying down and was placing her arm on her forehead
 - The child looks weak and tired and may be having fever
 - Someone was reading the findings from a thermometer
- With your experience in previous clinical placement, what is the range of normal temperature for children.
 - The temperature for children is between 36.5-37.5°c

Answer to self-Assessment 6.9

A 6 months old infant was brought to the consultation by her mother complaining of hot skin on touch and crying through the last night. She also added that his brother recovered from malaria 2 weeks ago. On assessment, the child has a temperature of 38.5°C. A negative test of malaria was confirmed. Classify and identify the appropriate management of this child using IMCI strategy.

The child will be classified as been exposed to malaria because the history the brother was exposed, classified under green color

Appropriate management:

- Give one dose of paracetamol
- Give appropriate antibiotics for treatment for an identified bacterial cause of fever
- Advice mother when to return immediately
- Follow up in three days if fever persist
- If fever is present every day for more than 7 days refer for assessment.

Lesson 10: Management of the child with EAR PROBLEM using IMCI strategy

a) Learning objectives

Determine the management of a child with EAR PROBLEM using IMCI strategy

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 10th lesson of the 6th unit in child health care. In this lesson you will be dealing with **management of the child with EAR PROBLEM using IMCI strategy**. Before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually activity 6.10 in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.

- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.10

A child of 24 months was brought by his mother in consultation complaining of the child crying persistently throughout the night. On examination you discovered that there was a pus discharge from ear, and swollen behind the ear with pain to touch.

As a student in senior six, what can you do to assist this child.

- Admit the mother
- Reassure the child and mother
- Use cold compress on the painful part
- Minimize touching the affected area
- Give paracetamol
- Refer and do follow up

Answer to self-Assessment 6.10

A child of 24 months was received in consultation complaining of crying guarding the left side of jaw and pus discharge from the left side of the ear for 8 days. Classify and identify the treatment for this child using IMCI strategy.

– It's classified as **acute ear infection** in the yellow color of the chart.

Treatment

- Give an antibiotic for 5 days
- Give paracetamol for pain
- Dry the ear by wicking
- Follow up in 5 days

Lesson 11: Management of the child with **NUTRITIONAL PROBLEM AND ANEMIA** using IMCI strategy

a) Learning objectives

- Determine the management of a child with nutritional problem using IMCI strategy
- Identify a child with anemia.

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 11th lesson of the 6th unit in child health care. In this lesson you will be dealing with management of the **child with NUTRITIONAL PROBLEM AND ANEMIA using IMCI strategy**. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually **activity 6.11** in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.11

What do you think this child may be suffering from?

- This child is suffering from **malnutrition**

Using your knowledge and skills from previous units covered, list the physical characteristics of what you see on the picture above.

- Weight loss, slow weight gain or underweight

- Eating less than usual
- Looks weak
- Thin and malnourished
- Hungry looking

Answer to self-Assessment 6.11

You receive a 40 months old child in consultation presenting some pallor in the palm of arms. No danger signs or any other abnormality is found. Classify and identify the treatment for this child using IMCI strategy.

The child is classified to have **anemia in yellow chart**

Treatment

- Give iron and
- Give mebendazole if the child is 1 year or older and has not had a dose in the last 6 months
- Advice mother when to return immediately
- Follow up in 14 days

Lesson 12: Management of the child with HIV using IMCI strategy

a) Learning objectives

Determine the management of a child with HIV using IMCI strategy

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 12th lesson of the 6th unit in child health care. In this lesson you will be dealing with **management of the child with HIV using IMCI strategy**. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

Guidance

- Ask learners to do individually **activity 6.12** in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.

- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.12

- What are the most common Sexually Transmitted Infections that a mother may transmit to the unborn fetus?
 - Syphilis
 - Gonorrhoea
 - Chlamydia
 - Hepatitis B
 - Genital herpes
 - HIV
 - Genital warts

Answer to self-Assessment 6.12

- Describe the classification of HIV status using IMCI strategy

THEN CHECK FOR HIV INFECTION
Use this chart if the child is NOT enrolled in HIV care.

<p>ASK</p> <p>Has the mother or child had an HIV test?</p> <p>IF YES:</p> <p>Decide HIV status:</p> <ul style="list-style-type: none"> • Mother: POSITIVE or NEGATIVE • Child: <ul style="list-style-type: none"> ◦ Virological test POSITIVE or NEGATIVE ◦ Serological test POSITIVE or NEGATIVE <p>If mother is HIV positive and child is negative or unknown, ASK:</p> <ul style="list-style-type: none"> • Was the child breastfeeding at the time or 6 weeks before the test? • Is the child breastfeeding now? • If breastfeeding ASK: Is the mother and child on ARV prophylaxis? <p>IF NO, THEN TEST:</p> <ul style="list-style-type: none"> • Mother and child status unknown: TEST mother. • Mother HIV positive and child status unknown: TEST child. 	<p>Classify HIV status</p>	<ul style="list-style-type: none"> • Positive virological test in child 	<p>OR</p>	<ul style="list-style-type: none"> • Positive serological test in a child 18 months or older 	<p>Yellow: CONFIRMED HIV INFECTION</p>	<ul style="list-style-type: none"> ■ Initiate ART treatment and HIV care ■ Give cotrimoxazole prophylaxis* ■ Assess the child's feeding and provide appropriate counselling to the mother ■ Advise the mother on home care ■ Assess or refer for TB assessment and INH preventive therapy ■ Follow-up regularly as per national guidelines
		<ul style="list-style-type: none"> • Mother HIV-positive AND negative virological test in a breastfeeding child or only stopped less than 6 weeks ago 		<ul style="list-style-type: none"> • Mother HIV-positive, child not yet tested 	<ul style="list-style-type: none"> • Positive serological test in a child less than 18 months old 	<p>Yellow: HIV EXPOSED</p>
		<ul style="list-style-type: none"> • Negative HIV test in mother or child 	<p>Green: HIV INFECTION UNLIKELY</p>	<ul style="list-style-type: none"> ■ Treat, counsel and follow-up existing infections 		

* Give cotrimoxazole prophylaxis to all HIV infected and HIV-exposed children until confirmed negative after cessation of breastfeeding.
** If virological test is negative, repeat test 6 weeks after the breastfeeding has stopped; if serological test is positive, do a virological test as soon as possible.

Lesson 13: Follow up care using IMCI strategy

a) Learning objectives

Determine the follow up care using IMCI strategy

b) Teaching resources

Student's book, teacher's guide, Library, computer lab, screen, projector, flip charts, whiteboard or blackboard, markers.

c) Prerequisites/Revision/Introduction

This is the 13th lesson of the 6th unit in child health care. In this lesson you will be dealing with **follow up care of sick child using IMCI strategy**. before teaching this unit, remind students what they have learnt in previous unit.

d) Learning activities:

- Ask learners to do individually **activity 6.13** in their student book
- Provide the necessary materials to the learners, give students opportunity to access library or computer lab.
- Move around in silence to monitor if they are having some problems.
- Assist those who are not understanding but without giving them the answers.
- Invite any of the students to present their findings to the rest of students
- Ask other students to carefully follow the presentations
- Note on chalk board or flip charts or whiteboard the student's ideas.
- Harmonize and conclude on the learned knowledge by immediate positive feedback.

Answer to learning activity 6.13

- Following a nursing intervention for a sick child, it is important to assess the progress of the treatment given. Discuss its related rationale.
- The rationale behind this is follow up on the case and evaluate the effectiveness of the treatment given and health care provider to re-assess the patient.

Answer to self-Assessment 6.13

- Explain the follow up care of a child that visited the health center 3 days ago suffering from pneumonia.

PNEUMONIA

After 3 days:

Check the child for general danger signs.
Assess the child for cough or difficult breathing.

Ask:

- Is the child breathing slower?
- Is there a chest indrawing?
- Is there less fever?
- Is the child eating better?

} See *ASSESS & CLASSIFY* chart.

Treatment:

- If *any general danger sign or stridor*, refer **URGENTLY** to hospital.
- If *chest indrawing and/or breathing rate, fever and eating are the same or worse*, refer **URGENTLY** to hospital.
- If *breathing slower, no chest indrawing, less fever, and eating better*, complete the 5 days of antibiotic.

Lesson 14: Skills laboratory 1

a) Learning objectives

- Determine key elements for child assessment.
- Use appropriate language while assessing children
- Respect clients' rights and confidentiality
- Show empathy when handling children
- Demonstrate professionalism while providing care to children

b) Learning activities:

- Prepare skills lab demonstrations and simulated learning activities
- Provide resources in skills lab to help students to master psychomotor skills
- Monitor and supervise students to ensure that lab experiences meet courses outcomes
- Provide feedback and evaluate students' skills
- Mentor and help students who have problems and who are weak in performance.
- Maintain records on students' attendance and performance
- Rearrange the skills lab.

c) Learning objectives

- Determine key elements for child assessment.
- Use appropriate language while assessing children
- Respect clients' rights and confidentiality
- Show empathy when handling children
- Demonstrate professionalism while providing care to children

d) Learning activities:

- Prepare skills lab demonstrations and simulated learning activities
- Provide resources in skills lab to help students to master psychomotor skills
- Monitor and supervise students to ensure that lab experiences meet courses outcomes
- Provide feedback and evaluate students' skills
- Mentor and help students who have problems and who are weak in performance.
- Maintain records on students' attendance and performance
- Rearrange the skills lab.

6.6. Summary of the unit

Seven in ten of deaths of children are due to acute respiratory infections mostly pneumonia, diarrhea, measles, malaria, or malnutrition and often to a combination of these conditions.

Providing quality care to sick children in these conditions is a serious challenge. In response to this challenge, WHO and UNICEF developed a strategy known as Integrated Management of Childhood Illness (IMCI). Although the major stimulus for IMCI came from the needs of curative care, the strategy combines improved management of childhood illness with aspects of nutrition, immunization, and other important disease prevention and health promotion elements.

The objectives are to reduce deaths and the frequency and severity of illness and disability and to contribute to improved growth and development.

Due to its appropriateness, the IMCI facilitates the accurate identification at first contact, appropriate combined treatment of all major illnesses, speeds –up referral of the severely ill child and improves the quality of care of sick children at the first referral level.

IMCI case management requires a well-defined set of knowledge and skills to accurately assess, classify, and treat ill children and, thereby, reduce mortality and reduce disabilities.

After classification, the health worker identifies specific treatments and develops an integrated treatment plan for each child. If a child requires urgent referral, the health worker gives essential treatment before the patient is transferred. If a child needs treatment at home, the health worker gives the first dose of drugs to the child.

The health worker provides practical treatment instructions, and advice on how to give oral drugs, feeding, fluids during illness, how to treat local infections at home and advises the caretaker on follow-up care to recognize signs that indicate that the child should return immediately to the health facility.

6.7. Additional information for teachers

The implementation of the Integrated Management of Childhood Illnesses (IMCI) strategy launched by the World Health Organization (WHO) and UNICEF in the mid 1990's has been shown to improve health workers performance and quality of service. Currently, more than 100 countries have adopted this strategy. The implementation of the strategy has achieved impressive results both in reducing childhood mortality and in improving the quality of life of children all over the world. However, despite the significant progress made since the global introduction of the IMCI strategy, a number of challenges related to its implementation remain. Among those challenges are:

- ensuring periodical updates of national and sub-national IMCI clinical guidelines to respond to local health needs, and
- training and maintaining the knowledge and skills of hundreds of thousands of health workers in IMCI.

To respond to these challenges, WHO Department of Child and Adolescent Health and Development (CAH) and the Novartis Foundation for Sustainable Development (NFSD) developed, tested and introduced between 2002 and 2010 the IMCI Computerized Adaptation and Training Tool (ICATT) that provides the possibility to adapt the IMCI guidelines at national and sub-national levels, and to develop ICATT-based trainings that fit into various training approaches. The content of ICATT can be translated into various languages and used in a range of environments and settings, giving it a global reach. Once the content of ICATT is adapted, it can be “closed” and distributed to trainers, trainees, NGOs, and other partners that can then use ICATT for training and other purposes, but cannot change the content of the application.

6.8. Answers to End unit assessment

1. What is the importance of IMCI?

It facilitates the accurate identification at first contact, appropriate combined treatment of all major illnesses, speeds –up referral of the severely ill child and improves the quality of care of sick children at the first referral level.

2. List danger signs that should be assessed in children following IMCI strategy.

In IMCI all children are assessed for the following danger signs:

- lethargic or unconscious
- Convulsing now
- History of convulsions
- Vomiting everything.
- Not able to drink or breastfeed

3. Enumerate main symptoms of pediatric illness following IMCI strategy.

After the danger signs, children are then assessed for four main symptoms. These are:

- Cough and difficult breathing
- Diarrhea
- Fever
- Ear problem

4. Mention three signs that indicate a child with protein energy malnutrition

- The child may become severely wasted, a sign of marasmus.
- The child may develop edema, a sign of kwashiorkor.
- The child may not grow well and become stunted (too short).

5. A father brought a child of 20 months at health center, whose mother died while giving birth to baby, the baby has been given cow milk from birth because their social economic status did not allow them to buy formula for baby, the baby does not like to eat and is still taking cow milk. The father mentioned also that the baby had malaria when he was 7 months, 11 months and 2 weeks ago he had another episode of malaria. The baby is now very weak, has skin pallor.

What would be the problem of the child?

Anemia

What are possible causes?

Malaria because it can destroy red cells, and malnutrition because he is taking meals which are not rich in iron.

6. A mother brings her child to the health center complaining that the child has been passing loose watery stools with no blood stains for the past 10 days, the physical assessment the child looks weak with sunken eyes and shows signs of dehydration.
 - a. What are the common ways that infants may get diarrhea?
 - Feeding the child with cow milk
 - Infant feeding formulas especially when bottle feed
 - Using dirty utensils to prepare the infant foods
 - b. judge what a child with diarrhea can be assess
 - how long the child has had diarrhea
 - blood in the stool to determine if the child has dysentery
 - signs of dehydration.
 - c. how would you classify this type of diarrhea?

Acute diarrhea

7. What are signs will you based on to classify a child as having severe pneumonia or very severe disease?

Cough or difficult breathing and with any of the following signs: any general danger sign, chest indrawing or stridor in a calm child.

8. What are signs will you based on to diagnose severe dehydration in children? describe the treatment that will be provided to the child

A child who has two of the following signs: lethargic or unconscious, sunken eyes, not able to drink or drinking poorly, skin pinch goes back very slowly

The treatment: Any child with dehydration needs extra fluids. A child classified with SEVERE DEHYDRATION needs fluids quickly. Treat with IV (intravenous) fluids

9. What are the four main classifications of ear problem in children
 - mastoiditis

- acute ear infection
 - chronic ear infection
 - no ear infection
10. Explain how a child with dysentery may be classified.
- Classify a child with **diarrhea** and **blood** in the stool as having **DYSENTERY**
11. Describe how to identify severe wasting in an infant
- wasting of the muscles of the shoulders
 - arms
 - buttocks
 - legs.
 - Absence of subcutaneous fat
12. Mention the complications that a child with vitamin A deficiency may develop.
A child with vitamin A deficiency is at risk of **death from measles** and **diarrhea**. And risk of **blindness**.

6.9. Additional activities

6.9.1. Remedial activities

1. To improve access and quality of care for newborns and children in primary health care services, WHO and UNICEF designed the IMCI strategy. **categorize three strategies** that was adopted.

Answer:

A) Improvement of health systems

Improving health systems to deliver IMCI concerns policy, planning and management, financing, organization of work and distribution of tasks at health facilities, human resources, availability of drugs and supplies, referral, monitoring and health information system, supervision, evaluation and research. It is an umbrella which covers human resources and their capacity.

B) Improvement of family and community practices

The community component of the Integrated Management of Childhood Illness (IMCI) strategy addresses family and community child care practices. The family and the community where children live play a major role in child health and development. There is a longstanding need to involve the family and community actively and plan and implement child care interventions in both the health system and the community in parallel.

C) Improvement health workers skills

This refers to clinical and communication skills and covers both pre-service education and in-service training in the **case management** of sick children.

IMCI **case management** requires a well-defined set of knowledge and skills to accurately **assess**, **classify**, and **treat** ill children and, thereby, reduce mortality and reduce disabilities.

2. Deduce **6 key family and community practices** related to child health and development. that if properly promoted and adopted by the targeted communities, would potentially contribute to improving child survival, growth and development.

Answer:

- **Breastfeeding feeding:** the baby should breastfeed exclusively for at least up to 6 months to improve their immunity and reduce resistance to infection.
 - **Complementary feeding:** From 6 months of age, other feeds may be introduced like freshly prepared energy and nutrients rich complementary foods combined with breastfeeding can be continued up to 2 years or longer.
 - **Micronutrients:** Ensure that children receive adequate amounts of micronutrients (vitamin A, iron and zinc, in particular).
 - **Hygiene:** Children's faeces should be properly disposed, and wash hands after defecation before preparing meals and before feeding children.
 - **Immunization:** children's schedule of immunization should be respected (complete a full course of immunizations example: BCG, DPT, OPV and measles).
 - **Malaria:** Protect children in malaria-endemic areas, by ensuring that they sleep under insecticide-treated mosquito nets
3. Predict 6 Key requirements for IMCI strategy to be successful in any community
 - The adoption of a national policy and standards on an integrated approach to child health and development.
 - Regular review and updating of IMCI clinical guidelines with adaptation to the country's epidemiology, medicines and commodities, relevant policies, and local foods and language used by the population.
 - Improving quality of care in primary health facilities by training, mentoring and support supervision of health workers in integrated assessment, treatment and effective counseling of caregivers.

- Ensuring availability of the essential medicines, laboratory tests and key equipment for prevention and case management.
- Strengthening referral pathways and improving quality of care in hospitals for management of severely ill children referred from the outpatient clinics.
- Empowering families and communities to prevent disease, seek timely care from qualified health care providers for illness, provide adequate home care for sick children, and support children's healthy growth and development.

6.9.2. Consolidation questions

1. A Mother brings her 36 months old baby to the consultation room urgently and states that her baby has been running fever for 2 days and refused to eat or drink any fluid. On assessment of the baby you noticed that the baby looks weak and drowsy, was lethargic, had two seizures within the time of assessment with fast breathing of 60 breaths per minute, severe chest indrawing and nasal flaring with a large red distribution of pustules on the skin.

a) Classify and identify the management of this child

Possible serious bacterial infection

Treatment

- Give first dose of possible antibiotic
- Treat to prevent low blood sugar
- Advice mother on how to keep the infant warm
- Refer urgently to the hospital

b) Interpret the appearance of a large red distribution of pustules on the baby's skin

- It indicates a serious bacterial infection
2. what is the commonest causative organism for dysentery and which laboratory test result will be used to confirm the diagnosis?
 - **Shigella** cause nearly all cases of life-threatening dysentery
 - **Stool** culture

Multiple choice questions

3. Which of the following is a common cause of diarrhea?
 - A. Contaminated food or water
 - B. Viral infection
 - C. Intolerance to milk

D. All the above are correct

4. **if a child has diarrhea and was brought to the health post, when should you refer the child to hospital.**
- A. If the child has a temperature of 38 and above
 - B. A and D are correct
 - C. If the mother complains that the child can't sleep
 - D. If the mother complain that the child shows signs of dehydration

6.9.3. Extended activities

1. **A mother brings her 24-month-old baby to the consultation complaining that for the past 4 weeks her baby has been draining pus from the left ear, sometime accompanied with slight pain on the ear.**

- A) Classify and treat the child
- chronic ear infection

Treatment:

- To keep the ear dry by wicking.
- Teach the mother how to dry the ear by wicking.
- Give topical quinolone ear drops for two weeks

2. **What are the three possible classification of measles?**

- severe complicated measles
- measles with eye or mouth complications
- measles

3. **What are the two ways that children who suffer from acute malnutrition can be identified during an assessment.**

Measure the mid-upper arm circumference (MUAC). This identifies “wasted” (thin) children

Perform a bilateral edema test. this identifies edema of both feet “swollen” children.

4. **Mention the three classification of child nutritional status.**

- severe malnutrition
- very low weight
- not very low weight

5. **Describe two complications which may arise from a child who is suffering from severe anemia**

- Children classified as having **SEVERE ANAEMIA** are at risk of **death** due to **chronic hypoxemia** or **congestive cardiac failure**.

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