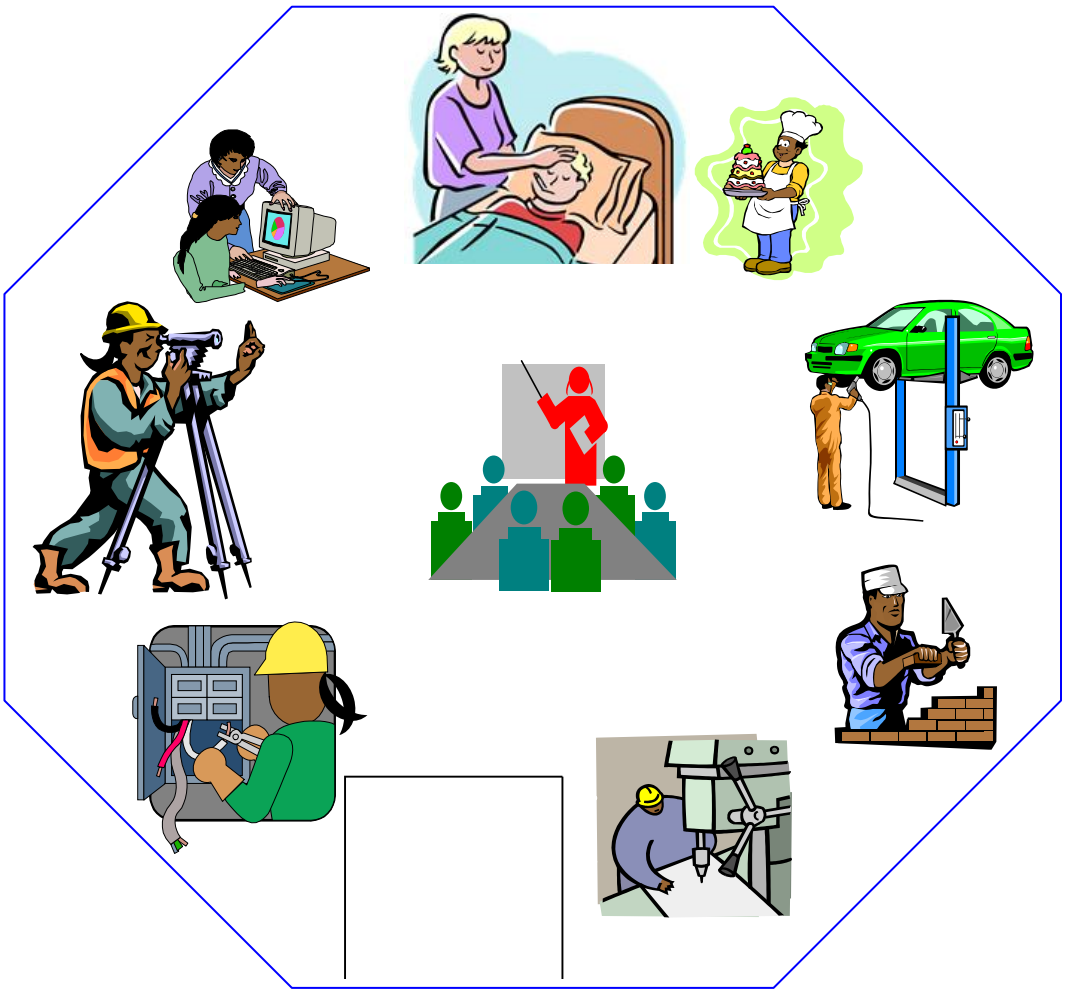
Health extension -Level-IV

Managing Ante-Natal Care and Promoting PMTCT

Based on Feb, 2021 Version OS and Feb, 2021 Version Curriculum



Module Title: **Managing Ante-Natal Care and Promoting PMTCT**

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LO 1: Plan antenatal activities

Instruction Sheet	Learning Guide 17

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Definition of terms
- Planning antenatal care

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Gather information for planning antenatal care
- Identify Antenatal eligible's and calculate number of expected pregnant women
- Develop Action plan

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4
3. Read the information written in the information "Sheet 1 in page 1 to 7
4. Accomplish the "Self-check 1, in page 8

Information Sheet-1	Planning antenatal Care

1.1. Definition of terms

Antenatal care: the professional healthcare a woman receives throughout her pregnancy

Planing : is forecasting and thinking about things that you want to happen in the future and then working out ways to get there

An action plan: describes the way your Health Post will meet its objectives through detailed action steps that describe how and when these steps will be taken.

1.2. Planning antenatal care

Antenatal care, the professional healthcare a woman receives throughout her pregnancy, is important in helping to ensure that women and newborn babies survive pregnancy and childbirth. In this information sheet, you will learn how to plan the antenatal care services that your community needs in order to improve and protect the health of mothers and newborns during pregnancy, childbirth and the postnatal period. You will learn what is meant by the antenatal profile of your community, and how to calculate the number of mothers who are pregnant every year in your catchment area.

1.2.1. Information gathering

Pregnant women may face many different health problems during pregnancy. Some of these are bleeding, high blood pressure, convulsions, high fever, blurred vision, abdominal pain, breathing difficulties, severe headache, anemia, diabetes and infections.

To ensure a full understanding of the problems that pregnant women may face during the antenatal period, and the possible solutions, a well planned antenatal care programme is necessary.

To plan effective maternal and newborn health services, you need to make an assessment of your community and identify the health needs of the population.
You can carry out this assessment through asking questions or through discussion with community representatives and elderly people who know the persistent patterns of habits, customs, attitudes and values in the community, which are transmitted from generation to generation

Then you need to identify the problems in relation to maternal and newborn health conditions, and assess the uptake of services. In promotion of maternal and child health services, you should clearly identify any attitudes and conditions which have an influence on the outcomes.

> ***For example***, in small villages, when a woman has a problem in labour it is very difficult for her to go to a health centre or hospital. Few or no villagers have cars, and even in urban areas most taxi drivers refuse to take a woman in labour to hospital. It is therefore very important for you to have an emergency care plan set up, and to make arrangements for transporting women who need urgent care to treat complications associated with pregnancy or childbirth.

Finding out what the concerns are in your community is an important first step in identifying and studying the problems in your catchment area, and your next step is to rank them in priority order

Ranking and prioritizing problems to tackle

You should rank the identified problems based on the following criteria:

- Magnitude or extent of the problem (how big is this problem?)
- Severity of the problem (how serious is it in terms of adverse outcomes?)
- Feasibility or practicability (how easy or difficult would it be to tackle this problem?)
- Community concern (is this problem an important concern for the community?)
- Government concern (is it an important concern for the government?).

For example, if there is low antenatal care (ANC) coverage and low latrine coverage in your catchment area, you might set the priority of these two problems, as shown in

Table 1.1. The scoring system is from 1 to 5, where 1 is the lowest ranking and 5 is the highest. You decide on the score in each box in the table, based on your knowledge of your community and its needs.

Table 1.1 Example of a priority setting analysis of two identified problems

Identified problem	Magnitude	Severity	Feasibility	Community concern	Government concern	Total (out of 25)
Low ANC coverage	5	5	5	5	5	25
Low latrine coverage	5	4	4	4	4	21

As you can see in Table 1.1, the total score is 25 for low ANC coverage and 21 for low latrine coverage. So, in this example, you would set low ANC coverage as a higher priority problem.

When you have identified a high priority problem to tackle in your community, your next steps are listed in Box 1.1.

Box 1.1 Steps in tackling a problem

- Set the objectives (e.g. increase the number of women receiving antenatal care visits)
- Identify the strategies you will use to achieve this (e.g. by organizing a health education campaign to promote the benefits of antenatal care
- Locate the resources needed for implementation of your plan
- Set the time span for reaching your target
- Continuously monitor and evaluate your progress towards achieving your goals.

1.2.2. Identifying antenatal eligible

The first step in assessing the need for antenatal care in your community is to calculate the number of women who are likely to be pregnant in a normal year. These women are sometimes referred to as the antenatal eligible (because they are 'eligible' to receive antenatal care).

A community profile describes the size and characteristics of a community, and the main health factors that affect its population. Population statistics, including facts and figures about maternal health and pregnancy in the community and information about how the community functions, are important information for planning and promoting effective antenatal care. But

remember that every community is different, so the examples we give in this section may not be the same as you will find in your community.

According to the population statistics for Ethiopia, the number of pregnant n women is calculated as 4% of the general population. This percentage will vary to some extent between communities, depending on the number of women of childbearing age in the population. The number of women who are eligible for antenatal care in one year in Ethiopia can be estimated with reasonable accuracy using the 4% figure.

Example : Calculating the antenatal eligible in a community Imagine that the total number of people in one community is exactly 5,000.

Calculate how many pregnant women are likely to be eligible for antenatal care services in this community in one year.

Answer

The total number of pregnant women is calculated as 4% of the 5,000 population. To calculate 4% of 5,000, you multiply 5,000 by 4 and divide the result by 100. A good way to write this down is as follows:

$$\text{Number of pregnant women} = \text{Total number of populatio}$$

$$= 5,000 \times \frac{4}{100}$$

$$= 200 \,\text{pregnant women}$$

Therefore, this community is expected to have 200 pregnant women in one year, who are eligible for antenatal care, delivery and postnatal care. Women who are eligible for Antenatal care needs at list four antenatal care visits called **Focused Antenatal care (FANC).**

Look back at the answer to the above example, . In that community, how many antenatal visits would you make in one year if you achieved focused antenatal care for every pregnant woman?

- You would make 800 antenatal visits ((4 X 200 = 800) 4 visits to each of the 200 pregnant women).

This calculation illustrates how carefully you will need to plan your antenatal care service, if you are going to visit each pregnant woman four times! If you cannot achieve this total, you should visit every pregnant woman at least once, and record the visit.

Calculating the uptake of antenatal care services

Antenatal care coverage is defined as the proportion of pregnant women attended at least once during the current pregnancy by a health professional such as a Health Extension Practitioner, for reasons related to the pregnancy.

Calculating the antenatal care 'first visit' coverage provides information on the percentage of women who use antenatal care services.

The antenatal care coverage rate (or ANC coverage rate) is calculated as the total number of pregnant women attended at least once during their pregnancy by a health professional for reasons relating to the pregnancy, divided by the total number of expected pregnancies during a given time period (usually one year) in the catchment area. The result is expressed as a percentage by multiplying by 100.

$$\text{Antenatal care coverage rate} = \frac{\text{Number of first antenatal visits}}{\text{Total number of expected pregnancies}} \times 100$$

For example, if the total number of first antenatal visits = 100, and the total number of pregnancies = 200, then the antenatal care coverage in your community will be 50%, calculated as written below

$$\text{Antenatal care coverage rate} = \frac{100}{200} \times 100 = 50\%$$

Calculating the antenatal care coverage rate in your community is important because ,It enables you and your supervisor to see whether your efforts to promote the uptake of antenatal care services are successful.

For example, if the antenatal care coverage rate was 50% of pregnant women before you began a health promotion campaign to increase uptake of antenatal care services, you could claim your campaign was successful if the uptake rose to 60% or more.

1.2.3 Developing action plan

Once you have identified the Antenatal eligible women in your catchment area, you will be in a position to implement a set of planned activities, sometimes called an action plan, to achieve your advocacy objectives

An action plan describes the way your Health Post will meet its objectives through detailed action steps that describe how and when these steps will be taken.

Most of the health and development issues that community partnerships deal with are community-wide, and thus need a community-wide solution. You might consider stakeholders/influential people, different sectors, religious organizations, schools, youth organizations, social service organizations, and others while developing the action plan .

Why develop an action plan?

Developing an action plan is a critical first step toward ensuring project success. An action plan may lend credibility to your Health Post and its initiative, increase efficiency, and provide accountability. In addition, the action plan provides a tool for mobilizing the

community or group and encouraging members to share responsibility for solving the problems and improving the situation you have decided to change

For each action step or change to be accomplished, list the following, with a due date for each:

- What actions or changes will occur-by when?
- Who will carry it out-by when (or for how long)?
- What resources are needed-by when?
- Communication (who should know what)-and when?

Example: You can use the following format for developing your Action plan.

Example: Action Plan for FANC Services

Objective : To provide FANC services for all ANC eligible women in the catchment area within the specified period

Action Steps	**By Whom**	**By When**	**Resources and Support Available/Needed**		**Remark**
What needs to be done? **(Activities)**	Who will take actions? **(Responsible body)**	By what date will the action be done? **(Time)**	Resources Available	Resources Needed (financial, human, political, and other)	

Your action plans can be posted on the wall of the Health Post so everyone knows what you hope to achieve

Self-Check -1	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Imagine that the total number of people in a catchment area is 8000, and the total number of first antenatal visits the Health Extension Practitioners (HEPs) made last year was 100.
    a. Calculate the number of pregnant women who were eligible for antenatal care services in this catchment area last year.
    b. What was the antenatal care coverage rate achieved by the HEPs last year?
2. Assume that the total population of a community is 6,000. How many antenatal visits would the HEPs make in one year if they achieved focused antenatal care for every pregnant woman?
3. Develop an action plan for providing FANC service for ANC eligible women in your catchment area within the specified period
4. List the criteria for prioritizing the problem

Note: **Satisfactory rating - 2 points** **Unsatisfactory - below 2 points**

Score = _____

Rating: _____

Name: _____ Date: _____

LO2. Promote antenatal care

Instruction Sheet	Learning Guide 18

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Health promotion, advocacy and community mobilization

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Identify and consult influential community representatives and health development armies
- Organize, promote and provide Antenatal care promotion and education in partnership with the community and relevant organizations
- Support Antenatal clients to take self-care and birth plan approach in line with individual needs
- compiled, document and report activities

Learning Instructions:

5. Read the specific objectives of this Learning Guide.
6. Follow the instructions described below 3 to 4.
7. Read the information written in the information “Sheet 1, **in page 1- to 13**
8. Accomplish the “Self-check 1, **in page 14**

Information Sheet-1	**Health promotion, advocacy and community mobilization**

1.1. Health Promotion Advocacy and community mobilization

Health promotion includes any actions of individuals, community, and organizations aimed at improving health and healthy life.

Community mobilization is about organizing the community and all the resources available in the community to move them towards achieving a certain health programme goal. Having this concept in mind, community mobilization is defined as a capacity building process, through which individuals, groups and families (such as model families), as well as organizations, plan, carry out and evaluate activities on a participatory and sustained basis to achieve an agreed goal

Advocacy is speaking up, and drawing policy makers and the community's attention to an important health issue

As a health extension practitioner, you have to use concepts of health promotion, advocacy and community mobilization in order to promote Antenatal care activity or services to your community. By doing so, you will

- Improves the health status of pregnant women.
- Enhances the quality of life for women and children.
- Reduces pregnancy and childbearing related problems.
- Reduces the costs (both financial and human) that individuals, families, and the nation would spend on medical treatment.

During the antenatal period, you can promote the health of the women in your care and the health of their babies before and after birth, by educating mothers about the benefits of good nutrition, adequate rest, good hygiene, family planning and exclusive breastfeeding, and immunization and other disease prevention measures. Your aim is to develop women's knowledge of these issues so they can make better informed decisions affecting their pregnancy outcome.

1.1.1. Nutrition during pregnancy

Maintaining good nutrition and a healthy diet during pregnancy is critical for the health of the mother and unborn child. Nutrition education and counseling is a widely used strategy to improve the nutritional status of women during pregnancy.

The strategy focuses primarily on:

- Promoting a healthy diet by increasing the diversity and amount of foods consumed
- Promoting adequate weight gain through sufficient and balanced protein and energy intake
- Promoting consistent and continued use of micronutrient supplements, food supplements or fortified foods.

Counseling about healthy eating and keeping physically active during pregnancy is recommended for pregnant women to stay healthy and to prevent excessive weight gain during pregnancy.

a. Eating well

To eat well means, to eat a variety and enough balanced food. This combination helps a pregnant woman and her baby stay healthy and strong because it:

- Helps a woman resist illness during her pregnancy and after the birth
- Keeps a woman's teeth and bones strong
- Gives a woman strength to work
- Helps the baby grow well in the mother's uterus
- Helps a mother recover her strength quickly after the birth
- Supports the production of plenty of good quality breast milk to nourish the baby.

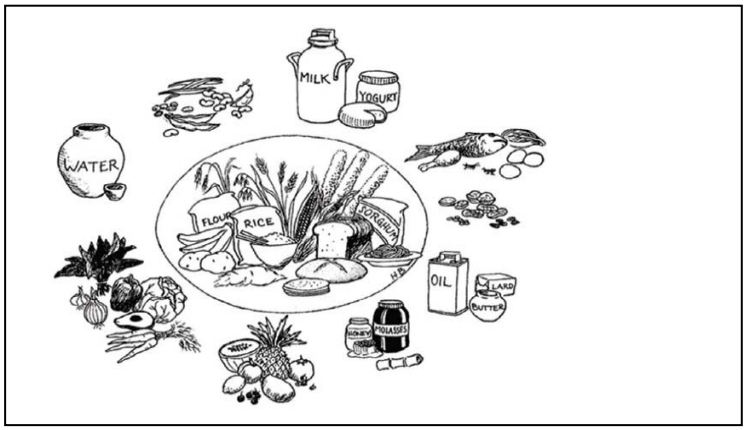


Figure 1.1.Variety of foods that needs to be eaten by pregnant mothers

I. Eating a variety of foods

It is important for pregnant women (like everyone else) to eat different kinds of food , main foods (carbohydrates), grow foods (proteins), glow foods (vitamins and minerals), and go foods (fats, oils and sugar), along with plenty of fluids.

II. Eat more food

Pregnant women and women who are breastfeeding need to eat more than usual. The extra food gives them enough energy and strength, and helps their babies grow. They need to increase their usual food intake by at least 200 calories per day, or even more than this if they were underweight before they became pregnant.

Some pregnant women feel nauseated and do not want to eat. But pregnant women need to eat enough — even when they do not feel well. Simple foods like injera or rice can be easier for these women to eat. For women who suffer from nausea, encourage small and frequent meals

b. Talking to women about food

When you see pregnant women for antenatal care, or at village meetings and celebrations, in the market, try to find ways to enquire sensitively about the food they eat. The earlier pregnant women start eating healthier foods, the better chance they have to stay healthy, to have normal births and to have healthy babies.

To find out whether a woman is eating well, ask her what she usually eats, and how much. For example, ask her: ‘What did you eat yesterday?’ Be sure to tell her what is healthy about what she eats, reinforce the positive efforts she is making to eat well. Then, if it is appropriate, make a suggestion for how she could eat better.

Remember; that education about food is not enough on its own to change eating behavior. Even if a woman knows the best foods for health, she may not eat them. Many families cannot afford to buy enough food or a wide variety of foods. Some women may

simply not like the taste of some healthy foods. To help a woman eat better, suggest healthy foods that she can afford and will choose to eat

c. Eating well with little money

The biggest cause of poor nutrition is poverty. A very poor family can eat better by spending money wisely and not wasting what little they have.

Here are some ideas that families can use to eat better with little money.

I. Beans, peas and lentils

Beans, peas and lentils belong to a family of vegetables called legumes. All legumes have a lot of protein and vitamins, and they usually do not cost much. They have even more vitamins if they are sprouted before being eaten.

II. Less expensive meats and animal products

Blood and organ meats like liver, heart and kidney have a lot of iron and may cost less than other meats. Fish and chicken are as healthy as other meats, and usually cost less — especially for a family that fishes or raises their own chickens. Eggs have a lot of protein, iron, and vitamin A. Eggs give more protein for less money than almost any other food.

III. Whole grains

Grains like teff, wheat, rice and corn are more nutritious when they have not been refined (processed to take out the color). Taking out the color takes out healthy things too. White bread and white rice have fewer vitamins, minerals and proteins than brown bread or brown rice. Dark teff and brown injera are more nutritious than the light-colored ones.

IV. Vegetables and fruits

When vegetables are boiled or steamed, some of the vitamins from the foods go into the cooking water. Use this water to make soups.

The outside leaves of plants are usually thrown away, but sometimes they can be eaten. The leaves of the cassava plant have more vitamins and protein than the root. Many wild fruits and berries are rich in vitamins and natural sugars that give energy.

1.1.2. Food groups and their nutrients

a. Main foods (carbohydrates)

In most parts of the world, people eat one main food at each meal. This main food may be injera, rice, maize, wheat, millet, cassava, plantain, kocho, bulla, godere, shenkora, gishta, breadfruit or another low-cost, starchy food which is rich in carbohydrates. These foods give the body energy. But to grow and stay healthy, the body needs other types of food too.

b. Grow foods (proteins)

Grow foods contain protein, which is needed for the growth of muscles, bones, and strong blood. Everyone needs protein to be healthy and to grow. Some grow foods that are high in proteins are:

- Legumes (beans, peas, soybeans, and lentils)
- Eggs, Cheese, milk and yogurt, Nuts and seeds
- Cereal, wheat, corn and rice, Meat, poultry and fish.

c. Go foods (sugars and fats)

Go foods contain sugars and fats, which give the body energy. Everyone needs these foods to be healthy. Some healthy go foods that are high in sugars are fruits and Honey. Some ‘go foods’ that are high in fats are:

- Some nuts (e.g. peanuts) and some seeds (e.g. sunflower),
- Avocados, Vegetable oils, butter and lard
- Fatty meat, Milk and cheese
- Eggs and Fish.

d. Glow foods (vitamins and minerals)

Glow foods contain vitamins and minerals, which help the body fight infection and keep the eyes, skin and bones healthy and strong. Vitamins and minerals are known as micronutrients because they are very small. Fruits and vegetables are high in vitamins and minerals. It is important for pregnant women to eat as many different fruits and vegetables as they can.

The most important vitamins and minerals that a pregnant and breastfeeding women need every day are

- **Iron, Folic acid, Iodine, Calcium, and Vitamin A**

A pregnant woman needs more of these vitamins and minerals, because the baby needs them to grow and be healthy and to prevent birth defects; and also she needs them to have enough energy to look after herself and her family, to fight infections and to keep her strong for completing the pregnancy, giving birth safely and breastfeeding the baby afterwards

Iron

Iron helps make blood healthy and prevents anemia. A pregnant woman needs a lot of iron to have enough energy, to prevent too much bleeding at the birth, and to make sure that the growing baby can form healthy blood and store iron for the first few months after birth. It is also important in the production of good breast milk.

Some of the foods that contain a lot of iron includes

- Poultry (chicken), Fish
- Sunflower, pumpkin and squash seeds, . Beans, peas and lentils
- Dark leafy green vegetables
- Meat (especially liver, kidney and other organ meats), Egg yolk
- Whole grain products, Dried fruit, Nuts
- Iron-fortified bread

.

Taking iron pills

It can be difficult for a pregnant woman to get enough iron, even if she eats iron-rich foods every day. She should also take iron pills (or liquid iron drops) to prevent anemia. These medicines may be called ferrous sulfate, ferrous gluconate, ferrous fumerate or other names (ferrous comes from the Latin word for iron).

Iron pills or drops can be obtained from pharmacies and health institutions, but throughout Ethiopia you will advice a women to take iron pills routinely to pregnant women as part of focused antenatal care

Folate (folic acid)

Lack of folate can cause anemia in the mother and severe birth defects in the baby. To prevent these problems, it is important if possible for a woman to get enough folic acid in her diet before she becomes pregnant and she should certainly do this in the first few months of pregnancy.

Foods rich in folate that pregnant and breastfeeding women should try to eat every day include:

- Dark green, leafy vegetables
- Whole grains (brown rice, whole wheat)
- Meat (especially liver, kidney and other organ meats) and Fish

As well as eating as many of these foods as she can, all pregnant women should also take 400 mcg (micrograms) of folic acid tablets orally every day during pregnancy. She should be able to get these tablets from the health post as part of Focused Antenatal Care.

Calcium

A growing baby needs a lot of calcium to make new bones, especially in the last few months of pregnancy. Women need calcium for strong bones and teeth. These foods contain a lot of calcium:

- Yellow vegetables (hard squash, yams)
- Milk, curd, yogurt and cheese
- Green, leafy vegetables and soybeans

Iodine

Iodine prevents goiter (swelling of the neck) and other problems in adults. Lack of iodine in a pregnant woman can cause her child to have cretinism, a disability that affects thinking and physical features. The easiest way to get enough iodine is to use iodized salt instead of regular salt . It is available in packet form labeled ‘Iodized salt’ in many market places.

Vitamin A

Vitamin A prevents poor vision at night or when light intensity is low and helps to fight infections. Lack of vitamin A also causes blindness in children.

A woman needs to eat plenty of vitamin A-rich food during pregnancy and while breastfeeding. Food items that contain lots of Vitamin A includes:

- Dark yellow and green leafy vegetables and yellow fruits (Carrots, mangoes, spinach, cabbage, etc).
- Liver, fish liver oil
- Milk, eggs and butter

Fluids

Along with eating healthy foods, women should drink plenty of clean water and other healthy fluids every day. Fruit juices, animal milks and many herbal teas are all healthy fluids to drink

1.1.3. Problems from poor nutrition

Poor nutrition can cause tiredness, weakness, difficulty in fighting infections and other serious health problems. Poor nutrition during pregnancy is especially dangerous. It can cause miscarriage or cause a baby to be born very small or with birth defects. It also increases the chances of a baby or a mother dying during or after the birth.

1.2. Hygiene During Pregnancy

During pregnancy, women should be especially careful about personal hygiene. Pregnant women sweat more and have more vaginal discharge than non-pregnant women (due to hormonal changes), and they may be more vulnerable to infection by germs in the environment. Keeping the body clean helps prevent infection.

Hand washing with soap is the most important hygiene action she can take, especially before

preparing food and after going to the toilet. If possible, a pregnant woman should wash her body every day with clean water especially her genital area.

Dental hygiene is especially important during pregnancy because increased oestrogen levels can cause swelling and increased sensitivity in gum tissues.

She should clean her teeth with a dental stick or a toothbrush with toothpaste, the pregnant woman should do so regularly.

1.2.1. Living a healthy lifestyle

As long as eating well and keeping clean is important for her, pregnant women need to get enough sleep and rest every day. This will help her to avoid developing high blood pressure , and edema (**Edema** is the swelling of the feet and ankles due to fluid collecting in the tissues).

Good rest also helps her to stay strong and gives the fetus a better chance of being born healthy. If families encourage a pregnant woman to rest, are helping her and the baby to be healthy.

Many women have to work throughout their pregnancy in the fields, factories or shops, as well as in their own homes. This can be especially hard for women during pregnancy, because they get more tired than usual; especially in the last few weeks. Explain to them and their families that the woman should try to rest for a few minutes every 1 to 2 hours. This will also help her to enjoy her pregnancy.

Make sure that women know that whatever they put into their body will pass across the placenta and into the baby.

Cigarette smoke, alcohol and illegal drugs such as opium, heroin, cocaine and barbiturates are dangerous for anyone, but especially harmful to the developing fetus. Even one or two alcoholic drinks a day during pregnancy can result in the baby being born too small, or with birth defects or disabilities that affect the brain

She should also be advised to avoid:

- Lifting heavy things
- People who are sick, especially if they have vomiting, diarrhea or rashes
- Strong chemicals or their fumes (e.g. chemicals used to kill pests in the fields)
- Non-essential medicines
- Medicines such as cough syrups, laxatives and pain relievers that have not been prescribed for her by a health worker

1.3. Benefits of early and exclusive breastfeeding

Educate and counsel for those who are pregnant for the first time and explain briefly the benefits of early and exclusive breastfeeding .

Explain to her that breast milk:

- Is ready made and natural food
- Provides the best nutrition for the newborn
- Is easily digested and efficiently used by the baby's body
- Protects against infection and other illnesses because it contains antibodies
- Is cost-effective and affordable
- Promotes mother-baby bonding
- Provides the mother as a contraceptive method (LAM) if she is exclusively and frequently breastfeeding until her first menstrual period returns

1.4. PMTCT

By prevention of mother to child transmission (PMTCT) of HIV we mean the set of interventions designed to reduce the transmission of HIV from Disinfected pregnant women to their babies. Although HIV testing and counseling before pregnancy is important, you should always bear in mind that antenatal care may provide the first opportunity for testing and counseling women in your community regarding HIV.

You should consider PMTCT as an essential component of focused antenatal care, It is an entry point for care and support not only for HIV infected pregnant women, but also for their partners and newborn babies.

It is Ethiopian national policy to aim to test all pregnant women who give their ***informed consent.***

Informed consent means consent given by a person who is being offered medical testing or treatment, and who understands the risks and benefits of the procedures being offered. you need to know about HIV testing, and what treatment will be provided for HIV-infected women.

This is so you can explain to them what will happen if they agree to be tested. We should emphasize that it is essential for pregnant women to give informed consent.

1.4.1. When does HIV transmission occur from mother to baby?

Although mother to child transmission (MTCT) of HIV can take place during pregnancy, the highest risk of transmission is during labour and delivery. Depending on breastfeeding practices and the duration of breastfeeding, there is also a substantial risk of MTCT of HIV during breastfeeding.

Without intervention, it is estimated that 40 out of every 100 babies (40%) born to HIV-infected mothers will be HIV-infected.. Sixty percent of babies of HIV-infected mothers will not acquire the virus at all. However, it is not possible to predict which HIV-infected mother will transmit the virus to her child, so you must provide PMTCT services to all HIV-positive pregnant women.

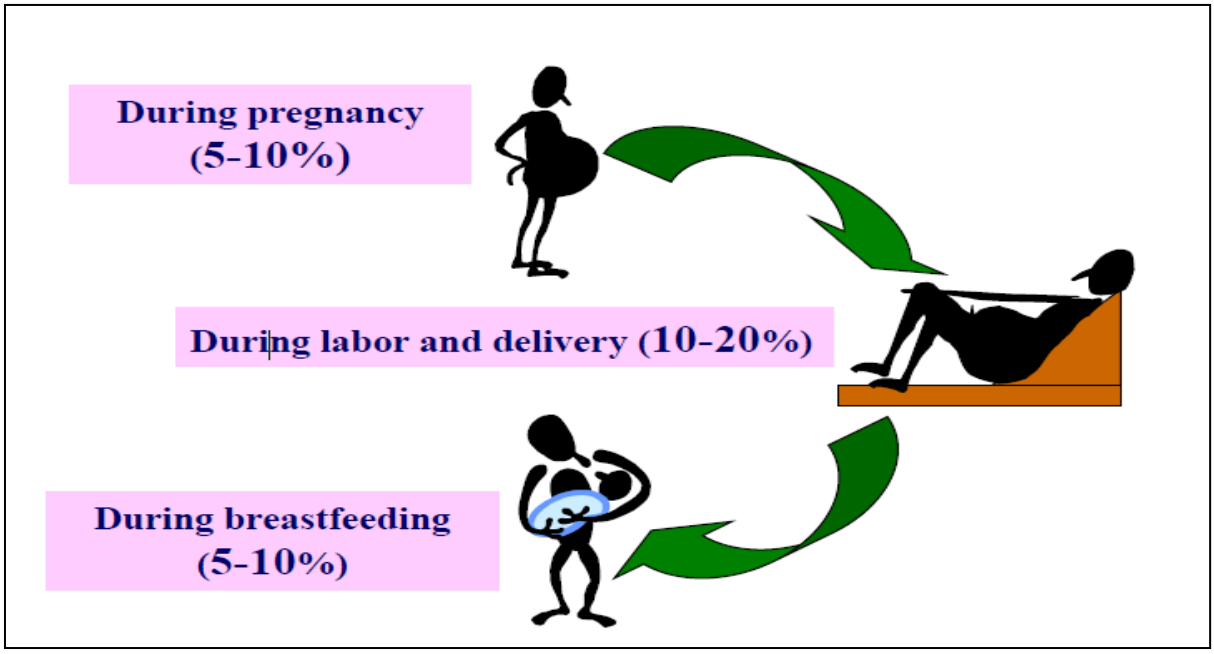


Figure 1.2: Outcomes of infants born to HIV-infected women without preventive measures (*BEmONC – LRP: Ethiopia Best Practices in Maternal and Newborn Care*), January 2017

1.5. Advocacy and community mobilization

Advocacy and community mobilization will help you to gain and sustain the involvement of a broad range of influential individuals, groups and sectors at different levels in the community, who will support the antenatal care program.

If you are successful in educating advocates to speak up for antenatal care and in mobilizing broad scale support for the service, the outcomes can include:

- Improving access to antenatal services for pregnant women, and its acceptance in the community
- Providing forums for discussion and coordination of the antenatal care service
- Mobilization of community resources, such as transportation, outreach and emergency funding for pregnant and laboring women with complications that require urgent medical attention.

1.5.1. Opinion leaders as advocates of antenatal care

Engaging the support of advocates who are ***'opinion leaders' or 'key persons'*** in your locality is an important task. Well-known and respected elders, traditional or religious leaders, and 'wise persons' whose advice and words are accepted in the community, can convince others of the benefits of the antenatal care service by exerting social pressure. The tendency of community members to agree with them is important in conveying your health messages and getting acceptance from others.

You can use these community-honored leaders to communicate positive messages about antenatal care if you give them the right information, and you are ready to use them as advocates. Advocacy by respected leaders can make sure people maintain the positive behavior changes you have brought about through health education.

Try to get the maximum number of people involved in the promotion of antenatal care, so that the community will really strengthen its support for pregnant women's health

Fig 1.3. Community Mobilization as a whole

1.6. Compiling and Reporting activities

Each Health Extension Practitioner needs to keep records and notes, as it has a lot of relevance.

The information might be about the services you are providing, for example:

- Total number of FANC eligible
- Number of house visited by you in that specific period
- Number of women who came for 1st ANC services
- The number of women having major danger sign of pregnancy, or about other activities such as training volunteers and model families, or even organizing health education events.

In reporting your health-related activities, you need to collect information that will tell you how well you have done in terms of your targets, and compare this information with the things you planned to achieve.

Some of the sources of information available to you include:

- Examining records: for example health service records, financial and administrative records.
- Documentation: for example letters, reports, plans, attendance lists, forms, invoices, receipts, minutes of meetings and official reports.
- Continually observing work progress, staff performance and service achievements.
- Discussing progress and any problems with staff and with the community.

Self-Check -1	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Describe health promotion?
2. Explain why a mother has to keep her personal hygiene during pregnancy?
3. How can a poor family still maintain eating better food?
4. When does highest HIV transmission occur from mother to child?
    a. During pregnancy
    b. During delivery
    c. During breast feeding

Note: **Satisfactory rating - 2 points** **Unsatisfactory - below 2 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

LO 3: Take and record complete history of pregnant mother

Instruction Sheet	Learning Guide 19

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

3.1. Diagnosing pregnancy and learning a pregnant women's history
3.2. General assessment of pregnancy

- This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**
  - Give home to home basic health education on healthy living and maternal health care for pregnant mother and her family
  - Take and record common vital signs recorded regularly
  - Provide appropriate support , consultation and follow up of pregnant mother
  - Identify and address Risk factors in consultation with her family and others
  - Identified and urgently refer Pregnancy related danger signs to health centers
  - Maintain Registers of women undergoing antenatal care according to organization policies and procedure
  - Keep and use schedules of participation in antenatal care to organize continuing care for women.
  - Organized and/or provide reminders and other assistance attend ANC care according to women's needs
  - Maintain referral and communication networks with Medical staff, and midwives allied health staff, birthing facilities and female community elders
  - Keep and use records on attendance for antenatal care and birthing outcomes to follow the mother

Learning Instructions:

9. Read the specific objectives of this Learning Guide.
10. Follow the instructions described below 3 to 4.
11. Read the information written in the information "Sheet 1, Sheet 2, **in page 1 to 7, and 9 to 12** respectively.
12. Accomplish the "Self-check 1, aand Self-check t 2, **in page 8, and 13** respectively

Information Sheet-1	Diagnosing pregnancy and learning a pregnant women's history

1.1. Diagnosis pregnancy

Safe motherhood begins before conception with proper nutrition and a healthy lifestyle. It continues with appropriate prenatal care, the prevention of complications when possible, and the early and effective treatment of complications. The ideal results are pregnancy at term, without unnecessary interventions, the delivery of a healthy infant, and a healthy postpartum period in a positive environment that supports the physical and emotional needs of the woman, infant, and family.

For the implementation to this, one of the approaches is visiting the client's (the pregnant mother's) home and talking to her and family. What function you will perform, before, during and on ending the visit need to be planned. In this aspect, before visiting the house, you need to review the client's pertinent data filled at the health post and elsewhere. Besides, you have to make sure that you obtain the permission of the clients to be visited. In this information sheet, you will learn in detail the importance of home visiting and how to go about it during the process and how to end it. It is a means to identify pregnant mothers and their problems (including the risk factors) and managing them at spot

Home visiting: is a face to face contact made by the public health professional to the client to offer care and support.

a. Principle of home visiting

1. It should have a purpose
2. It must be based on need

3. It should have a plan
4. It should use the available resources

I. Advantage

1. The family is seen in a familiar atmosphere which is were relaxed and makes communication easier than at hospital or clinic
2. All family members can be seen & assessed by one person at one visit
3. The health workers, who know the neighborhood, are aware of local problems, priorities, customs, difficulties, & resources.]
4. High risk families can be identified & visited as a priority
5. The health workers, can observe, assess, & act up on obvious and latent health problems. Health workers can follow these problems; Health workers can follow these problems at subsequent visit.'
6. Much can be assessed at one time. Example, personal hygiene, water supply, sanitation, waste disposed food storage etc.
7. More accurate assessment is done
8. Better understanding & good relationship is established with the family members.
9. Advice will be practical and suited to the family's needs.

II. Limitations

- Time consuming
- Limited equipment can only be carried to home
- Appointment might be not kept
- Destruction in the home makes construction difficult
- Certain homes may be geographical not reachable

b. Phases and activities of home visiting

Before doing home visiting the HEW should revive the client's pertinent data about the client.

The first thing is obtaining the client's permission to be visited, schedule for the visit, explains
the purpose and verifying the address.

Phase1. Initiation phase

- Clarify purpose of home visiting
- Share information to family member

Phase2. Pre-visit phase

- Initiate contact with family
- Determine family willingness
- Schedule home visiting
- Review records

Phase3. On home phase

- Introduction him/her self
- Warm greeting
- Social interaction (to develop trusting r/s
- Implement your objective.
- HEW must pay attention for safety of themselves and the client, if she has supervisor, deliver the plan.
- If she encounters problem inform her supervisor and return back and report

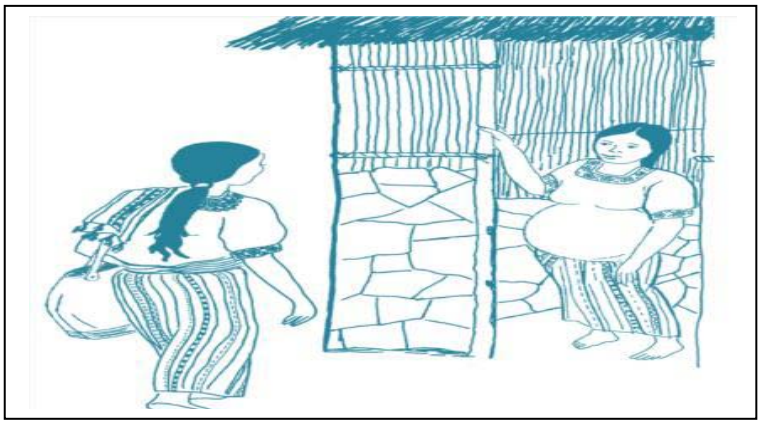


Fig 1.1 The HEW visiting the pregnant mother at her home

Phase4. Termination phase

- Review visit with family
- Plan for future visit

Phase5. Post visit phase

- Record visit what all you did and ANC service
- Plan for next visit

c. Detail of the Home Visit

I. Initial Home Visit

During the initial home visit, which is usually lasts less than an hour, the individual client is

evaluated and a plan of care is established to be followed or modified on subsequent visits.

The initial assessment includes evaluating the client, the home environment, the client's self-care abilities of family's ability to provide care, and the client's need for additional resources.

Identification of possible hazards, such as cluttered walk areas, potential fire risks, air or water pollution, or inadequate sanitation facilities, is also part of the initial assessment.

Documentation considerations for home visits follow fairly specific regulations. The client's

needs and the care provided must be documented. The medical diagnosis and specific detailed information on the functional limitations of the client are usually part of the documentation. The goals and the actions appropriate for attaining them must be identified. Expected outcomes of the nursing interventions must be started in terms of client's behaviors and may be realistic and measurable

II. Ending the Home Visit

As the visit comes to a close, it is important to summarize the main points of the visits for the

client and family and to identify expectations for future visits or client achievements. Here are

the following points to be considered at the end of each visit:

- What are the main points of the client or family should remember form the visit?
- What positive attributes have been noted about the client and the family that will give them a sense of accomplishment?
- What were the main points of the teaching plan or the interventions needed to ensure that the client and the family understand what they must do?
- Who should the client or family call if they need contact someone immediately?
- What signs of complications should be reported immediately?
- How frequent will the visit be made?
- When is the next visit?

1.2. Identifying and addressing/refer risk factors

Risk factors are those inherited, environmental and behavioral influences which are considered to increase the likelihood of physical or mental health problems in the future.

- The pregnant woman's age is below 18 years.
- A woman over 35 years of age is pregnant for the first time.
- The previous delivery was by operation.
- The height is below 150cm. and pregnant for the first time.
- Pregnancy (parity) over five.
- Less than 2 years spacing
- Alcohol consumption
- Tobacco use
- Mal-Nutrition
- Drugs that are not prescribed

- Environmental and housing issues affecting pregnancy, child care and family health
- Potential impact of compliance or non-compliance with antenatal care plan
- Presence or absence of family, financial and social support systems

1.3. Identify and refer potential pregnancy related danger sign

In addition to the above risk factors, there are major danger sign and symptoms, which are listed below that you have to identify and refer the mother immediately

- Persistent vomiting, weight loss
- Hyper emesis gravid arum (excessive nausea and vomiting during pregnancy)
- Vaginal bleeding, crampy lower abdominal pain.
- Headache, burning epigastric pain
- Blurred vision, generalized body swelling
- Leakage of watery fluid from the vagina
- Absent fetal kick for more than 6 hours
- Yellowish discoloration of the eyes
- Immobility or movement of the fetus has stopped.

As the occurrence of the common danger symptoms that can be felt or noticed by the pregnant woman may vary in their timing in relation to the gestational age:

- First, you have to know very well the timing of occurrence of common pregnancy related or other medical problems, taking the gestational age as the milestones;
- Secondly, you have to be selective not to overwhelm the pregnant mother with too much information at a time
- Thirdly, remember that counseling is not a one-time business . you should be prepared to repeat the messages about danger symptoms at every visit and check that the woman has understood correctly

Table 1.1. The major symptoms during pregnancy are outlined in the table below in relation to the gestational age

Gestational age	Sign and symptoms	Diagnosis/problem
Conception to 20 weeks of pregnancy	• Persistent vomiting, weight loss	Hyper emesis gravid arum
	• Vaginal bleeding (fresh), may include passage of clots and fleshy material, with crampy lower abdominal pain. On and off lower abdominal pain is very common in early pregnancy and not considered as danger sign.	Abortion
	• Pregnancy symptoms disappear, abdomen is not growing or is even decreasing in size, there may be minimal dark vaginal bleeding	Missed abortion
	• Vaginal bleeding (menstrual-like),lower abdominal pain, missed or irregular period	Ectopic pregnancy or pregnancy outside the uterus
	• Vaginal bleeding (fresh), passage of tissues which look like an ice spoiled with blood (grape-like tissues), fast abdominal growth	Molar pregnancy
	• Headache, burning epigastric pain, blurred vision, generalized body swelling (involving the back, abdominal wall, hands and face), decreased urine output	Hypertensive disorder of Pregnancy

	• Vaginal bleeding in late pregnancy, even minimal amount	Ante partum hemorrhage or late vaginal bleeding
	• Leakage of watery fluid from the vagina that wets her underwear significantly and may be extensive	PROM or premature/before labor/ rupture of membrane
20 weeks to full term	• Progressively increasing pushing down pain in the lower abdomen before 9 months of gestation	Preterm labor
	• No change in abdominal growth, fetal kick felt less than 10 times in 12 hours	Fetal growth retardation- IUGR
	• Absent fetal kick for more than 6 hours	Intra uterine fetal death (IUFD)
	• Fever, headache, chills, rigor, sweating, feels thirsty, generalized aching pain, lost appetite	Malaria, Typhoid fever or other febrile illness diseases
	• Urination becomes painful, frequent, urgent and may be bloody or look like pus	UTI
At any time during pregnancy	• Yellowish discoloration of the eyes, loss of appetite, hate spicy food smell, feels exhausted, nausea and vomiting	Liver disease
	• Thirsty, drinks excessive amounts of water, urinates a lot, feels hungry, weight loss	Diabetes militias

• Persistent cough for more than two weeks	TB or Other disease

Self-Check -1	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Describe health promotion?
2. How many visits does house visiting have?
3. Discuss what you do during the initial and termination phase during house visit?
4. List at list five risk factors which may danger the pregnancy ?
5. What are the common pregnancy related danger signs and symptoms ?

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-2	General assessment of pregnancy

2.1. Basic Health Education

After tracing and identifying the pregnant mothers you had registered on the registration form according to their gestational ages and their problems, you should provide appropriate interventions

1. Counseling about risk identifications
2. Advice on complication readiness and risk preparedness
3. Advice on the DO'S and DON'TS
4. Link or refer the mother if needed
5. Appoint your next visit

a. Pregnancy DO'S

- See your doctor regularly. Prenatal care can help keep you and your baby healthy and spot problems if they occur
- Continue taking folic acid throughout your pregnancy. All women capable of pregnancy should get 400 to 800 micrograms (400 to 800 mcg or 0.4 to 0.8 mg) of folic acid every day. Getting enough folic acid lowers the risk of some birth defects. Taking a vitamin with folic acid will help you to be sure you are getting enough.
- Eat a variety of healthy foods. Include fruits, vegetables, whole grains, calcium-rich foods, lean meats, and a variety of cooked seafood.
- Get all essential nutrients, including iron, every day. Getting enough iron prevents anemia, which is linked to preterm birth and low-birth weight babies. Ask your doctor about taking a daily prenatal vitamin or iron supplement.
- Drink extra fluids, especially water

- Get moving. Unless your doctor tells you otherwise, physical activity is good for you and your baby.
- Gain a healthy amount of weight. Gaining more than the recommended amount during pregnancy increases a woman's risk for pregnancy complications. It also makes it harder to lose the extra pounds after childbirth.
- Wash hands, especially after handling raw meat or using the bathroom.
- Get enough sleep. Aim for 7 to 9 hours every night. Resting on your left side helps blood flow to you and your baby and prevents swelling. Using pillows between your legs and under your belly will help you get comfortable.
- Set limits. If you can, control the stress in your life and set limits. Don't be afraid to say "no" to requests for your time and energy. Ask for help from others.
- Make sure health problems are treated and kept under control. If you have diabetes, control your blood sugar levels. If you have high blood pressure, monitor it closely.
- Ask your health care providers before stopping any medicines you take or taking any new medicines. Prescription, over-the-counter, and herbal medicine all can harm your baby.

b. Pregnancy DONT'S

- Don't smoke tobacco. Smoking during pregnancy passes nicotine and cancer-causing drugs to your baby. Smoking also keeps your baby from getting needed nourishment and raises the risk of miscarriage, preterm birth, and infant death.
- Avoid exposure to toxic substances and chemicals, such as cleaning solvents, lead and mercury, some insecticides, and paint. Pregnant women should avoid exposure to paint fumes.
- Protect yourself and your baby from food-borne illness, which can cause serious health problems and even death. Handle, clean, cook, eat, and store food properly.

- Don’t drink alcohol. There is no known safe amount of alcohol a woman can drink while pregnant. Both drinking every day and drinking a lot of alcohol once during pregnancy can harm the baby.
- Don’t use illegal drugs.
- Don’t clean or change a cat’s litter box. This could put you at risk for toxoplasmosis, an infection that can be very harmful to the fetus.
- Avoid contact with rodents and with their urine, droppings, or nesting material. Rodents can carry a virus that can be harmful or even deadly to your unborn baby.
- Don’t take very hot baths or use hot tubs or saunas (steam bath). High temperatures can be harmful to the fetus, or cause you to faint.
- Don’t use scented/perfumed feminine hygiene products. Pregnant women should avoid scented sprays, sanitary napkins, and bubble bath. These products might irritate your vaginal area, and increase your risk of a urinary tract infection or yeast infection
- Don’t douche. Douching can irritate the vagina, force air into the birth canal and increase the risk of infection.
- Avoid x-rays. If you must have dental work or diagnostic tests, tell your dentist or physician that you are pregnant so that extra care can be taken

2.2. Areas (points) to be assessed during Home visiting:

1. General cleanliness
2. Solid waste disposal
3. Latrine
4. Personal hygiene
5. Vaccination of <1yr infants
6. Vaccination of women
7. ANC
8. Feeding of children <2 yrs
9. FP

10. Presence of insects / rodents in the house
11. Presence of sick person in the house and action taken.

The health extension worker should hold a bag containing appropriate supplies to treat at the site.

2.3. Follow up of pregnant mother

A pregnancy follow-up is an appointment with a pregnant women to check on her and her growing fetus general condition. This occurs and is usually provided by you after a patient's pregnancy is confirmed, and is performed on a schedule basis. The procedure involves, counseling/health education, physical examination of the pregnant patient and monitoring of the fetus' growth. These visits play an important role in ensuring that the mother and her baby are safe from risks and complications all throughout the pregnancy.

A pregnancy follow-up is highly recommended for all pregnant women once their pregnancy is confirmed. Once you identify a pregnant women at home ,you have to schedule your follow-up as the FANC schedule principles, but you can modify the schedule depending on the condition of the mothers . so as a health extension worker, it is your part of work to provide health education regarding pregnancy follow up.

Self-Check -2	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the Areas /points to be assessed during Home visiting?
2. List the basic health education that re given to pregnant women during home visits?
3. What is the purpose of follow up of pregnant women ?

Note: **Satisfactory rating - 2 points** **Unsatisfactory - below 2 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

LO 4: Perform antenatal examination

Instruction Sheet	Learning Guide 20

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

4.1. Taking vital signs, (T, BP, PR, RR, and Wt.)
4.2. Assessing pregnant women for pallor, shortness of breath, nutritional status
4.3. Abdominal examination (Inspection, Palpation, Auscultation)
  4.1.1. Estimating gestational age from fundal height measurement
  4.1.2. Assessing the fetus (position, lie, fetal heart beat, engagement..etc.)
4.4. Genito-urinary, musculo-skeletal examination (inspection)
4.5. Minor disorders of pregnancy Danger signs

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Complete vital signs (T,BP,PR,RR, Wt, Ht. etc) are taken according to the standard procedures.
- Inspection, Palpation, Percussion, Auscultation are performed in line with standard protocol and guidelines.
- Geito-urinary, musculo-skeletal examination (inspection) are performed
- Minor disorders of pregnancy are identified

Learning Instructions:

13. Read the specific objectives of this Learning Guide.
14. Follow the instructions described below 3 to 6.
15. Read the information written in the information “Sheet 1, Sheet 2, and Sheet 3 **in page 1, 10 and 47** respectively.
16. Accomplish the “Self-check 1, Self-check t 2, and Self-check 3 **in page 9, 46 and 48** respectively

17. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, ” **in page 49**
18. Do the “LAP test” **in page –51**

Information Sheet-1	**Taking vital signs, (T, BP, PR, RR, and Wt.)**

1.1. Vital signs: Blood Pressure (BP), Pulse Rate (PR), Temperature (To), Respiratory Rate (RR)

1.1.1. Blood pressure :

Blood pressure (BP) refers to how hard the blood is 'pushing' on the walls of the major blood vessels as it is pumped around the body by the heart. The pressure is measured in millimeters (mm) of mercury (a liquid silver metal, which has the chemical symbol Hg), so blood pressure measurements are expressed as a number followed by mmHg

A blood pressure measurement is two numbers written one above the other. The top number tells you the woman's blood pressure at the moment when her heart 'beats' and pushes blood out into her body. The bottom number tells you her blood pressure when her heart relaxes between each beat, so it can refill with blood

Healthy blood pressure

Normal blood pressure stays between 90/60 mmHg (you say this aloud as 'ninety over sixty millimeters of mercury',) and below 140/90 mmHg ('one hundred and forty over ninety millimeters of mercury'). It does not go up much during pregnancy.

Warning signs

High blood pressure is known medically as hypertension and is a warning sign. The woman has high blood pressure if either of these is true:

- The top number is 140 or above.
- The bottom number is 90 or above.

Very low blood pressure (less than 90/50 mmHg) is also a warning sign, which is usually caused only by heavy bleeding or shock (a dangerous reduction in blood flow throughout the body). This is a very dangerous situation.

Blood pressure numbers

Show how hard the blood has to press. Note that blood pressure is not the same as pulse. You can have a slow pulse with a high blood pressure.

When a woman has high blood pressure during pregnancy, it is harder for her blood to bring food and oxygen to the baby via the placenta. The baby then grows too slowly. Very high blood pressure can also cause the woman to have kidney problems, bleeding in the uterus before birth, or bleeding in the brain (stroke).

How to check blood pressure

There are several types of blood pressure equipment (Figure 2.1).

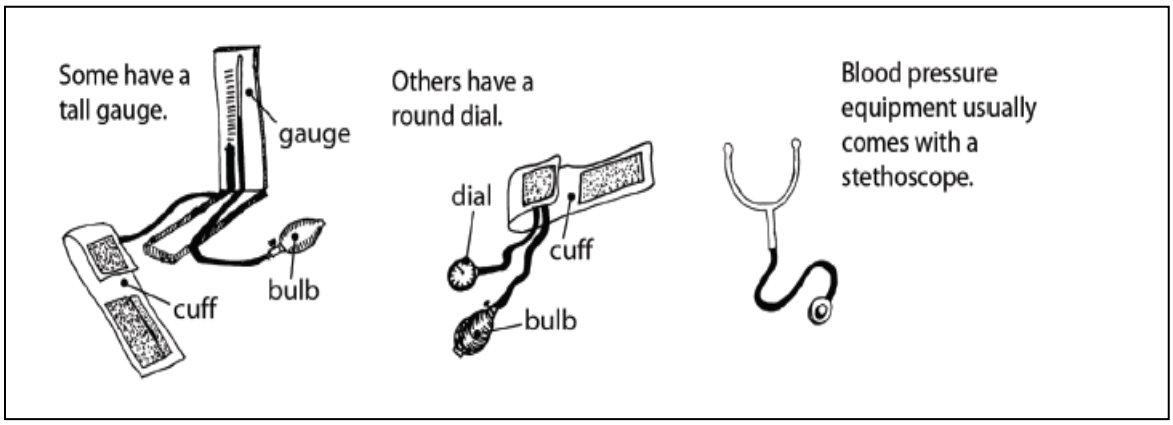
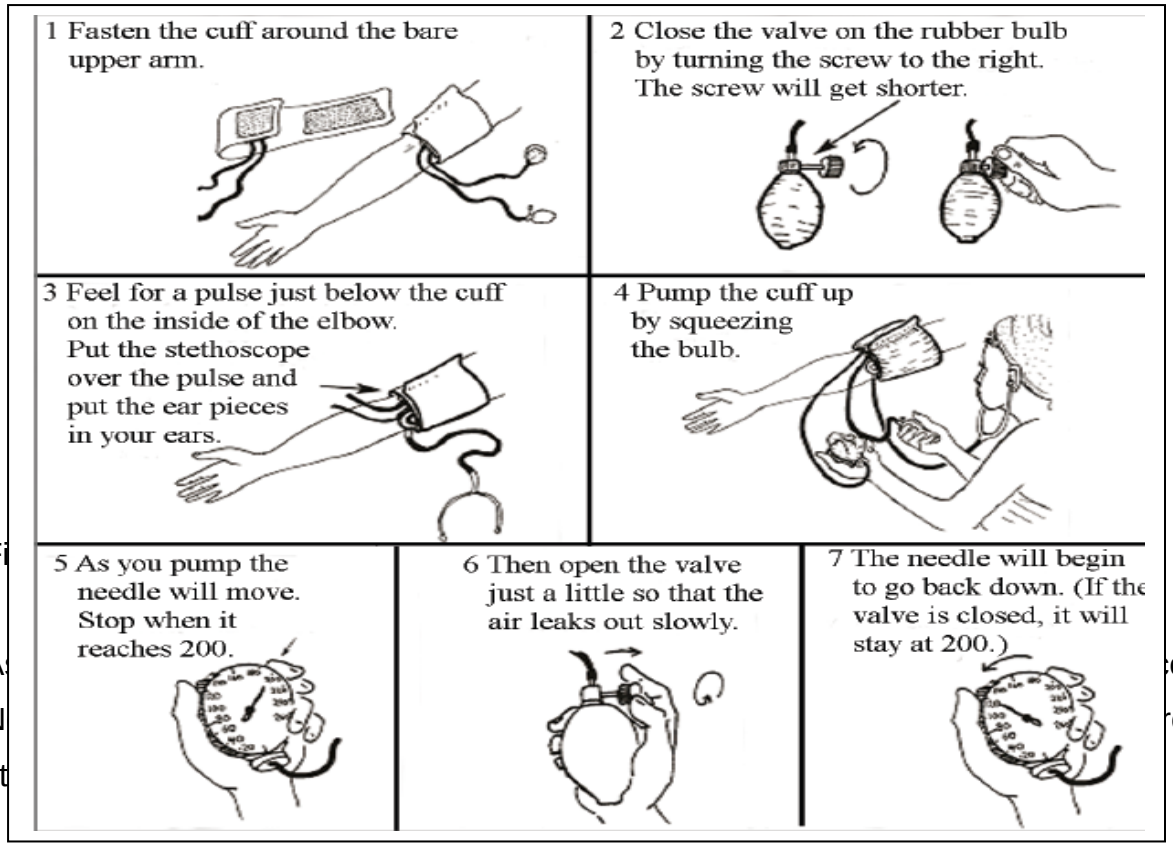


Figure 2.1: Blood pressure equipment may have a tall gauge (left) or a round one (middle). You will also need a stethoscope (right).

When you take the woman's blood pressure, first tell her what you are going to do, and why. Make sure she is sitting or lying comfortably and feels relaxed. Figure 2.2 shows the process step by step



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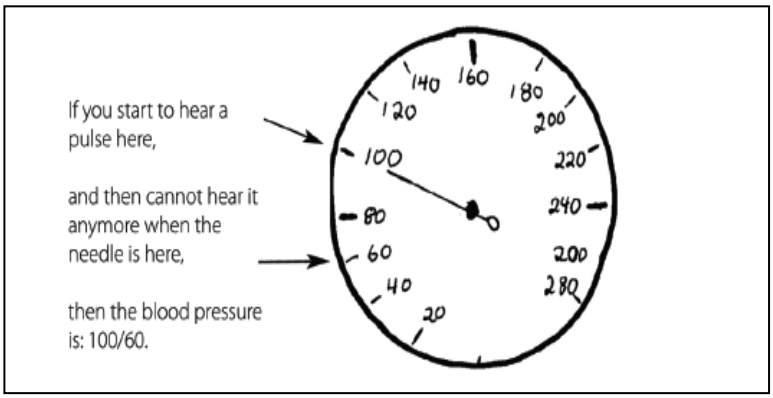


Figure 2.3: This gauge is round, and the pressure is indicated by a needle.

The other type of blood pressure equipment has a tall gauge with a vertical column of silver mercury and numbers at the side (left image of Figure 2.1); the top of the silver column indicates the blood pressure

You can record the woman's blood pressure:

- When you start to hear the pulse (this will be the top number), and
- When the pulse disappears or gets very soft (this will be the bottom number). Check the woman's blood pressure at each visit.
- Write the blood pressure down on her antenatal record card so you can check for changes over time (see the example in Figure 2.4). If her blood pressure is going up, ask her to come back every week until you are sure that it is not still rising.

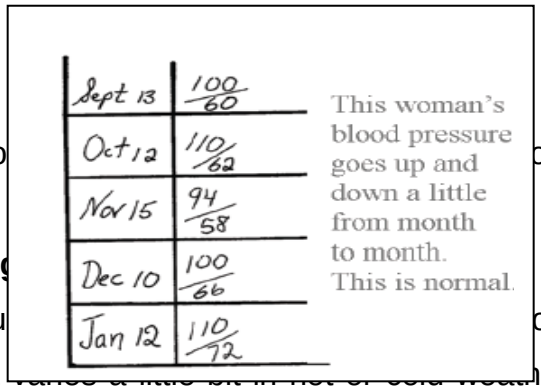


Figure 2.4 Reco own in this example

1.1.2. Checking

Body temperatu old the internal tissues of the body are. Although it er, or if the person is wearing too many or too few clothes, or doing heavy physical work, it generally stays close to a value known as 'normal' temperature, unless the person is ill.

Body temperature is measured using an instrument called a thermometer (Figure 2.5a), which has a 'bulb' at one end, usually filled with a silver liquid metal called mercury. (Some glass thermometers contain a red dye instead, and some use digital technology — see Figure 2.5b.) In a glass thermometer, when the bulb of mercury is warmed by a person's body, the mercury expands and rises up the thin glass tube, which is marked with numbers showing the person's body temperature

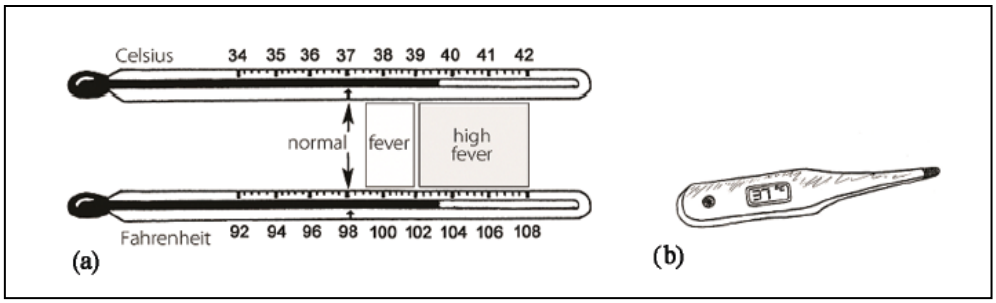


Figure 2.5. (a) Glass thermometers may measure temperature in degrees Celsius (top) or Fahrenheit (below). (b) A digital thermometer shows the temperature as a number in a window

Healthy temperature

Normal temperature is close to 37°C, or just under 98°F. The woman does not feel hot to touch.

Warning sign

The woman has a fever — a temperature of above 37.5°C (or 100°F) or above. She feels hot to touch.

How to check her temperature

If you don't have a thermometer, put the back of one hand on the woman's forehead, and the other on your own, or that of another healthy person (Figure 2.6). If the woman has a fever, you should be able to feel that her skin is hotter than that of a healthy person.

If you have a glass thermometer, clean it well with soap and clean water, or alcohol. Hold the thermometer with the 'bulb' containing the silver mercury pointing away from your hand. Shake it with a snap of the wrist (Figure 2.7), until the top of the thin column of silver mercury falls well below 'normal' body temperature, i.e. less than 36°C (or 96°F).

Put the bulb end of the thermometer under the woman's tongue or in her armpit, and leave it there for three minutes. The woman should keep her mouth closed, or her arm close to her body.

Take the thermometer out and turn it until you see the silver line. The point where the silver stops marks the temperature. There is usually a little arrow at the 'normal' point.

Figure 2.6. You can easily

Figure 2.7.Shake the mercury to below 36°C.

Always clean the thermometer with soap and cool water, or with alcohol, after you use it. Do not use hot water — it can break the thermometer! Mercury is a very poisonous metal. Be careful with glass thermometers, and if they break, do not pick up the mercury with your bare hands. Sweep the mercury into a jar and bury it. Do not let children play with thermometers or mercury. Get a digital thermometer if you can (Figure 2.5b).

Remember, a high fever (greater than 37.5^{o}C) may be due to sickness due to malaria or other body infection and needs to be lowered right away. To lower a fever:

- Have her drink one cup of fluid every hour
- Wash her body with a cloth dipped in cool water
- If available give 500 to 1,000 mg (milligrams) paracetamol by mouth every four to six hours and refer her

1.1.3. Checking her pulse

The pulse tells you how fast the heart is beating. Every time the heart beats (contracts) it pushes blood out into the arteries. You can feel each 'pulse' by pressing gently on an artery with your fingers. Everyone's pulse is different. That is normal. You can find the pulse in the throat or wrist, as shown in Figure 2.8.

Healthy pulse

The normal pulse rate is about 60 to 80 beats a minute when the woman is resting.

Warning sign

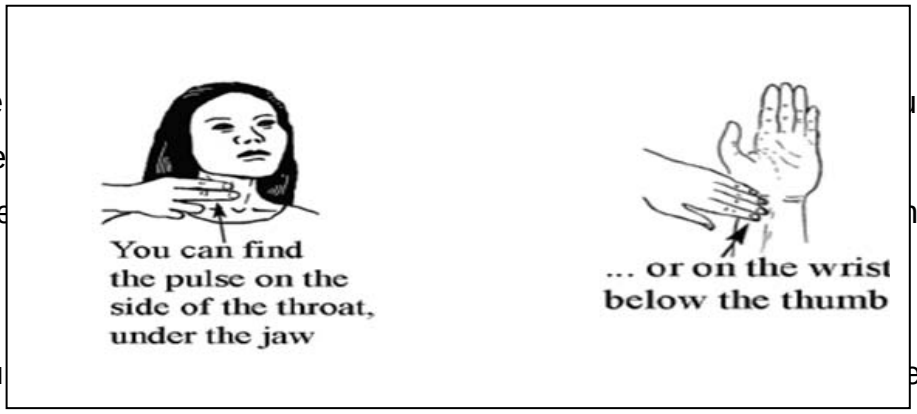
The pulse rate is 100 or more beats a minute when the woman is resting.

How to measure her pulse rate

Wait until the woman is resting and relaxed. Put the pads of two fingers on the pulse (Figure 2.9). Do not use your thumbs, because there is a little pulse in your own thumbs which could confuse you.

figure ulse in the neck or inside

Figure n you measure her pulse



If you econd hand, count the number of beats in the mother's pulse for one minute. Write the number down.

At first, have someone look at the watch or clock for you, and tell you when one minute has passed.

If you do not have a watch with a second hand, check the pulse anyway. You can learn to tell if it is slow, normal, or fast compared to your own pulse, and to other women's.

What to do if the woman has a fast pulse

If her pulse rate is 100 beats or more a minute, she may have one or more of the following problems:

- Stress, fear, worry, or depression
- Anemia
- An infection like malaria
- Bladder infection, or infection in her uterus
- Heavy bleeding
- Thyroid trouble
- Heart trouble.

If you do not know what is causing the fast pulse rate (above 100 beats per minute), refer the woman to the nearest health centre.

1.1.4. Checking for shortness of breath

Healthy respiration

Some shortness of breath, especially late in pregnancy, is normal. Many women get a little short of breath when they are 8 or 9 months pregnant. The cause of this is as the baby gets bigger, it squeezes the lungs so there is less room to breathe. Breathing may get easier when the baby drops lower in the belly shortly before labour begins.

Warning symptom

If shortness of breath is making a pregnant woman uncomfortable, this is a warning symptom, espe igure2.10).

Figure 2.10 Shortness of breath can be a warning symptom

Shortness of breath can also be caused by:

- Anaemia
- Heart problems
- Tuberculosis
- Asthma
- Lung infection
- A blood clot in the lung
- Allergies.

If a pregnant woman has trouble breathing all of the time, or severe trouble even once, or if you think she may have any of the illnesses listed, refer her to a health centre.

1.2. Check her weight and height

Healthy weight gain

- A woman in good health steadily gains between 9 to 12 kilograms during pregnancy. This is the same as 1 to 2 kilograms each month. However, routine weight measurement is not necessary for antenatal care because it is not a reliable indicator of pregnancy outcome.

Warning sign

- If a woman gains weight suddenly near the end of her pregnancy, it may be a sign of twins, or pre-eclampsia (high blood pressure and protein in the urine appearing for the first time during pregnancy).

Information Sheet-2	Assessing pregnant women for pallor, shortness of breath, nutritional status

2.1 Head, Ear, Eye Nose Throat/mouth (HEENT),

- Look for the cleanliness of her hair/ head, observe any sign of trauma, wound etc
- Check for any discharge, sign of trauma, swelling/lesion or wound in her ear and nose
- Check for oral hygiene and dental carries
- Check for anemia and sign of jaundice

2.2 Checking for signs of anaemia

When someone has anaemia, it usually means the person has not been able to eat enough foods with iron. Iron helps the red blood cells carry oxygen from the air we breathe to all parts of the body. Some kinds of anaemia are caused by illness, not lack of iron. And some kinds of anaemia are inherited (genetic) and cannot be cured by eating iron-rich foods or taking iron pills.

Healthy signs and symptoms

General good health and plenty of energy. The woman does not have pallor see below).

Warning signs and symptoms

- Pallor — paleness inside the eyelids, pale fingernails and gums (Figure 2.11)
- Dizziness or fainting
- Weakness or tiredness
- Fast pulse (over 100 beats a minute)

Fig 2.11. Illustrate sign and symptoms of Anemia

2.3 Perform breast examination and teach the mother breast self check

- Ask the woman to empty her bladder, and take her to the examination bed
- Secure privacy
- **Inspect**: color, size, symmetry, shape, direction of nipples , mass, swelling, discharge, or lesions
    - o If the nipples appears inverted test for protractility by placing the thumb and the index fingers on either side of areola and gently squeezing- if the nipple goes in, it is inverted
- **Palpate**: use one of the following techniques for palpating the breast (use your 2nd, 3rd, and 4th fingers, keeping the fingers slightly flexed)
    - **The quadrant method**
    - **The circular method**
    - o Palpate the axial area for mass, lymph nodes and swellings.

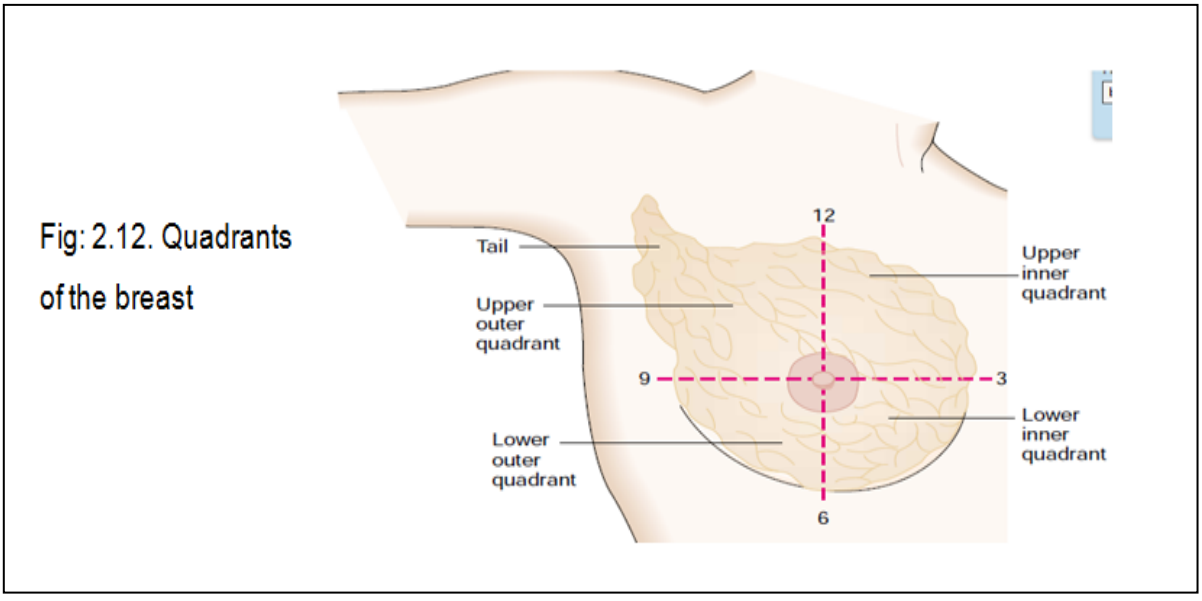


Fig: 2.12. Quadrants of the breast

I. The First Visit:

In Focused Antenatal Care (**FANC**), the first ANC visit should occur in the first trimester, preferably before 16 weeks of gestation.

2.1. Objectives of first visit (before 16th weeks of pregnancy):

- To determine the woman medical and obstetric history with a view to collect evidence of the eligibility to follow the basic component or the specialized care and/or referral to a specialized hospital (using the classifying form).
- To refer for pregnancy test for those women who came early
- To determine gestational age
- To provide routine iron supplementation
- Provide advice on signs of pregnancy-related emergencies and how to deal with them including where she should go for assistance
- To provide Prevention of Mother To Child Transmission (PMTCT) care for HIV counseling and testing to link with a recommended facility or service

Remember:

Ideally, the first visit should occur before 16 th weeks of pregnancy. However, some Women may come at a later gestational age in which case the provider has to

enroll the woman as first visit and give her all the services required for the first visit and as well appropriate for her gestational age.

- The first visit can be expected to take 30 – 40 minutes.
- It is necessary that the steps recorded on the pregnant women registration card be followed part by part.

III. History

3.1 Personal history (Socio-demographic characteristics)-

- Ask her, name, Woreda, Kebele, house number, age, marital status, whether her pregnancy is planned or unplanned pregnancy
- Do a "quick check" for danger signs and conditions needing emergency treatment.
- About daily habits and lifestyle (e.g., social support, workload, dietary intake, use of alcohol/drugs, smoking), and whether she has experienced threats, violence, or injury.
- about tetanus toxoid immunization.
- whether she is using insecticide-treated bed nets at all times.

3.2 Nutritional status

- Ask symptoms that suggest **poor nutrition or lack of iodine in her diet**.
    - This is very important, because poor maternal nutrition is associated with poor pregnancy outcomes like a small baby, and the child may be short in stature.
    - Ask the following warning symptoms

Warning symptoms

- Not wanting to eat
- Not gaining weight
- Weakness and general ill-health
- Sores, rashes, or other skin problems
- Sore or bleeding gums
- Stomach problems or diarrhea

- Burning or numbness of the feet.

The effects of iodine deficiency are:

- Goitre (swelling in the front of the neck caused by iodine deficiency;
- Short children
- Children with deafness
- Children with cretinism, a disability that affects thinking.
    - If you suspect that a pregnant woman's health is poor due to inadequate nutrition, or lack of iodine in her diet, advise her about good nutrition and iodine supplementation

3.3 Check her weight and height

Healthy weight gain

- A woman in good health steadily gains between 9 to 12 kilograms during pregnancy. This is the same as 1 to 2 kilograms each month. However, routine weight measurement is not necessary for antenatal care because it is not a reliable indicator of pregnancy outcome.

Warning sign

- If a woman gains weight suddenly near the end of her pregnancy, it may be a sign of twins, or pre-eclampsia (high blood pressure and protein in the urine appearing for the first time during pregnancy).

3.4 Last Normal Menstrual Period (LNMP)

- Ask her Last Normal Menstrual Period (LNMP)
- Determination of the expected date of delivery (EDD) based on LNMP and all other relevant information.
- To calculate EDD, first sure that whether the month of pagume is crossed or not crossed.
    - If the month of , pagume is crossed; add 5 days on the first day of her LNMP and 9 months on the month of her LNM P

- For example, if the mother's LNMP was on 12/6/2011, her EDD will be on 17/03/2012

  - If the month of pagume is not crossed add 10 days on the first day of her LNMP and 9 months on the month of her LNMP
    - For example, if the mother's LNMP was on 05/03/2011, her EDD will be on 15/12/2011

- To determine the gestational age of the fetus, i.e. the number of weeks or months of pregnancy (gestation), use the following formula

$$\frac{\text{VD (Visiting Day of the mother)} - \text{Her LNMP}}{7}$$

3.5 Medical history

- Ask specific diseases and conditions:
  - diabetes mellitus, renal, cardiac diseases, chronic hypertension, tuberculosis, HIV status , varicose veins, deep venous thrombosis, other specific conditions depending on what the service area perform (for example, hepatitis, malaria), other diseases (past or chronic) and allergies)
- Operations other than caesarean section
- Current use of medicines (specify them)

3.6 Obstetric history- Ask

- Previous stillbirth or neonatal loss
- History of three or more consecutive spontaneous abortion
- Birth weight of last baby < 2500 gm or > 4000gm
- Last pregnancy: hospital admission for hypertension or pre-eclampsia (eclampsia)
- Any unexpected event (pain, vaginal bleeding, others (specify them).
- About if she has felt fetal movements within the last day.

- Gravidity, parity, number of children alive and number of abortions
    - **Gravidity**: The total number of pregnancies (normal or abnormal) or it is the number of times a women has been pregnant
    - **Parity:** The number of times a women has delivered potentially viable children, or it is a description of having given birth to an infant, alive or died, with a birth of 1000gm or more, it excludes abortion
    - **Multigravida:** A woman who has been pregnant several times or a woman who had been pregnant at least once before the current pregnancy
    - **Multipara:** A woman who has given birth on two or more occasions
    - **Primipara:** A woman who has given birth to one or more infants as a result of one pregnancy

Information Sheet-3	Abdominal examination (Inspection, Palpation, Auscultation)

3.3 Perform Abdominal examination and measure uterine height

Abdominal Examination (Every visit)

3.13 Inspection the abdomen:

- While examining the abdomen, cover the chest of the mother with the towel.
- Ask the mother to bent her knee slightly
- Use the three techniques inspection, palpation and auscultation of physical examination
- Warm your hands by rubbing each other and stand at the woman's side, facing her head

While inspecting the abdomen look for:

- **Shape**: Normally it is oval in primi and round in multi gravida mother
- **Size:** Look if the abdomen is distended or not, If it is bigger than the expected gestational age, consider big baby or other abnormalities and if it is less than the expected gestational age consider a small baby or other abnormalities
- **Scar**: Scar of any abdominal surgery
- **Skin**: Color , lesion, mass
- **Striae**/ Stretch marks
    - **Striae or stretch marks** are caused by separation of the underlying collagen tissue and appear as irregular scars

- Fundus is the domed area at the top of the uterus, between the junctions with the two fallopian tubes.

- Place both hands on the side of the funds, and apply gentle pressure to assess consistency and mobility of the fetal part, normally, at 24 weeks, fetal parts are palpable
- Feel what part of the baby is in the upper uterus

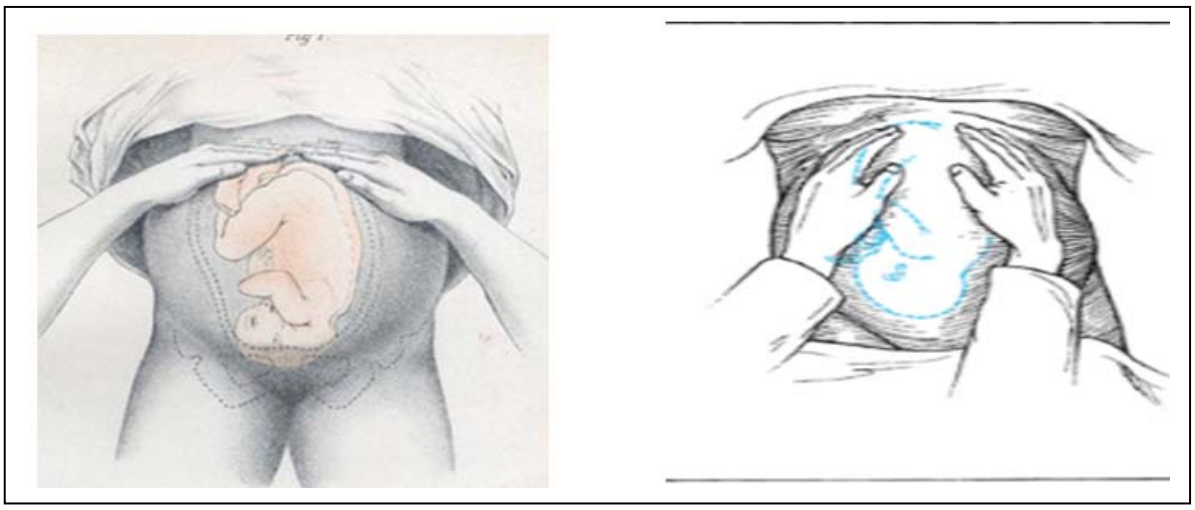


Fig 2.14. Both shows how to apply the first maneuver called fundal palpation

This first maneuver is used for:

- Identification of the fetal presentation (what the fundus /pole of the uterus occupies , is it head or buttock?)
    - If the palpable part at the pole of the uterus is more irregular, soft, and cannot moved independently of the body mass **it is buttock** and if the palpable part at the pole of the uterus is hard, round, and mobile **it is head**

Measuring the gestational age

Fig 2.15. Shows how to estimate the GA according to fundal height

Fundal height is measured usually after 20 weeks of gestation. Measurement should be made with a cent meter (cm) tape from the pubic symphysis (the label 0 cm of the tape measure should start from symphysis pubis) to the top of the uterine mass over the curviness abdominal surface; or you can use your fingers.

- *Remember, tell the mother to empty her bladder prior to abdominal examination*

Normally, the uterus is palpable just at the pubic symphysis at 8 weeks. At 12 weeks it becomes an abdominal organ and at 16 weeks it usually at the midpoint between the pubic symphysis and the umbilicus. At 20 weeks it is palpable at the umbilicus

The height of the uterus matches the gestational age of the fetus. The top of the uterus rises in the mothers abdomen by about TWO fingers width or 4cm every month (in other words, the uterus should grow about 1cm every week or 4cm every month)

Fig 2.16. Shows how to measure the fundal height using tape centimeter

How to measure fundal height using the fingers method

If the top of the uterus is *below* the bellybutton, measure how many fingers *below* the bellybutton it is. If the top of the uterus is *above* the bellybutton, measure how many fingers *above* the bellybutton it is.

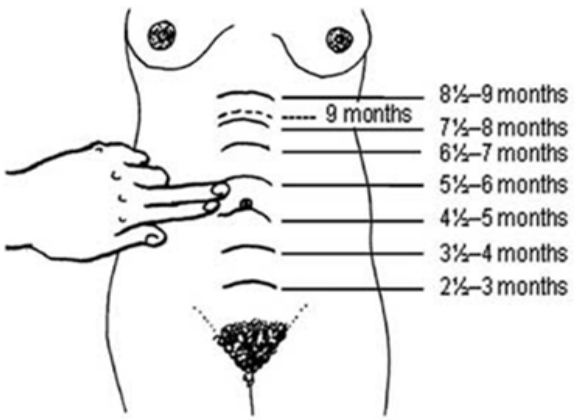


Figure 2.17. Measuring fundal height using

Fig 2.18: the fundus is about four finger above the umbilicus.

Figure 2.19. Fundal height at 7 months' gestation.

In general, when you measure fundal height using finger method, and if the top of the uterus is above the umbilicus, one finger is 2 weeks and if it is below the umbilicus one finger is one week. However, the limitation of this method is the big variation in the thickness of our fingers, there could be up to three weeks difference between the fundal height measurement of the same woman made by two different people. (This is known as 'inter-observer variation', i.e. variation between different observers.)

b. Second Maneuver: lateral palpation

After the upper abdomen has been palpated and the form that is found is identified, the individual performing the maneuver attempts to determine the location of the fetal back

While doing lateral palpation, use the palm of your hand and placed on either side of the maternal abdomen and gently but deep pressure. If you feel a hard resistance structure on one of the sides, ***then this is the back***; and if you fell numerous small, irregular mobile parts on the other side, these are **the fetal extremities**.

This maneuver helps to determine the fetal **Lie and Heart beat**

- **Lie**

- **Fetal lie:** relation of the long axis of the fetus to the mother. It could be longitudinal, transverse or oblique.
- The longitudinal lie is the commonest lie, which occurs in 99% of cases
- The back feels firm and smooth in contrast to the small parts, which will feel knobby and easily moveable
- Once you identify the back of the fetus listen for the FHB

- **Fetal heart beat (FHB)**
  - listen and count to the fetal heart beat for a full minute, by using an instrument called Fetscope .
  - Normally, the FHB ranges from 110-180 beats/ min).

To listen the fetal heart beat, place the fetal stethoscope (fetscope) on the abdomen at right angle to it (on the same side that you palpated the fetal back). Remove hands from fetscope and listen and count to the fetal heart beat for a full minute. Feel the woman's pulse at wrist, simultaneously to ensure that fetal heart tones, and not maternal pulse (which is slower than the fetus), are being measured

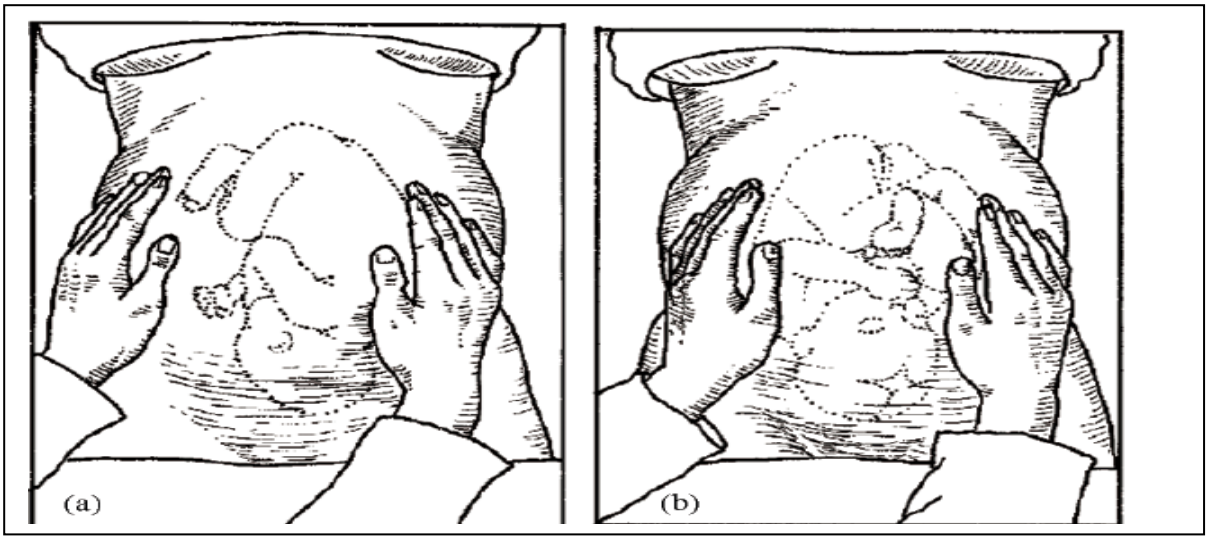


Fig 2. 20: Lateral palpation–the second manoeuvre. (a) The back of the fetus is towards the front of the mother's abdomen; (b) The back of the fetus is towards the mother's back

Th

Fig 2.21. Pinard Horn Fetoscope-Aluminum

Fig 2.22. shows HEW auscultate fetal heartbea using pinard Fetoscope

Fo rs of

In many instances, when the head has descended in to the pelvis, the anterior shoulder may be the differentiated by this maneuver

The third maneuver helps to determine the fetal position, attitude and engagement.

- **Fetal position:** refers to the relationship of an arbitrarily (subjectively) chosen portion of the fetal presenting part to the right and left side of the maternal birth canal. Accordingly, with each presentation there may be two positions- RIGHT or LEFT
- **Fetal attitude:** refers to the relationship of fetal head and limbs to the trunk. It is the mode of growth of fetus and its accommodation to the uterine cavity- it is a characteristic of posture

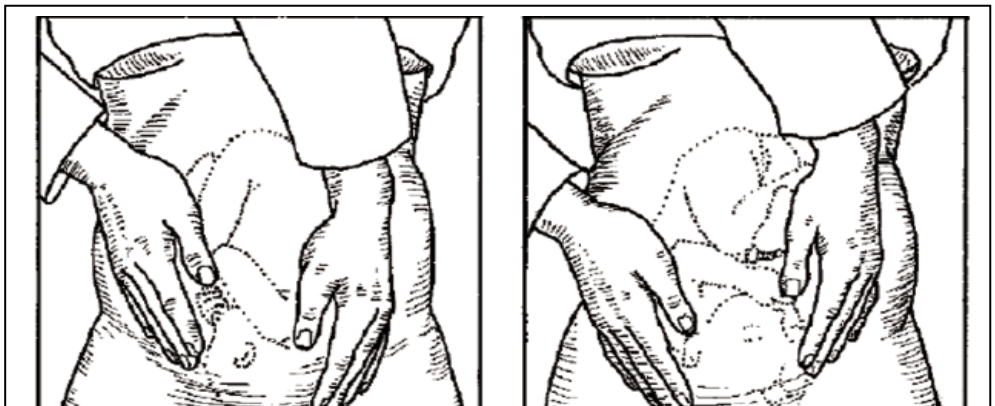


Fig 2. 23: Deep pelvic palpation–the third maneuver

This maneuver helps to determine the presenting part. Both these babies are in cephalic presentation, but (a) is in the occipito-anterior position, whereas (b) is occipito-posterior

c. Fourth Maneuver: Pawlick's Grip

Using the thumb and fingers of one hand, the lower portion of the maternal abdomen is grasped just above the symphysis pubis.

If the presenting part is not engaged, a movable mass will be felt, and it is usually the head. Remember, the differentiation between head and breech is made as in the 1st maneuver

This maneuver is used to detriment **engagement, decent**, and **presenting part**.

- **Engagement:** The mechanism by which the bi parietal diameter, the greatest transverse diameter of the fetal head in occiput presentation passes through the pelvic inlet (when the fetal head enters into the pelvic inlet)
- **Fetal presentation**: It is the portion of the fetal body that is either foremost within the birth canal or in closest proximity to it

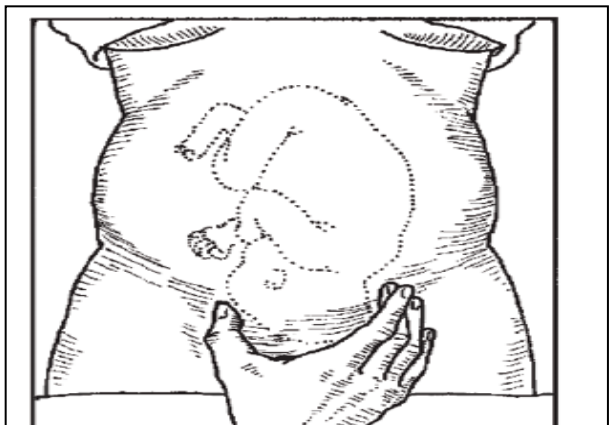


Fig 2. 24 : Pawlick's grip — the fourth manoeuvre helps to determine whether the presenting part has engaged.

Contraindication for the fourth manoeuvre - if the women has:

- Active vaginal bleeding
- PROM (premature rupture of membrane)

3.7 Check the extremities

Check legs for varicose veins, pain, swelling, redness, and edema related to anemia. (Visits 1 and 4 and as needed.)

IV. Laboratory tests

- Urine pregnancy test for HCG (Refer the mother for Pregnancy test)
- Counsel her on PMTCT (Refer the mother for HIV test)

V. Implement the following interventions:

- Supplementation of iron and folate to all pregnant women
- One tablet of 60-mg elemental iron and 400 micrograms folate per day. Note that, In case of anemia increase the dose of iron and folate.
- To enhance the absorption of iron, instruct mothers to take iron when eating meat or vitamin-rich foods (fruits and vegetables).
- Avoid tea, coffee, and milk at the same time when taking iron; it interferes with the body's absorption of iron. Iron can also be taken between meals.
- Educate/council the mother on the side effect of iron, such as
    - Constipation

- Nausea
- Black stool (reassure her, this is not harmful)

Figure 2.25. A pregnant

- In malaria endem
- Counsel her on F
- Refer clients that osis

5.1 Advice, questions and answers, and schedule the next appointment

Provide advice on signs of pregnancy-related emergencies and how to deal with them including where she should go for assistance. This should be confirmed in writing in the antenatal card. Provide simple written instructions in the local language general information about pregnancy and delivery. When necessary, materials appropriate for an illiterate audience should be available, such as simple pictures and diagrams describing the advice given at each visit.

- Give advice on birth plan, including transportation options to health institution.
- Offer sufficient time for free communication and discussion with the mother.
- Advise the woman to bring her partner (or a family member or friend) to later ANC visits so that they can be involved in the discussion and can learn how to support the woman through her pregnancy.
- Discuss on benefit of HIV testing, PMTCT, risk reduction support services including advice on safe sex.
- Provide HIV-posttest counseling according to Guideline for PMTCT of HIV in Ethiopia
- Advise women to stop the use of alcohol, tobacco smoking and chewing chat (if applies)

- Discuss on breast feeding options and advise on exclusive breast-feeding.
- Schedule appointment for the second visit at 24 – 26 weeks of gestation and state date/hour if possible. This should be written in the woman's appointment card and tell her to take note.

VI. Maintain complete records

- Complete integrated client card
- Complete appointment card
- Enter information on registration book

Note that in each visit, Vaccination against tetanus toxoid should be given during pregnancy.

Consider also if the mother had taken other doses in her past life. It is proved that, this toxoid vaccine have only minimum interval for buster; there is no maximum interval limit. The protection is for both maternal and fetal benefit. As a service provider you should seriously check for her vaccination status till she reaches the maximum level of protection (TT5).

Table 2.1. Tetanus toxoid Immunization Schedule

Tetanus toxoid Immunization Schedule		
Dose	Schedule	Years of protection
TT_1	At first contact, as early as possible during pregnancy	0
TT_2	Four week after TT_1	3 years
TT_3	Six weeks after TT_2	5 years
TT_4	One year after TT_3	10 years
TT_5	One year after TT_4	Life long

Figure ar on left shoulder

II. Tl

The second visit should be scheduled at 24-28 weeks of gestation. It is expected to take 20 minutes.

The Objectives of the Second Visit is to:

- Address complaints and concerns
- Assess fetal well being
- Design individualized plan
- Advice on existing social support
- Update the risk assessment and based on that, decide on the need for referral

a) History

- Personal history: note any changes since first visit.

I. Medical history

- Review relevant issues of medical history as recorded at first visit.
- Take note of diseases, injuries, or other conditions and additional histories for HIV positive women since first visit.
- Ensure intake of medicines, other than iron-foliate and other prescribed drugs.
- Check compliance for intake of iron
- Note other medical consultations, hospitalization or sick-leave in present pregnancy.

II. Obstetric history

- Ask the woman her feeding practice
- Review relevant issues of obstetric history as recorded during the first visit.

- Record symptoms and events since first visit: Ask about:
    - Vaginal bleeding and vaginal discharge
    - Dysuria, frequency, urgency during micturition
    - Severe/persistent headache or blurred vision
    - Difficulty breathing
    - Fever
    - Severe abdominal pain
    - Fetal movement (note time of first recognition in medical record).
    - Signs and symptoms of severe anemia.
    - Other specific symptoms or events such as opportunistic infections in HIV positive women.
    - Abnormal changes in body features or physical capacity (e.g. peripheral swelling,
    - Shortness of breath), observed by the woman herself, by her partner or other family members.
- Check sustained habits regarding alcohol, smoking and others.

b) Physical Examination:

- Note general appearance; look for signs of physical abuse.
- Measure vital signs and record (BP, PR, RR, Temperature, weight)
    - A woman in good health steadily gains between 9 to 12 kilograms during pregnancy. This is the same as 1 to 2 kilograms each month
- Measure uterine height in centimeters
- Auscultate for fetal heart beat and record
- Check for other signs of disease; shortness of breath, cough, generalized edema and the like.

c) Advice, Questions and Answers, and Scheduling the Next Appointment:

- Repeat all the advice given at the first visit.
- Questions and answers: give time for free communication.

- Give advice on whom to call or where to go in case of bleeding, abdominal pain or any other emergency, or when in need of other advice.
    - These information should be confirmed in writing (on the antenatal card), at the first visit.
- Schedule appointment of third visit (at 30-32 weeks).

d) Maintain Complete Records

- Complete clients‟ card on the Integrated Client Card.
- Complete appointment card
- Enter information on registration logbook

III. The Third Visit:

The third visit should take place around 30 – 32 weeks and is expected to take 20 minutes.

Objectives of the Third Visit are to:

- Address complaints and concerns
- Assess for multiple pregnancy, assess fetal well being
- Review individualized birth plan and complication readiness including advice to access skilled attendance in case of onset of labor, special care and treatment for HIV positive women based on the National Guideline for PMTCT of HIV in Ethiopia
- Advice on family planning and breastfeeding
- Decide on the need for referral based on updated risk assessment

a) History

- Personal history: (Note any changes or events since second visit).

I. Medical history

- Review relevant issues of medical history as recorded at first and second visits.

- Ensure existence of diseases, injuries or other conditions and additional histories for HIV positive women since the first and the second visit.
- Note intake of medicines other than iron and foliate.
- Compliance with iron intake
- Note other medical consultations and hospitalization

II. Obstetric history

- (Review relevant issues of obstetric history as recorded during the first visit and checked during the second one)
- Record symptoms and events since second visit; Ask about:
    - Vaginal bleeding and vaginal discharge
    - Dysuria, frequency and urgency during micturition
    - Severe/persistent headache or blurred vision
    - Difficulty breathing
    - Fever
    - Severe abdominal pain
    - Fetal movement; note time of first recognition in medical record.
    - Other specific symptoms or events such as opportunistic infections in HIV positive women.
    - Changes in body features or physical capacity, observed by the woman herself, her partner or other family members
    - Habits regarding alcohol, smoking and others.

b) Physical examination

- Measure and record vital signs (BP, PR, RR, weight gain or loss and temperature).
- Measure uterine height record on graph
- Palpate abdomen for detect multiple fetuses.
- Auscultate fetal heart beat (using fetusscope)
- Check for generalized edema.

- Check for other alarming signs of disease such as shortness of breath and cough etc.
- Check for bleeding or spotting {(Never do vaginal examination)
- Do breast examination for abnormality.

c) Implement the following interventions:

- Ensure compliance of iron and foliate and refill as needed
- Provide tetanus toxoid injection as needed.

d) Advice, questions and answers, and scheduling the next appointment

- Repeat advice given at first and second visits.
- Give advice on steps to be taken in case labor starts.
- Questions and answers: give sufficient time for free communication and discussion.
- Reconfirm written information on whom to call and where to go in case of emergency or any other problem.
- Ensure availability of transport in case of emergency like onset of labor
- Provide advice on breastfeeding, contraception and importance of the postpartum visit.
- Schedule appointment for the fourth visit at 36-38 weeks.

IV. The Fourth Visit:

The fourth should be the final visit of the basic component and should take place between weeks 36 and 38.

Objectives of the Fourth Visit are to:

Review individualized birth plan, prepare women and their families for childbirth such as selecting a birth location, identifying a skilled attendant, ensuring social support, planning for costs of transportation and supplies for her care and the care of her newborn.

Complication readiness:

- Develop an emergency plan which includes transportation, money, blood donors, and designation of person to make decision on the woman's behalf and person to care for the family while she is away.
- Re-inform women and their families of the benefits of breastfeeding and contraception as well as the availability of various methods at the postpartum clinics.
- Perform relevant examination
- Review special care and treatment for HIV positive women according to the Guidelines for PMTCT of HIV in Ethiopia.

a) History

- Personal information (Note any changes or events since the third visit)

I. Medical history

- Review relevant issues of medical history as recorded at the three previous visits.
- Note inter-current diseases, injuries or other conditions since the third visit.
- Note intake of medicines other than iron and foliate.
- Ensure compliance with iron intake
- Note other medical consultations, hospitalization or sick-leave since the third visit.

II. Obstetric history:

(Final review of obstetric history relevant to any previous delivery complications)

Record symptoms and events since third visit. Ask about:

- Vaginal discharge and/or bleeding
- Dysuria, frequency, urgency during micturition

- Severe (persistent) headache or blurred vision
- Difficulty breathing
- Fever
- Severe abdominal pain
- Fetal movement; note time of first recognition in medical record.
- Other specific symptoms or events such as opportunistic infections in HIV positive women.
- Changes in body features or physical capacity, observed by the woman herself, her partner, or other family members.

b) Physical examination

- Measure and record vital signs (BP, PR, weight, temperature or RR)
- Measure uterine height and record on graph.
- Check for multiple fetuses.
- Confirm fetal lie and presentation (head, breech, transverse).
- Check for fetal heart sound(s) and record.
- Check for generalized edema.
- Check for other signs of diseases like shortness of breath, cough, etc.
- If there is bleeding or spotting, never do vaginal examination

c) Implement the following interventions:

- (Continue with iron)

d) Advice, questions and answers on post-term management

- Repeat the advice given at previous visits.
- Give advice on measures to be taken in case of the initiation of labor or leakage of amniotic fluid.
- Give advice on breast-feeding.
- Give time for free communication and answer and questions
- Reconfirm written information on what to do and where to go (place of delivery) in case of labor or any other need.

- Schedule appointment, if the woman does not deliver by the end of week 41 (state date and write it in the ANC card).
- Schedule appointment for postpartum visit.
- Provide recommendations on lactation and contraception

e). Delivery Supplies the Mother Should Prepare:

The lists of birthing supplies that a pregnant woman and her family should be advised to prepare before the delivery are:

- Clean clothes to put under the mother and for drying and covering the newborn
- New razor blade to cut the cord
- Very clean and new string to tie the cord
- Soap, a scrubbing brush (if possible) and medical alcohol for disinfection
- Clean water for drinking and for washing the mother and your hands
- Three large buckets or bowls
- Supplies for making rehydration drinks, „Atmit" or tea
- Flashlight in case of interruption of electricity in the area.

f). Complication Readiness and Emergency Planning:

As noted earlier, complication readiness is the process of anticipating the actions needed in case of an emergency and making an emergency plan.

Pregnancy-related disorders such as high blood pressure and bleeding or other illnesses can occur any time between the antenatal check- up visits and delivery. If such conditions happen at any stage, you should refer the woman immediately to the next higher health facility. In addition, you need to counsel her repeatedly to report to you or to seek other medical care quickly in case she observes any of the danger symptoms.

g). Medical Equipment and formats needed for performing history taking and physical examination for FANC clients

The followings are list of some equipments that you need during FANC physical examination

- Towel (for covering the mother chest during examination)
- ANC card
- Appointment card
- TT card
- Referral (for internal and external referral) paper
- Teaching material (first visit) for family planning, breast feeding, HIV/AIDS such as flip chart, models, brushers, and other teaching aids.
- **Medications**
  - Iron or Ferious sulphate
  - TT with icepack
- **Solutions**
  - Alcohol swab
  - Needle and syringe (for TT)
- Trolley
- Receiver
- Clean glove
- Rubber sheet
- Safety box (for disposing the lancet and needles)
- Screen
- Pen/pencil
- ITN
- Watch
- **V/S equipment**
  - Thermometer
  - BP apparatus
  - Stethoscope
  - Fetscope
- **Anthropometric**
  - Tape measure
  - Weight scale
  - Height scale

Table 2.2. Focused antenatal care (FANC): The four visit ANC model outlined in WHO clinical guidelines

First Visit- Before 16 weeks	Second visit 24-28 weeks	Third Visit 30-32 weeks	Fourth Visit 36-38weeks
• Confirm pregnancy and EDD • Classify women for basic ANC (four visit) or more specializes care • Screen, treat and give preventive measures • Develop a birth and emergency plan • Advice and counsel	• Assess maternal and fetal well-being • Exclude PIH and anemia • Give preventive measures • Review and modify birth and emergency plan • Advice and counsel	• Assess maternal and fetal well-being • Exclude PIH, anemia, multiple pregnancy • Give preventive measures • Review and modify birth and emergency plan • Advice and counsel	• Assess maternal and fetal well-being • Exclude PIH, anemia, multiple pregnancy, Mal-presentation • Give preventive measures • Review and modify birth and emergency plan • Advice and counsel •

Self-Check -3	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. How many visits are recommended for ANC In FANC, and list the main objectives of each visit?
2. How many times do you need to give TT Vaccination for a pregnant mother to reach the maximum level of protection?
3. Describe the four maneuver in abdominal examination, and mention the function of each maneuver?
4. On palpation of Abdominal examination, if you find the fundas three finger width above the umbilicus, the estimated gestational age is_____?
5. List the sign and symptoms of anemia ?
6. At Antenatal visit to see W/ro Zufan and record the following measurements
   - Temperature ;37.2 ^{o}C
   - pulse rate 96 beats per min
   - Blood pressure 142/100mmHg

   Should you refer W/ro Zufan to a health center, explain why or why not ?

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-4	Genito-urinary, musculo-skeletal examination (inspection)

The health records are essential for monitoring and evaluation of activities and routine data collection at Health Post level, and is the basic source of information. Therefore, accurate and complete record-keeping is essential for providing the service information

Poorly written records can lead to doubts about the quality of your' work

Every pregnant woman coming for ANC services in public health institutions is issued with an ANC card now integrated into the maternity case record. This standardized national document is the principal record of pregnancy. It must be completed at each antenatal visit and retained by the mother until delivery, after which it will be kept for final referral.

The maternity case record serves to provide the woman a record of pregnancy, give health providers guidelines on history taken, examination, identifying problems during pregnancy and recording of action taken , enable you to manage follow ups and facilitate record-keeping.

Therefore, whenever providing FANC service to the women, you have to :

- **Maintain complete records**
  - Complete the FANC part of the integrated client card
  - Complete the registration log book
  - Give the appointment card to the client and advise her to carry with her to the hospital or to any appointments site for the necessary health services
  - Keep client records complete with all relevant information.
  - Document findings and management at each visit.

Self-Check -4	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the purpose of health records ?
2. What important records are maintained during provision of FANC?

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-5	Minor disorders of pregnancy Danger signs

Digestive and food-related disorders

There are several very common disorders of pregnancy that relate to food, or the digestion of food. Another way of classifying these disorders is to think of them as affecting the gastrointestinal system.

Nausea, vomiting and hyperemesis gravidarum

Many women have nausea and vomiting in the first trimester (3 months) of pregnancy, which is often called **morning sickness**. It happens commonly in the morning when the woman gets out of bed. Excessive salivation is an infrequent but troublesome complaint which is associated with a condition

called **hyperemesis gravidarum** — caused by severe and frequent nausea and vomiting during pregnancy.

The diagnosis of hyperemesis gravidarum is made if the woman loses 5 kg or more of her body weight due to frequent vomiting, loss of body fluids and nausea, making her fearful of eating, and is confirmed by the appearance of acidic chemicals (called ketone bodies) in her urine. The body starts to produce ketone bodies when it begins to break down proteins in a person's muscles because there is no other energy source to keep them alive. The ketone bodies can be detected in urine by a dipstick test, which you can do in the woman's home or at the Health Post if you have been provided with the appropriate dipsticks and shown how to 'read' the colour change if ketone

bodies are present. A positive test result means she must be referred immediately to get replacements for the nutrition, body fluids and essential chemicals that she has lost, and receive preventive treatment to avoid further occurrence.

Management of mild nausea

If the nausea is mild, encourage the woman to try any of these remedies:

Before bed or during the night, eat a food that contains protein, such as beans, nuts or cheese.

Eat a few bananas, dry bread, dry kita, or other grain food upon waking up in the morning.

Eat many small meals instead of two or three larger ones, and take small sips of liquid often.

Drink a cup of mint, cinnamon or ginger tea two or three times a day, before meals. Put a teaspoon of mint leaves, or a stick of cinnamon, in a cup of boiling water and let the tea sit for a few minutes before drinking it. To make ginger tea, boil crushed or sliced ginger root in water for at least 15 minutes.

Food dislikes and food cravings

A pregnant woman may suddenly dislike a food that she usually likes. It is OK not to eat that food, and she will probably begin to like it again after the birth. She should be careful that the rest of her diet contains a lot of nutritious food. You will learn what advice to give women about good nutrition during pregnancy.

A **food craving** (also known as pica) is a strong desire to eat a certain food, or even something that is not food at all, like black soil, chalk or clay (Figure 12.1). If a woman gets a craving for nutritious foods (like beans, eggs, fruits or vegetables), it is OK for her to eat as much as she wants.

Figure 12.1 Food cravings are common in early pregnancy.

A woman who craves to eat things that are not food, like soil or clay, should be advised not to eat them. They may poison her and her baby. They may also give her parasites, like worms, that can make her sick. Encourage her to eat iron-rich and calcium-rich foods instead.

Heartburn

A burning feeling or pain in the stomach, or between the breasts, is called indigestion or **heartburn**. Heartburn happens because the growing baby crowds the mother's stomach and pushes it higher than usual (Figure 12.2).

The acids in the mother's stomach that help digest food are pushed up into her chest,

where they cause a burning feeling. Reassure her that this is not dangerous and usually goes away after the birth.

Management

Here are some things a woman can try to make herself feel more comfortable:

- Keep her stomach less full by eating smaller meals more often, and by eating foods and drinking liquids separately.
- Avoid eating spicy or greasy foods, drinking coffee, or smoking cigarettes, as all of them can irritate the stomach.
- Regularly eat papaya or pineapple, which have enzymes (special chemicals) that help the stomach to digest food.
- Keep her head higher than her stomach when lying down or sleeping. This will keep her stomach acids in her stomach and out of her chest.
- Calm the acids in the stomach by drinking milk, or taking a low-salt antacid (stomach-calming liquid or tablet) that contains no aspirin, but advise her to try other methods before using drugs like antacids.

Constipation

Some pregnant women have difficulty in passing stools. This is called **constipation**. It is caused by hormonal changes that decrease the rhythmic muscular movements of the gut (peristalsis), which push food along the intestines. This results in an increase in 'emptying time', how long it takes for a meal to be digested and the waste matter expelled as stools.

Management

To prevent or treat constipation, a pregnant woman should:

- Eat more fruits and vegetables.
- Eat whole grains (brown rice and whole wheat, instead of white rice or white flour).
- Drink at least eight cups of clean water a day.
- Walk, move and exercise every day.
- Try home or plant-based remedies that will soften the stool or make it slippery, e.g. remedies made from telba seed, certain fruits, or fibre plants like gomen.

Swollen veins

There are many reasons why pregnant women may develop swollen veins in different parts of the body. Here are two of the most common.

Varicosities (varicose veins)

Swollen blue veins that appear in the legs are called **varicosities**, or varicose veins, and are very common in pregnancy. Sometimes these veins hurt.

Pressure by the enlarging uterus on the veins that return blood to the heart from the legs is a major factor in the development of varicosities in the leg veins. Very rarely, swollen veins may develop in the external genitalia and these are very painful.

Management

If the swollen veins are in the legs, they may feel better if the woman puts her feet up often. Strong stockings or elastic bandages may also help. If the swollen veins are around the genitals, a panty-girdle or sanitary pad may help to support them.

Haemorrhoids (piles)

Haemorrhoids (also known as piles) are swollen veins around the anus. They may burn, hurt, or itch. Sometimes they bleed when the woman passes a stool, especially if she is constipated. Sitting or standing a lot can make haemorrhoids worse.

Management

The woman should try to avoid getting constipated by eating a lot of fruit and vegetables and drinking plenty of fluids. Straining to pass hard stools makes haemorrhoids worse. Sitting in a cool bath or lying down can help.

Aches and pains

Back pain

Many pregnant women get back pain. The weight of the baby, the uterus and the amniotic fluid, changes her posture and puts a strain on the woman's bones and muscles. Too much standing in one place, or leaning forward, or hard physical work, can cause back pain. Most kinds of back pain are normal in pregnancy, but it could also be caused by a kidney infection.

Management

Encourage the woman's husband, children, other family members or friends to massage the woman's back. A warm cloth or hot water bottle on her back may also feel good. Her family can also help by doing some of the heavy work, such as carrying small children, washing clothes, farming, and milling grain.

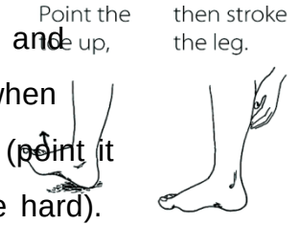
A tight girdle, or a belt worn about the hips, together with frequent bed rest, may relieve severe back pain.

Joint pain

Hormones in the third trimester (six to nine months of pregnancy) act on the woman's joints so they get softer and looser. This makes her joints more flexible, including the joints between the bones in her pelvis (recall the anatomy of the pelvis in Study Session 6, particularly Figure 6.1).

Leg cramps

Many pregnant women get foot or leg cramps — sharp sudden pain and tightening of a muscle. These cramps especially come at night, or when women stretch and point their toes. To stop the cramp, flex the foot (point it upward) and then gently stroke the leg to help it relax (do not stroke hard).



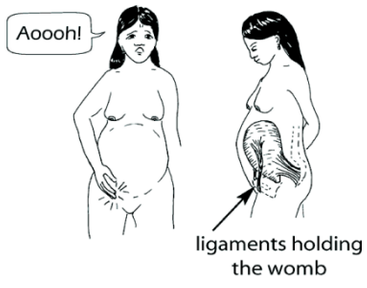
Management

To prevent more cramps, a woman should not point her toes (even when stretching), and she should eat more foods high in calcium and potassium, which can help.

- Can you list some calcium-rich foods?

- Yellow vegetables such as yams and carrots, lime, milk, curd, yogurt, cheese, green leafy vegetables, bone meal and egg shells, molasses, soybeans and sardines.

12.3.4 Sudden pain in the side of the lower belly



The uterus is held in place 'suspended' by ligaments on each side. Ligaments are like ropes that attach the uterus to the mother's abdomen. A sudden movement will sometimes cause a sharp pain in these ligaments. This is not dangerous. The pain will usually stop in a few minutes. It may help to stroke the belly gently, or to put a warm cloth on it.

Abdominal cramps in early pregnancy

It is normal to have mild abdominal cramps (like mild monthly bleeding cramps) at times during the first trimester of pregnancy. These cramps happen because the uterus is growing. However, cramps that are regular (come and go in a pattern), or constant (always there), or are very strong or painful, or come with spotting or bleeding from the vagina, are warning signs.

Headaches and migraines

Headaches are common in pregnancy, but are usually harmless. Headaches may stop if the woman rests and relaxes more, drinks more juice or water, or gently massages her temples. It is OK for a pregnant woman to take two paracetamol tablets with a glass of water once in a while. However, headaches late in pregnancy may be a warning sign of pre-eclampsia, especially if there

is also high blood pressure, or swelling of the face or hands.

Some women have migraine headaches. These are strong headaches, often on the side of the head. The woman may see spots and feel nauseated. Bright light or sunshine can make them worse. Migraines may get worse in pregnancy.

Management

Unfortunately, migraine medicine is very dangerous in pregnancy. It can cause labour to start too soon, and it may also harm the baby. It is better for a pregnant woman with a migraine to take 500 to 1,000 mg (milligrams) of paracetamol with a glass of water, and rest in a dark room. Although coffee and black tea are usually not healthy in pregnancy, they are OK occasionally, and they may help to cure a migraine.

Minor disorders in other body systems

Oedema

Swelling of the feet and ankles is very common in pregnancy, especially in the afternoon, or in hot weather. It is due to **oedema**, the retention of fluids in the body tissues. Under the force of gravity, the retained fluid tends to sink down the body and collect in the feet. Advise the woman to sit with her feet raised as often as possible, to allow the fluid to be absorbed back into the circulatory system. Swelling of the feet is usually not dangerous, but severe swelling when the woman wakes up in the morning, or swelling of the hands and face at any time, can be signs of pre-eclampsia, which is a very serious (even life-threatening) condition.

Management

Swelling in the feet may improve if the woman puts her feet up for a few minutes at least two or three times a day, avoids eating packaged foods that are very salty, and drinks more water or fruit juices.

Frequency of urination

Urinary frequency is a common complaint throughout pregnancy, especially in the first and last months. This happens because the growing fetus and uterus presses against the bladder. It will stop once the baby is born. If urinating hurts, itches, or burns, the woman may have a bladder infection. The diagnosis and management of urinary tract infections are discussed in Study

Self-Check -5	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

A 22-year old pregnant woman at 34 weeks of gestation tells you thatshe craves to eat clay soil. She also tells you that she has developed darker brown patches on her face, and that her feet and ankles swell up during the day.

(a) Identify the minor disorders of pregnancy this woman is displaying, using their medical names.

(b) What advice should you give her to manage her symptoms?

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Operation Sheet 1	Techniques of Providing Focused Antenatal Care

1.1. The techniques for providing Focused Antenatal Care are:

1.1.1. GETTING READY

- **Steps 1.** Prepare the necessary equipment.
- **Step 2-** Greet the woman respectfully and with kindness and introduce yourself, and then offer her a seat.
- **Step 3-** Tell the woman what is going to be done, encourage her to ask questions, and respond supportively
- **Step 4-** Provide reassurance and emotional support as needed

1.1.2. QUICK CHECK

- **Step 5**. Do a "quick check" for danger signs and conditions needing emergency treatment.
- **Step 6**. Ask the woman how she is feeling and respond immediately to any urgent problem(s).

1.1.3. GATHER INFORMATION: HISTORY

- **Step 7**. Gather information on Socio-demographic characteristics, personal (daily habits and lifestyle, immunization status, ITN utilization..), medical, and obstetric history
- **Step 8**. Calculate the estimated date of delivery (EDD) and gestational age.
- **Step 9**. Record all relevant details of the woman's history on her client record/antenatal card.

1.1.4. GATHER INFORMATION: PHYSICAL EXAMINATION

- **Step 10.** Explain each step of the physical examination to the woman
- **Step 11**. Wash hands thoroughly with soap and water and dry them

- **Step 12**. Perform Physical Examination (Head to toe)
- **Step 13**. Wash hands thoroughly with soap and water and dry.
- **Step 14**. Administer the necessary drugs and vaccine
- **Step 15**. Provide Counseling on birth preparedness, complication redness and on health life style
- **Step 16.** Evaluate what you did for her at the previous visit. Decide what else you may need to do for her.
- **Step 17**. Ask the woman if she has any further questions or concerns.
- **Step 18**. Write referral paper for laboratory tests (Blood group, RH, HCG, Hg..)
- **Step 19**. Thank the woman for coming and tell her when she should come for her next antenatal visit.
- **Step 20.** Record all relevant details of the woman's physical examination on her client record/antenatal card.

LAP Test 1	**Practical Demonstration**

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 2 hours.

Task 1: W/ro Sosina is a pregnant woman come to your health post for ANC on 26/04/2012. Her LNMP was on 23/10/2011 E.C.

The main task

- ❖ Provide FANC
- ❖ Calculate her EDD and GA

- Provide counseling according to her gestational age

LO 5: Manage antenatal care

Instruction Sheet	Learning Guide 21

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

5.1. Providing focused antenatal care (FANC)

5.2. Health promotion issues during pregnancy

5.3. Counseling pregnant women on danger symptoms

5.4. Common Medical Disorders in pregnancy

5.5. Premature rupture of membrane (PROM)

5.6. Early pregnancy bleeding

5.7. Late pregnancy bleeding

5.8. Follow up according to FANC protocol

5.9. IV fluid therapy and catheterization the pregnant women

5.10. Making referrals

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Elements of FANC are explained.
- Objectives and procedures at each FANC are described
- Birth preparedness, complication readiness, and emergency preparedness are discussed.
- Adviceondangersignsofpregnancy,nutrition,signoflabor,theimportanceofnextvisit, etc are provided to the client based on history and physical examination results.
- Pregnancyrelatedandothermedicalconditionsaremanagedaccordingtothe guidelines.
- Follow up is under taken according to the focused antenatal protocol.

- Clients" need further care are referred to the next higher health facility according to the standard protocol
- IV fluid therapy and catheterization in pregnant women are performed

Learning Instructions:

19. Read the specific objectives of this Learning Guide.
20. Follow the instructions described below 3 to 6.
21. Read the information written in the information “Sheet 1, Sheet 2, and Sheet 3 **in page 1, 10 and 47** respectively.
22. Accomplish the “Self-check 1, Self-check t 2, and Self-check 3 **in page 9, 46 and 48** respectively
23. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, ” **in page 49**
24. Do the “LAP test” **in page –51**

Information Sheet-1	5.1 providing FANC

5.1.1. Elements of FANC

Care: - look after someone or something; giving attention

Concepts: - a thought or idea, or something which someone might be able to imagine

Principles: - a rule or theory, standard of ethical behavior

Visit: - a short stay with someone, especially to comfort him/her or for business

Antenatal Care: the care that a woman receives during pregnancy; it helps to ensure healthy outcomes for women and newborns

5.1.2Focused Antenatal Care - Concepts and Principles:

Historically, the traditional antenatal care service model was developed in the early 1900s. This model assumes frequent visits and classifying pregnant women into low and high risk through predicting the complications ahead of time. Although the approach is announced to be the best way to promote ANC, it was unable to identify accurately women who are „at risk" of developing any of the life-threatening conditions. Rather, it categorize some pregnancy as „low risk" when it is liable that the women may subsequently develop danger symptoms that need urgent professional attention. Hence, it is currently replaced by focused antenatal care (FANC) which is a goal-oriented antenatal care approach, recommended by researchers in 2001 and adopted by WHO in 2002. In line with this, Ethiopia has also accepted FANC approach as its ANC policy.

The advantage of FANC over the traditional ANC approach is that the former is an ANC strategy which uses evaluation, intervention and promotion to implement ANC without classifying pregnant women as high and low risk case, and in addition:

- Takes into consideration that every pregnancy ends with the delivery of a healthy baby without also impairing the health of the mother.
- Assures that pregnant women and their families need to be advised on how to prepare for birth and subsequent potential complications.
- Helps pregnant women to receive special care and attention from the family, community and the health care system

- Promotes the benefit of skilled attendance during pregnancy and at birth including encouragement for postpartum care for themselves and their newborns
- Supports counseling women on the benefits of family planning and provision of the options of contraceptives
- Helps to assure the continuum of the link with higher levels of care as needed
- Helps to identify and treat maternal conditions appropriately, cost-effectively and as individualized case.

5.1.3 Rights of the Pregnant Woman:

The followings are rights of women that service providers should be aware of and respects when providing maternity care.

- Every woman receiving care has a right to information about her health
- Every woman has the right to discuss her concerns, thoughts, and worries without fear
- A woman should know in advance the type of procedure that is going to be done for her
- Procedures should be conducted in an environment in which the woman's right to privacy is respected.
- A woman should be made to feel as comfortable as possible when receiving services.
- The woman has the right to express her views about the service she receives.

5.1.4Objectives of Focused ANC:

The new approach to ANC emphasizes the quality of care rather than the quantity.

For normal pregnancies WHO recommends only four antenatal visits. Thus, the major objective of FANC is to help women maintain normal pregnancies through:

I. Health promotion and disease prevention
II. Early detection and treatment of complications and existing diseases
III. Birth preparedness and complication readiness planning.

I . Health Promotion and Disease Prevention:

Counseling about important issues affecting a woman's health and the health of the newborn is a critical component of focused ANC. That is, counseling the woman and providing the services required is the main concern.

The services include:

- Immunization against tetanus
- Iron and foliate supplementation.
- Recognition of danger signs, what to do, and where to get help
- Voluntary counseling and testing for HIV
- The benefit of skilled attendance at birth
- Breastfeeding (excluding and complementary)
- Establishing access to family planning
- Protection against malaria with insecticide-treated bed nets
- Good nutrition and the importance of rest
- Protection against iodine deficiency
- Risks of using tobacco, alcohol, local stimulants and traditional bad practices
- Hygiene and infection prevention activities

II. Early Detection and Treatment of Complications and Existing Diseases:

In FANC, as part of the initial assessment, the provider talks with the woman and examines her for pre-existing health conditions that may affect the outcome of pregnancy, require immediate treatment or a more intensive level of monitoring and follow-up during gestation.

5.1.2. Birth preparedness, complication readiness and emergency planning

III. Birth Preparedness and Complication Readiness:

Birth preparedness and complication redness is the process of planning for normal birth and expecting the action needed in case of emergency, so every woman and her family should have a plan for the following

Approximately 15% of women will develop a life-threatening complication. So, every woman and her family should have plan for the following for which some of them may need saving money.

- A skilled attendant at birth
- The place of birth and how to get there including how to access emergency transportation if needed
- Items required for the birth
- Support during and after the birth (e.g., family, friends)
- Potential blood donors in case of emergency

1.1. Implementation of Focused ANC:

This Focused ANC protocol is designed as a job aid for ANC providers. It includes

- Revised forms and checklists needed to identify those women that can follow basic care and
- those women with special health conditions and/or are at risk of developing complications that needs a special care.

Keep in mind to:

- Make all pregnant women feel welcome at your clinic.
- Opening hours for your ANC clinic should be as convenient as possible for mothers to come to the clinic.
- Make every effort to reduce client waiting time.
- However, women who come without an appointment should not be turned away even when there is no emergency.
- As far as possible, any required interventions (for treatment) or tests should be done at the women's convenience, for example, on the same day of the woman's visit.

1.1.1. The Basic Component of FANC:

The FANC approach categorizes pregnant women into **two groups**.

a) Those eligible to receive routine ANC (called the basic component); and
b) Those who need specialized care based on their specific health conditions or risk factors

Sets of criteria are used to determine the eligibility of women for the basic component. At first Antenatal visit, the provider should use the FANC checklist to classify the pregnant women. If a woman has none of the conditions listed on the classifying form (no single yes marked on the form), she is eligible to follow the basic component. But, if a woman has any one condition given in the checklist she should follow a specialized care.

If the specialized service is not available in the facility, she needs to be referred to the next level of care. A woman who was initially classified to follow the basic component of FANC may be reclassified to follow specialized care if she develops any of the conditions at any time during the ANC follow up. In the same way, a woman who was initially classified to follow a specialized care may be reclassified to follow the basic care if the condition or the risk factor initially identified no longer exists.

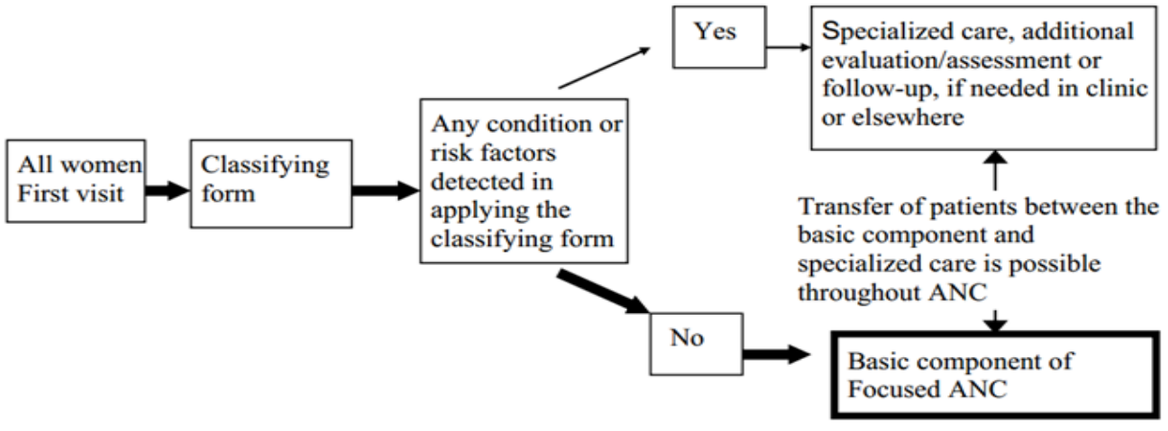


Fig 1.1. The FANC model

Does she has risk factor?

Federal Ministry of Health
Integrated Antenatal, Labor, Delivery, Newborn and Postnatal Care Card

Date: _____ ANC Reg.No: _____Medical Record Number (MRN):_____

Name of Client: _____Name of Facility _____

Woreda: _____Kebele:_____House No: _____

Age (Years) _____ LMP____/____/____ EDD ____/____/____

Gravida____ Para _____ Number of children alive_____ Marital Status_____

INSTRUCTIONS to Fill Classifying form: Answer all of the following questions by placing a cross mark in the corresponding box.

OBSTETRIC HISTORY	No	Yes
1. Previous stillbirth or neonatal loss?		
2. History of 3 or more consecutive spontaneous abortions?		
3. Birth weight of last baby < 2500g		
4. Birth weight of last baby > 4000g		
5. Last pregnancy: hospital admission for hypertension or pre-eclampsia/eclampsia?		
6. Previous surgery on reproductive tract?(Myomectomy, removal of septum, fistula repair, cone biopsy, CS, repaired rapture, cervical circlage)		
CURRENT PREGNANCY	**No**	**Yes**
7. Diagnosed or suspected multiple pregnancy?		
8. Age less than 16 years?		
9. Age more than 40 years?		
10. Isoimmunization Rh (-) in current or in previous pregnancy		
11. Vaginal bleeding		
12. Pelvic mass		
13. Diastolic blood pressure 90mm Hg or more at booking?		
GENERAL MEDICAL	**No**	**Yes**
14. Diabetes mellitus		
15. Renal disease		
16. Cardiac disease		
17. Chronic Hypertension		
18. Known 'substance' abuse (including heavy alcohol drinking, Smoking)		
19. Any other severe medical disease or condition TB, HIV, Ca, DVT..		

A "Yes" to any ONE of the above questions (i.e. ONE shaded box marked with a cross) means that the woman is not eligible for the basic component of the new antenatal care mode and require more close follow up or referral to specialty care.If she needs more frequest ANC visits use and attach additional recoridng sheets

a

Annex 1: Integrated client card

II. Initial Evaluation plus Promotive and Preventive Care

General Exam	Gyn Exam	Counseling /Testing, HIV+ Care and follow up
General_____	Vulvar Ulcer Y N	Danger signs in pregnancy & delivery advised Y N
Pallor Y N	Vaginal discharge Y N	Birth Preparedness advised Y N
Jaundice Y N	Pelvic Mass Y N	MOTHER HIV test accepted Y N
Chest Abn. Y N	Uterine size (Wks) ____	HIV test result R NR I
Heart abnormality Y N	Cervical Lesion Y N	

	HIV test result received with post test counseling Y N
	Counseled on Infant feeding Y N
	Referred for care, treatment and support Y N
	PARTNER Partner HIV test result R NR I

III.Present Pregnancy: Follow Up

	1ct visit (better before 16 wks)	2nd visit (better 24 - 28 wks)	3rd visit (better 30 -32 wks)	4th visit (better 38-40wks)
Date of visit				
Gestation age (LMP)				
BP				
Weight (Kg)				
Pallor				
Uterine height (Wks)				
Fetal heart beat				
Presentation				
Urine test for infection				
Urine test for protein				
Rapid syphilis test				
Hemoglobin				
Blood Group and Rh				
TT (dose)				
Iron/Folic Acid				
Mebendazole				
Use of ITN				
ARV Px (type)				
Remarks				

	First visit	*Second visit*	*Third Visit*	*Fourth Visit*
Danger signs identified and Investigation:				
Action, Advice, counseling				
Appointment for next follow-up				
Name and Sign of Health care Provider				

b

Figure 1.2. Both (a and b) shows focused ANC classifying form

Self-Check -1	**Written Test/true /false**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. State the difference between FANC and the traditional ANC approaches
2. What are the rights of pregnant women?
3. If the pregnant women develop any condition of risk factors detected in applying the focus ANC model form, she should have four FANC visit.
    a. True
    b. False
4. What is the objective of FANC?

Note: **Satisfactory rating - 2 points** **Unsatisfactory - below 2 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-2	**Health promotion issues during pregnancy**

Health promotion refers to any activity that aims to achieve better health in a community or a country. It includes the **health education** of individuals to enable them to control and change their lifestyles so that their health is improved. This is the main focus of this study session, in the context of your role as a health educator of pregnant women during antenatal care visits. But as you know from health promotion activities go far beyond this focus on individual behaviour, and include a wide range of social and environmental interventions that increase health and wellbeing in populations as well as individuals. Health promotion also includes **disease prevention** — actions taken to prevent a disease from developing, and **health screening** — the routine testing of individuals to see if they are at risk of developing a health problem.

Nutrition during pregnancy

In this section (the biggest in this study session) we describe the nutritional requirements in pregnancy in detail and explain how you can advise women about eating well, even if they have very little money for additional food.

Eating well

Eating well means eating a *variety* of healthy foods and also eating *enough* food. This combination helps a pregnant woman and her baby stay healthy and strong because it: Helps a woman resist illness during her pregnancy and after the birth Keeps a woman's teeth and bones strong Gives a woman strength to work Helps the baby grow well in the mother's uterus Helps a mother recover her strength quickly after the birth Supports the production of plenty of good quality breast milk to nourish the baby.

Eating a variety of foods

It is important for pregnant women (like everyone else) to eat different kinds of food (see Figure 14.1): main foods (carbohydrates), grow foods (proteins), glow foods (vitamins and minerals), and go foods (fats, oils and sugar), along with plenty of fluids.

Eat more food

Pregnant women and women who are breastfeeding need to eat more than usual. The

extra food gives them enough energy and strength, and helps their babies grow. They need to *increase* their usual food intake by at least 200 calories per day, or even more than this if they were underweight before they became pregnant. There are many ways to increase daily food intake by this amount: for example, one more serving of maize porridge and 12 groundnuts a day would meet this additional requirement.

Some pregnant women feel nauseated and do not want to eat. But pregnant women need to eat enough — even when they do not feel well. Simple foods like injera or rice can be easier for these women to eat. For women who suffer from nausea, encourage small and frequent meals.

Problems from poor nutrition

Poor nutrition can cause tiredness, weakness, difficulty in fighting infections and other serious health problems. Poor nutrition during pregnancy is especially dangerous. It can cause miscarriage or cause a baby to be born very small or with birth defects. It also increases the chances of a baby or a mother dying during or after the birth.

Talking to women about food

When you see pregnant women for antenatal care, or at village meetings and celebrations, in the market, try to find ways to enquire sensitively about the food they eat. The earlier pregnant women start eating healthier foods, the better chance they have to stay healthy, to have normal births and to have healthy babies.

To find out whether a woman is eating well, ask her what she usually eats, and how much. For example, ask her: 'What did you eat yesterday?' Be sure to tell her what is healthy about what she eats, reinforce the positive efforts she is making to eat well. Then, if it is appropriate, make a suggestion for how she could eat better.

Remember that education about food is not enough on its own to change eating behaviour. Even if a woman knows the best foods for health, she may not eat them. Many families cannot afford to buy enough food or a wide variety of foods. Some women may simply not like the taste of some healthy foods. To help a woman eat better, suggest healthy foods that she can afford and will choose to eat.

Eating well with little money

The biggest cause of poor nutrition is poverty. A very poor family can eat better by spending money wisely and not wasting what little they have. A father who buys alcohol, tobacco and 'chat' (or khat) could instead buy

nutritious food or he could buy a hen to lay eggs. A mother who buys her children sweets or

soda pop could instead buy eggs, beans or other low-cost, healthful foods. Here are some ideas that families can use to eat better with little money.

Beans, peas and lentils

Beans, peas and lentils belong to a family of vegetables called legumes. All legumes have a lot of protein and vitamins, and they usually do not cost much. They have even more vitamins if they are sprouted before being eaten.

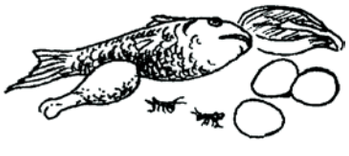
Food groups and their nutrients

Main foods (carbohydrates)

In most parts of the world, people eat one **main food** at each meal. This main food may be injera, rice, maize, wheat, millet, cassava, plantain, kocho, bulla, godere, shenkora, gishta, breadfruit or another low-cost, starchy food which is rich in carbohydrates. These foods give the body energy. But to grow and stay healthy, the body needs other types of food too.

Grow foods (proteins)

Grow foods contain protein, which is needed for the growth of muscles, bones, and strong blood. Everyone needs protein to be healthy and to grow. Some grow foods that are high in proteins are:



Legumes (beans, peas, soybeans, and lentils)

Eggs

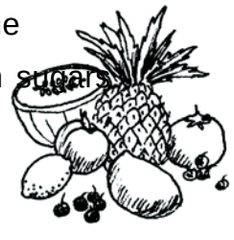
Cheese, milk and yogurt

Nuts and seeds

Cereal, wheat, corn and rice Meat, poultry and fish.

Go foods (sugars and fats)

Go foods contain sugars and fats, which give the body energy. Everyone needs these foods to be healthy. Some healthy go foods that are high in sugars are:



Fruits

Honey.

Some ‘go foods’ that are high in fats are:

Some nuts (e.g. peanuts) and some seeds (e.g. sunflower)

Avocados

Vegetable oils, butter and lard

Fatty meat

Milk and cheese

Eggs

Fish.

These days, many people eat more sugars and fats than they need. That is because more people drink sugary soda pop, or eat foods that come from packages instead of foods made at home. These packaged, sugary and fatty foods are expensive and not as healthy as fresh products. They also damage the teeth. It is better to eat go foods that are natural, not packaged.

Glow foods (vitamins and minerals)

Glow foods contain vitamins and minerals, which help the body fight infection and keep the eyes, skin and bones healthy and strong. Vitamins and minerals are known as **micronutrients** because they are very small. Fruits and vegetables are high in vitamins and minerals. It is important for pregnant women to eat as many different fruits and vegetables as they can. In the next section, we discuss the five most important vitamins and minerals that pregnant and breastfeeding women should eat every day.

The five most important vitamins and minerals

Pregnant and breastfeeding women need more of these five vitamins and minerals than other people do — iron, folic acid, calcium, iodine and vitamin A. They should try to get these vitamins and minerals every day.

■ Why do you think that a pregnant woman needs more of these vitamins and minerals?

□ The baby needs them to grow and be healthy and to prevent birth defects.

A pregnant woman needs them to have enough energy to look after herself and her family, to fight infections and to keep her strong for completing the pregnancy, giving birth safely and breastfeeding the baby afterwards.

Iron

Iron helps make blood healthy and prevents anaemia (you will learn about diagnosing and treating anaemia in Study Session 18 of this Module). A pregnant woman needs a lot of iron to have enough energy, to prevent too much bleeding at the birth, and to make sure that the growing baby can form healthy blood and store iron for the first few months after birth. It is also important in the production of good breast milk.

These foods contain a lot of iron (Figure 14.3):

Poultry (chicken)

Fish

Sunflower, pumpkin and squash seeds

Beans, peas and lentils

Dark leafy green vegetables
Yams
Hard squash
Meat (especially liver, kidney and other organ meats)
Whole grain products
Dried fruit
Nuts
Iron-fortified bread
Egg yolk.

Taking iron pills

It can be difficult for a pregnant woman to get enough iron, even if she eats iron-rich foods every day. She should also take iron pills (or liquid iron drops) to prevent anaemia. These medicines may be called ferrous sulfate, ferrous gluconate, ferrous fumerate or other names (*ferrous* comes from the Latin word for iron).

Iron pills or drops can be obtained from pharmacies and health institutions, but throughout Ethiopia you will give iron pills routinely to pregnant women as part of focused antenatal care. She should receive 300 to 325 mg (milligrams) of ferrous sulphate *once* a day taken by mouth, preferably with a meal. This dosage is usually supplied in a single tablet combined with folate(see below).

The iron pills may cause nausea, make it hard for the woman to pass stool (constipation), and her stool may turn black, but it is important for the woman to keep taking the iron pills because anaemia can cause complications during pregnancy, during delivery, and after the baby is born. It is helpful for the woman to take the iron pill with a meal, drink plenty of fluids, and eat plenty of fruits and vegetables to avoid nausea and constipation. The black colour of the stool is a normal side-effect from the iron and is not harmful.

Folate (folic acid)

Lack of folate can cause anaemia in the mother and severe birth defects in the baby. To prevent these problems, it is important if possible for a woman to get enough folic acid in her diet *before* she becomes pregnant and she should certainly do this in the first few months of pregnancy.

Foods rich in folate that pregnant and breastfeeding women should try to eat every day (Figure 14.4) include:

Dark green, leafy vegetables

Whole grains (brown rice, whole wheat)

Meat (especially liver, kidney and other organ meats)

Fish

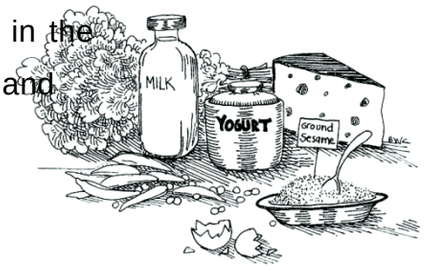
Peas and beans

Eggs

Sunflower, pumpkin and squash seeds Mushrooms.

As well as eating as many of these foods as she can, all pregnant women should also take 400 mcg (micrograms) of folic acid tablets orally every day during pregnancy. She should be able to get these tablets from you as part of Focused Antenatal Care.

Calcium



A growing baby needs a lot of calcium to make new bones, especially in the last few months of pregnancy. Women need calcium for strong bones and teeth. These foods (Figure 14.5) contain a lot of calcium:

Yellow vegetables (hard squash, yams)

Lime (carbon ash)

Milk, curd, yogurt and cheese

Green, leafy vegetables

Bone meal and egg shells

Molasses and soybeans

Sardines.

Women can also get more calcium in these ways:

Soak bones or eggshells in vinegar or lemon juice for a few hours. Then use the liquid to make soup or eat with other foods. Add lemon juice, vinegar or tomatoes when cooking bones. Grind eggshells into a fine powder and mix into food. Soak maize in lime (carbon ash) before cooking it.

Iodine

Iodine prevents goitre (swelling of the neck) and other problems in adults. Lack of iodine in a pregnant woman can cause her child to have cretinism, a disability that affects thinking and physical features.

The easiest way to get enough iodine is to use iodized salt instead of regular salt (Figure 14.6). It is available in packet form labelled ‘Iodized salt’ in many market places.

Vitamin A

Vitamin A prevents poor vision at night or when light intensity is low and helps to fight infections. Lack of vitamin A also causes blindness in children.

A woman needs to eat plenty of vitamin A-rich food during pregnancy and while breastfeeding.

■ Dark yellow and green leafy vegetables and yellow fruits contain lots of vitamin A. Name some of these vegetables and fruits.

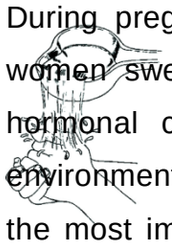
□ Carrots, mangoes, spinach, cabbage. (You may have suggested other good examples.)

Other sources of vitamin A are liver, fish liver oil, milk, eggs and butter.

Fluids

Along with eating healthy foods, women should drink plenty of clean water and other healthy fluids every day. Fruit juices, animal milks and many herbal teas are all healthy fluids to drink.

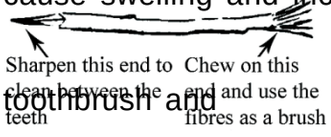
Hygiene during pregnancy



During pregnancy, women should be especially careful about personal hygiene. Pregnant women sweat more and have more vaginal discharge than non-pregnant women (due to hormonal changes), and they may be more vulnerable to infection by germs in the environment. Keeping the body clean helps prevent infection. Hand washing with soap is the most important hygiene action she can take, especially before preparing food and after going to the toilet. If possible, a pregnant woman should wash her body every day with clean water — especially her genital area.

Dental hygiene is especially important during pregnancy because increased oestrogen levels can

cause swelling and increased sensitivity in gum tissues.



Whether she cleans her teeth with a dental stick or a toothbrush and

toothpaste, the pregnant woman should do so regularly.

Living a healthy lifestyle

As well as eating well and keeping clean, pregnant women need to get enough sleep and rest every day. This will help her to avoid developing high blood pressure (discussed in detail in Study Session 19 later in this Module), andoedema (swelling of the feet and ankles due to fluid collecting in the tissues).

Good rest also helps her to stay strong and gives the fetus a better chance of being born

healthy.

Figure 14.7 Families who encourage a pregnant woman to rest often are helping her and the baby to be healthy.

Many women have to work throughout their pregnancy in the fileds, factories or shops, as well as in their own homes. This can be especially hard for women during pregnancy, because they get more tired than usual — especially in the last few weeks. Explain to them and their families that the woman

should try to rest for a few minutes every 1 to 2 hours (Figure 14.7). This will also help her to enjoy her pregnancy.

Make sure that women know that whatever they put into their body will pass across the placenta and into the baby (Figure 14.8). Cigarette smoke, alcohol and illegal drugs such as opium, heroin, cocaine and barbiturates are dangerous for anyone, but especially harmful to the developing fetus. Even one or two alcoholic drinks a day during pregnancy can result in the baby being born too small, or with birth defects or disabilities that affect the brain.

She should also be advised to avoid Lifting heavy things People who are sick, especially if they have vomiting, diarrhoea or rashes Strong chemicals or their fumes (e.g. chemicals used to kill pests in the fields)

Non-essential medicines

Medicines such as cough syrups, laxatives and pain relievers that have not been prescribed for her by a health worker (Figure 14.9).

Figure 14.9 Pregnant women should take only medicines that are safe in

pregnancy and that are truly needed.

Immunization against tetanus

Tetanus is a very serious, life-threatening infection, which damages the nervous system and is caused by bacteria in the environment, for example in soil. Tetanus toxoid immunization is the best protection against tetanus for the woman and her baby. Therefore, it is *very* important for her to be immunized according to the schedule on her card, and to bring her card to every antenatal care visit (Figure 14.10).

Figure 14.10 Make sure all pregnant women are immunized against tetanus.

Benefits of early and exclusive breastfeeding

Breastfeeding positions and good attachment of the baby are described in detail in the *Postnatal Care* Module, but you should lay the foundations during your antenatal care visits with pregnant women — especially those having their first baby. Whether the mother chooses to breastfeed her baby or she feeds a substitute for human milk, you should respect her decision. But she cannot make this choice if she has not been well informed by you about the benefits of early and exclusive breastfeeding. Explain to her that it:

Provides the best nutrition for the newborn

Is easily digested and efficiently used by the baby's body

Protects against infection and other illnesses

Offers some protection against allergies

Is cost-effective and affordable

Promotes mother–baby bonding

Provides the woman with a degree of contraceptive protection (though less than 100% effective) if she is exclusively breastfeeding until her first menstrual period returns after the birth.

Unhealthy beliefs and practices about feeding newborns

In some countries, there are beliefs about feeding newborn babies that are dangerous to the baby's health. For example, in some places the baby is given food or liquids, such as water with sugar, honey, herbs, spices and animal milks, during the first 3 days after the birth before the woman begins

breastfeeding. The thin, watery fluid called **colostrum** that her breasts produce during these 3 days may be thrown away because it is considered unclean.

General principles of early and exclusive breastfeeding For mothers who are HIV-negative:

Babies should begin breastfeeding as soon as possible after birth (preferably within the first hour) and continue for at least the first 6 months of life.

Colostrum, the first milk should be given to the baby, not thrown away.The baby should be breastfeed exclusively for the first 6 months of life.Nothing else should be given to the baby to drink or eat during that time.

The baby should be breastfeed whenever s/he wants, day and night (on demand), which stimulates the breasts to produce an adequate supply of breast milk.

During the antenatal period, discussions should begin concerning postpartum contraception options. Family planning information and services are important components of good quality antenatal care. These occasions provide an opportunity for health providers to discuss with women the benefits of **birth spacing** (leaving at least 2 years between births) for their health and the health of their current and future children. Help pregnant women and new mothers decide how they will avoid pregnancy after childbirth.

Breastfeeding and contraception

The return of fertility after birth is not entirely predictable, and conception can occur before the woman resumes her first menstrual period. A woman who is not fully and exclusively breastfeeding is able to become pregnant again as soon as 4 to 6 weeks after childbirth, and she should plan to begin some sort of contraception before starting to have sexual intercourse again. Full and exclusive breastfeeding gives good protection against conception, but cannot be relied on as 100% effective. A breastfeeding woman is usually protected from pregnancy *only* if:

She is no more than 6 months postpartum

She is breastfeeding exclusively (8 or more times a day, including at least once at night; no daytime feedings more than 4 hours apart and no night feedings more than 6 hours apart; no complementary foods or fluids given to the baby) Her menstrual cycle has not returned.

Numerous safe methods of contraception are available for the breastfeeding woman.

Benefits of birth spacing

For maximum protection, women after childbirth should not wait until the return of monthly bleeding to start a contraceptive method, but start as soon as safe guidance for her chosen method allows.

Appropriate birth spacing lowers the risk of:

Maternal mortality

Fetal death (miscarriage or stillbirth), neonatal mortality

Anaemia in the mother during subsequent pregnancies

Postpartum inflammation of the endometrium lining the uterus Premature rupture of

the amniotic membranes surrounding the fetus Premature birth intrauterine growth retardation and a low birth-weight baby Malnutrition of newborns and infants due to insufficient breastmilk.

Coordinate your family planning visits with an infant's immunization schedule. And remember that optimal breastfeeding offers triple value: important improvements in child survival and health, better health for mothers, and temporary contraception.

Self-Check -2	**True/ false**

Which of the following statements is *false*? In each case, explain what is incorrect.

A Breastfeeding is 100% effective at preventing a further pregnancy.

B Colostrum should be fed to the newborn baby, not thrown away.

C Early and exclusive breastfeeding means feeding only breastmilk from the first hour of the baby's life until at least 6 months of age.

D Even if menstrual periods return during exclusive breastfeeding, a woman does not need to begin another form of contraception.

E The benefits of birth spacing of at least 2 years include reduced risk of maternal and fetal death.

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-3	Counseling pregnant women on danger symptoms

General principles of counseling the pregnant woman

Counselling the pregnant woman is a process of **two-way interpersonal communication** in which you help her to know about possible problems that she may encounter during pregnancy, and make her own decisions about how to respond. When you create a two-way discussion with good understanding of each other, it not only helps the woman to know the possible problems that she may encounter and when to take appropriate action, but it also establishes a trusting relationship with you. Additionally, such two-way communication helps the woman to feel more comfortable and freely express her worries and needs to you.

Remember that the pregnant woman is also an expert on her own needs and situation. She has learnt informally many things about pregnancy (sometimes right and sometimes wrong). Therefore, never discourage her from expressing her beliefs and thoughts to you from the outset — you should develop tolerance for every woman's values and beliefs, while you gently and sensitively try to dispel any important misconceptions she may have. Respect and tolerance for wrong beliefs doesn't mean accepting that they cannot be changed. Sensitivity and tolerance are two of the most important qualities of an effective counsellor.

Box 15.1 summarizes the skills and attitudes you need in order to develop good communication with any client, including pregnant women. The **counselling process** goes through the following stages: opening building relationships with pregnant women, exploring their issues, facilitating exchange of information (two-way) and closing the counselling process with gratification and the next appointment.

Actively listen to her, using gestures and verbal communication to show her that you are paying attention to what she says.

Encourage her to ask questions, express her needs and concerns, and seek clarification of any information that she does not understand.

Ideally, she should talk for about two-thirds of the time, and you talk for only one-third (see Figure 15.2). Research has shown that health professionals often talk too much, and don't allow enough time for the client to express their own views and

needs.

What is special about counselling pregnant women?

In the pregnant woman, the general purpose of counselling is to provide her with essential information for improving or maintaining her health and the health of her baby before and after birth. To be specific, the counselling will help the pregnant woman to stay healthy through advising her about health promotion issues such as nutrition (you learned about this in Study Session 14), and also to know the common symptoms of health risks that may affect her or her baby. In addition, counselling will be an entry point to the family, in particular to her husband/partner, so they also know the potential

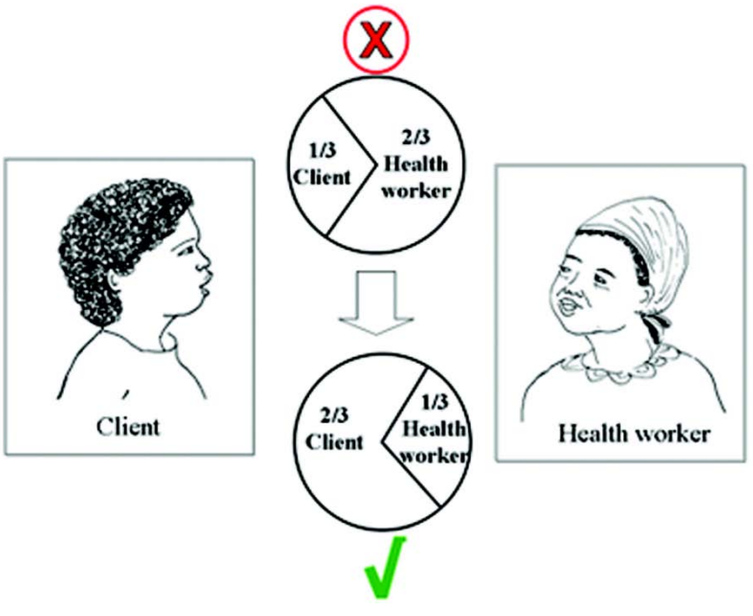


Figure 15.2 Healthcare providers should talk less and encourage their clients to talk more.

Counseling about danger symptoms

Counselling has succeeded when the pregnant woman:

Feels she got the help she wanted

Understands the common danger symptoms

Knows what to do and feels confident that she can come soon if she develops one of the danger symptoms

Feels respected, listened to and appreciated

Comes back when she needs your help (trusts you, see Figure 15.3).

What are the common danger symptoms during pregnancy?

The occurrence of the common danger symptoms that can be felt or noticed by the pregnant woman vary in their timing in relation to the gestational age.

■ What is meant by the first, second and third trimester of pregnancy?

□ **Trimester** means 'three month period'. The fi**rst trimester** is the first 3 months of the pregnancy (i.e. from conception to the 14th completed week of gestation, measured from the woman's **last normal menstrual period** or LNMP); the **second trimester** is from 3–6 months (i.e. from 15 to 27 completed weeks); and the **third trimester** is the final 3 months of pregnancy (i.e. from 28 weeks to delivery at up to 42 weeks).

Table 15.1 Danger symptoms during pregnancy.

	She may have this medical condition
Hyperemesis gravidarum	Characterised by persistent vomiting, weight loss of 5 kg and above, urine analysis shows ketones 2+ or more
Abortion (acute)	All types of spontaneous abortions except missed abortion are acute 'sudden' events

Missed abortion

When the fetus or fetal tissue is entirely in the uterus, but it has no signs of life and the cervix is completely closed

Ectopic pregnancy

Telling pregnant women about the danger symptoms

You should realize that pregnant women have many responsibilities at home and usually also in the fields, and they may already be overwhelmed by too much information about the current pregnancy. Table 15.2 presents what the mother primarily needs to know, but you shouldn't tell her everything all at the same time. Counselling the pregnant woman in relation to the stages of pregnancy is a good strategy from the perspective of the pregnant woman's understanding and using your time as efficiently as possible. In other words, you need to discuss the common danger symptoms with her, taking into account the stage of pregnancy. For instance, a pregnant woman coming for antenatal care before 20 weeks of gestation should be counselled about the danger symptoms of miscarriage, which are usually manifested by *vaginal bleeding*. She should also be aware of danger symptoms of common medical disorders that can occur any time during pregnancy - in the same way that they could occur to anyone in the rest of the population.

Most pregnancy-related serious problems occur in the third trimester. Therefore, it is a good opportunity to counsel the mother about them during the second trimester, to let her prepare ahead of time. If you have them, using printed instructions, diagrams, photos or pictures, which improve the pregnant woman's understanding and her ability to remember the key points. It is also a good approach to remind her about what was discussed at earlier antenatal visits .

Involving the husband/partner in antenatal visits

Diabetes mellitus

Helps the partner/husband to become aware of the danger symptoms the woman may encounter during the pregnancy.

Will make him more caring and more concerned.

Helps him to take action (early reporting) when danger symptoms appear.

Alerts him to save money for possible emergencies, e.g. transport to the health facility.

Alerts the family to decide on their preferred place of delivery.

Helps the family get prepared for caring for the mother and her baby after the birth.

Is a further entry point to increase general public awareness of the potential risks during pregnancy.

Self-Check -3	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

For each of the following statements, say whether it is true or false.

Explain what is *incorrect* about any statement that you judge to be false.

A Saying welcome, showing a smiling face, letting her express her concerns and doubts, helps the mother feel comfortable and develop confidence in you.

B You have to tell her that unless she comes on the day of her scheduled appointment, you will not see her at any other time.

C You should not allow h e r o ask questions till you finish telling her what she needs to know.

D You can counsel one woman who is sitting with you while you are conducting a physical exam of another one.

E If she tells you that her two daughters were circumcised on the day she gave birth at home, tell her harshly that she shouldn't do it again, and if she plans to do the same thing if this baby is a girl, she should not come back for any other visits.

F Counselling a pregnant woman on danger symptoms is essential in every visit.

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-4	Common Medical Disorders in pregnancy

4.1.1 **Malaria in pregnancy**

Malaria is an infection of the red blood cells caused by a parasite called **plasmodium** that is carried by certain kinds of mosquitoes. A mosquito sucks up the malaria parasites in the blood of an infected person when it takes a blood 'meal', and then passes the parasites on when it bites someone else (Figure 18.1). The parasites develop to maturity in the person's red blood cells and millions of parasites collect in the placenta of a pregnant woman.

Malaria can be more severe in women who are sick with other illnesses. Malaria is more dangerous to pregnant women than to most other people. A pregnant woman with malaria is more likely to develop anaemia (as you will see later in this study session), have a **miscarriage** (spontaneous abortion of

the fetus before 24 weeks of pregnancy), an early birth, a small baby, a **stillbirth** (baby born dead after the 24th week of pregnancy) or to die herself (**maternal mortality**).

18.1.1 Symptoms of malaria

The **symptoms** of a disease are the indications that an affected person is aware of and is able to tell you about; they may tell you spontaneously, but you may have to ask the right questions. The symptoms of malaria are:

Chills (feeling unusually cold, shivering) and rigors (intense periods of shivering lasting several minutes and up to 1 hour); this is often the first symptom of an attack Headache and weakness often accompany the chills Fever (raised temperature); the fever often follows the chills, and the temperature may go so high that the person suffers *delirium* (not being in her right mind, seeing or hearing things that are not real) Sweating as the temperature falls Diarrhoea/vomiting may also be experienced in some cases Muscle/joint pain is another common symptom.

The periods of fever typically alternate with periods of chills and rigors in attacks that can occur every day, or every 2–3 days. All of these symptoms could be due to something else, but you should suspect malaria if they happen in a person who has been exposed to mosquitoes in an area where malaria is known to occur.

The signs of a disease are the indications that only a trained health professional

would notice, or be able to detect by conducting a test. For example, if you suspect malaria, you should take the person's temperature with a thermometer if you have one

What is the normal body temperature and what would be a sign of fever?

□ Normal body temperature is 37^{o}C; a sign of fever would be a temperature of 38^{o}C or above.

18.1.2 Diagnosis of malaria

There are two main ways to diagnose malaria using blood tests. The simplest way is to run a **malaria rapid diagnostic test** (**RDT**), which detects proteins produced by the parasite in the patient's blood. The test kits can be in the form of a dipstick, a plastic cassette or a card, which changes colour when exposed to a drop of blood from an infected person – usually taken by pricking a finger with a sterile lance. However, the test kits must be stored carefully and protected from humidity and high temperatures. Training for health workers is required before the signs of malaria in the test results can be interpreted accurately.

The other way to diagnose malaria, which requires specialist training and equipment, is from microscopic examination of a smear of blood on a glass slide, which has been stained to reveal the parasites. Facilities for microscopic blood testing are usually not available at Health Post level. If you have been trained to use the malaria RDT and have access to properly stored test kits, you should diagnose malaria on the basis of the test results. If you are unable to use the malaria RDT, base your diagnosis on the symptoms (e.g. headache, fever, chills, muscle/joint pain), and high temperature measured with a thermometer.

18.1.3 Treatment of malaria in pregnancy

It is important for pregnant women to avoid malaria — or to be treated quickly if they get sick. Malaria medicines can have side-effects, but these medicines are much safer than actually getting sick with malaria. If a woman has symptoms of malaria, she should be treated right away. The medicine used in Ethiopia in the Health Extension Programme is called Artemether Lumifantrine (marketed as Coartem tablets). It works by interfering with the development of the parasites in the

person's red blood cells.

Coartem can be used to treat malaria during the second and third trimesters of pregnancy. The **second trimester** is 13–27 weeks since the woman's last normal menstrual period (LNMP), and the **third trimester** is from 28 weeks until the birth at around 40 weeks. If the diagnostic test is positive for malaria, or you strongly suspect malaria based on the clinical signs and symptoms, and the woman is in either the second or third trimester.

Coartem treatment in the second or third trimester of pregnancy

Four Coartem tablets twice a day (12 hours apart) for 3 days (a total of 24 tablets). Tell her to take the tablets with food, milk, oatmeal or soup. She can crush them and mix them with a spoonful of food if this makes it easier for her to swallow the medicine. Figure 18.3 (on the next page) shows a way of explaining to women how many tablets to take.

You can also give her paracetamol tablets (500–1000 mg) every 4–6 hours to bring down her temperature when she has a fever.

Cold sponging her body with a cloth dipped in cool water will also help when she has a fever.

Advise the woman to drink plenty of fluids to make sure she does not become dehydrated. She should drink at least 1 large cup of fluid every hour.

If the woman is in the fi**rst trimester** (i.e. up to 12 weeks since her LNMP), but she is too sick to travel to the health centre, give her the treatment in Box 18.2 (over the page). The risk from malaria to her life and the life of her fetus is greater than the risk from taking the medicine during early pregnancy.

Send her to the health centre as soon as she is well enough to travel. Note that the drug Artesunate is given by slipping a specially shaped capsule — called a **suppository** — into the woman's rectum by pushing it gently through her anus.

Artemether injection and rectal Artesunate

Pre-referral intramuscular (IM) injection of Artemether is given in cases of severe suspected malaria. The dosage is 3.2 mg of Artemether for every kilogram (kg) of the woman's body weight, in a single injection into the muscles of her upper arm.

Pre-referral rectal Artesunate given in suppositories with the following doses.

Note that pregnant women are likely to weigh more than 40 kg after the first trimester.

The total number of malaria deaths and cases has been falling in Ethiopia in recent years, due to the major effort to prevent the disease and to treat it rapidly when it occurs. The Health Extension Programme is vitally important in reducing malaria even further, including early diagnosis and treatment of pregnant women coming to you for antenatal care.

Prevention of malaria

To prevent malaria, you must do everything possible to avoid mosquito bites. You should advise everyone in your community to act together to: Get rid of standing water where mosquitoes breed; drain pits that fill with rain water; cover or get rid of tin cans and pots that collect water near the house.

Stay away from spending the night in wet places where mosquitoes breed.

Use bed nets treated with insecticide, a mosquito-killing chemical. In many parts of Ethiopia you are able to distribute **insecticide treated nets** (**ITNs**; see Figure 18.4) to families who need them. These nets protect people who sleep under them from being bitten by mosquitoes, and they also reduce

the risk to others sleeping in the same room because the insecticide repels mosquitoes from entering the house.

Figure 18.4 Insecticide-treated bed nets offer good protection from the mosquitoes that carry malaria. (Photo: UNICEF Ethiopia/Indrias Getachew)

Preventing malaria should be an individual and a community responsibility.

Consider holding a health campaign aimed at raising awareness of how to prevent malaria, using the health promotion techniques you learned about in Study Session 2 of this Module. Make sure the pregnant women you see for antenatal care know that they, their unborn baby and their children under 5 years are all at increased risk of malaria.

4.1.2Anaemia in pregnancy

Women with anaemia have less strength for childbirth and are more likely to bleed heavily afterwards (postpartum haemorrhage), become ill after childbirth, or even die. You have already learned a lot about the diagnosis andprevention of anaemia in earlier study sessions in this Module, so in this

session we will focus on its treatment and reinforcing what you have learned already.

■ What is anaemia and what happens in the body of an anaemic person?

□ When someone has **anaemia**, it usually means the person has not been able to eat enough foods containing iron. Red blood cells need iron to make **haemoglobin**, the substance that helps the red blood cells carry oxygen from the air we breathe to all parts of the body. A person with anaemia can't make enough red blood cells, so their body is short of oxygen.

Note that some kinds of anaemia are caused by illness, not lack of iron, and some are inherited (genetic). It may also be caused by infestation with certain parasites, including malaria and hookworm. In this session we are concerned with anaemia caused by iron deficiency in the diet. Many pregnant women have anaemia, especially poor women who can't afford to eat enough iron-rich foods.

Diagnosis of anaemia

Screen all pregnant women for anaemia at every antenatal visit, by asking about their symptoms. Useful questions to ask are:

'Do you feel weak or get tired easily?'

'Are you breathless (short of breath) when you do routine household work?'

'Do you often feel dizzy, and have you ever fainted (become unconscious)?

These symptoms are caused by too little oxygen in the blood to provide energy for normal activities. A person with anaemia tends to feel short of breath because they have to breathe more rapidly to get enough oxygen into their body. If the brain can't get enough oxygen, the person will feel dizzy and may faint.

The **signs** of anaemia (things a trained health professional can look out for or measure) are:

Pallor: paleness inside eyelids, palms of the hands, fingernails and gums.

Rapid breathing (faster than 40 breaths in a minute; normal breathing rate is 18–30 breaths per minute).

Fast pulse (over 100 beats in a minute). You learned how to measure the pulse rate in Study Session 9 (Section 9.4).

On the first antenatal care visit

If you suspect that the woman may be anaemic, encourage her to have a blood test for anaemia if it is available at the nearest Health Centre. The blood test measures the concentration of haemoglobin (the iron-containing substance in the blood) to see if there is enough to carry the oxygen that she needs for normal activity and her unborn baby needs for growth. If blood testing is not available, use your judgement of the known signs and symptoms (listed above) to diagnose anaemia and offer treatment as described below.

On subsequent antenatal care visits

Look for pallor inside her eyelids, hands, fingernails and gums.

Take her pulse. Is it over 100 beats per minute?

Count the number of breaths she takes in 1 minute. Is it faster than 40 breaths?

Anaemia poses a serious risk to her health and that of her baby, especially around the time of delivery.

18.2.2 Prevention of anaemia in pregnancy

Eating a healthy diet

All pregnant women should be advised about eating enough foods containing good amounts of **iron** and **folate** (a vitamin, which is also called folic acid).

You already know why she needs iron. Folate also helps to prevent anaemia in women who are pregnant or breastfeeding, and it can prevent some kinds of birth abnormalities in the baby.

- Think back to Study Session 13. Name some foods that contain a lot of iron.

- You may have thought of some of these: chicken; fish; sunflower, pumpkin and squash seeds; beans, peas and lentils; dark green leafy vegetables; yams; hard squash; red meat (especially liver, kidney and other organ meats); whole grain products such as brown bread; iron-fortified (enriched) bread; nuts and egg yolk.

- Now name some foods that contain a lot of folate.

- Fish; sunflower, pumpkin and squash seeds; beans and peas; dark green leafy vegetables; red meat (especially liver, kidney and other organ meats); brown rice; whole wheat; mushrooms and eggs.

Iron and folate tablets

You should give each pregnant woman enough iron tablets and folate tablets so she can take one tablet of each supplement once a day, or a combined tablet, until she sees you for the next antenatal visit. Make sure you give women more of these tablets at every visit. The *preventive* dosage is:

Iron: 300 to 325 mg (milligrams) of ferrous sulphate once a day taken by mouth, preferably with a meal. Usually this dosage will be supplied in a single tablet combined with folate, but sometimes it can be given as iron drops.

Folate: 400 µg (micrograms) of folic acid once a day taken by mouth, usually combined with iron.

18.2.3 Treatment of anaemia in pregnancy

Moderate levels of anaemia can usually be cured by eating foods high in iron and folate, and also vitamin C (like citrus fruits and tomatoes), and by taking iron tablets and folate. The *treatment* dosage is:

Iron: 300 to 325 mg (milligrams) of ferrous sulphate *twice* a day taken by mouth (*double* the dosage given to prevent anaemia).

Folate: 400 µg (micrograms) of folic acid once a day by mouth (the same dosage as for prevention).

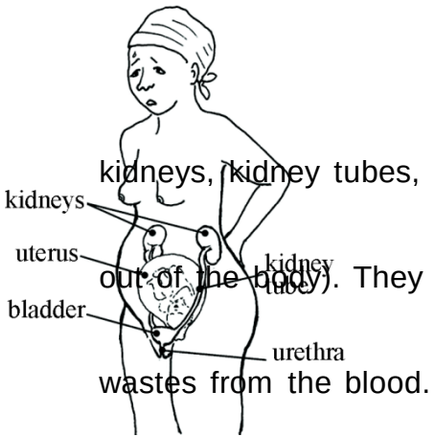
After prescribing these tablets and dietary advice, a pregnant woman with suspected anaemia should be checked again in 4 weeks. If she is not getting better, refer her to the health centre. She may have an illness, or she may just need a stronger iron supplement.

The supplements should be continued for 6 months during pregnancy if less than 40% of women in your community have anaemia. Continue for a further 3 months after the birth if more than 40% of women are anaemic, and your client is breastfeeding.

Side effects of iron tablets

Taking iron tablets can cause side-effects like constipation, nausea and black stools. Tell the woman she may have these side-effects, but it is important for her to keep taking the iron tablets. Taking the tablet when she eats a meal may help to prevent nausea, and drinking plenty of healthy fluids and eating lots of fruits and vegetables helps to prevent constipation. Reassure her that the black colour of her stools is not harmful and will go when it is safe for her to stop taking the iron

tablets.



4.1.3 Urinary tract infections

The **urinary tract** (see Figure 18.5) includes the kidneys, kidney tubes, bladder and urethra (the opening where urine comes out of the body). They are all connected and work together to get rid of body wastes from the blood.

First the kidneys clean the blood and turn waste into urine. Then the urine goes down the kidney tubes to the bladder. The urine stays in the bladder until the person urinates (passes water).

Urinary tract infection occurs when harmful germs (bacteria) get into the urethra. The infection can easily spread upwards to the bladder or kidneys.

Doctors often refer to urinary tract infections as **UTIs** (when you say this it sounds like 'you-tee-eyes'). You should assume that a UTI may involve all levels of the tract: the urethra, the bladder and the kidneys.

A woman is more likely to get UTIs during pregnancy than at other times.

UTIs – particularly those that get all the way up to the kidneys – can be very *dangerous* for the mother and can also cause her to start labour too early if they are not treated right away. This is why it is important to check for signs of infection at every antenatal visit.

18.3.1 Prevention of UTIs

To prevent UTIs, teach women how to keep germs in their stools away from the urethra by wiping from front to back after urinating or passing stools (see Figure 18.6). If they wipe from the anus towards the urethra, they can carry germs into the genital area, where they could get into the urethra. Remind women and their partners to wash their hands and genitals before sex. Women should also urinate right after having sex. Using a condom also helps to prevent the spread of a UTI from a man to a woman.

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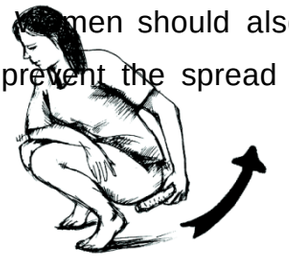


Diagnosing UTIs

A woman with a healthy urinary tract will not usually report pain, itching or burning when urinating. However, sometimes a woman has a UTI but she has no signs. It is important to try to tell whether the infection has reached the bladder, or if it has gone further up the urinary tract and reached the kidneys.

Kidney infections are more serious and are a greater risk to the mother and her unborn baby.

Testing for UTIs

UTI can be detected by testing the woman's urine. There are several different tests which are usually done at a Health Centre. There are dipsticks that change colour when dipped into infected urine, or the bacteria may be seen if the urine is looked at through a microscope, or the bacteria can be grown (cultured) in special containers until there are enough to identify them. All these tests require a clean 'mid-stream' urine sample.

Dipstick, microscope and bacterial culture tests are the only certain way to diagnose a UTI, but they cannot tell the difference between infection of the bladder and kidney infections. You may be able to do this by careful questioning of the woman about her symptoms.

Symptoms of a bladder infection

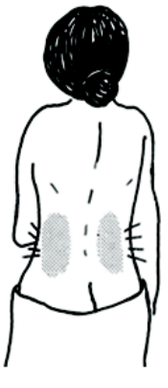
Ask the pregnant woman if she experiences any of the following symptoms:

- Constant feeling of needing to urinate, even after having just urinated
- Pain or burning while urinating, or straight afterwards
- Pain in the lower belly, behind the front of the pelvis.

Symptoms of a kidney infection

Ask the pregnant woman if she experiences:

- Any signs of bladder infection
- Cloudy or bloody urine
- Fever, feeling very hot and sweating
- Feeling very sick or weak
- Flank pain (in one or both sides)
- Repeated vomiting
- Chills, rigors or shivering persistently.



Another symptom is pain in the lower back, sometimes on the sides. But note that pain along the spine is common in pregnancy and may not be a sign of kidney infection. Normal back pain in pregnancy can be helped with massage, or exercise. If the pain is due to a kidney infection, massage or exercise won't relieve it.

Treating a bladder infection

Encourage the mother to drink 1 large cup of clean and healthy liquid at least once every hour while she is awake. Liquids help wash infection out of the urinary tract. Water and fruit juices are especially good to drink. Encourage her to eat fruits that have a lot of vitamin C, like oranges, guavas ('zeitun')
and mangoes.

If the infection does not start to improve quickly, or if the woman has any signs of kidney infection, refer her to the health centre, where tests can be performed to confirm the infection, and begin effective treatment with **antibiotics** (medicines that kill bacteria). The longer you wait to treat an infection, the more difficult it will be to cure.

If you have been trained to treat mild bladder infections with antibiotics, the dosage is:

Amoxicillin: 500 mg (milligrams) by mouth three times per day for 5 days; this antibiotic may be supplied in tablets of 250 mg or 500 mg, so take care to give the correct number of tablets. Never give another antibiotic – only Amoxicillin.

Using antibiotics to prevent recurrent bladder infections

If the woman has had frequent urinary tract infections in the past, you can give her preventive treatment with antibiotics to prevent further infections during her pregnancy. The dosage is:

Amoxicillin: 250 mg once a day at bedtime taken by mouth for the remainder of the pregnancy and for 2 weeks after the baby is born.

4.1.4 Hypertensive Disorders of Pregnancy

Introduction

Hypertensive disorders of pregnancy are one of the three leading causes of maternal morbidity and mortality (together with haemorrhage and infection). The contribution of **hypertension** (high blood pressure) to mortality and morbidity of the fetus and newborn is also immense. Hypertensive disorders

may complicate up to 10% of all pregnancies, with the highest proportion occurring in women who are pregnant for the first time (**primigravida**).

Hypertension is usually defined as blood pressure above 140/90 mmHg, where the top number is the *systolic* pressure and the bottom number is the *diastolic* pressure.

■ Do you remember what systolic and diastolic pressure refer to?

□ The **systolic pressure** is the pressure of blood in the blood vessels at the moment when the heart contracts. **The diastolic pressure** is measured when the heart relaxes between beats.

A major purpose of your antenatal care service is to make pregnant women aware of the danger symptoms of hypertensive disorders, to check their blood pressure at every antenatal visit and to make a timely diagnosis of hypertension and refer affected women as early as possible.

19.1 How does hypertension affect pregnancy?

The underlying cause of hypertension related to pregnancy remains unclear. However, hypertension is known to contribute to disorders in different parts of the body; in particular, it affects the brain and spinal cord, the heart and blood vessels, the blood, the kidneys and the liver.

19.1.1 Effects on blood vessels and body fluids

A well-known phenomenon in a woman who develops hypertension during pregnancy is that the muscular walls of the blood vessels all over her body contract, so the space inside the vessels becomes smaller. (The technical name for this is generalised *vasoconstriction*.) The constriction causes high blood pressure in the blood vessels, and this is one reason why fluid from the blood is pushed out through the vessel walls and collects in the woman's tissues.

What is the name for the swelling due to fluid collecting in the tissues and where is the swelling most often visible in pregnant women with hypertension?

The swelling is called **oedema** and is a warning sign of hypertension in pregnancy. It is most often see in the lower legs, ankles and feet; also the hands, and in the most severe cases in the face and back.

19.1.2 Effects of maternal hypertension on the fetus

Any form of hypertension during pregnancy has a significant effect on fetal growth

and survival. This happens because of the marked reduction in the mother's blood volume, which will in turn reduce the blood supply from the **endometrial arteries** into the placenta. The endometrial arteries bring the mother's blood into the placenta, delivering oxygen from her lungs and nutrients from her digestive system to the fetus.

If the maternal blood flow into the placenta is reduced, what effect will this have on fetal development?

The transfer of oxygen, nutrients and fluids to the baby will be reduced, so it will not develop normally. Fetal growth is likely to be restricted (hypertension during pregnancy is one of the common causes of intra- uterine growth restriction, IUGR).

The amount of **amniotic fluid** surrounding the fetus will also be much less than normal, because the blood flow to the baby's kidneys is reduced, so it makes less urine. In late pregnancy, most of the amniotic fluid comes from the baby's urine. The fetus may die due to deficiency of oxygen and nutrients, or due to significant reduction of amniotic fluid. If the fetus lives very long in the uterus with a reduced oxygen supply, the growing brain is very likely to

be dangerously affected. As a result, if the baby is born alive and survives early childhood, mental retardation can appear when it is older.

The fetus may also die because the placenta gets aged too early and the blood supply is inadequate, so there can be early separation of the placenta from the wall of the uterus. (Early detachment is called **placental abruption** and the mother's life can also be at risk due to severe placental abruption where much blood may be lost.

19.1.3 Common complications of severe pre-eclampsia for the mother

Complications of any type of hypertensive disorder for the mother are highly related to the generalized vasoconstriction and body fluid redistribution (more outside the blood vessels and less inside the vessels). These phenomena result in:

Inadequate blood supply to her vital organs (brain, heart) and less vital organs for short survival (kidneys, gastrointestinal tract including liver, skeletal muscles and skin).

Fluid accumulating in her organs (liver, brain, abdominal cavity, eyes,lungs), which swell and can even rupture. Narrow or constricted blood vessels, which contributes to blood cell damage, particularly platelets (essential for blood

clotting if there is a tear or wound in the tissues), and red blood cells.

If a significant proportion of the woman's red blood cells are damaged, what condition will she develop?

She will develop **anaemia**.

19.1.4 Summarising maternal and fetal complications of severe pre-eclampsia

Table 19.1 Common complications of severe pre-eclampsia in the mother and the fetus.

Maternal complications	Fetal complications
Eclampsia	Placental abruption
Intracranial haemorrhage (bleeding inside the skull)	Intrauterine asphyxia (severe shortage of oxygen in the uterus)
Anaemia	IUGR (intrauterine growth restriction)
Low platelet count, poor blood clotting and risk of bleeding	Premature delivery
Acute kidney failure	IUFD (intrauterine fetal death)
Acute liver failure, maybe even liver rupture	Respiratory distress after birth(early neonatal asphyxia)
Fluid in the lungs (pulmonary oedema)	Mental retardation
Heart failure	
Temporary total blindness	

19.2 Classification of hypertension during pregnancy

Hypertension during pregnancy can be a new development, or a continuation or

worsening of hypertension that existed before the pregnancy. If the hypertension is diagnosed before pregnancy or during the first 20 weeks of gestation, or if the hypertension persists for six weeks after the baby is born, it is defined as **chronic hypertension**.

The reason for classifying hypertension during pregnancy is to enable you to decide what actions to take in each case. Some types (e.g. mild pre-eclampsia and gestational hypertension — see Table 19.2 below) have fewer and lesssevere complications for the mother and the fetus: other types (e.g. severe pre-eclampsia and eclampsia) can have fatal complications unless managed quickly.

Classification of pre-eclampsia

Pre-eclampsia is the commonest type of hypertensive disorder of pregnancy and the focus of much of the discussion in this section (see Table 19.2). It usually occurs in the second half of pregnancy (after 20 weeks of gestation, but most commonly after 28 weeks). The appearance of protein in the woman's urine (**proteinuria**) is a danger sign. **Significant proteinura** is defined as a positive urine dipstick test for protein with a result greater than or equal to +2 on the scale supplied with the dipsticks.

Diagnostic signs of eclampsia

Eclampsia is the most severe type of hypertensive disorder. The diagnosis is made when a woman with pre-eclampsia (most commonly), or any other type of hypertensive disorder, develops **convulsions** (fits or seizures, Figure 19.1) or **coma** (complete loss of consciousness). The convulsion looks like the seizure you might have witnessed in a person with epilepsy (in Amharic: *Yemitil Beshita*). You will learn more about this type of convulsion later in this study session.

19.3 Risk factors for pre-eclampsia/eclampsia

In the majority of cases, the occurrence of pre-eclampsia or eclampsia is unpredictable and the cause is unknown. However, there are some risk factors which are known to be associated with hypertensive disorders of pregnancy (Box 19.1).

Box 19.1 Common risk factors for hypertensive disorders in pregnant women

First time pregnancy before the age of 20 years or after 35 years

Multiple pregnancy (twins or more)

Family history of pre-eclampsia/eclampsia in close female relatives

History of pre-eclampsia/eclampsia in the previous pregnancy

Diabetes currently

Obesity currently (woman is very overweight for her height)

Kidney disease currently.

Knowing these risk factors will help you to:

Anticipate the possibility of a hypertensive disorder and its complications developing before they actually happen.

Offer counselling to the woman and her partner and family about the danger symptoms of severe pre-eclampsia/eclampsia, so they can take action quickly if needed.

Make antenatal care visits more frequently in late pregnancy to women with known risk factors.

Equally important, you need to know that *any* woman (regardless of age and number of previous deliveries) can develop a hypertensive disorder in *any* pregnancy. Therefore, although it is good to anticipate its occurrence in those who have one of the risk factors, you should assume that *all* pregnant women have the potential to develop hypertension.

Clinical features of severe pre-eclampsia.

As you saw in Table 19.2, mild pre-eclampsia is an incidental finding of raised blood pressure in a woman who doesn't have any other hypertensive symptoms. However, a woman with severe pre-eclampsia can have one or more complaints of severe symptoms. From observations and research studies, the following are the common clinical features.

Headache

Although there are many causes of headache during pregnancy, till proved otherwise, you should first consider that a headache could be due to the severe form of hypertension. *Brain oedema* (swelling due to fluid collecting around the brain) and increased pressure inside the skull (the medical name for the skull is the cranium, so doctors call this **intracranial pressure**) are the major reasons for the headache in severe pre-eclampsia.

Blurred vision/visual disturbance

Blurred vision and visual disturbances are also because of increased intracranial pressure, coupled with oedema in the brain and in the retina (the structure at the back of the eyeball).

Epigastric pain

Oedema in the liver can become very painful because the liver is covered by a capsule, which becomes tense and painful when the liver accumulates too much fluid in its tissues. The liver lies behind the *epigastric* area of the abdomen, which you learned to identify in Study Session 15 (look back at Figure 15.4). Other causes of **epigastric pain** are rare during pregnancy, so
the message is: first think of hypertension in a pregnant woman (particularly after 28 weeks of gestation) complaining of epigastric pain.

Decreased urine output

Urine production decreases very significantly in severe types of pregnancy- related hypertension. The reduction in maternal blood volume (described in Section 19.1.1) results in markedly reduced blood flow to the kidneys, and as a result, there will be a significant decrease in urine output. The woman may stop producing urine altogether.

Decreased or absent fetal kick

This happens because the fetus receives a reduced supply of oxygen and nutrients due to the decreased blood flow through the placenta, as described above.

Generalized (pathologic) oedema

Generalized oedema is characterized by the widespread development of oedema in the woman's back, abdomen, hands and face. The oedema is considered *pathologic* if the mother's weight gain per week is above 1.0 kg.

The normal weight gain per week during pregnancy is in the range of 0.25 kg to 0.75 kg (average 0.5 kg).

19.5 Clinical features of eclampsia

Eclampsia occurs when the woman hasn't been able to get adequate treatment when she had severe pre-eclampsia. It is the most life-threatening complication of severe pre-eclampsia. It can occur before labour, during labour and after delivery. Sometimes, eclampsia can occur as long as 24 hours after the delivery, even in women who gave birth with normal blood pressure

and without any danger symptoms before and during labour. Therefore, if a woman comes to you with a history of convulsion, after a normal labour and delivery and even some time at home, the first clinical problem you need to consider is eclampsia. But you should also know that there are other medical causes of convulsion, such as blood sugar being too low or too high (hypo or hyperglycaemia), malaria affecting the brain, bacterial infection in the brain (e.g. meningitis), stroke, drugs, or poisoning.

As you learned above, the diagnosis of eclampsia is made when the clinical features of pre-eclampsia are present, plus: Convulsion/fitsComa in the absence of other causes.

The convulsion in eclampsia is usually sudden in onset, but in some cases there may be warning signs and symptoms that make the occurrence of eclampsia inevitable (see Box 19.2).

Box 19.2 Warning signs and symptoms that eclampsia is developing

Intractable/severe headache

Severe epigastric pain

Markedly blurred vision or total visual loss (temporary)

Lethargic or very irritable

Disoriented about the time, people and places in her environment

Disconnected with the environment

Shows some abnormal behaviour.

Convulsions in eclampsia

The convulsion in eclampsia is similar to the seizure in people with epilepsy. Like an epileptic fit, it has four phases:

The quiet stage

The typical feature of the first stage is a period of quiet (it may not take more than 20 seconds) when the person has generalized weak muscles, stiffness and twitch, and staring eyes.

The tonic stage

This may last up to 30 seconds and is characterized by a severe form of generalized muscle spasms, where the muscles of the legs and hands contract very severely and may seem as strong as a dry stick. During the tonic stage, the woman stops breathing and becomes short of oxygen. There is also rolling of the eyes where you can see the upper part of the sclera (the white part of the eye).

The clonic stage

The third stage may take up to 2 minutes and is classically a jerky movement of the whole body as a result of vigorous muscle contraction and relaxation. At this stage, the woman can breathe and she will also salivate and urinate spontaneously.

The coma stage

After the clonic stage is over, in typical cases the woman becomes deeply unconscious for an uncertain period of time. However, a woman can be comatose even from the outset (i.e. without even a single convulsion). The duration of the coma state is dependent on:

The *number of previous convulsions*: The higher the number, the longer the duration of coma, which may even end in death. Having a history of more than ten convulsions is one of the poor outcome indicators.

Therefore, the earlier the convulsion episodes are controlled, the better the prognosis for the mother and the baby.

Severity of brain oedema: The space between the skull and the brain is very limited.

Thus, even a minimal increase in the mother's brain size due to oedema or haemorrhage will have a serious effect on the brain cells, because the pressure on the brain (the intracranial pressure) rises so high.

Extent of intracranial haemorrhage (see below in this session): As already described for brain oedema, any bleeding in the intracranial space will increase the intracranial pressure on the brain cells. Additionally, it may aggravate further bleeding and can create a vicious cycle.

Associated hypoglycaemia (low blood sugar level): Each convulsion requires energy. This is because, during the tonic-clonic stages, almost all the skeletal muscles contract and relax many times. Frequent convulsion means consumption of much energy, which comes from stored sugars in the blood, liver and tissues. The woman with eclampsia cannot replace the sugars used by her muscles quickly enough, so she develops very low blood sugar (severe **hypoglycemia**), which in turn may manifest in coma.

Because her blood sugar is low, the woman with eclampsia invariably will be getting some energy from proteins in her muscles to keep her alive.

Breaking down proteins produces *ketone bodies* that can be used as an energy source and some will appear in her urine. You can test for the presence of ketone bodies with a dipstick.

What can you do if you diagnose a hypertensive disorder in a pregnant woman?

Your primary role in the management of hypertensive disorders of pregnancy is early identification of warning signs and symptoms, and immediate referral to a hospital or health centre. If possible ensure rapid transportation and reception of the woman at the higher health facility. Your actions should be based on your clinical diagnosis and the severity of the hypertension.

Actions if pre-eclampsia is not severe

Pregnant women diagnosed to have:

mild pre-eclampsia,

chronic hypertension

gestational hypertension

should be referred *without any intervention by you*, preferably on the day of

diagnosis.

Why do you think referral is necessary, even though the hypertension is not severe?

This is because sometimes the mild form of hypertension may progress to the severe type in a very short period of time.

Persuading affected women to go for medical treatment

You should offer counselling to the woman and her family about the danger of maternal and fetal complications and the advantage of getting specialist medical treatment urgently. In cases of eclampsia, people in many parts of rural Ethiopia believe that convulsions/fits are related to an evil spirit. A pregnant woman who has had a fit in these cultures may not want to go to a

health facility, because she may prefer to go to the holy water, to a priest or other religious leader, or to local healers. You have a very important role to make sure that the woman and her family understand that the fits are caused by the very high blood pressure she is experiencing. Reassure her that the convulsions will stop progressively after the baby is delivered.

19.6.3 Supportive pre-referral treatment for severe pre- eclampsia

Your second role is providing supportive treatment to avoid worse complications before the woman reaches the health facility. When your clinical diagnosis is as defined in Table 19.2 earlier:

severe pre-eclampsia superimposed severe pre-eclampsia

you should be able to prevent the occurrence of eclampsia by taking the supportive actions in Box 19.2 below.

Box 19.2 Actions to prevent superimposed and severe pre-eclampsia progressing to eclampsia

1 Make the referral to the higher health facility as soon as possible.

2 Communicate with the receiving hospital or health centre to alert the medical team that a pregnant woman with severe pre-eclampsia is coming for urgent treatment.

3 Reassure the woman and her family that when she arrives at the health facility, the doctor will give her drugs to reduce her high blood pressure (anti-hypertensive drugs) and to prevent her from developing convulsions (anti-convulsant drugs).

4 While transport is being arranged, insert an intravenous (IV) line into a vein in the woman's hand or arm, as you will learn to do in Study Session 22 of this Module and in your practical training sessions. Connect the IV line to a bag containing at least 1 litre of IV fluid: either Normal Saline (N/S) or Ringer Lactate (R/L). Never give dextrose in water IV fluid (D/W).

Emergency referral for eclampsia

If you discover a pregnant woman with eclampsia, you should take the actions already described in Box 19.2. Refer her urgently unless she is already in advanced labour — in this case you should deliver the baby and refer her and the baby to a hospital as soon as possible after the birth.

When you transport a woman with eclampsia to the health facility, make sure she is lying on her side with her airway open (Figure 15.2). Don't let her lie on her back because she may find it difficult to breathe if she has another fit.

Lying on her side also means that if she vomits during a fit, she is less likely to breathe the vomit into her lungs.

Self-Check -4	**True/false**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Which of the following statements is *false*? In each case, explain what is incorrect.

A The risk of a UTI can be reduced by washing hands and genitals properly.

B A woman is more likely to get infections of the urethra, bladder or kidneys during pregnancy than at other times.

C It is important to give iron tablets to prevent anaemia only at the first antenatal visit.

D Encouraging a woman with a UTI to drink 1 glass of liquid every hour while she is awake helps to reduce her bladder infection.

E Malaria in pregnancy is associated with an increased risk of spontaneous abortion and stillbirth.

F Milk is rich in folate, so drinking plenty of milk during pregnancy can help to prevent anaemia.

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-5	Premature rupture of membrane (PROM)

Premature rupture of membranes

Premature rupture of membranes (PROM) is defined as a spontaneous leakage of amniotic fluid from the amniotic sac where the baby swims; the fluid escapes through ruptured fetal membranes, occurring after 28 weeks of gestation and at least one hour before the onset of true labour. PROM can occur before or after 40 weeks' gestation, so the word 'premature' does not mean that the gestational age of the fetus is preterm.

Premature here refers to the premature rupture of fetal membranes before the onset of labour. PROM is of concern because rupture of fetal membranes before the onset of labour is not normal and is associated with many complications (described later in this session). In a normal labour, the fetal membranes usually rupture *after* the labour has progressed for some time, when the fetal head is deeply engaged and the cervix is near to full dilatation, with no complications in most labouring women.

You need to know that the majority of people in Ethiopia don't think of PROM as a problem. Rather, they consider the leakage of fluid as a good symptom about the coming labour. As you will see later in this study session, many serious complications can occur as a result of PROM. Therefore, you need to counsel the woman, her husband/partner and her family very clearly about the actions they should take if her membranes rupture and fluid leaks from her vagina before labour begins. Tell them about the dangers of waiting at home after the rupture of fetal membranes. We begin by describing how you classify cases of PROM, which determines how you handle each case.

17.2 Classifications of PROM

PROM is classified according to the gestational age at which it occurs and the interval between rupture of the fetal membranes and the onset of true labour.

Preterm PROM occurs *after* 28 weeks of gestational age and *before* 37 weeks.

Term PROM occurs *after* 37 completed weeks of gestational age, including post-term cases occurring after 40 weeks. Preterm and term PROM are further divided into:

Early PROM (less than 12 hours has passed since the rupture of fetal membranes)

Prolonged PROM (12 or more hours has passed since the rupture of fetal membranes).

The major reason for classifying PROM into term, preterm, early and prolonged PROM is for effective management decisions. The *earlier* the occurrence (preterm PROM) and the *longer* the interval between the rupture of fetal membranes and onset of labour, the more complications there are likely to be. We will describe the actions you should take to manage cases of PROM in Section 17.6 of this study session. First, we discuss the risk factors for PROM and then the complications that can result for the mother and thefetus.

Risk factors for PROM

Rupture of fetal membranes can occur when the cervix is either closed or dilated. Sometimes, it can occur in a very early pregnancy (before 28 weeks – this leads to inevitable abortion, which you will learn about in Study Session 20), or in early third trimester (between 28 and 34 weeks). It is not exactly known why fetal membranes rupture before the onset of labour.

However, there are some known risk factors highly associated with PROM.

Consider the amniotic cavity as a sac (or bag) whose wall is formed by the fetal membranes, enclosing the fetus and amniotic fluid. The sac will rupture at the weakest point, which is the part of the membranes in direct contact with the 'mouth' of the cervix. Rupture happens when the sac is either damaged by an infection or external trauma, or it becomes over-stretched (distended) and unable to withstand the internal pressure. These risk factors are described in more detail below.

17.3.1 Infection can cause PROM

Bacteria that cause infection in the lower genital tract (infection of the cervix or vaginal wall) can travel upwards through the cervix and infect the fetal membranes. This can weaken the membranes enough to allow them to rupture.

Box 17.1 summarises the diagnostic signs of infection in a woman with PROM.

Evidence of infection in a woman with PROM

Fever: the woman may complain of feeling feverish, or you may record her temperature of 38°C or more.

The vaginal discharge may have an offensive smell and the colour may be changed from watery to cloudy.

She may have an increased pulse rate (more than 100 beats/minute).

The fetal heart beat may increase to 160 beats/minute or more.

She may feel pain in the lower abdomen, particularly when it is touched.

Malpresentation of the fetus

Rupture of fetal membranes is highly associated with fetal malpresentations in the third trimester. Particularly high risk of PROM is associated with footling breech (feet first) and transverse lie (across the abdomen) with the baby's back arched upwards and hands and legs pointing down, in direct contact with the weakest point of the membranes.

Multiple pregnancy and excess amniotic fluid

If the uterus holds two or more babies, or there is excess accumulation of amniotic fluid (polyhydramnios), the fetal membranes become over-stretched and rupture. The membranes can rupture even if the amount of amniotic fluid is small, if there is another cause such as those described below.

Cervical incompetence

Without uterine contraction, the cervix may dilate spontaneously early in gestation and this can be the cause for an abortion (miscarriage). The cervix may dilate even in late pregnancy before the onset of labour. As the cervix continues dilating, it will allow part of the fetal membranes to pass through it. As a result, the membranes can rupture easily and leak amniotic fluid.

Trauma to the abdomen

Any blunt or penetrating trauma to the abdominal wall can result in a break in the fetal membranes. Blunt traumas include: uterine manipulation by a doctor or midwife to change the fetal presentation from breech or transverse lie to the normal 'head down' or vertex presentation; uterine massage by traditional healers; and blunt abdominal injury (e.g. from a blow or fall). An example of a penetrating abdominal injury is insertion of a hollow needle into the amniotic cavity through the abdominal wall, or through the cervix, to withdraw amniotic fluid or placental tissue for analysis.

Diagnosis of PROM

When there is a rupture in the fetal membranes, the woman notices a painless sudden leakage of fluid from her vagina, which is usually excess and watery.

However, when the amount of amniotic fluid in the sac is minimal, the leaking fluid may only wet her underwear, and you may be unsure whether to make the diagnosis of PROM from the woman's complaint.

The mother may be worried, but not be sure whether the leakage is normal or abnormal. A little bit of excess vaginal discharge is normal near to full term, and this may be confused with the leakage of amniotic fluid. So you need to refer any woman complaining of excess vaginal discharge for further evaluation at a higher level health facility, in case the woman is showing signs of PROM.

Box 17.1 summarises the clinical features that can help you to make the diagnosis of PROM.

Clinical features of PROM

The woman complains of leakage of fluid from her vagina (minimal or excess).

She says she noticed a decrease in the size of her abdomen after leakage of fluid.

You observe watery fluid coming out through the vagina, or the woman's under clothing is soaked with watery fluid.

When you measure the distance between the pubic symphysis and the fundal height (as described in Study Session 9), you find the baby is small for gestational age. (Note that being 'small for gestational age' can also be due to scanty amount of amniotic fluid with intact membranes, intrauterine growth restriction and wrong date for the stated gestational age.)

In PROM, the amniotic fluid remaining in the sac will be minimal, so you may be able to feel (palpate) the fetal parts easily through the mother's abdomen.

Although not specific, the woman may have an offensive smell due to vaginal discharge, and she may have a fever these signs indicate an already established infection, which may be the cause of PROM.

You can give her a dry vaginal pad or Goth and check after some hours whether it is wet or still dry. Note that being dry doesn't necessarily rule out PROM.

17.5 Complications of PROM

PROM is associated with several potentially life-threatening complications, as we will now describe.

17.5.1 Infection after PROM

As stated earlier, the premature rupture of fetal membranes allows bacteria to get into the uterine cavity. They multiply rapidly in the warm, wet environment and, as a result, both the mother and the fetus may develop a life-threatening infection. It can continue even after the birth as uterine or widespread infection in the mother, and cause pneumonia, sepsis (blood infection) or meningitis (infection of the brain) in

the newborn.

Infection is one of the most feared complications of PROM because, unless it is quickly treated, it may end up with both maternal and fetal or newborn death. But the good news is that swift treatment with antibiotics is generally successful.

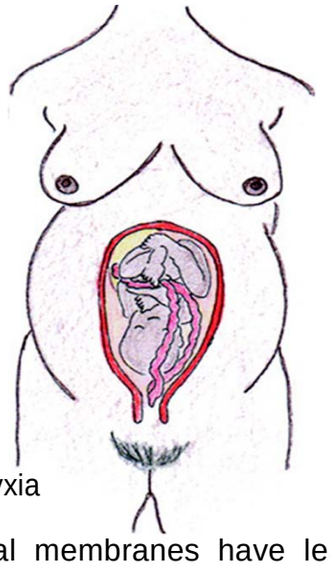
It should be noted that *prolonged* PROM cases are highly likely to develop a uterine infection unless treated quickly with preventive antibiotics.

■ Why do you think prolonged PROM is particularly likely to lead to infection?

□ Over 12 hours have passed since the fetal membranes ruptured, so any bacteria that got into the uterus have enough time to multiply and take hold.

Cord prolapse

One of the potentially fatal complications of PROM for the baby is **umbilical cord prolapse**. (The term 'prolapse' means 'pushing out of the proper place'.) When the membranes rupture, the umbilical cord may be washed downwards by the rushing out of amniotic fluid and fall towards the vagina. It may be pushed ahead of the baby and push out into the cervix (see Figure 17.1) through the break in the membranes. In this position, the prolapsed cord is easily compressed, cutting off the blood supply to the fetus and this can be the cause of sudden fetal death.



Fetal hypoxia and asphyxia

When the ruptured fetal membranes have leaked most of the fluid that keeps the fetus 'floating' in the uterus, the membranes collapse around the baby, and the baby can press against the uterine wall. It can lie on and compress the umbilical cord, so the fetus becomes short of oxygen and the waste product carbon dioxide builds up in its body.

Deficiency of oxygen and accumulation of carbon dioxide in the body is called **hypoxia**

(literally ‘low oxygen’), which rapidly leads to **asphyxia** (brain and tissue damage due to hypoxia) resulting in death if oxygen is not quickly restored.

The fetus can also develop asphyxia and die because of partial or complete placental abruption, as described next.

Placental abruption

When the cause of the rupture of fetal membranes is an over-stretched uterus, there is a possibility of premature separation of the placenta from the uterine wall (a condition called *placental abruption* which you will learn more about in Study Session 21). This can happen when a gush of fluid suddenly flows out of the uterus, ripping part of the placenta away from the uterine wall.

Preterm labour

Once the fetal membranes rupture, labour usually starts spontaneously in less than one week. If the PROM occurs several weeks before the pregnancy reaches full term, the resulting labour will also be preterm, and this can pose a risk to the newborn. Its development may not be sufficiently mature to sustain life — for example, the preterm baby cannot maintain its body temperature as well as a full term baby, its respiration will be shallow, it may have trouble feeding and its immune system may not be able to protect it from infection.

Deformity of fetal limbs

Sometimes labour does not start spontaneously after PROM. This is the most risky situation for development of infection and fetal deformity, if it occurs too early in gestation and the pregnancy continues for a long period of time after the membranes have ruptured.

Without the amniotic fluid to keep the fetus ‘floating’, the muscular walls of the uterus closely surround the fetus and compress it. The immature fetal bones are not yet strong enough to resist the pressure, and the chance of developing deformity of the legs, feet, arms or hands is very high if the pregnancy continues in this state for more than 3 weeks.

Actions in a case of PROM

Whenever you see a woman with clearly defined or suspected PROM, the questions you need to answer are:

Does the woman have established labour or not?

If the woman has established labour:

Is it preterm or term PROM?

How long has she stayed at home after the membranes ruptured?

How much has the labour progressed?

Is the fetus alive or dead?

Irrespective of labour condition, does the woman have established infection or not?

You need to answer the above questions because they show what actions you need to take, as we will now describe.

When should you conduct the delivery before referral?

Under certain conditions, it is safer for you to conduct the delivery of a woman with PROM where she is (at her home or your Health Post) before referral.

If the labour and delivery was normal and the woman and baby are doing well, check them for the next 24 hours. Tell the family to call you and take her to a health facility immediately if there is any sign of infection in the mother or the newborn.

If the woman comes to you with PROM and she is already in established labour which has progressed a long way (late active first stage, or second tage when the woman is wanting to push), *even with evidence of infection, or a preterm labour, or you think the fetus may be dead*, it is still preferable to conduct the delivery where the woman is and refer her to a health facility as soon as the baby is born.

When should you refer before conducting the delivery?

Refer the woman with PROM as soon as possible to a hospital with a surgical facility if she is not in labour, or she is still in the early stage of labour and there is time to get her to the health facility before labour progresses much.

Remember that if the case is preterm PROM, the newborn will need special care in a hospital.

Self-Check -5	**True or false**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Which of the following statements is *false*? In each case, explain what is incorrect.

A Infection in the uterus may cause PROM and may also be acomplication following PROM.

B PROM may occur if the uterus is over-stretched by malpresentation of the fetus, multiple pregnancy or excess amniotic fluid.

C Cervical incompetence in combination with PROM can be a cause ofumbilical cord prolapse.

D The fetal membranes are so strong that blunt trauma to the abdomen is unlikely to cause PROM.

E Hypoxia and asphyxia of the woman in labour is a common complication of prolonged PROM.

F A sudden gush of clear watery fluid from the vagina is always seen in cases of PROM.

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-6	Early pregnancy bleeding

What is early pregnancy bleeding?

Bleeding *before* 28 weeks of pregnancy is considered as **early pregnancy bleeding**. If it occurs *after* 28 weeks it is referred to as **late pregnancy bleeding**. This cut-off-point of 28 weeks is based on the chance of survival if the baby is born before the expected date at 28 weeks. Survival before 28 weeks is very minimal in countries like Ethiopia where there is a shortage of intensive care facilities for premature babies. Nowadays some countries have brought the cut off point to 20 weeks because of the increased chance of survival due to the improved care and technology their health system provides.

The main cause of early pregnancy bleeding is **abortion**, the ending of a pregnancy early with the loss of the fetus. Two other common causes are **ectopic pregnancy** (when the fetus implants and grows outside the uterus),

and **molar pregnancy** (when a tumour grows in the uterus instead of a fetus).

We will refer to both of these problems near the end of this study session, but our main focus will be on abortion.

Abortion

Spontaneous abortion

Spontaneous abortion (also known as a **miscarriage**) occurs naturally in 15% of pregnancies, often so early that the woman may not even realise that she was pregnant. However, spontaneous abortion may sometimes lead to heavy bleeding and threaten the woman's life. Sexually transmitted infections, injury, violence, malaria and stress all can cause a pregnancy to end early.

Sometimes miscarriages happen because a woman has been near poisons or toxic chemicals. It is not easy to know why a miscarriage happens all the time, but some causes of miscarriage are preventable. Some miscarriages can be prevented by treating women for illness and infection and by helping them to avoid chemical poisons and violence. But some women have one miscarriage after another, and you may not know why.

Induced abortion

Unplanned and unwanted pregnancies, especially in adolescent girls, may result in the woman resorting to an **induced abortion** (deliberate termination of the pregnancy). Under certain conditions in some countries, a **legal abortion** may be induced safely in a health facility by trained health professionals. This procedure will not usually endanger a woman's future pregnancies. The legal position in Ethiopia and the allowable methods of safe abortion are covered in Section 20.2.4 of this study session.

An **unsafe abortion** is a termination induced by the woman herself or by an unskilled person in an unhygienic environment .

A woman who was sick, injured or bled heavily after an abortion may have scars in her uterus that could cause problems for later pregnancies. Death from unsafe abortion is one of leading causes of mortality and morbidity globally and especially in developing countries. In Ethiopia it is an important cause of maternal death and needs to be addressed to reduce the high maternal mortality in the country.

20.2.3 Clinical classification of abortion

The outcomes of either a spontaneous or induced abortion are classified based on clinical presentation, as judged by the health care provider. It is important for you to know the different categories, because how you treat the woman depends on the clinical classification.

Complete abortion

A **complete abortion** means that all parts of the fetus and placenta have been expelled through the vagina; nothing is left behind in the uterus and the cervix has closed. No treatment procedure to evacuate (empty) the uterus is usuallynecessary. After a complete abortion which has been safely induced, the woman may feel light cramping pains in her abdomen, and bleeding from her vagina should be no more than during a normal menstrual period.

An **incomplete abortion** is when part of the fetal tissue or placenta is still in the uterus and the cervix is open. If you leave an incomplete abortion without treatment for some time there is an increased risk that it will be complicated with infection and this could be life-threatening for the woman.

When you attend the practical skills training associated with this study session you will see how the tissue left behind in the uterus can be removed with instruments, using a technique called *evacuation* and *curettage*. You will also learn how to give drugs to the

woman by mouth (orally) and by injection into the muscles of her thigh or buttocks (intramuscular injection, or IM) to assist this process.

Threatened abortion

When a pregnancy is complicated by bleeding from the vagina, but the cervix is closed, this may signal a **threatened abortion**. There is a chance that the pregnancy may continue normally, provided the fetus is showing signs of life.

Inevitable abortion

An **inevitable abortion** is when the fetus is entirely in the uterus, but the pregnancy will definitely end in the expulsion of the fetus. Often the woman has lower abdominal pain and a cervical change called *effacement*, when the cervix has pulled back and become thinner; then the cervix starts to dilate and open as though during a normal full-term labour. (You will learn about effacement and dilatation of the cervix in *Labour and Delivery Care*, the next Module in this curriculum.) The contents of the uterus will often spontaneously come out, but if this does not happen soon, you will be taught to give the woman 400 µg (micrograms) of *misoprostol* orally, repeated once after 4 hours if necessary. Do not attempt to do this until you have completed your practical training in this competency.

Missed abortion

When the fetus is entirely in the uterus, but it has no signs of life and the cervix is completely closed, this situation is called a **missed abortion**. The dead fetus is likely to be retained in the uterus for some time unless there is an intervention in a specialised health facility.

20.2.4 Legal aspects of abortion in Ethiopia

Prior to 2004, abortion was permitted in Ethiopia only to save a woman's life, protect her health and in cases of rape. According to the new penal code, adopted in 2004, abortion is not punishable when it is performed to save a woman's life or health; in cases of rape, incest or serious fetal impairment; or when a pregnant woman lacks the capacity to care for a child because of her young age or her deficient physical or mental health. As a step

toward implementing the new law, the Ethiopian Federal Ministry of Health released guidelines for safe abortion services in June 2006, which set out basicprinciples and standards for the delivery of abortion care.

Semira comes to see you and says she is pregnant. She is in good health.

She has no stable partner and she does not want the baby. Does Ethiopian law provide for her to have a legal abortion? Explain why or why not.

Semira is not eligible for the abortion service in Ethiopia unless she was raped, the father is a close relative (incest), or she is not able to care for the baby because of serious mental or physical illness.

Methods of provision of abortion

Safe induced abortion is provided in Ethiopia for women who meet the legal criteria described above and who want to end their pregnancy. The procedures are carried out at a health centre or hospital, so you should refer women seeking help from the abortion service to go to the higher health facility. The methods for provision of a legal abortion depend on the gestational age of the pregnancy and the facilities available locally. They include:

Medical abortion: where women are given medical drugs to initiate the process of abortion **Manual vacuum aspiration** or **MVA**: using an instrument like a syringe operated by hand that creates a negative pressure to suck out the contents f the uterus **Evacuation and curettage**: emptying the contents of the uterus using metallic instruments to remove the fetal tissue and clean the inner walls of the uterus.

Remember that women need emotional support before, during and after an induced abortion, just as they do after a spontaneous miscarriage. In the next section, we describe the post-abortion services that you should provide to the women in your community.

Woman-centred comprehensive post- abortion care

The Ethiopian guidelines define woman-centred comprehensive post-abortion care as:‘a comprehensive approach to providing abortion services that takes into account the various factors that influence a woman’s individual mental and physical health needs, her personal circumstances, and her ability to access services ... that support women in exercising their sexual and reproductive rights.’

(Federal Democratic Republic of Ethiopia, *Technical and Procedural Guidelines for the Provision of Safe Abortion Services in Ethiopia*, 2006)

20.3.1 Goals of the post-abortion service

The goals of a woman-centred comprehensive post-abortion service are to:

Provide safe, high-quality services

Decentralize services to the most local level possible

Be affordable and acceptable to women

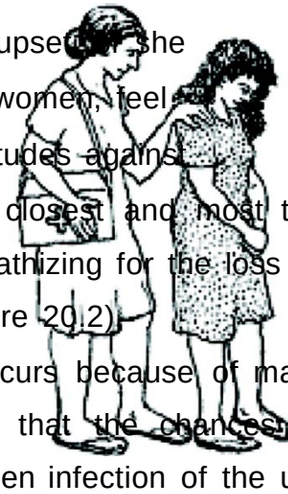
Understand each woman's particular social circumstances and individual needs, and tailor her care accordingly

Reduce the number of unplanned pregnancies and abortions Identify and serve women with other sexual or reproductive health needs Be affordable and sustainable to the health system.

To achieve these goals, you have many roles to play, including recognizing the individual needs and social circumstances of individual women and guiding them where to get appropriate care at the appropriate time. You also have to act effectively in response to any referral note a woman may bring back to her village from a higher level health facility.

20.3.2 Important messages for women after a spontaneous or induced abortion

Giving emotional support



When a pregnancy ends early, a woman may feel afraid, sad or upset. She may feel guilty or ashamed. Many women, especially unmarried women, feel they must hide a miscarriage or induced abortion because of attitudes against sex, family planning or abortion in their communities. As the closest and most trusted health worker locally, you have an important role to play in sympathizing for the loss of the pregnancy and providing the woman with emotional support (Figure 20.2).

If she had a spontaneous abortion, tell her that this mostly occurs because of maternal illness or problems with the developing fetus. Reassure her that the chances for a subsequent successful pregnancy are good, unless there has been infection of the uterus, or the cause of her miscarriage has not been identified and it has an effect on future pregnancies (but this is rare). If the woman wants another baby, encourage her to delay the next pregnancy until she has completely recovered from the miscarriage or abortion.

Breaking the cycle of unwanted pregnancies

Another important role is providing a family planning service to those who need it, including breaking the cycle of unwanted pregnancies and induced abortions. If pregnancy is not desired after an abortion and there are no severe complications requiring further treatment, the woman should receive adequate counselling and help in selecting the most appropriate contraceptive method that can be started immediately. Section 20.5 of this study session gives a brief introduction to post-abortion family planning.

Care after an uncomplicated abortion

After an uncomplicated spontaneous or induced abortion, tell the woman that she should expect to feel mild pains or cramps in her lower abdomen for a few days, and some light bleeding from her vagina — no more than in a normal menstrual period. Tell her how she and her family can look after her for a few days (Box 20.1).

Taking care after an uncomplicated abortion

Good care after a spontaneous or induced abortion can prevent infection and help a woman's body to heal faster. She should:

Drink plenty of liquids and eat nutritious foods

Rest often and avoid heavy work for a week

Wash regularly, but she should not douche or sit in a bath or tub of water until a few days after the bleeding stops

Use clean cloths or pads to catch any blood, and change the pads often Not put anything inside her vagina, and avoid sexual intercourse for at least a few days after the bleeding stops.

Tell her to call you immediately or seek help from a higher health facility if she has any of the warning signs listed in the next section.

Follow-up care after an abortion

Prevention of abortion-related illness and mortality is dependent on the availability of comprehensive post-abortion care throughout the healthcare system. Whether it is health information and education, stabilization of symptoms and timely referral, safe methods of abortion, or specialized care for the most severe complications, at least some components of post-abortion care should be available at every service delivery site in the healthcare system, including at Health Posts. If the woman had

a miscarriage or a safely induced abortion at a health facility, she is less likely to develop a serious infection or injury than a woman whose abortion was done illegally by someone who used unsafe tools.

Emergency post-abortion care refers to the actions you should take if any of the complications in Box 20.2 arise after an abortion.

Complications after an unsafe abortion

The most serious complication is death. It is estimated that around one- third of maternal deaths in Ethiopia are due to unsafe abortions. For every woman who dies, it is estimated that another 16 to 33 women suffer a complication after an unsafe abortion, including:

Haemorrhage (heavy bleeding)

Infection in the pelvic cavity, or in the bloodstream (e.g. tetanus)

Perforation of the uterus (puncturing the wall of the uterus by a sharp instrument)

Injury to adjacent organs in the pelvic cavity (e.g. vagina, urinary bladder, rectum, intestines) Poisoning from an overdose of medicines or herbs used to induce abortion.

In the longer term, a woman can suffer from chronic (persistent) pelvic pain, especially during menstruation, repeated spontaneous abortion or infertility.

You should check the woman's health, pulse, temperature and blood pressure regularly after an abortion and question her carefully and sensitively to reveal any of the following warning signs and symptoms:

Strong cramping pains in the lower abdomen

Swollen or hard lower abdomen with no sounds or gurgles inside

Heavy bleeding, large clots of blood or bleeding for more than 2 weeks

Bad smell coming from the vagina Fever: temperature 38°C or above

Fast pulse: more than 100 beats per minute

Feeling very nauseated, faint or dizzy

Low or falling blood pressure, below the bottom of the normal range of 120/70 mmHg.

If heavy bleeding occurs, you may not be able to see the blood if it is leaking into the woman's abdomen from an injury to her uterus or other internal organs, which may occur

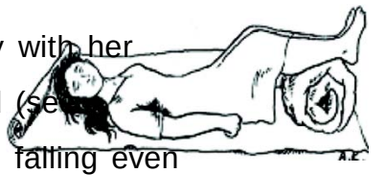
after an unsafe abortion. Heavy loss of blood leads to a condition known as shock (Box 20.3).

Signs of shock

A woman in shock will be pale and sweating, with a fast pulse (above 100 beats per minute), fast respiration, low or falling blood pressure (the diastolic pressure — the bottom number — is below 60 mmHg), and dizziness or confusion; she may even lose consciousness. You must act quickly to save her life.

Pre-referral treatment in an emergency

Emergency treatment of patients in shock includes starting an **intravenous (IV) infusion**, that is delivering a sterile fluid called Normal Saline or Ringer's Lactate solution, directly into a vein to replace the blood fluids and salts that are being lost through heavy bleeding. You will learn the theory of how to do this in Study Session 22 of this Module, and in your practical skills training. As soon as the IV infusion is set up, you must make an immediate referral of the woman to the nearest health facility.



During transport make sure you position the woman appropriately with her head flat (do not use a pillow) and her legs raised and supported (see Figure 20.3). This position helps to keep her blood pressure from falling even lower. If possible, you should accompany her to the next level health facility to maintain the IV infusion and keep the bag of IV fluid held above her. If you cannot go with her, explain the importance to whoever accompanies her of keeping the woman and the fluid bag in the suggested positions; also tell them how to close the IV tubing when the bag of fluid has completely drained. Ideally, send a healthy person with her who could act as a blood donor if she needs a transfusion of blood when she gets to the health facility.

Make sure you write a *referral note* that covers all the essential details.

- Recall what these details are (you learned this in Study Session 13).
- A referral note should include the patient's name, age and address; any medical or personal history that is relevant to her current condition; a clear description of her signs and symptoms; the details of any treatment you have performed; and your reasons for referring her to the health facility. Remember to sign and date the note and say how you can be contacted so you can follow-up the patient afterwards.

Other causes of early pregnancy bleeding

The warning signs and the emergency treatment described above are also relevant

to two other common causes of early pregnancy bleeding.

Ectopic pregnancy

Ectopic pregnancy is when pregnancy occurs outside the endometrial cavity of the uterus. The most common site for an ectopic pregnancy is in a fallopian tube (the pair of tubes connecting the uterus with the interior of the abdomen, each one ending close to the ovary on that side. Look back at Figures 3.3 and 5.3 in *Antenatal Care*, *Part 1*, to remind yourself of the anatomy of the uterus and the adjacent structures. Other possible sites are the ovarian ligaments, the ovaries and the abdominal cavity surrounding the uterus.

If the embryo implants in the fallopian tube, it cannot support the growing fetus for longer than the first few weeks. There is a high risk that the tube will rupture and the woman will start bleeding into the abdominal cavity. This is a life-threatening situation leading to shock, which must be quickly treated to stop the bleeding. The typical symptoms of ectopic pregnancy are lower abdominal pain, late menstrual periods and vaginal or internal bleeding.

20.4.2 Molar pregnancy

The other cause of early pregnancy bleeding is molar pregnancy, which you already learned about in Study Session 10. You may encounter this problem occasionally. It is characterized by an abnormal growth of a tumour formed from the future placenta during early pregnancy. The uterus fills with grape- like tissues and grows bigger than the size it will attain at full term of anormal pregnancy.

- Can you recall the signs of a molar pregnancy?

- No fetal heartbeat can be heard. No baby can be felt when you palpate the mother's abdomen. The woman has had nausea all through the pregnancy. She has spotting of blood and tissue like bunches of grapes coming from her vagina.

Self-Check -6	**True/false and case study**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Which of the following statements is *false*? In each case, explain what is incorrect.

A There is no need to refer all incomplete abortion cases to the next higher health facility.

B In a complete abortion the tissue inside the uterus has been entirely expelled and the cervix has closed.

C Women whose abortion is complete will not be able to get pregnant again for some months.

D After an abortion, a woman should be advised to delay another pregnancy until she has completely recovered.

First read Case Study 20.1 and then answer the questions that follow it.

Case Study 20.1 Mrs X

Mrs X is 26 years old and has been married for 4 years. She has one child who was born 3 years ago and is hoping that she is pregnant again.

Mrs X says she has lower abdominal pain and has started bleeding two days ago. When you examine her she has a rapid pulse of 100 beats per minute and blood pressure of 110/60 mmHg. She also has pale conjunctiva and mild lower abdominal tenderness.

(a) What are the possible causes of bleeding at this early stage of her pregnancy?

(b) What do her other symptoms suggest may be happening?

(c) Give your reasons to indicate whether it would be safer to refer her to a higher health facility.

(d) If you refer her, what will you do before referral?

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Information Sheet-7	Late pregnancy bleeding

Bleeding after 28 weeks of gestation is considered to be **late pregnancy bleeding**. You learned about early pregnancy bleeding before 28 weeks in Study Session 20. Late pregnancy bleeding is also referred to as **antepartum**

haemorrhage (**APH**) by doctors and midwives. It is an important cause of maternal and fetal death and needs the attention of a highly skilled heathcare provider at the earliest time possible in order to save the life of the woman and her unborn baby.

21.1 What causes late pregnancy bleeding?

The most common causes of late pregnancy bleeding, or ante-partum haemorrhage (APH), are due to bleeding from the placenta, but there are other less common causes arising in the uterus or other parts of the reproductive tract. First, we will list the causes briefly, and then describe placental abruption, placenta previa and ruptured uterus in detail, because these are conditions that require your immediate life-saving intervention.

Placental abruption: this condition occurs if the placenta pulls away prematurely (too soon) from its normal attachment site in the top two- thirds of the uterus.

Placenta previa: this condition is when the placenta has attached too low down in the uterus, very close to, or even covering, the cervix.

Ruptured uterus: this can occur during a prolonged or obstructed labour when the uterus, after a long effort to expel the fetus, gives way and tears or bursts.

Ruptured varicose vein in the genital area: this can occur if a vein becomes twisted and dilated. As a result, it can easily be traumatized and bleed, usually during labour and delivery.

Placental abruption

Placental abruption refers to the premature separation of the whole or part of a placenta which is implanted in the upper two-thirds of the uterus. Normally the placenta only separates from the uterus *after* the delivery of the fetus, in the **third stage of labour** (you will learn all about this in the module on *Labour and Delivery Care*). The mother and the baby may die if the place where the placenta pulled away from the wall of the uterus starts to bleed a lot.

■ Why is it likely that placental abruption will result in a lot of bleeding, and why does this pose a serious risk to the mother and the fetus?

Hemorrhagic shock

Placental abruption with external or internal bleeding may lead to **haemorrhagic shock**, in which blood is lost in such large amounts that the blood remaining in the woman's blood vessels is not enough to deliver the nutrients and oxygen required by her body cells.

Acute renal failure

As a result of haemorrhagic shock and the reduced amount of blood flowing to the kidneys, they may stop functioning. As a result, the woman produces very little urine, so toxic material which should have been cleared from her blood by her kidneys and expelled in her urine will build up in her blood. The accumulation of toxic chemicals in her blood rapidly causes her to become severely ill and death follows unless the condition is reversed. This condition is called **acute renal failure** ('acute' means it develops quickly into a life- threatening condition; 'renal' is a medical term referring to anything to do with the kidneys).

Heart failure

If the woman is haemorrhaging, her heart will beat very fast as it tries to pump enough blood to vital body parts like her brain. If the blood loss is severe, her heart may not be able to beat fast enough to compensate for the falling blood volume and the women will develop **heart failure**. This condition is where the heart is unable to pump enough blood to the tissues and as a result death may occur.

Placenta previa

The other common cause for late bleeding is **placenta previa**. In this situation the placenta is attached very close to the cervix, or is even covering it on the next page). As the cervix dilates the edge of the placenta may detach and it starts bleeding. A woman with this condition generally has clear, bright red blood coming from her vagina. The amount may be less than with placental abruption, but in some cases it can be severe and life threatening. The bleeding is often painless, so the woman may not have noticed it happening for a while, for example during the night when she was in bed. The bleeding can be set off by sexual intercourse and it may be recurrent (stopping and starting again).

Ruptured uterus

Bleeding from a **ruptured uterus** may occur from the vagina so you can see the blood flowing out, or the uterus may bleed into the woman's abdomen where the blood won't be visible to you. If a woman who has been a long time in labour develops abdominal pain that is constant and gets worse with movement, or if, the uterus stops its contraction in the effort of expulsing the fetus, or she develops vaginal bleeding with associated state of shock, it is likely that the uterus has ruptured.

Self-Check -7	choose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Choose

Relatives call you to see a woman who is bleeding from the vagina at the 8th month of gestation.

(a) What will you do as the initial assessment?

(b) Will you initiate emergency treatment for this woman and refer her to the nearest higher health facility? Explain why, or why not.

(c) What will you tell the relatives to do?

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-8	Follow up according to FANC protocol

The health records are essential for monitoring and evaluation of activities and routine data collection at Health Post level, and is the basic source of information. Therefore, accurate and complete record-keeping is essential for providing the service information

Poorly written records can lead to doubts about the quality of your' work

Every pregnant woman coming for ANC services in public health institutions is issued with an ANC card now integrated into the maternity case record. This standardized national document is the principal record of pregnancy. It must be completed at each antenatal visit and retained by the mother until delivery, after which it will be kept for final referral.

The maternity case record serves to provide the woman a record of pregnancy, give health providers guidelines on history taken, examination, identifying problems during pregnancy and recording of action taken , enable you to manage follow ups and facilitate record-keeping.

Therefore, whenever providing FANC service to the women, you have to :

- **Maintain complete records**
  - Complete the FANC part of the integrated client card
  - Complete the registration log book
  - Give the appointment card to the client and advise her to carry with her to the hospital or to any appointments site for the necessary health services
  - Keep client records complete with all relevant information.
  - Document findings and management at each visit.

Self-Check -8	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the purpose of health records?
2. What important records are maintained during provision of FANC?

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-9	IV fluid therapy and catheterization the pregnant women

haemorrhaging (losing blood very quickly from her uterus), for reasons already described in Study Sessions 20 and 21; or who cannot **urinate** (pass urine) because there is an obstruction preventing her from emptying her bladder. Usually this is because the pressure of the baby is blocking the urethra – the tube that brings urine down from her bladder.

22.1 Starting intravenous (IV) fluid therapy

22.1.2 When to start IV fluid therapy

A pregnant woman who is haemorrhaging will rapidly develop a state of shock; unless you take action quickly she will soon become unconscious and die.

■ What are the signs of **shock**? (You learned this in Study Session 20.)

□ The woman will look pale, especially inside her lower eyelids and the palms of her hands; her *diastolic* blood pressure (the bottom number) is *below* 60mmHg – sometimes much lower; and her pulse is high, often more than 100 beats per minute.

In order to save her life, you need to know how to start **intravenous** (**IV**) fluid therapy (also known as *IV* fl*uid resuscitation* or *IV infusion*). This means getting special fluids into her blood circulation through a hollow needle called a **cannula** inserted into a vein, to replace the fluid part of the blood she is losing. You should do this before you urgently refer her to a hospital or health centre, where they will give her a blood transfusion. Women in labour, or soon after delivery of the baby, may also haemorrhage (as you will learn in the *Labour and Delivery Care* Module). You should start IV therapy quickly whenever you detect that a woman is haemorrhaging.

Setting up the IV fluid therapy equipment

The first step in the process of initiating IV fluid therapy is to assemble and check the equipment you need . You can place everything on a very clean large dish or locally available tray. We will describe the equipment in

detail after you have looked at Figure .

Preventing infection during IV fluid therapy

The most important precaution is to wash your hands thoroughly with soap and clean water *for at least two minutes* before and after you handle patients or sterile equipment.

Use alcohol to clean the tray or dish for your equipment, or (if not available) use soap and water and make sure it is thoroughly air-dried before using it.

Put on sterile or very clean gloves. You must wear gloves all the time because you will be coming in contact with the patient's blood.

The cannula, the IV tubing and the surgical gloves come sealed in sterile plastic or paper packages. The inside surface of these sterile packages can be opened out and laid flat to serve as a sterile surface for the equipment until you need it.

The patient should be lying down in a comfortable position. Swab her skin with alcohol or soap and water around the area where the cannula will be put into a vein.

Open the sterile package holding the IV tubing and connect it to thefluid infusion bag. Hang the bag on hook in a wall above the patient, or ask someone to hold it up for you. Make sure the tip of the tubing which will be connected to the cannula is kept untouched and sterile.

Selecting the IV cannula

You must choose a cannula with the appropriate size of needle for the required purpose. The size is referred to as the **gauge** of the cannula, and each size is given a number – the larger the number, the bigger the cannula.

Inserting the IV cannula

Once you decide where to insert your IV cannula, apply a tourniquet about three finger-widths above the chosen venipuncture site (Figure 22.3a). Then feel for the vein with your gloved finger (Figure 22.3b). Clean the site with alcohol (Figure 22.3c) or soap and water.

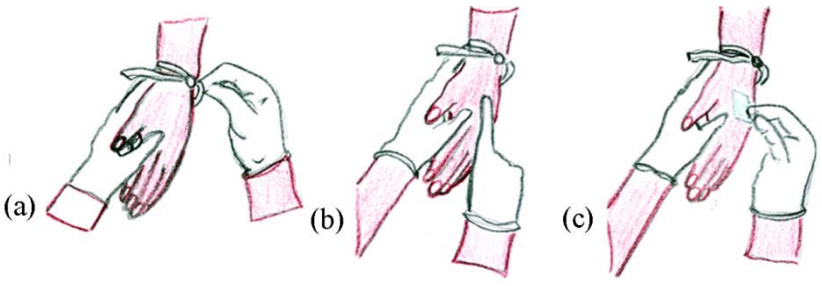


Figure 22.3 Steps in inserting an IV cannula. (a) Tie the tourniquet above the chosen venipuncture site. (b) Feel for a good vein with your gloved finger. (c) Clean the area with alcohol or soap and water.

Then stretch the skin taut and stabilize the vein with your non-dominant hand — meaning keeping it stretched so that it does not move easily and you miss your target with the needle. Pierce the skin with the IV cannula over vein at a 45 degree angle; first you push the needle into the skin and then aim at them vein (Figure 22.4). As you approach the vein, lower the angle to about 10 degrees and insert the cannula into the vein.

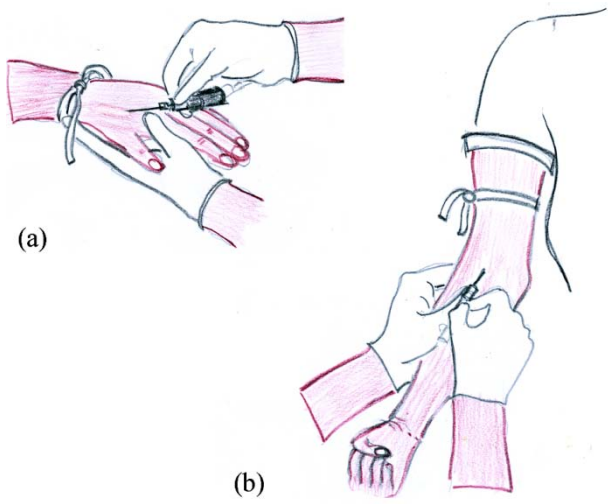


Figure 22.4 Stretch the skin with your non-dominant hand and insert the cannula into a vein (a) in the patient's hand; (b) in the forearm.

22.4.2 Steps in the catheterisation procedure

■ What is the first thing you should do before you open any of the sterile equipment packages?

□ Wash your hands thoroughly with soap and water for at least 15 seconds.

Once your patient is prepared and informed and your equipment is ready, put on the sterile or very clean gloves and clean around the woman's vulva and perineal area with antiseptic solution or alcohol, starting from the urethral opening and swabbing outwards (Figure 22.8a). If you don't have antiseptic solution, clean the area thoroughly with soap and water.

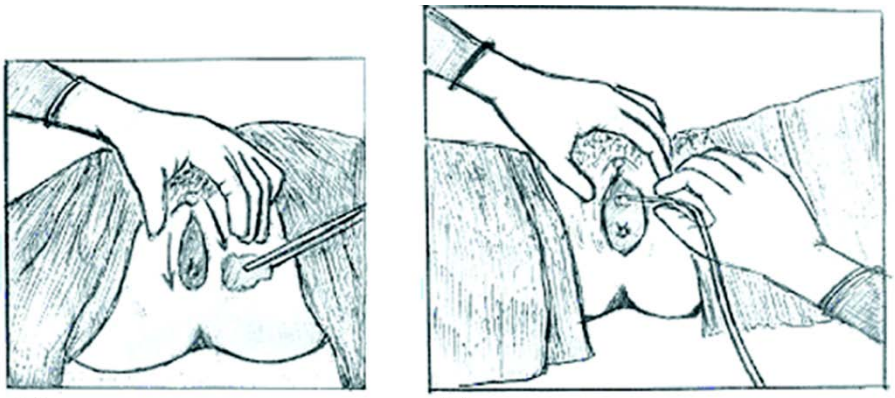


Figure 22.8 (a) Clean the area around the vulva and perineum with an alcohol swab. (b) Gently pull back the labia majora to expose the urethral opening and insert the catheter.

- Why do you think it is important to clean the area starting with the urethral opening and swabbing *outwards*?

- This avoids wiping germs from the perineal area towards the urethral opening; they could be carried inside when the catheter is inserted.

Use your non-dominant hand to carefully pull back the *labia majora* to fully expose the urethral opening. (You may wish to look back at the detailed drawing of the female external genitalia in Figure 3.2 in Study Session 3.) Lubricate the 16FC catheter if you have proper lubricant (don't use anything else) and slowly insert the catheter into the urethral opening (Figure 22.8b).

Once well into the bladder, you will see urine flowing out through the end of the catheter. Use the syringe to inject 5 ml of sterile water into the tube leading to the catheter balloon; this makes the balloon swell up and anchors the catheter in the bladder so it won't pull out when the patient moves (see Figure 22.9). Pull on the catheter very gently to feel the resistance.

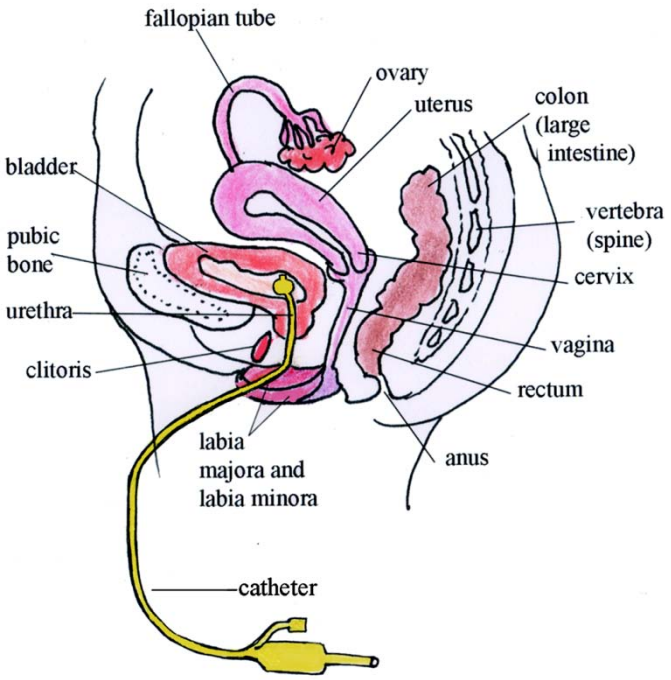


Figure 22.9 Half section of the pelvic cavity of a woman showing a urinary catheter anchored in the bladder by the inflated catheter balloon.

Self-Check -09	**True or false**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Which of the following statements is *false*? In each case, explain what is incorrect.

A. A woman who is in shock due to loss of blood should be referred immediately without beginning IV fluid therapy.

B. Remove and reposition the IV cannula if the veni puncture site swells and is painful.

C. If you don't have a plaster to put over the veni puncture site there is no need to stabilize the IV cannula in the vein.

D. You can stop giving IV fluid if the woman's blood pressure and pulse return to normal and she is no longer bleeding.

Note: **Satisfactory rating - 1 points** **Unsatisfactory - below 1 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-10	Making referrals

LO 5: PROMOTE PMTCT

Instruction Sheet	**Learning Guide 22**

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Definition of terms
- Promote PMTCT

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Gather information for manage antenatal care
- Identify Antenatal eligible's and calculate number of expected pregnant women
- Develop Action plan

Learning Instructions:

25. Read the specific objectives of this Learning Guide.
26. Follow the instructions described below 3 to 4
27. Read the information written in the information "Sheet 1 in page 1 to 7
28. Accomplish the "Self-check 1, in page 8

Information Sheet-1	Introduction to mother to child transmission of HIV

6.1. Introduction to mother to child transmission of HIV

HIV (the **Human Immunodeficiency Virus**) destroys the body's defenses against other infections, which lead to death if the person is not treated appropriately with anti-HIV drugs. HIV is carried in the blood of an infected person and also appears in the genital tract of infected men and women. It can be transmitted from one person to another by unprotected sexual intercourse (sex without a condom) or by transfer of infected blood. The virus can also be transmitted from mother to child during pregnancy, during labour and delivery, and during breastfeeding. It is important for you to counsel pregnant women about prevention of mother to child transmission (PMTCT) of HIV, and to test them for HIV, as a routine part of antenatal care. This study session explains what you need to know about PMTCT so you can discuss it effectively with pregnant women during antenatal visits. We also tell you about a blood test for HIV, which will become available for you to use in women's homes or at your Health Post.

By **prevention of mother to child transmission (PMTCT) of HIV** we mean the set of interventions designed to reduce the transmission of HIV from HIV- infected pregnant women to their babies. Although HIV testing and ounselling *before* pregnancy is important, you should always bear in mind that antenatal care may provide the first opportunity for testing and counselling women in your community regarding HIV. You should consider PMTCT as an essential component of focused antenatal care, as you learned in Study Session 13. It is an entry point for care and support not only for HIV- infected pregnant women, but also for their partners and newborn babies.

Moreover, it will contribute to the attainment of the nationally shared Ethiopian vision of an 'HIV-free generation by the year 2020'. It is Ethiopian national policy to aim to test

all pregnant women who give their **informed consent.** Informed consent means consent given by a person who is being offered medical testing or treatment, and who understands the risks and benefits of the procedures being offered. Even if the facilities and training to achieve the target of 100% of pregnant women HIV tested at Health Post level are not yet available, you need to know about HIV testing, and what treatment will be provided for HIV-infected women. This is so you can explain to the what will happen if they agree to be tested. We should emphasize that it is essential for pregnant women to give *informed* consent

6.2. Promoting PITC to pregnant women Antenatal interventions to reduce mother to child transmission of

Although **mother to child transmission (MTCT)** of HIV can take place during pregnancy, the highest risk of transmission is during labour and delivery. Depending on breastfeeding practices and the duration of breastfeeding, there is also a substantial risk of MTCT of HIV during breastfeeding. Without intervention, it is estimated that 40 out of every 100 babies (40%) born to HIV-infected mothers will be HIV-infected. Table 16.1 shows the riskof transmission during pregnancy, during labour and delivery, and during breastfeeding. Sixty percent of babies of HIV-infected mothers will not acquire the virus at all. However, it is not possible to predict which HIV- infected mother will transmit the virus to her child, so you must provide PMTCT services to *all* HIV-positive pregnant women.

Transmission period	Maximum risk of HIV MTCT without any intervention
During pregnancy (in the uterus)	5–10%
During labour and delivery	10–15%
During breastfeeding after birth	5–10%
Overall risk *without* breastfeeding	15–25%
Overall risk with breastfeeding to 6 months	20–35%
Overall risk with breastfeeding to 18–24 months	30–45%
Total risk of MTCT	**20–40%**

Information Sheet-2	Promoting PITC to pregnant women

In HIV-positive pregnant women, the virus is found abundantly in the birth canal (cervix and vagina) and in the mother's blood. Therefore, if the baby is exposed to vaginal fluid or to the mother's blood during labour and delivery, there is an increased chance of MTCT occurring.

Damage to the barrier between fetal and maternal blood supply in the placenta

Common factors that damage the natural barrier between the fetal and maternal blood supply in the placenta and expose the fetus to maternal blood include:

Infection of the placenta due to malaria, or by bacteria or viruses. Bleeding from the placenta before labour begins (the medical name for this is antepartum haemorrhage). This can occur due to placental abruption (placenta

detaching too early from the uterus) or placenta previa (placenta covering the opening of the cervix).

Injury to the abdomen due to a blow, or by a sharp object which penetrates the abdomen. Vigorous abdominal massage by traditional healers in late third trimester. In some areas of Ethiopia, traditional healers repeatedly massage the abdomen, which they believe will make delivery of the baby easier.

Maternal malnutrition, especially deficiency of vitamin C, vitamin A, or the mineral zinc. Cigarette smoking, which weakens the fetal membranes surrounding the unborn baby and increases the chance of developing placentalabruption.

Core PMTCT interventions

HIV testing and counselling. You will learn more about this later in this study session. Giving **antiretroviral drugs (ARVs**) to HIV-positive pregnant women. These drugs act against viruses such as HIV which belong to a virus 'family' called retroviruses. They are given either as part of **antiretroviral therapy (ART)** for women who are eligible to start treatment for their own HIV infection, or as **antiretroviral prophylaxis** (**ARP)** to pregnant women who are not eligible to start antiretroviral treatment at this time. Giving pregnant women ARV drugs either before or during pregnancy benefits them directly, but it also helps to prevent HIV transmission to the baby. According to the 2007 National PMTCT of HIV Guidelines for Ethiopia, ARP should be started at 28 weeks of gestation, but ART can be started at any time provided that the woman is eligible. (You will learn in detail about eligibility criteria for ART in the Communicable Diseases Module).

Safe delivery practices. These are taught in the Module on Labour and Delivery Care. Safe baby feeding practices. You will learn about these in the Module on Integrated Management of Newborn and Childhood Illness.

Antenatal interventions to reduce mother to child transmission of

Antiretroviral prophylaxis (ARP) for prevention of mother to child transmission of HIV involves giving an antiretroviral drug to the mother starting at 28 weeks of gestation, again to the mother during labour and delivery, and to her baby immediately after its birth. The drug reduces the risk of transmission of HIV to the baby. It is different from the antiretroviral therapy (ART) given to the mother to treat her own HIV infection, depending on her eligibility criteria.

If an HIV-positive mother prefers and insists to deliver her baby at home, the current ARP drug that can be made available to her is called Nevirapine.

When you know that an HIV-infected woman is near to giving birth at home,if you are authorised and trained to do so, you should give her a single dose of Nevirapine (200 mg) to take when true labour starts. It is better if you make the diagnosis of true labour and administer the drug yourself.

baby should receive a single dose of Nevirapine within 3 days of being born. You should give this drug directly based on the baby's weight. You will learn how to do this in the *Communicable Diseases* Module in this curriculum.

For those who decide to give birth in a health centre or hospital, three type of ARP drugs need to be taken by the labouring mother as prophylaxis (AZT + Neverapine + Lamuvudine). The woman and her husband have to know that the three ARP drugs administered during labour provide better protection for the baby. Additionally, the baby will be given two drugs (AZT + Lamuvudine) for 1–4 weeks. Therefore, you have to encourage HIV-positive women to give birth in health centres or hospitals. The ARP drugs reduce the risk of MTCT of HIV to the baby, but they don't treat the mother's HIV infection and don't improve her health. In some cases, the pregnant woman can start ART drug treatment for her HIV infection before she gives birth (if she is eligible). Therefore, you should try to encourage all HIV-infected pregnant women to go to the nearest health centre to check if they can start ART that will also protect their babies.

Routine HIV testing during pregnancy

It is advisable to carry out HIV testing on all pregnant women. The test is voluntary and, after receiving pre-test information, the woman has the right to refuse testing (as described later, in Section 16.5.2). A signed consent form is not needed in Ethiopia to conduct the HIV test — but obtaining clear verbal consent is essential.

The World Health Organization (WHO) and the health services in many countries, including Ethiopia, promote a policy of **provider-initiated HIV testing and counselling**. This means that when trained to do so, you should offer and provide HIV testing and counselling *routinely* as part of your maternal and child health services. You should not wait for the woman to ask for it (client-initiated HIV testing and counselling). If you have not been trained in these competencies, you should offer pre-test education and refer the woman to the nearest health centre, or inform her of a date for outreach testing.

Detecting HIV infection using blood tests

HIV infection can be detected in the blood by three tests. These include the **HIV Rapid Test** (or **HIVRT**), which is the only test which can be done in a person's home or at a Health Post. The other two tests (the Western blot test and enzyme immunoassay test), can only be done at a higher level health facility. As it is so easy to use, the HIVRT is the most commonly used HIV test in Ethiopia. It involves taking a very small sample of blood from the person's finger by pricking it with a sterile instrument, and taking a drop of blood to place onto a test kit (Figure 16.1). You will learn how to conduct the test and read the result in the Module on *Communicable Diseases.* The principle behind all the various HIV testing kits that have been develop to screen blood is the same.

Information Sheet-3	**Introduction to mother to child transmission of HIV**

There are two contrasting approaches to counselling pregnant women about the need for HIV testing: they are known as 'opt-in' and 'opt-out'. The **opt-in approach** involves counselling a woman for about 40 minutes in a private room, to inform her about everything she wants to know, so she can agree to be tested with informed consent (i.e. opt-in, or accepted by the woman). Of course, at the end of the counselling session, she may refuse to have the test.

Opt-in was practised until 2006 in Ethiopia and is still the approach in many other countries.

The **opt-out approach**, on the other hand, involves informing the woman that she is about to have an HIV test. The main aim of the opt-out approach is to get as many women (and men) as possible tested for HIV infection. The differences between the opt-in and opt-out approaches are summarised in Table 16.2. As you can see, the opt-out approach is much more successful in achieving high test coverage than was the case with opt-in.

16.6.2 Counseling women who refuse HIV testing

There are some crucial points about the opt-out approach that you need to understand. First, the woman can refuse the test — she can opt-out. Second, if the HIV test result is positive, the woman will be given post-test counselling. Third, women who opted-out (refused) will be provided with a longer session of counselling, which starts by letting them express their concerns and reasons for objection to the test, so you can address their specific questions and worries.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

A woman has sexual intercourse with a man who is HIV-positive. She is tested for HIV infection two weeks after this sexual intercourse. Her HIV test is negative.

(a) Should you trust this result? Give reasons for your answer.

(b) What should you do next?

Note: **Satisfactory rating - 2 points** **Unsatisfactory - below 2 points**

Score = _____

Rating: _____

Name: _____ Date: _____

LO 7: Register and document antenatal records

Instruction Sheet	Learning Guide 23

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

7.1. Antenatal care card and registration book
7.2. Completing antenatal care card and registration book
7.3. Updating antenatal care events
7.4. Reporting and communicating antenatal care activities
7.5. Monitoring implementation plan

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Take general information (name, parity, etc) from the antenatal client using standard format and document of FMOH.
- Take Complaints of the current pregnancy from the antenatal client according to the procedure of FMOH.
- Collect problems related to previous pregnancy from client and documents based on the standard assessment technique

Learning Instructions:

29. Read the specific objectives of this Learning Guide.
30. Follow the instructions described below 3 to 6.
31. Read the information written in the information “Sheet 1, Sheet 2, and Sheet 3 **in page 1, 10 and 47** respectively.

32. Accomplish the “Self-check 1, Self-check t 2, and Self-check 3 **in page 9, 46 and 48** respectively
33. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, ” **in page 49**
34. Do the “LAP test” **in page –51**

Information Sheet-1	Antenatal care card and registration book

Information Sheet-2	**Completing antenatal care card and registration book**

Information Sheet-3	**Updating antenatal care events**

Information Sheet-4	**Reporting and communicating antenatal care activities**

Information Sheet-5	Monitoring implementation plan

No	Name	Qualifica	Educational	Region	E-mail

List of Reference Materials

1. FMOH, Management protocol on selected obstetrics topics, January, 2010 Addis Ababa, Ethiopia
2. FMOH, Antenatal Care, Part 1, Blended Learning Module for the Health Extension Programme, Adds Ababa, Ethiopia 2007
3. FMOH, Health Education, Part 2, Blended Learning Module for the Health Extension Programme, Adds Ababa, Ethiopia 2007

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Annex