

INTERMITTENT PREVENTIVE TREATMENT (IPT) OF MALARIA IN PREGNANCY

TRAINING MANUAL FOR HEALTH PROVIDERS



FACILITATORS GUIDE

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EXECUTIVE SUMMARY

Controlling the enormous health impact associated with malaria has become a global priority. Prevention of the serious health impact of malaria during pregnancy, represents one of the most imminently achievable public health goals of the Ghana Roll Back Malaria (RBM) Program.

The deleterious effects of malaria infection during pregnancy on both maternal and foetal health are caused chiefly by *Plasmodium falciparum*. In areas of epidemic and low (unstable) malaria transmission, adult women have no significant level of immunity and will develop clinical illness when parasitaemic. Pregnant women with no immunity are at risk for dying from severe malarial disease and/or for spontaneous abortion, premature delivery or stillbirth.

In a high- malaria transmission zone like Ghana, adult women are semi-immune, and most malaria infections in pregnant women are asymptomatic. These asymptomatic infections contribute invariably to the development of severe anaemia in the mother, resulting in an increased risk of maternal mortality. The impact on the foetal's health results from maternal infection mainly during the second half of pregnancy. Malaria infection of the placenta and maternal anaemia contributes to low birth weight (LBW), which results in higher peri-natal mortality and in impaired child development.

Despite the toll that malaria exacts on pregnant women and their babies, for various reasons malaria control during pregnancy has not received broad programme support in the past. First, the fact that malaria infection in women is largely asymptomatic in areas of greatest burden mandates a preventive approach, which has usually been given low priority. In addition, the control approach to date, weekly chloroquine (CQ) chemoprophylaxis has not been fully supported because of implementation difficulties related to delivery and compliance, as well as concerns about the promotion of drug resistance. The evolution of CQ resistance has posed yet an additional impediment to control efforts due to the limited armamentarium of antimalarial drugs which have both demonstrated efficacy and safety during pregnancy.

The lack of effective linkages between malaria control and antenatal care programmes has also limited the success of efforts to control malaria during pregnancy. The promising news is that during the past decade more effective control approaches have been identified to address these limitations. The African Summit on Roll Back Malaria (RBM) in April 2000 adopted the Abuja Declaration, in which regional leaders committed to achieving 60% coverage of malaria prevention of pregnancy.

In order to reach this target, this training manual has been produced and recommends a three-pronged approach— use of intermittent preventive treatment (IPT), insecticide-treated nets (ITN), and case management of malaria illness— to reduce the burden of malaria infection in pregnancy. More than 90% of pregnant women attend antenatal clinic (ANC) at least once during their pregnancy, making a clinic-based prevention approach feasible.

The World Health Organisation (WHO) 20th Malaria Expert Committee designated IPT using an efficacious, preferably single-dose, anti-malarial drug as the preferred approach to reduce the adverse consequences of malaria during pregnancy. IPT involves the administration of full,

curative treatment doses of an effective ant malarial drug at predefined intervals during pregnancy, beginning after 16 weeks or after quickening..

IPT provides a highly effective base for programmes through use of safe and effective anti malarial drugs in treatment doses, which can be linked to antenatal clinic visits. The potential of IPT to attain high levels of programme coverage and its benefit in reducing maternal anaemia and Low Birth Weight (LBW) makes it a preferred strategy to the failed strategy of weekly Chloroquine chemoprophylaxis.

ITN use during pregnancy also provides significant protection against maternal anaemia and LBW. In addition, ITN use benefits the infant who sleeps under the net with the mother by decreasing exposure to malaria infection and subsequent severe disease. Priority shall therefore be placed on developing ANC-based programmes that support both IPT and ITN's, along with other essential elements of the antenatal care package (deworming, haematenics etc.), as well as malaria diagnosis and treatment.

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ABBREVIATIONS AND ACRONYMS

AIDS	-	Acquired Immune Deficiency Syndrome
ANC	-	Antenatal Care
DOT	-	Directly Observed Treatment
EDD	-	Expected Date of Delivery
FHR	-	Foetal Heart Rate
Hb	-	Haemoglobin
HIV	-	Human Immunodeficiency Virus
IPT	-	Intermittent Preventive Treatment
ITN	-	Insecticide Treated Net
MIP	-	Malaria in Pregnancy
OPD	-	Out Patients' Department
SP	-	Sulfadoxine-Pyrimethamine
STI	-	Sexually Transmitted Infection
TT	-	Tetanus Toxoid
WHO AFRO	-	World Health Organisation Africa Regional Office

INTRODUCTION

Background

Malaria is an enormous global health problem affecting mainly young children and pregnant women. Malaria infection during pregnancy poses substantial risk to the mother, her foetus, and the neonate because pregnant women appear to be less capable of coping with and clearing malaria infections. The adverse malaria impact in pregnant women is largely due to *Plasmodium falciparum*.

Despite the toll that malaria exacts on pregnant women and their babies, malaria control during pregnancy has not received adequate programme support. This is because malaria infection in women is largely asymptomatic in hyper endemic countries like Ghana and therefore generally not recognised as a health risk. The lack of effective linkages between malaria control and antenatal care programmes has also limited the success of malaria control during pregnancy.

In Ghana, among pregnant women, malaria accounts for 13.8% of OPD attendance, 10.6% of admissions and 9.4% of deaths. The current anti-malaria drug policy promotes chloroquine chemoprophylaxis throughout pregnancy and six weeks post-partum. The compliance is low, around 11.6%. The low compliance is **due to unfounded fear on the part of pregnant women that chloroquine causes abortion, the unpleasant itching due to chloroquine, the bitter taste and the fact that they have to swallow too many tablets.** This makes malaria prevention ineffective. This is coupled with the fact that resistance to chloroquine is becoming increasingly high.

WHO AFRO recommends a multi-pronged approach to reduce the burden of malaria infection among all pregnant women.

- Insecticide-treated nets (ITN),
- Use of Intermittent Preventive Treatment (IPT) and
- Case management of malaria illness

Use of insecticide-treated nets (ITN)

Sleeping under an ITN is probably the most effective method for preventing mosquito bites because mosquitoes bite at night when the pregnant woman is asleep. ITNs prevent mosquito bites by repelling them or killing them if they land on the net.

Use of Intermittent Preventive Treatment (IPT)

Intermittent preventive treatment (IPT) of malaria during pregnancy is based on the assumption that every pregnant woman living in areas of high malaria transmission has malaria parasites in her blood or placenta, whether or not she has symptoms of malaria (see Unit 3).

Case management of malaria illness

Despite preventive measures, some pregnant women will still become infected with malaria. These women should adequately be treated to prevent them getting complicated malaria (see Unit 4). Complicated malaria is more difficult to manage and, therefore, requires immediate referral.

In response to the WHO recommendation the Ghana Malaria Control Programme and the Reproductive and Child Health Unit with support from partners have developed guidelines/strategy for the implementation of IPT.

The general Objective of the strategy is to contribute to the reduction of malaria related maternal and perinatal morbidity and mortality.

The specific **Objectives** are:

- To reduce malaria episodes among pregnant women attending ANC services
- To contribute to the reduction of maternal anaemia amongst pregnant women attending ANC services
- To contribute to the reduction of low birth weight amongst pregnant women attending ANC services

The components of the strategy are:

- Integrating IPT with the following package of interventions within the Safe Motherhood programme.
 - Iron and folate supplementation
 - Deworming
 - Case management
 - ITN
- Increasing awareness at all levels about integrated strategies for control and prevention of malaria during pregnancy
- Ensuring that all health facilities/staff in the country are fully equipped to provide IPT with SP according to national guidelines.
- Regularly assessing the efficacy of the drugs used for IPT.
- Regularly assessing the effectiveness of IPT including monitoring side effects.

Fortunately, more than 90% of pregnant women in Ghana attend antenatal clinic at least once during their pregnancy, making this clinic-based prevention approach feasible.

OTHER WAYS TO PREVENT MALARIA

Although ITNs and IPT are the most effective ways to prevent malaria in pregnant women, other means of preventing infection are also available. It is important to educate pregnant women to prevent malaria by taking the following additional actions, as appropriate, to minimize contact with mosquitoes:

- Cover doors and windows with wire or nylon mesh/nets to prevent mosquitoes from entering the house.
- Avoid going outside after dark or when out in the evening:
 - Wear protective clothing that covers the arms and legs.
 - Apply chemical mosquito repellent cream on exposed skin surfaces.
- Use mosquito coils that release smoke (particularly when sitting outdoors). The smoke keeps mosquitoes away or kills them when they fly through it.
- Spray rooms with insecticide before going to bed every evening. Because the sprays are only effective for a few hours, this method should be used in combination with other measures, such as screening doors and windows.
- Physically kill mosquitoes in the house by swatting them.
- Manage the environment by ensuring that breeding sites of the anopheles mosquito are eliminated or reduced.

How to use the manual

This manual has been written for the purpose of training antenatal care providers in IPT. The manual has five units, which will take 20 hours to complete. Each unit has a number of hours assigned to it and it is expected that trainers will spend 18 hours on the 5 modules and 2 hours on the introduction and to conduct a pre-test and post-test.

UNIT 1

MALARIA IN PREGNANCY

This unit describes malaria with special reference to pregnant women and their unborn babies.

LEARNING OBJECTIVES

At the end of this unit, participants will be able to:

1. Describe how malaria is transmitted.
2. Identify the group of people at highest risk of malaria infection.
3. List the effects of malaria on pregnant women and their unborn babies.
4. HIV/AIDS and Malaria in pregnancy
5. Describe control strategies for malaria in pregnancy.

TEACHING / LEARNING METHODS:

- Lecturette
- Discussion
- Role Play

INTRODUCTION

Malaria is a disease caused by a group of parasites called *Plasmodium*. Of the four types of *Plasmodium* that affect humans, only one, *Plasmodium falciparum*, is of importance in Ghana. It is found in the anopheles mosquito.

The anopheles mosquito breeds in clean and calm water collections therefore, breeding increases dramatically in the rainy season because many artificial water collections occur; -

- Domestic sources- Collection of water in bottles, tins, coconut shells, buckets, tyres etc.
- Water sources/irrigation sites- Wells, ponds, dams, water tanks, paddy fields etc.
- Construction sites- Water on the concrete slabs (used for curing) collected in tanks, collected in and around the construction site owing to blockage of drains.

It is very important to destroy these artificial water collections or to keep them properly covered to prevent breeding

1.1: HOW MALARIA IS TRANSMITTED

The infected female mosquitoes from the *Anopheles genus* spread the malaria parasite. When the infective female Anopheles mosquito bites its victim, it injects saliva that contains parasites (sporozoite) into the human blood. The parasites are then carried to the human liver

cells. About 1 to 2 weeks later, the parasites are released into the blood, at which time the person starts showing symptoms of malaria. The parasites then attack red blood cells leading to breakdown of the cells, which then may lead to anaemia.

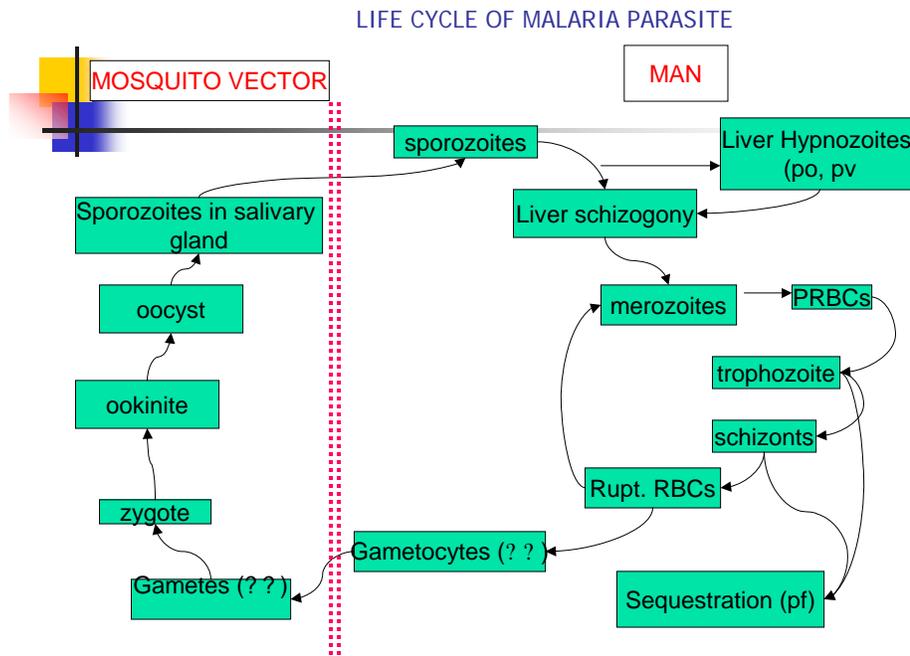


Figure 1:

1.2: POPULATIONS MOST AFFECTED BY MALARIA

Malaria is a public health problem throughout the world. Of the estimated 300 million cases each year worldwide, more than 90% occur in Sub-Saharan Africa. Young children and pregnant women are two groups of people most at risk of infection. Other people who are also at a greater risk of being infected with the malarial parasite include immigrants, refugees, people with sickle cell anaemia or HIV/AIDS and visitors from areas with little or no malaria (low malaria transmission areas) who come to visit or live in high malaria transmission areas.

- ✓ Every hour 4 persons in Ghana die from malaria of which two are children under five (2002)
- ✓ Among pregnant women, malaria accounts for 13.8% of OPD attendance and 10.6% of admissions
- ✓ Women in their first or second pregnancies are more at risk
- ✓ Pregnant women are twice more likely to become infected than non-pregnant women
- ✓ Malaria contributes 9.4% of maternal deaths

1:3a: EFFECT OF PREGNANCY ON MALARIA

During pregnancy, a woman's immunity is reduced with effect that she experiences:

- More frequent episodes of malaria
- Severe forms of malaria

1.3B: EFFECT OF MALARIA ON A PREGNANT WOMAN

Millions of pregnancies occur among women living in malaria-endemic regions of Africa, yet only a fraction of these women have access to effective interventions. In Africa, anaemia caused by malaria is estimated to cause up 10,000 maternal deaths per year.

Although a pregnant woman with malaria parasites in her blood may not have symptoms of malaria, the parasites can still affect her health and that of the unborn baby. When the parasites get into the placenta, they interfere with the transfer of oxygen and nutrients from the mother to the unborn baby. When this happens to the mother, it increases her risk of having:

- Maternal anaemia
- Spontaneous abortion/ preterm birth
- Complicated malaria (severe malaria)
- Placental infection

Pregnant women are at a higher risk of malaria infection if they are:

- In their first or second pregnancy
- Adolescents
- Immigrants/visitors from areas of low malaria transmission
- Infected with HIV/AIDS
- Sickle cell clients

1.3c: EFFECT OF MALARIA ON THE UNBORN BABY

Malaria parasites affect the placenta leading to;

- Foetal anaemia
- Pre-maturity
- Low birth weight
- Stillbirth
- Rarely Congenital malaria

- ✓ Malaria in pregnancy is associated with the following serious complications;

 - Maternal anaemia
 - Spontaneous abortion/pre-term birth
 - Complicated malaria (severe malaria)
 - Pre-maturity
 - Low birth weight

1.4: INTERACTION BETWEEN HIV/AIDS AND MALARIA DURING PREGNANCY

Studies have shown that HIV/AIDS infection during pregnancy:

- Reduces a woman's resistance to malaria
- Causes malaria treatment to be less effective
- Causes increased risk of malaria-related problems during pregnancy
- Increases risk of intrauterine growth restriction leading to low birth weight
- Increases the risk of pre-term birth
- Increases the risk of maternal anaemia

HIV-infected women can transmit the virus to the baby during pregnancy, childbirth, or through breastfeeding. Malaria infection can increase the risk of transmission of HIV from the mother to the baby. Newborns infected with HIV have a lower resistance to malaria.

Asymptomatic malaria can exacerbate the common mild anaemia of pregnancy, and recrudescence of malaria may be more frequent because of the immune suppression normally experienced by pregnant women. Placental malaria may be associated with an increased frequency of mother-to-child HIV transmission. Malaria during pregnancy is a particularly dangerous condition, since any underlying anaemia can be dramatically amplified by red blood cell destruction.

More commonly however, malaria is asymptomatic during pregnancy and not always easily diagnosed. Research has shown that even such sub-acute malaria can contribute to anaemia and placental infection. A clinical trial in Kenya reported that presumptive treatment of all pregnant women in endemic malarial areas with only two doses of Sulfadoxine-Pyrimethamine (SP) reduced the incidence of anaemia among first-time mothers by 39%. Another study observed a reduction in the incidence of low birth-weight babies from 14% when only symptomatic mothers were treated (fever case management) to 8% when all mothers were treated presumptively. (Steketee; Shulman)

1.5: STRATEGY FOR CONTROLLING MALARIA IN PREGNANCY

The general objective of the strategy is to contribute to the reduction of malaria related maternal and perinatal morbidity and mortality.

The specific objectives are:

- To reduce malaria episodes among pregnant women attending ANC services
- To contribute to the reduction of maternal anaemia among pregnant women attending ANC services
- To contribute to the reduction of low birth weight among pregnant women attending ANC services.

The components of the strategy are:

- Integrating IPT with the following package of interventions within the Safe Motherhood programme, i.e.
 - Iron and folate supplementation
 - Deworming
 - Case management
 - ITN
- Increasing awareness at all levels about integrated strategies for control and prevention of malaria during pregnancy.
- Ensuring that all health facilities/staff in the country are fully equipped to provide IPT with SP according to national guidelines.
- Regularly assessing the efficacy of the drugs used for IPT.
- Regularly assessing the effectiveness of IPT including monitoring side effects.

The WHO AFRO Strategic Framework approach for malaria control during pregnancy, recommends the multi-pronged approach stated below:

1. Use of insecticide-treated nets (ITN)

Sleeping under an ITN is probably the most effective method for preventing mosquito bites because mosquitoes bite at night when the pregnant woman is asleep. ITNs prevent mosquito bites by repelling them or killing them if they land on the net.

2. Use of Intermittent Preventive Treatment (IPT)

Intermittent preventive treatment (IPT) of malaria during pregnancy is based on the assumption that every pregnant woman living in areas of high malaria transmission has malaria parasites in her blood or placenta, whether or not she has symptoms of malaria (see Unit 3).

3. Case management of malaria illness

Despite preventive measures, some pregnant women will still become infected with malaria. These women should adequately be treated to prevent them getting complicated malaria (see Unit 4). Complicated malaria is more difficult to manage and, therefore, requires immediate referral.

ROLE-PLAY: MALARIA DURING PREGNANCY

Directions:

Two participants in your group will assume (or be assigned) roles. One will be a midwife, and the other a pregnant woman. Both participants taking part in the role-play and observers should spend a few minutes reading the background information and prepare for the exercise so that all can participate in the discussion

Scenario

Akua Mansa, an eighteen-year-old primigravida who is 24 weeks pregnant has come to the antenatal clinic to register. She tells you that she heard that malaria could cause problems during pregnancy and wants more information about this.

Discussion

Discuss the key issues about malaria in pregnancy with this woman.

Ask participants to give reasons for their answers. This would help them to understand the issues.

Possible Responses

1. Pregnant women are more prone to malaria because their immunity is reduced.

2. Pregnant women with malaria parasites may have no symptoms

Reason: Malaria parasites can exist in the blood without producing symptoms in the person

3. Malaria causes maternal anaemia

Reason: Malaria parasites breaks down red blood cells leading to anaemia (which if Severe can cause maternal death)

3. Malaria can lead to pre-term birth or low birth weight

Reason: when malaria parasites get into the placenta, they interfere with oxygen and nutrients from the mother to the unborn baby leading to low birth weight

Babies. The fever together toxins released by the parasites can cause pre-term labour and birth.

4. HIV-positive women have a higher risk of getting malaria than HIV-negative women

Reason: HIV infection makes it easier for a woman to get malaria because of the immuno suppression.

UNIT 2A

FOCUSED ANTENATAL CARE¹

This unit describes the components of Focused Antenatal Care (ANC) for pregnant women in malaria-endemic countries including Ghana, there are guidelines on how it can be organized and delivered most effectively.

LEARNING OBJECTIVES

After completing this unit, learners will be able to:

1. Explain what focused ANC is
2. Describe the three main goals of Focused ANC.
3. Explain the frequency and timing of ANC visits.

TEACHING AND LEARNING METHODS

- Lecturette
- Group discussion

INTRODUCTION

ANTENATAL CARE: Traditional Approach

The traditional approach to antenatal care, based on European Models developed in the early 1900s, assumes that more frequent ANC is better and thus quantity of care is emphasized rather than the essential elements of care.

To a large extent, developing countries have adopted the antenatal care (ANC) model of developed countries with little or no adjustment for endemic diseases or epidemiological considerations. Other challenges with the traditional approach were that visits are often irregular, with long waiting time, little feedback to (or real communication with) mothers and little education to mothers on the pregnancy.

For some time now, ANC has become routine and ritualistic. It focuses on risk assessment and not detection and management pregnancy-related complications.

Findings of evidence-based research on practices of routine care provided during ANC, has been found to be wasteful or misleading. As a result of this there is the need for a transition in our ANC paradigm.

The key to effective ANC is to use our powers of observation to really look at the condition of each pregnant woman, using simple and effective tests, and treating existing problems on the spot rather than trying to predict who is likely to have a complication.

¹ Adapted from: Gomez P and B Kinzie. October 2002. *Basic Maternal and Newborn Care: Section Two: Antenatal Care*. Draft.

2a.1: FOCUSED ANTENATAL CARE

Focused ANC is an individualized, client-centred, comprehensive ante-natal care and emphasizes on disease detection rather than risk assessment.

2a.2: GOALS OF FOCUSED ANC

Focused antenatal care visits concentrate on interventions aimed at the following goals:

- Detection and prevention of complications that might affect a woman's pregnancy
- Counselling and health promotion to encourage good health throughout pregnancy and to increase a woman's ability to identify possible problems
- Preparation for birth and possible complications

Focused ANC:

- **Emphasizes quality of visits over quantity of visits** and recognizes that frequent visits do not necessarily improve pregnancy outcomes.
- **Realises that the previous concept of dividing pregnancies into “high risk” and “low risk”** does not hold because every pregnant woman is at risk of complications and should, therefore, receive the same basic care—including monitoring of complications.
- **Relies on evidence-based, goal-directed** interventions that are appropriate to the gestational age of the pregnancy, and specifically address the most prevalent health issues affecting women and newborns. In areas with a high prevalence of malaria, such interventions include the detection, prevention, and treatment of malaria and its complications.
- **Emphasises that care is given by skilled healthcare providers**—that is, midwives, doctors or other qualified healthcare providers who have the knowledge, skills, and attitudes required to work effectively toward accomplishing the goals of ANC, as described below.

2A.2A:EARLY DETECTION AND PREVENTION OF COMPLICATIONS

Although most pregnancies are normal, an important goal of focused ANC is the early detection and prevention of complications pregnancy. Focused ANC promotes targeted assessment, during which the skilled provider takes history, examines and carries out relevant investigations. .

Focused ANC promotes the implementation of safe, simple, and cost-effective interventions. Screening for symptoms and signs of malaria is a routine part of focused antenatal Care. In addition the following are also ensured;

- ❖ Intermittent Preventive Treatment (IPT) with Sulfadoxine Pyrimethamine (SP)
- ❖ Tetanol toxoid immunization to prevent tetanus
- ❖ Iron/Folate supplementation to prevent anaemia.
- ❖ Presumptive treatment for hookworm infestation

2A.2b: COUNSELLING AND HEALTH PROMOTION

Focused ANC promotes making time to discuss important health issues. The skilled provider should ensure that the woman and her family have the knowledge they need to make informed decisions during pregnancy, childbirth, and the postpartum period. In addition, [there should be sufficient guidance in applying that information in their particular situation.](#)

The health education topics that should be discussed during the antenatal clinics include;

- Dangers signs in pregnancy
- Diet/Nutrition/Anaemia/Deworming
- Hygiene
- Rest/Exercise
- Husband/Support Person involvement
- Medications (immunizations)
- Birth Preparedness and Complication Readiness
- STI Prevention/Condom Use/Safer sex
- Voluntary Counselling and Testing
- Labour and Delivery
- Baby Care
- Breastfeeding and Breast care
- Family Planning Motivation
- Promote use of Insecticide Impregnated Materials (ITMS)
- Iron Folate Supplementation-Counselling

2A.2c: BIRTH PREPAREDNESS AND COMPLICATION READINESS

As part of focused ANC, the skilled provider assists the woman and her family in developing a **birth plan** to ensure that necessary preparations for normal childbirth are made well in advance of the expected date of delivery. In addition, because 15% of all pregnant women develop life-threatening complications and most of these complications cannot be predicted. Every woman and her family must be prepared to respond appropriately in an emergency situation. Therefore, the birth plan should also include arrangements for **complication readiness**.

(This topic is discussed in more detail in Unit 2B.)

We must shift our ANC approach and;

- ❖ Recognise that “Every Pregnancy is at Risk”
- ❖ Ensure that we use ANC as an opportunity to detect and treat existing problems
- ❖ Ensure that services are available to respond to obstetric emergencies when they occur
- ❖ Prepare women and their families for the eventuality of an emergency

2A.3: SCHEDULING OF VISITS

It is recommended that a pregnant woman receive at least three (3) doses of SP as IPT. The first dose of SP should be taken after quickening or after sixteen (16) weeks. The subsequent doses should be taken at least one month apart.

2A.4: RECORD KEEPING FOR ANTENATAL VISITS

Record keeping is an important tool in the provision of antenatal care. Accurate record keeping is necessary to adequately monitor the woman's condition and to provide continuity of care. It is also necessary for planning and evaluation of care, and for effective communication among healthcare providers in the event of a referral. A healthcare facility should establish and maintain a record for every woman and newborn that receives care.

(This topic is discussed in more details under Unit 5B)

Table 1. Components of Antenatal Care Visits

ACTIVITY	FIRST VISIT (16 weeks*)	SECOND VISIT (24–28 weeks)	THIRD VISIT (32 weeks)	FOURTH VISIT (36 weeks)
ASSESSMENT	<p>Conduct a thorough assessment:</p> <ul style="list-style-type: none"> • Ask about problems/danger signs • History: menstrual and contraceptive history, present pregnancy, obstetric history, medical and surgical history, family history, STI history, Drug history, lactation history • Physical examination: general well-being; blood pressure; breasts, pelvis, abdomen, genitals • Testing: haemoglobin levels Hb, sickling, electrophoresis, VDRL, Blood group and RH, Stool and Urine R/E <p>To:</p> <ul style="list-style-type: none"> • Detect s/s of complications or diseases • Calculate EDD/gestational age • Determine if normal progress 	<p>Conduct a targeted assessment:</p> <ul style="list-style-type: none"> • Ask about problems/danger signs • History: problems/changes since last visit • Physical examination: general well-being, blood pressure, abdomen (including FHR), other elements as indicated • Testing: as indicated to: • Detect s/s of malaria and other complications or diseases • Confirm EDD and normal progress 	<p>Conduct a targeted assessment:</p> <ul style="list-style-type: none"> • Ask about problems/danger signs • History: problems/changes since last visit • Physical examination: general well-being, blood pressure, abdomen (including FHR), other elements as indicated • Testing: as indicated to: • Detect s/s of malaria and other complications or diseases • Confirm EDD and normal progress 	<p>Conduct a targeted assessment:</p> <ul style="list-style-type: none"> • Ask about problems/danger signs • History: problems/changes since last visit • Physical examination: general well-being, blood pressure, abdomen (including FHR and foetal presentation), other elements as indicated • Testing: as indicated to: • Detect s/s of malaria and other complications or diseases • Confirm EDD and normal progress • Identify mal-presentation
CARE PROVISION	<ul style="list-style-type: none"> • Appropriate care/referral for problems identified • Voluntary counselling and testing for HIV • Development of birth plan (including review of danger signs and complication readiness) • Initiation of preventive measures: • If after 16 weeks, first dose of IPT • TT and iron/folate if appropriate • Health messages/counselling on issues such as malaria prevention through IPT and ITNs, nutrition, common discomforts 	<ul style="list-style-type: none"> • Continuation or revision (if appropriate) of plan of care • Appropriate care/referral for problems identified • Further development/review of birth plan • Continuation of preventive measures: • Dose of IPT if appropriate • TT and iron/folate if appropriate • Health messages/counselling continued on issues such as malaria prevention through IPT and ITNs, STI prevention 	<ul style="list-style-type: none"> • Continuation or revision (if appropriate) of plan of care • Appropriate care/referral for problems identified • Further development/review of birth plan • Continuation of preventive measures: • Dose of IPT if appropriate • TT and iron/folate if appropriate • Health messages/counselling continued on issues such as malaria prevention through IPT and ITNs, hygiene 	<ul style="list-style-type: none"> • Continuation or revision (if appropriate) of plan of care • Appropriate care/referral for problems identified • Finalization of birth plan • Continuation of preventive measures: • Dose of IPT if appropriate • TT and iron/folate if appropriate • Health messages/counselling continued on issues such as malaria prevention through IPT and ITNs, family planning, newborn care, signs of labour
RECORD	Before each visit, review records from the last ANC visit if available. During the visit, record findings, care provided, and date of next ANC visit.			

*Or when the woman first thinks she is pregnant

UNIT 2B

COMMUNICATION AND COUNSELLING

This unit describes communication and counselling in focused antenatal care. Poor communication is the root of a large number of organisational problems. Effective communication is an essential component of organizational success whether it is at the interpersonal; inter group, intragroup, organizational, or external levels.

LEARNING OBJECTIVES

After completing this unit, learners will be able to:

1. Describe the basic principles of communication.
2. Explain how to develop communication skills.
3. Describe the essential elements of a birth plan that includes complication readiness.
4. List the important topics necessary for promoting health in the pregnant woman

TEACHING / LEARNING METHODS:

Lecturette
Group Discussion
Case Study
Role-play
Exercises

INTRODUCTION

Clients are more likely to utilise healthcare services where they are treated with respect and dignity. The antenatal visit is a time when clients and providers *share* very personal information and provide very important information respectively. The visit also gives an opportunity to establish good client-provider relationship. Communication is particularly important in assisting the client to develop a birth preparedness and complication readiness plan as well as providing health education to the client.

2B.1: BASIC INTERPERSONAL SKILLS FOR EFFECTIVE COMMUNICATION

The process of transmitting information from an individual (or group) to another is a very complex process with many sources of error.

Basic principles of communication

- Use open ended and close ended questions appropriately
- Use eye contact and encourage gestures
- Focus on the situation, issue, behaviour and not the person
- Maintain the self-confidence and self-esteem of others
- Maintain constructive relationships with your clients
- Use active listening techniques such as stating your understanding of what you are hearing
- Make sure you summarize
- Lead by example

Nonverbal Communication Cues

A large percentage (studies suggest over 90%) of the meaning derived from communication comes from the non-verbal cues. Often a person says one thing but communicates something totally different through vocal intonation and body language. These mixed signals force the receiver to choose between the verbal and nonverbal parts of the message. Most often, the receiver chooses the nonverbal aspects.

Nonverbal communication is made up of the following parts:

1. Visual
2. Tactile
3. Vocal
4. Use of time, space, and image

2B.2: Developing Communication Skills: Listening Skills

There are a number of situations when you need to get good information from others; these situations include interviewing clients, solving problems, seeking to help a client, and finding out reasons for problems.

A skill in communication involves a number of specific strengths. The first to be discussed is listening skills. The following lists some suggestions for effective listening when confronted with a problem at work:

- Pay attention to the content of the message
- Ask for as much details as possible
- Establish eye contact
- Talk less, listen more
- Be patient
- Avoid distractions

- Listen and respond in an interested way that shows that you understand the problem.
- Check for understanding, (paraphrasing, ask questions for clarification, etc.)
- Do not control conversation; acknowledge what is said.
- Attend to emotional (e.g. anger) as well as cognitive messages; aware of non-verbal cues, e.g. body language, etc.;
- Make sure you understand before you make conclusions

A major source of problem in communication is defensiveness. Effective communicators are aware that defensiveness is a typical response especially when negative information or criticism is involved. Be aware that defensiveness is common. Try to make adjustments to compensate for the likely defensiveness. Realize that when people feel threatened they will try to protect themselves; this is natural. This defensiveness can take the form of aggression, anger, competitiveness, and avoidance among other responses. A skilful listener is aware of the potential for defensiveness and makes needed adjustment. He or she is aware that self-protection is necessary and avoids making the other person spend energy defending the self.

2B.3: BIRTH PREPAREDNESS AND COMPLICATION READINESS

If a woman is well prepared for normal childbirth and possible complications, she is more likely to receive the skilled and timely care she needs to protect her overall health and possibly save her life and her newborn’s life.

The main components of a birth plan are described below:

Skilled Provider	Assist the woman in making arrangements to deliver in a place where there is a skilled provider. Make sure the woman knows how to contact the skilled provider or healthcare facility at the appropriate time.
Place of Birth	Assist the woman in making arrangements for place of birth—whether at the district hospital, health centre, community health post, or home. Depending on her individual needs, you may need to recommend a specific level of healthcare facility as the place of birth, or simply support the woman in giving birth where she chooses.
Transportation/ Emergency Transportation	Make sure she discusses the available means of transport with her family and close relations i.e. transportation to the place of birth (if not the home), and emergency transportation to an appropriate healthcare facility when complications set in.
Decision-Making	Discuss how decisions are made in the woman’s family (who usually makes decisions?), and decide: how decisions will be made when labour begins or if complications set in, and who else can make decisions if that person is not present.
Support	Assist the woman in deciding on/making arrangements for necessary support, including: companion of her choice to accompany her during transport and if possible stay with her during labour and childbirth, and someone to care for her house and children during her absence.
Blood Donor(s)	Ensure that the woman has identified an appropriate blood donor(s) and that these persons will be accessible in case of emergency.
Items Needed for a Clean and Safe Birth and the Newborn	Make sure the woman has gathered necessary items for a clean and safe birth. Discuss the importance of keeping items together for easy retrieval when needed. For the birth: sanitary pads/cloths, soap, clean bed cloths, placenta receptacle (where the culture demands), clean razor blade, (home delivery) waterproof/plastic cover, clean clothing for personal use etc. For the newborn: blankets, napkins (diapers), clothes, etc.

✓ **Note:** Items needed depends on the individual requirements of the intended place of birth, whether in a facility or in the home.

Signs of Labour		Regular, progressively painful contractions Lower back pain radiating from fundus Bloody show Rapture of membranes
Danger Signs in pregnancy		-Vaginal bleeding -Difficulty in breathing -Fever -Severe abdominal pain -Severe headache/blurred vision -Convulsions/loss of consciousness -Regular painful contractions before 37 weeks

CASE STUDY – MAKING A BIRTH PREPAREDNESS PLAN

Objective – Describe the need for a birth preparedness plan.

Instructions

Read and analyse this case study individually. When the others in your group have finished reading it, answer the question below. When all groups have finished, we will discuss the case study.

Scenario

Amina Yakubu is 28 years old and a tomato seller at Kaneshie market. She has reported at the antenatal clinic at Kaneshie Polyclinic for the first time. On taking her history, the midwife finds out that this is Amina's second pregnancy and that she delivered her first baby with an untrained TBA in her hometown because she did not have money to pay the charges at the health centre in her hometown. Unfortunately she lost the baby from umbilical cord infection on the sixth day after birth. On examination, you confirm she is 14 weeks pregnant.

Question for discussion

1. As a midwife, what advice would you give Amina on birth preparedness?

Answer

1. I would advise Amina on the benefits of delivering in a place of her choice where there is a skilled provider to attend to her and help her to make arrangements to deliver in such a place.

I will make sure she finds out how to contact the skilled provider or healthcare facility at the appropriate time. This is especially as she lost the first baby.

2. I would particularly encourage her to save or look for other source of funding that she can access when needed to pay for care during normal birth and emergency care. I would also discuss emergency funds that may be available through the community or other groups.

3. I would ask her to discuss the available means of transport with her family and close relations i.e.

- a. Transportation to the place of birth (if not the home) and
- b. Emergency transportation to an appropriate healthcare facility if complications arise.

4. I would find out from her how decisions are made in the family and encourage her to discuss with her family

- a. How decisions will be made when labour begins or if complication sets in (who is the key decision-maker?), and
- b. Who else can make decisions if that person is not present?

5. I would also assist Amina in deciding on the necessary support arrangements including:

- a. Companion of her choice to accompany her when she is being transported to the health facility during labour and if possible stay with her during labour and childbirth.
- b. Someone to care for her house and children during her absence

6. I would help Amina to identify an appropriate blood donor who will be accessible in case of emergency.

7. I would advise her and check that she has kept the necessary items needed for a clean and safe birth and to ensure that the items are easily retrieved when needed.

8. I would also ensure that she knows the danger signs, which indicate a need to enact the complication readiness plan:

- a. Vaginal bleeding
- b. Difficulty in breathing
- c. Fever
- d. Severe abdominal pain
- e. Severe headache/blurred vision
- f. Convulsions/loss of consciousness
- g. Labour pains before 37 weeks

9. Finally I would explain to her the signs of labour listed below, which indicate a need to contact the skilled provider and enact the birth preparedness plan:

- a. Regular, progressively painful contraction
- b. Lower back pain radiating from fundus
- c. Bloody show

d. Rupture of membranes

ROLE PLAY – INTERPERSONAL SKILLS

Objective – Describe the importance of interpersonal skills

Directions

Two participants in your group will assume (or be assigned) roles. One will be a mid wife and the other a pregnant woman. Both participants taking part in the role-play and the observers should spend a few minutes reading the background information and prepare for the exercise so that all can participate in the discussion.

Scenario

Mrs. Koshie Lamptey is 35 years old Gravida 5 and Para 4. She reports at the ANC at Adabraka polyclinic for consultation.

Ms. Joyce Mensah, the midwife sits behind her desk and offers Mrs. Lamptey a seat on a bench with other clients about 2 metres from her desk.

Joyce starts taking the history and instructs Mrs. Lamptey to mention the years that she had her four previous children with their sex in chronological order.

Mrs. Lamptey starts by saying: “1992 girl, 1993 girl...”

Just then another midwife comes to talk to Joyce who diverts her attention to listen to the other midwife.

After talking to the other midwife Joyce shouts to Mrs. Lamptey “Yes! Start again”
“1992 girl, 1993 girl, 1994 boy...”

Before Mrs. Lamptey could mention the fourth born Joyce interrupts and screams “Ei Maame have you never heard about family planning?” to the hearing of all the clients.

Discussion Questions

1. What are your comments on Joyce’s communication with Mrs. Lamptey?
2. If you were the midwife how would you have communicated with Mrs. Lamptey?

Answers:

1. Joyce:
 - a. Did not welcome and introduce herself to Mrs. Lamptey
 - b. Did not provide privacy
 - c. Did not make Mrs. Lamptey comfortable
 - d. Was judgemental of Mrs. Lamptey’s deliveries
 - e. Was insensitive to Mrs. Lamptey’s feelings
2. I would:
 - a. Welcome and introduce myself to the client
 - b. Ask the client’s name
 - c. Speak in a quiet, gentle tone of voice
 - d. Listen to Mrs. Lamptey and respond appropriately.
 - e. Encourage Mrs. Lamptey to ask questions and express her concerns.
 - f. Allow Mrs. Lamptey to demonstrate understanding of information I provide.

- i. Explain all procedures/actions and obtain permission before starting.
- j. Show respect for cultural beliefs and social norms.
- k. Be empathetic and non judgemental.
- l. As far as possible avoid distractions while conducting the visit

UNIT 3

INTERMITTENT PREVENTIVE TREATMENT

This unit describes the rationale of Intermittent Preventive Treatment, the drug used in Ghana and the main issues with implementing IPT in Ghana.

LEARNING OBJECTIVES

At the end of this unit, the learners will be able to:

1. Define Intermittent Preventive Treatment (IPT)
2. Describe the use of Sulphadoxine-Pyrimethamine (SP) for IPT during pregnancy.
3. Explain the IPT treatment flowchart.
4. List side effects and contraindications of Sulphadoxine Pyrimethamine.

TEACHING / LEARNING METHODS:

Group Discussion

Lecturette

Exercises

Role Plays

DURATION: 4 HOURS

INTRODUCTION

All asymptomatic pregnant women receive regular doses of Sulphadoxine–Pyrimethamine (SP) as an Intermittent Preventive Treatment (IPT) during the second and third trimesters, while mothers with signs and symptoms of malaria get prompt treatment according to the national treatment guidelines.

The IPT with SP should be provided as part of a comprehensive antenatal package with other drugs like haematinics and anti-helminthics to control maternal anaemia that is highly prevalent during pregnancy in the country.

3.1: WHAT IS INTERMITTENT PREVENTIVE TREATMENT?

Intermittent preventive treatment (IPT) is based on the use of anti-malarial drugs given in treatment doses at predefined intervals after quickening to clear a presumed burden of parasites.

WHY IPT?

Intermittent preventive treatment (IPT) of malaria during pregnancy is based on the assumption that every pregnant woman living in areas of high malaria transmission has malaria parasites in her blood or placenta, whether or not she has symptoms of malaria. In unit 1 section 4, we learnt of the effects of malaria in pregnancy. Malaria infection in the mother, therefore, increases the risk of:

- Spontaneous abortion
- Stillbirth
- Pre-term birth
- Low birth weight
- Maternal anaemia

These effects are caused by malaria parasites being present in the placenta. These parasites are at the placenta sites, impairing passage of nutrients and oxygen from passing from the mother to the foetus. The use of the anti-malarial drugs given in treatment doses clears the sites of these parasites, allowing the free passage of nutrients and oxygen to the foetus. The free movement of nutrients and oxygen enables the foetus to develop normally, reducing the chances that a foetus will suffer the effects of malaria. It also reduces the chances that a mother will end up with maternal anaemia.

✓ **IPT is important because many pregnant women can have malaria parasites without symptoms.**

TARGET GROUP

IPT is given to all asymptomatic pregnant women who report at the antenatal clinic in the second or third trimester but more especially:

- Those of low gravidity (i.e primigravida and secundigravida)
- Those infected with HIV
- Adolescents and youth (10- 24 years)
- Sicklers
- Those with unexplained anaemia

3.2: DRUG OF CHOICE IN GHANA

The drug of choice for IPT in Ghana is *Sulphadoxine Pyrimethamine (SP)*

This is because of:-

- a) Effectiveness:** SP is the single-dose anti-malarial with the best overall effectiveness for prevention of malaria in pregnancy in areas of Africa with stable transmission of *Plasmodium falciparum* malaria as in Ghana, and also where resistance to SP is low.
- b) Efficacy:** Very good in clearing placental parasites
- c) Safety:** No significant side effect when used appropriately in pregnancy
- d) Acceptance:** Demonstrated high levels of IPT acceptance by pregnant women
- e) Programme feasibility:** Good programme feasibility and can be delivered as a single dose treatment under observation by the health worker and thereby minimizing compliance problems
- f) Low resistance:** Resistance to SP is quite low in Ghana. (i.e. Low treatment failure rate in Ghana as at now).

- *IPT with SP when delivered as part of antenatal care significantly reduces the prevalence of maternal anaemia and placental parasitemia and the incidence of low birth weight.*

Studies in Kenya and Malawi have shown that IPT with SP has a beneficial impact on maternal and infant health

- *Although there are concerns that sulfa drugs may be associated with kernicterus when given to premature neonates, this problem has not been noted in studies of IPT where Sulfadoxine Pyrimethamine (SP) has been administered to the mother.*
- *Studies examining the risk to the foetus from uterine exposure to SP have generally not found any increased risk in spontaneous abortions or congenital defects. One retrospective study of antifolate drugs given before and during pregnancy did find that there was an increased risk of birth defects when such drugs were taken during the first trimester, but not during the second or third trimester.*

DOSAGE

Sulphadoxine – Pyrimethamine (SP) or Fansidar should be given as single adult dose (3 tablets) at regularly scheduled antenatal care visits during the second and third trimesters.

Up to a maximum of 3 doses is recommended by the Ministry of Health.

1st. Dose:	Given after quickening or after (16 weeks)
2nd. Dose:	At least one month after the first dose.
3rd. Dose:	At least one month after the second dose.

ADMINISTRATION

Sulphadoxine-pyrimethamine should be given at the ANC clinic or at where there is supervision of a midwife/health worker through a **Directly Observed Treatment (DOT) Method.**

Step 1

- When a pregnant woman comes to the clinic before quickening, inform her to come back for her next regularly scheduled ANC visit.
- Screen the pregnant woman for history of allergy to Sulpha drugs and record in maternal health record book.
- If quickening has occurred, ask the pregnant woman whether she has received treatment with SP in the past one month. If she has, ask her to return one month after the last SP dose. Proceed to step 2.

Step 2

- Give pregnant woman 1st dose of SP after quickening (16 weeks of pregnancy or later). Ask her to take SP in your presence (**Directly Observed Treatment, DOT**).

Step 3

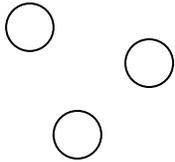
- Provide the two additional doses of SP to the pregnant woman at regularly scheduled ANC visit, but each dose must be at least one month after the previous one.

✓ All pregnant women should be given three doses of SP after quickening and at least 1 month apart. Do not give SP to women less than 16 weeks pregnant.
1st dose: after quickening or after 16 weeks of gestation.
2nd dose: at least one month after first dose
3rd dose: at least one month after second dose
(up to a maximum of three doses is recommended by the Ministry of Health)

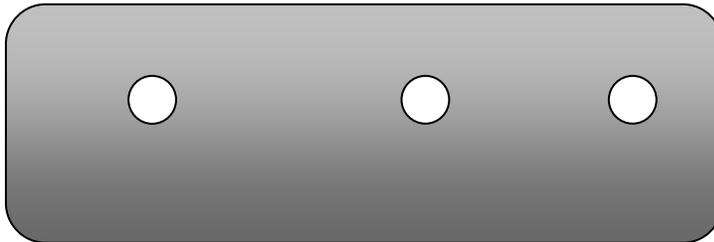
PACKAGING

SP can be found as loose tablets or in blister packs of three tablets, as shown below.

Loose Packs



Blister Packs



PRECAUTIONS:

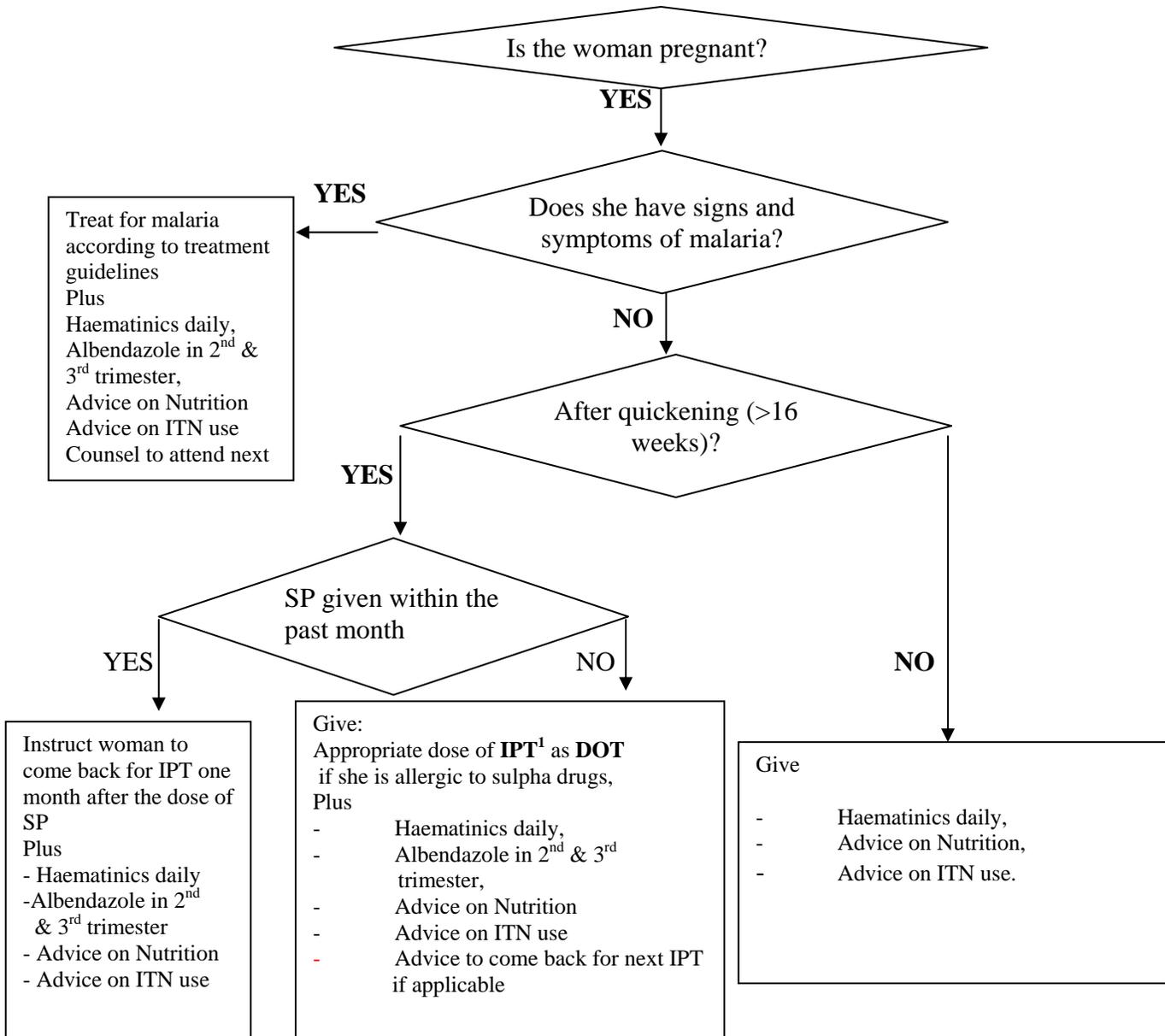
DO NOT GIVE SP TO THE FOLLOWING

1. A pregnant woman in the 1st trimester (< 13 weeks of gestation).
2. A pregnant woman who has received recent treatment with SP (less than 1 month ago)
3. A pregnant woman who is allergic to sulpha drugs.
4. A pregnant woman who is taking co-trimoxazole to treat other infections.

IT WILL BE PREFERRED IF:

1. Pregnant women advised not to *self-medicate* when they are put on SP under IPT (This is because there are different brands of Sulphadoxine-pyrimethamine and also different drugs containing sulpha on the market.).

3.3 FLOWCHART SHOWING THE STANDARDISED WAY OF TREATING A PREGNANT WOMAN WITH MALARIA



ALTERNATIVE MEASURES FOR THOSE WHO CANNOT TAKE SP

Advise them to take the following measures:

1. Sleep under the Insecticide Treated Nets through out pregnancy
2. Undertake indoor residual spraying with pyrethroid insecticide
3. Avoid staying outside late in the evening.
4. Use mosquito repellent

CASE STUDY: INTERMITTENT PREVENTIVE TREATMENT

Objective:

To describe how to put a pregnant woman on SP under IPT

Instructions:

Read and analyse this case study individually. When the others in your group have finished reading it, answer the questions below. When all groups have finished, we shall discuss the case study by groups.

Scenario

Abena Kyere is 28 years old and a trader. She has reported at the antenatal clinic for the first time. On taking the history, she is six months pregnant and has slight oedema of both feet. She has not taken any medication. On examination the gestation period is 26 weeks.

Questions for Discussions

1. How will you manage this woman?
2. If she has taken some medication, what will you tell her?

Answers:

1. This is the first visit and she is 26 weeks. She is therefore eligible for IPT.

Since she has not taken any medication, she can be given the IPT1. BUT before giving her the SP, ask whether she is allergic to sulfa drugs. If she is not allergic, give IPT1 as DOT. If allergic to sulfa drugs, do not give IPT1; instead encourage her to sleep under an ITN.

2. If she has taken some medication, ask her what she took. If it was SP, ask her to come back for the IPT one month after the dose of the SP. In addition

3. - Give haematinics and albendazole
- Advice on ITN use and Nutrition

ROLE PLAY: USING THE FLOWCHART TO MANAGE A PREGNANT WOMAN

Directions:

Participants will be in groups of two and be assigned roles. One plays a role of a health provider and the other a pregnant woman. The participants should spend a few minutes reading the background information and prepare for the exercise.

Scenario:

Participants should demonstrate the use of the flowchart by interviewing and examining a pregnant woman and following the directions of the arrow. A participant plays the role of a pregnant woman while another plays the role of a midwife.

Discussions

Participants get the opportunity to practice and that they should go through all the possible options

Answer: No Answers; participants should discuss the flow charts

UNIT 4

CASE MANAGEMENT

This unit outlines how to recognize both uncomplicated and complicated malaria, how to treat uncomplicated malaria, and to refer complicated malaria cases.

LEARNING OBJECTIVES

After completing this unit, learners will be able to:

1. Recognise the signs and symptoms of uncomplicated and complicated malaria during pregnancy.
2. Identify other causes of fever during pregnancy.
3. Describe the management for uncomplicated malaria during pregnancy.
4. Describe the management for complicated malaria during pregnancy.

TEACHING / LEARNING METHODS:

Discussion

Lecturette

Case Study

DURATION: 3 HOURS

INTRODUCTION

Despite preventive measures, some pregnant women will still become infected with malaria. First, it is important to determine whether the infection is complicated or not. Uncomplicated malaria can easily be treated but complicated malaria however is more difficult to manage and, therefore, requires immediate referral. Women may be referred to a higher level of care within the facility or the nearest location where she can receive appropriate care.

RECOGNISING MALARIA DURING PREGNANCY

a) History and findings

Malaria is most often identified by the symptoms, signs and/or through laboratory investigations. In areas where malaria is common, many people based on their symptoms may diagnose and treat themselves.

Signs and Symptoms of malaria

- Fever
- Shivering/chills/rigors
- Headache
- Muscle/Joint pains
- Loss of appetite
- Nausea and vomiting

b) Laboratory Investigation

Malaria can be diagnosed through microscopy when malaria parasites (*Plasmodium*) are found in the blood film examined.

A blood test, if available, will confirm the diagnosis of malaria and is useful for those women who present with vague or no symptoms.

4.2: OTHER CAUSES OF FEVER DURING PREGNANCY

Fever during pregnancy, a temperature of 38° C or above is the most common symptom of malaria. Other conditions may however present with fever during pregnancy, for example:

- Bladder or kidney infections
- Pneumonia
- Typhoid
- Intra-uterine infections (Chorioamnionitis)

For this reason, before diagnosing malaria, it is essential to gather as much information as possible from the woman and/or her family to rule out other causes.

4.3: CASE MANAGEMENT OF UNCOMPLICATED MALARIA DURING PREGNANCY

Uncomplicated Malaria	Refer to guidelines for treatment. Usually, any client who is diagnosed with uncomplicated malaria during pregnancy should first be treated with Quinine. You may also give Artesunate-Amodiaquine if pregnancy is in second or third trimester.
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Table: Treatment of Uncomplicated Malaria in Pregnant Women using Artesunate-Amodiaquine in 2nd and 3rd Trimester

DAY	DRUG AND DOSAGE	COMMENTS
1	Tab. Artesunate 600mg Tab. Amodiaquine 200mg PLUS Paracetamol: 1 gram (2 tablets) every 6 hours, if needed	The patient takes the first dose of Artesunate-Amodiaquine on day 1. Advise client to: -Continue iron tablets -Consume iron-rich foods -Use ITNs and other preventive measures -Take analgesics, if needed to lower the body temperature -Record relevant information on Maternal Record Book.
2 and 3	Tab. Artesunate 600mg Tab. Amodiaquine 200mg (each day) PLUS Paracetamol: 1 gram (2 tablets) every 6 hours, if needed	Continue Artesunate- Amodiaquine on days 2 and 3
Follow-up after Treatment of Uncomplicated Malaria	Ensure that; ○ The client knows the danger signs and advises her to return to the facility for a follow-up visit after treatment is complete or if her condition worsens. ○ IPT schedule is followed if it has previously been started. ○ IPT schedule is started at the next visit, if she has not previously received it.	

4.4a: RECOGNIZING COMPLICATED MALARIA IN PREGNANT WOMEN

Malaria may be uncomplicated or complicated. Although uncomplicated malaria is easily treated, complicated malaria may be life-threatening and therefore, needs to be promptly recognized and treated.

Signs and symptoms of complicated malaria

- Dark coloured urine
- Drowsiness or coma
- Jaundice
- Inability to stand or support oneself
- Persistent vomiting
- Temperature over 39°C and above
- Anaemia
- Poor urine output
- Difficulty in breathing

Management of Complicated Malaria

Most clients will respond to malaria treatment and begin to feel better within 1 or 2 days after starting treatment. If, however, the client's condition does not improve or worsens, stabilize and refer the woman immediately if she has any symptoms that suggest complicated malaria.

Assess:

Ask if pregnant and determine length of gestation.

Examine:

If diastolic blood pressure is 90 mm Hg or more and/or temperature is 38°C or more; stabilize and

- Call the medical officer if there is a medical officer in the facility
- or
- Refer to a medical officer with referral note detailing history and any treatment given (accompany woman if possible)

4.4b: CASE MANAGEMENT OF COMPLICATED MALARIA DURING PREGNANCY

Pregnant women with severe malaria are prone to developing severe anaemia, hypoglycaemia, and pulmonary oedema if not properly managed.

In treating complicated malaria, the drug to be used is **Quinine**. Quinine is safe in pregnancy and pregnant women put on it should be monitored very closely.

IV Administration of Quinine

- **Quinine Hydrochloride, 10mg/kg body weight of salt (max. 600mg) IV 8 hourly in 5-10ml/Kg of 4.3% dextrose in 0.18% normal saline or in 5% dextrose over 4 - 8 hours.**
- **If required for over 48 hours reduce the dose to 5-7 mg/kg to avoid toxicity**
- **IV. Quinine should continued until when the patient is able to take orally**
Change to quinine tablets 10 mg/kg every 8 hours to complete 7 days of treatment or give a full dose of sulphadoxine-pyrimethamine.

If intravenous (IV) access is not possible, give intramuscular (IM)

IM Administration of Quinine

Deep IM injection at a dose of 10 mg/Kg body weight of Quinine 8 hourly using a dilution of -

Adults: 100mg/ml Quinine in sterile water for injection or normal saline

If the diluted volume is more than 5ml, divide the volume into 2

Quinine shall be given either IV or IM until patient can swallow, then treatment shall be continued orally.

Oral Administration

Oral Quinine at 10mg per Kg body weight every 8 hours to complete 7 days of treatment

<u>WEIGHT KG</u>	<u>AGE IN MONTHS /YEARS</u>	<u>DAILY DOSAGE FOR SEVEN DAYS (Tablet Strength is 300mg)</u>
35 – 60	12 – 14 years	300mg- 600mg 1 – 2 tablets every 8 ours
60>	15 years +	600mg (2) tablets every 8 hours

EXERCISE: BRAINSTORMING ACTIVITY FOR MALARIA DETECTION

Instructions:

Match complaints in column A against column B on the exercise given you.

ANSWER KEY

Column a: Complaints	Column b: History/Physical Examination
Fever	Body temperature 38° c or above No signs of other infection
Weakness and dizziness	Pale inner eyelids/tongue/hands; breathlessness, tiredness (anaemia)
Headaches	Blood pressure 120/80 mm hg (excluding pregnancy induced hypertension); no history of migraines
Very yellow urine	Yellow eyes (jaundice)
Joint pains	Normal findings; no visible swelling or palpable tenderness

CASE STUDY – DETECTION OF MALARIA AND ANAEMIA IN PREGNANCY

Instructions

Read and analyse this case study individually. When the others in your group have finished reading it, answer the questions. When all groups have finished, we will discuss the case study and answer each group developed.

Scenario

Theresa Amoako is 24 years old and reported at the antenatal clinic looking ill and weak. When the midwife took her history she told the midwife that she was three months pregnant and had been ill for the past week and although she took two tablets of chloroquine daily for five days, she had not been improved.

Questions:

1. If you were the midwife, what important physical examination would you carry out?
2. What tests would you carry out and why?
3. What advice would you give to Theresa after treatment and why?
4. What additional measures would you take to ensure that Theresa recovers completely?

Answers:

1. Look for signs of anaemia by looking at the conjunctiva, tongue and nail beds. Examine the abdomen to confirm that she is pregnant and estimate the period of gestation.

Take her temperature.

2. Send her to the laboratory for Hb, Sickling and blood film for malaria parasites tests. These tests would enable health worker to confirm that she has malaria and anaemia and its severity. .

3. Theresa would be advised to:

a. Report all illnesses promptly to a skilled care provider because many causes of ill health have serious consequences to pregnant mothers and their unborn babies (give examples).

b. Avoid self-medication because she might take the wrong dose as she did in her case and also she would most probably make the wrong diagnosis and delay seeking proper medical treatment.

c. Eat a balanced diet including foods rich in iron and folate (such as meat, fish, liver etc) as well as foods rich in vitamin A and C (such as dark green leafy vegetables and oranges respectively).

d. Sleep under an ITN to prevent malaria that can lead anaemia.

4. The additional measures I would take would be:

a. Advise her to comply with the treatment regimen as well as benefits and management of side effects if any arises.

b. Give her an ANC schedule and advise her on the importance of keeping to it.

c. Give her iron and folate supplements

d. Start her on IPT as soon as quickening has occurred.

CASE STUDY : TREATING A CLIENT WHO HAS MALARIA

Directions:

Divide the participants into small groups. Participants should read and analyse this case study individually and then answer the case study questions as a group. The group should then share their answers.

Scenario:

Akpene Agbo is 30 years old. She is approximately 24 weeks pregnant with her second baby. She comes to the antenatal clinic for her ANC visit complaining of severe headache, fever and dizziness. Akpene and her family moved to the area 6 months ago. She has never suffered from malaria.

Basic Assessment:

1. *What will you include in your initial assessment of Akpene and why?*
 - Greet Akpene respectfully and with kindness in order to establish rapport.
 - Tell her what will happen during this visit. Listen to her carefully and answer her questions in a calm and reassuring way (as she will be more likely to share her concerns if she knows she is being listened to).
 - Gather information about onset, duration, and severity of headache, fever, and dizziness, and any medications taken. Ask about previous history of headache, dizziness, recent illness, signs of other infection (pain when passing urine, chest pain, painful cough, abdominal pain/tenderness), history of any other danger signs, signs of uncomplicated and complicated malaria, and history of the pregnancy (e.g., last menstrual period, symptoms of pregnancy, quickening, presence of contractions, leaking of fluid). This is because every pregnant woman living in malaria-endemic areas who presents with a fever should be suspected of having malaria (though other causes of fever in pregnancy should be considered).
 - Check Akpene's temperature, pulse, blood pressure, and respiratory rate to identify and treat life-threatening illnesses as rapidly as possible.
2. *What particular aspects of Akpene's physical examination will help you make an evaluation or identify her problems and needs, and why?*

- The examination should be based on information obtained in the history. However, Akpene's general appearance, her blood pressure, temperature, respiration, pulse, pallor in eyelids (to check for anaemia), signs of dehydration (loose, dry skin, sunken eyes) and abdominal examination (for fundal height, position and lie and foetal heart sounds) would help identify her problems and needs.

3. *What screening procedures and laboratory tests will you include (if available) in your assessment of Akpene and why?*

Check haemoglobin for anaemia if pallor is present; malaria test; urine for protein (if blood pressure is greater than 140/90 mm Hg, to rule out pre-eclampsia).

Evaluation

You have completed your assessment of Akpene and your main findings include the following:

1. Akpene states she has felt well during this pregnancy, and began having fever and headache yesterday morning. She states that she does not have other symptoms such as cough, difficulty urinating, abdominal pain, or leaking of fluid. She has not had convulsions or loss of consciousness. She has not taken any medication.
2. Akpene's temperature is 38.7° C, her blood pressure is 122/68 mm Hg, pulse rate is 92 beats per minute, and her respiration rate is 18 breaths per minute. Akpene is pale, her mouth and tongue are dry, and her eyes are mildly sunken. Her fundal height is 23 cm (which is compatible with the dates of her last menstrual period) and foetal heart tones are 140 beats per minute.
3. Her haemoglobin is 10.5 g/dl; the thick blood film test for malaria is positive.

4. *Based on these findings, what is Akpene's evaluation, and why?*

- ***Akpene is 24 weeks pregnant (determined by last menstrual period and uterine size)***

- She has uncomplicated malaria (based on her positive blood film, symptoms, and vital signs)

Care Provision

5. *Based on your evaluation, what is your plan of care for Akpene, and why?*

-- (Note: best approach is to refer her to see a doctor or medical assistant; especially if she is on IPT and still became ill with malaria)

- Begin treatment for uncomplicated malaria: prescribe and observe her as she takes Artesunate-Amodiaquine (four each) or tablets quinine, depending on client's preference and paracetamol (two tablets).
- Instruct her on how to take the medication for Day 2 as well as paracetamol (two tablets every 6 hours until her temperature returns to normal).
- Instruct her on how to take the medication for Day 3
- Tell her to return to the clinic in 48 hours if she is not feeling better, or immediately if she has signs and symptoms of complicated malaria (e.g., convulsions, loss of consciousness).
- Tell her that she must take all of her medication, and describe the side effects it may cause (Tinnitus, Skin rashes, Stomach upsets, Low blood sugar, **if she is on quinine**).
- Tell her about the causes of malaria and how to prevent it, including the use of ITNs.
- Talk to her about her need to prepare a birth plan.
- Give iron and folate tablets, and counsel her to eat foods with adequate sources of iron. Begin tetanus immunization if necessary.
- Schedule an appointment for her second ANC visit at 32 weeks.
- Record all findings and treatments on her Maternal Health Record Card.
- Thank her for coming to the clinic

CASE STUDY – MANAGEMENT OF A PREGNANT WOMAN WITH COMPLICATED MALARIA

Directions

The participants should go into small groups. The participants should read and analyse this case study individually and then answer the case study questions as a group. The groups should then share their answers.

Scenario:

Victoria Ablor is 24 years old and reported at the antenatal clinic looking ill and weak. During history taking she told the midwife that she was three months pregnant and had been ill for the past week and although she had taken some medication she had not improved. On examination, she had yellowish discolouration of the eyes and temperature was 39°C.

Questions for discussion:

1. If you were the midwife, what important physical examination would you carry out?
2. What tests would you carry out and why?
3. How will you treat her if there are malaria parasites in the blood?
4. What advice would you give to Victoria after treatment and why?
5. What measures would you take to ensure that Victoria recovers completely?

Answers

1. Let her lie down and be comfortable.

a. **Assess:** Ascertain if she is pregnant and check her gestational period.

b. **Examine:** Check her BP, temperature, Pulse and respiration and record it.

2. **Laboratory Investigation:** A blood test can be done to isolate malaria parasites in a blood film examination.

b. Other tests can be done to exclude other conditions that can cause fever like;

- Bladder infection
- Pneumonia
- Typhoid
- Intra uterine infections (Chorioamnionitis)

3. Call the medical officer, if she is suspected to be suffering from complicated malaria. The doctor will put her on quinine through any of the following routes;

Intravenous Administration Of Quinine

Quinine Hydrochloride, 10mg/kg body weight of salt (max. 600mg) IV 8 hourly in 5-10ml/Kg of 4.3% dextrose in 0.18% normal saline or in 5% dextrose over 4 - 8 hours.

IM Administration of Quinine

Deep IM injection at a dose of 10 mg/Kg body weight of Quinine 8 hourly using a dilution of;- 100mg/ml Quinine in sterile water for injection or normal saline

(If the diluted volume is more than 5ml, divide the volume into 2)

Oral Administration

Oral Quinine at 10mg per body weight every 8 hours to complete 7 days of treatment
i.e. 600mg (2 tablets) every 8 hours, for 7 days.

OR

If there is no medical officer, She would be referred with a note detailing history and any treatment given. She should be accompanied if possible

4. a. Counsel her on the need to go to the clinic for antenatal care so that she can be put on SP under IPT
 - b. If she cannot take any sulpha drug, she should use ITNs strictly till her postnatal period ends.
 - c. Discuss Birth Preparedness and Complication readiness plan with her.
-
5. a. Ensure that she takes her treatment religiously.
 - b. Ensure intake of a good diet.
 - c. Ensure she gets enough rest.
 - d. Ensure intake of fluids and juices.

LEARNING GUIDE FOR TREATMENT OF UNCOMPLICATED MALARIA

Rate the performance of each step or task observed using the following rating scale:

- 1 Needs Improvement:** Step not performed correctly and/or out of sequence (if necessary) or is omitted
- 2 Competently Performed:** Step performed correctly in proper sequence (if necessary) but progression from step to step is inefficient
- 3 Proficiently Performed:** Step efficiently and precisely performed in proper sequence (if necessary)

LEARNING GUIDE FOR TREATMENT OF UNCOMPLICATED MALARIA

STEP/TASK	CASES			
GETTING READY				
1. Greet the woman respectfully and with kindness.				
2. Ask about her general health and current pregnancy.				
HISTORY OF PROBLEMS IN CURRENT PREGNANCY				
1. If she has any complaints, ask about each one specifically.				
2. If she complains of fever , ask her if she also has any of the following complaints: <ul style="list-style-type: none"> • Shivering/chills/rigors • Headache • Muscle/Joint pains • Loss of appetite • Nausea and vomiting 				
3. If she does, suspect uncomplicated malaria during pregnancy .				
4. Check if she has other symptoms/signs suggestive of complicated malaria by asking her if she has any of these other complaints: <ul style="list-style-type: none"> • Dark coloured, <i>cola-like</i> urine • Drowsiness or coma • Jaundice • Inability to stand or support herself • Persistent vomiting • Temperature over 39°C • Anaemia • Poor urine output • Difficulty in breathing 				
5. Ask anyone accompanying her if the woman has at any time been unconscious or had fits (convulsions).				

LEARNING GUIDE FOR TREATMENT OF UNCOMPLICATED MALARIA				
STEP/TASK	CASES			
6. Listen to the woman/family and respond to their concerns and questions.				
7. If she has had any of the complaints listed under Step 4 and 5 above or has experienced fits, suspect complicated malaria				
PHYSICAL EXAMINATION				
8. Wash your hands thoroughly with soap and water and dry with a clean, dry cloth or air dry.				
9. Perform a physical examination: <ul style="list-style-type: none"> • Does the woman look abnormally drowsy/sleepy? • Check the body temperature. Does she have a fever (above 37.5 °C)? • Check blood pressure, pulse and respiration rate. • Check the eyes: <ul style="list-style-type: none"> - Pallor inside the eyelids - Yellowness of the eyes - Do the eyes appear sunken? • Check the mouth for: <ul style="list-style-type: none"> - Dryness - Pallor of tongue/mucous membranes - Bleeding from the gums • Check the legs for swelling (oedema) • Check the skin for: <ul style="list-style-type: none"> - Dryness - Looseness - Spontaneous bleeding 				
10. If the woman is attending routine antenatal clinic, complete other ANC tasks.				

TREATMENT OF UNCOMPLICATED MALARIA				
11. If the woman does not have any of the danger symptoms/signs listed under 4 and 5 above, diagnose uncomplicated malaria and treat as follows: <ul style="list-style-type: none"> • Prescribe Quinine 10mg/kg body weight 8 hourly for 7 days OR • Tab. Artesunate 600mg Tab. Amodiaquine 200mg as appropriate 				
12. Instruct her on how to take additional drugs that are prescribed: <ul style="list-style-type: none"> • Paracetamol two tablets every 6 hours until the temperature returns to normal • Inform her about taking three SP tablets on her next visit 				
13. Educate her on: <ul style="list-style-type: none"> • How mosquitoes transmit malaria • The effects of malaria on pregnancy (on mother and baby) • The benefits of using insecticide-treated nets and wearing protective clothing • Eliminating sources of stagnant water where she lives • The importance of taking the drug as prescribed • Explain about possible side effects of the specific medication; <p>Quinine:</p> <ul style="list-style-type: none"> - Tinnitus - Skin rashes - Stomach upsets - Low blood sugar - Dizziness <p>Amodiaquine:</p> <ul style="list-style-type: none"> - Nausea - Abdominal pains - Diarrhoea <p>Artesunate:</p> <ul style="list-style-type: none"> - Headache - Nausea - Abdominal pains - Occasional diarrhoea 				
14. Advise the woman to come back to the facility if she does not feel better within 48 hours or anytime symptoms become worse and/or she has signs of complicated malaria.				
15. Record relevant information and medications given in woman's Maternal Health Record Book.				
REFERRAL OF COMPLICATED MALARIA				

<p>16. If she has any of the danger symptoms/signs listed under 4 and 5 (above) diagnose complicated malaria and:</p> <ul style="list-style-type: none"> • Give first dose of oral Quinine (10mg/kg. body weight), if she has not yet taken any medication • Give first dose of paracetamol (if she can swallow tablets) • Write a referral note • Arrange transportation 				
<p>17. Refer immediately.</p>				
<p>18. Record all relevant information in woman's Maternal Health Record Book.</p>				

UNIT 5A

MONITORING AND REPORTING

This unit describes the data required for monitoring and record keeping and its importance in Focused Antenatal Care.

LEARNING OBJECTIVES

At the end of this unit, participants will be able to:

1. Describe the purpose of record keeping in ANC
2. List and know the indicators for monitoring malaria in pregnancy.
3. Record relevant information in the Maternal Health Record Book, ANC Register and Delivery Register
4. Summarize data from ANC Register and Delivery Register into ANC Clinic Report Book (Form) and Delivery (Maternity) Report Book (Form) respectively.
5. Measure the indicators for monitoring malaria in pregnancy using the Addendum to Midwifery monthly return forms.

TEACHING / LEARNING METHODS:

Discussion
Presentation
Case Study
Demonstration
Exercises

DURATION: 3 HOURS

INTRODUCTION

Accurate record keeping is necessary to adequately monitor the progress and effectiveness of the programme and evaluate impact of the intervention. A healthcare facility should establish and maintain a record for every woman and newborn that receives care. Data should be quickly collated and feedback given to those collecting the data. The data should be used locally. The creation of new or parallel systems of data collection should be avoided.

INDICATORS FOR MONITORING MALARIA IN PREGNANCY

Three groups of indicators are proposed to monitor control activities of malaria in pregnancy at antenatal care facilities:

Process indicators: those that measure whether or not interventions that are known to be effective in reducing the adverse consequences of malaria during pregnancy are being implemented.

- % of antenatal clinic staff trained to deliver IPT to pregnant women

$$\frac{\text{Number of ANC staff trained to deliver IPT}}{\text{Number of ANC staff}} \times 100$$

-% of Health facilities implementing IPT

$$\frac{\text{Number of Health Facilities Implementing IPT}}{\text{Number of Health Facilities in District}} \times 100$$

Outcome Indicators: These indicators should reflect the change in knowledge and practices

- % of pregnant women receiving IPT1

$$\frac{\text{Number of pregnant women who receive IPT1}}{\text{Total number of Attendants (New registrants + Continuing)}} \times 100$$

- % of pregnant women receiving IPT2

$$\frac{\text{Number of pregnant women who receive IPT2}}{\text{Number of Attendants (Registrants + Continuing)}} \times 100$$

- % of pregnant women receiving IPT3

$$\frac{\text{Number of pregnant women who receive IPT3}}{\text{Number of Attendants (Registrants + Continuing)}} \times 100$$

**Narrative: Indicate, out of the number of people receiving IPT1 each month, how many received IPT2 and IPT3 subsequently)

- % of pregnant women who report that they slept under an ITN the previous night

$$\frac{\text{Number of pregnant who reported sleeping under ITN the previous night}}{\text{Number of Attendants (Registrants + Continuing)}} \times 100$$

Impact Indicators: The long-term effects of the interventions, which have been put in place; or the effects of the interventions, which have been put in place.

- % of screened primigravid and multigravid women with severe anaemia (Hb \leq 7gm/dl) in 3rd trimester

$$\frac{\text{Number of primigravid with HB} < 7\text{gm/dl in 3}^{\text{rd}} \text{ trimester}}{\text{Number of primigravid screened in 3}^{\text{rd}} \text{ trimester}} \times 100$$

$$\frac{\text{Number of multigravid with HB} < 7\text{gm/dl in 3}^{\text{rd}} \text{ trimester}}{\text{Number of multigravid screened in 3}^{\text{rd}} \text{ trimester}} \times 100$$

- % of LBW newborns (<2500 grams) born to primigravidae / multigravidae

$$\frac{\text{Number of LBW newborns born to primigravidae}}{\text{Number of live births born to primigravidae}} \times 100$$

$$\frac{\text{Number of LBW newborns born to multigravidae}}{\text{Number of live births born to multigravidae}} \times 100$$

Maternal Health Record Book

This has been modified to cater for the administration of SP in IPT. The midwife is expected to indicate in the column provided the gestation age at which the first, second and third doses of the SP was given.

ANC Register

This records the details of the ANC visits. It has been (should be) modified to cater for

i. Antenatal attendance

Indicate whether the visit is the first, second, third etc (Use 1, 2, 3, etc)

ii. Dose of IPT given

Indicate the dose of IPT given as IPT1, IPT2, and IPT3. If no IPT given indicate by (-)

iii. ITNs use in the previous night

Ask whether she slept under an ITN the previous night. Indicate Yes/No

iv. Severe anaemia

Indicate Yes if HB is 7gm/dl or less, otherwise No. (-) If HB was not measured.

CASE STUDY: RECORD KEEPING

Directions

This exercise should be used as a small group activity. Participants should read the case scenario individually and answer the questions as a group. Groups will share and discuss their answers.

Scenario

Dede Fianu is 21 years old and is about 20 weeks pregnant. This is her second pregnancy but the first one ended in a spontaneous abortion. This is her first ANC visit and she has not experienced any problems during this pregnancy.

Dede has never had any serious disease in the past. The first day of her last menstrual period was about 5 months ago. Dede's body temperature is normal, her blood pressure is 120/80 mm Hg, and pulse is 80 beats per minute. Dede's conjunctiva, palm, and nail beds are slightly pale. The weight was 60kg and height 5ft 8inches

The midwife palpates her abdomen and finds her uterus at the level of the umbilicus. Dede states that she feels the baby's movements. These findings confirm a gestational age of 20 weeks.

Investigations carried out showed Hb of 7.2mg/dl, sickling negative and no albumin in the urine.

The midwife gives her the first dose of tetanus toxoid immunization and some iron tablets.

The midwife also gives her three tablets of sulfadoxine-pyrimethamine (SP) for prevention of malaria, which Dede swallows with a cup of clean water. The midwife tells Dede that she will receive a total of three doses of intermittent preventive treatment (IPT) during the pregnancy to decrease the risk of getting malaria. The midwife explains the possible complications that can arise with the mother and baby if the mother contracts malaria while pregnant. The midwife emphasizes the need to use insecticide treated nets (ITNs) every night to avoid being bitten by mosquitoes.

The midwife informs Dede about the next ANC visit. Dede will go to her mother's home for 6 weeks. The midwife and Dede agree that the next visit will be around 24–28 weeks of pregnancy, or earlier if Dede experiences danger signs.

Questions

1. Is it necessary for the midwife to fill out information about Dede's visit in any register or individual record forms? Why or why not?
2. How would the midwife benefit by maintaining information about Dede? How would Dede benefit? What is the benefit to the district health management team?
3. Identify all the information that the midwife should and record in the maternal health record book and ANC register

1. a. For continuity of care
b. For records purposes
c. To monitor the effectiveness of the treatment programme.

2. (Midwife)

- a. To determine when the patient will be due for further management ie. IPT etc.

b. A baseline to reassess during subsequent visits (Dede)

c. To identify any adverse events

d. For statistics and planning

3. Entries into maternal health record book

EXERCISE: ENTRYING INFORMATION IN MATERNITY RECORDS

Objective:

To practice the completion of the ANC Clinic Report Book (Form), Maternal (Delivery) Report Book (Form) and the Addendum to Midwifery monthly Returns Form; and calculate the indicators

Materials required

ANC registers

Maternal (delivery) books

ANC clinic report book

Maternal (Delivery) Report book

Directions

Make ANC registers and maternal (delivery) books available to participants. Let them summarize at least two months records into ANC Clinic Report Book (Form) and Maternal (Delivery) Report Book (Form) respectively. Then let them use the information available to complete the Addendum to Midwifery monthly Returns Form and calculate the indicators.

UNIT 5B

ADVERSE DRUG REACTION MONITORING (PHARMACOVIGILANCE)

LEARNING OBJECTIVES

At the end of this unit, the learners will be able to:

1. Describe what pharmacovigilance is.
2. Explain why the need for pharmacovigilance in IPT implementation.
3. Describe how to monitor adverse effects of Sulphadoxine Pyrimethamine.
4. Describe how to monitor adverse effects Sulphadoxine Pyrimethamine.

TEACHING / LEARNING METHODS:

Lecturette
Group Discussion
Exercises

INTRODUCTION

Modern drugs (medicines) have brought significant benefits to our lives offering reduction in morbidity and mortality. As part of efforts to ensure that the use of sulphadoxine-pyrimethamine (SP) in pregnant women continues to have a favorable risk: benefit profile, a pharmacovigilance (drug safety monitoring) component is incorporated into the national programme and this manual gives an overview of what is involved in pharmacovigilance for intermittent preventive treatment (IPT).

This manual is intended to guide health professionals on the operations of the pharmacovigilance system for IPT in Ghana. It provides definitions of the main terms used in pharmacovigilance and gives a broad educational overview of pharmacovigilance in general. It describes who can send adverse drug reaction reports relating to SP in IPT to the National Malaria Control Programme (NMCP) and what to report. It also explains what happens after reports are sent and the benefits to the nation of a strong pharmacovigilance system.

It is hoped that all healthcare professionals will take an active interest in pharmacovigilance and report any suspicion of adverse drug reactions to National Centre Pharmacovigilance (NCP). This way, we would all be doing our best to make Ghana and the world a safer place as far the use of drugs is concerned. Remember, even one seemingly inconsequential report may be life saving if the suspicion for the drug causing the Adverse Drug Reaction is acted upon, as reports coming in from other places may give an early warning to all of us.

5B.1: What is Pharmacovigilance?

Pharmacovigilance (which is also referred to as Adverse Drug Reaction Monitoring) is the detection, assessment and prevention of adverse reactions to drugs, and includes monitoring and providing early warnings of adverse effects due to drugs.

5B.2: Why the need for Pharmacovigilance in Ghana?

There are differences among countries (and even regions within countries) in the occurrence of ADRs and other drug-related problems. This may be due to differences in for example:

- Diseases and prescribing practices
- Genetics, diet, traditions of the people
- Drug manufacturing processes used which influence pharmaceutical quality and composition
- Drug distribution and use including indications, dose and availability;
- Use of traditional and complementary drugs (e.g. herbal remedies) which may pose specific toxicological problems, when used alone or in combination with other drugs

SP has been shown to be safe and well-tolerated when used for IPT. Pharmacovigilance of SP in IPT may also help in detecting other drug related problems including the presence of counterfeit and/or sub-standard quality SP in the country.

5B.3: MONITORING OF SIDE EFFECTS

When given as IPT, SP has been associated with rare severe cutaneous reactions such as toxic epidermal necrosis and Stevens-Johnson syndrome. However, there is no evidence that the risk of severe cutaneous reactions is any greater in pregnant women than non-pregnant women. Although sulfonamides are excreted in breast milk, the risk to healthy full-term neonates is believed to be minimal. Pyrimethamine is usually given in combination with sulphadoxine. However, studies in which Pyrimethamine has been given alone have also found no increase in adverse pregnancy outcomes. In addition, Pyrimethamine is considered to be compatible with breast-feeding.

Several studies have been conducted to detect adverse reactions to SP, including cutaneous reactions and other potentially serious conditions that would either pose risks to the pregnant woman or infant or limit programme effectiveness. No evidence has been found of increased risk for serious cutaneous side effects or for increased jaundice in the newborn when SP has been administered in the second and third trimesters.

THOUGH DATA ON SAFETY OF SP IS REASSURING, THERE REMAINS AN ONGOING NEED FOR MONITORING OF SAFETY OF ALL ANTI-MALARIALS USED FOR TREATMENT AND PREVENTION IN PREGNANCY, INCLUDING SP.

5B.4: MONITORING OF ADVERSE EFFECTS

DEFINITION OF TERMS

I) Adverse Drug Reaction (ADR)

The World Health Organization's definition for Adverse Drug Reaction (ADR) is:

"a response to a medicine which is noxious and unintended, and which occurs at doses normally used in man for the prophylaxis, diagnosis or therapy of disease, or for the modification of physiological function."

What is important in this definition is that a patient experiences an unwanted and/or noxious reaction following drug therapy. Individual factors may play an important role but the key point is that the phenomenon experienced is noxious and unintended. An ADR is essentially an "undesirable" reaction suffered by the patient and differs from "side effect" which is essentially an unexpected therapeutic response – which may be "good" or "bad".

II) Adverse Event

"Adverse event/experience" is any untoward medical occurrence that may present during treatment with a pharmaceutical product but which does not necessarily have a causal relationship with this treatment.

The basic point here is that an untoward event occurs during the use of a drug but that the drug did not **necessarily** cause the event. Hence the term "adverse event" appears to be a broad one encompassing "adverse drug reactions" (drug related) and other unwanted (but not drug related) problems occurring during therapy.

To prevent duplication of reports, it is important for healthcare workers to enquire from patients whether a report concerning the reaction they are reporting has already been submitted to the NMCP or NCPv

III) ADVERSE DRUG REACTION (ADR) REPORT

An adverse drug reaction report is a detailed record of all relevant data associated with the use of a medicine in a patient.

The information required in an ADR report for IPT is shown on Appendix 1. It is important to stress that healthcare workers should try and send reports of ADRs **even** if they do not have all the information required.

To prevent duplication of reports, it is important for healthcare workers to require from patients whether a report concerning the reaction has already been submitted to the NMCP or NCPv.

WHO SHOULD REPORT ADRS IN GHANA FOR SP IN IPT

- The patient (usually to the CBS/CHO/MCH Centre/Health Centre/ Hospital).
- Community Based Supports (CBSs)
- Health care workers (e.g. Clinic attendants)

Health professionals should fill the SP/IPT reporting form on behalf of patients and submit it to the next level.

WHAT SHOULD BE REPORTED?

All suspected reactions to SP on SP/IPT forms and all drugs on National Reporting Form – blue colour, including minor ones.

In addition, drug-drug, drug-food, or drug-food supplements interactions (including herbal and complementary products) should also be reported.

The following should also be reported;

- Overdose or medication error
- Lack of efficacy or when the drug is suspected to be defective, substandard, counterfeit or not giving the “expected” response.
- Any other reaction that the patient is sufficiently concerned about to report to the health professional. Remember “if the patient is concerned enough to report a reaction to you, you must also be concerned to report to the NMCP/NCPv.

ADVERSE EVENT REPORTING FORM (specimen at the appendix)

A copy of the National Spontaneous Reporting Form is shown in Appendix. The form consists four main parts as follows:

Patient Details

Name

Age, Weight

Address

Reaction Details

What happened – description of the event or problem

When – date of event

What was done – treatment given to the patient or whether the drug was withdrawn (dechallenge) and/or reintroduced (rechallenge)

What was the outcome – outcomes attributed to adverse event i.e. was the patient hospitalized? If so, for how long? Did the patient die? How long did the reaction last?

Drug Details

- Suspected agent (brand names if known or else generic name)
- Lot/batch number, expiry date etc. if known
- Dose, frequency and route used
- Date of intake
- Was patient on SP for IPT?

- Other medical products (drugs, herbal medicines etc) taken within the preceding two weeks

Reporter Details

- Name, address and telephone number
- Profession
- Specialty (if applicable)
- Date of Reporting
- Signature

Delivery (Maternity) Book

This records the details of the delivery.

Maternal (Delivery) Report Book (Form)

This is designed to summarize all that happened in the past 24 hours within the labour ward / delivery room. This makes it easier to complete the monthly returns. It has the same variable as the delivery book

Addendum to Midwifery Monthly Returns Form

This is designed to assist in measuring the indicators for implementing IPT. The information is obtained from the ANC Clinic Report Book (Form) and Maternal (Delivery) Report Book (Form)

**APPENDIX C:
ADDENDUM TO ANTENATAL/MATERNITY MONTHLY DATA RETURNS**

Name of Health Facility _____ District _____

Region _____	Month _____	Year _____	
ANTENATAL RECORD	Number	INDICATOR	
Total ANC Attendance			
First ANC Attendance			
Second ANC Attendance			
First dose of IPT (IPT1)		% taking IPT1	
Second dose of IPT (IPT2)		% taking IPT2	
Third dose of IPT (IPT3)		% taking IPT3	
ITN use on First ANC visit		% ITN use on First ANC visit	
ITN use on Second ANC visit		% ITN use on Second ANC visit	
All screened in 3 rd . trimester for Hb			
Primigravidae screened in 3 rd . trimester for Hb			
Primigravidae with severe anaemia in 3 rd . trimester (Hb<7g/dl)		% Primigravidae with severe anaemia in 3 rd . trimester	
Multigravidae with severe anaemia in 3 rd . trimester (Hb<7g/dl)		% Multigravidae with severe anaemia in 3 rd . trimester	
MATERNITY RECORD			
All deliveries			
All Live births			
Live births to Primigravidae			
Deliveries with at least one dose of SP			
All LBW (birth weight < 2.5kg)			
LBW to Primigravidae		% LBW in Primigravidae	
LBW to Multigravidae		% LBW in multigravidae	
All still Births			
All new born deaths in first 7 days			

Adverse Event Form for SULPHADOXINE/PYRIMETHAMINE IN IPT IN PREGNANT WOMEN

PATIENT DETAILS			
Last Name: _____		Other Name(s): _____	
Address: _____		Town/City: _____	Region: _____
Date of birth: ____/____/____	Age: _____ years _____ months	Weight (kg): _____	Height (m) _____

DRUG DETAILS				
Is Patient on SP for IPT? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	IPT Schedule	IPT1	IPT2	IPT3
	Date			

DETAILS OF ADVERSE EVENTS		
Date event started: ____/____/____ Date event stopped: ____/____/____		
Adverse reaction observed (<i>please tick all that applies</i>) Vomitting [] Nausea [] Itching [] Skin rashes [] Diarrhoea [] Headache [] Mouth sores [] Stomach pains [] Dizziness [] Insomnia [] Dark-coloured urine [] Other (please specify): _____		
Description of event (Continue on back page if necessary): _____		
Treatment or action taken (Continue on back page if necessary): _____		
Outcome (please tick all that apply)		
<input type="checkbox"/> Death <input type="checkbox"/> Life Threatening <input type="checkbox"/> Required / prolonged hospitalisation	<input type="checkbox"/> Permanent disability <input type="checkbox"/> Congenital anomaly <input type="checkbox"/> Ongoing	<input type="checkbox"/> Recovered <input type="checkbox"/> Other outcome (please specify)

REPORTER DETAILS			
<input type="checkbox"/> Doctor <input type="checkbox"/> Pharmacist <input type="checkbox"/> Nurse <input type="checkbox"/> Other (please specify)			
Last Name: _____		Other Name(s): _____	
Address: _____		Tel No. _____	Email: _____
Signature _____		Date: _____	

Please return this form to: YOUR DHMT

Forms MAY also be sent to The National Centre for Pharmacovigilance, CTCPT, UGMS, 2nd Floor Medical Block Building, Korle-Bu Teaching Hospital, Box 4236, Accra, Ghana Tel: 021-675885//779838; Fax: 668219 OR The National Malaria Control Programme, Tel. 021-762031, Accra

Please note: Completion of this form is not an admission of causation by, or contribution to the suspected adverse event by the suspected drug(s) or the reporting professional. The information does help to ensure the safety of all pregnant women in Ghana

APPENDIX E:

EXPERIENCES FROM DISTRICTS ON MONITORING OF SIDE EFFECTS

Keta Model

A midwife gives a 'special identification card' to a pregnant woman who has been put on IPT (SP); identifying the pregnant woman. The pregnant woman then sends this card to the community-based agent (CBA) in her community. This enables the CBA to know those pregnant women who are on IPT in order to monitor them for any possible side effects.

In cases that she reacts to the SP before seeing the CBA, she is to take the card to the nearest health facility for treatment and recording into the Adverse Events Form.

Dangbe West Model

In Dangbe West model there are two chits. There are the referral and follow-up chits. With the referral chits, the pregnant woman visits the health facility for IPT and ITNs. At the facilities the midwife collects the referral chit, which has the CBA's name and address. The midwife then gives the pregnant woman a follow up chit. On her return to the community, the CBA collects the follow-up chit while monitoring the pregnant woman for adverse events after the pregnant woman has been put on SP. The number of follow up chits that are collected by determines how well the CBAs are doing and reward them accordingly. This system enables the DHMT to know how many pregnant women have been put followed up.

FACILITATORS SHOULD FIND OUT IF PARTICIPANTS HAVE OTHER EXPERIENCES TO SHARE.

ADD UP TO 20 QUESTIONS

APPENDIX G:

INTERMITTENT PREVENTIVE TREATMENT - MIDCOURSE ASSESSMENT

MALARIA IN PREGNANCY

1. In Ghana,
 - A. **Four people die from malaria every hour**
 - B. Four people suffer from malaria every day
 - C. Four people report at the hospital with malaria everyday
 - D. Four people suffer from malaria every hour

2. Out of the four people who die from malaria
 - A. Two are children
 - B. **Two are children under five years**
 - C. Two are young children
 - D. Two male children under five years

3. IPT is given to pregnant women primarily to reduce
 - A. Anaemia
 - B. Malaria
 - C. **Placental parasitaemia**
 - D. Still births

FOCUSED ANTENATAL

4. One of the goals of focused ANC is to;
 - A. Have all pregnant women examined
 - B. Take care of all pregnant women
 - C. **Preparation for birth and possible complications**
 - D. Give SP to the pregnant woman

5. The following are skills needed when counselling a pregnant woman except
 - A. Listening skills
 - B. **Being very sympathetic**
 - C. Questioning skills
 - D. Non-verbal cues

6. The following are goals of ANC except ;
 - A. Detection and prevention of complications that might affect a woman's pregnancy .
 - B. Counselling and health promotion to encourage good health throughout pregnancy and to increase a woman's ability to identify possible problems

C. Check the gestational age of the foetus

D. Preparation for birth and possible complications

IPT

7. Intermittent Preventive Treatment involve the following except

- A. The use of anti-malarial
- B. Given as Direct Observed Treatment
- C. Given in treatment doses after quickening
- D. Administration during an episode of malaria in pregnancy**

8. The target group for IPT for pregnant women is except

- A. Those infected with HIV
- B. Adolescents and youth (13-24 years)
- C. Sickle cell persons who are pregnant
- D. Those with hypertension**

9. These are strategies for IPT except

- A. Creating awareness
- B. Equip health facilities/staff
- C. Assess the efficacy of the drug including side effects
- D. Treat all side effects in the hospital**

10. IPT will be integrated with the following package of interventions within the safe motherhood program except

- A. Health education**
- B. Deworming
- C. ITN use
- D. Case management

11. SP is the drug of choice for IPT because of the following except

- A. Low resistance
- B. It is being used in nearby countries**
- C. Has high compliance
- D. Good safety profile in pregnancy

CASE MANAGEMENT

12. The cardinal sign in the diagnosis of malaria is...

- A. Rigor
- B. Bitterness in the mouth
- C. Fever**
- D. Nausea and vomiting

13. One of the following is not a sign/symptom of uncomplicated malaria

- A. Fever

- B. Jaundice**
- C. Headache
- D. Shivering/rigors

14. These are other causes of fever during pregnancy except
- A. Bladder or kidney infections
 - B. Pneumonia
 - C. Typhoid
 - D. Pre-eclampsia**

(Qus. 15 – 18) Match column A and column B

NO.	COMPLAINTS	ANSWER	HISTORY/PHYSICAL
15	COLUMN A Fever	A	COLUMN B Yellow eyes (jaundice)
16	Weakness and dizziness	B	Body temperature 38°C or above
17	Headaches	C	Blood pressure 120/80 mm hg (excluding pregnancy induced hypertension); no history of migraines
18	Very yellow urine	D	Pale inner eyelids/tongue/hands; breathlessness, tiredness (anaemia)

15. A
B
C
D
E

16. A
B
C
D
E

17. A
B
C
D
E

18. A
B
C
D
E

19. Which one is not a sign/symptom of complicated malaria

- A. **Oedema**
- B. Dark coloured-urine
- C. Drowsiness or coma
- D. Temperature over 39°C

20. One of the following is not required at the district level (DHMT)

- A. **To procure and distribute SP drugs**
- B. Train staff
- C. Provide technical support to facilities
- D. Treatment/referral of complications to next level

