



Prevention and Control of Malaria in Pregnancy

Learner's Guide

3rd Edition, 2018 Update

Jhpiego is an international, nonprofit health organization affiliated with Johns Hopkins University. For more than 40 years, Jhpiego has empowered frontline health workers by designing and implementing effective, low-cost, hands-on solutions to strengthen the delivery of health care services for women and their families. By putting evidence-based health innovations into everyday practice, Jhpiego works to break down barriers to high-quality health care for the world's most vulnerable populations.

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Abbreviations and Acronyms

ACT	artemisinin-based combination therapy
ANC	antenatal care
EDD	estimated date of delivery
ANC	antenatal care
IPT _p	intermittent preventive treatment of malaria in pregnancy
IRS	indoor residual spraying
ITN	insecticide-treated net
LLIN	long-lasting insecticide-treated net
LMP	last menstrual period
MIP	malaria in pregnancy
RDT	rapid diagnostic test
SP	sulfadoxine-pyrimethamine
WHO	World Health Organization

Introduction

Workshop Overview

This workshop will be conducted based on the assumption that people participate in training because they:

- Are interested in the topic.
- Wish to improve their knowledge or skills and thus their job performance.
- Want to be actively involved in workshop activities.

For this reason, the workshop materials focus on the learner. The facilitator and the learner use a similar set of learning materials. The facilitator works with learners as an expert on the workshop topic and guides the learning activities.

Learning Approaches

Mastery learning: By the end of the course, 100% of those trained will have mastered the desired competencies and be able to demonstrate the desired performance.

Adult learning principles:

- Training builds on the learner's abilities and is designed or revised to recognize the learner's experience and expertise.
- Training is designed and continuously revised to ensure that it is efficient, effective, and relevant.
- Training actively involves learners in setting their learning goals and assessing their progress.

Apprenticeship: Cognitive apprenticeship is a process that focuses on making complex skills easy for a learner to observe and learn. In the cognitive apprenticeship process:

- The mentor (or trainer) demonstrates steps and models behaviors for the apprentice (or learner).
- The mentor explains his or her decisions and thought processes while working.
- The apprentice (learner) practices alongside the mentor, getting continual mentoring and coaching.

Over time, as the apprentice (learner) becomes more competent, he or she performs more and more independently.

Humanism: The humanistic approach reduces learner stress and protects the safety and dignity of the learners and clients involved in the learning process. The approach involves practicing and mastering clinical services in simulation with anatomic models, if appropriate, before working with clients to reduce the risk of client harm or discomfort. Learners gain confidence by practicing in a safe environment.

Modular: A modular approach allows instructors and learners to focus on one topic at a time, build on their current knowledge, and move to the next course with more confidence and competence.

Workshop Syllabus

Workshop Description

The Prevention and Control of Malaria in Pregnancy workshop is intended for skilled providers, including midwives, nurses, clinical officers, medical assistants, etc., who provide antenatal care (ANC). The workshop provides learners with the knowledge and skills needed to prevent, recognize, and treat malaria in pregnancy (MIP) as they provide ANC services.

Since the goal is to deliver these services as part of routine ANC, this guide recommends ANC as the main platform for the integration of evidence-based care for pregnant women. The 2016 World Health Organization (WHO) recommendations on ANC state: “ANC provides a platform for important health care functions, including health promotion, screening and diagnosis, and disease prevention. It has been established that by implementing timely and appropriate evidence-based practices, ANC can save lives. Crucially, ANC also provides the opportunity to communicate with and support women, families and communities at a critical time in the course of a woman’s life” (WHO 2016). The updated ANC recommendations support the WHO 2012 policy recommendation for intermittent preventive treatment of malaria in pregnancy with sulfadoxine-pyrimethamine (IPTp-SP) (WHO 2013b).

Workshops may include one or more days of guided clinical observation and practice. In such cases, the facilitator will provide information regarding that component separately.

Workshop Goals

- Prepare skilled providers to educate and counsel women about how to prevent MIP.
- Prepare skilled providers to administer appropriate IPTp-SP to pregnant women.
- Provide skilled providers with the knowledge necessary to recognize and treat uncomplicated malaria in pregnancy.
- Provide skilled providers with the knowledge necessary to recognize severe malaria in pregnant women, deliver a loading dose of the appropriate medication, and refer the women to a higher level of care.

Learning Objectives

By the end of this workshop, the learner will be able to:

1. Define ANC and list the main goals of ANC.
2. Discuss the timing of ANC contacts.
3. Describe the essential elements of a birth preparedness/complication readiness plan.
4. Describe health system factors to support recordkeeping for ANC.
5. Define malaria and how it is transmitted.
6. Describe the effects of malaria globally, and in their own country.
7. Compare the effects of malaria in areas of stable and unstable transmission.
8. List the effects of malaria on pregnant women and their babies.
9. Describe the effects of malaria on pregnant women living with HIV.
10. Discuss integration of MIP and prevention of mother-to-child transmission services into ANC.

11. Describe the three-pronged approach to malaria prevention and control according to the WHO MIP strategy (WHO 2012b).
12. List the elements of counseling women about the use of insecticide-treated nets (ITNs)—more specifically, long-lasting insecticide-treated nets (LLINs)—for IPTp and other means of malaria prevention.
13. Describe the use of SP for IPTp, including dosage, timing, and contraindications.
14. Discuss indoor residual spraying (IRS) and other ways to prevent malaria.
15. Assist the pregnant woman with preparing a birth preparedness and complication readiness plan.
16. Explain why self-diagnosis/treatment may lead to treatment failure or recurring infection.
17. Describe the types of diagnostic tests available for malaria and their advantages and disadvantages.
18. Identify causes of fever during pregnancy other than malaria.
19. List the signs and symptoms of uncomplicated and severe MIP.
20. Describe the treatment for uncomplicated and severe MIP.
21. Explain the steps to appropriately refer a pregnant woman who has severe malaria.
22. If the workshop includes a clinical component, practice conducting initial and follow-up ANC visits; targeting prevention, diagnosis, and treatment of uncomplicated malaria; and diagnosis, stabilization, loading dose, and referral for severe malaria.

Training/Learning Methods

- Illustrated interactive presentations
- Large- and small-group discussions
- Case studies
- Role-plays
- Group activities

Learning Materials

The learning materials for this workshop include:

- **Reference manual** for learners and facilitators: Prevention and Control of Malaria in Pregnancy
- **Learner's guide** containing the course syllabus, schedule, knowledge assessments, case studies, role-plays, and checklists
- **Presentation graphics:**
 - Module One: Antenatal Care
 - Module Two: Transmission of Malaria
 - Module Three: Prevention of Malaria
 - Module Four: Diagnosis and Treatment of Malaria

Learner Selection Criteria

Workshop learners must be practicing health care providers or administrators of health care facilities that provide ANC services.

Workshop Duration

The workshop duration is 2 days. The optional clinical observation and practice may last for 1 or more days, depending on the needs of the learners and availability of the clinical facility/facilities.

Suggested Workshop Composition

- 20 learners
- One or two facilitators (up to four facilitators if a clinical component is included)

Sample Workshop Schedule

Prevention and Control of Malaria in Pregnancy Workshop		
Day 1	Day 2	Days 3 and 4 (optional)
<p>AM (4 hours)</p> <ul style="list-style-type: none"> Welcome, introductions, norms, and learners' expectations Workshop overview and objectives Review of workshop materials Preworkshop knowledge assessment Identification of individual and group learning needs <p>Tea Break</p> <p>Module One: Antenatal Care</p> <ul style="list-style-type: none"> Illustrated presentation, brainstorming, discussion Role-play Demonstration and skills practice, including recordkeeping (recordkeeping exercise) 	<p>AM (4 hours)</p> <ul style="list-style-type: none"> Review of agenda Discussion: initial and follow-up antenatal care (ANC) contacts <p>Module Four: Diagnosis and Treatment of Malaria</p> <ul style="list-style-type: none"> Illustrated presentation Discussion Brainstorming activity Malaria treatment: Illustrated presentation Discussion Case study <p>Tea Break</p> <p>Malaria diagnosis and treatment:</p> <ul style="list-style-type: none"> Skills practice Caring for a woman with uncomplicated malaria 	<p>AM (4 hours)</p> <p>Clinical observation and practice:</p> <ul style="list-style-type: none"> Preclinical meeting Guided clinical activities and provision of ANC to clients
<p>PM (3 hours)</p> <p>Module Two: Malaria Transmission</p> <ul style="list-style-type: none"> Illustrated presentation Group discussion <p>Module Three: Malaria Prevention</p> <p>ITNs:</p> <ul style="list-style-type: none"> Illustrated presentation Group activity <p>Tea Break</p> <p>IPTp-SP:</p> <ul style="list-style-type: none"> Illustrated presentation Case study <p>Birth preparedness and complication readiness:</p> <ul style="list-style-type: none"> Case study <p>Review of day's activities</p>	<p>PM (3 hours)</p> <p>Referring a woman with severe malaria:</p> <ul style="list-style-type: none"> Illustrated presentation Discussion Clinical drill <p>Implications for practice:</p> <ul style="list-style-type: none"> Discussion Preparation of action plans Postworkshop knowledge assessment Workshop evaluation (if no clinical component) Closing (if no clinical component) 	<p>PM (2 hours)</p> <p>Clinical conference:</p> <ul style="list-style-type: none"> Review experiences of each group Recordkeeping and referral notes with client transfer (severe malaria) Workshop evaluation Closing

Prevention and Control of Malaria in Pregnancy Workshop

Day 1	Day 2	Days 3 and 4 (optional)
<p>Assignments:</p> <ol style="list-style-type: none">1. In reference manual review Table 2, Components of ANC contacts (for pregnant women in moderate- to high-transmission areas), and compare content of initial and follow-up ANC contacts.2. Review checklists for first and follow up ANC contacts.		

Learning Methods

Illustrated Interactive Presentations

Facilitators will use interactive presentations to provide information about specific topics. The content is based on, but not necessarily limited to, the information in *Prevention and Control of Malaria in Pregnancy* (the reference manual). Learners should read relevant sections of the reference manual (and other resource materials, if used) before each session.

During presentations, the facilitator will ask questions of learners and encourage learners to ask questions at any point. The facilitator will also stop at predetermined points to discuss issues and information of particular importance in the context of the learners' country and experience with MIP.

Case Studies

Case studies help learners practice clinical decision-making skills. For each case study, a key lists the expected responses. The facilitator will be thoroughly familiar with these responses before introducing the case studies. Though the key contains “likely” answers, other answers provided by learners during the discussion may be equally acceptable. The technical content of the case studies is taken from *Prevention and Control of Malaria in Pregnancy* (the reference manual).

Role-Plays

Role-plays help learners practice interpersonal communication skills. Each role-play requires the participation of two or three learners, with the other learners observing. Following completion of the role-play, the facilitator will ask questions to guide the discussion.

Skills Practice

This portion of the workshop focuses on observation and classroom practice of the skills needed to educate clients about malaria and recognize, treat, and refer clients with malaria.

The checklists contain the key steps or tasks required to perform a skill or activity in a standardized way. They outline the correct steps and the sequence in which they should be performed (for skill acquisition), and measure progress in small steps as the learner gains confidence and skill (skill competency). Once learners become confident in performing a skill during classroom practice, they can use the checklists to rate each other's performance.

If the workshop includes clinical observation and practice sessions with clients, learners are grouped in teams. One learner acts as the skilled provider and carries out the ANC visit, while the other learners observe and use the checklist to evaluate the provider's performance. During this phase, the facilitator is always present in the clinic and supervises at least one client encounter for each learner.

Clinical Drills

Clinical drills provide learners with opportunities to observe and take part in an emergency rapid response system. Frequent drills help to ensure that each member of the emergency team knows his or her role and is able to respond rapidly.

By the end of the workshop, learners should be able to conduct drills in their own facilities.

Preworkshop Knowledge Assessment

The objective of the preworkshop knowledge assessment is to assist the facilitator and the learners by determining what the learners, individually and as a group, know about malaria in pregnancy. The assessment helps the facilitator identify topics that need additional emphasis during the workshop. The individual results help the learners focus on their learning needs and alert them to the content that will be presented in the workshop.

The relevant learning objectives are noted for each statement on the assessment.

Instructions: In the space provided, print a capital T if the statement is true or a capital F if the statement is false.

	T or F	
Antenatal Care		
A minimum of eight antenatal contacts is advised for women who register for care in the first trimester of pregnancy.		Learning Objective 2
When providing health education, first address the woman's specific questions, problems, or concerns.		Learning Objective 3
Recognizing early signs of problems or disease is an essential part of antenatal care contacts.		Learning Objective 1
Malaria Transmission		
Flies can transmit malaria by landing on food eaten by pregnant women.		Learning Objective 5
Malaria parasites can attack the placenta and interfere with its function, leading to poor growth of the fetus.		Learning Objective 8
Women in their first pregnancy are at higher risk of developing complications of malaria in pregnancy, compared to women who have had more than two babies.		Learning Objective 8
Pregnant women living with HIV have a higher risk of malaria infection than women who do not have HIV.		Learning Objective 9
Malaria Prevention		
Insecticide-treated nets reduce the number of mosquitoes in the house, both inside and outside the net.		Learning Objective 12
Intermittent preventive treatment should be given to all eligible pregnant women, even if they have no symptoms of malaria.		Learning Objective 13
The first dose of intermittent preventive treatment with sulfadoxine-pyrimethamine can be given at the beginning of the second trimester of pregnancy.		Learning Objective 13
Malaria Diagnosis and Treatment		
Changes in behavior, such as drowsiness or confusion, could be symptoms of severe malaria.		Learning Objective 19
Pregnant women diagnosed with malaria should never be given artemisinin-based combination therapy.		Learning Objective 20

Module One: Antenatal Care

Brainstorming Activity for ANC

Time Needed: 5–10 minutes

Learners will name practices performed routinely in antenatal clinics and list them on a flip chart. The facilitator will ask learners to discuss each of these practices to determine its contribution to improved outcomes for the mother and her newborn. Learners will be encouraged to talk about how to eliminate unnecessary practices in their own settings to make more time for ANC and counseling about birth planning and malaria.

Role-Play for ANC

Purpose

The role-play provides an opportunity for learners to understand the importance of individual counseling and health education, using good interpersonal skills, and supporting/encouraging women to seek information.

Directions

Two learners will be selected to perform the roles of a skilled provider and an ANC client. Learners will have a few minutes to prepare for the activity by reading the background information provided below. The remaining learners, who will observe and discuss the role-play, also should read the background information.

Roles

Skilled provider: The provider is an experienced provider who has good interpersonal skills.

ANC client: Ngone, a 21-year-old woman, is pregnant for the first time. She is 28 weeks pregnant.

Situation

Ngone has come to the ANC clinic 5 days before her second antenatal appointment. She appears very anxious and explains that the midwife advised her to return if she had any concerns. She tells the provider that she has several questions about changes and discomforts in her body.

Ngone describes the symptoms of one or two common discomforts of pregnancy, such as constipation and low back pain. The provider takes a targeted history and performs a targeted physical exam to rule out conditions requiring care beyond the scope of basic ANC. The provider determines that Ngone has some common discomforts of pregnancy and gives her the information necessary to deal with her symptoms.

Checklist for Initial ANC Contact

(For use by the learner for practice and by the facilitator to assess competency)

Place a "✓" in case box if step/task is performed satisfactorily, an "X" if it is performed unsatisfactorily, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines.

Unsatisfactory: Is unable to perform the step or task according to the standard procedure or guidelines.

Not Observed: Step or task not performed by participant during evaluation by trainer.

Learner _____ Date Observed _____

Checklist for First ANC Contact (Many of the following steps/tasks can be performed simultaneously.)					
Step/Task	Cases				
PREPARATION					
1. Prepare necessary equipment for antenatal care: weighing scale, blood pressure apparatus, stethoscope, thermometer, measuring tape, fetoscope, iron/folic acid tablets, tetanus toxoid/syringe, SP tablets, clean cup and drinking water, exam table/step stool, urine protein test, hemoglobin test, syphilis test, HIV rapid diagnostic test, malaria rapid diagnostic test, soap/water/towel, exam gloves, sharps box, bucket for used instruments, waste bucket, ANC record, and clinic card.					
2. Greet woman and companion of woman's choice (if she so desires) respectfully and with kindness, and offer them a seat. Tell her/them what you will do and answer her questions.					
3. Provide continual emotional support and reassurance.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
HISTORY					
1. Do rapid initial assessment: Ask the woman how she is feeling and respond immediately to any urgent problems.					
2. Obtain the woman's personal information: name, age, address, and phone number.					
3. Ask her name, age, number of previous pregnancies and dates of deliveries, complications/outcomes, and number of living children.					
4. Ask about use of alcohol, tobacco, or unprescribed medications/traditional remedies.					
5. Ask if she is currently breastfeeding.					
6. Ask if she has allergies to any medications or food.					
7. Ask about her menstrual periods: how often they occur, whether they are regular, how long they last, and amount of flow.					
8. Ask about contraceptive history, including use of lactational amenorrhea method or other modern methods, and when the woman started and discontinued the methods.					

Checklist for First ANC Contact (Many of the following steps/tasks can be performed simultaneously.)					
Step/Task	Cases				
9. Ask the date of the first day of her last normal menstrual period (LMP) and about any bleeding since that time.					
10. Ask if she has had problems in this pregnancy, such as bleeding or cramping.					
11. Ask if she has had a pregnancy test in this pregnancy, the date, and the results.					
12. Ask if she has had an obstetric ultrasound scan in this pregnancy, the date, and the results.					
13. Ask if she has noted fetal movement (quickening) and, if so, the date it began.					
14. Calculate gestational age and estimated date of delivery (EDD). (Use a pregnancy wheel, or take the date of the first day of the LMP, subtract 3 months, and add 7 days; for example, first day of LMP is March 1, 2015; EDD = December 8, 2015). Correlate this information with findings from physical exam (and ultrasound scan, if applicable) to arrive at a final estimate of gestational age and EDD.					
15. Ask about tetanus immunization status.					
16. Ask about general health problems and whether she has been or is being treated for hypertension, heart disease, anemia, malaria, diabetes, HIV, tuberculosis, etc. Screen for TB (ask about persistent cough, fever, night sweats, blood-tinged sputum).					
17. Ask about use of SP in this pregnancy.					
18. Ask about use of a long-lasting insecticide-treated net (LLIN).					
19. Ask about gender -based violence or abuse and social support to deal with it.					
20. Ask about any other problems or concerns not covered already.					
21. Ask the woman what questions she has and provide clear answers.					
22. Record information on the ANC card and/or clinic record and client-held case notes, if applicable.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
PHYSICAL EXAM					
1. Wash and dry hands.					
2. Ask the woman if she needs to empty her bladder and, if necessary, instruct her to save urine for testing for proteinuria.					
3. Take her vital signs if not already done (blood pressure and pulse; temperature if indicated).					
4. Assist her onto the exam table/bed.					
5. Observe her general appearance.					
6. Check conjunctiva and palms for pallor.					
7. Assess face and hands for edema.					

Checklist for First ANC Contact (Many of the following steps/tasks can be performed simultaneously.)					
Step/Task	Cases				
8. Check breasts and nipples for lesions.					
9. If uterus is at umbilicus or higher, listen for fetal heart with fetoscope.					
10. Examine abdomen and fundal height in relation to symphysis pubis and umbilicus (13–20 weeks); use abdominal palpitation or measure with measuring tape after 20 weeks.					
11. If the woman states that she is having problems, put exam gloves on both hands and examine external genitalia for bleeding, discharge, and lesions.					
12. Remove gloves by turning them inside out. Dispose of them in trash. Wash hands with soap and water, and dry them.					
13. Inform the woman of the results of the exam; record information on the ANC card and/or clinic record and the client-held case notes, if applicable.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
SCREENING TESTS/TREATMENTS					
1. Wash and dry hands. Put on exam gloves.					
2. Counsel the woman on tests that will be done and answer any questions she has.					
3. Draw blood for screening tests: hemoglobin, syphilis, HIV, and malaria rapid diagnostic test, as appropriate.					
4. Dispose of syringe/needles/lancets in sharps box; label samples and ensure that they are taken to the appropriate place for processing.					
5. Remove gloves, and wash and dry hands.					
6. Provide first tetanus toxoid immunization, if indicated.					
7. If the woman is in the second trimester (13 weeks gestation or more), and if she has not had SP within the last month and is not on co-trimoxazole or taking >5 mg of folic acid, counsel her on need for SP and provide SP under directly observed therapy using a clean cup and drinking water. (Decontaminate cups after use and store in a clean place.)					
8. Provide an LLIN, and counsel the woman on the importance of using it every night and how to use it.					
9. If not done previously, if less than 24 weeks, and if available, obtain obstetric ultrasound scan.					
10. Counsel her about the need for iron/folic acid and provide sufficient iron and folic acid tablets (30–60 mg elemental iron; 0.4 mg folic acid) to last until the next contact.					
11. Record the test results, immunization, and provision of SP, LLIN, and iron/folic acid on the ANC card/clinic record and the client-held case notes, if applicable.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

Checklist for First ANC Contact (Many of the following steps/tasks can be performed simultaneously.)					
Step/Task	Cases				
FORMULATE PLAN OF CARE					
1. Based on the results of the woman's history, physical exam, and screening test, formulate a plan of care to address any problems or needs.					
2. Discuss the plan of care with the woman and answer any questions she has.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					
COUNSELING					
1. Counsel the woman on birth preparation/complication readiness, including danger signs and what to do if they occur.					
2. Counsel her on daily use of iron/folic acid tablets.					
3. Educate the woman about prevention of malaria infection (cause of malaria and its effects on mothers and babies, use of ITNs every night, benefits of IPTp-SP throughout the pregnancy, and signs of malaria and what to do if they occur).					
4. Counsel the woman on other issues relevant to the woman's plan of care and ensure that you have answered any questions she has. Include health education and health promotion on healthy eating, physical activity, and healthy timing and spacing of pregnancies.					
5. Set the date of the next ANC contact and ensure that the woman understands the importance of continued ANC, which includes SP at not less than monthly intervals.					
6. Thank the woman for coming to the antenatal clinic.					
SKILL/ACTIVITY PERFORMED SATISFACTORILY					

Checklist for Follow-Up ANC Contacts

Place a "✓" in the case box if the step/task is performed satisfactorily, an "X" if performed unsatisfactorily, or **N/O** if it is not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines.

Unsatisfactory: Is unable to perform the step or task according to the standard procedures or guidelines.

Not Observed: Step or task not performed by learner during evaluation by facilitator.

Learner's name: _____ Date observed: _____

Checklist for Follow-Up ANC Contacts				
Step/Task	Cases			
GETTING READY				
1. Prepare the necessary equipment and supplies.				
2. Greet the woman respectfully and with kindness.				
3. Ask if she has experienced any danger signs or symptoms and address them immediately (vaginal bleeding, severe headache/blurred vision, fever, convulsions, persistent cough, fever, night sweats, blood-tinged sputum, etc.).				
4. Listen to the woman and respond attentively to her questions and concerns.				
5. Ask about any previous antenatal care during this pregnancy.				
STEP/TASK PERFORMED SATISFACTORILY				
HISTORY TAKING				
1. Ask the woman whether she has had any problems since her last contact and if she has received care from another provider.				
2. Ask whether her personal information or daily habits have changed and whether she has been unable to carry out any part of the plan of care.				
3. Inquire about nightly use of an insecticide-treated net (ITN).				
STEP/TASK PERFORMED SATISFACTORILY				
PHYSICAL EXAMINATION				
1. Wash hands thoroughly.				
2. Measure blood pressure and pulse. Measure temperature if necessary. Perform a focused head-to-toe examination.				
3. Inspect the abdomen.				
4. Palpate the abdomen and note uterine size, fetal heart rate, fetal movements, and fetal position (after 36 weeks).				
5. Perform an external genital examination, if indicated.				
STEP/TASK PERFORMED SATISFACTORILY				

Checklist for Follow-Up ANC Contacts				
Step/Task	Cases			
POSTEXAMINATION TASKS				
1. Dispose of waste materials in a leakproof container or plastic bag.				
2. Remove gloves and discard them in a leakproof container or plastic bag.				
3. Wash hands thoroughly.				
STEP/TASK PERFORMED SATISFACTORILY				
TESTING				
1. Conduct tests as indicated or needed. If tests for HIV and syphilis have not been performed, they should be done at this contact.				
STEP/TASK PERFORMED SATISFACTORILY				
COUNSELING AND HEALTH EDUCATION				
1. Discuss the woman's birth preparedness and complication readiness plan.				
2. Provide health education and health promotion counseling on healthy eating, physical activity, healthy timing and spacing of pregnancies, and preventing malaria infection.				
3. Provide appointment for next antenatal contact.				
STEP/TASK PERFORMED SATISFACTORILY				
PROVISION OF CARE				
1. If the woman is in the second trimester of pregnancy (13 weeks) or beyond, administer intermittent preventive treatment of malaria in pregnancy with sulfadoxine-pyrimethamine (IPTp-SP) by directly observed therapy, three tablets with clean cup and water. Ensure that it has been at least 1 month since her last dose. Do not administer SP if the woman is in the first trimester of pregnancy, but inform her when she should receive the first dose of IPTp-SP. Do not administer if she is taking co-trimoxazole prophylaxis and/or if she is taking > 5 mg of folic acid.				
2. If the woman has not received an ITN, provide one now or provide her with information about where to obtain one and how to use it.				
3. Give immunizations and other prophylaxis (e.g., tetanus toxoid, iron 30–60 mg/folic acid 0.4 mg, presumptive treatment for hookworm, iodine, etc., per country guidelines). If IPTp-SP is administered and only a high dose of folic acid (≥ 5 mg) is available, withhold folic acid for 2 weeks, or per country guidelines.				
4. Record all findings and medications prescribed/dispensed on the woman's ANC card and/or clinic card and client-held case notes, if applicable (IPTp-SP 1, IPTp-SP 2, etc.).				
STEP/TASK PERFORMED SATISFACTORILY				

Recordkeeping Exercise

This exercise may be used as a small- or large-group activity, or as an evening assignment to be discussed with the group the next day.

Small-group activity: Learners should read the case scenario individually and answer the questions as a group. Groups will share and discuss their answers.

Large-group activity: Learners should read the case scenario individually. Brainstorm and discuss their answers.

Evening assignment: Learners should read the case scenario and answer the questions. The next day, the facilitator will lead a group discussion about the answers.

Case Scenario

Jasmine is 21 years old and about 20 weeks pregnant. This is her second pregnancy. She has had one spontaneous abortion. Jasmine goes to the ANC clinic for the first time. She has not experienced any problems during this pregnancy.

Jasmine has never had any serious disease in the past. The first day of her last menstrual period was about 5 months ago. Her periods had been regular and lasted for about 4 days. Jasmine's body temperature is normal, her blood pressure is 120/80 mm Hg, and her pulse is 80 beats per minute. Jasmine's conjunctivas are slightly pale. She says that she has been bitten many times by mosquitoes.

The provider palpates her abdomen, finds her uterus at the level of the umbilicus, and hears the fetal heart at 140 beats per minute. Jasmine states that she feels the baby's movements. These findings confirm a gestational age of 20 weeks.

The provider completes Jasmine's physical examination by taking blood for hemoglobin, administering syphilis and HIV testing, and giving her the first dose of tetanus toxoid immunization and enough iron (30–60 mg) and folic acid (0.4 mg) tablets to last until her next contact. The provider will recommend an obstetric ultrasound scan (according to country policy and if it is available) to confirm gestational age and to identify multiple pregnancy and fetal anomalies. The provider also gives her three SP tablets for prevention of malaria. Jasmine swallows them with a cup of clean water as the provider observes. The provider tells Jasmine that she will receive IPTp-SP at each scheduled ANC contact, but not more often than monthly, up to the time she gives birth. To decrease the risk of getting malaria, the provider explains the possible complications that can arise with the mother and baby if the mother contracts malaria while pregnant. The provider emphasizes the need to use an ITN every night to avoid bites by malaria-carrying mosquito.

The provider informs Jasmine about her next ANC contact. Jasmine will go to her mother's home for 6 weeks. The provider and Jasmine agree that the next contact will be at about 26 weeks of pregnancy, or earlier if Jasmine experiences danger signs.

Questions

1. **Is it necessary for the provider to fill out information about Jasmine's contact in any register or individual record forms? Why or why not?**

Yes, the provider should complete whatever individual records and registers are routinely used in the health facility and those carried by the woman. Information should include findings about the woman's medical history, results of her physical exam, and all medications and treatments given to the woman, such as tetanus toxoid injection, iron/folic acid tablets, and IPTp.

Counseling provided about important topics such as MIP should be noted as well. This is the best way for all providers to ensure that women are receiving appropriate and complete care during their pregnancies.

2. **How would the provider benefit by maintaining information about Jasmine? How would Jasmine benefit? What is the benefit to the district health management team?**

When the provider completes the record with the dates and results of Jasmine's medical history and physical exam, s/he will supply vital information for use by all the skilled providers who will take care of Jasmine for the entire antenatal period, as well as during childbirth and the postpartum period. This information will help to correctly determine when to give the next dose of tetanus toxoid and the next dose of IPTp-SP. This benefits Jasmine because she will receive the correct medications at the appropriate times, thus decreasing her risk of acquiring tetanus and malaria. The district health management team can perform audits of these records to make sure that providers are giving medications at the proper times in pregnancy and in the appropriate amounts. They can also ascertain that women are receiving important counseling about preventive measures, such as the use of ITNs, and thus be able to gather statistics on the number of pregnant women in their district who are benefiting from these interventions.

3. **Identify all of the information that the provider should record.**

- The woman's medical history, past obstetrical history, date of the first day of her last menstrual period (in order to calculate gestational age), and whether the woman feels fetal movement
- Information from the physical exam, especially blood pressure and the size of the uterus, to confirm gestational age
- Counseling given to the mother about how to avoid MIP by taking IPTp-SP and using ITNs, and about birth preparedness and complication readiness
- Medications and treatments given, such as tetanus toxoid, iron/folic acid, and IPTp-SP (There are two instances in which SP is **NOT** given: if the woman is receiving folic acid in doses ≥ 5 mg and if the woman is receiving co-trimoxazole prophylaxis.)
- Tests performed, such as hemoglobin, syphilis, and HIV, with results
- Identification of problems and treatment provided; documentation of any referrals made
- Date of next ANC contact

Module Two: Transmission of Malaria

Group Discussion about Malaria Transmission

Directions

Learners should read the question and list their responses individually. The facilitator asks learners to share their responses and leads the discussion.

Question

An 18-year-old woman who is 26 weeks pregnant with her first child has come to the clinic to register. She tells you that she heard on the radio that malaria can cause problems during pregnancy. In the space provided below, list at least four key issues you will discuss with this young woman about MIP and why.

Module Three: Prevention of Malaria

Case Study 1: Conducting an ANC Contact

Directions

The learners will be divided into small groups. Learners should read and analyze this case study individually and then answer the case study questions as a group. The groups should then share their answers.

Case Study

Hawa is 24 years old. She is 16 weeks pregnant with her second child. Her last pregnancy was 2 years ago, and it was uneventful. She lives in a small town, about 5 kilometers from the maternity clinic. She is a part-time teacher at a nursery school that is 3 kilometers from her home. Her husband works 45 kilometers away and returns home late in the evening. Hawa arrives today for her first ANC contact with a complaint of slight dizziness. She has walked to the clinic.

Basic Assessment

1. What will you include in your initial assessment of Hawa and why?
2. What particular aspects of Hawa's physical examination will help you make an evaluation or identify her problems/needs, and why?
3. Which screening procedures/laboratory tests will you include (if available) in your assessment of Hawa and why?

Evaluation

You have completed your assessment of Hawa. Your findings include the following:

Hawa's temperature is 37 degrees C, her blood pressure is 110/72 mm Hg, and her pulse is 84 beats per minute. Her hemoglobin is 11 g/dL. She states that she left home this morning without eating breakfast so she would not be late to the clinic. She had slight nausea earlier in her pregnancy, but this has stopped. She explains that she eats irregular meals due to her work and the distances she must walk. Hawa has felt fetal movement (quickenings) for the last several days.

Her physical examination is normal, and the size of her uterus corresponds to the gestational age based on last menstrual period.

4. Based on these findings, what is Hawa's diagnosis and why?

Care Provision

5. Based on your diagnosis, what is your plan of care for Hawa and why?

Follow-Up

Hawa returns for her second ANC visit at 20 weeks. She reports no danger signs, and she states that she is eating nutritious foods regularly throughout the day. She has had no further episodes of dizziness. She sleeps under an ITN every night. She and her husband have asked a neighbor with a

car if they would be willing to take Hawa to the health center where she has chosen to have her baby. This same neighbor would be willing to take her to the district hospital if she has complications.

6. Based on these findings, what is your continuing plan of care for Hawa and why?

Case Study 2: Conducting an ANC Contact

Directions

The learners will be divided into small groups. Learners should read and analyze this case study individually and then answer the case study questions as a group. The groups should then share their answers.

Case Study

Thandi is 19 years old and has been married for a year. She arrives for her first contact at the ANC clinic because she suspects she is pregnant. Thandi's husband works in a distant city and is home only on weekends. His mother lives nearby and comes often to check on Thandi. Her mother-in-law has already advised her son and Thandi to have the traditional birth attendant, who lives very close, attend the birth.

Basic Assessment

1. What will you include in your initial assessment of Thandi and why?
2. What particular aspects of Thandi's physical examination will help you make an evaluation or identify her problems/needs, and why?
3. What screening procedures/laboratory tests will you include (if available) in your assessment of Thandi and why?

Evaluation

You have completed your assessment of Thandi, and your findings include the following:

Thandi's history and physical examination reveal no abnormalities. The size of the uterus is compatible with the date of her last menstrual period (14 weeks). Her rapid plasma reagin and HIV tests are negative, and her hemoglobin is 10.5 g/dL.

4. Based on these findings, what is Thandi's diagnosis and why?

Care Provision

5. Based on your diagnosis, what is your plan of care for Thandi and why?

Follow-Up

Thandi returns to the antenatal clinic at 20 weeks gestation, accompanied by her mother-in-law. She states that she feels well and feels the baby moving. She is taking her iron/folic acid tablets daily and trying to eat foods containing iron. The results of her history and physical examination are normal. She is given her second dose of IPTp-SP, three tablets with a clean cup and water, and is observed while taking it. She uses an ITN every night. She states that she and her mother-in-law have discussed the provider's suggestions about making a birth plan and using a skilled provider at the time of birth. Her mother-in-law would like to ask the provider some questions about these points.

6. Based on these findings, what is your continuing plan of care for Thandi and why?

Module Four: Diagnosis and Treatment of Malaria

Case Study 3: Treating a Client Who Has Malaria

Directions

The learners will be divided into small groups. Learners should read and analyze this case study individually and then answer the case study questions as a group. The groups should then share their answers.

Case Study

Aminah is 30 years old. She is approximately 24 weeks pregnant with her second baby. She comes to the antenatal clinic for the first time complaining of fever for the last 2 days. Aminah 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 Aminah and why?
2. What particular aspects of Aminah's physical examination will help you make an evaluation or identify her problems and needs, and why?
3. What screening procedures and laboratory tests will you include (if available) in your assessment of Aminah and why?

Evaluation

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

Aminah states that she has felt well during this pregnancy and began having fever yesterday morning. She states that she does not have other symptoms, such as visual changes, cough, difficulty urinating, abdominal pain, or leaking of fluid. She has not had convulsions or loss of consciousness. She has not taken any medication.

Aminah is fully conscious and able to walk. Her temperature is 38.7° degrees C, her blood pressure is 122/68 mm Hg, her pulse rate is 92 beats per minute, and her respiration rate is 18 breaths per minute. Aminah 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 date of her last menstrual period), and fetal heart tones are 140 beats per minute.

Her hemoglobin is 10.5 g/dL; the thick blood film test for malaria is positive. The tests for syphilis and HIV are negative.

4. Based on these findings, what is your diagnosis of Aminah and why?

Care Provision

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

Checklist for Treatment of Uncomplicated Malaria and Referral for Severe Malaria

Place a “✓” in the case box if the step/task is performed satisfactorily, an “X” if it is performed unsatisfactorily, or **N/O** if it is not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines.

Unsatisfactory: Is unable to perform the step or task according to the standard procedures or guidelines.

Not Observed: Step or task not performed by learner during evaluation by facilitator.

Learner’s name: _____ Date observed: _____

Checklist for Treatment of Uncomplicated Malaria and Referral for Severe Malaria				
Step/Task	Cases			
GETTING READY				
1. Greet the woman respectfully and with kindness.				
2. Ask if she has experienced any danger signs or symptoms and address them immediately. Ask about her general well-being.				
STEP/TASK PERFORMED SATISFACTORILY				
DIAGNOSIS OF MALARIA				
1. Ask her if she has any complaints, such as fever or recent history of fever. Ask her if she has had symptoms of severe malaria, including impaired consciousness/coma, convulsions, prostration/generalized weakness, or respiratory difficulty.				
2. If she answers yes to any of the questions in #1, perform microscopy, if available, or a malaria rapid diagnostic test. If positive, confirm malaria disease.				
3. If no signs/symptoms of severe malaria are present, confirm uncomplicated malaria, perform physical exam as described below and treat per the case management job aid (see see Figure 11 in reference manual).				
4. If signs/symptoms of severe malaria are present, confirm severe malaria and treat per the case management job aid (see see Figure 11 in reference manual).				
5. Listen to the woman and her family, and respond to their concerns and questions.				
STEP/TASK PERFORMED SATISFACTORILY				
PHYSICAL EXAMINATION				
1. Wash your hands thoroughly.				
2. Note the woman's general appearance and measure her axillary temperature, blood pressure, pulse, and respiratory rate. Check her level of consciousness and check for pallor, dry mouth, jaundice, etc.				
3. If the woman is attending the routine antenatal clinic and is in stable condition (i.e., uncomplicated malaria is confirmed), provide treatment as necessary and complete other ANC tasks (see checklists for ANC).				
STEP/TASK PERFORMED SATISFACTORILY				
TREATMENT OF UNCOMPLICATED MALARIA				

Checklist for Treatment of Uncomplicated Malaria and Referral for Severe Malaria				
Step/Task	Cases			
If microscopy or rapid diagnostic tests are positive for malaria and the woman does not have any of the danger signs listed above that suggest severe malaria, diagnose uncomplicated malaria and treat according to the case management job aid (see see Figure 11 in reference manual).				
STEP/TASK PERFORMED SATISFACTORILY				
COUNSELING AND HEALTH EDUCATION FOR UNCOMPLICATED MALARIA				
1. Instruct her on how to take additional drugs that are prescribed: <ul style="list-style-type: none"> If axillary temperature is ≥ 38 degrees C, give paracetamol 500 mg: two tablets every 6 hours until her temperature returns to normal. 				
2. Educate her about malaria prevention and control, possible side effects of drugs, etc.				
3. Counsel her on ITN use and, if she does not have one, provide an ITN or voucher to purchase one.				
4. Advise her to come back to the facility within 48 hours or at any time if she feels worse.				
5. Record relevant information and medications given in the woman's ANC card and/or clinic card and client-held case notes, if applicable.				
STEP/TASK PERFORMED SATISFACTORILY				
REFERRAL FOR ALLERGIES TO ANTIMALARIALS				
1. If she is allergic to antimalarials, refer her immediately to a higher level of care for appropriate treatment.				
REFERRAL FOR SEVERE MALARIA				
2. If she has any of the danger signs listed under History and Physical Examination, and microscopy and/or rapid diagnostic test are positive, diagnose severe malaria and: <ul style="list-style-type: none"> Explain the situation to the client and her family. Give her prereferral treatment according to the case management job aid (see Figure 11 in reference manual) if she has not yet taken any medication. 				
3. Refer immediately. <ul style="list-style-type: none"> Write a referral note. Record information on the woman's ANC card and/or clinic record and client-held case notes, if applicable. 				
STEP/TASK PERFORMED SATISFACTORILY				

Group Activity for Malaria Diagnosis and Treatment

The purpose of this activity is to help learners become used to asking questions and looking for key physical signs when a pregnant woman presents with symptoms of malaria. The activity will also help them know how to give the correct medication and when to refer the woman.

Learners will be divided into four groups as follows:

- Group 1: History
- Group 2: Physical exam
- Group 3: Treatment
- Group 4: Referral

Groups 3 and 4 will receive additional information about the case on a card from the facilitator.

The facilitator will read the case description to the groups.

Each group will have 10 minutes to list the actions to be performed for their category of care. For example, Group 1 lists all relevant and important questions to ask a woman who may have malaria. Group 2 lists the necessary components of an examination for a woman who may have malaria. Group 3 lists treatment options based on the additional information provided to them. Group 4 lists diagnosis and management plans based on the additional information provided to them.

Each group will present their list to the larger group, which will suggest additional actions to complete the list, if necessary.

Clinical Drill for Severe Malaria

Clinical drills provide learners with opportunities to observe and take part in an emergency rapid response system. Ideally, unscheduled emergency drills should be included in the workshop. Frequent drills help ensure that all members of the emergency team know their role and are able to respond rapidly. By the end of the workshop, learners should be able to conduct drills in their own facilities.

Directions

The facilitator will write each role on a separate card (see below). Learners will be selected to play the roles. The selected learners will receive the cards the day before the simulation is scheduled so they have time to prepare.

At the time the simulation is scheduled, the facilitator rings a small bell. The learners should immediately assume their roles and demonstrate the actions needed to respond to the patient's condition.

At the end of the simulation, the facilitator and learners should discuss the simulation and identify any steps or tasks that could be done more effectively or rapidly.

Roles

Role 1: Thandiwe, the patient

Thandiwe is 32 weeks pregnant. She was treated for uncomplicated malaria 2 days ago and returns to the clinic complaining of symptoms that are getting worse. While the provider is obtaining her history, Thandiwe collapses and begins convulsing.

Role 2: Family member accompanying Thandiwe to the clinic

Role 3: Skilled provider

- Conducts rapid initial assessment, including blood pressure, pulse, respirations and temperature. Orders a malaria RDT and urinalysis for protein testing.
- When exam and test results are given, diagnoses probable severe malaria.
- Directs health staff (see below).
- Gives diazepam to treat convulsions.
- Begins treatment according to case management job aid:
 - Parenteral artesunate 2.4 mg/kg IV bolus or IM as a loading dose, **or**
 - If artesunate is unavailable, intramuscular artemether is given, and if this is unavailable, then parenteral quinine is started immediately until artesunate is obtained.
- Writes referral note on flip chart (includes patient's name, age, gravida; para; and number of weeks pregnant; presenting symptoms; diagnosis; treatment provided; and facility to which patient is being referred).

Role 4: Health staff

- Takes vital signs frequently. Assures good positioning of woman to guard airway. Protects from harm if convulsing. Gives oxygen.
- Starts IV fluids.
- Escorts family members away from bed so health providers can manage care. Keeps patient and family informed of situation.
- Arranges transportation for referral.
- Replenishes supplies/medications on emergency tray after use.

Action Plan for Learners

Learner Name: _____ Country of Residence: _____ Name of Facility: _____

Workshop Attended: _____ Date: _____

Based on what you learned during this workshop, please write down three things that you would like to change at your facility over the next year to improve prevention and treatment of malaria during pregnancy using the platform of antenatal care.

Goal #1 _____

Goal #2 _____

Goal #3 _____

My Support Team Network:

Supervisor: _____ Trainer: _____ Coworker(s): _____

Challenges to Address: (Describe the barriers that must be eliminated or reduced and how this will be done.)

Goal #1 _____

Activities/Steps	Date Planned	Responsible Person	Resources	Date Completed
1.				
2.				
3.				

Goal #2 _____

Activities/Steps	Date Planned	Responsible Person	Resources	Date Completed
1.				
2.				
3.				

Goal #3 _____

Activities/Steps	Date Planned	Responsible Person	Resources	Date Completed
1.				
2.				
3.				

Postworkshop Knowledge Assessment

This knowledge assessment is designed to help the learners check their progress. By the end of the workshop, all learners are expected to achieve a score of 85% or better.

Read each question and circle the letter (a, b, or c) of the correct answer.

ANC

1. What is the best time for the first antenatal contact?
 - a. When the woman has vaginal bleeding
 - b. Before the sixth month of pregnancy
 - c. As soon as the woman thinks she may be pregnant
2. Topics for antenatal health education and counseling should:
 - a. Be the same at each ANC contact.
 - b. Address the woman's individual needs and concerns.
 - c. Include only what the provider thinks is important.
3. Early detection of complications and disease involves:
 - a. Obtaining the woman's history, performing a targeted physical exam, and obtaining necessary tests
 - b. Basing diagnoses on signs and symptoms alone
 - c. Explaining that the patient may not be susceptible to malaria because of where she lives

Transmission of Malaria

4. Mosquitoes transmit malaria by:
 - a. Laying eggs with mosquito parasites
 - b. Biting people
 - c. Contaminating food that people eat
5. Malaria parasites in the blood of a pregnant woman:
 - a. Interfere with the transfer of nutrients (food) to the baby.
 - b. Improve the blood flow to the placenta.
 - c. Improve the flow of oxygen to the baby.
6. Among pregnant women, those at highest risk of malaria are:
 - a. Women having their third pregnancy
 - b. Women having their first pregnancy
 - c. HIV-negative women

Prevention of Malaria

7. The benefit of an insecticide-treated net is that it:
 - a. Reduces the number of mosquitoes in the house, both inside and outside the net.
 - b. Can be used for catching fish.
 - c. Will last for at least 10 years.
8. SP should not be given to pregnant women who are:
 - a. Allergic to sulfa drugs
 - b. Less than 24 weeks pregnant
 - c. More than 36 weeks pregnant

Treatment of Malaria

9. The treatment of uncomplicated MIP should include:
 - a. First-line treatment according to national guidelines
 - b. SP
 - c. Withholding iron supplementation
10. If a woman with severe malaria is referred for treatment, the provider should:
 - a. Tell the family they should be at the referral facility by the next day.
 - b. Give a loading dose of the appropriate medication prior to referral.
 - c. Make sure the family knows what to tell the providers at the referral facility.

Prevention and Control of Malaria in Pregnancy Workshop Evaluation

Please answer all questions by circling the letter that corresponds to your answer.

1. Please indicate your occupation:
 - a. Nurse
 - b. Midwife
 - c. Obstetrician/doctor
 - d. Other health care worker
 - e. Administrator
2. Please indicate the extent to which this workshop met your expectations:
 - a. Exceeded my expectations.
 - b. Met my expectations.
 - c. Did not meet my expectations.

Please explain: _____

3. List the sessions(s) that you found most useful:

4. List the sessions(s) that you found least useful:

5. List other topics you would like to be included:

6. List two practices that you learned in this workshop that you will try to implement in your own clinical sites:

7. The workshop was (please circle one):

- a. Too long
- b. Too short
- c. The right length

8. Please rate the usefulness of the following learning tools by checking the appropriate box.

Learning Tools	Very Useful	Useful	Not Useful	Comments
Large-group discussions				
Small-group discussions				
Role-plays				
Case studies				
Clinical practice (if you went to a clinical site)				

9. Please rate the usefulness of the workshop materials by checking the appropriate box.

	Very Useful	Useful	Not Useful	Comments
Learner's guide				
Reference manual				
Learning guides and checklists				

10. The facilitators used a variety of training techniques, including demonstration, coaching, feedback, group discussion, and others. Which did you find the most useful?

11. Were any of the training techniques useful or helpful? Which ones? Why?

12. What suggestions do you have for improving the workshop? Please be specific.

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