Ministry of Health and Sanitation

Malaria in Pregnancy Guidelines for Health Workers in Malawi

May 2026
3rd Edition

FOREWORD

Malaria continues to take a great burden on pregnant women and their babies. Effective interventions have been put in place to protect this highly vulnerable population over the past few years. The country's objective is to minimize effects of malaria in pregnancy. The guidelines for malaria in pregnancy in Malawi reflects the overall goals of the country's Roll Back Malaria Programme in as far as pregnant women and their unborn babies are concerned.

The Ministry of Health and Sanitation has revised Malaria in pregnancy guidelines for health workers with the aim of improving malaria prevention and case management. This harmonized approach will help to reduce morbidity and mortality due to malaria.

This comprehensive third edition of the guidelines contains new information regarding treatment and prevention policy of malaria in pregnancy in Malawi. What is new in the guidelines is the introduction of Dihydroartemisinin-Piperaquine (DP) as an additional first-line treatment for uncomplicated malaria, alongside Lumefantrine-Artemether (LA), updating Malaria in Pregnancy (MIP) protocols, job aids among other changes. It addresses issues such as the minimum number of doses of Sulphadoxine-Pyrimethamine (SP) in Intermittent Preventive Treatment in pregnancy (IPTp) as well as calculation of IPTp coverage.

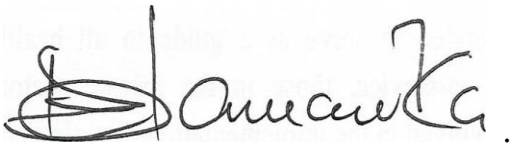
The policy document is intended to serve as a guide to all health professionals both pre- and in-service, those in the private sector, researchers and all partners involved in the implementation of malaria in pregnancy management in Malawi.

This guideline will continue to be updated periodically taking into consideration continuous monitoring and evaluation and emerging

research findings and lessons learnt. We have carefully considered the cost effectiveness of recommended interventions.

I wish to acknowledge the immense contribution of the Malaria-in-Pregnancy working group who worked tirelessly to provide the technical direction during the review of this document.

Lastly, we expect users to continually give feedback regarding the use of relevant sections of these guidelines as it guides to address the problem of malaria in pregnancy and minimize its burden on mothers and their babies.



Dr. Dan Namarika

Secretary for Health and Sanitation

ACKNOWLEDGMENTS

This third edition document outlines the 2026 malaria in pregnancy guidelines developed by the Ministry of Health and Sanitation. This document contains new information that involve introduction of Dihydroartemisinin-Piperaquine (DP) as an additional first-line treatment for uncomplicated malaria, alongside Lumefantrine-Artemether (LA). This version is based on the nationwide therapeutic efficacy study results on antimalarial medicines including recommendations from WHO.

The Ministry of Health and Sanitation would like to take this opportunity to express its gratitude to FOSUN PHARMA for their financial and technical support in the preparation of these guidelines. Technical support was also received from the World Health Organization (WHO), United States President's Malaria Initiative (PMI REACH), Directorate of Reproductive Health, Public Health Institute of Malawi (PHIM), Kamuzu University of Health Sciences (KUHeS), Lilongwe DHO.

The following people were instrumental in the development and review of these guidelines: Dr Storn Kabuluzi, Director of Community and Promotive Health Services, Dr Doreen Ali, Directorate of Reproductive Health Services, Dr. Lumbani Munthali Deputy Director, Community and Promotive Health Services (Malaria), Dr. Michael Kayange (WHO), Victoria Nyirenda, Agnes Banda Mapala, Aljanat Sadala, John Sande, Dr. Sosten Lankhulani, Martha Mpinga, Akuzike Banda, Dr. Morris Lingilirani, Nelson Namchinga, Mpendesi Chinsana (NMCP), Christine Kaliwo (PHIM), Christina Mchoma (RHD), Vijay Kumar, Esloyn Kaonga (KUHeS), Alice Chipula, Alinafe Kaning'a, Joyce Mtonga (Lilongwe DHO), Petros Chirambo and Zima Nindi (PMI REACH) and all other stakeholders.

The success of these guidelines will require continued close linkages and coordination between all partners to ensure we meet the common goal of

malaria control and eventual elimination in Malawi and attain the vision of a “Malaria Free Malawi”

ABBREVIATIONS

ASAQ -	Artesunate-Amodiaquine
ANC -	Antenatal Care
DP-	Dihydroartemisinin-Piperaquine
DOT -	Directly Observed Treatment
IPTp	Intermittent Preventive Therapy in pregnancy
IMCI	Integrated Management of Childhood Illnesses
ITN -	Insecticide Treated Net
IRS -	Indoor Residual Spraying
LA -	Artemether-Lumefantrine
MCH -	Maternal and Child Health
MIP -	Malaria in Pregnancy
MOHS -	Ministry of Health and Sanitation
NMCP -	National Malaria Control Programme
PMI –	United States President’s Malaria Initiative
UNICEF -	United Nations Children's Fund
USAID -	United States Agency for International Development
RHD-	Reproductive Health Directorate
QMD	Quality Management Directorate
KUHeS	Kamuzu University of Health Sciences

EXECUTIVE SUMMARY

The complications of malaria in pregnancy are enormous and continue to affect a significant proportion of Malawian women and their babies.

These guidelines outline the applicable interventions for the Malawian local setting and address areas of prevention, early diagnosis and case management.

The document is divided into the following sections:

- Prevention strategies specific for the target population
- Diagnosis and treatment of MIP
- The Effects of Malaria in Pregnancy and the Neonate
- Information, Education and Communication
- Capacity Building
- Monitoring and evaluation

Current approaches and guidelines for malaria treatment and prevention in Malawi are detailed in various policy documents. These guidelines should direct all stakeholders on the appropriate interventions to prevent and treat malaria in pregnant women and to minimize the effects of malaria in pregnant women, foetus and the neonate.

All health providers should be trained in these recommended strategies to address malaria in pregnancy existing knowledge gaps. For greatest impact and to reduce mortality and morbidity among pregnant women and neonates, all groups involved in the care of pregnant women and newborns as well as those involved in vector control, mass media, and those assessing the quality and efficacy of medicines used for pregnant women should collaborate to ensure effective and timely adoption and implementation of these interventions.

CONTENTS

BACKGROUND

Malaria remains a public health problem in Malawi with everyone living in Malawi at risk. One third (1/3) of the population get infected each year. This has huge household and national social-economic losses through work hours lost, student absenteeism and, reduced agricultural productivity. Malaria infection during pregnancy is a major problem with substantial risks to the mother, her foetus and the neonate. However, it has traditionally been viewed as a simple disease and it continues to silently claim the lives of Malawians mostly children and pregnant women in rural communities.

Malaria contributes to 36% of all Out-Patient Department (OPD) cases and 15% of all in –patient admissions creating a huge workload to the health workers and pressure on drugs at public health facilities. Though preventable and treatable, malaria is one of the leading causes of deaths in Malawi claiming 6 lives each day mostly under-fives and pregnant women due to late presentation for care (HMIS report 2020).

In 2025 Malawi registered about 5.4 million malaria cases and 1,629 deaths due to Malaria. About 950,000 pregnancies are estimated to occur annually. The prevalence of malaria in pregnant women in Malawi was at 9% in 2025 (MMIS 2025). *Plasmodium falciparum*, the most common species in Malawi, is responsible for severe disease and complications in pregnant women. Pregnant women are twice as likely to become infected than non-pregnant women. Other population who are at greater risk of malaria infection are those with sickle cell anaemia, immunocompromised and those from no or low malaria transmission areas who come to visit or live in high malaria transmission areas.

Malaria is hyper-endemic in Malawi and transmission occurs throughout the year in most areas, with transmission being greatest during the rainy season and in the low-lying areas.

The first and second pregnancies are usually the most affected, with the prevalence of parasitaemia being greatest in the second and third trimester, with susceptibility to clinical malaria persisting into the postpartum period. A pregnant woman may not show any signs of clinical malaria but may harbor a high parasite density in the peripheral blood and in the placenta.

The effects of malaria on the mother and the baby can be devastating. In the mother, malaria can lead to anaemia, fever, hypoglycaemia, cerebral malaria, pulmonary oedema, puerperal pyrexia and death. In the foetus, malaria can result in low birth weight, pre-maturity, stillbirth or neonatal death.

Malaria in pregnancy is a priority concern in Malawi. Reducing the impact of malaria during pregnancy depends on both preventing the infection and clearing parasitaemia when the disease occurs.

The World Health Organization (WHO) recommends a package of interventions for controlling malaria during pregnancy in areas with stable transmission of *Plasmodium falciparum*, which includes the promotion and use of insecticide-treated nets (ITNs), the administration of intermittent preventive therapy with Sulphadoxine-Pyrimethamine (IPTp-SP), and appropriate case management through prompt and effective treatment of malaria in pregnant women (WHO 2004).

Through the National Malaria Strategic Plan 2023-2030, the Government of Malawi and Roll Back Malaria Partners are committed to increasing coverage of key malaria control interventions and reducing the burden of malaria throughout the country.

Over the past three decades, strategies have evolved to address the problem of malaria in pregnancy. In 1985, Malawi adopted the IPTp intervention using Sulphadoxine pyrimethamine (SP). In 1995, insecticide treated nets (ITNs) for prevention of malaria began to be promoted. Since 2007, newer drug regimens based on Artemisinin-Combination Therapy (ACT) for case management have been recommended. Over the past 29 years, IPTp has been provided as part of antenatal care (ANC). Accordingly, Malawi now recommends at least 3

or more doses of SP to be given to all pregnant women, following recommendations from World Health Organization.

Effective implementation of the recommended strategy for malaria in pregnancy requires close collaboration between all Ministry of Health and Sanitation Departments, Training Institutions, Health Facilities and Stakeholders.

These guidelines seek to provide a comprehensive approach and direction to the prevention and management of malaria in pregnancy.

1.0 MALARIA IN PREGNANCY CONTROL STRATEGIES

Prevention of malaria in pregnancy remains the highest priority of malaria control activities within National Malaria Control Programme. This requires effective delivery of malaria services through strengthening health systems in the country.

Malawi implements the three-pronged approach recommended by the World Health Organisation: (1) Provision of IPTp, (2) promotion of the use of insecticide-treated nets and (3) improved case management including the treatment of anaemia. This section describes in more detail the strategies for malaria prevention:

1.1 INTERMITTENT PREVENTIVE TREATMENT IN PREGNANCY

IPTp a treatment dose of SP given to pregnant women at pre-defined intervals in order to clear existing malaria parasites as well as to prevent new infections. It has been shown to be effective in preventing malaria in pregnancy and reducing the consequences of malarial infection in the mother, her foetus and neonate. IPTp is recommended based on the assumption that a high proportion of pregnant women in a malaria endemic region will have malaria parasites in their blood or placentas, which is associated with complications whether they have symptoms of malaria or not

1.1.1 TARGET GROUPS FOR IPTP

All pregnant women with no signs of malaria whose pregnancies are thirteen (13) weeks gestation and above should be given SP at least one month apart during scheduled ANC contacts until time of delivery.

Pregnant women with the following conditions should be exempted from using SP:

- Women in their first trimester of pregnancy (first three months / 12 weeks) due to the potential harm to the foetus in early pregnancy

- Women who are known to be allergic to sulfa-containing medicines or the Pyrimethamine component
- Women who have received treatment with a sulfa medicine e.g., Co-trimoxazole within a month (4 weeks) of being seen at the antenatal clinic
- HIV-infected women on Co-trimoxazole prophylaxis (CPT) for opportunistic infections

1.1.2 TIMING AND DOSAGE OF SP FOR IPTP

SP should be administered as a single-dose comprising three (3) tablets of 500mg Sulphadoxine and 25mg Pyrimethamine.

- SP should be given at every scheduled ANC visit except during first trimester. SP should be given every month until the time of delivery, with doses given at least one month apart.
- SP should ideally be administered as directly observed therapy (DOT). If vomiting occurs within 30 minutes, repeat the dose.
- SP can be taken on an empty stomach or with food
- SP should not be administered to women receiving co-trimoxazole prophylaxis due to a higher risk of adverse events. WHO recommends the administration of folic acid at a dose of 0.4 mg daily; this dose may be safely used in conjunction with SP.
- Folic acid at a daily dose equal to or above 5 mg should not be given together with SP as this counteracts its efficacy. Folic acid should be resumed seven days after taking SP
- Women who present to the Antenatal clinic with symptoms of malaria should be tested for malaria before administration of SP. If the woman is positive for malaria either by RDTs or microscopy, should be treated according to the current National

Malaria Treatment Guidelines, and SP should not be given. If she is negative should receive SP.

- In order to further preserve SP efficacy for IPTp use, all possible efforts should be made to avoid SP use as monotherapy for the treatment of clinical cases of malaria.

- Report any adverse events following SP administration through the malaria coordinator.

Availability of SP

SP should be made available at ANC clinics, so that pregnant women have immediate access to IPTp during routine care.

Quality, efficacy and resistance

Only SP of proven quality such as that which is WHO prequalified, or that which meets the international standards of the International Pharmacopoeia [Ph. Int.]) should be used.

1.1.3 CALCULATION OF IPTP COVERAGE

WHAT IS IPTp COVERAGE?
IPTp coverage is the percentage of total eligible women in a cohort who received **ATLEAST** 1, 2 or 3 or more doses of SP for IPTp.

SPECIFIC DEFINITIONS
Where;

1. **IPTp1+** is the % of women in cohort who received **at least** one dose of SP (total sum of those who received 1,2,3 or more doses). Those with 2,3 or more doses are included because they also received 1 dose before proceeding to 2,3 or more doses.
2. **IPTp 2+** is the % of women in cohort who received **at least** two doses of SP (total sum of those who received 2,3 or more doses). Those with

3 or more doses are included because they also received 2 doses before proceeding to 3 or more doses.

3. **IPTp 3+** is the % of women in cohort who received **at least** three doses of SP (total sum of those who received 3 or more doses). Those with 4 or more doses are included because they also received 3 doses before proceeding to 4 or more doses.

IPTP COVERAGE FORMULAE

IPTp 1+ coverage

- Numerator – Total number of pregnant women in cohort who received SP1+SP2+SP3+ … doses
- Denominator – Total number of pregnant women in cohort excluding all on CPT.

IPTp 2+ coverage

- Numerator – Total number of pregnant women in cohort who received SP2+SP3+… doses
- Denominator – Total number of pregnant women in cohort excluding all on CPT

IPTp 3+ coverage

- Numerator – Total number of pregnant women in cohort who received SP 3+… doses
- Denominator – Total number of pregnant women in cohort excluding all on CPT.

ALWAYS REMEMBER TO EXCLUDE TOTAL PREGNANT WOMEN ON CPT IN THAT COHORT!!!

A PRACTICAL EXAMPLE ON CALCULATION OF IPTp COVERAGE

A PRACTICAL EXAMPLE ON CALCULATION OF IPTp COVERAGE

OCTOBER	NOVEMBER	DECEMBER
TOTAL WOMEN IN COHORT =404	TOTAL WOMEN IN COHORT =314	TOTAL WOMEN IN COHORT =264
ON CPT =5	ON CPT =6	ON CPT =4
SP 1 =81	SP 1 =51	SP 1 =36
SP 2 =103	SP 2 =81	SP 2 =85
SP >3 =211	SP >3 =171	SP >3 =136

STEP 1: First add up total data for 3 months as follows:
Total cohort = 404+314+264= **982**
Total on CPT = 5+6+4= **15**
Total SP1 = 81+51+36= **168**
Total SP2 = 103+81+85= **269**
Total SP>3 = 211+171+136= **518**

STEP 2: Find the denominator
Total cohort – on CPT
982-15= **967**

THEREFORE;

IPTp1+ (those who took one or more doses in a cohort)
$=\frac{SP1+SP2+SP3+}{\text{Total cohort-onCPT}} \times 100 = \frac{168+269+518}{967} \times 100 = \frac{955}{967} \times 100 =$ **99%**

IPTp2+ (those who took two or more doses in a cohort)
$= \frac{SP2+SP3+}{\text{Total cohort-onCPT}} \times 100 = \frac{269+518}{967} \times 100 = \frac{787}{967} \times 100 =$ **81%**

IPTp3+ (those who took three or more doses in a cohort)
$= \frac{SP3+}{\text{Total cohort-onCPT}} \times 100 = \frac{518}{967} \times 100 =$ **54%**

1.2 INTEGRATED VECTOR MANAGEMENT STRATEGIES

NMCP adopted integrated vector management strategies which consist of Insecticide Treated Nets (ITN), indoor residual spraying (IRS), and larval source management to control malaria.

1.2.1 INSECTICIDE TREATED NETS (ITNS)

Insecticide Treated Nets (ITNs) reduce human-vector contact by physically excluding, repelling and killing the vector mosquitoes if they land on the ITNs. Studies have documented their effect in reducing malaria-related illness and death (7,8)

The chemicals (pyrethroids, chlorfenapyr, interceptor G2) used to treat ITNs are safe for pregnant women as approved by World Health Organization.

Availability and Distribution of ITNs

ITNs should be provided to every pregnant woman at her first ANC contact and on discharge from postnatal ward for all births.

ITNs for newborns should be received on discharge or at the nearest health facility if they did not receive on discharge.

ITNs should be available in all public and CHAM facilities and distributed free to all pregnant women at first ANC contact and at discharge.

NMCP, DRHD, DHMT and partners to build capacity of health workers including facility HMIS officers and in charges to own and utilize facility data for informed decision making. In addition to:

- Improve timely reporting of ANC monthly report to district
- Proper storage of ANC registers and reports
- Follow guidance for correct documentation in ANC, ITN and maternity registers
- Conducting spot checks to ensure proper documentation in register
- District malaria and safe motherhood coordinators to conduct mentorship and supportive supervision sessions monthly.

1.2.2 INDOOR RESIDUAL SPRAYING (IRS)

Indoor residual spraying (IRS) is the process of spraying the inside of dwellings (walls & ceilings), and eaves with an insecticide to repel and kill mosquitoes that spread malaria. IRS is a highly effective malaria prevention strategy that significantly reduces the burden of malaria (1,3). Pregnant women in such communities are therefore protected too, but still encouraged to use ITNs and to take IPTp-SP for optimal malaria prevention.

1.2.3 LARVAL SOURCE MANAGEMENT

Pregnant women, their families and communities should be encouraged to undertake environmental modifications to reduce vector breeding. Health workers should encourage families and communities to drain stagnant waters, clear old tyres and broken containers/pots around households as part of environmental modifications.

2.0 MALARIA CASE MANAGEMENT IN A PREGNANT WOMAN

Malaria infection in pregnancy is largely asymptomatic. However, pregnant women are more likely than their non-pregnant counterparts to develop clinical malaria. Women in their first pregnancy and in their first trimester as well as those who are immunocompromised are at greater risk of developing clinical malaria.

2.1 DIAGNOSIS OF MALARIA

Malaria is categorized into two forms: uncomplicated and severe. Microscopy remains the gold standard for the diagnosis of malaria. All suspected malaria cases should be confirmed using either mRDT or microscopy. The MOHS recommends the use of mRDTs to diagnose uncomplicated malaria while all suspected severe malaria or treatment failures on first line treatment should only be confirmed using microscopy.

2.2DIAGNOSIS OF UNCOMPLICATED MALARIA DURING PREGNANCY

A pregnant woman who presents with fever or history of fever or a body temperature of >37.5˚C and have a positive parasitological test (mRDT or microscopy) but with no features of severe malaria is defined as having uncomplicated malaria.

Signs and symptoms of uncomplicated malaria

The following signs and symptoms may occur in uncomplicated malaria:

- Fever and rigors
- Lassitude/Fatigue
- Abdominal discomfort
- Muscle and joint aches
- Headache
- Nausea and vomiting
- Pallor
- Diarrhoea
- Backache

2.3 MANAGEMENT OF UNCOMPLICATED MALARIA

There are three components in managing uncomplicated malaria:

- Diagnosis
- Treatment
- Counselling for compliance, follow-up care and prevention.

2.3.1 FIRST LINE TREATMENT OF UNCOMPLICATED MALARIA IN PREGNANCY

Any pregnant woman diagnosed with uncomplicated malaria should be given: Artemether 20 mg/ Lumefantrine 120 mg tablets (LA).

The dose is as follows: LA 4 x 6

DAY 1		**DAY 2**		**DAY 3**	
STAT	8 Hours	AM	PM	AM	PM
4	4	4	4	4	4

OR Dihydroartemisinin Piperaquine.

DP is one of the two first line treatments for uncomplicated malaria in Malawi. The dosing regimen currently recommended by the

manufacturer provides adequate exposure to piperaquine and excellent cure rates (>95%).

Dihydro-artemisinin Piperaquine dosing

Adult Dose				
BODY WEIGHT	**STRENGTH**	**DAY-1**	**DAY-2**	**DAY-3**
17<25kg	Dihydroartemisinin 40mg /Piperaquine 320mg (DP-40mg/320mg	**1.5 tab a day**	**1.5 tab a day**	**1.5 tab a day**
25<36 kg	Dihydroartemisinin 40mg /Piperaquine 320mg (DP-40mg/320mg	**2 tabs a day**	**2 tabs a day**	**2 tabs a day**
36kg to < 60kg	Dihydroartemisinin 60mg /Piperaquine 480mg (DP-60mg/480mg)	2 tab a day	2 tab a day	2 tab a day
60kg to < 80kg	Dihydroartemisinin 80mg /Piperaquine 640mg (DP-80mg/640mg)	2 tab a day	2 tab a day	2 tab a day
>80kg	Dihydroartemisinin 80mg /Piperaquine 640mg (DP-80mg/640mg)	2 and half tab a day	2 and half tab a day	2 and half tab a day

DP comes in fixed dose combinations of tablets, and dispersible tablets, containing varying amounts of dihydroartemisinin and piperaquine for specific weight bands. Malawi uses the following fixed dose combinations:

- DP 60 mg/480 mg (6 Blister Pack Tablets) – for adults
- DP 80 mg/640 mg (6 Blister Pack Tablets) – for adults

NOTE

Cautions with DP include risk of prolonged QT interval and risk of possible arrhythmias although less than quinine. It is not necessary to perform an electrocardiogram before providing DP but should not be used in patients with congenital QT prolongation or on medications that prolong the QT interval. Dihydroartemisinin exposure is lower in pregnant women and piperaquine is eliminated more rapidly in pregnant women, but as this does not affect the primary efficacy, no dosage adjustment is recommended for pregnant women.

2.3.2 TREATMENT FAILURE

Treatment failure is the persistence of signs and symptoms of malaria in a patient with a positive blood film for malaria parasites three (3) to fourteen (14) days after initiating Artemether Lumefantrine, or 3 to 28 days after initiating Dihydroartemisinin Piperaquine, treatment taken in adequate dosage. Treatment failure is not the same as drug resistance.

Causes of real or apparent treatment failure may include:

- Unreported poor adherence to treatment
- Drug resistance
- Inadequate drug exposure

    - Unrecognized incorrect dosage
    - Vomiting within 30 minutes of administration
    - Unusual pharmacokinetic properties in that individual
- Misclassification of malaria
- Fake or defective drug

Note: If there is confirmed LA or DP treatment failure for a pregnant woman, give Artesunate-Amodiaquine as below:

Dosage schedule for fixed combination dose of artesunate-amodiaquine			
Body Weight (kg)	Age	Daily dose for 3 days	Preparation strength per tablet
18.0 – 35.9	6 – 13 years	1 tablet	100 mg/270 mg
≥ 36	14 years old and above	2 tablets	100 mg/270 mg

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If the patient develops symptoms 14 days or more for LA or more than 28 days for DP after initiation of therapy where there has been prior clearance of symptoms, this should be considered as a new infection and be treated with the first-line drug.

- ❖ If, after 14 days for LA, or 28 days for DP, diagnosis, adherence, or dosage are found to have been incorrect, then 'treatment failure' is excluded, and the primary treatment should be repeated correctly.

- ❖ If, within 14 days for LA or 28 days for DP, treatment failure is confirmed, the patient should be treated with the 2nd line treatment, give Artesunate-Amodiaquine.

- ❖ Encourage the pregnant woman to report to the health facility immediately they experience adverse events after treatment.

2.3.3 COUNSELLING AND FOLLOW UP AFTER TREATMENT

All pregnant women on anti-malarial treatment should be counselled on:

- Danger signs of malaria
- Compliance with treatment
- Reporting on adverse effects
- Progression of the disease to complications like anaemia
- IPTp schedule

2.4 DIAGNOSIS OF SEVERE MALARIA

Severe malaria in pregnancy is defined as malaria due to *P. falciparum* infection that is sufficiently serious to be an immediate threat to life. It is a medical emergency, which requires hospitalization. As such do not wait for results of parasitological confirmation before treating patients. Severe malaria should only be confirmed using microscope.

SIGNS AND SYMPTOMS OF SEVERE MALARIA

In addition to the symptoms of uncomplicated malaria described above, the patient may have one or more of the following signs and symptoms:

- Severe pallor
- Prostration
- Impaired consciousness
- Respiratory distress (acidotic breathing)
- Circulatory collapse
- Pulmonary oedema (radiological)
- Disseminated Intravascular Coagulation (DIC)
- Jaundice

- Repeated profuse vomiting
- Coma
- Difficulty breathing
- Very dark coloured urine

Laboratory tests may reveal the following:

- Severe anaemia (Hb< 7g/dl)
- Hypoglycaemia (≤3 mmol/l or ≤55 mg/dl)
- Lactic acidosis
- Renal impairment
- Hyperlactaemia (blood lactate of >4mmol/L) Haemoglobinuria

2.4.1 MANAGEMENT OF SEVERE MALARIA

Severe malaria is a medical emergency and all pregnant women diagnosed with severe malaria must be admitted and treated promptly.

GENERAL MANAGEMENT

In the management of severe malaria in pregnancy a special concern must be paid to anaemia, hypoglycaemia and pulmonary oedema:

- Clear and maintain the airway (if unconscious)
- Position the woman in semi prone position or on side (if unconscious)
- Monitor vital signs
- If convulsions occur give10mg of diazepam IV slowly over 10 minutes. Check fetal heartrate and rule out Pre-eclampsia
- Give Ceftriaxone 2gm od or crystalline penicillin 4 mega unit 6hourly plus Gentamycin 240mg 12hourly and Metronidazole 500mg 8hourly to cover for bacterial meningitis & septicaemia.
- If hypoglycaemia is suspected give 40mls of 50% dextrose as bolus or 4-level tea spoons of sugar mixed with 200 mls of clear water.

	Box 1: Take 8 Immediate Measures:

1.	Start resuscitation, particularly maintenance of a patent airway.
2.	Establish IV line.
3.	Make a thick blood smear for immediate malaria parasite count, (if microscopy is not available, an mRDT may be useful to indicate whether malaria infection is present or not)
4.	Assess for severe dehydration (lethargy, sunken eyes, dry mouth and reduced skin turgor). Assess patient's fluid requirements and correct accordingly.
5.	Control fever if the axillary temperature is 38 ºC or above: Tepid sponge, fanning and oral paracetamol 500gm every 6-8 hours.
6.	Manage convulsions: maintain airway, treat with diazepam 10mg iv slowly
7.	Assess whether a blood transfusion is needed by looking for signs of severe anaemia. Check the level of pallor by looking at the palms and mucous membranes. Assess signs that increase the dangers of severe anaemia – respiratory distress, altered consciousness, shock and hyper parasitaemia. Blood transfusion decision should be based on the patient's overall clinical condition, not only on laboratory results. As a guide, all patients with PCV<12% or Hb<4g/dl should be transfused, whatever the clinical state.

	Transfuse packed red cells in most cases; in shock or severe acidosis, use whole blood. The volume transfused should be 20 ml/kg.
8.	Detect and treat hypoglycaemia: hypoglycaemia can be induced by high parasitaemia, fasting and medication therapy. Hypoglycaemia can recur, especially in pregnant women. If blood glucose ≤3 mmol/l or ≤55 mg/dl; give 40mls of 50% dextrose as bolus, or 200mls of sugar solution orally (4-level tea spoons of sugar mixed with 200 mls of clear water). Check blood glucose after 30 minutes and as required after treatment. Continue with 5% Dextrose
9	**Start intravenous or intra-muscular artesunate**

2.4.2 TREATMENT OF SEVERE MALARIA

Parenteral artesunate is the recommended treatment for severe malaria in all pregnant women. Give artesunate **2.4 mg/kg body weight** IV bolus or IM on admission (at 0 hour), repeat at 12 hours and at 24 hours, then once daily, for no more than 6 days. However, once patient can take oral treatment and at least 24 hours of parenteral therapy has been administered, discontinue parenteral therapy and commence a full 3-day course of LA or DP.

In the unlikely event that Parenteral artesunate is not available, give parenteral quinine for severe malaria. The dose is 900mg quinine as loading dose in 1litre of 5% dextrose to run in 3 to 4 hours, followed by 600mg in 1litre of 5% dextrose every 12 hours to run in 3 to 4 hours until patient is able to take oral medications and after at least 24 hours of

parenteral treatment has been administered. Shift to LA or DP as soon as the patient can take orally. **There should be an interval of at least 8 hours between the last dose of artesunate and the first dose of LA or DP**.

- If ACTs are contraindicated give oral quinine 600mg plus clindamycin as soon as the patient can take orally.
- NOTE: LA or DP should only be taken 12 hours after last dose of Parenteral quinine to avoid cardiotoxicity.

3.0 SOCIAL BEHAVIOUR CHANGE AND COMMUNICATION

Social and behaviour change communication is a combination of approaches that includes participatory communication and social marketing. The aim is to inform, influence and support households and individuals to adopt, practice and sustain a set of desired behaviours.

Considering the high incidence rate of Malaria in pregnancy in Malawi (89 cases/1000 population) (Ref-DHIS II Report 2024), pregnant women are among the at risk groups that would benefit from health education and counselling messages on Malaria. The following are the key areas for SBCC:

FACTS ABOUT MALARIA

- Malaria transmission
  - ✓ Malaria is transmitted through infected mosquito bites
  - ✓ Malaria transmitting mosquitoes bite at night.
- At risk groups
  - ✓ Pregnant women
  - ✓ under five children
  - ✓ Immunocompromised people
  - ✓ School going children

- Signs and symptoms
  - ✓ Headache
  - ✓ Fever
  - ✓ Chills
  - ✓ Vomiting
  - ✓ General body pains and weakness
  - ✓ Abdominal pain

NOTE. Some Pregnant women infected with malaria may have no symptoms but may experience the complications of malaria like low birth weight babies.

- Complications of Malaria
  - ✓ Anaemia
  - ✓ Spontaneous abortions
  - ✓ Preterm labour
  - ✓ Low birth-weight babies
  - ✓ Still births
  - ✓ Death
- Prevention of Malaria
  - ✓ IPTp from second trimester, 4 weeks apart, till delivery
  - ✓ Integrated Vector control including use of treated mosquito nets
  - ✓ Early health care seeking (prompt diagnosis and treatment)

3.1 KEY MESSAGES ON ANC IN RELATION TO MALARIA PREVENTION

Messages on ANC:

- Start ANC as soon as she recognizes that she is pregnant
- Attend ANC monthly on the given dates, and whenever a problem arises

Messages on ITNs:

- Places where nets can be accessed

Public health facilities, Shops and mass distribution by Ministry of Health and Sanitation

- Utilization
  Sleep under an ITN every night all year round
  Proper tucking of ITNS
- Care and maintenance
  Use of mild soap and not to be dried in the sun.
  Not to be washed too often unless it is clearly dirty

Messages on IPTp:

- First dose should be administered after the first trimester starting 13th week of gestation
- Subsequent doses should be given at least one month (4 weeks) apart
- SP can be administered up to the time of delivery without safety concerns SP should be administered under DOT
- SP can be taken on an empty stomach or with food
- Pregnant women on CPT should not be given SP
- Pregnant women allergic to sulphur should not be given SP

Messages on IRS:

- Allow your houses to be sprayed for it has no impact on health
- Sleep under an ITN even if your house has been sprayed
- Do not interfere with IRS sprayed walls

Messages on malaria treatment:

- Seek treatment of malaria within 24 hours from onset of symptoms
- Complete the treatment of malaria for effectiveness
- Refer immediately pregnant women with severe malaria to the next level of care to avoid complications.

4.0 MONITORING AND EVALUATION

Monitoring and Evaluation are important in Malaria in Pregnancy to track progress of the interventions and measure their effectiveness in the management and control of malaria. To achieve this, the following activities must be strengthened;

- Routine record-keeping at ANC and in other departments generating malaria in pregnancy data.
- Periodic evaluation to assess implementation e.g. through quarterly reviews, surveys, monthly reports and supervision reports.
- A healthcare facility should establish and maintain a record for every woman that receives care.
- The health provider should use the data collected for planning and policy formulation.

4.1 INDICATORS FOR MONITORING AND EVALUATING MALARIA IN PREGNANCY CONTROL INTERVENTIONS .

Three groups of indicators are proposed to be used to monitor and evakuate control activities of malaria in pregnancy at antenatal care facilities.

These are:

- **Output indicators**:
    - Percentage of antenatal clinic staff trained: in-service or during malaria integrated supervision and mentorship visits for the past 12 months
    - Percentage of health facilities reporting stock-out of the recommended drug for intermittent preventive treatment (currently Sulphadoxine-Pyrimethamine) in the past month or in the determined period (according to national guidelines)
    - Percentage of pregnant women attending ANC
    - Percentage of pregnant women who have received ITNs during ANC
- **Outcome indicators**:

- Percentage of pregnant women receiving intermittent preventive treatment
- Percentage of pregnant women who report to have slept under an insecticide-treated net the previous night.

- **Impact indicators**:
  - Percentage of low birth-weight infants associated with Malaria
  - Percentage of screened pregnant women with severe anaemia (haemoglobin less than 7g/dl) linked to Malaria as a cause
  - Prevalence of Malaria in Pregnancy

4.2 SOURCES OF DATA

ROUTINE INFORMATION

The principle routine reporting systems currently available in Malawi include the national Central Monitoring and Evaluation Department (CMED) and the parallel reporting on some indicators not yet included on DHIS2. This information is reported monthly through district offices to central level HMIS and submitted monthly to the National Malaria Control Programme.

RESEARCH

Research should be conducted to support the implementation of the malaria in pregnancy policy; in particular, operational research.

A main objective of the operational research in malaria in pregnancy is to generate data for timely, accurate and relevant information for policy decision making

The following are the current existing gaps to be explored:

Persistent low coverage of IPTp

Effectiveness/Impact of IPTp on malaria prevention in pregnant women

Research institutions and universities should collaborate with Ministry of Health /NMCP to address the

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10) Malawi malaria indicator survey, 2025

ANNEX 1: INDICATORS TO BE MEASURED IN MALARIA IN PREGNANCY

INDICATOR	TYPE	SOURCE	HOW OFTEN	ORGANISATION RESPONSIBLE
Number of pregnant women attending first Antenatal Visit	**outcome**	ANC register	**Monthly**	RHD National Malaria Control Program
Percent of pregnant women who receive IPTp under direct DOT 1st, 2nd, 3rd and 3+ Dose of SP	**outcome**	-ANC register -Midwives Monthly Returns -District quarterly reports -Household surveys	**Monthly**	RHD/National Malaria Control Program
Percentage of staff trained in malaria in pregnancy over the past twelve months	**Output**	**Training report**	**Quarterly**	RHD/National Malaria Control Program
Percent of pregnant women who finished four visits (can we consider 8 contacts?)	**Output**	ANC register	**Monthly**	**RHD/NMCP**

Percentage of pregnant who slept under an ITN the previous night	**outcome**	MIS Report	**Every two years**	**NMCP**
Percentage of facilities experiencing SP stock out	**outcome**	**ANC register/stock card, LMIS report**	**Monthly**	**NMCP/JSI**
Percentage of facilities offering ANC services	**Output**	**District quarterly report**	**Quarterly**	**NMCP/RHD**
Percentage of facilities having DOT equipment for SP	**Output**	**District quarterly report**	**Quarterly**	**NMCP/RHD**
Percentage of low birth-weight infants	**Impact**	-Household surveys	**5 years**	RHD/NSO
Incidence of Malaria in Pregnancy	**Impact**	Annual Reports	**Annual**	NMCP