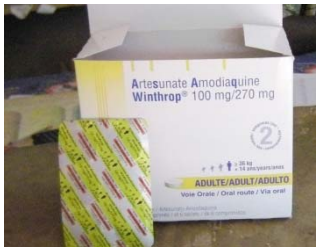
Review of National-Level Malaria in Pregnancy Documents in Five PMI Focus Countries



Prepared by:
Patricia Gomez
Aimee Dickerson
Elaine Roman

Input on the design of the report and critical review and feedback on the content was provided by the PMI Malaria in Pregnancy Working Group.

Publications support:
Elizabeth Thompson
Renata Kepner

The Maternal and Child Health Integrated Program (MCHIP) is the United States Agency for International Development (USAID) Bureau for Global Health's flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria, nutrition, and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening.

This report was made possible by the generous support of the American people through USAID, under the terms of the Leader with Associates Cooperative Agreement GHS-A-00-08-00002-00. The contents are the responsibility of MCHIP and do not necessarily reflect the views of USAID or the United States Government.

Published by:
Jhpiego
Brown's Wharf
1615 Thames Street
Baltimore, Maryland 21231-3492, USA
www.jhpiego.org

Table of Contents

Acronyms and Abbreviations

ACT	Artemisinin-based combination therapy
AL	Artemether-lumefantrine
ANC	Antenatal care
AS-AQ	Artesunate-amodiaquine
BCC	Behavior change communications
BEmONC	Basic emergency obstetric and newborn care
DOMC	Division of Malaria Control
DOT	Directly observed therapy
DRH	Division of Reproductive Health
EmONC	Emergency obstetric and newborn care
EPI	Expanded Program on Immunization
FANC	Focused antenatal care
HIV+	HIV positive
IEC	Information, education, and communication
IMCI	Integrated management of childhood illnesses
IPTp	Intermittent preventive treatment in pregnancy
IV	Intravenous
LLIN	Long-lasting insecticidal net
MCHIP	Maternal and Child Health Integrated Program
MDG	Millennium Development Goal
M&E	Monitoring and evaluation
MIP	Malaria in pregnancy
MNH	Maternal and newborn health
MOH	Ministry of Health
NMCP	National Malaria Control Program
PMI	President's Malaria Initiative
PMTCT	Prevention of mother-to-child transmission
QI	Quality improvement
RDT	Rapid diagnostic test
RH	Reproductive health
SP	Sulfadoxine-pyrimethamine
TB	Tuberculosis
TWG	Technical working group
WHO	World Health Organization

Review of National-Level Malaria in Pregnancy Documents in Five PMI Focus Countries

INTRODUCTION

The devastating consequences of malaria in pregnancy (MIP) are well documented and include higher rates of maternal anemia and low birth weight babies in areas of stable malaria transmission. In areas of unstable malaria transmission, pregnant women are at increased risk of severe malaria, death, and stillbirth of the fetus. The MIP strategy of the President's Malaria Initiative (PMI) supports the World Health Organization's (WHO's) recommended three-pronged approach for managing MIP. This includes promotion and distribution of long-lasting insecticidal nets (LLINs)[1] to pregnant women, intermittent preventive treatment in pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP), prompt diagnosis and effective treatment of confirmed malaria cases, and prevention and treatment of maternal anemia.[2]

Among the 19 PMI focus countries in sub-Saharan Africa, there has been steady progress in achieving the PMI target of 85% coverage of LLIN use among pregnant women; however, limited progress has been made in achieving the PMI target of 85% coverage of IPTp2—two doses of SP. While some countries, including Zambia, Malawi, and Senegal, have achieved higher coverage of IPTp uptake and, to an extent, insecticide-treated net (ITN) coverage among pregnant women, use of these interventions across sub-Saharan Africa is generally abysmally low.[3] Some factors contributing to low coverage include: late antenatal care (ANC) attendance; insufficient coordination of commodities leading to stock-outs of SP in facilities; inadequate and high turnover in staffing at facilities; poor dissemination of guidelines among providers, and/or conflicting or unclear guidelines about IPTp; and insufficient resources to support MIP programs.[4] In October 2012, the WHO Malaria Policy Advisory Committee reviewed the most recent evidence on the efficacy and effectiveness of IPTp-SP in light of growing SP resistance in children and potential SP resistance in pregnant women receiving IPTp-SP. Based on the review, the committee determined that frequent dosing of IPTp-SP is effective in reducing the consequences of MIP. The new WHO recommendation states that IPTp-SP should be given as early as possible in the second trimester and at each scheduled ANC visit thereafter, at least one month apart.[5]

PMI is interested in assessing the current status of national-level MIP documents in light of the new WHO IPTp policy recommendations and with the understanding that countries will need to revise these documents to disseminate the new policy. It is important that reproductive health (RH) and malaria control programs harmonize country policies, guidelines, and training materials based on the latest WHO guidance. MIP is a maternal and newborn health issue and requires a strong partnership between both national RH programs to manage implementation and national

[1] This report refers to 1) insecticide-treated nets (ITNs), which are the conventionally treated nets that have been dipped in insecticide and require retreatment after three washes or after one year of use; and 2) long-lasting insecticidal nets (LLINs), which are made with factory-treated netting material that incorporates insecticide within, or bound around, the fibers. These nets must retain their effectiveness without retreatment for at least 20 washes and three years of recommended use in the field. In 2007, WHO's guidance to national malaria control programs and partners shifted to use of LLINs. Consistent with WHO's guidance, the term LLINs is used in the recommendations of this report. The term ITNs is used in this report where data and resources cited specify ITNs.

[2] World Health Organization (WHO). Malaria in pregnancy. http://www.who.int/malaria/high_risk_groups/pregnancy/en/index.html.

[3] van Eijk, AM et al. 2001. Coverage of malaria protection in pregnant women in sub-Saharan Africa: a synthesis and analysis of national survey data. *Lancet Infect Dis*. 11: 190–207.

[4] MIP Program Updates: Accelerating Malaria in Pregnancy Programs to Achieve Country Scale-Up. http://www.rollbackmalaria.org/mechanisms/mpwg.html.

[5] WHO. Updated WHO Policy Recommendation (October 2012): Intermittent Preventive Treatment of malaria in pregnancy using Sulfadoxine-Pyrimethamine (IPTp-SP). http://www.who.int/malaria/iptp_sp_updated_policy_recommendation_en_102012.pdf.

malaria control programs to provide technical oversight. PMI believes that a review of national-level MIP documents will increase our understanding of the existing MIP guidance that countries are promoting for health workers; specifically, how these documents reflect WHO guidance and how consistent national RH and malaria control documents are. This will provide insight as to how countries adopt and disseminate the new WHO IPTp recommendations.

BACKGROUND

PMI asked the Maternal and Child Health Integrated Program (MCHIP) to conduct a rapid review of policy documents, national guidelines, and training and supervision materials across malaria and RH programs in five PMI focus countries: Kenya, Mali, Mozambique, Tanzania, and Uganda.

Data from the five countries included in this review, a subset of PMI-supported countries, are illustrated in Table 1. (Data sources indicated in parenthesis.)

Table 1. Data on IPTp2 uptake and ITN use by pregnant women

COUNTRY	IPTP2 UPTAKE	ITN USE BY PREGNANT WOMEN	YEAR OF MIP POLICY ADOPTION
Kenya	15.1% (2008–2009 DHS*) 25.4% (2010 MIS**)	49% (2008–2009 DHS) 41.1% (2010 MIS)	2001
Mali	11.2% (2006 DHS) 36% (2011 HMIS***)	28.9% (2006 DHS) 55% (2010 MICS)	2003
Mozambique	18.6% (2011 DHS)	19.5% (2011 DHS)	2006
Tanzania	27.2% (2010 DHS)	56.9% (2010 DHS)	2002
Uganda	26.7% (2011 DHS)	46.9% (2011 DHS)	2000

*Demographic and Health Survey

**Malaria Indicator Survey

***Health Management Information System

The rapid review aimed to:

1. Understand what is included in national-level RH and malaria documents, which are disseminated to health workers in these five countries, on prevention and treatment of MIP;
2. Ascertain whether these documents are consistent with WHO guidance; and
3. Determine how each country's documents are harmonized between their respective RH and malaria control divisions.

The review of country-level guidance documents for four of the countries was complemented by anecdotal input from the field so that on-the-ground issues of providers' understanding and use of guidelines and access to medications and commodities, such as LLINs, can be better understood. This report presents the findings of the rapid review and provides specific recommendations for harmonization of the various country strategies and guidelines in accordance with the latest WHO guidance. PMI will collaborate with MCHIP and other partners, including the Roll Back Malaria MIP working group, to share and disseminate the findings and recommendations of this review, as well as the new WHO guidance on IPTp, to stakeholders in each country.

METHODOLOGY

The national-level documents targeted for review in each country include: malaria policy, malaria guidelines, RH policy, RH guidelines, in-service and pre-service education training materials, and supervision guidelines. A framework was developed to review national-level country documents according to the current WHO guidance for MIP, which is summarized in Table 2. A more detailed summary of WHO guidance is included in Appendix 1. It is important to note that for IPTp timing and dosing, none of the country documents were expected to contain the latest WHO policy recommendation issued in October 2012, as outlined in Table 2 below. IPTp timing and dosing was however reviewed to better understand what specific guidance countries are currently promoting and if that guidance is harmonized across national documents between RH and malaria control.

Table 2. Summary of WHO guidance on MIP

MIP AREA	WHO GUIDANCE	WHO SOURCE
IPTp timing and dosing	Pregnant women should receive IPTp as early as possible in the second trimester of pregnancy and at every scheduled ANC visit thereafter, at least one month apart.	Updated WHO Policy Recommendation on Use of IPTp, October 2012
Directly observed therapy (DOT)	IPTp should be administered by DOT.	
Linkages to HIV	IPTp with SP is contraindicated for HIV-positive (HIV+) pregnant women taking cotrimoxazole.	
Promotion and distribution of LLINs	ITNs should be provided to women as early in the pregnancy as possible, at the ANC clinic or through other sources in the public or private sectors.	A Strategic Framework for Malaria Prevention and Control during Pregnancy in the African Region, WHO 2004
	The WHO Global Malaria Programme recommends distribution of ITNs, more specifically LLINs, to achieve full coverage of populations at risk of malaria. The best opportunity for rapidly scaling up malaria prevention is free or highly subsidized distribution of LLINs through existing public health services (both routine and campaigns).	WHO Global Malaria Programme: Position Statement on ITNs, 2007
Diagnosis	Diagnosis of MIP with microscopy or rapid diagnostic tests (RDTs) is recommended whenever possible.	Guidelines for the Treatment of Malaria, Second Edition, WHO 2010
Treatment	**Uncomplicated Malaria:** *First Trimester:* Quinine plus clindamycin to be given for seven days (artesunate plus clindamycin for seven days is indicated if this treatment fails). An artemisinin-based combination therapy (ACT) is indicated only if this is the only treatment immediately available, or if treatment with seven-day quinine plus clindamycin fails, or if there is uncertainty about patient compliance with a seven-day treatment. Note: If clindamycin is unavailable or unaffordable, then quinine monotherapy should be given. *Second and Third Trimester:* ACT known to be effective in the country/region or artesunate plus clindamycin to be given for seven days or quinine plus clindamycin to be given for seven days (with the exception of DHA-PPQ (dihydroartemisinin-piperaquine) for which there is insufficient information to use it as a first-line therapy in second and third trimesters of pregnancy). **Severe Malaria:** Parenteral antimalarials should be given to pregnant women with severe malaria in full doses without delay. Parenteral artesunate is preferred over quinine in the second and third trimesters, because quinine is associated with recurrent hypoglycemia. In the first trimester, the risk of hypoglycemia is lower and the uncertainties over the safety of the artemisinin derivatives are greater, thus the two drugs are considered equivalent.	

OVERALL FINDINGS, RECOMMENDATIONS, AND DISCUSSION

This is the first formal review of national policies, guidelines, educational, and supervision materials pertaining to the prevention and treatment of MIP across divisions of malaria control and RH in Kenya, Mali, Mozambique, Tanzania, and Uganda. The documents reviewed pointed to important issues for each country as well as to overarching needs in the region that should be considered and addressed to improve women's access to evidence-based prevention and treatment of MIP. The review did not formally include assessment of how these national-level documents affect implementation o f MIP programs. However, the anecdotal feedback received from four out of five countries increases understanding of how national-level guidance is applied and, in some cases, how bottlenecks are being addressed.

Findings and Recommendations

This section of the report presents common findings and recommendations across the five countries. While all countries have national-level documents promoting IPTp, ITN use, and treatment of MIP, WHO evidence-based guidance is not always reflected. For example, Tanzania's guidelines promote use of IPTp no earlier than 20 weeks of pregnancy and during fixed timeframes, which may preclude eligible women from receiving it. Further, review of both RH and malaria control documents showed that while some countries, such as Kenya, have harmonized guidance, other countries, such as Uganda and Mali, have inconsistent or unclear guidance.

Global policies are meant to be adapted to each country's local situation and context to help achieve the highest level of coverage and improved health outcomes. Kenya's policy of only promoting IPTp in areas of high transmission is a good example of this. At the same time, it is concerning that multiple countries are promoting out-of-date and discordant guidance in RH and malaria control programs as indicated in the country-specific findings and recommendations section of this report and summarized in Table 3.

Table 3. Common issues of out-of-date and discordant guidance

COMMON ISSUES	KENYA	MALI	MOZAMBIQUE	TANZANIA	UGANDA
Need for interrupting folic acid intake after taking SP in countries that use high doses of folic acid (low-dose folic acid is recommended during pregnancy and is compatible with SP use)	X	X			X
Unclear timing and dosing guidance for IPTp-SP	X	X	X	X	X
Designation of IPTp by specific week intervals	X	X		X	X
Prohibition of IPTp before 20 weeks			X	X	
Prohibition of IPTp after 36 weeks or in the last month of pregnancy		X		X	
Unclear guidance regarding DOT		X			
Inconsistent guidance about malaria prevention for HIV+ women		X	X	X	X
Unclear guidance on when and how pregnant women should obtain ITNs	X	X	X	X	X
Lack of guidance on use of microscopy or RDTs for diagnosis		X		X	X
Incomplete or confusing guidance on treatment of malaria by trimester	X	X		X	X

Outdated and discordant guidance is confusing to program planners, providers, and monitoring and evaluation efforts, and wastes financial and human resources. This can result in low uptake of vital interventions such as IPTp, ITN use among pregnant women, and appropriate and prompt diagnosis and treatment of MIP.

Summarized below, according to MIP area, are the common issues highlighted by this review and overall recommendations for consideration by country-level policymakers and regional and global partners.

IPTp Timing and Dosing and DOT

Policy and guideline documents often provide conflicting and inconsistent information about use of IPTp-SP. While malaria control programs provide technical guidance, MIP is implemented by RH divisions through ANC. Failure to provide consistent MIP guidance in malaria and RH documents can lead to confusion among providers. Thus, pregnant women either do not receive services or services are provided incorrectly. This is further complicated by stock-outs of SP, as indicated in the anecdotal input received from some countries.

Recommendations

- All countries with IPTp policies should place priority on reviewing, updating, and disseminating their national guidelines and training packages to reflect the October 2012 updated WHO policy recommendation on use of IPTp.
- The Ministry of Health (MOH) divisions for malaria control and RH should form technical working groups (TWGs) to develop consistent and harmonized guidance on all aspects of MIP, which should be reflected in every document coming from the MOH for front-line providers at every level of the health system as well as for pre-service and in-service educational programs. The role of the TWG is further described later in this section where cross-cutting issues are discussed.
- These MOH divisions might consider identifying "Champions for Malaria in Pregnancy" who can advocate for national-level political and fiscal commitment to reach MIP targets and help sensitize and energize colleagues to formulate strategies to make this possible, including ensuring adequate stocks of SP at ANC.

Anemia Prevention

Another common issue (found in three of the five countries) related to IPTp distribution is the use of daily doses of 5 mg of folic acid during pregnancy, which requires suspension of folic acid after IPTp is given. This practice is not consistent with the WHO recommendation of daily doses of 0.4 mg of folic acid, which is safe to provide alongside IPTp. The larger 5 mg dose requires women to stop taking folic acid for at least one week after administration of IPTp. These interruptions can cause confusion about resuming the folic acid, which is often combined with iron, leading to under treatment of anemia.

Recommendation

- Countries should review the WHO guidance for the administration of folic acid, which recommends the administration of folic acid at a dose of 0.4mg daily; this dose may be safely used in conjunction with SP. Folic acid at a daily dose to equal or above 5mg should not be given together with SP as this counteracts SP's efficacy as an antimalarial

Linkages to HIV

Across the five countries, there is inconsistent guidance about malaria prevention for HIV+ women. MIP and RH guidelines often do not address malaria prevention for HIV+ women and providers may not be aware that women taking daily cotrimoxazole should not receive IPTp-SP.

Recommendation

- Countries should review and update all documents relating to malaria, RH, and HIV to ensure current and consistent guidelines about use of IPTp for HIV+ women; specifically, women taking cotrimoxazole should not be given SP. While national malaria control and RH programs should collaborate to produce consistent guidelines, they should also include their colleagues from the national HIV/AIDS arena so that prevention and treatment of MIP for HIV+ women is clear for all providers.

Promotion and Distribution of LLINs

Although most malaria and RH policies and guidelines recommend use of ITNs as early as possible in pregnancy, there is often no guidance to providers about when and how pregnant women are to obtain ITNs. While some countries provide vouchers to women to subsidize the purchase of ITNs, the process is not clearly described in policies and guidelines. In countries where women must purchase ITNs without vouchers, providers need guidance to correctly inform women about their purchase. The anecdotal input from many countries indicates that stock-outs of ITNs at ANC are common. Commodity systems are not streamlined; the reasons are varied, such as budget constraints, poor forecasting, lack of resources for ITN logistics, and use of different supply systems. While not the focus of this review, LLIN procurement and access to LLINs for pregnant women are particularly critical recognizing the shortage of LLINs and demands for universal coverage combined with the vulnerability of pregnant women.

Recommendation

- Per WHO guidance, countries should shift to use of LLINs over ITNs. Countries should make consistent recommendations about counseling of women on use of LLINs, as well as how nets are distributed. Ideally, LLINs should be given to all women, free of charge, at the first ANC visit, and this should be documented on the ANC card and register. In addition, countries should ensure that effective procurement and management practices prioritize refills of LLINs at ANC to give pregnant women consistent access and greater opportunities for coverage.

Diagnosis

Guidance documents are not consistent in recommending diagnosis of MIP with RDTs or microscopy prior to treatment. Some countries recommend treating all pregnant women with fever for presumed malaria, which can lead to over treatment and misdiagnosis of other causes of febrile illness.

Recommendation

- All policies, guidelines, and educational materials should stress the need for diagnosis of MIP prior to treatment.

Treatment

Guidance documents lack clearly defined treatment regimens specifically for MIP, by trimester.

Recommendation

- Clear algorithms—complete with appropriate medications, doses, and timing by trimester—should be developed and used consistently in all documents and educational materials. Job aids that reflect these algorithms should be developed and distributed widely.

Cross-cutting

In most countries, women do not attend ANC until well into the second trimester, and thus are not counseled about LLIN use nor are they given access to an LLIN, and begin IPTp-SP later than recommended. Among the guidance documents reviewed, only one country mentioned potential community-level efforts to promote use of ITNs and IPTp through behavior change communications (BCC)/information, education, and communication (IEC), or even investigating community-based distribution of SP as an adjunct to ANC. This country has since made the decision not to move forward with community-level distribution of IPTp-SP. While WHO now considers community distribution of SP an option "with targeted monitoring and evaluation,"[6] PMI does not support SP distribution outside of ANC because the full range of ANC services are not provided in the community and there is concern that this might lower ANC attendance. Community distribution of SP aside, recognizing the low levels of ANC utilization in the first trimester, community engagement is an important component of a comprehensive program to promote IPTp uptake, LLIN use, and prompt care-seeking for fever.

Recommendation

- Countries might consider promoting a two-pronged approach to reach women earlier in their pregnancies and increase the quality of ANC services by supporting communities to distribute LLINs and the first dose of IPTp-SP, as well as to promote facility-level care for continued ANC. This approach requires ensuring that the bridge between community- and facility-level services is strengthened to ensure that community-level services do not detract from comprehensive ANC.

Updated WHO policy

The update of WHO's IPTp recommendation (October 2012), *Intermittent Preventive Treatment of malaria in pregnancy using Sulfadoxine-Pyrimethamine (IPTp-SP),* affords countries the opportunity to review their national-level policies and guidelines for both malaria and RH, as well as to update all of their guidance documents according to evidenced-based findings. The newly updated policy is also an opportunity for national programs, i.e., RH, malaria, and HIV, to come together and foster their in-country partnerships.

Recommendation

- This review could be accomplished by the establishment of a national TWG for MIP, comprised of leaders from the divisions of RH, malaria, and HIV. Other key members should represent the departments responsible for laboratories/diagnostics, medical stores, pre-service and in-service education, health management information system, monitoring and evaluation, and community IEC. The TWG would first review the WHO policy recommendation, then compare existing RH, malaria, and other related policies and guidelines to it, and update them as necessary. At the same time, the TWG will need to identify and address gaps in the health system that are precluding uptake of IPTp and LLINs. The TWG must then ensure strict oversight of all revised documents emanating from the MOH and its partners to guarantee consistency among the documents. The effort to update and harmonize all national

[6] WHO, 2012. WHO recommendations for optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting.
http://www.who.int/workforcealliance/media/news/2012/whotaskshiftingrecom/en/index.html

policy, guideline, and educational/supervisory documents relating to MIP, as well as disseminate them to front-line workers and see the process through, will require enormous commitment by the MOH, the TWG members, and their support staff. But, with the well-being of so many mothers and babies at stake, there is no alternative.

Discussion

While this review is targeted primarily at country-level stakeholders, the information is important for those at the regional and the global levels as well. For example, when called upon by MOHs, country advisors from UNICEF, UNFPA, and WHO can use these findings to act as advocates for policy and guideline revision and health system strengthening through the TWG process. The Roll Back Malaria MIP working group can continue to support dissemination of best practices and lessons learned and collaborate with the United Nations agencies and other organizations to foster the partnership between RH and malaria control programs as the TWG is formed and becomes functional. PMI and other global donors can use this information to better understand existing bottlenecks (per out-of-date and discordant guidance) and, in partnership with the TWG, determine what technical assistance is needed to address them. Finally, nongovernmental organizations, faith-based organizations, and private sector donors working at the frontline should understand how the new policy will affect their programs. They must be prepared to work with the MOH, who should call upon them to rapidly adopt and disseminate revised policies and guidelines at all levels of the health system and in the community.

COUNTRY-SPECIFIC FINDINGS AND RECOMMENDATIONS

This section presents detailed findings and recommendations categorized by each of the five countries. Table 4 summarizes the types of documents reviewed per country. For detailed findings by country, refer to the completed frameworks in Appendices 2 through 6.

Table 4. Country-level guidance documents reviewed

	NATIONAL MALARIA POLICY	NATIONAL MALARIA GUIDELINES	NATIONAL RH POLICY	NATIONAL RH GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM
Kenya	X	X	X		X	X	
Mali	X	X	X	X	X	X	
Mozambique	X	X	X	X	X	X	X
Tanzania		X		X	X	X	X
Uganda	X	X	X	X	X		

Kenya

The documents reviewed are indicated in Table 4. RH guidelines specific to the provision of IPTp during ANC have not been formulated. No specific pre-service education materials about MIP have been formulated in Kenya, thus tutors use existing national malaria guidelines to formulate their curricula.

MIP AREA	KEY FINDINGS FROM KENYA'S GUIDANCE	ANECDOTAL INPUT
IPTp timing and dosing	▪ Kenya's documents support previous WHO guidance of providing IPTp during ANC, at intervals of at least one month apart and up to time of delivery, starting at either 16 weeks or quickening. The Focused Antenatal Care/Malaria in Pregnancy/Prevention of Mother-to-Child Transmission/Tuberculosis) (FANC/MIP/PMTCT/TB) Orientation Package for Service Providers and job aid on prevention of MIP recommend 16 weeks, but the IPTp circular on MIP, the national malaria guidelines and the supervision manual recommend quickening for time of first dose. The national malaria policy, strategy, and all RH documents do not specify timing or dosing for IPTp. ▪ The national malaria policy and national malaria strategy, as well as the FANC/MIP/PMTCT/TB orientation package, discuss use of IPTp in high-transmission areas, but not all documents define where these areas are. ▪ Only the national malaria guidelines specify clearly the dose of SP (three tablets). ▪ The guidelines and both orientation packages state that folic acid should either not be given or should be withheld for 14 or 15 days after taking SP; only the orientation packages specify withholding folic acid if high-dose folic acid (5 mg) is used.	▪ The decision to focus use of IPTp in areas of high malaria transmission is based on studies carried out in Kenya. ▪ The Division of Malaria Control and the Division of Reproductive Health (DRH) hold joint TWG meetings to develop IPTp guidelines and IEC materials, to plan for field activities, and to conduct joint supportive supervision, trainings and orientations. ▪ The Division of Nutrition is developing a policy for lower doses of folic acid; revision and dissemination of guidelines is planned.
DOT	▪ All documents recommend SP administration by DOT.	
Linkages to HIV	▪ The national malaria guidelines recommend that in areas with HIV prevalence >10%, pregnant women should receive at least three doses of IPTp. ▪ All documents, except the national malaria policy, consistently state that HIV+ women on daily cotrimoxazole should not receive IPTp.	▪ HIV+ women in Kenya are identified through testing at the first ANC visit; this is an opt-out approach. There is retesting after three months or in the third trimester for women who do not test positive.
LLIN promotion/ distribution	▪ Policy recommends free access to LLINs for pregnant women. ▪ Guidelines and orientation packages recommend promotion of ITN use. ▪ Recommendations on distribution of ITNs differ—the national malaria policy and national malaria guidelines as well as the supervision manual recommend free distribution at first ANC visit, however, the means of distribution are not specified in the orientation packages.	▪ ITNs fall under the vector control TWG, but the DRH is not a member and is thus not involved in quantification, procurement, and distribution. However, the DRH participates fully in supporting implementation of ANC activities and data collection, as well as community-level promotion of ITNs.
Diagnosis	▪ Documents consistently recommend diagnosis of malaria before treatment whenever possible, using either microscopy or RDTs.	
Treatment	▪ The national malaria policy recommends free diagnosis and treatment for pregnant women presenting at all health facility levels. ▪ Guidelines for treatment are not mentioned in all documents, but where mentioned, are consistent with WHO treatment guidelines, except that clindamycin is not given with quinine for treatment of uncomplicated malaria in the first trimester. ▪ Information on treatment doses is lacking or incomplete, especially for uncomplicated malaria, in the IPTp and FANC/MIP/PMTCT/TB orientation packages. ▪ The malaria support supervision materials do not specify treatment for uncomplicated malaria in the second and third trimesters, but indicate intravenous (IV) quinine for treatment of severe malaria, semesters not specified, rather than WHO guidance of quinine in the first trimester and artesunate in second and third trimesters.	▪ Clindamycin is not given with quinine for uncomplicated malaria due to cost and to decrease exposure to medications in the first months of pregnancy.

MIP AREA	KEY FINDINGS FROM KENYA'S GUIDANCE	ANECDOTAL INPUT
Cross-cutting	▪ Two other documents made available for review (the Kenya National Malaria Strategy 2009–2017 and the National Reproductive Health Strategy 2009–2015) include guidance on the importance of collaboration among MOH divisions to ensure integrated programs. The malaria strategy states that the Division of Malaria Control should coordinate with the DRH to support use of IPTp and ITNs during ANC. The national RH strategy states that malaria is an indirect cause of maternal mortality and that the DRH should collaborate with other MOH divisions to ensure essential health packages addressing malaria.	▪ Under the current "push system," SP stock-outs are rare, but this may change when the "pull system" is put into place, due to poor quantification and supply systems. ▪ More providers should be trained using the guidelines to ensure consistency of care, but budget problems preclude more wide-spread training. ▪ WHO's updated policy recommendation for IPTp will be reviewed by the MIP TWG, which will make recommendations to the relevant ministry divisions to revise and disseminate guidance to providers.

Recommendations

1. National malaria policy and guidelines should be reviewed and updated in the context of the new WHO guidance on timing and dosing of IPTp-SP, including use for HIV+ women. Revisions should be quickly disseminated to all levels of the health system. In-service training and supervision materials should also be reviewed and revised according to the new guidance, using language that is consistent across documents. If new RH guidelines are formulated, they should reflect WHO's updated recommendations to ensure that all providers, whether maternal, newborn, child health, or other, have access to consistent guidance.
2. The national guidelines recommend that women in areas of high malaria transmission receive IPTp, but do not define where these areas are. The document should be revised to clearly indicate the areas of high transmission. This should be clarified for consistency with WHO recommendations, which do not recommend zonal dosing, and to avoid possible confusion among providers about who should receive routine IPTp.
3. The IPTp and FANC/MIP/PMTCT/TB orientations should reflect where pregnant women can access LLINs. For consistency with guidelines, the recommendation is distribution of LLINs at the first ANC visit.
4. The IPTp orientation does not contain treatment guidelines, but includes an accompanying poster on treatment. The poster does not describe specific doses of quinine and ACTs for uncomplicated malaria, but does describe treatment consistent with WHO guidelines for severe malaria. The poster should also state the need for diagnosis of malaria by microscopy or RDTs, when possible, before treatment. With modification, the poster could be widely used as a job aid. The FANC/MIP/PMTCT/TB orientation has incomplete recommendations on treatment of both uncomplicated and severe malaria by trimester and should be revised.
5. The support supervision manual should be revised to include treatment of uncomplicated malaria in the second and third trimesters, and specify use of parenteral artesunate in the second and third trimesters.
6. The WHO recommends 30–60 mg of elemental iron/day and 0.4 mg of folic acid/day during pregnancy. Kenya is using a dose of 5 mg of folic acid, far above the recommended level, which necessitates suspension of folic acid for two weeks after SP administration so as not to interfere with the antimalarial action of SP, as stated in the national malaria guidelines. Stopping folic acid for even a week after IPTp could cause confusion for providers and women about when to take their iron and folic acid supplements. The Division of Nutrition should accelerate and implement the planned policy change in favor of low-dose folic acid. RH and malaria control should be engaged to revise their guidelines and the two orientation packages should be brought in line with the policy change.
7. Implement the action plan outlined in the *Kenya MIP Country Update: Accelerating Malaria in Pregnancy Programs to Achieve Country Scale-Up, May 2012,* including improving quality of ANC services, encouraging women to attend ANC earlier in pregnancy, and improving coordination between commodity supply systems.

Mali

The documents reviewed are indicated in Table 4. National RH policy and guidelines are combined into one document. No materials specific to pre-service education were reviewed; the FANC reference manual for in-service education is used by nursing and midwifery schools. Anecdotal input to further illustrate the key findings was not received for Mali.

MIP AREA	KEY FINDINGS FROM MALI'S GUIDANCE
IPTp timing and dosing	▪ While the malaria policy and the malaria case management guidelines mention the importance of IPTp-SP, they do not specify timing or dose of SP during ANC. ▪ The RH policy and guidelines state that IPTp-SP should be part of ANC, but no guidance on dosing is given. ▪ Only the guidelines for free distribution of IPTp and the FANC reference manual specify dosing. ▪ Guidance on timing of IPTp-SP varies across documents, specified either in weeks (at 24–28 weeks and at 32–36 weeks) or months (give twice between months 4 and 8). ▪ The FANC reference manual specifically advises against IPTp in the last month of pregnancy. ▪ The FANC reference manual advises the suspension of folic acid for one week after receiving IPTp.
DOT	▪ Only the guidelines for free distribution of IPTp, the FANC reference manual, and supervision guide mention IPTp by DOT. ▪ The guidelines for free distribution of IPTp specify that the pregnant woman receive a prescription at ANC to take to a pharmacist for DOT, whereas the supervision guide specifies IPTp by DOT during ANC.
Linkages to HIV	▪ The FANC reference manual states that HIV+ pregnant women should receive three doses of SP unless they are on daily cotrimoxazole. ▪ The guidelines for free distribution of IPTp state that HIV+ women should receive three doses of SP but do not mention management of women on cotrimoxazole.
LLIN promotion/ distribution	▪ All documents except the malaria policy and malaria case management guidelines state that pregnant women should be counseled on use of ITNs. ▪ The RH policy and guidelines do not mention distribution, while the other documents specify ITNs should be free at the first ANC visit. ▪ The malaria guidelines for free distribution of IPTp state that a pregnant woman should receive a prescription for an ITN at the first ANC visit to redeem at a pharmacy.
Diagnosis	▪ The RH policy and guidelines and the guidelines for free distribution of IPTp do not mention diagnosis. ▪ All other documents reviewed state that diagnosis of malaria with microscopy or RDTs should be done whenever possible prior to treatment.
Treatment	▪ The malaria guidelines for case management recommend oral quinine for first trimester, and ACTs subsequently for uncomplicated malaria, but do not give specific doses. Parenteral quinine is recommended for severe malaria in all trimesters, and dose is given; also states that ACTs can be used beyond first trimester but does not specify doses. ACTs can be used beyond first trimester though it is difficult to discern doses to be used in pregnancy. ▪ The supervision guide uses a checklist to observe care and mentions quinine and ACTs, but not use by trimester or doses. ▪ The malaria guidelines name the medications to be used by trimester but not their doses. ▪ The FANC manual does not specify the dose of oral quinine to be used for uncomplicated malaria in the first trimester, but does specify use of ACTs for second and third trimester use. ▪ The information on treatment of MIP in both the malaria guidelines and the FANC manual is not delineated in a separate section, making it difficult to discern the correct medications and their doses for uncomplicated and severe malaria in the three trimesters of pregnancy. ▪ The RH policy and guidelines document does not mention diagnosis or treatment of MIP.

Recommendations

1. The Reproductive Health Policy and Guidelines; the National Malaria Control Program (NMCP) Guidelines for Management and Distribution of Free LLINs to Pregnant Women and Under 5s and SP to Pregnant Women; the Malaria Policy; Malaria Guidelines; and the NMCP Strategic Plan to Fight Malaria, 2007–2011 should be reviewed in the context of the new WHO guidance on timing and dosing of IPTp-SP. Revised guidance should be complete and consistent across all documents and quickly disseminated to all levels of the health system. In-service training and supervision materials should also be revised according to the new guidance, using language that is consistent across documents.
2. The FANC reference manual is the only document to state that use of folic acid should be suspended for one week after IPTp. The WHO recommends 30–60 mg of elemental iron/day and 0.4 mg of folic acid/day during pregnancy. If high doses of folic acid (>0.4 mg/day according to WHO guidelines) are being used in Mali, the DRH should be engaged to change this practice, as stopping folic acid for even a week after IPTp causes confusion for providers and women.
3. The importance of DOT should be stated in both the national malaria policy and malaria guidelines.
4. All documents should reflect the WHO guidelines on use of IPTp for women who are HIV+.
5. All documents should be harmonized to state the importance of promotion of LLINs as well as the mechanism to distribute them.
6. Information on treatment of MIP is not mentioned in the RH policy and guidelines, and is incomplete across other documents. A user-friendly, updated job aid for treatment of uncomplicated and severe malaria in all trimesters of pregnancy should be developed and included in all national-level documents dealing with MIP.

Mozambique

The documents reviewed are indicated in Table 4.

MIP AREA	KEY FINDINGS FROM MOZAMBIQUE'S GUIDANCE	ANECDOTAL INPUT
IPTp timing and dosing	▪ The malaria policy and RH policy do not mention timing. ▪ The malaria policy, malaria guidelines, and NMCP two-day in-service package specify at least two doses of IPTp, while the RH guidelines, maternal and newborn health (MNH) performance standards, and MNH nursing curriculum state three doses. The MOH in-service package does not specify number of doses. ▪ All documents, except the malaria policy, RH policy, and MOH supervision manual recommend IPTp starting at 20 weeks or after quickening and at least one month apart. ▪ The MOH supervision manual recommends register/record reviews to determine if IPTp is given correctly, but does not give a definition of what is "correct" IPTp administration. ▪ Only the RH guidelines, MOH in-service package, MNH performance standards, and MNH nursing curriculum specify three tablets of SP.	▪ Stock-outs of SP occur mostly at local levels, and lead to low use of even two doses of IPTp by pregnant women.
DOT	▪ All documents mention SP administration by DOT except the RH policy and MOH supervision manual.	
Linkages to HIV	▪ The malaria policy, malaria guidelines, RH policy, MOH supervision, and MNH performance standards do not mention use of IPTp for HIV+ women. ▪ The RH guidelines and MNH nursing curriculum specify three doses of IPTp for HIV+ pregnant women, unless on cotrimoxazole or antiretrovirals; it is not clear if women on antiretrovirals also receive cotrimoxazole. ▪ The NMCP two-day in-service package states that in areas where HIV prevalence among pregnant women is >10% a third dose of IPTp should be given; no mention of contraindication for cotrimoxazole. ▪ The MOH in-service package mentions use of IPTp for HIV+ women, but no mention of number of doses or contraindication for cotrimoxazole.	▪ In practice, all HIV+ women take cotrimoxazole so are not candidates for IPTp. ▪ HIV counseling and testing using a rapid test is routine during first ANC visit. If missed at the first visit, testing is done at a subsequent visit.

MIP AREA	KEY FINDINGS FROM MOZAMBIQUE'S GUIDANCE	ANECDOTAL INPUT
LLIN promotion/ distribution	▪ ITN promotion is not mentioned in the malaria guidelines, RH policy, supervision tools, or performance standards. ▪ The malaria policy recommends that all pregnant women receive a free LLIN during ANC; the malaria guidelines specify first ANC visit. ▪ The RH guidelines, MNH nursing curriculum, and the two in-service packages recommend promotion of ITNs. ▪ Means of ITN distribution is not mentioned in the malaria and RH policies, RH guidelines, MNH nursing curriculum, or the two-day in-service education package. ▪ The MOH supervision manual requires a register review to ensure that ITNs are given during ANC. The MNH performance standards include a criterion on furnishing the ITN at the first ANC visit and on counseling women about ITNs.	
Diagnosis	▪ The only document not recommending diagnosis via microscopy or RDT prior to treatment is the national RH policy.	
Treatment	▪ The national malaria policy recommends appropriate treatment, free of charge at all levels. ▪ The national malaria and RH policies do not include treatment guidance. ▪ The MOH supervision manual mentions treatment but refers the user to other national guidelines. ▪ The national malaria guidelines, national RH guidelines, and the two-day NMCP and MOH in-service training packages all recommend oral quinine in the first trimester and ACTs in the second and third trimesters for women with uncomplicated malaria, and IV quinine for women with severe malaria in the first trimester, then intramuscular (IM)/IV artesunate in the second and third trimesters, per WHO guidelines. ▪ The MNH performance standards recommend oral quinine for women with uncomplicated malaria in the first trimester, but no information is given about treatment in the second and third trimesters. Prompt referral is required for women with severe malaria. The standards for care of the woman at the hospital level with severe malaria in the first trimester is parenteral quinine and for second and third trimesters parenteral artesunate, per WHO standards.	▪ Clindamycin for treatment of uncomplicated malaria in the first trimester is not feasible, likely due to its high cost. ▪ If malaria is diagnosed by the ANC provider, that same provider treats the woman. In larger facilities, the woman will be treated in the emergency department.
Cross-cutting		▪ Coordination meetings and guideline revisions occur at the national level between the RH and malaria control programs. Trainings are also collaborative (i.e., MCH nurses are included in trainings on malaria). ▪ Inconsistencies among guidelines cause confusion for providers and result in improper use of IPTp. ▪ The MOH and its malaria partners have begun revising MIP training materials and service delivery guidelines to reflect WHO's updated policy recommendation for IPTp.

Recommendations

1. All guidelines from the malaria and RH divisions, along with the in-service training packages, should be reviewed and updated, as well as harmonized, to reflect the current WHO guidance for IPTp and promotion and distribution of LLINs.
2. Use of IPTp for HIV+ women should be clarified in all documents.
3. The national RH policy should state the need for diagnosis of malaria with microscopy or RDTs prior to treatment.
4. The national RH policy should make specific recommendations on the availability of services to prevent and treat MIP as part of emergency obstetric and newborn care (EmONC). RH guidelines should offer more specific guidance to providers about integrating all aspects of MIP into ANC: prevention, diagnosis, and treatment.
5. Supervision tools should include performance criteria to measure the ability of the provider to manage all aspects of MIP: IPTp, provision of LLINs, and case management.
6. Implement the action plan outlined in the *Mozambique MIP Country Update: Accelerating Malaria in Pregnancy Programs to Achieve Country Scale-Up, May 2012*, specifically: improved coordination between RH and NMCP to accelerate MIP programming, improved IEC and BCC through partner organizations to sensitize the public about early and consistent attendance at ANC, and improved supply chain management to decrease stock-outs of SP.

Tanzania

The documents reviewed are indicated in Table 4. A national malaria policy separate from the malaria guidelines does not exist. There is also a national health policy (but no separate national RH policy), and it does not address MIP. The National Policy Guidelines for Reproductive and Child Health, 2003, do not address MIP.

MIP AREA	KEY FINDINGS FROM TANZANIA'S GUIDANCE	ANECDOTAL INPUT
IPTp timing and dosing:	▪ The malaria guidelines, FANC in-service education package, and pre-service education package recommend two doses of IPTp-SP, the first at 20–24 weeks and the second at 28–32 weeks. ▪ The FANC quality improvement (QI) tool states to give IPTp-SP at 20 weeks or more, but does not give information on subsequent doses or the number of doses to be given. ▪ All documents reviewed specify three tablets of SP, with doses at least one month apart.	
DOT	▪ All documents reviewed recommend use of DOT.	
Linkages to HIV	▪ Neither the FANC in-service education package nor the pre-service package gives guidance on IPTp use for HIV+ women. ▪ The malaria guidelines state that HIV+ women should have three doses of IPTp with SP (no timing is given) or daily cotrimoxazole. ▪ The FANC QI tool says that if the woman's CD4 count is <350 she should receive daily cotrimoxazole. The tool also states that cotrimoxazole should then be suspended to give three doses of IPTp at least one month apart, though timing is not stated. The tool does not mention whether or when cotrimoxazole should be resumed.	▪ Tanzania adopted the opt-out approach to HIV testing. Testing for HIV is offered to every ANC client at first booking, unless the client refuses. Clients who do not agree to testing continue receiving counseling in subsequent visits, even during labor.
LLIN promotion/ distribution	▪ All documents recommend counseling on ITN use. ▪ Only the FANC QI tool mentions distribution, specifying that the woman should receive a voucher to buy an ITN, but no mention of when to give the voucher or where to redeem it.	▪ The voucher should be given at the first ANC visit. The ITN cost is about $0.30 with the voucher.
Diagnosis	▪ The national malaria guidelines and the FANC in-service package recommend diagnosis via microscopy or RDTs for anyone admitted with severe malaria. ▪ The FANC QI tool states that microscopy or RDTs should be used prior to treatment. ▪ The pre-service education package makes no mention of diagnosis.	

MIP AREA	KEY FINDINGS FROM TANZANIA'S GUIDANCE	ANECDOTAL INPUT
Treatment	▪ The national malaria guidelines and the pre-service education package recommend oral quinine for women with uncomplicated malaria in the first trimester, and ACTs in the second and third trimesters, in accord with protocols for non-pregnant adults. ▪ The FANC in-service package and QI tool recommend oral quinine for uncomplicated malaria in the first trimester, but specific doses are not provided. ACTs are recommended for uncomplicated malaria in the second and third trimesters. ▪ For women with severe malaria in all trimesters, IV quinine is recommended by the in-service and pre-service education documents. ▪ The FANC QI tool recommends immediate referral of women with severe malaria, with a loading dose of IV quinine if a delay is anticipated.	▪ If malaria is diagnosed by an ANC provider, the woman is referred to the clinical officer for treatment. ▪ Clindamycin is not used for treatment in the first trimester, likely due to its high cost and lack of evidence that it is more effective than quinine alone.
Cross-cutting	▪ An additional document reviewed, The National Road Map Strategic Plan for the Acceleration of Reduction of Maternal and Newborn Mortality, 2008–2015, gives support for training of providers in quality ANC, use of ITNs, and includes an indicator for use of two doses of IPTp.	▪ Stock-outs of both SP and ITN vouchers are widespread and contribute to low IPTp coverage. ▪ The malaria control program formulates MIP guidelines that become part of RH documents. They also oversee availability of SP. ▪ An MIP task force was established recently comprising NMCP, RH, and other partners. ▪ Inconsistencies among guidelines have caused confusion for providers. With increased collaboration among MOH divisions this should decrease. ▪ Discussions are under way at the MOH to determine how to incorporate WHO's updated policy recommendation for IPTp into guidelines and other documents.

Recommendations

1. All documents should be reviewed and updated to reflect revised WHO guidance on IPTp use, especially timing of IPTp and use for HIV+ women, as well as clear guidance about distribution of LLINs and diagnosis of malaria prior to treatment.
2. If a newer version of the National Policy Guidelines for Reproductive and Child Health Services is available, it too should be reviewed for recommendations about prevention and treatment of MIP.
3. Implement the action plan as described in the *Tanzania MIP Country Update: Accelerating Malaria in Pregnancy Programs to Achieve Country Scale-Up, May 2012*, including: improving forecasting of commodity use to decrease stock-outs of SP, strengthening community involvement and demand creation, and strengthening integration and planning between RH and NMCP to improve uptake of IPTp.

Uganda

The documents reviewed are indicated in Table 4. National RH policy and guidelines are combined in one document. Supervision materials were sought, but were not obtained for this review. Uganda has no pre-service education materials specific to MIP, but plans to address this gap in the near future.

MIP AREA	KEY FINDINGS FROM UGANDA'S GUIDANCE	ANECDOTAL INPUT
IPTp timing and dosing	▪ All documents reviewed indicate two doses of IPTp-SP. ▪ Only the malaria policy, malaria guidelines, and MIP refresher trainer guide specify giving doses at least one month apart. ▪ The malaria policy does not specify timing of IPTp-SP. ▪ All other documents reviewed provide timing of IPTp doses, but in some documents, timing is specified using weeks of pregnancy while others use months, which could cause confusion among providers. ▪ The MOH MIP flow chart states to suspend use of folic acid (5 mg) for one week after taking IPTp-SP.	
DOT	▪ All documents recommend use of DOT, except the RH policy and service standards.	
Linkages to HIV	▪ Only the MIP refresher training guide addresses HIV+ pregnant women, stating that they should receive three doses of IPTp-SP at monthly intervals after 16 weeks. It is not clearly stated that women on cotrimoxazole should not be given IPTp.	▪ HIV counseling and testing is routine during ANC. If the client refuses, testing is offered again during labor and postnatal.
LLIN promotion/ distribution	▪ Promotion and counseling on ITN use is mentioned in all documents, but only the MIP refresher training guide states that the pregnant woman should receive a free ITN at the first ANC visit.	▪ ITNs are only available in 34 of 112 districts, contributing to an increase in MIP.
Diagnosis	▪ The RH policy guidelines and the MOH flow chart mention microscopy results as a way to differentiate between uncomplicated and severe malaria. ▪ The malaria policy states that diagnosis of malaria by microscopy or RDTs should be available in all health facilities. ▪ The malaria guidelines state that diagnosis of malaria by microscopy should be done for all pregnant women with malaria, but that routine use of RDTs is not recommended. ▪ The MIP refresher training guide recommends confirmatory lab tests before treatment.	▪ In most parts of Uganda, children have malaria parasites in their blood, even when they are not sick, therefore, when tested, the RDTs will be positive. By detecting antigens from both dead and living malaria parasites, the tests may be positive in patients who have already been successfully treated. Also, extremes of temperature and moisture can lead to degradation of RDTs.
Treatment	▪ The malaria control policy recommends quinine in the first trimester and ACTs subsequently, but doses are not given. For severe malaria, parenteral quinine is first-line treatment and ACTs are second line. ▪ The malaria guidelines recommend treating any pregnant woman with a fever for malaria; quinine is the first-line treatment throughout pregnancy, though ACTs can be used after first trimester. Doses are the same as for non-pregnant adults. If referral is needed for severe malaria an IM injection of 600 mg of quinine should be administered. ▪ The RH guidelines do not mention treatment of MIP. ▪ The MIP refresher training guide and the malaria flow chart recommend oral quinine for uncomplicated malaria in all trimesters, although ACTs may be used after the first trimester. For severe malaria, IV quinine is recommended until oral medication starts, which could include ACTs.	▪ Pregnant women usually seek care for uncomplicated malaria in outpatient departments served by a range of nurses, midwives, clinical officers, doctors, and specialist doctors. For severe malaria, care is sought from in-patient services. ▪ Clindamycin is not used because it is not provided for in the policies nor requested in the budget for malaria treatment. It might be considered with the revision of the policies.

MIP AREA	KEY FINDINGS FROM UGANDA'S GUIDANCE	ANECDOTAL INPUT
Cross-cutting:		▪ Coordination is being strengthened between RH and malaria control and roles are being streamlined. The malaria control program works on the policy and both departments implement as a joint venture. ▪ The MOH is considering WHO's updated policy recommendation for IPTp.

Recommendations

1. All documents should be reviewed and updated to reflect the current WHO recommendations for prevention of MIP, including IPTp timing and dose, use of DOT, promotion and distribution of LLINs, and diagnosis of malaria.
2. All documents reviewed should be updated with consistent guidance on diagnosis, preferably following WHO guidance to confirm all cases with RDTs or microscopy, unless those methods of diagnosis are not available.
3. Treatment guidelines should also be updated to reflect WHO 2010 guidelines, particularly on use of clindamycin concomitantly with quinine if affordable and feasible in Uganda, and use of parenteral ACTs for severe malaria as first-line agents.
4. Implement the action plan as outlined in the *Uganda MIP Country Update: Accelerating Malaria in Pregnancy Programs to Achieve Country Scale-Up, May 2012*, specifically targeting: improved definition of the roles of RH and NMCP in MIP programming, improved dissemination of policies and guidelines to front-line workers, and improved commodity distribution.

Appendix 1: WHO Guidelines for Malaria Prevention and Treatment in Pregnancy

From Updated WHO Policy Recommendation on Use of IPTp, October 2012
In areas of moderate-to-high malaria transmission, IPTp with SP is recommended for all pregnant women at each scheduled ANC visit. WHO recommends a schedule of four ANC visits.

- The first IPTp-SP dose should be administered as early as possible during the second trimester of gestation.
- Each IPTp-SP dose should be given at least one month apart.
- The last dose of IPTp-SP can be administered up to the time of delivery, without safety concerns.
- IPTp should ideally be administered as directly observed therapy (DOT).
- SP can be given either on an empty stomach or with food.
- Folic acid at a daily dose equal or above 5 mg should not be given together with SP as this counteracts SP's efficacy as an antimalarial. WHO recommends daily iron and folic acid supplementation in pregnant women at the dose of 30–60 mg of elemental iron and 0.4 mg of folic acid, to reduce the risk of low birth weight infants, maternal anemia, and iron deficiency at term.
- SP should not be administered to women receiving cotrimoxazole prophylaxis.

From A Strategic Framework for Malaria Prevention and Control during Pregnancy in the African Region, WHO 2004

- ITNs should be provided to women as early in the pregnancy as possible, at the ANC clinic or through other sources in the public or private sectors.
- Effective case management of malaria illness for all pregnant women in malarious areas must be assured.

From WHO Global Malaria Programme: Position Statement on ITNs, 2007
The WHO Global Malaria Programme recommends distribution of ITNs, more specifically LLINs, to achieve full coverage of populations at risk of malaria. The best opportunity for rapidly scaling up malaria prevention is free or highly subsidized distribution of LLINs through existing public health services (both routine and campaigns).

From Guidelines for the Treatment of Malaria, Second Edition, WHO 2010
Diagnosis:

- "Prompt parasitological confirmation by microscopy or alternatively by RDTs is recommended in all patients suspected of malaria before treatment is started.
- Treatment solely on the basis of clinical suspicion should only be considered when a parasitological diagnosis is not accessible."

Treatment of uncomplicated malaria: "Pregnant women in the first trimester with uncomplicated falciparum malaria should be treated with quinine plus clindamycin for 7 days (and quinine monotherapy if clindamycin is not available). Artesunate plus clindamycin for 7 days is indicated if this treatment fails." Specifically:

First trimester:

- Quinine plus clindamycin to be given for 7 days (artesunate plus clindamycin for 7 days is indicated if this treatment fails). If clindamycin is unavailable or unaffordable, then quinine monotherapy should be given.
- An ACT is indicated only if this is the only treatment immediately available, or if treatment with 7-day quinine plus clindamycin fails, or if there is uncertainty about patient compliance with a 7-day treatment.

Second and third trimesters:

- ACT known to be effective in the country/region, or artesunate plus clindamycin to be given for 7 days or quinine plus clindamycin to be given for 7 days (with the exception of DHA-PPQ, for which there is insufficient information in second and third trimesters of pregnancy to use as first-line therapy). Note: If clindamycin is unavailable or unaffordable, then the monotherapy should be given.

HIV infection:

- HIV+ patients who develop malaria should receive prompt, effective antimalarial treatment regimens as recommended in the relevant sections of these guidelines. Treatment or IPTp with SP should not be given to HIV+ patients receiving cotrimoxazole (trimethoprim plus sulfamethoxazole) prophylaxis.

Treatment of severe malaria: Parenteral antimalarials should be given to pregnant women with severe malaria in full doses without delay. Parenteral artesunate is preferred over quinine in the second and third trimesters because quinine is associated with recurrent hypoglycemia. In the first trimester, the risk of hypoglycemia is lower and the uncertainties over the safety of the artemisinin derivatives are greater. However, weighing these risks against the evidence that artesunate reduces the risk of death from severe malaria, both artesunate and quinine may be considered as options until more evidence becomes available. Treatment must not be delayed; so if only one of the drugs—artesunate, artemether, or quinine—is available, then it should be started immediately.

Dosages:
Artemether plus lumefantrine (AL): This is currently available as a fixed-dose formulation with dispersible or standard tablets containing 20 mg of artemether and 120 mg of lumefantrine. The recommended treatment is a 6-dose regimen over a 3-day period. The dosing is based on the number of tablets per dose according to predefined weight bands (5–14 kg: 1 tablet; 15–24 kg: 2 tablets; 25–34 kg: 3 tablets; and > 34 kg: 4 tablets), given twice a day for 3 days. This extrapolates to 1.7/12 mg/kg body weight of artemether and lumefantrine, respectively, per dose, given twice a day for 3 days, with a therapeutic dose range of 1.4–4 mg/kg of artemether and 10–16 mg/kg of lumefantrine.

Artemsisinins: The only recent change is the higher maintenance dose of parenteral artesunate recommended (2.4 mg/kg body weight), which is based on pharmacokinetic and pharmacodynamic studies, and by extrapolation from studies with oral artesunate.

Quinine treatment for severe malaria was established before modern clinical trial methods were developed. Several salts of quinine have been formulated for parenteral use, but the dihydrochloride is the most widely used. Peak concentrations following intramuscular quinine in severe malaria are similar to those following intravenous infusion. Pharmacokinetic modeling studies suggest that a loading dose of quinine (i.e., 20 mg salt/kg body weight—twice the maintenance dose) reduces the time needed to reach therapeutic plasma concentrations. The

maintenance dose of quinine (10 mg salt/kg body weight) is administered at 8-hour intervals, starting 8 hours after the first dose. Following initial parenteral treatment, once the patient can tolerate oral therapy, it is essential to continue and complete treatment with an effective oral antimalarial using a full course of an effective ACT (artesunate plus amodiaquine, artemether plus lumefantrine, or dihydroartemisinin plus piperaquine) or artesunate (plus clindamycin or doxycycline) or quinine (plus clindamycin or doxycycline).

Appendix 2: Kenya

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	TRAINING MATERIALS	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM
Documents	Kenya National Malaria Policy, April 2010 and IPTp circular 2011	National Guidelines for Detection, Treatment and Prevention of Malaria in Kenya; Ministry of Public Health and Sanitation and Ministry of Medical Services, May 2010	Enhancing Reproductive Health Status for all Kenyans; October 2007 (Also see notes below on RH National Strategy, 2009–2017)	Not available for review	MIP Orientation Package for Service Providers, June 2011 and accompanying posters on prevention and case management of MIP	FANC/MIP/ PMTCT/TB Orientation Package; December 2011	Malaria Support Supervision Manual; February 2011 Division of Malaria Control	No separate documents exist; tutors use existing national guidelines for diagnosis, treatment, and prevention to formulate curricula.
IPTp Timing	All pregnant women living in malaria-endemic areas receive free malaria preventive treatment during ANC as per the national treatment guidelines.	IPTp should be given at each scheduled visit after quickening, for a minimum of 2 doses; IPTp should be given at an interval of at least 4 weeks; SP for IPTp is safe up to 40 weeks and late dosing is beneficial for women presenting late in pregnancy.	Mentions malaria only as an indirect cause of maternal mortality; no mention of specific interventions to prevent or treat malaria.		Each scheduled visit after quickening, or between 16–40 weeks, at least one month apart.	IPTp recommended in malaria endemic areas: Nyanza Coast and Western Province; give minimum of two doses of SP at least one month apart from 16–40 weeks.	After quickening, or between 16–40 weeks.	
IPTp Dosing		IPTp is recommended in areas of high malaria transmission. The current recommended medicine for IPTp is 3 tablets of sulphadoxine/sulphalene 500 mg and pyrimethamine 25mg. Folic acid tablets should NOT be administered with SP given for IPTp, but if need be, may be taken 14 days following administration of IPTp.			SP is used, states to use treatment dose but number of tabs not mentioned; take folic acid 14 days after IPTp.	Dose of SP not specified. Withhold folic acid (5 mg) for 14 days after SP.	Every four weeks after quickening or whenever the mother presents herself if interval between her visits is greater than 4 weeks.	
DOT		IPTp should be given under DOT in the antenatal clinic and can be given on an empty stomach.			Yes	Yes	Yes	

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	TRAINING MATERIALS	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM
Linkages to HIV: What do the RH and malaria documents promote for HIV in pregnancy?		In areas of high HIV prevalence (>10% among pregnant women) pregnant women should receive at least 3 doses of IPTp. Pregnant women who are HIV+ and are on daily cotrimoxazole chemoprophylaxis should not be given SP for IPTp; pregnant women who are HIV+ and are also taking antiretroviral therapy for PMTCT who are not receiving cotrimoxazole should receive IPTp with SP.			No IPTp for HIV+ women on cotrimoxazole.	Counseling and testing of all women (opt out approach); re-test all negative women after 3 months. Do not give SP to women on cotrimoxazole prophylaxis.	IPTp not given to women on cotrimoxazole.	
LLIN Promotion	All pregnant women living in malaria-endemic areas have access to LLINs.	Advocacy, communication, and social mobilization are a critical intervention for behavior change towards improved health practices. The community should be sensitized to use appropriate prevention measures especially to sleep under LLIN every night.			Counsel on use of ITNs.	Counsel on use of LLINs.		
LLIN Distribution		Each pregnant woman living in a malaria-risk area receives a free LLIN at the first contact visit to the ANC and is shown how to hang the LLIN and encouraged to use the net every night during her pregnancy and thereafter.			Confirm whether mother has an ITN but distribution not mentioned.	Not specified how nets are to be given.	Facility should provide ITNs/LLINs to pregnant women.	
Diagnosis of malaria	All persons with fever have parasitological diagnosis using microscopy or RDTs.	If possible parasitological diagnosis using microscopy or RDTs should be done.			No mention of how to diagnose.	Parasitological diagnosis recommended if possible.	Microscopy or RDT should be used to diagnose before treatment.	

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	TRAINING MATERIALS	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM
Treatment: Uncomplicated malaria	All pregnant women with fever have access to free diagnosis and treatment for malaria.	**1st trimester:** 7-day therapy of oral quinine, 600 mg every 8 hours. Do not withhold artemether-lumefantrine (AL) or any other treatment in 1st trimester if quinine is not available. **2nd and 3rd trimesters:** AL, 4 tablets every 12 hours for 3 days; oral quinine may also be used but compliance must be ensured.			IPTp only discussed in slides, no case management, but per accompanying poster: **Uncomplicated malaria: 1st trimester:** administer 7-day course of oral quinine; do not withhold AL in 1st trimester if quinine is not available (doses not stated). **2nd and 3rd trimesters:** administer 3-day course of AL, dose not stated.	**1st trimester**: oral quinine for 7 days, dose not specified. **2nd and 3rd trimesters:** ACTs (AL).	**1st trimester:** oral quinine should be used. **2nd and 3rd trimesters:** treatment not mentioned.	
Treatment: Severe malaria	All pregnant women with fever have access to free diagnosis and treatment for malaria.	**All trimesters:** Parenteral quinine or parenteral artemisinins (artemether or artesunate). The preferred route of administration is IV for quinine (1,200 mg loading dose and 600 mg 8 hourly) and artesunate (2.4 mg/kg loading dose and 1.2 mg/kg at 12 and 24 hours, then daily). However the IM route can be used as an alternative where IV route is not feasible. In the absence of quinine, IM artemether, IM artesunate, or rectal artesunate can be administered. All efforts should be made to move the patient to a center where the expertise and infrastructure exist for the adequate management of severe malaria.			Establish if loading dose has been given; if not, administer a loading dose of quinine 1,200 mg in dextrose infusion; 8 hours from the initial dose of parenteral quinine, give infusion of 10mg/kg (maximum 600mg) in dextrose. Repeat infusion every 8 hours until the patient can take medication orally; thereafter a complete course of AL should be administered. With artesunate: establish if initial dose has been given, if not, administer IV loading dose 2.4 mg/kg then 1.2 mg/kg at 12 and 24 hours, then once a day until patient is able to take medication orally; thereafter a complete course of AL should be administered.	**Severe malaria**: Trimesters not specified: parenteral quinine or artemisinins; dose of quinine specified per WHO guidelines; dose of artemisinin not specified.	**All severe malaria** should be treated with IV quinine, trimesters not specified.	

Additional documents reviewed and related noteworthy findings include:

- Kenya Malaria Monitoring and Evaluation Plan 2009–2017: indicators for use of IPTp1 and IPTp2 uptake; use of LLIN by pregnant women.
- 2009 Kenya Malaria Program Performance Review: **Recommendations**: evaluate the implementation of IPTp with SP, explore reasons for low uptake after 10 years of implementation; explore alternatives to SP for IPTp; place the country IPTp focal person at Division of Malaria Control (DOMC); address the procurement and supply chain management of SP to avoid stock outs; investigate other avenues (e.g., a community-based approach) in addition to the ANC for delivering IPTp; establish IPTp-specific delivery points within the current ANC system; develop key messages for BCC targeting both health workers and pregnant women.
- National Malaria Strategy 2009–2017: **DOMC offices and roles**: Malaria in Pregnancy: Provide technical guidance for the implementation of activities for the prevention and treatment of MIP; coordinate MIP TWG and subcommittees. **Collaborate with DRH**: The DOMC collaborates with DRH to maximize the impact of malaria control in the attainment of Millennium Development Goal 5 by supporting activities for the prevention and treatment of MIP, including IPTp and distribution of ITNs to pregnant women through ANC clinics. In 2005, DOMC collaborated with DRH on a pilot project to strengthen health systems through the implementation of FANC and MIP initiatives.
- Circular describing malaria national policy, April 2011: confirms guidelines above—all women get at least 2 doses of IPTp by DOT and should receive it at each scheduled ANC visit, at least one month apart after quickening; no folic acid for 15 days following IPTp; no IPTp for HIV+ women on cotrimoxazole.
- National Reproductive Health Strategy, 2009 – 2015, August 2009: The main objective is to reduce rates of maternal, perinatal, and neonatal morbidity and mortality in Kenya. This will be achieved by "increasing equitable access to maternal and newborn services; improving quality, efficiency and effectiveness of service delivery at all levels; and improving responsiveness to the client needs," and increased access to skilled birth attendant; malaria acknowledged as an indirect cause of maternal mortality. Since RH services are part of the essential health packages, their management and implementation will involve other Ministry of Public Health and Sanitation divisions providing relevant packages such as Kenyan Expanded Programme on Immunization, HIV and AIDS, and TB, integrated management of childhood illnesses (IMCI), and malaria. Monitoring and evaluation indicators include those around basic emergency obstetric and newborn care (BEmONC), which would target the facilities/providers who prevent, diagnose, and treat MIP.
- Job aid poster from ACCESS/Uzima, no date: at least 2 doses of SP four weeks apart between 16–40 weeks; DOT; suspend folic acid for 2 weeks after SP; HIV+ women on cotrimoxazole should not take SP; promote ITNs.
- MIP Standards Based Monitoring and Recognition tool, 6 July 2012 (draft tool), endorsed by the MIP TWG: IPTp with 3 tabs SP, DOT from 16 weeks/quickening; doses at each visit, at least 4 weeks apart; promotion and provision of LLIN, counseling on how to use net. No SP to HIV+ women on cotrimoxazole. Detection with microscopy/RDT if possible. Treatment: uncomplicated malaria, 1st trimester: 7-day course of oral quinine; if quinine not available 3-day course of AL, 1st dose DOT; 2nd– 3rd trimester: 3-day course of AL, 1st dose DOT. Severe malaria: loading dose before referral of IM quinine 20 mg/kg (to 1200 mg); or IM artesunate 2.4 mg/kg; continuing treatment with quinine—10 mg/kg every 8 hours until oral meds can be taken, then 3-day course of AL, or AL 2.4 mg/kg every 12 hours x2 after loading dose, then once daily until oral meds can be taken, and commence 3-day treatment of AL.
- MIP Orientation Package for Service Providers, June 2011: IPTp from 16–40 weeks at each ANC visit at least 4 weeks apart, DOT; delay folic acid for 14 days; not for HIV+ women on cotrimoxazole. Promotion of LLINs.

- Community Midwifery Services in Kenya: Implementation Guidelines, August 2012: Mentions IPTp and ITN use as core components of FANC.
- National Road Map for Accelerating the Attainment of the MDGs Related to Maternal and Newborn Health in Kenya, August 2010: Mentions importance of malaria prevention as a part of FANC, using IPTp and ITNs.

Appendix 3: Mali

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM
Documents	NMCP, no date but around 2008/2009	Malaria National Guidelines for Case Management of Malaria, from NMCP 2012	NMCP Guidelines for Management and Distribution of Free LLINs and IPTp to Pregnant Women and Under 5s, March 2011	See next column—policy and guidelines for RH services are combined into one document	Policy and Guidelines for RH Health Services, 2004.	FANC reference manual, November, 2011	NMCP Supervision Guide, February 2012	The FANC reference manual for in-service education is also used by nursing and midwifery schools. No separate pre-service materials.
IPTp Timing	SP to be used during pregnancy but no dosing or timing described.	Importance of IPTp mentioned, but timing and dose not mentioned.	SP to be given twice during pregnancy after 16 weeks.		Not to be given at first visit (16 weeks) but at follow up visits (24–28 weeks and 32–36 weeks).	2 treatment doses of SP at least one month apart between the 4th and 8th months of pregnancy, following quickening; not given in last month of pregnancy.	Provider is asked when IPTp should be given during pregnancy; correct answers not mentioned in document: between 4th and 8th month; 3 tablets of SP. Client exit interview about receiving SP.	
IPTp Dosing	Not mentioned	Importance of IPTp mentioned, but timing and dose not mentioned.	SP, 3 tablets; woman takes prescription from ANC provider to pharmacy.		SP to be used, but dose not stated.	SP, 3 tablets; do not take folic acid for one week after SP.	SP is specified; provider is asked what the dose is but correct answer is not mentioned.	
DOT	Not mentioned	Not mentioned	Pharmacist gives SP by DOT.		Not mentioned	Yes	IPTp by DOT	
Linkages to HIV: What do the RH and malaria documents promote for HIV in pregnancy?	Not mentioned	Not mentioned	HIV+ pregnant women receive 3 doses of IPTp with SP; no mention of determining if she is on cotrimoxazole prophylaxis.		Not mentioned	HIV+ women should receive 3 doses of SP; if on cotrimoxazole should not receive IPTp.	Not mentioned	

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM
LLIN Promotion	Will work with private sector to achieve scale up.	Use mentioned but distribution not mentioned.	Woman counseled on use of net and given prescription by ANC provider.		Counseling on use of ITNs mentioned.	Counsel all mothers on ITN use at each ANC visit.	Counsel on use of LLINs.	
LLIN Distribution	All pregnant women should receive a net free at the 1st ANC visit.	Use mentioned but distribution not mentioned.	Woman takes prescription to pharmacy where she receives net at the first ANC visit.		Method of distribution not mentioned.	ITNs given free of charge at 1st ANC visit.	Gives the LLIN at the first ANC visit; client exit interview about receiving free LLIN.	
Malaria diagnosis	Cases should be diagnosed with RDTs or microscopy when possible, and free of charge to pregnant women.	Diagnosis with microscopy or RDT depending on level: community health center—RDT; referral health center—microscopy.	Not discussed		Not discussed	Use microscopy or RDTs when possible; if not available use clinical status to diagnose.	Interviews of health care workers target use of RDTs or microscopy for diagnosis; assessment of presence of supplies/ equipment to do RDTs and microscopy.	
Treatment: Uncomplicated malaria	No specific mention of pregnancy or trimesters, just that all uncomplicated malaria will be treated with ACTs like artesunate-amodiaquine (AS-AQ) or AL; no dosing, route, or specific treatment per trimester given. Provided free of charge to pregnant women.	**1st trimester:** Oral quinine for 7 days, dose not delineated. **2nd and 3rd trimesters:** ACTs, but type/dose not delineated.	Not discussed		Not discussed	**1st trimester:** oral quinine, dose not specified. **2nd and 3rd trimesters:** AL (20 mg/120 mg)—4 tabs morning and evening for 3 days.	Asks provider what medication would be given for treatment, specifies AL and quinine but no doses given; questions about stock of AL, AS-AQ, quinine, and artemether.	

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM
Treatment: Severe malaria	No specific mention of pregnancy; quinine will be used to treat all cases of severe malaria; no dosing, routes, or timing given; to be provided free to pregnant women.	**All trimesters**: IV quinine loading dose 20 mg/kg then 10 mg/kg maintenance dose every 8 hours until oral quinine can be started if in first trimester, or ACT if in 2nd and 3rd trimester.				Artemether 3.2 mg/kg (max 160 mg) IM before referral; or artesunate 800 mg rectally; or quinine 10 mg/kg IM. If transfer not possible continue artemether 1.6 mg/kg daily up to 5 days; or artesunate repeat loading dose 12 hours later, then 10mg/kg daily, duration not specified; or quinine 10 mg/kg IV 3 times/day or 15 mg/kg 2 times/day; when patient can take oral medication, continue treatment with oral ACTs.		

Additional documents reviewed and related noteworthy findings include:

- NMCP Strategic Plan to Fight Malaria 2007–2011, July 2006: IPTp—2 doses at least one month apart between 4th and 8th months; with SP—3 tabs; LLINs promoted; use of RDTs/lab diagnosis promoted.

Appendix 4: Mozambique

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS—CASE MANAGEMENT	IN-SERVICE TRAINING MATERIALS—MNH	SUPERVISION MATERIALS	MNH PERFORMANCE STANDARDS	PRE-SERVICE CURRICULUM
Documents	From NMCP 2011	Guidelines for Treatment of Malaria in Mozambique, 2011	National Sexual and RH Policy, July 2011	Reference Manual of National Norms for Care during Childbirth, Newborn Care, and Treatment of Major Obstetric and Newborn Complications, August 2011	2-day in-service training module for malaria case management, NMCP, 2012	2nd in-service package, January 2012 (Based on ACCESS Program's Best Practices in MNH Learning Resource Package; module on malaria.)	MOH Supervision Manual for Malaria, 2011	MOH September 2012	Intermediate-Level Nursing Curriculum for MNH, August, 2010
IPTp Timing	Not mentioned	At least 2 doses at least one month apart beginning at 20 weeks of pregnancy.	Need for malaria prophylaxis mentioned, but not specific dosing or timing.	Providers should give information and counseling on malaria prophylaxis in ANC; give 3 doses of IPT beginning at 20 weeks, or after quickening, or when the provider hears fetal heart sounds with a Pinard stethoscope; doses at least 4 weeks apart.	At least 2 doses of SP, one each during the first and second ANC visit; first dose after perception of fetal movement, around 20 weeks.	SP given at 20 weeks or after quickening (time not specified), every four weeks; number of doses not specified.	Record/register reviews to determine if IPTp is given correctly.	Monitoring and evaluation (M&E) indicators include IPTp for 1, 2, and 3 doses, for woman after 20 weeks of pregnancy; not more often than monthly.	First dose at 20 weeks; 2 subsequent doses at monthly intervals.
IPTp Dosing	Pregnant women should receive at least 2 doses of IPTp by DOT during ANC.	SP; dose not specified	Not mentioned	3 tablets of SP	SP, dose not specified	SP, 3 tablets at 4-week intervals	Record/register reviews to determine if IPTp is given correctly.	3 tablets of SP	SP, 3 tablets

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS—CASE MANAGEMENT	IN-SERVICE TRAINING MATERIALS—MNH	SUPERVISION MATERIALS	MNH PERFORMANCE STANDARDS	PRE-SERVICE CURRICULUM
DOT	Yes	Yes	Not mentioned	Yes	Yes, recommended	Yes, recommended	Not mentioned	Yes	Recommend
Linkages to HIV: What do the RH and malaria documents promote for HIV in pregnancy?	Not mentioned	Not mentioned	Not mentioned	HIV+ women not on cotrimoxazole should have 3 doses of IPTp; if on cotrimoxazole does not receive SP; if on ARVs does not receive IPTp.	In areas where HIV prevalence is >10%, a third dose of SP should be given. No mention of IPTp use if woman is on cotrimoxazole.	HIV module in package and mentions use of IPTp, but number of doses or timing not stated; no mention of cotrimoxazole during pregnancy.	Not mentioned	Not mentioned	Give 3 doses of IPTp to HIV+ women unless they are on ARVs or taking cotrimoxazole.
LLIN Promotion	All pregnant women should receive a free LLIN during ANC.	Not mentioned	Not mentioned	Importance mentioned	Mentioned as important preventive measure.	Importance mentioned; recommended.	Not mentioned	Standard for counseling and furnishing ITN at first ANC visit.	Recommends their use
LLIN Distribution	Not mentioned	Free distribution of LLINs to all pregnant women at 1st ANC visit.	Not mentioned	Not mentioned	Not mentioned	ITN use described and recommended.	Register review to determine that ITNs are given at ANC visits.	Standard for counseling and furnishing ITN at first ANC visit.	Does not specify when or how they are obtained.
Malaria Diagnosis	All persons suspected of having malaria will have confirmatory testing via microscopy or RDT.	Either microscopy or RDT should be done before treating for malaria.	Not mentioned	Confirm diagnosis of malaria with microscopy or RDT.	Diagnosis of malaria via microscopy preferably, or with RDT, required before treatment.	Use microscopy or RDTs to establish diagnosis.	Record review to determine that RDT was used to diagnose malaria in ANC setting; direct observation of microscopy and RDT techniques.	Obtains RDT if woman has signs/symptoms of malaria.	Microscopy prior to initiating treatment is recommended.

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS—CASE MANAGEMENT	IN-SERVICE TRAINING MATERIALS—MNH	SUPERVISION MATERIALS	MNH PERFORMANCE STANDARDS	PRE-SERVICE CURRICULUM
Treatment: Uncomplicated malaria	Appropriate treatment for malaria will be available free at all levels of the health care system; specific drugs not mentioned.	**1st trimester:** oral quinine, 600 mg every 8 hours for 7 days. **2nd and 3rd trimesters**: AL 20/120—4 tabs every 12 hours for 3 days.	Need for strengthening of EmONC capacity mentioned, but not MIP specifically.	**1st trimester**: oral quinine 10mg/kg (600 mg) every 8 hours for 7 days. **2nd and 3rd trimester**: AL—4 tabs every 12 hours for 3 days.	**1st trimester**: oral quinine. **2nd and 3rd trimesters:** AL	**1st trimester**: oral quinine per national guidelines. **2nd and 3rd trimesters:** ACTs—AL, per national guidelines.	Record/register review to determine that uncomplicated MIP was treated according to NMCP norms.	Standards in ANC clinics for presence of RDTs, SP, quinine, and Coartem in health centers to prevent, diagnose, and treat pregnant women with malaria. **Uncomplicated malaria**: **1st trimester**: use oral quinine 600 mg every 8 hours for 7 days; refer for complicated malaria. **2nd and 3rd trimesters:** No other information.	Trimesters not specified. Uncomplicated malaria: oral quinine, 600 mg every 8 hours for 7 days.
Treatment: Severe malaria		**1st trimester:** IV quinine, 10 mg/kg every 8 hours until oral medication is tolerated, then oral quinine 10 mg/kg every 8 hours to complete 7 days (21 doses) of treatment. **2nd and 3rd trimesters:** artesunate 2.4 mg/kg IM or IV at 0, 12, and 24 hours, then daily until oral medication is tolerated, complete with either oral quinine or AL.		**1st trimester:** parenteral quinine 10mg/kg every 8 hours until patient can begin oral treatment; then continue as per uncomplicated malaria. **2nd and 3rd trimesters:** artesunate 2.4 mg/kg IV or IM every 12 hours for 3 doses, then begin oral medication as able.	**1st trimester:** IV quinine. **2nd and 3rd trimester:** parenteral artesunate (2.4 mg/kg at hours 0, 12, and 24, then daily for 7 days, moving to oral when possible) and quinine (1,200 mg loading dose, then 600 mg every 8 hours, reducing to 300 mg after 48 hours).	**1st trimester** parenteral quinine. **2nd and 3rd trimesters:** parenteral artesunate; or quinine; if trained, give loading dose of medication per national guidelines and refer immediately.		Standards for labor and delivery care of complications for severe malaria in: **1st trimester:** quinine. **2nd and 3rd trimesters:** use as first-line treatment artesunate, and second-line quinine. Artesunate IV/IM 2.4 mg/kg at hours 0, 12, and 24, then daily for 7 days.	600 mg parenteral quinine every 8 hours until clinical improvement, then oral quinine to complete 7 days of treatment. If in lower level facility, transfer woman to higher level, but give first dose of quinine.

Appendix 5: Tanzania

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS/QI TOOL FOR FANC	PRE-SERVICE CURRICULUM
Documents	A separate policy document does not exist	National Guidelines for the Diagnosis and Treatment of Malaria, NMCP, January 2006; presently under revision	National Health Policy, October 2003. There is no separate RH policy, no specific mention of MIP.	National Policy Guidelines for Reproductive and Child Health Services; May 2003. No specific mention of MIP.	Focused Antenatal Care, Malaria and Syphilis in Pregnancy Package for ANC Providers and Supervisors, 2008; NMCP and MOH	Focused Antenatal Care, Malaria and Syphilis in Pregnancy using SBMR Process, 2011; MOH/ACCESS Program (used by MOH, but still considered to be draft version)	Clinical Assistant/ Clinical Officer Training Package, MOH, August 2010
IPTp Timing		First dose 20–24 weeks; second dose 28–32 weeks.			First dose 20–24 weeks; second dose 28–32 weeks, at least 1 month apart although this can be modified if woman presents outside these parameters; not given after 32 weeks.	Begin SP at 20 weeks of gestation or more; doses 4 weeks apart; number of doses not clear.	First dose at 20–24 weeks; second dose at 28–32 weeks.
IPTp Dosing		SP 3 tablets			SP 3 tablets.	SP 3 tablets	SP 3 tablets
DOT		Use DOT			Use DOT	Use DOT	Use DOT
Linkages to HIV: What do the RH and Malaria documents promote for HIV in pregnancy?		HIV+ women should have 3 doses of IPTp (no timing given) or daily cotrimoxazole.			Use of IPTp for HIV+ women not mentioned.	If CD4 <350 should get cotrimoxazole; cotrimoxazole should be suspended to give 3 doses of IPTp at least one month apart; unclear whether or when cotrimoxazole should be resumed. ITN use recommended.	No mention of HIV+ women and need for IPTp.
LLIN Promotion		ITNs advised			ITNs advised	Counsel about use of and need for ITNs.	Counsel on ITN use

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS/QI TOOL FOR FANC	PRE-SERVICE CURRICULUM
LLIN Distribution		Not mentioned			Not mentioned	Give voucher to buy ITN, not specified where it must be bought.	Not mentioned
Malaria diagnosis		All patients admitted with severe malaria should have microscopy if possible, complemented by RDTs.			Diagnose malaria with microscopy or RDT if possible before treating.	Should do microscopy or RDT before giving antimalarials.	No mention of diagnosis with microscopy or RDT prior to treatment.
Treatment: Uncomplicated malaria		**1st trimester**: oral quinine, 10 mg/kg every 8 hours for 7 days; (AL only if quinine not available). **2nd and 3rd trimesters**: AL 2 tabs twice/day for 3 days.			**1st trimester**: oral quinine, dose not specified. **2nd and 3rd trimesters:** AL, 4 tabs start dose, repeated in 8 hours; then every 12 hours for 2 more days.	Verification criteria for case management according to national guidelines. **Uncomplicated malaria**: **1st trimester**: oral quinine 300 mg orally every 8 hours for 7 days. **2nd and 3rd trimesters:** AL every 12 hours for 3 days.	**1st trimester**: oral quinine for 7 days, unless not available, then AL (doses not specified). **2nd and 3rd trimester**: AL 4 tabs every 8 hours first day, then every 12 hours for 2 more days.
Treatment: Severe malaria		**Severe malaria in all trimesters:** 600 mg quinine IV every 8 hours until oral can be started; continue for 7 days.			**Severe malaria all trimesters**: quinine 10 mg/kg every 8 hours IM or IV until able to take oral medication; quinine 10 mg/kg every 8 hours to complete 7 days of treatment if in **1st trimester**, or full treatment with AL in **2nd and 3rd** trimesters.	Treatment not divided by trimester; states to urgently refer to the referral hospital, or administer artesunate suppositories, or quinine 20 mg/kg IM.	**Severe malaria all trimesters:** IV quinine 600 mg every 8 hours for 7 days; start oral when able.

Additional documents reviewed and related noteworthy findings include:

- National Road Map Strategic Plan for Acceleration of Reduction of MN Mortality, 2008–2015. General support for training of providers in quality ANC; use of ITN promoted; indicator for use of 2 doses of IPTp. "A focus on the continuum of care replaces competing calls for mother or child, with a focus on high coverage of effective interventions and integrated MNCH [maternal, newborn, child health] service packages as well as other key programmes such as Safe Motherhood (SM), Family Planning (FP), Prevention of Mother to Child Transmission (PMTCT) of HIV, Malaria, EPI [Expanded Program on Immunization], IMCI, Adolescent health, and nutrition. Sustained investment and systematic phased scale up of essential MNCH interventions integrated in the continuum of care are required."
- National Health Policy 2003—no later version received: "The Government is committed to reduce the burden of disease due to Malaria. To address the problem, the Ministry of Health will apply four strategic approaches: Improved Malaria case management; Use of Insecticide Treated mosquito Nets (ITNs); Control of Malaria in pregnancy; and Malaria epidemics prevention and control. All these strategies will be complemented by IEC on control and prevention."
- National Guidelines for Comprehensive Care of PMTCT, June, 2012. Advises providers to ask about signs/symptoms of malaria during ANC; pregnant women on cotrimoxazole do not need IPTp, but women not eligible for cotrimoxazole should take SP for IPTp. Acute cases of malaria should be identified and treated according to national guidelines. Counseling about use of ITNs is mentioned several times.

Appendix 6: Uganda

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM	NOTES FROM FLOW CHART ON MIP
Documents	National Malaria Control Policy, May 2009	From Management of Uncomplicated Malaria, 3rd Edition, from MOH, no date	National Policy Guidelines and Service Standards for Sexual and Reproductive Health and Rights, Reproductive Health Division, MOH, 2012	These are combined in the Policy Guidelines and Service Standards	Refresher Training Guide for MIP, NMCP, 2011	Very short section on supervision in the Refresher Training Guide for MIP	No pre-service education materials presently exist, but the MOH plans to address this gap	
IPTp Timing	IPTp will consist of at least two doses of SP given at a minimum of one month apart.	The first dose of SP is given during the 4th to 6th months of pregnancy. The second dose of SP is given during the 7th to 9th months. There must be an interval of at least 4 weeks between doses.	At second ANC visit, 24–28 weeks; repeat at <36 weeks.		"Protection against malaria is important throughout pregnancy and most important between 16–28 weeks."			First dose during the 4th to 6th months of pregnancy. Second dose during the 7th to 9th months of pregnancy.
IPTp Dosing	Not delineated	SP, 3 tablets	Not mentioned		"SP can be given on the same day that a woman is treated for an episode of malaria." Give 2 doses of SP (3 tabs) at least one month apart anytime between 16–40 weeks, but ideally 1st dose is between 16–24 weeks, second dose is between 28–34 weeks.			SP, 3 tablets. Suspend use of folic acid (5 mg) for one week after IPTp.
DOT	Supplies for delivery of IPTp by DOT, (e.g., cups and safe drinking water).	Yes	Not mentioned		IPTp should be given by DOT and the facility should be able to wash cups for sharing by clients.			

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM	NOTES FROM FLOW CHART ON MIP
Linkages to HIV: What do the RH and malaria documents promote for HIV in pregnancy?	Not mentioned	Not mentioned	Not mentioned		HIV+ pregnant women should get 3 doses of IPTp with SP starting after 16 weeks. It is unclear if a woman on cotrimoxazole should also receive IPTp with SP.			
LLIN Promotion	To ensure every pregnant woman sleeps under a LLIN throughout her pregnancy and thereafter. All pregnant women shall have access to cost-effective preventive interventions, including LLINs and IPTp. There shall be strategic and rigorous communication campaigns to promote correct use of LLINs.	To prevent new malaria infections, pregnant women should be advised to sleep under ITNs.	Promotion of ITN as part of pre-conception counseling; ITN use counseled during ANC.		"In much of the country LLINs will be given free during ANC," but mechanism is not explained. Section on counseling of mother in ANC about importance of accepting and using the net every night.			Use recommended
LLIN Distribution	Uganda will continue with a mixed-model approach: large-scale, free campaign distributions targeted routine distribution (e.g., ANC and routine EPI distribution) and support to the commercial sector.	Not mentioned	Not mentioned		Make sure women have access to LLINs from the start of their pregnancy; providers should give one to each woman at the first ANC visit if she has not received one from another clinic; check on ANC card that she received it.			Not mentioned

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM	NOTES FROM FLOW CHART ON MIP
Diagnosis	Parasite-based diagnosis with microscopy or RDTs shall be part of malaria case management in all health facilities.	Microscopy should be done where available for pregnant women with signs of uncomplicated malaria, and all people with signs of severe malaria. Given the current limitations of RDTs, their use should be considered only in special situations (such as verifying malaria epidemics, children under 4 months of age); their routine use is therefore not recommended.	Not mentioned		Confirmatory lab tests required where possible.			Not mentioned
Treatment: Uncomplicated malaria	All pregnant women who present with suspected malaria shall receive prompt diagnosis and effective case management using quinine during the first trimester and ACTs during the second and third trimesters. No differentiation of uncomplicated and severe malaria in pregnancy, though in other groups parenteral quinine is first-line treatment and artesunate or artemether are the alternatives.	Any patient with fever or a history of fever within the last 24 hours without evidence of other diseases should be treated for malaria even with a negative blood smear for malaria parasites. Any pregnant woman presenting with fever should be treated for malaria. **Throughout pregnancy,** quinine should be used as the first-line treatment.	Not described		**1st trimester**: oral quinine, 600 mg every 8 hours for 7 days; ACTs contraindicated in 1st trimester due to insufficient data. **2nd and 3rd trimesters**: oral quinine remains drug of choice, but ACTs can be used as first-line treatment. Give AL 4 tabs every 12 hours for 3 days.			**All trimesters:** Oral quinine 600 mg every 8 hours for 7 days. **2nd and 3rd trimester**: if quinine is not available, can give AL 4 tablets twice daily for 3 days.

MIP AREAS OF GUIDANCE	MALARIA NATIONAL POLICY	MALARIA NATIONAL GUIDELINES	RH NATIONAL POLICY	RH NATIONAL GUIDELINES	IN-SERVICE TRAINING MATERIALS	SUPERVISION MATERIALS	PRE-SERVICE CURRICULUM	NOTES FROM FLOW CHART ON MIP
		1st trimester: it is not recommended to take ACTs. **2nd and 3rd trimester:** If there are no suitable alternatives, ACTs may be used as first-line treatment. The doses of quinine and ACTs during pregnancy are the same as those for adults who are not pregnant.						
Treatment: Severe malaria		No specifics for pregnant women; before referral give 600 mg quinine as IM injection.			**All trimesters:** before referral give 10 mg/kg quinine IM; in-patient facilities can use IV quinine until stable, then start oral. **2nd and 3rd trimesters**: ACT can also be used as first-line treatment in health facility.			If facilities are available treat according to guidelines for management of severe malaria; if not available give quinine IM and refer immediately.