

Preventing and Treating Malaria during Pregnancy

Linking prevention and treatment of malaria with focused antenatal care is key to the MNH Program's approach to increasing the survival of mothers and newborns.

Pregnant women are generally more susceptible than other adults to malarial infection.

Malaria is a parasitic infection that can have a serious negative impact on pregnant women and young children in sub-Saharan Africa and other tropical areas. More than 45 million women—30 million of them in Africa—become pregnant in malaria-endemic areas each year. *Plasmodium falciparum*, the type of malaria that is most prevalent in Africa, can cause maternal anemia and impaired fetal growth, both of which contribute to low birth weight in newborns. Malaria can also cause spontaneous abortion, stillbirth, premature birth and intrauterine growth retardation.

Malaria during pregnancy can be prevented, reduced and managed with appropriate, low-cost interventions. Following the recommendation of the World Health Organization, the Maternal and Neonatal Health (MNH) Program promotes intermittent preventive treatment (IPT) and the use of insecticide-treated bed nets (ITNs) for prevention of malaria, and supports effective case management for treatment of malaria during pregnancy.

Malaria Transmission and Maternal Immunity

In areas where transmission of malaria is stable (high), such as in many parts of sub-Saharan Africa, many adults have developed immunity to malaria and do not become seriously ill when they become infected. However, when a pregnant woman has malaria, even if she has no clinical symptoms, she may develop placental parasitemia, which can contribute to maternal anemia and impaired fetal growth—two of the leading causes of low birth weight and poor survival for newborns in Africa. Women in stable transmission areas have the greatest risk of developing these complications during their first and second pregnancies.

A woman's immunity to malaria may be compromised by HIV infection. The prevalence and intensity of malaria infection during pregnancy is higher among HIV-positive women and the risk to the woman and her newborn may be independent of the number of pregnancies. The influence of malarial infection

on the risk of mother-to-child transmission of HIV is still being researched.

Pregnant women who have little immunity to malaria—both those in areas of unstable transmission and those whose immunity has been diminished by HIV or other factors—are more likely to experience severe illness in addition to poor pregnancy outcomes. These women are at risk of developing malaria-related problems during every pregnancy.

What Can Be Done?

Effective strategies to reduce the impact of malaria during pregnancy must address both the need to prevent illness in asymptomatic pregnant women and the need to manage disease in women with clinical illness. Following the guidelines of the World Health Organization, the MNH Program's approach to malaria prevention and treatment emphasizes initiating preventive measures during antenatal care and effective case management for all clinical cases of malaria.

Prevention of Malaria during Pregnancy

The MNH Program promotes IPT (the administration of drug therapy in full treatment doses at predetermined intervals during pregnancy) and the use of ITNs as the best ways to prevent and control malaria. Because many pregnant women—as many as 70 percent in Africa—attend at least one antenatal care visit, the Program supports incorporating these prevention approaches (as well as the provision of iron/folate supplements to prevent anemia) into routine focused antenatal care. Antenatal care visits also provide a good opportunity for a third element of a preventive strategy—education and counseling about malaria.

Intermittent Preventive Treatment: All pregnant women in areas of stable transmission should receive IPT as a routine part of antenatal care. Sulfadoxine-pyrimethamine (SP) is the current antimalarial drug

In areas where malaria is prevalent, the disease contributes to 2–15 percent of cases of maternal anemia, 8–14 percent of low birth weight, and as many as 3–5 percent of infant deaths.

of choice for IPT. SP is preferred over chloroquine, the antimalarial drug traditionally used during pregnancy, because resistance to chloroquine is prevalent and increasing in many malaria-endemic areas. In addition, compliance is greater with the IPT approach than it is with the traditional treatment approach using chloroquine. Whereas a woman must take chloroquine at home over the course of several days each week, with IPT she can take an entire treatment dose of SP (or another appropriate antimalarial) during an antenatal care visit, under the care and supervision of a healthcare provider.

Although a single dose of SP has been shown to be effective in reducing malarial infection and parasitic load, repeated doses during the second and third trimester are recommended. Following the recommendation of the World Health Organization, the MNH Program promotes the following practice for IPT: **All pregnant women in areas of stable transmission (and, where recommended, in areas of unstable transmission) should take a single dose of SP (three tablets, each containing 500 mg of sulfadoxine and 25 mg pyrimethamine) at the first antenatal visit after fetal movement begins (quickening) and at each subsequent antenatal care visit, but not more often than monthly, until delivery.**

Insecticide-Treated Bed Nets: ITNs kill and repel the mosquitoes that carry malaria, providing protection for both mothers and newborns. Although ITNs are relatively inexpensive, their cost may be prohibitive for many of the women who need them. Various alternatives to commercial distribution of ITNs are being explored, including “bundling” ITNs and IPT together and providing them as a routine part of antenatal care, or providing vouchers for subsidized nets. The MNH Program recommends the following practice for ITNs: **Pregnant women in areas of stable and unstable transmission should consistently sleep under an ITN, starting as early in pregnancy as possible and continuing through the postpartum period.**

Education and Counseling: As another routine part of focused antenatal care, women should be given information and counseling on the dangers that malaria poses to them and their babies, and the steps they can take to help protect themselves. These messages should address the importance of practices such as continuing antenatal care, receiving the next scheduled dose of IPT and iron/folate, sleeping under an ITN and covering arms and legs in the evening. As part of their birth planning, the woman and her family should also receive assistance in developing a complication readiness plan that specifies exactly what to do if danger signs of malaria arise. Family members can also help protect the woman from malaria by filling in areas in the ground near their

home where water collects, clearing bushes away from the house, disposing of trash and keeping food containers covered.

Case Management for Treating Malaria

Appropriate management should be available to all women with clinical cases of malaria. In endemic areas, screening for signs and symptoms of malaria should be a routine part of antenatal care. Although malarial infection can be confirmed by a blood test, diagnosis is typically based on the presence of a fever (or recent history of fever) and consideration of the type of region (stable or unstable transmission) in which the woman lives. Providers should also diagnose and manage anemia in antenatal care clients.

A woman who has a fever (or recent history of fever) with or without symptoms such as chills, headache, body/joint pains or loss of appetite may have uncomplicated malaria. Management of uncomplicated malaria should include administration of antimalarials and iron/folate, as well as close monitoring. A woman with severe malaria may have a fever (or recent history of fever) with complications such as unconsciousness or convulsions, rapid or difficult breathing, severe vomiting and/or dehydration, weakness/fatigue, pulmonary edema or hypoglycemia. Women with severe malaria need emergency care from a skilled provider. Care may include stabilization, administration of antimalarials and iron/folate, blood transfusion and other life-saving measures.

MNH Program Activities

The MNH Program promotes the approaches described above through its training and support of maternal and neonatal healthcare providers, and is currently promoting efforts in Senegal, Tanzania, Uganda and Zambia. In addition, the Program is involved in the following programmatic efforts to improve malaria control during pregnancy:

- Assisting in the development of global, regional and national standards and guidelines for the prevention and treatment of malaria during pregnancy
- Providing technical assistance to several sub-Saharan African countries to update malaria policies or implement revised policies
- Developing a resource package of materials that policymakers and program managers can use to revise current policies and implement more effective malaria prevention and treatment programs
- Revising inservice and preservice curricula to include the most up-to-date practices for the prevention and treatment of malaria during pregnancy
- Supporting social mobilization efforts to educate community members on taking appropriate actions to help protect women and newborns from malaria, including the recognition of and appropriate response to danger signs

For more information about the MNH Program visit our website: www.mnh.jhpiego.org

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