

## Malaria in pregnancy: challenges for control and the need for urgent action



Malaria in pregnancy has a devastating effect on the health of mothers and their babies, and is an important cause of maternal and infant mortality and morbidity.<sup>1</sup> The greatest effect of malaria in pregnancy is concentrated in sub-Saharan Africa and is associated with *Plasmodium falciparum* infection. However, pregnant women are also at risk of *Plasmodium vivax* malaria. Although its burden seems to be lower than that of *P falciparum*, *P vivax* malaria is still associated with harmful consequences for maternal and infant health.<sup>2</sup>

WHO promotes three strategies for the control of *P falciparum* infection in pregnancy in Africa, which include provision of intermittent preventive treatment for malaria in pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP), use of insecticide-treated nets (ITNs), and prompt diagnosis and treatment of confirmed infections. Unlike in stable transmission areas, no global recommendations currently exist for the prevention of malaria in pregnancy in low-transmission areas or those *P vivax* predominates.

In 2000, under the Roll Back Malaria Partnership, Abuja targets were set for at least 60% of pregnant women who are at risk of malaria to have access to antimalarial chemoprophylaxis or IPTp-SP by 2005, and at least 80% use of ITNs by 2010.<sup>3</sup> These targets were subsequently reset with even more ambition to 100% use of both interventions by 2015. However, coverage estimates for IPTp-SP and long-lasting ITNs in the sub-Saharan region have increased only modestly in past years, reaching about 21% coverage for two doses of IPTp-SP and 41% for ITNs on average in 2010.<sup>4</sup> Problems with the delivery of control interventions for malaria in pregnancy are linked to weaknesses within the health system, such as insufficient resources, inadequate or poorly trained staff, and ineffective procurement and supply chain management of SP and ITNs. In 2012, WHO updated its policy for IPTp-SP, recommending an increase in the number of doses of SP to be administered at each scheduled antenatal care visit, starting as early as possible in the second trimester.<sup>5</sup> Countries currently face many obstacles in the scale-up of the provision of IPTp-SP, including inconsistencies between the WHO guidelines and national policies, which have increased

the number of missed opportunities for control of malaria in pregnancy.

Accordingly, the main challenge for reducing the burden of malaria in pregnancy in Africa is related to the adoption of national policies that incorporate WHO guidance, and effective implementation and scaling-up of programmes. Health systems need to be strengthened to successfully provide interventions for the prevention and treatment of malaria in pregnancy as part of the platform for antenatal care. Innovative approaches to increase demand must be explored so more women can be reached and earlier in pregnancy. Harmonisation of policies between malaria control and reproductive, maternal, newborn, and child health programmes is urgently needed and will be crucial to meet global targets. Together, these programmes must address both supply and demand challenges and derive clear lessons from assessment of new approaches to the delivery of preventive strategies, such as maximisation of coverage through community-directed interventions delivered by community health workers.

Challenges for effective prevention of malaria in pregnancy are increased in pregnant women living with HIV, especially in view of the fact that IPTp-SP is contraindicated for HIV-infected pregnant women receiving co-trimoxazole prophylaxis to prevent opportunistic infections.<sup>6</sup> This has several implications for health systems: first, it tends to create confusion among front-line health workers, sometimes leading to both drugs being given and, second, because of frequent stock-outs of HIV screening tests, women often do not receive any preventive drugs. Additionally, suitable approaches for the prevention of malaria infection in the first trimester of gestation, for both pregnant women living with HIV and those not infected, have yet to be identified. None of the currently recommended antimalarial drugs can be given in this critical period because of safety risks for the embryo.<sup>7</sup> Thus, malaria protection in the first trimester relies mostly on vector control measures, mainly ITNs that are usually provided later in pregnancy.

Research priorities should include the assessment of innovative programming to address the low uptake

of preventive interventions for malaria in pregnancy; ensuring effective protection in particularly susceptible groups such as HIV-infected pregnant women; improving of malaria control in the first trimester of gestation; and evaluation of alternative antimalarials to replace SP because of increasing resistance to this antimalarial drug.<sup>8,9</sup> Research is also needed with respect to the malaria elimination agenda, including identification of the most suitable strategies for control of malaria in pregnancy and for radical cure of *P vivax* and *P falciparum* infections in low-transmission settings that are on track towards malaria elimination.

Targets for malaria control in pregnancy are far from being reached, despite global gains in malaria investment during the past decade, which have resulted in substantial overall reductions in deaths from malaria and the existence of highly cost-effective tools for malaria in pregnancy that have potential to save many maternal and neonatal lives. The challenges for effective control of malaria in pregnancy need a multidisciplinary approach that includes the coordination and integration of programmes for malaria and maternal and reproductive health, increased provision of resources to provide the best antenatal care, and investigation of the role of new and innovative delivery approaches to maximise coverage of interventions to prevent malaria. To have an immediate effect, a global call to action is urgently needed to increase national coverage and protect mothers and babies from the devastating consequences of malaria in pregnancy.

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We declare no competing interests.

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