RBM

Roll Back Malaria

2001–2010 United Nations Decade to Roll Back Malaria

Malaria in pregnancy

Malarial infection during pregnancy is a major public health problem in tropical and subtropical regions throughout the world. In most endemic areas of the world, pregnant women are the main adult risk group for malaria. Malaria during pregnancy has been most widely evaluated in Africa south of the Sahara where 90% of the global malaria burden occurs. The burden of malaria infection during pregnancy is caused chiefly by *Plasmodium falciparum*, the most common malaria species in Africa. The impact of the other three human malaria parasites (*P. vivax, P. malariae,* and *P. ovale*) is less clear. Every year at least 30 million pregnancies occur among women in malarious areas of Africa, most of whom reside in areas of relatively stable malaria transmission.

The symptoms and complications of malaria during pregnancy differ with the intensity of malaria transmission and thus with the level of immunity the pregnant woman has acquired. While these settings are presented as two distinct epidemiologic conditions, in reality the intensity of transmission and immunity in pregnant women occurs on a continuum, with potentially diverse conditions occurring within a country.

■ In areas of **epidemic or low (unstable) malaria transmission**, adult women have not acquired any significant level of immunity and usually become ill when infected with *P. falciparum* malaria. Pregnant women resident in areas of low or unstable malaria transmission are at a two- or threefold higher risk of developing severe disease as a result of malaria infection than are non-pregnant adults living in the same area. In these areas maternal death may result either directly from severe malaria or indirectly from malaria-related severe anaemia. In addition, malaria infection of the mother may result in a range of adverse pregnancy outcomes, including spontaneous abortion, neonatal death, and low birth weight (LBW).

■ In areas of **high and moderate (stable) malaria transmission**, most adult women have developed enough immunity that, even during pregnancy, *P. falciparum* infection does not usually result in fever or other clinical symptoms. In these areas, the principal impact of malaria infection is associated with malaria-related anaemia in the mother and with the presence of parasites in the placenta. The resultant impairment of foetal nutrition contributing to low birth weight is a leading cause of poor infant survival and development. In areas of Africa with stable malaria transmission, *P. falciparum* infection during pregnancy is estimated to cause as many as 10 000 maternal deaths each year, 8% to 14% of all low birth weight babies, and 3% to 8% of all infant deaths.

Despite the toll that malaria exacts on pregnant women and their infants, until recently this was a relatively neglected problem, with less than 5% of pregnant women having access to effective

RBM is backing increased use of insecticide-treated nets and intermittent preventive treatment with antimalarial drugs for all pregnant women in Africa.

interventions. The promising news is that during the past decade potentially more effective strategies for the prevention and control of malaria in pregnancy have been developed and demonstrated to have a remarkable impact on improving the health of mothers and infants. Malaria prevention and control during pregnancy has a three-pronged approach:

i) intermittent preventive treatment;

ii) insecticide-treated nets; and

iii) case management of malaria illness.

The fact that in most African countries over 70% of pregnant women make multiple antenatal clinic visits provides a major opportunity for prevention of malaria, along with other priority diseases affecting pregnant women.

In areas of stable *P. falciparum* transmission, prevention of asymptomatic malaria infection through a two-pronged approach of IPT and ITNs will result in the greatest health benefits.

Pictures: WHO/TDR. WHO/RBM

Child health, family planning and ANC clinics provide a route for promoting action on malaria in pregnancy.

■ **Intermittent preventive treatment (IPT)** involves providing all pregnant women with at least two preventive treatment doses of an effective antimalarial drug during routine antenatal clinic visits. This approach has been shown to be safe, inexpensive and effective. A study in Malawi evaluating IPT showed a decline in placental infection (32% to 23%) and in the number of low birth weight babies (23% to 10%). It also found that 75% of all pregnant women took advantage of IPT when offered.

■ **Insecticide-treated nets (ITNs)** decrease both the number of malaria cases and malaria death rates in pregnant women and their children. A study in an area of high malaria transmission in Kenya has shown that women protected by ITNs every night during their first four pregnancies produce 25% fewer underweight or premature babies. In addition, ITN use benefits the infant—who sleeps under the net with the mother—by decreasing exposure to malaria infection. ITNs should be provided to pregnant women as early in pregnancy as possible, and their use should be encouraged for women throughout pregnancy and during the postpartum period. Health education programmes, social marketing and lobbying to reduce the prices of ITNs and re-treatments are helping to encourage the use of ITNs by pregnant women.

In areas of unstable *P. falciparum* transmission, non-immune pregnant women exposed to malaria require prompt case management of febrile illness. Although at present there are no fully effective tools to prevent malaria among non-immune women, ITNs will decrease exposure to infective mosquito bites and thus would be expected to provide benefit in decreasing symptomatic infections. Essential elements of the antenatal care package should, therefore, include malaria diagnosis, where available and needed, and treatment with antimalarial drugs that have an adequate safety and efficacy profile for use in pregnancy.

Roll Back Malaria, in partnership with Making Pregnancy Safer, has brought a new emphasis to the burden of malaria in pregnant women within malaria control efforts. However, there remain obstacles to implementing effective programmes and reaching women who will benefit the most from them, particularly high risk adolescents in their first pregnancies. Many women in Africa lack access to medical care and may have limited access to effective tools such as ITNs, especially in remote areas. Delivery of cost-effective malaria prevention to pregnant women will require:

- increased awareness of the problem among communities most affected by malaria;
- integration of malaria control tools with other health programmes targeted to pregnant women and newborns;
- strengthened antenatal care systems and involvement of traditional birth attendants where they are part of health service delivery; and
- financial investment.

The prize for doing so will be safer pregnancies and a reduction in newborn deaths in these settings.

Roll Back Malaria is a global partnership initiated by WHO, UNDP, UNICEF and the World Bank in 1998. It seeks to work with governments, other development agencies, NGOs, and private sector companies to reduce the human and socioeconomic costs of malaria.

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