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Malaria control in pregnancy: still a long way to go

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Pregnant women, especially those pregnant for the first time, are at increased risk of more frequent and more severe malaria infections than are non-pregnant women.[1–3] In endemic areas, malaria in pregnancy is a major preventable cause of maternal morbidity and poor birth outcomes. Use of insecticide-treated nets can decrease maternal anaemia and parasitaemia, resulting in improved pregnancy outcomes.[4,5] Furthermore, the use of intermittent preventive treatment with sulfadoxine–pyrimethemine during pregnancy can reduce maternal anaemia, placental malaria, and the number of infants born with low birthweight.[6,7]

In the *Lancet Infectious Diseases* today, Anna Maria van Eijk and colleagues[8] report the progress of coverage with malaria control interventions in pregnant women in sub-Saharan Africa. The report is a substantial effort on the part of the investigators to compile data from all the countries in the sub-Saharan region. The findings emphasise that, although progress has been made in the scaling up of malaria-control interventions, the goals set by the Roll Back Malaria Partnership (80% population coverage of insecticide-treated nets in at-risk areas and 100% coverage of intermittent preventive treatment in pregnancy by 2010) have not been reached.[9] On the basis of available data, the investigators estimated an overall coverage of treated nets among pregnant women of only 17%. The biggest impediment to use of nets is ownership.[10,11] Between 2000 and 2004, distribution of nets occurred mainly through social marketing with subsidies to susceptible groups, leading to slow uptake, especially in poor, rural households.[12] Subsequently, several studies showed that free distribution of nets increases coverage and use,[12–14] and multiple mass-distribution campaigns have improved coverage. Because nearly half of the data in van Eijk and colleagues' report[8] were derived from surveys done before 2007, and because production and procurement of insecticide-treated nets increased strikingly from 2004 to 2007,[9] present coverage in women probably exceeds 17%. Nonetheless, countries fell far short of stated goals. Provision of free nets via mass distribution campaigns and through distribution at antenatal clinics will help to move countries towards the targeted goals.

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Although reported attendance to antenatal clinics was quite high (median 88·4%, IQR 68·1–95·2),[8] coverage of intermittent preventive treatment was dismal, with a median coverage of 17·8% (IQR 5·7–47·9). However, there were some notable exceptions, with five countries coming close to or exceeding 80% coverage of this intervention. As the investigators note, uptake of intermittent preventive treatment in pregnancy might be affected by multiple factors, including health-worker confusion about timing of doses, drug stockouts, late attendance at antenatal clinics, and provider underachievement. In a study by Sangaré and colleagues,[15] missed opportunities for intermittent preventive treatment with sulfadoxine–pyrimethamine were reported in nearly 70% of women attending an antenatal clinic. The main reasons were that the drug was not offered to 35% of women and 49% did not know about it to ask.[15] Stockouts led to only 5·6% of the missed doses. These findings suggest that barriers to improvement in intermittent preventive treatment coverage can be overcome by improved health-worker training and targeted health promotion. Interventions such as provision of clear and simplified instructions to health-care providers about when to give such treatment might be associated with increased uptake.[16]

Increasing resistance of *Plasmodium falciparum* to sulfadoxine–pyrimethamine has heightened concern that, in the short-term to medium-term, this drug will not be effective as intermittent preventive treatment, and new drugs are being sought. Because the dosing regimen for drugs to replace sulfadoxine–pyrimethamine for such treatment might be different, improvement in implementation measures at antenatal clinic is crucially important.

van Eijk and colleagues' analysis[8] is a reminder that cost-effective techniques to scale up malaria control interventions are needed. High rates of attendance at antenatal clinic can provide an effective platform to deliver these services; success will require strengthened systems through training of health workers, education of clients, and robust supply chains to ensure goals are achieved.

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