Malaria in pregnancy control services still lag below targets

Putting resources into ante-natal clinics to prevent malaria made sense. But, as Professor William R Brieger reports, all is not as effective as you might expect.

Since we last visited the issue of malaria in pregnancy (MIP), the World Health Organization (WHO) has updated its guidance on intermittent preventive treatment in pregnancy (IPTp), one of the three key interventions designed to control MIP. The other two are nightly use of insecticide treated nets (ITNs) from the earliest point in pregnancy possible, and prompt parasitological diagnosis and treatment of positive malaria cases with appropriate medicines.

The Roll Back Malaria Partnership during the 2000 Abuja Summit set coverage targets for these interventions – 60% by 2005 and 80% by 2010. In conjunction with the Millennium Development Goals, an additional target was proposed; by sustaining the 2010 coverage target levels, deaths from malaria would reach zero by 2015. With such targets, it became extremely important to establish monitoring and evaluation systems to document progress and achievement.

Two main monitoring and evaluating (M&E) tools were the national survey as intervals (2-5 years) such as the Demographic and Health Survey and the Malaria Information Survey, based on population samples. More current and immediate data sources are also needed, such as found in a national health information system, in particular the proportion of women registering for antenatal care (ANC) who receive these interventions.

WHO’s current IPTp guidance continues to recommend use of Sulfadoxine-Pyrimethamine (SP), but at more frequent dosing due to reduction in SP half-life associated with parasite resistance. The current recommendation states that IPTp with SP should start as early in the second trimester as possible, with doses at every subsequent ANC visit, as long as one month has passed since the previous dose. The full treatment dose of SP (three tablets) clears the placenta and prevents maternal anemia (and death), intrauterine growth retardation, still birth, low birth weight and neonatal death. IPTp should now be given up through the last month of pregnancy to ensure a malaria-free mother and placenta. The science and benefits of enhanced IPTp are detailed in a WHO briefing paper on MIP.

While many countries have already adopted this updated guidance, or are in the process of developing their new guidelines, the available national survey data still mostly reflect only the provision of two IPTp doses as previously recommended. Figures 1 and 2 show the most recent Demographic and Health Survey or Malaria Information Survey information for 17 countries that receive support from both the Global Fund and the US President’s Malaria Initiative (PMI). As we can see in Figure 1, no country achieved the Abuja Declaration target of 80% coverage by the year 2010. Introducing additional doses in this context will be challenging.

If IPTp and ITNs are to be delivered through routine ANC services, women need to register and attend regularly, at least a minimum of four visits. Figure 2 shows that while initial ANC attendance is generally strong (with Ethiopia and Nigeria being exceptions), around half of these women do not make up to four visits. Even in Ghana where 85% of women attended four times, only 63% of women got two IPTp doses. There are some serious health systems issues that must be addressed if the new targets of 3-4 IPTp doses minimum are to be achieved.

ITNs can be delivered through two main mechanisms – mass campaigns and routine services. Mass campaigns are often known as efforts to ‘catch up’ in terms of achieving universal coverage (which may mean ensuring one

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Routine distribution through ANC and child health clinics are known as ‘keep up’ to help replace or supplement net availability in the house, and guarantee enough nets for vulnerable groups like pregnant women and young children (Figure 3).

Actually, we are always trying to catch up since ITNs may last only about 2-3 years. Both forms of distribution are needed in order to reach pregnant women. Since many women do not register for ANC until into their second trimester, the only way they will be protected against malaria in the first trimester, when most vulnerable, is if they already have a net given through a campaign. Fewer than 10% of women attend their first ANC visit during the first trimester, a time when they are ineligible for IPTp. Thus, using routine ANC as the main net delivery mechanism will not cover the early stages of most pregnancies.

In addition to low ITN use during pregnancy (Figure 2), another problem occurs. Unfortunately, not all houses are reached through campaigns, but even in houses that did receive nets, not all pregnant women use them as seen in Figure 4.

The biggest challenge to coverage with IPTp and ITNs has been stock-outs. SP is an inexpensive drug and often donors assume that a country will make its own contribution toward malaria control by buying adequate supplies of SP for IPTp. Disappointments in this area are common. In some settings, countries order enough nets for mass distribution while not ordering for routine service needs.

Malaria case management for pregnant women, the third arm of the MIP strategy, is the most elusive in terms of service provision and documentation. A recent visit to a health centre in Malawi illustrates the issues that are seen in basically all malaria endemic countries. Detailed information about ANC visits, IPTp dosing and ITN provision were seen in ANC registers, the woman’s health passport and the ANC clinic monthly summary form. This information was reflected all the way through to the M&E Unit of the National Malaria Control Program (NMCP). But, like other countries, existing data collection forms for diagnosis and treatment did not distinguish pregnant women from other clients.

Staff at one clinic in Malawi did take initiative and stared an entry of a pregnant woman in the lab/diagnostic register, but summary forms did not have a place to record this. A review of women’s health passports could also identify places where suspected malaria was mentioned by a client and subsequently tested and treated, but again, monthly summary forms do not capture this. Thus, throughout endemic countries, it will be difficult to document the provision of the third essential MIP control service until M&E records themselves are updated.

Jenny Hill and colleagues5 conducted a meta-analysis of determinants of IPTp and ITN uptake over a 24-year period, and from 98 articles they identified key barriers to the provision of IPTp and ITNs. These could be grouped into two main categories, health systems issues and client/community issues. Health systems issues included:

- unclear policy and guidance on IPTp;
- general healthcare system issues, such as stockouts and user fees;
- health facility issues stemming from poor organisation, leading to poor quality of care; and
- poor healthcare provider performance, including confusion over the timing of each IPTp dose;

On the community side, they identified women’s poor antenatal attendance, affecting IPTp uptake. ‘Key determinants of IPTp coverage were education, knowledge about malaria/IPTp, socio-economic status, parity, and number and timing of antenatal clinic visits. Key determinants of ITN coverage were employment status, education, knowledge about malaria/ITNs, age, and marital status.’ These factors can vary by country and within countries.

Health service providers at the district and community levels cannot wait on infrequent national surveys or general reviews of previous studies to take action to increase utilisation of MIP services. While use of existing health data, especially that from ANC clinics, may have weaknesses, it may be the best option for stimulating timely decision making to improve services and their use.

Table 1 (right) shows national routine health information from the Malawi NMCP, as an example. Ideally, every woman who registers for ANC should receive both ITNs and the appropriate number of IPTp doses. While we do not know from these statistics the proportion of pregnant women in a community or country who actually register for ANC, we can say that at least for all who register, they should receive all MIP services.

Where there are gaps, such as the 8% of ANC clients who did not get the first IPTp dose, we need to explore possible reasons. One possibility is that the 9% of pregnant women register in the first trimester when IPTp is not given did not return for a second visit. The annual
data shows that 23% of those who attended once did not come for subsequent visits. Some of the gap in IPTp 1 as well as drop-out for the second dose may be among the early attenders, but equally likely is the possibility that some attenders did not receive SP because of health systems gaps and community factors outlined by Hill et al.

Ultimately, health workers and programme managers in each clinic and district need to sit with community leaders and identify specific local reasons for these gaps and plan solutions. More innovative community approaches to providing timely and convenient delivery of ITNs, IPTp and case management need to be considered, based on a successful model in southeastern Nigeria.6

Overall, the solution to the MIP service gap is only possible if there is a basic agreement on how to approach MIP services between NMCPs that provide overall malaria guidance, and national maternal and reproductive health (RH) programmes that offer ANC services. Gomez and colleagues5 found that across endemic countries, ‘inconsistencies between NMCPs and RH programmes on the timing or dose of IPTp-SP were documented, as was the mechanism for providing long-lasting insecticide-treatment nets. Inconsistencies also were found in training documents from NMCPs and RH programmes in a given country.’ Without collaboration from the national level to the front line, MIP services will continue to lag and the lives of mothers and neonates will continue to be threatened.

References
3. The Demographic and Health Surveys (DHS) Programme. USAID. http://dhsprogram.com/

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Table 1: Health information on MIP from Malawi National Malaria Control Programme