Conversations with Malaria Consortium, March 3 and May 4, 2018

Participants

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- Dr. Prudence Hamade – Senior Technical Advisor, Malaria Consortium
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- Dr. James Tibenderana – Global Technical Director, Malaria Consortium
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Note: These notes were compiled by GiveWell and give an overview of the major points made by Malaria Consortium.

Summary

GiveWell spoke with Ms. Marasciulo, Dr. Hamade, Dr. Haq, Ms. Counihan, Dr. Tibenderana, and Mr. Rassi of Malaria Consortium as part of its investigation into intermittent preventive treatment in pregnancy for malaria (IPTp). Conversation topics included an overview of IPTp, community-based IPTp, barriers to IPTp, Malaria Consortium's IPTp-related projects, its monitoring and evaluation of IPTp coverage, and its room for more funding.

Overview of intermittent preventive treatment in pregnancy for malaria (IPTp)

Treatment recommendations for IPTp

The World Health Organization (WHO) recommends intermittent preventive treatment for malaria in pregnancy (IPTp) for all pregnant women in areas with moderate or high malaria transmission in Africa. WHO recommends a preventive treatment regimen with the antimalarial drug sulfadoxine-pyrimethamine (SP) taken monthly, beginning as early as possible in the second trimester (13 weeks), with the objective of ensuring that at least three doses are received. One dose of IPTp-SP consists of 1500 mg/75 mg SP (i.e. 1500 mg of sulfadoxine and 75 mg of pyrimethamine), taken as three tablets of 500 mg/25 mg SP.

Timeline for beginning IPTp

WHO recommends that SP should not be taken in the first trimester due to concerns about negative side effects for the fetus.

Preventive treatment with SP should begin as close to the start of the second trimester as possible. It may be difficult, however, for health workers in low-resource settings to accurately assess how far along a woman's pregnancy is. One

option is for health workers to wait for "quickening" (when a pregnant woman begins to feel fetal movements) which occurs approximately 18-20 weeks into pregnancy. This method for assessing whether to start providing IPTp is easy for health workers to implement, but in most cases would result in pregnant women starting IPTp a few weeks after the start of their second trimester.

Other methods of determining gestational age include measuring the symphysis-fundal height (SFH), which is the distance from the top of the pubic bone to the top of the fundus (palpated uterus), or by ultrasound with a trained sonographer. Ultrasound machines are expensive and not widely available in primary care facilities.

Choice of drug for IPTp

SP for IPTp is recommended by WHO because it can be administered as a single dose under directly-observed therapy (DOT). Amodiaquine (AQ), a drug used in combination with SP in Seasonal Malaria Chemoprevention (SMC) programs for children under five, is not recommended for use for IPTp because it must be taken over the course of three days and because there is no evidence of its preventive effect during pregnancy. WHO also recommends SP because it is safe and rarely causes adverse events, whereas AQ may cause side effects such as dizziness and vomiting that could deter pregnant women from taking the drug.

WHO has investigated the use of dihydroartemisinin-piperaquine (DHA-PPQ) during pregnancy, which does not cause serious side effects but does require three days of treatment, for IPTp in East Africa. DHA-PPQ has not been as widely adopted as SP for IPTp.

Effects of IPTp-SP on children and mothers

There is strong evidence that three or more doses of IPTp-SP, even in places where there is moderate resistance to SP in children under five, reduces the risk of infants having low birth weight (LBW) and reduces the risk of morbidity and mortality for pregnant women due to malaria, especially when given between 13 to 20 weeks when malaria parasite densities are highest.

IPTp-SP may have particularly strong effects for women pregnant with their first child who have not developed immunity to placental malaria. The vulnerability to malaria is exacerbated by the fact that a woman's immune system weakens at 14 to 16 weeks into pregnancy as part of a natural process to protect against miscarriage.

Community-based IPTp

Although WHO primarily recommends that IPTp-SP be delivered through antenatal care (ANC) visits at health facilities, a number of pilot studies have tested the effectiveness of community-based IPTp (c-IPTp) delivered by community health workers (CHWs) through an independent program or as an addition to an existing system for community health services. Based on the results of these studies, WHO

recognizes that community health worker delivery of IPTp has the potential to increase overall IPTp-SP coverage rates; is likely to be acceptable and feasible with few undesirable effects; and may reduce inequalities by extending care to underserved populations. Both WHO and Roll Back Malaria acknowledge that countries could consider piloting and scaling up community approaches that help to increase IPTp uptake and ANC coverage as long as appropriate training and logistical support are provided and are designed to complement and promote ANC.

Official recommendations from WHO for delivery of community-based IPTp are pending the outcome of ongoing studies.

Potential challenges to c-IPTp

Deterrence of ANC visits

Community-based IPTp could deter visits to ANC clinics, which women should still be visiting to receive recommended antenatal health services. However, many community-based IPTp programs attempt to offset this risk through significant promotion of ANC visits.

Community health workers' lack of expertise

CHWs may not have the requisite training needed to deliver community-based IPTp effectively. For example, determining when pregnant women have entered the second trimester can be difficult without sufficient training or access to medical equipment.

Barriers to the efficacy of IPTp-SP

SP resistance

Most adults in sub-Saharan Africa have contracted malaria multiple times at a younger age, resulting in partial immunity to the disease. Therefore, despite the fact that levels of SP resistance are moderate to high among adults in some parts of Africa, the combination of partial immunity and partial effect of SP is sufficient to protect pregnant women in Africa from acquiring malaria and reduce the risk of low birth weight.

Studies conducted by researchers from the Liverpool School of Tropical Medicine confirm that, despite high SP resistance, IPTp is still effective at reducing rates of LBW deliveries. Malaria Consortium conducted a study in Nigeria that found similar results.

Malaria Consortium believes it is important to continue monitoring levels of SP resistance and conducting studies to ensure that SP is effective at protecting pregnant women from placental malaria.

Low coverage rates

Countries implementing IPTp-SP have observed low coverage rates, with causes including:

- **Minimal or no ANC visits** – Although WHO now recommends that pregnant women make eight ANC contact visits (as compared to the four previously recommended), many pregnant women make minimal or no visits, often due to cultural or socioeconomic factors. For example, in northern Nigeria, young pregnant women are often not permitted to leave their households without an accompanying man or permission from their husband. Access to ANC facilities can also be difficult due to having to travel long distances. Consequently, these women often do not receive adequate healthcare, with uptake of the third dose of IPTp-SP (IPTp 3) among pregnant women at approximately 19% in northern Nigeria and 22% in Burkina Faso.
- **SP stockouts** – Pregnant women who visit ANC clinics may not receive IPTp due to an unavailability of SP. SP is inexpensive, and most countries offer the drug for free, often through funding from the President's Malaria Initiative or the Global Fund to Fight AIDS, Tuberculosis and Malaria. However, some health facilities still experience SP stockouts.
- **Lack of awareness of malaria in pregnancy and IPTp** – several research studies indicate that pregnant women in sub-Saharan Africa, especially in rural communities, have a limited understanding of the risks of malaria during pregnancy or the benefits of IPTp, which can sometimes lead to women rejecting IPTp when offered or not requesting it when not offered during ANC visits.
- **Lack of potable water** – ANC clinics may have SP available but may not have access to potable water that women can use to swallow the tablets. If the tablets are given to the mothers to take at home, there is no way of knowing whether they actually swallowed them.
- **Lack of reporting** – Pregnant women may be receiving and taking SP, but health facilities may be failing to report accurate coverage rates. Additionally, some data collection tools have not been updated to record three or more doses of IPTp, making it difficult for health providers to record all doses given.
- **Lack of clarity on revised WHO recommendations** – Malaria Consortium's study of barriers to IPTp coverage in Uganda found that coverage was low not only due to a lack of SP stock but also a lack of training for health facility workers. The updated 2013 WHO recommendations and revised national guidelines advising that IPTp begin early in the second trimester and continue monthly until delivery had not been effectively communicated to health workers.
- **Supervision and quality assurance** – Monitoring and supervision of health facility workers in ANC varies with limited performance standards for IPTp uptake.

Malaria Consortium's efforts to increase coverage rates

Malaria Consortium's approach to increasing IPTp coverage rates is dependent on the country and area that it is working in. It conducts holistic needs assessments to determine why coverage is low and develops interventions to address the underlying causes. Malaria Consortium's work to increase IPTp coverage rates includes:

- **Improvement of training** – Malaria Consortium evaluates health worker case management practices and works with public health officials to strengthen training curricula for health workers, including competency assessment used for performance evaluations and supervision.
- **Behavior change interventions** – Malaria Consortium implements behavior change interventions at the community level or through health facilities. For example, in Uganda, after a training for health workers on the revised WHO recommendations for IPTp, Malaria Consortium sent text messages to health workers reminding them of material covered during the training. It found that after six months, health workers that received training and text message reminders were more knowledgeable about WHO recommendations for IPTp. It also found that IPTp coverage had increased in the district where it implemented the behavior change intervention. The intervention was inexpensive to implement and was well-received by the Ugandan Ministry of Health, which would like to scale up the program across the nation.
- **Resource assessments** – Malaria Consortium conducts assessments of infrastructure, equipment, supplies, and reporting systems used for the delivery of IPTp. It is particularly interested in analyzing the supply chain for SP to determine the causes of stockouts in health facilities.
- **Policy advocacy** – Malaria Consortium engages with policymakers at national and subnational levels to strengthen guidelines for delivering IPTp.

Malaria Consortium's IPTp-related projects

Work in Nigeria

Malaria Consortium recently completed work on the USAID-funded Malaria Action Program for States (MAPS) in Nigeria, which included provision of IPTp at ANC. Malaria Consortium also led the eight-year Support to National Malaria Programme (SuNMaP), funded by the United Kingdom's Department for International Development. SuNMaP supported the provision of IPTp through trainings for health workers, behavior change messaging, supply chain improvement, and other activities.

Work in Uganda

Malaria Consortium's work on IPTp in Uganda includes the Stop Malaria Project (SMP), which was completed in 2015, and the Malaria Action Program for Districts

(MAPD), which is a currently ongoing project funded by USAID. Malaria Consortium is also working on a USAID-funded program in eastern Uganda that promotes holistic health services, of which IPTp is one component.

Work in Mozambique

CHWs in Mozambique, known locally as agentes polivalentes elementares (APEs), receive intensive 4-month training and are often high-school educated. Although APEs do not deliver IPTp, they promote ANC visits and the prevention of malaria in pregnancy. Malaria Consortium has worked extensively with APEs to improve trainings and to implement a mobile-phone-based system of tracking pregnant women and referring them to ANC clinics.

Monitoring and evaluation of IPTp coverage

When implementing an IPTp intervention, Malaria Consortium generally conducts baseline and endline assessments to evaluate its impact on IPTp coverage. Data for these assessments are gathered through different channels, depending on the program's budget:

1. **Household surveys** – Most of Malaria Consortium's program evaluations include administering baseline and endline surveys to a random sample of households in the intervention area.
2. **Health facility records** – In contexts where conducting surveys may be prohibitively expensive, Malaria Consortium determines IPTp coverage rates by collecting administrative data from health facilities. However, recordkeeping in health facilities may not always be accurate. For example, Malaria Consortium's study of barriers to IPTp in Uganda—which monitored coverage by collecting administrative health records—found that SP was often being provided to women but was not being recorded. To address this issue, it added a recordkeeping component to health worker trainings, which Malaria Consortium believes was partially responsible for increased IPTp coverage rates.
3. **National surveys** – Approximately every three years, national-level IPTp coverage is measured through large-scale malaria indicator surveys (MIS) administered by national governments or by the Demographic and Health Surveys Program, often with help from Malaria Consortium. Malaria Consortium is able to use the information gathered from these large-scale surveys to better understand changes in IPTp coverage.
4. **Qualitative data** – To explore feasibility and acceptability of interventions, as well as to understand the mechanisms through which interventions achieve impact, Malaria Consortium uses qualitative methods such as in-depth interviews, focus group discussions, or participatory research involving key stakeholders involved in or affected by the intervention.
5. **Process data** – To evaluate the process of developing and implementing an intervention, a range of data sources such as recording forms, referral

slips, activity reports, and field notes are used. This allows Malaria Consortium to identify implementation barriers and facilitators, as well as adaptations needed for scale-up or transferring the intervention to other contexts.

For some of its projects, Malaria Consortium combines data from both household surveys and administrative health facility records. Qualitative data and process data complement the other data sources to provide a comprehensive assessment of how an intervention achieves impact.

Room for more funding

Scale-up of mobile phone intervention in Uganda

Malaria Consortium believes it could easily scale up its intervention in Uganda in which it sends text messages to health workers in order to reinforce training material. It is actively seeking additional funding to scale up this intervention.

Community-based IPTp programs

Malaria Consortium has proposed a pilot study to GiveWell for a community-based IPTp program. In the pilot program, SP drugs would be delivered door-to-door by community health workers to women in their second and third trimesters of pregnancy and could be combined with an existing community platform such as integrated community case management (iCCM). Community health workers would also encourage pregnant women to regularly visit an antenatal care clinic for additional services as well as provide intensive behavior change communication (BCC) health education on use of insecticide-treated nets, good nutrition during pregnancy, the importance of antenatal care, and recognition of danger signs during pregnancy. The pilot would last 18 months and would include baseline and endline surveys to measure IPTp coverage and antenatal care clinic attendance. The 18-month pilot could be followed with a 24-month scale-up period.

Northern Nigeria and Burkina Faso would be promising locations for this type of pilot study—baseline IPTp uptake coverage would likely be low and government interest in participating in this type of program would likely be high. Uganda and Guinea-Bissau might also be suitable locations for similar reasons. In Northern Nigeria and Burkina Faso, IPTp could be delivered by the same community health workers that are already delivering seasonal malaria chemoprevention (SMC) drugs for children under 5 years old.

All GiveWell conversations are available at http://www.givewell.org/conversations