



# ADDRESSING MALARIA IN PREGNANCY IN MALAWI

## Community-Based Delivery of IPTp: Study Brief

### KEY FINDINGS:

The study, Community-Based Delivery of Intermittent Preventive Treatment of Malaria in Pregnant Women (IPTp), demonstrates that engaging Health Surveillance Assistants (HSAs) in the delivery of IPTp at the community level is feasible. Findings present opportunities to strengthen linkages between community and facility-based services to address persistent challenges and improve uptake of malaria prevention treatment among pregnant women while ensuring antenatal care visits are improved or maintained. The study found:

- **High uptake of malaria prevention treatment.** Community-based delivery of IPTp increased, especially for later doses (IPTp 4–7). Study participants reported an increase in knowledge of malaria in pregnancy interventions.
- **Increase in repeat ANC visits.** Women in intervention areas were more likely to receive repeat ANC services from health facilities than women in control areas.

### Background

In sub-Saharan Africa, more than 30 million pregnancies are exposed to malaria transmission each year. Of these, an estimated 10,000 pregnant women and up to 200,000 newborns die as a result of malaria in pregnancy (MiP).<sup>1</sup> In addition, recent data indicate that up to 8% of stillbirths globally are attributed to maternal malaria infection.<sup>2</sup> The World Health Organization (WHO) recommends the use of intermittent preventive treatment in pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP) to prevent the adverse effects of MiP. In 2012, in an effort to boost uptake, WHO updated its policy<sup>3</sup> promoting initiation of IPTp-SP as early as possible during the second trimester and at every scheduled antenatal clinic (ANC) visit thereafter, as long as the visits were at least one month apart. Despite this recommendation, progress has been slow, and no sub-Saharan African country has achieved the 85% coverage target set by the President's Malaria Initiative (PMI).<sup>4</sup> Malawi was the first African country to formally adopt IPTp-SP, and though it had early gains, they have stagnated.<sup>5</sup> IPTp2 coverage was 42.9% in 2004 (DHS), 53.8% in 2010 (DHS), and remained at only 77% as of 2017.<sup>6</sup> However, only 40.1% of pregnant women received IPTp3+ in 2017, despite the fact that half of women attended four or more ANC visits.<sup>7</sup> A novel approach to ensure earlier presentation at ANC and increase IPTp delivery is needed to boost coverage to the 85% target.

Traditional ANC platforms present barriers to IPTp delivery and often fail to address systemic barriers to care, such as staff turnover and health worker practices. Although more than 95% of pregnant women in Malawi have two or more ANC visits, and nearly half of all pregnant women have four



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### About ONSE Health Activity

The Organized Network of Services for Everyone's (ONSE) Health Activity is USAID's flagship health program working to reduce maternal, newborn, and child morbidity and mortality in Malawi. Led by Management Sciences for Health, ONSE works closely with the Ministry of Health and key stakeholders at the national and district levels to deliver on four intermediate results: (1) Improving access to priority health services, (2) improving quality of priority health services, (3) strengthening the performance of health systems, and (4) increasing demand for priority health services. As a trusted partner in 16 of Malawi's districts, ONSE works across a series of priority health areas, including maternal, newborn, and child health; family planning and reproductive health; malaria; nutrition; and water and sanitation.

“The study has brought about such a big change in our communities. Now, we have women who literally come to my house to remind me that they are due for their monthly SP intake when they are not due for an ANC visit, and it has become so much easier to monitor them and even shortened the distance they walked to access such services. Now they know they could call me as an HSA or even just come to my house any time. I wish this was cascaded to the rest of the country.”

*Stuart Chalimba, HSA in Ntcheu District.*

visits, only 63% of them receive two doses of IPTp, and 30% receive three doses. Health Surveillance Assistants (HSAs) work to educate women in communities on MiP, recognize danger signs in pregnancy, and emphasize the importance of starting ANC early and continuing ANC. Recognizing that HSAs serve as an important link between health systems and communities, the USAID ONSE Health Activity sought to explore a novel approach involving HSAs to address persistent barriers, ensure earlier introduction of IPTp, and boost delivery and uptake of preventive malaria treatment among pregnant women.

This brief presents the results of the community-based delivery of IPTp (cIPTp) study and discusses important implications for the future of IPTp delivery. Findings will inform the Ministry of Health (MoH) in Malawi, including the Malaria Control Programme (NMCP), the Reproductive Health Department (RHD), and the Community Health Section, on the way forward for the implementation of cIPTp as part of the national policy.

## Study Description

In November 2018, the USAID ONSE Health Activity, with funding from PMI through USAID and in close collaboration with the Malawi MoH, the Malaria Alert Center at the College of Medicine, and the US Centers for Disease Control and Prevention (CDC), initiated a cIPTp study in Ntcheu and Nkhatabay districts. Nkhatabay is a moderate malaria transmission area with relatively high IPTp coverage in the Northern Region, while Ntcheu is a high malaria transmission area with low IPTp coverage in the Central Region. The overall aim of the study was to test whether engaging HSAs in community-based delivery of IPTp would increase coverage of three or more doses compared to delivery only at antenatal clinics, while at the same time improving or maintaining ANC attendance.

## Methodology

The cIPTp study began in November 2018 and was completed in July 2020. The study was a cluster randomized trial that included 44 HSAs in Nkhatabay and 28 HSAs in Ntcheu. All HSAs received training on encouraging women to attend ANC early and recording on the ANC card and HSA register when they administered a dose of IPTp-SP in the community. Health facility staff were trained to record and report pregnant women who received IPTp-SP in the community by collecting data from the ANC card. HSAs and health facility staff received periodic supervision visits to monitor data quality. In addition, health facility data were monitored through regular review of the District Health Information System.

From each district, 10 health centers were randomly selected after excluding nongovernmental facilities, district hospitals, facilities that do not provide ANC, and facilities accessible only by boat. At the beginning and end of the study, a household survey was conducted in the control and intervention groups to assess coverage of IPTp-SP, ANC attendance, community knowledge of malaria, and perception of HSAs. The qualitative endline survey was conducted July 27–August 7, 2020, while the quantitative endline survey was conducted August 17–September 1, 2020. Final reports produced in November 2020 highlight the analysis from the two endline surveys.

## Results

Area Development Committee meetings were held in communities to share information on the study, and communities pledged their support of the study, communicating that IPTp would be provided by HSAs and encouraging pregnant women to attend ANC early and as required. As of June 2019, HSAs in both Nkhatabay and Ntcheu made 2,564 contacts with pregnant women (1,546 in

Table I. Percentage of Uptake of IPTp Coverage – Intervention vs Control

Group	IPTp Coverage (%)				Source of IPTp3 (%)		Source of IPTp4 (%)		Source of IPTp5 (%)	
	IPT3	IPT4	IPT5	IPT6	MoH Facility	HSAs	MoH Facility	HSAs	MoH Facility	HSAs
Intervention (N = 356)	84.1%	48.7%	19.6%	8.1%	76.6%	22%	75%	25%	72.6%	27.3%
Control (N = 352)	78.9%	27.2%	7.9%	2.3%	98.2%	1.4%	96.3%	3.1%	89.5%	10.4%

Nkhatabay and 1,018 in Ntcheu). Out of the 2,564 contacts, 1,679 were initial contacts, and HSAs have provided 1,450 doses of IPTp (528 IPTp2, 487 IPTp 3, and 435 IPTp4+).

The endline survey, completed by 708 recently pregnant women, suggests that health workers and women found cIPTp accessible and acceptable. Coverage of IPTp1, IPTp2, and IPTp3 were similar across intervention and control areas, but women living in intervention areas were more likely to have high coverage of more than three IPTp doses (i.e., IPTp4 to IPTp7) compared with women in control areas. In addition, when asked how to prevent MiP, women in the intervention areas were more likely to cite IPTp, compared with women in the control areas.<sup>8</sup>

Major factors that facilitated pregnant women taking at least three doses of SP to prevent MiP were early ANC enrollment and women's understanding about the dangers of MiP.<sup>9</sup>

The majority of HSAs, ANC providers, and HSA supervisors stated that women were motivated to approach or visit HSAs as they are seen as health experts in communities. As most women use family planning methods, they are able to build close relationships through their interactions and come to HSAs for SP. Because they are located within the communities and provide regular visits, HSAs are able to build trust among pregnant women by allowing them a private and respectful space to receive regular health education and follow up. Key results from the study include:

- **High uptake of IPTp.** Women reported that cIPTp delivery in their communities by HSAs has reduced the need for women to travel long distances to health facilities. Among the intervention group, uptake of IPTp was high, with most women (94.7%) taking SP to prevent MiP. Virtually all women who took medicine to prevent MiP used IPTp-SP for this purpose (99.8%). On average, women in the intervention group took more IPTp-SP doses during their pregnancy than women in the control group (3.6 vs 3.1 doses, p-value <0.01). Coverage of pregnant women with IPTp1, IPTp2, and IPTp3 was similar between the groups. However, the coverage of women with IPTp4 to IPTp7 was substantially higher in intervention areas, suggesting that cIPTp can increase uptake of IPTp, especially for later doses.
- **Increase in repeat ANC visits.** Women in intervention areas were more likely to receive ANC services from MoH health facilities than women in control areas (95.0% vs 80.3%, p-value <0.01). The study found that the majority of health care workers and women stated that cIPTp increased ANC attendance because HSAs and volunteers were able to identify pregnant women early and refer them to enroll in ANC as well as remind them of subsequent ANC visits through follow up.
- **Increase in knowledge of MiP interventions.** Among the intervention group, women's knowledge of MiP was

generally good. Most women correctly responded that individuals get malaria from mosquito bites (81.4%), and that malaria is a serious problem in pregnancy (79.8%). Approximately one-third women stated that pregnant women should first attend ANC in the first trimester and have at least five ANC visits. The proportion of women who recognized IPTp as a malaria prevention intervention was higher in the intervention areas than in the control areas. Women and health care workers stated that they get more information from HSAs on the benefits of starting ANC early and continuing with subsequent visits, as HSAs teach women in all village clinics about MiP, danger signs in pregnancy, and hospital delivery and encourage pregnant women to start ANC and receive SP in the community.

## Lessons Learned

The study reveals several lessons that can inform scale up of access to preventive malaria treatment at the community level.

- The cIPTp study demonstrates that linkages between community-based interventions and facility-based services can be improved, thereby strengthening referral of women between facilities and community health workers for continuation of services.
- The study demonstrates that community health workers are amenable to receiving health education and in-service training. This community-level approach allows for health workers to conduct follow-up visits with women in their own homes, unlike a facility delivery approach that may not offer such follow-up services.
- The study suggests that with proper training, HSAs can provide IPTp to pregnant women, resulting in improved IPTp coverage, and encourage pregnant women to make more frequent and timely ANC visits, thereby preventing any potential decline in ANC coverage. Researchers have made the recommendation for the MoH in Malawi, including the NMCP, RHD, and Community Health Section, to use these results to assess whether cIPTp should be implemented as part of a national policy.

## Challenges

It is worth noting that both health care workers and the community recommended cIPTp program scalability. Nevertheless, there are a few challenges that need to be sorted out, including the capacity of HSAs to routinely follow up with pregnant women. While the ideal is to provide monthly follow ups in practice, this did not occur. This problem is best addressed by monthly supervision of HSAs and coaching. Additional challenges are related to transportation and inadequate staffing. Some villages are remote enough that women need to travel long distances

over challenging terrain, and it was noted that additional HSAs should be recruited to allow the program to continue sustainably and manage HSAs' workloads.

The MoH introduced new ANC registers during the study period. The new register created confusion among providers, who struggled to determine how best to align the first and subsequent visits with the proposed scheduling of visits in the register. For example, the proposal is for the first ANC visit to occur during the first trimester, yet many women initiate ANC only after the first trimester. The challenge for the provider is to indicate whether it is the first visit or a second visit as guided by the gestational age indicated in the register schedule. This confusion had to be addressed, and training was given to providers.

The onset of the 2020 COVID-19 pandemic also posed many challenges to malaria service delivery at the facility and community levels in Malawi. The study found that women failed to enroll or arrive for subsequent ANC visits because they feared COVID-19. Further, COVID-19 necessitated changes in working mechanisms at the facility, as women were not supposed to stay at the facility for too long to reduce the risk of infection. This had some implications in that some women were seen in a hurry and could not be assisted properly. The evaluation found that although people feared COVID-19, services did not stop completely, and the majority of health workers stated that COVID-19 had no impact on IPTp uptake. Infection prevention measures were put in place in health facilities, such as handwashing facilities, encouraging social distances of 1 meter apart, and wearing face masks. Further, SP administration in the community followed IPC measures. The majority of HSAs mentioned that there was no direct contact with women when administering SP.

## Way Forward

The study suggests that cIPTp should be recommended as a strategy to increase coverage of pregnant women with IPTp in Malawi, but mechanisms to monitor the long-term effects of cIPTp on ANC service use should also be supported. PMI has evaluated the community delivery of IPTp-SP in four

studies in Malawi, Nigeria, and Uganda. While all showed an increase in IPTp-SP uptake, these studies took place prior to WHO's updated policy. Thus, it is relevant to assess whether there is a benefit to community delivery of IPTp-SP under the current policy and whether this approach is feasible from the standpoint of both service delivery and data collection. To improve women's knowledge of MiP, community health workers and facility-based providers should focus on informing women about the adverse effects that malaria has on women and newborns. As the first health personnel in the village, HSAs are able to act as a bridge between the community and the facility.

A plan should be put in place to serve women in hard-to-reach communities, where few HSAs reside. Strengthened links between HSAs and existing platforms and community structures including Care Group Leaders, Village Health Committees, Health Center Management Committees, and Village Chiefs, could support the integration of malaria interventions, helping women learn about malaria in pregnancy, and encouraging HSA visits as they happen in their communities. Community mobilization and sensitization will be critical for communities to buy-in or adopt new interventions, and district health management teams and health facilities should advocate for the importance of ANC visits and cIPTp uptake through the existing Health Center Management Committee meetings, which are patronized by chiefs.

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