



The Provision of Intermittent Preventive Treatment for Malaria in Antenatal Care Clinics in Malawi: Views of Health Care Providers

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Abstract

This study focused on providers of antenatal health care in Malawi and their understanding and actions in the routine administration of intermittent preventive treatment in pregnancy (IPTp) for malaria. Since the recognition of the benefits of IPTp in preventing malaria transmission from mother to child, many countries in Africa have sought to provide at least two doses of the antimalarial drug sulfadoxine-pyrimethamine (SP) as an integral part of antenatal care. Malawi adopted IPTp as an official policy in 1993; and yet, after 20 years, the coverage of pregnant women who receive at least two doses of SP (IPTp2) is at 55%, according to the 2010 Malawi Demographic and Health Survey. The Malawi Ministry of Health has a target of 80% coverage for at least two doses of SP during antenatal care by 2015. The research explored the viewpoint of service providers: guidelines they use, challenges they face, problems they solve, and the rationale for giving SP pills. Study results show that the lack of clear, detailed guidelines for providing antimalarial drugs is the weakest aspect of Malawi antenatal services. Researchers also found a need for a system of supervision of antenatal services to focus attention on IPTp services.

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Acronyms

ANC	Antenatal Care
ART	Antiretroviral Therapy
ARV	Antiretroviral
CHAM	Christian Health Association of Malawi
DHS	Demographic and Health Survey
DOT	Directly Observed Therapy
FANC	Focused Antenatal Care
HTC	HIV Testing and Counseling
HIV	Human Immunodeficiency Virus
IMCI	integrated management of childhood illnesses
IPTp	Intermittent Preventive Treatment in Pregnancy
ITN	insecticide-treated net
MCH	Maternal and Child Health
MDHS	Malawi Demographic and Health Survey
MiP	Malaria in Pregnancy
MIS	Malaria Indicator Survey
MOH	Ministry of Health
NMCP	National Malaria Control Program
PMI	President's Malaria Initiative
PMTCT	Prevention of Mother-To-Child Transmission
RBM	Roll Back Malaria
SP	Sulfadoxine-Pyrimethamine
SPA	Service Provision Assessment
STI	Sexually Transmitted Infection
TTV	Tetanus Toxoid Vaccine
WHO	World Health Organization
USAID	United States Agency for International Development

Executive Summary

Background

Since the general recognition of the benefits of providing antimalarial drugs for intermittent preventive treatment in pregnancy (IPTp), many countries in Africa have sought to provide at least two doses of sulfadoxine-pyrimethamine (SP) as an integral part of antenatal care (ANC). Malawi adopted IPTp as an official policy in 1993; and yet, after 20 years, the coverage of pregnant women who receive at least two doses of SP, or IPTp2, is at 55%, according to the 2010 Malawi Demographic and Health Survey (MDHS). The Malawi Ministry of Health has a target of 80% coverage for at least two doses of SP to be administered during antenatal care. This study focused on antenatal health care workers in Malawi to explore their understanding and actions in the routine administration of IPTp for malaria. The researchers approached the study from the viewpoint of service providers—the guidelines they use, challenges they face, problems they solve, and the rationale for giving SP pills.

The coverage rate of SP in ANC care is possibly related to the actions of clients who attend or do not attend ANC clinics or to the actions of health care providers as they deliver the services, or to the supply of SP in health care facilities. While all three explanations deserve attention, this study explores the knowledge, understanding, and experience of health care providers as they administer SP in the context of antenatal care. The research included individual interviews with nurses and midwives who provide ANC services and their practices in the facilities where they work—guidelines they use, challenges they face, problems they solve, and the rationale for giving SP pills. The interviews with nurses and midwives occurred in eight health care facilities in two regions of Malawi: four in the Central region and four in the Northern region. In most facilities, the researcher conducted three individual interviews, which were recorded with permission, transcribed, and typed for analysis.

This study focused on these overall questions:

- How does the knowledge of providing ANC services and experience of nurses and midwives affect the way health care providers dispense IPTp to ANC clients?
- What do health care personnel know about the purpose and importance of IPTp?
- What do health care personnel know about Ministry of Health policy on IPTp?
- What has been their experience in providing SP to pregnant women in the context of ANC services in general?

Findings: Delivery of Antenatal Care in Malawi

Study results show that antenatal care in Malawi is strongly emphasized. In health care facilities, the delivery of antenatal care begins with a health talk, when mothers assemble in one room before the other services begin. Other ANC services include provision of malaria prophylaxis with SP, anemia prevention with ferrous sulfate, distribution of an anti-parasite drug (usually albendazole), and immunization with a tetanus toxoid vaccine. Health care workers take blood pressure and test urine. Other services include HIV testing and counseling, provision of antiretroviral (ARV) drugs to mothers who test positive for HIV, and distribution of nevirapine

to mothers to give the baby during delivery. HIV-positive women are not given SP; instead, they are immediately enrolled in ARV therapy in what is known as Option 5 B+.

The nurses, midwives, and clinical officers who provide ANC in health care facilities included in the study also provide services in other facility departments, an arrangement that increases the workload for the nurses who see pregnant women. Throughout the interviews, nurses consistently mentioned challenges of understaffing.

The nurses interviewed were knowledgeable about important aspects of ANC services. They ably and confidently explained what they do, why they do it, and the benefits that accrue to delivering the services. Focused ANC is an area they emphasized. According to the nurses, focused ANC involves holistic assessment of all ANC clients. Nurses used the phrase “from head to toe” to refer to a holistic assessment of clients, a procedure used to identify what the nurses referred to as “high-risk mothers” who require specialized care.

Most of the nurses interviewed have not received specific training to provide SP and the new concept of Option B+ as part of the prevention of mother-to-child transmission (PMTCT). The nurses regarded these technical areas as new, and they felt they needed additional training to provide them properly. In fact, the nurses expressed concerns about a lack of clear and sufficient information on policy changes announced by the Ministry of Health from time to time. They appeared eager to follow Ministry policy on ANC; however, although they said some guidelines on IPTp were available, they also said nurses who work in ANC were not keeping to them. Some said they know that guidelines exist, but have never seen them. Most of them have learned about Ministry policy from colleagues in the facility.

Discussions with the nurses revealed four important issues that could undermine their effectiveness in service delivery: (1) a lack of sufficient information and training on the new developments in Ministry policy and procedures; (2) a lack of useful, relevant equipment available in the ANC unit to facilitate physical examinations; (3) requirements for HIV/AIDS counseling and testing and subsequent enrollment in antiretroviral therapy (ART) for women who are HIV positive (nurses were concerned that some women do not readily accept their test results); and (4) cost sharing in the two central hospitals, which, for service without payment, requires women to be referred from lower-level facilities.

Interviewers asked nurses which services they think women value most. At first, the nurses responded that all services are important and resisted pointing out one service over another. Eventually nurses pointed out HIV testing and treatment as important and administration of antimalarial drugs for PMTCT. Nurses said that, in general, mothers want to spend more private time with the nurses so they can explain their problems and get feedback about the condition of the baby.

Findings: Delivery of Intermittent Preventive Treatment in Pregnancy in Antenatal Care

The nurses interviewed consider IPTp important among the many ANC services provided. Most nurses interviewed did not want to rank the importance of certain services relative to others, and they emphasized that all ANC services are important. The importance and ranking of PMTCT

and IPTp, however, was evident from the consistent order of the services they mentioned. The nurses indicated that IPTp ranks right after PMTCT in importance in their minds.

Nearly all ANC clients, except those who are HIV positive, receive at least one dose of SP during pregnancy, which is administered during the first visit, along with a dose of the anti-parasitic drug albendazole and other drugs and services. On the second ANC visit, women are scheduled to receive ferrous sulfate, tetanus toxoid vaccine, and another dose of SP, and possibly another dose of albendazole. The overall burden of services is far less in the second and third ANC visits.

The nurses interviewed were unable to show or identify specific government guidelines that govern delivery of IPTp. Nurses know that IPTp is mandatory for all pregnant women except for those who are allergic to sulfur and those who are known to be HIV positive and already on cotrimoxazole. The nurses lack detailed guidelines on how and when to administer IPTp, and they do not have specific training on IPTp provision; however, all talked about the importance of giving SP after 16 weeks (or 18 or 20 weeks). The nurses know the rationale for giving SP to prevent malaria infection, which can be dangerous to both the baby and the mother. Some nurses reported that malaria can cause premature deliveries or anemia in the mother; however, many of the nurses did not know why it is only SP that is given and not another antimalarial drug.

The nurses all recognize the difficulties women have in swallowing the large, bitter SP pills. The nurses reported that some women do not want to swallow the medicine without eating first, and other women do not see why they should take SP when they are not sick. A few nurses said that after being counseled, women cooperate and take the medicine. Giving the pills so they could be taken at home is not considered an option, for the nurses are not confident the women would take the pills at home if the nurses simply gave the pills to them rather than watching them take the pills, a practice known as directly observed therapy (DOT). Even then, nurses reported some women complain about feeling dizzy and not being able to go home after taking the medicine. Nurses raised issues about women vomiting the medicines, but said it is not a common occurrence. In case a woman does vomit, and it was clear that the woman had vomited the medicine, the nurses said they would wait for a while and then provide another dose.

The analysis of the interview texts identified several elements as possible reasons why a pregnant woman would not receive a second dose of SP during antenatal care. (1) If a woman is HIV positive, she is not given SP; according to the 2010 DHS, about 10% of women with a birth in the last three years and who attended ANC were HIV positive. (2) If a woman attending ANC has malaria, she is not given SP. (3) A small proportion of women refuse to take SP and remain unpersuaded by the nurses. (4) A small proportion of women begin ANC services too late to take two doses of SP, according to the Ministry of Health policy as understood by the nurses interviewed. (5) Some nurses fail to give a second dose of SP because they missed the opportunity as a result of overwork, lack of time, negligence, or other cause.

These findings help us consider ways that the provision of IPTp could be improved in Malawi. Training, knowledge, skills, and dedication of the health care providers interviewed do not seem to present major problems. One thing that stands out in the work of nurses in ANC clinics is the importance given to counseling and education: health talks in the morning; counseling before and after testing for HIV; counseling to persuade women to accept, and then to disclose, their

HIV results; and counseling to persuade them to begin taking ARV treatment if the test is positive.

The lack of clear and detailed guidelines for providing SP in ANC is the weakest aspect of IPTp. Some of the nurses interviewed mentioned that they would like more information on Ministry of Health policy changes in the provision of health care. Yet if the coverage of SP is to be improved, the Ministry of Health must clarify its policy on the timing of giving SP and then make sure that short, simple instructions are distributed to all health care facilities in the country. It is possible that the instructions for IPTp could be reduced to three points: (1) give the first dose on a woman's first visit at 16 weeks or later, (2) wait four weeks between doses, and (3) give a dose of SP every time a woman comes for antenatal care, while also respecting the first two points.

It also seems essential that a system of supervision of ANC services be established or reinforced to include more attention to IPTp services. With the importance of the persuasion aspect of ANC, a supervisor could determine if a service provider needs assistance or guidance to be more effective in persuading women to take SP or to accept an HIV test result and proceed with antiretroviral (ARV) treatment. A supervisor also could discuss with the nurse her experiences in giving a second dose of SP to all women who attend ANC multiple times.

Chapter 1: Introduction

Since the general recognition of the benefits of providing antimalarial drugs for intermittent preventive treatment in pregnancy (IPTp), many countries in Africa have sought to provide at least two doses of sulfadoxine-pyrimethamine (SP) as an integral part of antenatal care (ANC). Malawi adopted IPTp as an official policy in 1993; and yet, after 20 years, the coverage of pregnant women who receive at least two doses of SP, or IPTp2, is at 55%, according to the 2010 MDHS. The Malawi Ministry of Health has a target of 80% coverage by 2015 for at least two doses of SP to be administered during antenatal care. This study focused on ANC health care workers in Malawi and their understanding and actions in the routine administration of IPTp for malaria. The study explored the viewpoint of service providers: the guidelines they use, challenges they face, problems they solve, and the rationale for giving SP pills.

1.1 Study Questions

Given the importance of delivery of IPTp to all pregnant women in Malawi, why is the coverage of two doses of SP (54–55%) not higher? Does the explanation lie mainly with the actions of pregnant women, with the services of the health care providers, or with the elements of the health care system? Could the low coverage be related to knowledge of IPTp and SP among pregnant women? Is the low rate of coverage related to how health care providers understand the risks and benefits of dispensing IPTp during ANC services? How does the delivery of other services, such as anemia testing and provision of iron and folate affect delivery of IPTp? These example questions often come up in the consideration of IPTp coverage in countries in Sub Saharan Africa (Finlayson and Downe 2013; Onoko et al.2012; Pell et al. 2011; Konaté et al. 2012).

The coverage may indeed be related to the actions of clients who attend or do not attend ANC clinics (factors of accessibility), or to actions of health service providers (quality of service), or to the supply of SP in health care facilities. While all three explanations deserve attention, this study focused mainly on how health care providers understand and act in their delivery of ANC and the impact of the context of ANC service delivery on IPTp. The study examined the dispensing of IPTp in the context of other ANC services, such as testing for anemia, giving of iron and folate, testing and counseling for HIV, conducting physical examinations, and delivering other services.

Among the questions raised during the study design was whether the way health service staff provides IPTp would affect the probability of women returning for another ANC visit and if the prospect of receiving a second or third pill of SP to protect against malaria could act as an incentive to return. The study also sought to check if health care staff members consider that giving multiple doses of SP involves health risks, as was thought in earlier times. Researchers considered it likely that the knowledge of nurses and midwives about the purpose and the policy of giving IPTp, as well as their counseling of pregnant women, would affect the uptake of SP among ANC clients. The 2010 MDHS showed that the proportion of women who received a second dose of SP is far lower than the proportion of women who made a second ANC visit. The study design, therefore, aimed to clarify if this difference suggested that nurses and midwives sometimes fail to take the opportunity to give SP or fail to persuade women to accept SP during a visit.

Researchers planned this study following a request from the Bureau for Global Health in the U.S. Agency for International Development (USAID) Washington. MEASURE Evaluation conducted the study in Malawi on the ways that IPTp is being provided in ANC clinics. The study, financed with funds from the President's Malaria Initiative (PMI) and the Maternal and Child Health (MCH) Division of the Bureau for Global Health of USAID Washington through the MEASURE Evaluation project, was designed in collaboration with personnel from the funding organizations.

1.2 Objectives

The study was designed to provide information on the knowledge, understanding, and experience of health care providers of IPTp in the context of ANC. This information will be useful in understanding the current level of dispensing of SP in ANC clinics. The study examined how health care staff provides ANC services, with a particular emphasis on IPTp. A consultant conducted individual interviews with nurses and midwives who provide ANC services to discuss how they provide ANC services, including IPTp, in health care facility where they work. This information will help guide the design of training curricula for both new service providers and refresher training for current staff. The results from this qualitative study also will help the National Malaria Control Program (NMCP) and the Ministry of Health to improve the coverage of its Malaria in Pregnancy (MiP) interventions and refine efforts to prevent and treat malaria in pregnant women.

Chapter 2: Background

Malaria during pregnancy can harm the health of the mother and baby, but the risks of malaria can be greatly reduced through interventions that are not expensive (Hill et al. 2013). The World Health Organization (WHO) has recommended three interventions that do not require large investments to protect against malaria in African countries with stable malaria transmission: (1) the provision of IPTp with SP, (2) the use of insecticide-treated nets (ITN), and (3) effective case management of malaria and anemia. For many countries in Sub Saharan Africa, however, coverage for these interventions remains low.

Interventions that address malaria prevention during pregnancy have multiplied in the past 10 years with the President’s Malaria Initiative, Roll Back Malaria program, and the Malaria in Pregnancy program, interventions funded by the U.S. Government, the Global Fund, and the Bill and Melinda Gates Foundation. The impetus for these efforts has come from evidence of the harmful effects of malaria on the mother, fetus, and newborn, and on the effectiveness of preventive interventions now available, such as providing IPTp and ITNs in ANC and illness case management. DHS provides data on the coverage of these interventions through questions on the use of ANC services, the specifics of ANC services delivered, and usage of IPTp and ITNs.

Studies of the coverage of IPTp sometimes have examined the accessibility of ANC services (Finlayson and Downe 2013), the delivery of health services (Hill and Kazembe 2006; Abonye et al. 2013), and the elements of the health care system (Van Eijk et al. 2004). Recent studies, including this one, have focused on factors that are part of the process of delivering ANC services.

2.1 Assessing Coverage of Intermittent Preventive Treatment in Pregnancy

A recent series of analyses by Lia Florey examines DHS data from 2007 to 2011 on the coverage of ANC services, IPTp, and ITNs, and provides a portrait of the factors related to the delivery of IPTp in 16 Sub Saharan Africa countries, including Malawi (Florey 2013). The sample for these analyses was women with a live birth in the two years before the survey. The intervention outcomes of interest were “the proportion of women attending ANC by numbers of visits and by timing of visits; the proportion of women receiving SP for prevention of malaria by numbers of doses; and the proportion of women reporting ITN use the night before interview” (Florey 2013:9). The text refers to the “service effectiveness of IPTp delivery” to assess how well each country was doing in delivering SP. The data were reported as the proportion of women who made one visit and women who made two visits to ANC and the proportion of women who received one dose of IPTp and women who received two doses of IPTp (IPTp1 and IPTp2). The tables and figures provide a clear overview of the IPTp situation in the 16 countries, as well as the strength of associations between background and outcome variables. Coverage data by country for IPTp were reported by countries with higher and lower IPTp2 coverage, with a cutoff point of 20% coverage.

The results support the conceptual framework that suggested that intermediate steps can be identified to show bottlenecks in the system of providing IPTp. The coverage of IPTp is

determined by the actions taken by pregnant women by coming or not coming to ANC, by health care providers giving SP or not, and by elements of the health system. The study concludes that the delivery of IPTp depends more on the dynamics of service delivery than by differential access to ANC (see Florey 2013, p. 17).

Jenny Hill and colleagues recently conducted a comprehensive review of 98 published articles that examined the factors that affect the coverage of IPTp and ITNs in Sub Saharan African countries (Hill et al. 2013). The authors structured the text to highlight barriers to higher coverage of IPTp and ITNs. They found that many barriers to higher coverage of IPTp2 appeared consistently across countries and are ones that are surmountable. From the perspective of pregnant women, these barriers include the women's lack of knowledge about the benefits of IPTp and the number of doses recommended, as well as concern about taking a drug while pregnant. Women in some studies reported that they could not take SP at the clinic because they needed to eat first.

Considering health care providers, many studies found that the nurses and midwives were confused about the dosage and timing of giving SP in relation to gestational age (Webster et al. 2013). In a few countries, health care providers said coverage was low because women would not take SP on an empty stomach or they would not return for another ANC visit (Konaté et al. 2012). Considering health care systems, some studies reported low coverage because of inadequate staff or a lack of water or cups to assist women in taking drugs. Stock-outs of SP were not mentioned often as a problem.

2.2 Guidelines for Providing Antenatal Care

It is generally recognized that while women must make several visits for ANC if the targets for IPTp coverage are to be reached, a high proportion of women with three or more ANC visits does not guarantee high coverage for SP (Onako et al. 2012). The Florey study cited earlier reports that the mean number of ANC visits in the 16 Sub Saharan Africa countries varied from 3.2 visits per woman in Burkina and Burundi to 5.4 visits per woman in Sierra Leone and 7 in Nigeria, with an average of 4.5 visits among women who made at least one ANC visit. IPTp2 coverage varied from 0.3% in Burundi to 66% in Zambia; however, in the pooled data from the 16 countries, a direct relationship was found between the numbers of doses of SP received (one to three doses) and the number of ANC visits (one to four). The coverage decreases for women who made more than four ANC visits; and thus, multiple ANC visits are necessary, but not sufficient, to attain high coverage of IPTp2.

It may well be that nurses and midwives who provide ANC services do not clearly understand the policy of their government on how and when to give SP in ANC clinics. One reason that Zambia has higher coverage of IPTp2 than other places is its policy of giving three or more doses (not two) to all women who attend ANC clinics. Many other countries have stringent national policies that restrict IPTp administration outside of a few specified weeks during pregnancy. According to one Malawi government document from 2007, for example, SP was supposed to be given at 26 and 32 weeks of gestation, and never after 36 weeks. A literal interpretation of such guidelines would ensure that many eligible women would not receive SP. A study directed by PMI and the Maternal and Child Health Integration Program (MCHIP)

discusses Ministry of Health guidelines in relation to the goals and accomplishments of the MiP program in Malawi in 2011 (Wallon et al. 2011).

The WHO recommendations on IPTp have evolved over time as more research has shown the safety and efficacy of SP and its important contribution in the improvement of maternal and newborn health outcomes. Indeed, WHO revised its policy in 2012 to recommend that SP be given at every ANC visit after the first trimester, up until the time of delivery. Earlier guidelines had stated that IPTp should not be given after 36 weeks of gestation. If Malawi were to adopt these new recommendations, nurses and midwives would encourage women to take an SP dose at each ANC visit, starting as early as possible in the second trimester, or after quickening.

2.3 Antenatal Care and Intermittent Preventive Treatment in Pregnancy in Malawi

Government health facilities provide about 60% of health services in Malawi, and an additional 37% are provided by facilities managed by the Christian Health Association of Malawi (CHAM). Different church groups manage the CHAM health care facilities in Malawi, but they follow Ministry of Health policy closely in their delivery of services. ANC is provided mainly by nurses and midwives who work in specialized clinics that are open on particular days of the week. Although most facilities provide ANC services five days a week, they usually designate one day to serve women who arrive for ANC for the first time during their pregnancy. Most ANC services are provided by district hospitals, rural hospitals, and health centers operated by the government or CHAM.

Antenatal care by skilled attendants in Malawi is part of an essential health care package for maternal health that follows guidelines from the Ministry of Health. These guidelines are presented in the National Reproductive Health Strategy, 2006–2010 (MOH 2007). ANC services offer early detection of possible complications, disease prevention through immunization and supplements, health education and counseling, preparation for labor and delivery, and now HIV testing and counseling. WHO has recommended that women make at least four ANC visits during an uncomplicated pregnancy, and the Malawi Ministry of Health has adopted this recommendation as its policy.

As the MOH policy recommends, women are encouraged to make at least four ANC visits during a pregnancy. In the 2010 MDHS, 49% of women who attended an ANC clinic came for their first visit when they were 4–5 months pregnant, and 35% were 6–7 months pregnant on their first visit. A total of 73% of women delivered in a health care facility the last time they gave birth.

The 2010 MDHS provides data on ANC attendance and assisted deliveries. Women who had given birth in the last five years were asked about their use of health care services during their most recent pregnancy. They were asked if they had used any ANC services, the type of person who provided the service, and how often they attended an ANC clinic. The survey found that 95% of these women had received ANC from a doctor, nurse, or midwife two or more times during her latest pregnancy, with virtually no variation in this coverage by urban or rural residence or by region. In fact, 49% of the women had made two or three visits for ANC, and 46% had made four visits or more.

A second source of information on ANC services and IPTp comes from a study directed by PMI and MCHIP, which conducted a study in 2011 on the goals and accomplishments of the MiP program (Wallon et al. 2011). The authors examined numerous secondary sources of data and interviewed stakeholders in Malawi about their experiences with the MiP program. The study found that Malawi is closer to achieving its MiP goals than other countries in Sub Saharan Africa. The government target for IPTp coverage with two doses (IPTp2) is 80% by 2015.

The authors identified some ambiguity in the guidelines from the government of Malawi on when to give SP to pregnant women in ANC services. The National Reproductive Health Service Delivery Guidelines of 2007 includes guidelines for focused antenatal care (FANC), including a list of the services to be provided and a recommendation that IPTp be given at 26 and 32 weeks of gestation. The National Malaria Treatment Guidelines, also published in 2007, include slightly different guidelines for IPTp. That document recommends that at least three doses of SP be given after the first trimester and four weeks apart (Wallon et al. 2011). Yet another MOH document of 2007 (Guide for the Management of Malaria) recommends that two doses of SP be given as part of standard ANC services. It is thus likely that not all health care providers have the same understanding of the recommended dosage and dosage timing for giving SP.

The 2007 Ministry of Health document that recommends giving two doses of SP four weeks apart after the first trimester appears to be the guidelines most familiar to health service providers. Another sign that IPTp can be given (instead of a specified 13 weeks) is the quickening or internal movement of the fetus. The 2010 DHS showed that 95% of women had made two or more visits to an ANC clinic during their last pregnancy (less than five years ago), and yet the IPTp2 coverage was only 55% in the survey. The median number of months of gestation at the first visit was 5.6 months.

Stakeholders described in the study directed by PMI and MCHIP in Malawi (see above) cited several reasons for the less than ideal coverage with IPTp2 in ANC services. Those reasons included ambiguity in the guidelines for when to give SP, the lack of potable water in clinics for taking the pills in the presence of health workers, and doubts among health workers about the effectiveness of the drug. Stakeholders linked this last reason to an understanding that SP is no longer used for treatment of malaria in the general population.

Overall, evidence in reports suggests that IPTp2 coverage remains at a relatively low level in Malawi, in part because of ambiguity in the government guidelines for administration of SP and because women prefer not to take the pills without food or water (Wallon et al. 2011). Attendance at ANC clinics does not appear to be a major problem. Other factors, such as stock-outs, lack of time, or not taking the giving of SP seriously, also must be considered.

Standard ANC services offered in Malawi include a complete health examination and a discussion of danger signs for pregnancy complications, an offer of iron pills or syrup, access to an ITN for sleeping, administration of an HIV test and counseling, inoculation with tetanus toxoid vaccines (TTV), and issue of a drug for intestinal parasites (albendazole) and sulfadoxine-pyrimethamine. The service providers check a client's weight and blood pressure and take blood and urine samples for testing. In the 2010 MDHS, 95% of the women had made at least two ANC visits, 91% of the sample had received iron tablets or syrup, 82% gave blood for tests for anemia and HIV, 69% received two doses of TTV, 86% took one dose of SP from an ANC

center, and 55% received two doses of SP. IPTp is but one of many services provided as part of ANC.

Chapter 3: Methods

3.1 General Questions

This study answers the following overall questions:

- How do the knowledge and experience of nurses and midwives in providing ANC services affect the way they dispense IPTp to pregnant women in ANC clinics?
- What do the personnel know about the purpose and importance of IPTp, about the Ministry of Health policy on IPTp, and what has been their experience in providing SP to pregnant women in the context of ANC services in general?
- How does the provision of various services in antenatal care affect the delivery of IPTp during visits to ANC clinics?

Interviewers used the following questions to guide the conversation with health service providers; however, they are not necessarily questions that interviewers asked directly:

- What are their main responsibilities as health care providers in the health facility?
- How long have the service providers been providing ANC services?
- Which services do they currently provide?
- Which ANC services do service providers think are the most popular with women?
- What is the purpose of testing for anemia according to service providers?
- What do clients think about taking iron pills for prevention of anemia?
- What is the current Ministry of Health policy on providing IPTp?
- What is the current policy followed by the health facility on the provision of IPTp during ANC?
- What is the purpose of providing IPTp to clients?
- What challenges have they faced in persuading women to accept a dose of SP?
- What do women themselves think of taking SP at ANC clinics?
- How do service providers respond to ANC clients who present with a fever? Those who are diagnosed with malaria?

The research design assumed that women seek out ANC clinics to obtain a medical checkup, or sometimes to obtain a mosquito net, because many studies have noted that women welcome medical examinations and want to obtain ITNs. It was unclear initially to what extent women value the other standard services offered at ANC clinics, such as a test for anemia, iron folate, IPTp, TTV, screening for pre-eclampsia, syphilis testing, and other services. The study asked service providers their opinions on what brings women in for ANC and what makes them come back for subsequent visits.

Researchers visited a number of health care facilities in Central and Northern regions that operate ANC clinics to conduct individual interviews with nurses and midwives that staff those clinics. A consultant conducted interviews, directed the transcription of recordings, and participated in the analysis and writing.

3.2 Institutional Framework

The study was designed by MEASURE Evaluation, with contributions from USAID personnel in Washington. The research activities were meant to complement the Service Provision Assessment (SPA) being conducted in Malawi by ICF International in collaboration with the Ministry of Health. A sociologist from Uganda was hired to review the protocol, conduct the interviews in Malawi, and participate in the data analysis and writing of the report. Personnel from the MOH involved in the SPA assisted the study in many ways. They set up meetings to discuss study objectives in Lilongwe; they contacted the facilities to explain study objectives; they wrote a letter of introduction about the study for presentation to the person in charge of each health care facility; and they provided one MOH person to accompany the consultant and introduce him to facility directors in his visits to the health facilities.

3.3 Sample Selection

This study selected health care facilities for data collection in the Central and Northern regions at different levels of complexity and at government and nongovernment facilities. The limited time and resources made it impossible to collect data on all three regions of the country. The eight selected facilities, four in Central region and four in Northern region, operated at different levels of complexity: two regional central hospitals, two district hospitals, and four rural hospitals. Nongovernment facilities visited are administered by CHAM. The facilities served urban and rural populations.

MEASURE Evaluation requested that the MOH identify the two regional hospitals, one district hospital in each region, and four hospitals that serve rural populations as sites for data collection. The facilities were selected by MOH personnel who were working with the SPA survey, and who selected the facilities from their list of health care facilities in Central and Northern region. CHAM facilities were included in the selection. Table 1 describes the level of complexity and type of population served by each facility, along with the training and qualifications of personnel interviewed in each facility. Several nurses did not mention any specialized training received.

Most women receive ANC services in one of these types of facilities, although some ANC services also are provided in dispensaries. At six facilities, the researcher conducted three individual interviews with personnel who provide ANC services. In two facilities, where four service providers were available, the researcher interviewed all four. This strategy yielded 26 interviews with health care personnel. All but one of the respondents was a nurse or midwife, or both; in one rural health care facility, the consultant interviewed one clinical officer in charge of ANC services. All the other ANC service providers were community health nurses, registered nurses, or midwives. The researcher interviewed a total of 20 midwives and five community health nurses. Although the majority of nurses also are midwives, in this report we usually refer to them simply as “nurses.”

It should be noted that three of the six community health nurses interviewed worked in one district hospital that serves a rural population. A few of the midwives were in their first or second year of service, while others had been working in that capacity for 20 years or more.

Table 1: Type of health care facility and qualifications of respondents interviewed

Type of Facility	Type of Respondent	Qualifications
Regional Central Hospital Urban	Enrolled nurse and community nurse-midwife	ART, PMTCT, STI, IDSR, trauma for patients involved in car accidents
	Nurse and midwife technician	ART initiation, IPTp, Option B+
	Nurse and midwife	Care counseling, in-service on SP, infant feeding, nurses as managers, PMTCT
Government Hospital Rural	Clinical officer	IPTp
	Community nurse and midwife	ART, CBMAM, focused ANC, IMCI, infection prevention, malaria case management, PMTCT, pneumonia case management
	Nurse midwife technician	ART
CHAM Hospital Rural	Registered nurse and midwife	ART
	Nurse and midwife	
	Community nurse and midwife	focused ANC, SP
Government Hospital Rural	Community health nurse	Family planning, infection prevention, supportive supervision
	Community health nurse	FANC, HIV/AIDS counseling and testing, PMCT
	Community Health Nurse	ART, HIV/AIDS counseling and testing
CHAM Hospital Rural	Community nurse technician	ARV, counseling, family planning, focused ANC, PMTCT, SP, tuberculosis management
	Senior community health nurse	
	Nurse midwife	ART
Regional Central Hospital Urban	Nurse midwife technician	Family planning, focused ANC, infection prevention reproductive health, VIA
	Nurse midwife technician	
	Nurse and midwife technician	
	Nurse midwife technician	Focused ANC, PMTCT, STI, VIA
Government Hospital Semi-urban	Enrolled community nurse and midwife	
	Community nurse and midwife	
	Community health nurse	ARI, ART, CMAM, community mobilization, ETAT, focused ANC, integrated community-based maternal and neonatal health, PMTCT
Government Hospital Rural	Enrolled midwife technician	
	Nurse midwife technician	Focused ANC, intensive training in HTC, PMTCT, safe motherhood
	Nurse midwife technician	
	Nurse midwife technician	IMCI, integrated ART, PMTCT, youth-friendly services
NOTE: ANC = antenatal care; ARI = acute respiratory infection ; ART = antiretroviral therapy; ARV = antiretroviral; CBMAM = community based management in acute malnutrition; CMAM = community management of acute malnutrition; ETAT = emergency triage assessment treatment; FANC = focused antenatal care; HTC = HIV testing and counseling; IDSR = integrated disease surveillance and response; IMCI = integrated management of childhood illnesses; IPTp = intermittent preventive treatment in pregnancy; PMTCT = prevention of mother-to-child transmission; PMTCT = prevention of mother-to-child transmission; SP = sulfadoxine-pyrimethamine; STI = sexually transmitted infection.		

3.4 Conversation Guide

The interviews were structured by a conversation guide that mentioned various themes in an open-ended manner (see the Appendix). Following is a list of themes mentioned in the guide:

- Current work and responsibilities of respondent
- ANC services currently offered by health care facility
- Women's opinions on ANC services provided
- Knowledge of giving iron and folate for prevention and treatment of anemia
- Perceptions of women's understanding of the purpose of iron folate for prevention and treatment of anemia
- Provision of counseling and testing for HIV
- Their own knowledge of MOH policy on the administration of IPTp
- Advice and counseling they provide to clients on IPTp
- Perceptions of women's understanding of the purpose of taking IPTp

3.5 Data Collection

The fieldwork, conducted in Malawi between July 15 and August 15, 2013, was carried out by the consultant. On arrival in Lilongwe, he met with representatives from the Ministry of Health who directed the SPA because this study was a complement to the SPA. The meetings were to review study objectives, elicit advice on how to proceed, and plan the logistics of contacts with the health facilities involved. Members of the USAID Mission health team in Lilongwe were briefed earlier about the schedule and study objectives. The consultant also met with the head of the Monitoring and Evaluation Unit for the MOH. The Ministry of Health personnel suggested that a person from the Ministry accompany the consultant in his visits to health facilities. Someone was soon designated to fulfill that role.

The conversation guide, tested in a Lilongwe hospital before data collection began, was revised to reduce duplication and streamline the logical flow of topics covered. The consultant conducted three or four interviews, in English, in one day at each facility. The conversations lasted from 30 to 45 minutes each, depending on the eagerness of the respondent to speak about her work and her clients. The conversations were recorded, with permission of respondents (two declined). The conversations were transcribed soon after completion of the field work, and then typed in Microsoft Word. The texts and notes from the recordings were grouped around the relevant themes (content analysis). The consultant who conducted the interviews submitted a complete set of transcripts of the interviews to ICF International.

Chapter 4: Findings

4.1 Delivery of Antenatal Care in Malawi

4.1.1 Nature of Antenatal Care Services

This chapter presents the findings of the study in two sections: (1) a section on the delivery of ANC overall, and (2) a section on the provision of IPTp services by nurses and midwives. The services normally available during ANC include screening for anemia; distribution of iron supplements, a drug for intestinal parasites, and sulfadoxine-pyrimethamine (SP); inoculation with TTV; counseling on the signs of pregnancy complications; and administering PMTCT services.

These ANC services primarily are preventive. Also included are the recording of blood pressure and weight of the woman, and the taking of urine and blood samples for testing. The PMTCT services include HIV testing services and counseling, provision of ARVs to mothers who are HIV positive, and giving women nevirapine to give the baby during delivery. Women who are HIV positive are not given SP. Rather, if they accept the HIV diagnosis and treatment, they are enrolled in the antiretroviral therapy (ART) program.

Services also include a holistic assessment of the mother's health conditions and treatment of any symptom or disease identified. Nurses call this approach "head to toe," a way to describe the process of examining the entire body to search for signs of illness that need to be addressed. Nurses noted that mothers value this examination more than the health talks. Nurses use this examination to identify women who are at higher risk for health problems in their pregnancy.

The nurses and midwives interviewed spoke easily about the numerous services provided under ANC. They described educational talks that relate to guidance and counseling to explain how women can look after themselves for nutrition and other issues that promote the safety and good health of child and mother. These educational activities are conducted during health talks to groups and in individual conversations. Each day begins with a health talk, when mothers assemble in one room before the other services begin. Later, individual counseling is tied to individual needs of mothers and covers aspects like how to disclose HIV test results or how to manage disease conditions that affects the mother and fetus.

4.1.2 Organization of Antenatal Care Services

The health facilities visited were well demarcated into separate departments, with ANC as a distinct service with specified rooms and facilities. The amount of space and equipment made available varied according to the level of the health facility. The central hospitals had relatively more space than the peripheral health facilities (rural and district hospitals). Paradoxically, while the central hospitals of Central and Northern regions have more space, they receive fewer women coming for ANC than the smaller hospitals. Central hospitals demand cost sharing for mothers who visit them without a referral. That is, mothers who come for services without being referred by another facility must pay fees, while mothers with a referral pay no fees. This additional cost reduces the number of women who attend ANC in a central hospital. At the same

time, nurses in peripheral health facilities expressed the need for additional space, more privacy for patients, and additional equipment, such as hemoglobin assessment machines.

It is also important to note that the rural hospitals had less space and far fewer materials for services than the urban hospitals. This meant that these facilities suffered more from understaffing and a lack of equipment. In rural facilities, it was more common to experience shortages of ANC materials and equipment than in urban hospitals.

Although most ANC services are provided in the space designated for those services, ANC remains linked to other the facility services. ANC relates closely to other departments, depending on the level of the health facility. In central hospitals, ANC is linked to the gynecology clinic, the outpatient division, HIV/AIDS, family planning, and immunization for tetanus. Women who attend ANC and show complications, such as anemia, high blood pressure, edema in the legs, fever or malaria, or signs of sexually transmitted infections (STI), are referred to other units for expert management and treatment. The women are sent to the lab for tests and to clinicians for management of diseases and further assessment. Other services related to ANC include family planning, TTV, and screening for cancer of the cervix. From ANC, women also can access services for other gynecological problems, such as assessment and management of fibroids and STIs.

A number of the nurses spoke of the positive contribution that health education provides in helping women understand their services. They stated and seemed to believe that health education and counseling greatly influence the knowledge and actions of mothers. One nurse made the following statements:

Interviewer: *So let us talk about the women themselves, what services do they find useful? What services do they really like?*

Response: *The health education which we offer to them they really like it.*

Interviewer: *How do you tell that they like it?*

Response: *They do give us the feedback. They even tell you today was not for their appointment but they came to listen to the health talks, I have just come here for the lesson. Then there you could tell this person likes it.*

Several of the nurses' descriptions of health talks also revealed the challenge they face in getting men to accompany their wives. The following two quotes demonstrate this point:

Interviewer: *Tell me more a little bit more on what you do in this place in relation to ANC.*

Response: *In relation to antenatal clinic. Normally when we go there we do health education to the ladies, to the women.*

Interviewer: *Not to the men?*

Response: *Of course, this male involvement, yes.*

Interviewer: *So if the men come, are they mixed with the women as they listen to the health talk?*

Response: *Yes, they are mixed.*

Interviewer: *Are they many?*

Response: *No.*

Interviewer: About how many in a talk, from your experience?

Response: Mainly these men come on Monday. We encourage them to come on Mondays because on Monday it is booking day. We are first initial examination of a pregnant mother. Where a lot of things are involved like the PMTCT testing and we plan for their deliveries. We normally advise these women to come with their men on Mondays so that they should hear or listen together. And we should plan together about pregnancy.

Interviewer: So can you elaborate more on what you do with women who have come for ANC?

Response: When women come here, most of them, especially early in the morning, we encourage them to bring their spouses so that we give them health education. When they come early in the morning, first of all we give them health education after giving.....

Interviewer: Excuse me a little, why do you want them to come with spouses?

Response: You know this time this PMTCT, you understand PMTCT?

Interviewer: Yes I do

Response: When they opt in we would prefer them to be tested with their spouses. So that as the results come out they should all know and we can counsel them properly on how to take care of the baby and her.

Interviewer: So how could this help?

Response: It will help because sometimes at first we did not involve men. Most of the marriages were breaking because men did not accept my wife has been found positive. So they would always say you are the one who has brought this disease in the house because the man has never been tested positive, it was a problem women were coming here crying. So we said we should involve men too. So we said we should involve men too. So anyway it is a challenge because most of the women they do not bring their spouses. But anyway when they come, those who have opted in with their husband, we test them together. They are given the right information and they have been counseled properly.

A few nurses reported that some women complain about the long time taken for the morning health talks and say that they would like to begin the services. This was one issue on which the nurses voiced differing opinions: some seemed convinced that women welcome health talks and profit from them, while others thought women would prefer to initiate services without the health talks.

The testing, counseling, and treatment (HTC) related to HIV/AIDS dominate services in time and material resources required. Every woman who comes for ANC services for the first time is asked about her HIV status; if she has not been tested in the past three months, she is asked to give blood for an HIV test. The nurses do the testing and counseling before a woman receives any other service. Women who are found negative are counseled about how to protect themselves against HIV infection, and they then continue with the other ANC services available. Women who are found positive are immediately invited to enroll in ARVs. When a woman is HIV positive, the tendency is to focus on convincing her to accept enrollment immediately in the ART program (Option B+). In the meantime, treatment for other health problems she may have are suspended or ignored and tests, such as for syphilis and cervical cancer, receive less

attention. If the process is smooth, HTC is naturally followed by the holistic examination from head to toe, as mentioned earlier, which takes place after HIV testing.

The following quote captures the initial ANC process:

So many things are involved in ANC. First of all, when the woman comes in for her initial visit, we give her a new health passport book, and we register her. We ask the questions which are in the health passport book, and she answers. After that, we ask her about her HIV status. If she says she has not tested for three months or more, we counsel the client. I make sure that I counsel the client until she says I am willing to be tested. Then we test for HIV; that is, PMTCT and also syphilis testing.

—Midwife in a central hospital

4.1.3 Material Conditions of Service Delivery

Most of the health facilities visited appeared clean from casual observation, with fairly good sanitation systems. Observations showed that all the departments had toilets with hand washing sinks and running water. The nurses interviewed noted that mothers greatly appreciate a clean environment where they do not worry about contracting other diseases due to poor hygiene. Personnel employed to clean in these hospitals are well motivated. According to the nurses interviewed, cleaning personnel undergo serious training on how to clean health facilities. Hospital management ensures that cleaning detergents are available in sufficient amounts. The nurses also help ensure proper hygiene.

One of the first things nurses do as they reach the facility is to clean the premises, as captured in this quote:

There is support of supplies for cleaning and also all the support staff has gone for training. We go to train how to clean our work places, especially initial trainings. Whenever there are refresher trainings, they go to those trainings. They receive an incentive to go, and they work hard because of that.

But first of all we have to do some cleaning, that is, dusting. We nurses do the dusting while our support staff will do mopping and cleaning the floor.

—The In-Charge of a district hospital

ANC rooms are well painted and have enough seats for mothers waiting for service. The waiting rooms also serve as health education venues and are decorated with health education materials on various topics related to ANC.

4.1.4 Personnel Who Deliver Antenatal Care

The nurses, midwives, and clinical officers in these hospitals have been trained to serve in any department in the health facility, including ANC. Most of the nurses who were seeing women who had come for ANC also were providing other services to patients in other units. This kind of arrangement increases the workload for nurses seeing pregnant women. Challenges of understaffing were mentioned consistently throughout the interviews. Clinical officers are highly valued in the ANC business. They are always referred to in case of complications, except in the

central hospitals, where medical doctors are seldom seen. Some of the community hospitals that serve rural populations are headed by clinical officers. Apart from central hospitals, the other hospitals were managed and served mainly by clinical officers and nurses.

After basic training in nursing, nurses specialize in midwifery; later, some go for upgrading to become community health nurses who specialize mainly in offering both preventive and curative services at the community level. The community component is taken seriously by the Ministry of Health; many nurses have undergone community nurses training, and those who have not, want to do so. The nurses expressed concerns that training opportunities in community nursing are limited.

Besides this general training, some nurses interviewed also had attended additional training on cross-cutting issues, such as focused antenatal care, PMCTC, integrated management of childhood illnesses, STIs, and ART. A few had done courses in family planning and cervical cancer screening. Generally, most of the ANC units, except for the central hospitals, had a shortage of nurses. The nurses working in rural government hospitals and CHAM facilities have received less specialized training.

4.1.5 Knowledge of Antenatal Care Services of Nurses and Midwives

Except for a few areas, the nurses interviewed were knowledgeable about important aspects of ANC services. They ably and confidently explained what they do, why they do it, and the benefits that accrue to delivering that service. Focused antenatal care is one of the areas they emphasized. The nurses know and strongly believe that women who come for ANC should be assessed holistically. The head-to-toe examination enables nurses to identify danger signs and deformities that may endanger the mother and fetus. Nurses use this procedure to identify what they referred to as “high-risk mothers” who require specialized care.

A midwife from a rural government facility described the head to toe examination:

Interviewer: *Have you heard about this thing, from head to toe examination?*

Response: *Yes, of course. We can say assessment from head to toe. We do the head to toe assessment.*

Interviewer: *Do you like it?*

Response: *Yes I like it*

Interviewer: *Why?*

Response: *Because when you do a head to toe examination, it is like you have assessed the whole person, and it is where you find the problems and you address them. Like when you are doing a head to toe examination you can see if the woman is healthy; if the woman is anemic, then you address those issues. Or like how big is the fetus in relation to the weeks that the mother is saying. Sometimes maybe the mother is saying the fetus is 5 months old, but when assessing the woman you see that in relation to the weeks that the mother is saying, maybe the fundus is smaller. So you know where to advise, like on nutrition. I think that is the advantage of doing the head to toe assessment, because you rule out problems.*

A nurse from an urban hospital described part of her head to toe examination in this way:

Interviewer: *What do you do with the eyes?*

Response: *We check on hemoglobin, if she is having enough hemoglobin (because it can indicate dizzy spells) on the conjunctiva if it looks white or slight pink. When it is red we know she has enough blood. Then from the ears, if she has got any abnormalities like some they do. So they cannot know whether they have a problem but through examination we can detect the problems. From there we come to the abdomen. We inspect scars. How the abdomen looks.*

Interviewer: *And what is the key issue there on the abdomen?*

Response: *If she has a scar, we ask her when she got that scar. A check of the abdomen can indicate whether she is bearing twins or else the lie of the baby, whether it is transverse or if it is aspheric vertex.*

Interviewer: *So you check the positioning, whether they are two babies?*

Response: *Yes, we do. The same, even the lie of the baby. The fetal heart presentation.*

Interviewer: *Tell us, you continue.*

Response: *We continue down to see whether she has got edema of the feet. If she has got those problems, we refer her.*

The nurses noted that high-risk mothers include women under 18, shorter women, women who have had an operation, and physically handicapped women. All the nurses interviewed knew well what to examine on different parts of the body and the action to take if problems are identified. For problems beyond the nurses' capacity, they refer to clinicians or doctors in the facility. Two nurses also reported that very young women in their first pregnancy may be uncomfortable during the head to toe examination because they feel shy about being examined.

Most of the nurses mentioned the importance of giving iron pills to prevent anemia, but they cannot be sure if the women actually take the pills. A nurse from a semi-urban facility explained it this way:

Interviewer: *Ok, what about iron sulfate?*

Response: *We give iron, and since there is no rule which says that they should take iron in our presence, we just give them the pills. The assumption is that they take them at home. But if there is a chance you say I am giving you these iron tablets, can you tell me how you deal with them at home? Some people say they make me to constipate if I take them, I lose appetite, I feel my stomach is full. Others say they make them to have nausea. But for us, in terms of taking them, there is no refusal, they always take, but the challenge is, do they take as we tell them to take?*

Interviewer: *Do they actually take?*

Response: *That is the challenge; we do not know.*

The nurses expressed concerns about a lack of clear and sufficient information on periodic policy changes announced by the Ministry of Health from time to time. The nurses appeared eager to follow Ministry policy; however, although some guidelines were said to be available, the nurses who work in ANC were not following them. Some said they know that guidelines exist, but have never seen them. Most of the nurses referred to posters on the walls as guidelines; however, the posters are not detailed enough to truly guide actions. Some health workers had extracted

information, which they had typed and printed out and hung on the walls in the examination rooms for reference.

Most health workers had not been trained specifically on providing SP and PMTCT along with Option B+. Nurses regard these technical areas as new, and they feel they needed additional training to provide them properly. A midwife from a district hospital explained Option B+ this way:

Interviewer: *What is the B+ option?*

Response: *This is the new policy from the Ministry that every pregnant woman and lactating ones, as soon as they test positive, they should start B+ option. It is to help the mother to have a healthy life. Also to help the new born baby not to get the HIV infection, which the baby can get from the mother, in the antenatal period, then delivery and general breast feeding. And we also give the nevirapine syrup to the baby. And continue educating the mother on hospital delivery. And on the six food groups.*

The nurses spoke with enthusiasm about their work. They want to improve the conditions of mothers and help them achieve a safe delivery. The nurses sympathize with mothers who express doubts about taking medication, but at the same time, they need to encourage them to comply with taking the medication. For example, they know the SP tablets are bitter, large, and difficult to swallow. Some nurses confessed to having difficulty in swallowing these medicines when they were pregnant. Nevertheless, they need to observe the women swallow the medicines because they are not sure the women will do so in their absence. They do not force the mothers to take medicines, but rather they use persuasion and counseling.

4.1.6 Work Performance and Responsibilities

Although nurses encounter challenges, they are committed to providing most of the basic ANC services in the policy framework they know. They wanted to demonstrate that they are doing well with most procedures. Following is a list of some of the key policy areas the nurses highlighted:

- HTC
- PMTCT and provision of medicines, such as ART, including option B+
- Provision of deworming medicines (albendazole) and iron supplements of ferrous sulfate
- Provision of SP, if a woman tests HIV negative
- Use of directly observed therapy with provision of SP to ensure compliance
- Focused ANC services
- Examination of women from head to toe

Although nurses can provide almost any service in the health facility, nurses who work in ANC usually follow a routine. All the health facilities provide services Monday to Friday, and generally run from 8 a.m. to 5 p.m. Weekends are reserved for rest unless an emergency arises. Not all services are offered every day. For example, in many ANC clinics, Monday or Tuesday is reserved for pregnant women to come to ANC for the first time in that pregnancy. Other days of the week, or at least two days, are reserved for women coming for a second or third or fourth visit.

Nurses reported the earlier mentioned routine activities, plus cleaning the premises, giving health talks in the morning, and working elsewhere in the facility as needed. Most nurses saw many mothers on most days. On busy days, some nurses see more than 30 mothers in a day, which involves engaging in a series of interrelated activities, as described in the text box.

A daily routine for a community health nurse in a district hospital

She reports to work at 8 a.m. and starts by cleaning the premises. Mothers start assembling, and she gives them a health talk. After that, she provides tetanus immunizations. This is followed by some blood grouping and matching for first-time patients. She also assists in carrying out other tests, such as urine and sugar levels. If reagents and test kits are available, she assists in drawing blood to test for HIV status of mothers. After testing the mother, the nurse performs a physical examination. Physical observation includes checking for all possible abnormalities, such as anemia, breast cancer, edema of the legs, signs of enlargement of the spleen and liver, the position of the fetus, presentation of the fetus, and the heart.

All this is done if the woman is sero negative for HIV. If the woman tests sero positive, then the nurse first offers Option B+ medicines and tries to persuade the woman to enroll in ART (Option B+). If the mother does not accept the results, then the nurse offers additional counseling to try to persuade her to accept the results.

It is important to note that nurses try to follow Ministry of Health policy, as they were taught in nursing school and other cross-cutting courses they have had on the job. The commitment of nurses to service delivery is clear; however, they experience the challenges of a heavy workload and a shortage of basic equipment, and they need to rely on other units in the facility for equipment. The weight of the workload can compromise the nurses' efforts to provide quality time for counseling. Nurses in all facilities expressed concern about staff shortages, and they spoke of being exhausted, as the following quote shows:

What should be done? As a facility, our main challenge is human resources. You find that there is only one nurse in antenatal ward working Monday to Friday for 30 days. At least two or three would be better because the same nurse will be doing family planning, the same nurse is doing examination of the women...

Nurses reported that they will not take a break or have lunch unless they have finished the number of women in the queue. Despite the specialized training they might have attained up to midwifery, the arrangement is that any nurse will work in any department, despite training, as typified by this quote:

Because I am a community health nurse, I am supposed to work in the community, but in my job description I am supposed to work anywhere. I can go to male ward, I can go to female ward. I can go to labor ward to conduct deliveries.

This arrangement exhausts them. The moment they are free they are called to go and serve in another department. Despite the heavy workload, they still report that they love their work. For example, a number of nurses spoke positively about doing the head to toe examination, but the examination takes time:

Interviewer: *If you are doing head to toe assessment, how many women will you be able to see in a day?*

Response: *In a day, it depends on how first you do it.*

Interviewer: No, tell me in your experience.

Response: In my experience, like the full head to toe examination, like you are doing to each and every woman, a day, maybe in a day you can manage maybe 10.

One of the midwives at a central hospital explained how nurses proceed:

Mainly we attend to antenatal mothers in ANC. When mothers come, we do antenatal care, Monday to Friday every day. They come and we welcome them. We ask them, what have you come for? They respond. If it is a new case, then we start with PMTCT the first thing. And we tell them to go and pay. We explain everything, that here they pay. If they accept, they go and pay. After paying they come and we start chatting with them on PMTCT.

The payment refers to the fact that at the central hospital, if they are not referred from another facility, they are required to pay 900 Kwacha or more, or about \$2.50 USD, which is not an insignificant amount. One nongovernment hospital charges women who come from beyond the catchment areas of the hospital. They say it is a government regulation that people should use the facilities in their communities. Nurses noted that women that come to use the facilities have particular reasons for the preference of these facilities, and not all of them can afford the charges.

The interviewer also asked the midwives and nurses about the system they use for reporting care provided. Here is one example from an urban hospital:

Interviewer: Let me go to something else. Do you keep records?

Response: Records of...

Interviewer: Of different things that you do in these services.

Response: Records, we do keep records, yes. Because we have got registers, every end of month we write reports, which goes to the district hospital. And I think thereby it goes to Ministry of Health.

Interviewer: Then reports sent to the district hospital, you said.

Response: Yes, we send to the district hospital. Of course, the other one remains here because we normally have two copies, one that goes to the district hospital, another one is here.

Interviewer: What about ANC?

Response: Report for antenatal clinic? I think we have one. A report focuses on a lot of things. It focuses on HIV/AIDS. It focuses on the number of women that have been registered in that month. It focuses on the number of women that tested HIV positive for that month. It focuses on Fansidar [SP], ferrous sulfate, albendazole. Of course, I also forgot about TTV. We give TTV at the antenatal clinic.

The discussion with the nurses revealed four important issues that could undermine their effectiveness in service delivery. (1) A lack of sufficient information and training on new developments in MOH policy and procedures undermines service delivery. A number of nurses reported that they simply are not well informed when policies change, and that troubles them. (2) A lack of useful, relevant equipment in the antenatal care unit restricts the head to toe

examination. Sometimes nurses do not have an instrument to monitor blood pressure in the unit, so they need to borrow one from another department. Nurses reported they cannot always test for anemia using dried blood spots because of a lack of instruments or reagents. (3) HIV/AIDS counseling and testing and the requirement for subsequent enrollment of the woman in ART if she is found positive challenges nurses. They reported concern that some women do not readily accept their test results, especially if they have not tested along with their spouse. Women can deny they are positive. It is also common for women to refuse to be enrolled on ARVs. This refusal becomes a barrier to delivery of other ANC services. (4) Cost sharing, if a woman is not referred from another facility, discourages some women. In both the central hospitals, the assumption was that women who come to the facility must be referred from lower-level facilities to be served without paying; otherwise, they pay fees for the services.

4.1.7 Views of Nurses and Mothers on Antenatal Care Services

The nurses recognize that some of the women coming for ANC live in somewhat difficult conditions and circumstances. For example, they recognize that some of the women come from distant areas, and they try to serve them as quickly as possible. In CHAM health facilities, mothers receive refreshments while they were waiting and sometimes food stuffs to take home. Nurses recognize the fact that mothers are hungry and thirsty after their journey to arrive at the facility.

The nurses also discussed challenges some women face in accessing antenatal care services that derive from their socio-economic context. The nurses noted that if a woman is too young, or if she comes from a polygynous marriage, or if a husband is not supportive of her attending ANC, then she faces particular obstacles in attending ANC clinics. For example, young women in polygynous marriages do not come in company of their husbands and have particular difficulties in disclosing their sero-status. One nurse reported such a situation:

Especially here. The young girls like when they see a rich man, not that much rich, like they have just gone to the bank and they have a little money, like 50,000, they see it is a lot of money. So when they have got a bicycle or something they see that as a rich person. When they give them 1000k, oh if I marry this one, then I will be in a better place. I would have a better life. I will marry that one. We have a lot of girls like that. There is one who just delivered yesterday, about 15 years old, and she is in a polygamous marriage. She is a third wife, you see. I remember, we also had at this point a 16 year old girl. She comes and she is HIV positive. She was a third wife, but the husband and the other wives did not know she was taking ART. She was on ART they did not know. Ask why, she said she is afraid that her husband will chase her away, saying that she brought the virus into the family. But when we asked the co-wife, who came with her, she was also on drugs but....

Nurses were asked what they thought were the services women value the most. Nurses said, in general, mothers want to spend more private time with the nurses so they can explain their problems and also get feedback about the condition of the baby. Nurses reported that mothers often come to thank the nurses when good services are provided. On the other hand, if the services were poor, women go away grumbling.

Nurses reported that the following services are valued highly by the women who come to the ANC clinics:

- Examination from head to toe by nurses
- Feedback about the condition of the fetus
- Quick and courteous service
- Distribution of one or two ITNs

Some nurses noted that women want to know in advance what will happen during delivery. They want an explanation from the experts about the impending labor because they are afraid, as captured in the following quote:

What women want is a friendly atmosphere. The first thing I notice, they are always afraid of labor, most of them always want to be told about how labor happens. I do not know how I can explain this. At antenatal care they always want to know what will happen at labor. They always want to talk about what they need in labor. And they want to be assured of good service in delivery in the labor ward. Those are the things they want. Otherwise if they know that the labor ward is not friendly, they will just run away to other clinics, to other facilities.

—Nurse in a rural hospital

Nurses said other services women highly appreciate include provision of mosquito nets, which are provided during their first ANC visit and then again close to delivery.

One urban hospital nurse said that women value all the services provided:

Interviewer: *Now let us go to the women. Which services do they like most?*

Response: *You mean antenatal mothers?*

Interviewer: *Yes*

Response: *I think they like all the services because anyway, we do not divide the services.*

Interviewer: *You could see actually that on this service everybody is trying to push.*

Response: *(Laughs) They know it is beneficial to them. So I do not think they can ignore one from the health education they benefit something. We weigh them, we do blood pressure, we examine them, when you do not touch them, they feel neglected. We have to know whether she has just come with a complaint they feel like being touched.*

Interviewer: *You know you touch them with soft hands, anything else?*

Response: *Touching them is very important, weighing them is very important, and blood pressure, checking their BP, and routine checking of urine.*

Nurses were asked to report on some of the practices that women who attend ANC do not like. In general, women do not want information about their HIV status to be shared with other people in the hospital; and therefore, most of them do not like being referred for care or treatment to other units where they are likely to wait in a long queue, and where they take the risk of inadvertent disclosures of their HIV status. Nurses reported that in ANC clinics, women are respected and

treated with care and courtesy. This may not be the case in the departments to which they are referred. They would much prefer to continue with the same people who saw them initially and know their situation. For the same reasons, there were constant reports that some of the HIV positive women remove pages in their health passport where the information on the HIV status is written.

A midwife summarized how women feel about the health passports:

They are not comfortable with the health passport because mainly of their status, HIV status. Since we write the health status in the health passports, other women are clever enough to realize that when it is written like this it means HIV positive. So they are afraid that maybe their friends or their relatives when they see the health passports they can tell this one is positive or not. So I think that is mainly where I feel other women do not like the health passports.

A nurse from a rural hospital had this to say about women and their health passports:

Health passport, especially to those who are HIV positive, they used to keep two or three books for one person. So we find this is a challenge because some know that they are already positive, but they do not bring that book here to start antenatal. And so when they go for testing, that is, when they say I have got another book. To those who are a little bit literate, they will say this is the book; I am already HIV positive. The others do not show that they are positive. We just retest them. So we tell them they are positives and they say I forgot the first book at home. They are usually carrying two or three books.

A number of the nurses explained that women who test positive for HIV will simply tear out the page where their status is indicated, not realizing that the nurses know exactly what they have done. Others purchase a second or third passport from vendors at the hospital and fill it out without the indication that they are HIV positive.

While little variation in the accounts of nurses was found on most topics, nurses did not agree on the usefulness of the health education talks that begin the day in each of the facilities visited. A nurse from a nongovernment hospital described what they do in this manner:

Interviewer: *You said that it easy and sometimes difficult, but you began with the difficult part. What is the easy one?*

Response: *Most of them they understand when we try to explain.*

Interviewer: *When you explain?*

Response: *They understand. Because it is not only that we explain when we are going to get the dose and we use it as a topic in general health talk before we start examinations, so they understand it.*

Interviewer: *So who gives the general health talks?*

Response: *Ourselves.*

Interviewer: *How do you find the talks?*

Response: *How do I find the talk? The talk begins like a malaria talk; you say, 'we are going to talk about malaria.' Then we start with malaria, general signs of*

malaria, what do you do. What are symptoms? What are you given when you come and found with malaria? Then they say if you come when you are not pregnant they give you quinine or AL Then after that how can we prevent malaria? So in that topic how can you prevent malaria is when we introduce that component of SP.

Interviewer: *Are there other ways you advise them to protect themselves from malaria?*

Response: *Yes.*

Interviewer: *Like?*

Response: *The use of mosquito treated nets.*

Interviewer: *Use of bed nets?*

Response: *Yes, use of bed nets (and) that they should not keep long grass around their homes because they are a breeding place for mosquitoes. They should not have water, stagnant water, the water that is not moving, and they should not keep their rooms dark because mosquitoes like breeding in dark places. They should open the windows, but when the sun goes down they should remember to close the windows so that the mosquitoes will not enter bite them. And another way is they should wear long-sleeved clothes when it is getting dark.*

Interviewer: *What do you find interesting in this whole arrangement of teaching people about SP?*

Response: *What I find interesting is that most of the people already know. They already have the information about malaria, and when you teach them you get more information from them. So it is easy they understand. But one thing about the use of bed nets. Most of them, I do not think they use it because if you move around their homes you find most of them they have used it as a mat not to sleep on them but using to.....*

Interviewer: *Shut the windows?*

Response: *To shut the windows, to prevent goats from entering their gardens. They use it as a fish net. And others use to cover ground nuts when they spread it in the sun.*

This long quote shows that while the nurse was convinced that mothers follow the health talks well, that mothers understand the dangers posed by malaria, and that the nurses even learn from the women in the process of giving health talks, the nurses do not think that the women follow instructions on the use of ITNs.

The nurses said they did not want to keep the women waiting for long hours; however, when the women are referred to other units, they must join long queues again, and so they are forced to remain longer. Some nurses said they tried to influence the services in other departments to ensure that the women referred reach the right places of referral. In case of HIV services, some women who are already traumatized may decide to leave the facilities without attaining the service provided in other departments. No information is available on actual waiting times or the frequency of women leaving because they found they were not served quickly enough.

The concerns of women related to ANC services focus mainly on taking SP and around a possible positive diagnosis for HIV. Women sometimes hesitate to take the three bitter pills because they are used to taking drugs with food, and the ANC clinics do not offer food with the

medications. Sometimes women object to taking SP because they are not sick, and they question why they should take the pills. The nurses are accustomed to hearing these objections and counseling women to take the drugs anyway.

As reported by the nurses, pregnant women express several concerns about testing positive for HIV. First, they often are nervous about informing their husbands of their status, and the nurses try to reassure them and suggest ways to approach husbands to discuss their situation.

One of the midwives described the situation in this manner:

They do accept (drugs), but because it is an issue of sharing with the husband, for most of them it becomes difficult if they have come without the husband. They say: 'I am afraid to tell my husband'. But as for those who come with their husband, it is not difficult because you test them all together, you give the results to them together. I am saying this because we have met such cases. A mother says, maybe we will not give the drugs to the mother for fear just because the husband is not aware. The main problem is that they feel if they will disclose to a husband, that husband will think it is her who has come with that problem.

The women do not like to be referred to other units of the hospital for care or drugs because of the long queues. Also, the women do not easily accept taking ARVs as soon as they test positive for HIV. They worry about having to take drugs every day. Nurses feel strongly that community sensitization and mobilization of male involvement in ANC would minimize these challenges. Community mobilization would enable follow up of mothers to ensure that they complete the required ANC visits.

4.1.8 Government versus Nongovernment Health Care Facilities

Although this study sample is small, the study design team suspected a few differences would be found in the way that ANC services are offered between public and CHAM facilities. In fact, no systematic differences were found in the ways nurses provide antenatal care in nongovernment facilities and public facilities. The level of understanding and thoughts and experiences shared about the different elements of ANC were similar. The consultant observed a few variations in the resources available for different services. One domain of activity that showed some difference was the outreach services to local populations. One CHAM hospital was being assisted by an American university foundation to support PMTCT services. The assistance included counseling and testing and funds to employ staff. The university foundation arranged for follow-up services for mothers in their homes. In another nongovernment hospital, a private donor had purchased a vehicle for use to promote ANC services locally, and outreach ANC services were not a challenge in that facility. In the same hospital, pregnant women are given snacks before they receive SP, and they are sent home with groundnuts.

On the other hand, most nurses in the public health facilities struggle to find funds to conduct outreach services to promote antenatal care services. They lack the time, personnel, and means of transportation for effective outreach services. One community health nurse summarized the situation in the following quote:

We can say at the moment things are not going well just because we are lacking transport to going to the community. But when transport is there, things do go on well because we usually help mothers who are living far. And at the moment, we are only conducting hard to reach areas. It is where we are managing to go with outside support.

Later, the same nurse talked about following women in the PMTCT phase:

And also another challenge is we also are having a challenge of follow up. How to follow up these different mothers. We are having a challenge finding a means of transport to follow these others. We are interested and we are willing to follow these mothers, but we cannot afford the means of transport (needed) when they have said “I will start the drugs later; I need some time to discuss with my husband.” Now to follow her is a challenge.

Nurses expressed concern that ANC is not under one roof in the CHAM health facilities. Mothers must move to different units to access services. For example, the nurse who talks to mothers in the general health talk is not the same nurse who counsels mothers for HIV/AIDS services. The lab and the family planning services are in different units. Nurses expressed concern that the services are scattered, so women need to walk from service to service.

Overall, differences observed were related to access to resources to attract clients, not in the overall approach to provide ANC services. This finding suggests that the CHAM hospitals and health centers follow government guidelines to provide services.

4.2 Delivery of Intermittent Preventive Treatment in Pregnancy in Antenatal Care

Studies on factors that affect the coverage of IPTp in Sub Saharan African countries indicate that the provision of IPTp depends more on the dynamics of service delivery than on differential access to ANC (Florey 2013). This section considers the views of nurses and midwives who provide SP in ANC clinics and how they perceive the process and rationale for giving SP to pregnant women.

4.2.1 The Context of Providing IPTp in ANC

IPTp services are one set of services among many others in ANC clinics in Malawi, but the main moment for providing numerous services comes on the initial visit. On that visit, a woman is tested for HIV and receives counseling; she receives a tetanus toxoid inoculation; she usually receives iron supplements and albendazole; her height and weight are checked; and her blood and urine are collected for various tests. Women also undergo a head-to-toe examination to check for symptoms of illness or pregnancy complications. In addition, if the woman has reached the stage in her pregnancy when she qualifies, she is given a dose of sulfadoxine-pyrimethamine.

Because of the numerous actions that take place during the first ANC visit, many hospitals designate at least one day a week for first-time visits for a pregnancy. The first action taken on a first visit is to ascertain the woman’s HIV status and provide the requisite counseling. That is followed by the other services on the list above or, if the woman tests HIV positive, by more

counseling and a referral to enroll in the ART program (Option B+). Women who are HIV positive are not given SP; rather, they are given Coartem (artemether and lumefantrine).

IPTp is considered an important service for women who attend ANC, and the nurses interviewed ranked it after PMTCT in importance. They mentioned HTC first most often and IPTp services second. Nurses said they spend more time on PMTCT because of the intricacies involved, such as the women accepting testing and receiving results, and then accepting medication if they are found positive. Nurses spend much time counseling mothers who are in denial. When asked about what they do in ANC, many nurses mentioned HIV-related activities more than others.

Interviewer: *Tell me what you exactly do in the antenatal service.*

Response: *In antenatal service, what we normally do in ANC services includes booking of clients, screening, HIV testing, pre- and post-counseling on HIV, and provision of prophylaxis. ART is given to those who are HIV positive.*

—Nurse in one of the rural facilities

Some ANC services may not always be delivered because of lack of materials and reagents. Nurses noted, however, that provision of SP, ferrous sulfate, and albendazole has been regular, with no stock outs. This has made it easy for nurses to provide services as expected.

Nearly all ANC clients receive at least one dose of SP during pregnancy. Most women receive the first dose of SP during their first ANC visit, but sometimes mothers wait to attend ANC until the third trimester, in which case, they usually receive only one dose of SP. The overall burden of services is less on the second and third visits. Although nurses were confident about when they should provide SP and why, some nurses were not sure why SP is given rather than another antimalarial medicine.

Interviewer: *Why did you choose SP and not AL? (Coartem)*

Response: *Not AL, actually I do not know, but that is what I have found here, that they give SP. I have not taken that initiative to ask my friends why we are giving this SP and not AL.*

—Nurse in one of the central hospitals

4.2.2 Guidelines for Providing Intermittent Preventive Treatment in Pregnancy Services

Our discussions with nurses indicate that a less than ideal coverage rate for SP does not result from a lack of importance given to SP by service providers; instead, the interviews show that the nurses are committed to giving SP. Coverage may be related to how nurses understand government guidelines or the way nurses read or interpret signals to begin giving SP and the rationale.

The nurses interviewed were unable to show or identify specific government guidelines they follow in delivering IPTp. Nurses know IPTp is a compulsory service for all public health facilities that offer ANC in Malawi. All the nurses interviewed knew of that requirement, and that taking SP is mandatory for all pregnant women except those who are allergic to sulfur and those known to be HIV positive and enrolled on cotrimoxazole. The nurses did not have detailed guidelines on how or when to administer IPTp, and none had specific training on IPTp provision. Some guidelines, written by a few nurses who felt they needed some reminders, are printed on

A4 paper with a few bullet points and hang on the walls of several ANC units, but these guidelines are not sufficient. These sheets have no logos to indicate their origin.

Several nurses said they got information from friends who had attended some training somewhere. In one hospital, nurses were aware that malaria guidelines existed, but did not know where. Most of the time, nurses mentioned HIV-related guidelines. Here is an example from one nurse:

Interviewer: ...here do you have guidelines for malaria like for HIV?

Response: Yes, for HIV we have, for malaria I think we had them, only that we just moved here. Some of the things are still packed because they have not yet decided where we are exactly supposed to be so that we should unpack our things. But we have most of the books: HIV, family planning, all those we have.

—Nurse in a rural facility

Another nurse made this remark:

Interviewer: Do you have any kind of guidelines?

Response: Concerning?

Interviewer: The work you do, HIV, SP provision?

Response: Certainly we have, but I do not know whether we have the books right here. My friend is coming, she will be in a position to give you. She is the coordinator of PMTCT, and in that in the book statistic we write the drugs given to the mothers we have given like on the ARVs. So you see in that book each and every bit of information is found in there positive all the drugs she has received.

A nurse in a district hospital said the facility has guidelines for ANC in general:

Interviewer: Do you have guidelines for SP?

Response: Yes, we have.

Interviewer: Do you have a copy?

Response: Oh yes, I have.

Interviewer: Can I look at it?

Response: Focus antenatal.

Interviewer: All those antenatal?

Response: Yes, antenatal service because we think of the mother has to be served quickly and go home and rest.

A community health nurse in a rural hospital reported they had general guidelines to follow:

Interviewer: So do you have any policies that you follow or guidelines?

Response: Yes we have guidelines.

Interviewer: Which ones? For antenatal services?

Response: There is, we have the reproductive health one, the guidelines.

Interviewer: Do you have a copy?

Response: I do not think it is in here. And we have the PMTCT guidelines which are there at the ward. And we have the ARV, this is for sexual reproduction. It is also a guideline.

All in all, no nurse could show a copy of any guidelines they work with; however, all were confident about the procedures and timing of the SP provision. The nurses were unsure of what to do when the women come for ANC late, after the time expected for the second dose.

Despite a lack of adequate guidelines, the nurses know that women need to take two SP doses during their pregnancy. Most of the nurses said they give the first dose in the first 16 weeks of pregnancy. Some nurses thought it was in the first trimester, while others thought it was during the second trimester. Two nurses mentioned giving SP at 20 weeks. Others simply said they would give SP at 16 weeks and give the second dose at 26 weeks of pregnancy or in the second and third trimesters.

The second dose is given four weeks after the first dose. The other signal used for giving the first dose is fetal movement (quickening) before SP is given. A nurse in a large urban hospital described giving SP this way:

Interviewer: *The other question that I have is giving Fansidar to the women who have come for ANC.*

Response: *Yes.*

Interviewer: *How do you give it?*

Response: *We give twice during pregnancy. The first dose is given when the woman starts feeling fetal movements. That is after quickening.*

Interviewer: *First after feeling...?*

Response: *Fetal movements.*

Interviewer: *Fetal movements?*

Response: *We call it quickening.*

Interviewer: *Quickening?*

Response: *Yah, you can write a simple way that after the woman started feeling fetal movements, that is when we give the first dose.*

Interviewer: *The terminology is called quickening?*

Response: *Yah (laughs) and the second dose comes four weeks from the first dose.*

Interviewer: *Four weeks after....*

Response: *the first dose.*

Interviewer: *After the first dose, so you give only two times?*

Response: *Yes.*

Interviewer: *And they are very close?*

Response: *Yes.*

Interviewer: *So why only two times?*

Response: *After being given the second dose they say the woman is fully protected from malaria because it is just prophylaxis. How many times do you give in your country?*

4.2.3 Rationale for Giving Sulfadoxine-Pyrimethamine

All the nurses knew the rationale for giving SP as prevention of malaria infection, which can be dangerous to both the baby and the mother. Some nurses reported that malaria can cause premature deliveries or anemia in the mother. In one rural health care facility, the nurses noted

that with the high prevalence of malaria in the area, it is critical to prevent malaria, as the following quote summarizes:

It helps because without SP usually here, especially in this malaria area, there are so many mosquitoes. So they catch up on malaria so easily when they are pregnant....Malaria can cause premature delivery, and it can cause anemia.

—Nurse at a rural hospital

Many of the nurses, however, did not know why only SP is given and not another antimalarial drug. A few nurses easily explained why SP prophylaxis was given, and most of them mentioned protecting the mother and child from malaria, which, if not averted, would lead to miscarriage or still births. Nurses also knew that other antimalarial drugs might harm the baby, the reason SP is preferred, as summarized in this quote:

Interviewer: *What else? Why Fansidar? Why not another medicine, another antimalarial?*

Response: *I can say others are very strong, that they can have effect on the baby, but Fansidar does not have effect on the baby.*

Interviewer: *So why malaria? Why do you prevent malaria only?*

Response: *Because sometimes it causes abortion, frequency of type of malaria, then sometimes the woman gets anemic because of the recurrence of the malaria. It causes the loss of red blood cells.*

A nurse in a rural hospital said:

Interviewer: *You provide SP?*

Response: *Yes*

Interviewer: *Tell me more about that.*

Response: *About SP?*

Interviewer: *What do you exactly do?*

Response: *We give SP to pregnant women not because they are suffering from malaria but as a preventive measure. So they get two doses of SP during pregnancy.*

Interviewer: *Two doses means what?*

Response: *Two doses: the first one at 18 weeks; we give three tablets, and then another one before the end of 36 weeks.*

Interviewer: *Before the end of 36 weeks. Do you know why you have to do that?*

Response: *Yes.*

Interviewer: *Why?*

Response: *We have to prevent the pregnant mother and the baby from suffering from malaria.*

Women's HIV status is determined before they are given SP. Nurses understand that SP contains sulfur, and therefore, cannot be combined with cotrimoxazole, which also contains sulfur. With the new regimen of Option B+, women who are HIV positive are enrolled for ARVs. The question arises, do these ARVs also contain sulfur? Cotrimoxazole could also protect the

mothers from malaria infection. Nurses did not know whether this protection is guaranteed with option B+.

4.2.4 Response of Women to Offer of Sulfadoxine-Pyrimethamine

The nurses gave mixed responses when asked about how women respond when they are given the three tablets of SP. A few nurses said that after being educated, women cooperate and take the medicine. Some nurses noted that some pregnant women even ask for SP in case it is not given. Other nurses said that women naturally do not like the medicines, and some hide the pills in their bras and throw them away. The nurses generally reported that some women do not want to swallow the medicine without eating first. Others do not see why they should swallow the SP when they are not sick. Nurses noted some resistance to taking the drugs, and they try to overcome this by continuously educating the women, as this quote indicates:

***Response:** Yah, we first explain. Because they will always ask ‘why am I taking this?’ We first explain ‘you are taking this because you are pregnant, you are prone to malaria. Malaria has a lot of complications to your pregnancy.’*

—Nurse in a rural hospital

All the nurses also appreciated the difficulties women have in swallowing SP. They also are not confident that women would take the three white pills at home if they were given the pills to take home, rather than being watched (directly observed therapy). A nurse from an urban hospital described the approach to giving SP:

***Interviewer:** So can you say a little more on Fansidar? How do you give it? Do you just come and distribute the medicine? What do you do?*

***Response:** Fansidar. As we were trained previously, we are trained that if someone has come, she is eligible for having Fansidar at that time. We have to take the Fansidar and give her and we observe her on direct observed therapy not to take them home, no.*

***Interviewer:** Why?*

***Response:** Because these mothers say if they take the Fansidar, mainly Fansidar, they have negative attitude on Fansidar. Others say that if I take Fansidar I get very sick so I do not want to take Fansidar. So if you just give them go and take at home, they will not take it. That is why we try to give them while they are here at the hospital.*

***Interviewer:** Any other challenge with Fansidar?*

***Response:** No*

***Interviewer:** How can we improve the uptake of Fansidar? Anyway, if they are directly observed, it is fine. So what if a woman comes late?*

***Response:** At how many weeks?*

***Interviewer:** Maybe more than 7 months.*

***Response:** More than 7 months, then she will take just one dose.*

***Interviewer:** Are there many cases like that?*

***Response:** No, because with the awareness the government is making on radio and television, most of the women know that when they become pregnant, when they have just Fansidar conceived, they go and start antenatal screening.*

All the nurses gave an impression that they are concerned if the mothers insist they take the SP pills at home. They do not trust the mothers to take the pills at home for two reasons: first, the mothers are not sick, and therefore, will not have the motivation to swallow the medicines; second, some of the mothers do not like swallowing the medicines because of the bitter taste. The nurses said the mothers are worried about taking the medicine without eating, and others think it can lead to miscarriage. Some of the nurses reported that they themselves also had problems swallowing SP when they were pregnant, as this quote from one nurse shows:

It was a challenge. At first I said I will take (the pills) at home, but the one who was caring for me forced me to take while she was there, so I tried to take it. But soon after 30 minutes I felt somewhat dizzy and maybe I did not eat that day. I felt like something was moving inside. It was like I had a heart burn. And I was almost sick. But afterwards, when I went home, I drank a lot of fluids like juices, and then I had my meal. After that, everything was OK. The second trimester when I took the SP, I prepared myself, and so I did not see any reaction.

Nurses noted that failure to take the medicines may result in still births and even death of the mother, and therefore, they do not want to take chances. Nurses use a directly observed therapy approach. They provide the medicine and clean water, and then witness the swallowing. Although some women claim they would vomit if they swallow SP without eating, none has vomited, according to the health workers. This conversation was recorded in one interview:

Interviewer: *So what about SP?*

Response: *SP. Whenever you are giving mothers on DOT... They directly observe them take the treatment in there.*

Interviewer: *Why do it that way?*

Response: *Because they are not sick. So when you give them Fansidar they are not sick. When you tell them to take it at home we are sure some of them cannot take it. Because they do not understand really why they are taking Fansidar, though we explain to them it is just for prevention of malaria. So that is why we give them to take it there. But some say, you know, I came without eating food. I am afraid I might collapse. I might have dizziness on the way when am going back home, but we always try to advise them and explain to them why they are taking Fansidar.*

4.2.5 Giving the Second Dose of Sulfadoxine-Pyrimethamine

One of the study questions is if SP is nearly always given on the first ANC visit, why is a major proportion of women not receiving a second dose? One explanation is that women do not complete all four ANC visits, as recommended in Ministry of Health policy. Some women come late in the pregnancy and receive only one dose. The Malawi 2010 DHS showed that the average gestation time at the first ANC visit was 5.6 months, which means that most women arrive for their first visit well into their second trimester. Others come only once, for the initial ANC visit, and return only to deliver. Some ambiguity also remains about the timing of the second SP dose. Most Ministry documents state that the second dose should be given either four weeks after the first dose or at 26 weeks of gestation. Some nurses referred to the four weeks, others to the 26 weeks of pregnancy. The interviews indicate that all the women, except those that are HIV positive, who attend ANC need to swallow SP under DOT, and therefore, one key determinant of

SP consumption is ANC utilization. All the nurses indicated that most women do not complete all four recommended visits. Nurses explained some women come long distances.

Some nurses reported that although both SP and ITNs are given to mothers, some mothers still come to the ANC clinic suffering from malaria; however, the nurses were not sure if mothers with malaria had taken SP earlier. Nurses reported that in some areas, ITNs are diverted into other uses, such as making ropes to tie goats and using them for fishing or mats. Additional study is needed to find links between taking SP, getting malaria, and using the mosquito nets. Women with a record of treatment for malaria are not given SP. Those who present symptoms of malaria are treated for malaria with either quinine or artemether lumefantrine (AL). If a mother gets malaria when she is supposed to receive SP, she receives an alternative drug. The type of medicine for these cases depends on the stage of pregnancy.

You do not give them. If they are sick and for instance if they come with signs and symptoms of malaria, we check the malaria parasite in the lab, and then we can give quinine or AL, but it depends on the trimester. If she is in the first trimester, we give quinine at first, then we continue with AL.

—Nurse in a district hospital

This study identified five factors that help explain why a pregnant woman might not receive a second dose of SP during antenatal care. (1) If she is HIV positive, she is not given SP. According to the 2010 DHS, 10% of women with a birth in the last three years and who had attended ANC were HIV positive. (2) If a woman attending ANC has malaria, she is not given SP. (3) A small proportion of women refuse to take the dose and remain unpersuaded by the nurses. (4) A small proportion of women begin ANC services too late to take two doses of SP according to the policy as understood by nurses today. (5) Some nurses fail to give a second dose because they missed the opportunity because of overwork, lack of time, negligence, or some other cause. Taken together, small details in the interaction between women and nurses can explain many of the missed opportunities to deliver a second dose of SP during ANC. None of these elements, however, is likely to be overcome without clearer guidelines about the timing of the doses of SP. Appropriate guidelines could reduce the numbers of missed opportunities at both the beginning and the end of the period of eligibility for taking SP.

Chapter 5: Summary and Implications

This study was conducted to better understand the ways that ANC is delivered in health care facilities in Malawi and the factors that affect how IPTp services are provided in that context, all from the viewpoint of the service providers. The nurses and midwives who provide ANC consistently described the services and the rationale for each of those services. That is, they described their activities and their knowledge in the same terms. They spoke with enthusiasm about their role and responsibilities in providing ANC and showed concern and interest in serving their clients as best they could. The consistency of their accounts and the accuracy of their reasoning for providing the services suggest that the training of nurses and midwives in Malawi remains effective. Several nurses had been in service for less than one year, while others have worked as midwives for more than 20 years.

The two domains of activities that nurses differed on somewhat were (1) the usefulness of giving health talks to women and women's interest in them, and (2) in the success of their efforts to persuade women to take SP pills in their presence. Some nurses said they were nearly always successful, while others said they experienced enduring problems in getting women to swallow the pills. The two domains are similar in the temptation they offer providers to give a normative discourse: some nurses may report what they want to have heard, while others spoke more directly from their experience.

5.1 Antenatal Care Provided

Among the ANC services provided routinely, two activities took on more importance than initially anticipated: (1) the counseling and testing for HIV and the (2) head-to-toe physical examination. Both of these services are always performed on the first visit to an ANC clinic for a specific pregnancy. The HIV counseling and testing demands time and attention because it is the first service to be performed and because it takes time to conduct the counseling before and after the test. Women who test positive for HIV must be persuaded to accept their test results, inform their husband or partner, if possible, and begin taking ARVs. Women often resist doing these activities.

The head-to-toe examination takes time, but it is important because mothers value and appreciate it and nurses attached great importance to doing this exam on the first ANC visit. One nurse reported that she could do about 10 such examinations in a day. This comprehensive exam serves as a way of identifying health problems and possible complications of pregnancy and providing background information for health care the woman seeks.

The head-to-toe examination is the first effort to check for anemia. Nurses check the eyes and palms of the hands. Some health facilities have the equipment and reagents to assess anemia levels with dried blood spots, but some nurses reported that materials often are not available, so they only can rely on physical signs to identify cases of anemia. The nurses all knew the importance of giving iron supplements to prevent anemia, but they recognized that some women may not take the pills they are given at home. No one mentioned a similar problem for taking albendazole for intestinal parasites, a service that is highly valued by the women.

Many of the nurses spoke about the challenges they face constantly to convince women to accept their HIV status and take ARVs. Some women begin taking ARVs during pregnancy, but they stop after delivery, saying they are not sick, so why should they be taking drugs? Nurses also reported that women who test positive for HIV sometimes hide the HIV status in their health passports by tearing the page out where their status is written or they purchase a second health passport from a vendor at the health facility and fill in the care they have received except for their HIV status. They then present this second passport for future services.

5.2 Intermittent Preventive Treatment in Pregnancy Services

The nurses interviewed all understand the rationale behind giving SP pills to pregnant women when they seek ANC: SP protects a woman from becoming ill with malaria. A number of nurses also mentioned the possible harmful effects that malaria could provoke in a mother or the fetus. The nurses consider that of all the ANC services they provide are important, but when pressed, they stated that HIV counseling and testing is the most important and giving SP is second. They know they need to give two doses during a pregnancy if possible because it is Ministry of Health policy; however, the interviews indicate some ambiguity about when to initiate the first dose of SP and when it is too late to give the second dose. Also, nurses do not agree on when a woman has progressed far enough in her gestation to be given a dose of SP. Some nurses said late in the first trimester or the second trimester. Many said that SP should be given at 16 weeks, and a few said 18 or 20 weeks. Others said it could be given any time after the quickening, or after fetal movements are felt. The cutoff period to no longer give SP was not mentioned often, but several nurses indicated that 36 weeks is the cutoff point.

One reason for this enduring ambiguity is that nurses and midwives have no written guidelines to provide clear directions for when to begin and end administering SP. No nurse could show printed guidelines that include detailed instructions for giving SP. The nurses have printed guidelines for PMTCT services and reproductive health instructions in a few facilities, but not for administering SP to pregnant women in ANC clinics.

The nurses all know that Ministry policy is to provide two doses of SP per pregnancy, and that the three white pills should be taken while the nurse watches. Some nurses said they are nearly always successful at getting women to take the pills, while others spoke of the challenges of persuading women to do so. The nurses said they do not want to simply give the pills to be taken later at home because women probably would not take them. Women have several objections to taking SP. The pills are large, taste bitter, and sometimes cause nausea. Women have learned that all drugs are taken with food and the clinics offer no food. Women also question why they should take these drugs when they are not sick.

5.3 Missing the Second Dose of Sulfadoxine-Pyrimethamine

The contrast in the proportion of women who attend ANC services for multiple visits and the proportion of women who took a second dose of SP raises a question on how this second dose is often missed. Several explanations arose from the interviews with nurses, although it is not possible to assess the relative importance of each situation. Women who are HIV positive are not given SP. Women who come with a fever or malaria are not given SP, but instead are sent to another department for treatment. A small number of women simply refuse to take SP. A small

number of women arrive for ANC too far advanced in their pregnancy to be given two doses. In some cases, for various reasons, a nurse simply fails to provide a second dose.

It is possible to identify several situations when a second dose of SP should be given and when more support for the care provider may make a difference. One is when a woman simply refuses to take SP, and thus must be persuaded or given a snack to encourage her to take her pill. Another is to promote ANC visits late in the first trimester so that nurses have more time to give multiple doses. Clear guidelines would help remind nurses to give a second dose.

5.4 Service Provision Assessment Data

Malawi implemented a Service Provision Assessment (SPA) survey in 2013 to collect data from health facilities on health services. Fieldwork began in June 2013. The data collected included information on the availability of equipment, supplies, and staff at different types of health facilities and observations of client and provider interactions. The survey includes exit interviews with clients and all health care facilities (census), rather than only a sample of facilities in the country. These data will provide contextual information on the availability of maternal and child health services as a backdrop for the qualitative component proposed here.

The SPA questionnaire includes an ANC section in the inventory questionnaire, the ANC observation protocol, and the ANC client exit interview questionnaire. The ANC observation protocol, which is expected to conduct from 2,000 to 2,500 observations of ANC service delivery around the country, may provide an opportunity to examine the associations between the delivery of SP and certain other standard services when data become available.

5.5 Conclusion

The findings in this study help identify ways to improve how IPTp is delivered in Malawi. No major problems are apparent in the training, knowledge, skills, or dedication of the nurses and midwives who provide antenatal care in the health care facilities sampled. One outstanding observation is the importance that counseling and education are given, such as health talks in the morning, counseling before and after testing for HIV, counseling to persuade women to accept their HIV status and then disclose it; counseling to persuade them to begin taking ARVs if found positive, and counseling and persuasion to take SP at the clinic.

The lack of clear, detailed guidelines for providing SP in ANC is the weakest aspect of ANC services in Malawi. Some nurses said they would like more information on changes in Ministry of Health policy. Ministry documents from earlier years gave policy recommendations that often were not consistent with one another on the number and timing of SP doses to provide. The Ministry of Health should clarify its policy on the timing of giving SP and then make sure that short, simple instructions are distributed to all health care facilities, an action that is especially important since recent changes in WHO recommendations for IPTp. The instructions could be reduced to three points: (1) Give the first dose of SP on a woman's first ANC visit at 16 weeks or later. (2) Wait four weeks between SP doses. (3) Give a dose of SP every time a woman comes for ANC, while respecting the first two points.

A system of supervision of ANC services should be established or reinforced to include more attention to IPTp services. The nurses interviewed did not mention supervision, but the topic was not raised directly. With the importance of the persuasion aspect of ANC, a supervisor could determine if a service provider needs assistance or guidance to be more effective in persuading women to accept an HIV test result, or take ARVs or SP. A supervisor also would discuss nurses' experiences in giving a second dose of SP.

Overall, ANC, including IPTp, would be improved with more staff allocated to ANC. All the nurses interviewed, without exception, spoke of the challenges of being short-staffed much of the time. The lack of human resources likely contributes to some missed doses of SP. More staff would increase the quality of all ANC services provided.

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Appendix: Conversation Guide for Health Care Providers

Introduction

We have invited you here so we can discuss your work as a nurse, midwife, clinician for ANC services, as well as many other services. In our study we are speaking with people who provide services to women who come for ANC services. We want to better understand the services you provide in ANC clinics and what women themselves, the clients, think of the services you offer.

Let's talk first about your work at this health facility. Just tell us about the work you do in this health facility: your title, your division, how you spend your time.

- Your professional title
- How long you have been a health care professional
- The professional training you had before acquiring this title
- How long you have worked here
- Any training in IPTp
- The services you provide

Now tell us about how the facility offers antenatal care here. What services do they offer; how often?

- During what times is the ANC clinic open each week
- The personnel/staff involved
- The services they provide
- The number of women who come each week (more or less)
- The services you yourself provide as part of the ANC
- Which of the services do you consider important for the health of the mothers
- What are some of the challenges you face when providing antenatal services
- What kind of record keeping system does the facility use for keeping track of the ANC services that each woman receives

We would also like to hear your ideas about what the women think about the ANC services you offer. Can you tell me what women are seeking when they come for ANC services?

- Which services do they find the most useful
- Which services are not of interest to them
- What do they say about getting tested for HIV
- What do they say about taking SP for prevention of malaria

Let's finish today with talking about giving SP to pregnant women when they come to an ANC clinic for services.

- What process do you follow when providing SP to the women attending ANC
- Is there any health facility policy on giving SP to pregnant women? Where do we find it? What does it say

- Health care facility instructions for giving SP during ANC services (how, when where, why)
- How does SP help women
- What do women at ANC clinics think of taking those large white pills
- Challenges you face in giving SP to women
- How can these challenges be addressed