

**DETERMINANTS OF UTILISATION OF INTERMITTENT PRESUMPTIVE  
TREATMENT OF MALARIA USING FANSIDAR BY PREGNANT WOMEN IN THE  
RURAL AND URBAN CLINICS OF LUSAKA PROVINCE**

BY  
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I, Priscar Sakala Mukonka hereby certify that this dissertation is the product of my own work and, in submitting it for my MPH programme, further attest that it has not been submitted in part or whole to another university.

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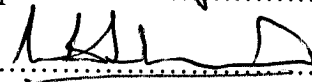
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## STATEMENT

I hereby certify that this work presented for the degree of Master of Public Health, is in all entirely the results of my own independent and laborious investigations. The various sources to which I am indebted are gratefully acknowledged in the text and in the references.

Signed: -----

Student.

## ABSTRACT

**Objective:** To assess the utilization and determinants of Intermittent Presumptive Treatment of malaria by pregnant women in the rural and urban clinics of Lusaka Province.

**Study Design:** A comparative cross-sectional study design was carried out among pregnant women in the rural and urban clinics of Lusaka Province.

**Study Setting:** The study was carried out in four rural clinics of Chongwe District and four urban clinics of Lusaka District.

**Subjects:** The study focused on pregnant women who were in their third trimester and attending their usual ante-natal clinics at the selected rural and urban clinics.

**Sampling Technique:** Four rural and four urban clinics in Chongwe and Lusaka were conveniently selected. A systematic sampling technique was then applied to select the respondents. Every second pregnant woman in the third trimester was requested to participate in the study. Totals of 370 pregnant women in Chongwe and 426 respondents in Lusaka were interviewed.

**Main outcome measures:** In this study, full utilisation of Intermittent Presumptive Treatment of malaria using fansidar was used as the main outcome. The pregnant women who had received three or more doses of fansidar, or were receiving the third dose on the day of the interviews were considered to have fully utilised the service, while those who received less than three doses of fansidar were considered not to have fully utilised the service.

### **Results:**

Full utilisation levels of IPT/SP were 27.3 percent in Chongwe and 31.0 percent in Lusaka ( $P=0.288$ ).

The study revealed that the following determinants were significantly associated with IPT/SP utilisation: gestation of the pregnancy at the time of the interview and gestation of the pregnancy at first dose of IPT/SP were significantly associated with utilisation of IPT/SP in both Chongwe ( $P<0.001$ ,  $P=0.008$ ) and Lusaka ( $P<0.001$ ,  $P<0.001$ ) respectively; respondents' perception of fansidar being beneficial or harmful to pregnant women and their unborn babies and behaviour of health workers towards clients were significantly associated with utilisation of IPT/SP in Chongwe only ( $P=0.008$  and  $P=0.013$  respectively). In Lusaka, knowledge of traditional medicine used for prevention of malaria in pregnancy, respondents taking fansidar in the presence of nurses, and availability of fansidar in the clinics were all associated with utilisation of IPT/SP, ( $P<0.001$ ,  $P<0.001$ , and  $P=0.012$ ).

### **Conclusion:**

The study revealed that utilisation of IPT/SP service in rural Chongwe and urban Lusaka Districts were very low. It is therefore recommended that health workers need to strengthen health education on the importance of IPT/SP of malaria to all pregnant women and at the same time to be vigilant so as to ensure that all pregnant women who visit the ANC are given the fansidar whenever they are due to have it using the DOT strategy.

## **DEDICATION**

This study is dedicated to my family, Victor Senior, Victor Junior and Eva, without whose love, support and understanding this study would not have been a success.

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## ACRONYMS

ANC	-	Ante-natal care
CSO	-	Central Statistical Office
IPT	-	Intermittent presumptive treatment of malaria
ITNs	-	Insecticide Treated Nets
KAP	-	Knowledge Attitude and Practice
MACEPA	-	Malaria Control and Evaluation Partnership in Africa
MDGs	-	Millennium Development Goals
MOH	-	Ministry of Health
NMCC	-	National Malaria Control Center
RBM	-	Roll back malaria
SP	-	Sulfadoxine-Pyrimethamine (Fansidar)
USAID	-	United States Agency for International Development
WHO	-	World Health Organization

## **CHAPTER 1**

### **1.0 INTRODUCTION**

Malaria, the most important infection of humans, affects about five percent of the world's population. It is estimated that the incidence of malaria in the world is between 300 million and 500 million clinical cases per year. Studies have shown that there are 1.5 million to 2.7 million annual deaths from malaria worldwide (Sukwa et al, 2004). Malaria is a complex public health problem in the African Region, where most cases and deaths due to the disease occur. It presents an enormous obstacle to national development because of its high human and economic costs. Furthermore, the disease burden falls disproportionately on vulnerable groups; pregnant women and children under five, who have limited access to malaria control interventions, which perpetuates a vicious cycle of poverty and disease (WHO, 2004).

Malaria is endemic throughout Zambia and continues to be a major public health concern. It is a leading cause of morbidity and second highest cause of mortality, especially among pregnant women and children under the age of five. It is estimated that there are more than 3.5 million cases and 50,000 deaths per year. The disease accounts for about 37 percent of all out-patient attendances in Zambia (CSO, et al 2003). Malaria poses a major challenge to the Zambian public health system in terms of the catastrophic consequences arising as well as to the extent that malaria can be successfully controlled within the context of a strengthened health system (MOH, 2005). According to the NMCC 2006-2011 National Strategic Plan, Zambia needs to have 80 percent of all pregnant women subjected to the IPT/SP, 30 percent of all pregnant women and under five children to sleep under insecticide treated bed nets, 80

percent of all structures to be sprayed and 80 percent of all fever cases to be appropriately diagnosed and treated with first line drug by the year 2008 and sustain it by 2011 to demonstrate substantial reduction of malaria through out the country. In this study, the focus was on malaria in pregnancy, and utilization and determinants of use of Intermittent Presumptive Treatment using sulfadoxine-Pyrimethamine (SP), as a strategy for its control and prevention by pregnant women.

## **1.1 BACKGROUND INFORMATION**

Malarial infection during pregnancy is a major public health problem in tropical and subtropical regions throughout the world. In most endemic areas of the world, pregnant women are the main adult risk group for malaria. Malaria during pregnancy has been most widely evaluated in Africa, south of the Sahara where 90% of the global malaria burden occurs. The burden of malaria infection during pregnancy is caused chiefly by *Plasmodium falciparum*, the most common and virulent malaria species in Africa. The impact of the other three human malaria parasites (*P. vivax*, *P. malariae*, and *P. ovale*) is less clear (United Nations, 2000). Each year, more than 30 million women in Africa become pregnant in malaria-endemic areas. In these areas, malaria accounts for significant morbidity in pregnant women. For example, it accounts for 2-15 percent of maternal anemia and 5-14 percent of low birth weight. Of those newborns born with "preventable" low birth weight, 30 percent are due to malaria. Malaria also accounts for between 3-5 percent of all newborn deaths (Otolorin, 2005).

The symptoms and complications of malaria during pregnancy differ with the intensity of malaria transmission and thus with the level of immunity the pregnant woman has

acquired. Maternal deaths in pregnant women who reside in areas of low or unstable transmission areas may result either directly from severe malaria or indirectly from malaria-related severe anaemia. In addition, malaria infection of the mother may result in a range of adverse pregnancy outcomes, including spontaneous abortion, neonatal death, and low birth weight. The principal impact of malaria infection in women who reside in areas of high and moderate malaria transmission is associated with malaria-related anaemia in the mother and with the presence of parasites in the placenta. The resultant impairment of foetal nutrition contributing to low birth weight is a leading cause of poor infant survival and development (Otolorin, 2005). In areas of Africa with stable malaria transmission, *P. falciparum* infection during pregnancy is estimated to cause as many as 10 000 maternal deaths each year, 8 to 14 percent of all low birth weight babies, and 3 to 8 percent of all infant deaths (United Nations, 2000).

Despite the toll that malaria exerts on pregnant women and their infants, not until recently this was a relatively neglected problem, with less than 5 percent of pregnant women having access to effective interventions. The promising news is that during the past decade potentially more effective strategies for the prevention and control of malaria in pregnancy have been developed and demonstrated to have a remarkable impact on improving the health of mothers and infants. Malaria prevention and control during pregnancy has a three-pronged approach of which Intermittent Presumptive Treatment (IPT) of malaria using Sulfadoxine-Pyrimethamine (SP), Fansidar is part. Intermittent preventive treatment is an intervention for effectively preventing and controlling malaria during pregnancy. It is based on the assumption that every pregnant woman living in an area of stable or unstable malaria transmission has malaria parasites

in the blood or/and in the placenta, and therefore, should be treated to minimize its effects on the mother and her fetus. Intermittent Presumptive treatment with SP is currently the most effective approach for the use of antimalarial drugs during pregnancy. Sulfadoxine-pyrimethamine is the drug of choice in many countries for intermittent preventive treatment of malaria. SP, as it is often called, is a combination of two drugs. Each tablet contains 500 mg of sulfadoxine and 25 mg of pyrimethamine. A single dose consists of three tablets taken at once, preferably under direct observation by the health care provider. Fansidar is the most common brand of SP (Otolorin, 2005). The World Health Organization (WHO) recommends a schedule of four antenatal clinic visits, with three visits occurring after quickening. At least two doses of IPT should be delivered at scheduled antenatal care visits after quickening until delivery (WHO, 2004). The Zambian Government recommends a three-dose regimen of IPT-SP in order to provide adequate protection to all women, including those who are immuno-compromised. This was supported by several studies, one of which was done in Kenya, which indicated that a three-dose IPT regimen was more effective than a two-dose regimen in pregnant women who were immuno-compromised (Alilio et al, 2004).

Roll Back Malaria, in partnership with Making Pregnancy Safer, has brought a new emphasis to the burden of malaria in pregnant women within malaria control efforts. However, there remain obstacles to implementing effective programmes and reaching women who will benefit the most from them, particularly high risk adolescents in their first pregnancies. Many women in Africa lack access to medical care and may have limited access to effective tools such as ITNs, especially in remote areas. For any



program on malaria control during pregnancy to be successful, there must be a partnership between the providers of maternity services and malaria control staff. Antenatal clinic visits provide a unique opportunity to educate women about the effects of malaria on pregnancy and about what can be done to eliminate or minimize its adverse consequences. These interventions will include, among others application of Intermittent Presumptive Treatment of malaria illness. Studies have shown that a significant proportion of pregnant women in Africa (between 35-95%) will attend the antenatal clinic at least once during pregnancy, this, therefore presents a unique opportunity to initiate the control of malaria during pregnancy and to reach as many women as possible (Otolorin, 2005). The objective of the Zambian government is to successfully cover 80 percent of pregnant women with fansidar as IPT by the year 2008 by protecting not only them but also the infants from the dangerous effects of malaria.

## **LUSAKA PROVINCE**

Lusaka Province has the smallest surface area covering 21,896 square kilometers among other provinces in Zambia. It shares boundaries with Central Province in the North, Southern Province in the South and Eastern Province in the east. It also shares an international boundary with Mozambique in the southeast side. Administratively, the province is divided into four districts, namely: Chongwe, Kafue, Luangwa and Lusaka. Lusaka City is both a provincial headquarter as well as a capital city of Zambia (CSO-Provincial Census, 2000). The population of Lusaka Province is 2, 074, 519. Lusaka District with a population size of 1,617, 839, has the largest number of people, both at National and Provincial Level. At Provincial Level, it accounts for 78 percent of the

population. Chongwe District has a population size of 181,762; Kafue District has 249,917 and Luangwa District has 18,948. Lusaka Province has a total population of women in child bearing age as 456,391 (22.0 percent), and estimated proportions of pregnancies as 112,023 (5.40 percent) (Lusaka Provincial Health Office, 2005).

The province has one hundred health institutions, out of which 82 are government owned, 4 are mission owned while more than 14 are privately owned. Generally, the province experienced an upward trend in the provision of health services by private institutions and private practitioners between 1990 and 2000. However, the government still remains the major service provider (CSO-Provincial Census, 2000). The disease burden of malaria in Lusaka province is increasing. Reviewed data from 2000-2005 shows an increase in malaria cases and deaths. (Lusaka Provincial Health Office, 2005). Reviewed data on maternal services also shows a reduction in ante-natal visit attendances. The ante-natal coverage for the province according to the service delivery report of 2005 was at 73 percent. The coverage for 2004 was at 79 percent and the year before (2003) was at 90 percent (Lusaka Provincial Health Office, 2005).

## **1.2 Statement of the Problem**

Pregnant women are more vulnerable to malaria due to physiological changes like higher temperature and reduced immunity (Kasonka, 2006). Each year more than thirty million African women living in malaria endemic areas become pregnant and are at risk of malaria. For these women malaria is a threat both to themselves and to their unborn babies, with up to 200,000 deaths of new born babies each year (USAID, 2005). The

disease also accounts for 20 per cent of the total maternal deaths (729/100,000) in Zambia (Kasonka 2006; CSO, et al, 2003). It was for this reason that, Zambia like any other African country embarked on the IPT programme where pregnant women are provided with a total of three doses of sulphadoxine pyrimethamine (SP) during their usual ante-natal visits as a directly observed therapy. Zambia generally has a high ante-natal attendance of about 90 percent (MOH, 2005). It should therefore, be the same with the IPT programme, but this is not the case as of now. The national coverage for IPT is about 65 percent. The 2004 Follow-up Roll Back Malaria Baseline Survey in ten Sentinel Districts of Zambia, of which Chongwe was part, recorded 80 percent IPT coverage in the District. This is of course questionable considering the methodology used. The National target, according to the 2006-2010 Plan is to reach 90 percent coverage. IPT programme works hand in hand with the ante-natal programme.

The disease burden of malaria in Lusaka province is increasing. Reviewed data from 2000-2005 shows an increase in malaria cases and deaths (Lusaka Provincial Health Office, 2005). Reviewed data on maternal services also shows a reduction in ante-natal visit attendances. The ante-natal coverage for the province according to the service delivery report of 2005 was at 73 percent. The coverage for 2004 was at 79 cent and the year before (2003) was at 90 percent (Lusaka Provincial Health Office, 2005). If the country is to achieve the health related Millennium Development Goals, which focuses on combating malaria among others, all pregnant women need to utilize the IPT services fully regardless of whether they live in urban or rural settings.

There are several factors that may determine utilization of IPT services. The number of pregnancies a woman has had may determine use of the IPT services by pregnant women. Multigravid women may be more likely to fail to receive the recommended SP/IPT regimen (Holtz et al, 2004). Fear of side effects of the antimalarial drug may also determine the IPT use. Rodgers et al (2001) stated that most pregnant women were more aware and worried about side-effects of antimalarial drugs than about the deleterious effects of malaria infection on their own and their babies' health and that led to low coverage of the service. Staff motivation, timely and regular attendance at ANC by pregnant women and their positive perception of IPT-SP doses as a strategy and the drug recommended and on the quality of ante-natal care service could be important determinants for the complete uptake of the recommended IPT-SP doses (Mubyazi et al, 2004). Lack of information and misinformation may also determine use of IPT-SP. Mubyazi et al (2004) stated that sometimes the pregnant women were uninformed or misinformed about IPT and the standard dosage of SP. Traditional beliefs and old-fashioned ideas about modern medicine have been cited as some of the reasons for none-use or low use of ante-natal care and IPT-SP services in some rural communities (Mubyazi et al, 2004).

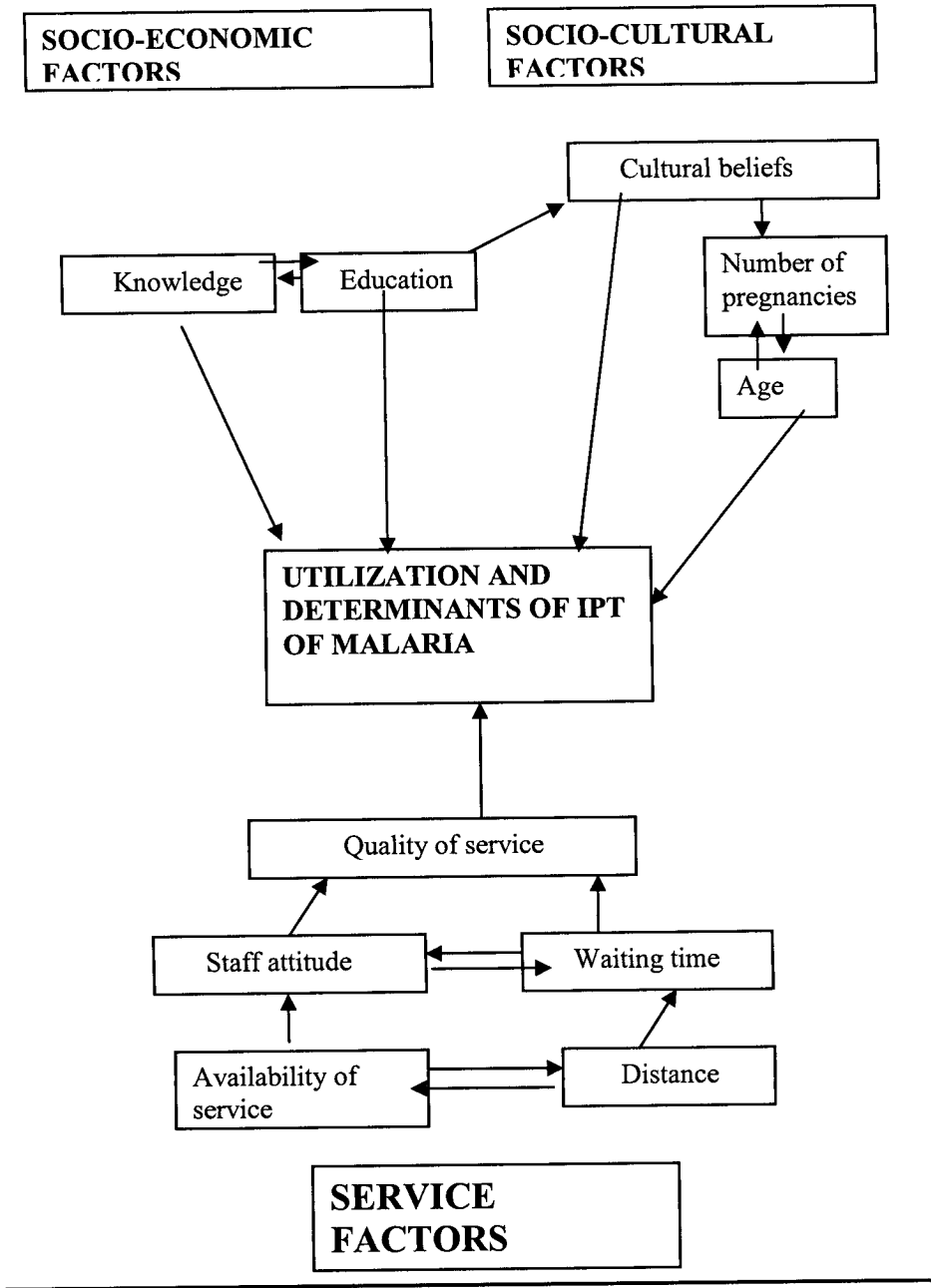
Pregnant women in rural and urban settings may utilize health facilities at different levels and different factors may determine use of the IPT-SP services by these pregnant women in different settings. This study therefore seeks to establish and compare the levels of utilization of the IPT of malaria services by pregnant women in both rural and

urban areas of Lusaka Province and also determine factors that influence its use so that recommendation can be made to the relevant authorities on its improvement.

### **1.3 Justification of the study**

Incidence of malaria in Lusaka province is on the increase. Reviewed data even per individual district under study also shows both increase in the incidence of malaria and also of the deaths due to the disease (Lusaka Provincial Health Office, 2005). This picture poses a very dangerous situation for pregnant women as they are very vulnerable to the disease because of their physiological changes and lowered immunity (Kasonka, 2006). IPT of malaria is one such effective control and preventive programme in combating malaria in pregnancy. The IPT programme depends directly on the ante-natal services. Lusaka Province's Services Delivery Report indicates a decrease in the ante-natal services, at 90 percent in 2002, 79 percent in 2004 and 73 percent in 2005. If the country is to achieve the Health Related Millennium Development Goals on combating malaria and other diseases, this situation needs to be arrested before it gets worse. A 20 percent maternal mortality rate due to malaria is too high and therefore needs to be seriously looked into. IPT of malaria is one of the interventions for the reduction of this problem, and hence the need to carry out this study to assess utilisation levels and the determinants for its use.

**1.4 PROBLEM ANALYSIS DIAGRAM**



## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

Malaria in pregnancy is a major public health problem and potentially preventable cause of maternal and peri-natal morbidity and mortality (McGregor, 1984; Brabin, 1991). Protecting pregnant women from malaria infection is therefore a major public health priority in endemic countries. Different strategies using either chemoprophylaxis or intermittent preventive treatment (IPT) during pregnancy have been recommended by the World Health Organization.

Several randomized controlled studies and meta-analyses of a number of randomized placebo controlled trials conclude that prevention has a beneficial effect on maternal anaemia, placental malaria and low birth weight babies, especially among primigravidae (Shulman et al., 1999; Gülmezoglu & Garner, 1997; Steketee et al., 1996). Evidence in support of the use of intermittent preventive treatment with SP, is also given by a study from Kenya in which data from three groups of pregnant women were analyzed. These were women who had case management for malaria illness, women who were protected by the two-dose SP regimen, and women protected by a monthly SP regimen. The groups protected with the two-dose or monthly SP regimens had higher mean blood hemoglobin levels than those in the case management group. Also, the groups protected with SP had lower incidence rates of maternal parasitemia (9 percent and 7 percent) and placental parasitemia (12 percent and 9 percent) compared to women seen with malaria illness (27 percent). The incidence of low birth weight newborns among those who were protected with SP (8 percent) was also lower than

among those not protected with SP (which was 14 percent). The conclusion is that intermittent preventive treatment offers some protection from the adverse consequences of malaria during pregnancy.

Many malaria endemic countries have guidelines for malaria preventive measures in pregnancy (chemoprophylaxis or IPT) and this is part of the ante-natal care (ANC) package provided within the context of primary health care. Zambia, like other malaria endemic countries also has guidelines for implementing malaria preventive measures in pregnancy. All ANC clinic nurses are trained to sensitize pregnant women to receive three doses of SP during their ANC visits. Unfortunately, there are major problems of compliance and coverage. The success of any programme depends not only on the efficacy of the intervention provided under ideal and controlled conditions, but also on achieving optimal use by the target population (Fosu, 1994). ANC services are traditionally delivered from health facilities along with other health promotive and preventive programmes such as vaccinations and under five clinics.

## **2.2 Determinants of utilization of IPT-SP Service**

There are a number of factors that may determine the utilization of IPT-SP service. Holtz et al (2004) stated that to reduce maternal morbidity and mortality and better health for the baby, focused ANC package advocates for the timely and appropriate care during pregnancy and timely attendance at ANC clinics as a key factor for the effective delivery of IPT services. However, various studies have found that in sub-Saharan Africa, women often do not seek ANC until late in pregnancy and they attend irregularly. For example, only 42 percent of pregnant women in Uganda attend the



required 4 ANC visits and less than 40 percent deliver at health units (Uganda Bureau of Statistics, 2002; Ndyomugyenye, 1998). Van Eijk et al (2004), also noted similar findings in the study conducted in Western Kenya. One study in Kenya found the late timing of the first dose of SP corresponding with late registration at ANC clinics among pregnant women (Schultz et al, [http://web.idcr.ca/en/ev/28394-201-1-DO\\_TOPIC.htm](http://web.idcr.ca/en/ev/28394-201-1-DO_TOPIC.htm)). Another study from the same country found that despite high awareness about the IPT strategy, only 5 percent of pregnant women had received two or more doses of SP as preventive treatment and only 14 percent of the women received at least one dose (Guyatt et al, 2004). Similarly findings were reported from Malawi whereby less than 40 percent of the 391 pregnant women surveyed in Blantyre district received the full dose regimen of SP for IPT (Schultz et al, [http://web.idcr.ca/en/ev/28394-201-1-DO\\_TOPIC.htm](http://web.idcr.ca/en/ev/28394-201-1-DO_TOPIC.htm)). A recent study conducted by Shachakanza (2007) on utilization of IPT/SP in Ndola District, showed poor adherence to second and third doses of IPT/SP by pregnant women who lived very close to the clinic. It was attributed that they preferred to work for subsistence rather than go for the drug which gave them headache, nausea and vomiting.

The number of pregnancies a woman has had and age may determine use of the IPT services by pregnant women. Holtz et al (2004) in a study conducted in Malawi on “use of ante-natal services and Intermittent Preventive Treatment for malaria among pregnant women” revealed that multigravid women were more likely to fail to receive the recommended SP/IPT regimen. This could perhaps be attributed to the fact that they

had gained enough experience in pregnancy and child bearing and they felt they knew best what was good for them.

Fear of side effects of the antimalarial drug (Fansidar) may also determine the IPT use. Rodgerson et al (2001) in a study conducted in Malawi on Intermittent SP in pregnancy: effectiveness against malaria morbidity in Blantyre revealed that the concept of using antimalarial drugs to prevent malaria is not widespread and this leads to low compliance with usual chemoprophylaxis regimens. Most pregnant women in high transmission areas are asymptomatic and are more aware and worried about side-effects of antimalarial drugs than about the deleterious effects of malaria infection on their own and their babies' health. Even with the introduction of IPT with sulfadoxine-pyrimethamine (SP), a logistically simpler intervention than weekly chloroquine chemoprophylaxis, low coverage and compliance remain a problem; in Malawi for example 75 percent of pregnant women get one dose of SP but only 30 percent get the recommended two doses.

Lack of information and misinformation may influence the usage of IPT-SP service. Mubyazi et al (2004), in a study conducted in Tanzania on "Intermittent Preventive Treatment of malaria during pregnancy: a qualitative study of knowledge, attitudes and practices of district health managers, ante-natal care staff and pregnant women", revealed that sometimes the pregnant women were uninformed or misinformed about IPT and the standard dosage of SP. The majority of the respondents alleged that one of the drawbacks linked to low acceptance of SP was a perceived relationship between SP side effects and HIV infection. Some women reported developing adverse reactions

after using SP. Because of their belief and fear of the Steven-Johnson Syndrome, it was openly asserted that the majority of the women threw away the SP tablets after leaving the dispensary. It was further argued that some women believed SP taken during pregnancy could cause abortion, whilst others decided to take smaller dosage than what was recommended. Other participants in the same study alleged that SP did not lower body temperature and that it caused one's (especially children's) body to weaken.

Traditional beliefs about modern medicine have been cited as some of the reasons for low use of ante-natal care and IPT-SP services in some rural communities (Mubyazi et al, 2004). In the same KAP study conducted in Tanzania on Intermittent Preventive Treatment of malaria in pregnancy, Mubyazi et al (2004) noted that although the majority of women reported contacting formal health facilities for malaria diagnostic and treatment services, some did not feel shy about testifying that traditional health practitioners were commonly consulted for conditions such as coma and convulsions. Self-medication with modern pharmaceuticals from retail sources (shops/kiosks) was also reported to be common. Similar studies conducted by Ndyomugenyi et al (1998), on "The use of formal and informal services for ante-natal care and malaria treatment in rural Uganda", and another study conducted by Kengeya et al (1994), in the same country on "Recognition, treatment seeking behaviour and perception of cause of malaria among rural women" came up with similar findings. They both noted that women generally recognized malaria in pregnancy as a serious problem with deleterious consequences. The studies revealed that when pregnant women get malaria, care seeking behavior included self medication with antimalarial drugs from drug-shops, or use herbs, whilst visiting a health unit might have been a last resort if there was no

improvement. These studies were also supported by a study by Magnussen (2003) on “Antimalarial intermittent treatment during pregnancy: how do we ensure coverage and compliance in Africa”.

The quality of health services offered is an important factor in determining health seeking behaviour by clients. The term "quality services" in this case include all services pertaining to customer care such as health workers' behaviour when dealing with their clients, waiting time at the service facility, availability of drugs and other basic services. Quality of health care also includes the technical competence/skills of a provider in delivering the care .Hanson et al, (2004) in their research study on “The economics of malaria control interventions”, it was noted that although users' perceptions of the quality of care are highly subjective, patients should rightly expect courtesy and attention from health service providers as well as proper clinical examination and medical advice. Another study in Tanzania by De-Savigny et al (2004) on “Care-Seeking patterns for fatal malaria also observed a relationship between a user-perception of quality of care and their health care seeking behaviour for malaria and other illnesses”, found that it had negative implications on users' compliance with the recommended treatment procedures.

Staff motivation is an important determinant for the complete uptake of the recommended IPT-SP doses. It is an important factor to determine the quality of care, hence deserving attention by policy makers and other key decision-makers in the health system. Evidence shows that a well-functioning health system depends on the motivated work force, amongst other things (Mubyazi et al, 2004).The desired quality of care cannot be fully realized when there is a shortage of health service personnel and

supporting infrastructural facilities. Unless resolved, problems of this nature may directly or indirectly influence the health seeking behaviour of pregnant women who may ultimately decide to abandon the public health system and consult more private health care providers such as traditional health practitioners, retail drug sellers or private clinics. These may not be sufficiently competent or well monitored to ensure compliance with national guidelines (Mubyazi et al, 2004).

## **Conclusion**

Reviewed literature has shown that malaria during pregnancy has adverse consequences for both mothers and their babies. However, malaria prevention with an effective package which includes Intermittent Presumptive Treatment with a dose of SP given during usual ante-natal care visits after quickening ensures that the pregnant women receives at least two/three doses. Reviewed literature has also shown that a number of factors may determine utilization of IPT. It then goes without saying that, a successful IPT programme can only emerge from partnerships between malaria control and reproductive health units.

## **2.3 OBJECTIVES OF THE STUDY**

### **2.3.1 General Objective**

To assess utilization and determinants of Intermittent Presumptive Treatment of malaria by pregnant women in the rural and urban clinics of Lusaka Province.

### **2.3.2 Specific Objective**

1. To compare levels utilization of IPT-SP of malaria between rural and urban pregnant women
2. To establish the timing of ante-natal clinic visits by pregnant women in relation to IPT use.
3. To assess the level of knowledge on IPT of malaria in relation to its use by pregnant women.
4. To establish level of education of pregnant women in relation to the use of IPT.
5. To establish number of pregnancies in relation to IPT use by pregnant women.
6. To establish the influence of cultural beliefs on the IPT use by pregnant women.
7. To establish quality of service in relation to IPT use by pregnant women.
8. To inform policy makers on study results and recommendations.

## **2.4.0 RESEARCH QUESTIONS**

- Is there a difference in IPT-SP utilization between the rural and urban pregnant women in Lusaka Province?
- What determines utilization of IPT of malaria by pregnant women in rural and urban areas of Lusaka Province?

## **2.5 HYPOTHESIS**

1. There is no difference in the utilization levels of IPT of malaria by pregnant women in rural and urban clinics of Lusaka Province.
2. Level of education is not associated with the use of IPT-SP of malaria by pregnant women in rural and urban clinics of Lusaka Province.

2.6 OPERATIONALISATION OF VARIABLES

VARIABLES	OPERATIONAL DEFINITION	INDICATOR	MEASUREMENT
<b><u>DEPENDENT VARIABLE</u></b> Utilization	Making practical and effective use of the IPT services	- Full utilization  - No full utilization	- Has had the 3 doses of Fansidar as scheduled considering the gestation of the pregnancy' -Has had less than the 3 recommended doses of Fansidar.
<b><u>INDEPENDENT VARIABLES</u></b> Education	A state where a pregnant woman had gone through formal educational process	- very educated -Moderately educated - Semi educated - Not educated	- Had gone up to college and above - Secondary level - Primary level - No school
Distance	The length of the space between the respondent's home and the health facility.	- Near  - Far  - Very far	- Less than 30 minutes walk from respondent's home to the health facility' -30 to an hour's walk - More than an



			hour's walk
Cultural beliefs	Ones beliefs and attitude towards pregnancy and use of IPT of malaria	<ul style="list-style-type: none"> <li>- Positive</li> <li>- Negative</li> </ul>	<ul style="list-style-type: none"> <li>- One has no reservation and appreciates the use of IPT of malaria and its benefits.</li> <li>- One has reservation and does not appreciate the use of IPT of malaria and its benefits.</li> </ul>
Age	Ones years of birth	<ul style="list-style-type: none"> <li>- Young</li> <li>- Medium</li> <li>- Old</li> </ul>	<ul style="list-style-type: none"> <li>- Up to 34 years old</li> <li>- 35 to 40 years old</li> <li>- More than 40 years</li> </ul>
Parity	Number of children a woman has	<ul style="list-style-type: none"> <li>- Prime gravida</li> <li>-Multi gravida</li> </ul>	<ul style="list-style-type: none"> <li>- A woman having pregnancy for the first time.</li> <li>- A woman who has had more than one pregnancy.</li> </ul>
Knowledge	Pregnant woman having knowledge about the IPT services.	<ul style="list-style-type: none"> <li>- Knowledgeable</li> <li>-Partially knowledgeable</li> </ul>	<ul style="list-style-type: none"> <li>- One has heard about IPT and is able to mention name of drug being used, dosage and its benefits.</li> <li>- One is able to mention one of the above.</li> </ul>

		Not knowledgeable	- One has or has not heard about IPT, but is not able to state its use and benefits.
Availability of service	Availability of Fansidar for IPT of malaria during ante-natal visits.	<ul style="list-style-type: none"> <li>- Available</li> <li>- Erratic</li> <li>- Not available</li> </ul>	<ul style="list-style-type: none"> <li>- Drug always available</li> <li>- Drug not always available</li> <li>- Drug never available.</li> </ul>
Waiting time	Time pregnant woman arrives at the ante natal clinic and the time she is attended to.	<ul style="list-style-type: none"> <li>- Less than 30 minutes</li> <li>- 30 minutes</li> <li>- 30 minutes to one hour</li> <li>- More than one hour</li> </ul>	<ul style="list-style-type: none"> <li>- No waiting</li> <li>- Waiting for sometime</li> <li>- Waiting for a long time</li> <li>- Waiting for a very long time.</li> </ul>
Staff attitude	Health workers' behaviour towards pregnant women	<ul style="list-style-type: none"> <li>- Bad attitude</li> <li>- Good attitude</li> </ul>	<ul style="list-style-type: none"> <li>- Behaving badly towards pregnant women.</li> <li>- Behaving well.</li> </ul>

## **CHAPTER 3**

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Research Design**

A comparative cross-sectional study design was undertaken to assess the utilization and determinants of IPT of malaria by pregnant women in the rural and urban clinics of Lusaka Province.

#### **3.2 Variables**

##### **Dependent Variable**

Utilization

##### **Independent Variables**

- Education
- Distance
- Cultural beliefs
- Age
- Parity
- Staff attitude
- Availability of service
- Waiting time
- Knowledge

### 3.3 Research Setting

The study was conducted in Lusaka Province. The sites included four urban clinics – Mutendere, Chawama, Kabwata and Chilenje, in Lusaka District, and four rural clinics – Chongwe, Chainda, Chalimbana and Kanakantapa, from Chongwe District.

### 3.4 Study Population

The study population were pregnant women in their 3<sup>rd</sup> trimester of pregnancy. The group was chosen because it was assumed that all the three recommended doses of Fansidar should have been taken at this stage by the pregnant women.

#### Inclusion criteria

- Pregnant women in the 3<sup>rd</sup> trimester of pregnancy.
- Pregnant women attending ante-natal clinics at the selected urban and rural clinics.
- Pregnant women who were willing to participate.

#### Exclusion criteria

- Pregnant women not in the 3<sup>rd</sup> trimester of pregnancy.
- Pregnant women who were not willing to participate.

### 3.5 Sample size determination

The sample size was calculated using the following formula.

$$N = \frac{Z^2 PQ}{d^2}$$

Z = Z value for 95 percent Confidence Level

P = Percentage of pregnant women in 3<sup>rd</sup> trimester of pregnancy. A prevalence of 50 percent was considered since the utilization rate could not be estimated.

$$Q = 100 - P$$

$$1.96 \times 1.96 \times 50 \times 50$$

---

$$5 \times 5$$

$$3.84 \times 2,500$$

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$$25$$

$$384$$

Adjusted for a response rate of 90 percent

$$384$$

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$$0.9$$

Rounded off to **430**

The above sample size was then applied to each study site (urban and rural). This was so because each study site was independent and therefore required independent sample size. The calculated sample size could not be achieved during the stipulated data collection period because of fewer numbers of pregnant women in the third trimester who were attending the ante-natal clinics. Only 370 respondents in Chongwe and 426 in Lusaka were interviewed.

### **3.6 Sampling Technique**

Four clinics in each study setting were conveniently selected. Stratification by socio-economic status was used for Lusaka District where two clinics were being attended by people from moderate to high socio-economic background and the other two clinics by people from the low socio-economic background. This ensured that pregnant women from all socio-economic backgrounds were included. As for Chongwe District, clinics which were easily accessible were considered. A systematic sampling technique was applied to select the sample from the rural and urban ante-natal clinics. Every second pregnant woman in the 3<sup>rd</sup> trimester of pregnancy attending ante-natal clinic during the data collection period and willing to participate was included in the study.

### **3.7 Data Collection**

Data collection was carried out over a period of a month and three weeks, starting from the 25<sup>th</sup> of September to the 16<sup>th</sup> of November, 2006. A structured interview schedule was used to collect data from the respondents. Physical check of ante-natal cards and clinic records were also done for verification.

### **3.8 Pre-test**

A pre-test was done before the main study in the second week of September, 2006 in one urban and one rural clinic that were not part of the main study. This was done to test the data collection tools to ensure that questions were clear, concise, and consistent. Appropriate changes were then be made.

### **3.9 Quality Control Checks**

At the end of each day of data collection, all the questionnaires were checked for any incomplete or missing information. A well completed questionnaire ensures consistency and quality of information collected. It also increases the statistical power of the study.

### **3.10 Ethical Consideration**

Ethical approval was sought from the Directorate of Post Graduate Studies and later from the University of Zambia Research Ethics Committee. Letters were written to the District Health Directors of Lusaka and Chongwe District Health Boards to seek permission to conduct the study at the selected rural and urban clinics and permission was granted to carry the study. A written informed consent for clients was signed (or thumb printed for those who were not able to write) before the interview. The nature and purpose of the study was explained and confidentiality, privacy and anonymity were assured. Respondents were not forced to provide the consent and those unwilling were left out. The researchers gave their contact addresses and telephone numbers in cases of any queries.

### **3.11 Data Processing and Analysis**

Before data entry, open ended questions were coded by assigning numbers to response categories and entered into the computer for analysis. Analysis was done by using SPSS Computer Statistical package. Frequencies and cross tabulation were done. Chi – Square statistical tests were carried out to test for the association between the dependent

variable and the independent variables. A result yielding a P- value of 5 percent was considered statistically significant.

### **3.12 Staffing and work plan**

Eight research assistants were recruited to help with data collection. The assistants were trained on how to collect data from respondents using the interview schedule.

### **3.13 Limitation of the study**

The main limitation of the study was failure to reach the required number of respondents for both Chongwe and Lusaka although a post hoc sample size calculation using 27.3 and 31.0 percent respectively as prevalence percentages gave 339 and 418 respondents respectively. This showed that 370 and 426 respondents that were interviewed in Chongwe and Lusaka respectively were actually adequate. The second limitation was the time limit in which the study had to be completed due to the university scheduling.



## **CHAPTER 4**

### **DATA ANALYSIS AND FINDINGS**

#### **4.1 INTRODUCTION**

The findings of the study have been presented using tables and the order of the presentations is as follows: Utilization levels of IPT/SP according to the areas (rural and urban); Demographic characteristics; Pregnancy; Knowledge; IPT/SP utilization patterns; Socio-cultural and Service factors in relation to utilization of IPT/SP and finally recommendations by respondents on how to improve delivery of IPT/SP..

#### **4.2 UTILIZATION OF IPT/SP ACCORDING TO AREA**

In Chongwe, utilization levels were: A total of 370 respondents were interviewed and of these 2(0.5 percent) took fansidar four times, 99(26.8 percent) took three times, making full utilization of the IPT/SP service [101(27.3 percent) out of 370(100 percent)]. The remaining 157(42.4 percent) respondents took fansidar two times, 90(24.3 percent) took once and 22(5.9 percent) did not take any at all. In Lusaka, out of a total of 426 respondents who were interviewed, 6(1.4 percent) took fansidar four times, 126(29.6 percent) took three times, making full utilization of IPT/SP service [132(31.0 percent) out of 426(100)]. The rest 152(35.7 percent) respondents took fansidar two times, 137(32.2 percent) took only once and 5(1.2 percent) did not take any at all. The levels of full utilization of IPT/SP were not significantly different between the study areas ( $P=0.288$ ).

TABLE 1.UTILISATION OF IPT/SP BY CLINIC

Characteristics	Total n[%]	Fully Utilised IPT/ SP n[%]	Not Utilised IPT/ SP n[%]	X <sup>2</sup>	P- Value
<b><u>Chongwe</u></b>					
Chongwe	109 [29.5]	47[46.5]	62[23.0]	21.73	<0.001
Chainda	92 [24.9]	21[20.8]	71[26.4]		
Kanakantampa	67 [18.1]	17 [16.8]	50[18.6]		
Chalimbana	102 [27.6]	16 [15.8]	86 [32.0]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b><u>Lusaka</u></b>					
Kabwata	100 [23.5]	27 [20.5]	73 [24.8]	79.28	<0.001
Mtendere	110 [25.8]	64 [48.5]	46 [15.6]		
Chilenje	109 [25.6]	38 [28.8]	71 [24.1]		
Chawama	107 [25.1]	3 [2.3]	104 [35.4]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 1 shows a significant association between the clinics and utilization of IPT/SP for both Chongwe (P<0.001) and Lusaka (P<0.001). In Chongwe district, the majority of clients who utilized the service were from Chongwe clinic (46.5 percent) and Chalimbana clinic had the majority who did not fully utilize the service (32.0 percent). In Lusaka, Mtendere urban clinic had the highest number of clients who utilized the service (48.5 percent) whereas Chawama clinic had the highest number of clients who did not fully utilize the service (35.4 percent).

## DEMOGRAPHIC INFORMATION

**TABLE 2. DEMOGRAPHIC CHARACTERISTICS IN RELATION TO UTILISATION OF IPT/SP**

Characteristics	Total n[%]	Fully Utilized IPT/ SP n[%]	Not Utilized IPT/ SP n[%]	X <sup>2</sup>	P- Value
<b><u>Age (years)</u></b>					
<b><u>Chongwe</u></b>					
<24	160 [43.2]	45 [44.6]	115 [42.8]	0.53	0.767
24 – 34	174 [47.0]	48 [47.5]	126 [46.8]		
35 and above	36 [9.7]	8 [7.9]	28 [10.4]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b><u>Lusaka</u></b>					
<24	159 [37.3]	51 [38.6]	108 [36.7]	0.20	0.905
24 – 34	232 [54.5]	71 [53.8]	161 [54.8]		
35 and above	35 [8.2]	10 [7.6]	25 [8.5]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		
<b><u>Marital status</u></b>					
<b><u>Chongwe</u></b>					
Married	299 [80.8]	84 [83.2]	215 [79.9]	0.49	0.963
Not married	71 [19.2]	17 [16.8]	54 [25.1]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b><u>Lusaka</u></b>					
Married	379 [89.0]	120 [90.9]	259 [88.1]	0.47	0.490
Not married	47 [11.0]	12 [9.1]	35 [11.9]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		
<b><u>Religion</u></b>					
<b><u>Chongwe</u></b>					
Christian	362 [97.8]	99 [98.0]	263 [97.8]	0.22	0.883
Others	2 [2.2]	2 [2.0]	6 [2.2]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b><u>Lusaka</u></b>					
Christian	416 [97.7]	128 [97.0]	288 [98.0]	0.38	0.533
Others	10 [2.3]	4 [3.0]	6 [2.0]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

<b><u>Education level</u></b>					
<b>Chongwe</b>					
University/ College	9 [2.4]	2 [2.0]	7 [2.6]	0.62	0.890
Secondary	118 [31.9]	34 [33.7]	84 [31.2]		
Primary	192 [51.9]	53 [52.5]	139 [51.7]		
No Education	51 [13.8]	12 [11.9]	39 [14.5]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
University/ College	38 [8.9]	11 [8.3]	27 [9.2]	1.69	0.639
Secondary	191 [44.8]	62 [47.0]	129 [43.9]		
Primary	172 [40.4]	54 [40.9]	118 [40.1]		
No Education	25 [5.9]	5 [3.8]	20 [6.8]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		
<b><u>occupation</u></b>					
<b>Chongwe</b>					
House wife	253 [68.4]	60 [59.4]	193 [71.7]	5.81	0.121
Formally employed	45 [12.2]	16 [15.8]	29 [10.8]		
Business/self employed	36 [9.7]	14 [13.9]	22 [8.2]		
Students	36 [9.7]	11 [10.9]	25 [9.3]		
<b>Total No</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
House wife	282 [66.2]	90 [68.2]	192 [65.3]	0.37	0.946
Formally employed	86 [20.2]	25 [18.9]	61 [20.7]		
Business/self employed	33 [7.7]	10 [7.6]	23 [7.8]		
Students	25 [5.9]	7 [5.3]	18 [6.1]		
<b>Total No</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 2 shows that there were no significant associations between all the socio-demographic characteristics and utilisation of IPT/SP in both Chongwe and Lusaka Districts .Important points to note were: Both in Chongwe and Lusaka, the majority of respondents 174 (47.0 percent) and 232 (53.8 percent) respectively were aged between 24-34 years and were married 299 (80.8 percent) and 399 (89.0 percent) respectively. With regards to education level, the majority of respondents in Chongwe had attained

primary education 192 (51.9 percent), while in Lusaka they had attained secondary education 191 (44.8 percent).

### **INFORMATION ON THE PREGNANCY**

**Table 3. NUMBER OF PRESENT PREGNANCY IN RELATION WITH UTILISATION OF IPT/ SP**

Characteristics	Total n[%]	Fully Utilized IPT/ SP n[%]	Not Utilized IPT/ SP n[%]	X <sup>2</sup>	P- Value
<b>Number of present pregnancy</b>					
<b>Chongwe</b>					
Prime gravida	85 [23.0]	23 [22.8]	62 [23.0]	0.03	0.955
Multi gravida	285 [77.0]	78 [77.2]	207 [77.0]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b><u>Lusaka</u></b>					
Prime gravida	126 [29.6]	37 [28.0]	89 [30.3]	0.22	0.639
Multi gravida	300 [70.4]	95 [72]	205 [69.7]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 3 shows no significant associations between the number of the pregnancy respondents were carrying and utilisation of IPT/SP in both Chongwe and Lusaka Districts. Majority of respondents in both Chongwe and Lusaka were multi gravida 285 (77.0 percent) and 300 (70.4 percent) respectively.

**TABLE 4. AGE OF PREGNANCY (MONTHS) WHEN STARTED ANC IN RELATION TO UTILISATION OF IPT/ SP**

Characteristics	Total n[%]	Fully utilized IPT/SP n[%]	Not utilized IPT/SP n[%]	X <sup>2</sup>	P-Value
<b><u>Age (months) of pregnancy when started ANC</u></b>					
<b>Chongwe</b>					
Early(1-3months)	44 [11.9]	12 [11.9]	32 [11.9]	0.01	1.000
Late(4 and above)	326 [88.1]	89 [88.1]	237 [88.1]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
Early(1-3months)	79 [18.5]	27 [20.5]	52 [17.7]	0.29	0.586
Late(4 and above)	347 [81.5]	105 [79.5]	242 [82.3]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 4 shows that there was no significant association between age of the pregnancy when ante-natal care was commenced and utilisation of IPT/SP in both areas of Chongwe (0.586) and Lusaka (P=1.000) Districts. Further more, 326 (88.1 percent) out of a total of 370 respondents who were interviewed in Chongwe commenced ANC late while in Lusaka 347 (81.5 percent) out of a total of 426 respondents also commenced ANC late.

**TABLE 5. AGE (MONTHS) OF PREGNANCY AT THE TIME OF THE SURVEY IN RELATION TO UTILISATION OF IPT/SP**

Characteristics	Total n[%]	Fully Utilized IPT/SP n[%]	Not Utilized IPT/SP n[%]	X <sup>2</sup>	P-Value
<b>Age of pregnancy(months)</b>					
<b>Chongwe</b>					
7 months	183 [49.5]	27 [26.7]	56 [58.0]	3.71	<0.001
8 months	112 [30.3]	37 [36.6]	75 [27.9]		
9 months	75 [20.3]	37 [36.6]	38 [14.1]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
7 months	159 [37.3]	28 [21.2]	131 [44.6]	28.14	<0.001
8 months	141 [33.1]	45 [43.1]	96 [32.7]		
9 months	126 [36.6]	59 [44.7]	67 [22.8]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 5 shows a significant association between the age of pregnancies of the respondents at the time of the survey and utilization of IPT/SP in both Chongwe (P<0.001) and Lusaka (P<0.001). Most of the clients who utilized the IPT/SP service were 8 or 9 months pregnant in both Chongwe [ 37(36.6 percent or 37(36.6 percent)] and Lusaka [45(43.1 percent) or 59(44.7 percent)] while most of respondents who were

7 months least utilized the service in both areas, in Chongwe-256(58.0 percent ) and Lusaka-131 (44.6 percent).

**TABLE 6. AGE (MONTHS) OF THE PREGNANCY WHEN GOT THE FIRST DOSE OF IPT/SP IN RELATION WITH UTILSATION OF IPT/SP.**

Characteristics	Total n[%]	Fully Utilised IPT/ SP n[%]	Not Utilised IPT/ SP n[%]	X <sup>2</sup>	P- Value
<b>Age of pregnancy(months)</b>					
<b>Chongwe</b>					
4 – 6	308 [83.7]	93 [92.1]	211 [80.5]	7.13	0.008
7 – 9	59 [16.3]	8 [7.9]	51 [19.5]		
<b>Total</b>	<b>363 [100]</b>	<b>101 [100]</b>	<b>262 [100]</b>		
<b>Lusaka</b>					
4 - 6	343 [81.1]	122 [92.4]	221 [75.9]	16.08	<0.001
7 – 9	80 [18.9]	10 [7.6]	70 [24.1]		
<b>Total</b>	<b>423 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 6 shows significant associations between age of the pregnancy when the women got the first dose of IPT/SP and utilisation of IPT/SP, (Chongwe, P = 0.008 and Lusaka P <0.001). Clients who got their first IPT/SP dose when their pregnancies were 4-6 months old were more likely to fully utilize the IPT/SP service in both Chongwe 93(92.1 percent) and Lusaka 122 (92.4 percent).

## INFORMATION ON THE KNOWLEDGE OF THE RESPONDENTS ON MALARIA PREVENTION

**TABLE 7. KNOWLEDGE OF THE MEDICINE USED FOR MALARIA PREVENTION IN PREGNANCY IN RELATION WITH UTILISATION OF IPT/ SP**

Characteristics	Total n[%]	Fully Utilized IPT/SP n[%]	Not Utilized IPT/SP n[%]	X <sup>2</sup>	P-Value
Knowledge of medicine used to prevent malaria in pregnancy					
Chongwe					
Yes	362 [97.8]	101 [100]	261 [97.0]	3.07	0.080
No	8 [3.0]	0 [0.0]	8 [3.0]		
Total	370 [100]	101 [100]	269 [100]		
Lusaka					
Yes	417 [97.9]	130 [98.8]	287 [97.6]	0.33	0.566
No	9 [2.1]	2 [1.5]	7 [2.4]		
Total	426 [100]	132 [100]	294 [100]		

Table 7 shows no significant associations between knowledge of the medicine used for prevention of malaria in pregnancy and utilisation of IPT/SP in both Chongwe and Lusaka. In Chongwe, 362 (97.8 percent) respondents out of a total of 370 had the knowledge of the medicine used for prevention of malaria in pregnancy while in Lusaka 417 (97.9 percent) out of a total of 426 respondents had the knowledge.

### **KNOWLEDGE OF THE NAME OF THE MEDICINE IN RELATION WITH UTILISATION OF IPT/SP.**

There were no significant associations between respondents' knowledge of the name of the medicine for prevention of malaria and utilisation of IPT/SP for both Chongwe (P=0.559) and Lusaka (P=0.691). However most of the women interviewed in both Chongwe and Lusaka mentioned fansidar as the medicine for prevention of malaria in pregnancy, 359 (97.0 percent) out of a total of 370 respondents and 420(98.6 percent)



out of 426, while 11(3.0 percent) and 6(1.4 percent) respectively mentioned Chloroquine, Iron and folic Acid.

**TABLE 8. KNOWLEDGE OF NUMBER OF TABLETS OF FANSIDAR GIVEN IN RELATION WITH UTILISATION OF IPT/SP**

Characteristics	Total n[%]	Fully Utilized IPT/ SP n[%]	Not Utilized IPT/ SP n[%]	X <sup>2</sup>	P- Value
<b><u>Number of tablets given</u></b>					
<b>Chongwe</b>					
3 tablets	357 [96.5]	97 [96.0]	260 [98.5]	2.03	0.153
Others(1,2,4)	8 [2.2]	4 [4.0]	4 [1.5]		
<b>Total</b>	<b>65 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
3 tablets	399 [94.1]	129 [97.7]	270 [92.5]	4.53	0.033
Others(1,2,4)	25 [5.9]	3 [2.3]	22 [7.5]		
<b>Total</b>	<b>424 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 8 shows a significant association between respondents’ knowledge of number of tablets of fansidar given and utilisation of IPT/SP for Lusaka (P=0.033) and no significant association for Chongwe (P=0.153). In Lusaka , clients with knowledge of the number of tablets of fansidar given were more likely to have fully utilized the IPT/SP service. In Chongwe, the majority of the respondents interviewed 357 (96.5 percent) knew the number of tablets of fansidar that were being given.

## INFORMATION ON RESPONDENTS' PATTERN OF IPT/SP UTILISATION

**TABLE 9. TAKING OF FANSIDAR IN PRESENCE OF THE NURSES, SWALLOWING THE MEDICINE WHEN GIVEN AND TAKING MEDICINE LATER NOT IN PRESENCE OF THE NURSES IN RELATION WITH UTILISATION OF IPT/SP**

Characteristics	Total n[%]	Fully Utilized IPT/ SP n[%]	Not Utilized IPT/ SP n[%]	X <sup>2</sup>	P- Value
<b><u>Taking fansidar in presence of Nurses</u></b>					
<b>Chongwe</b>					
Yes	327 [88.9]	93 [92.1]	234 [87.6]	1.04	0.307
No	41 [11.1]	8 [7.9]	33 [77.8]		
<b>Total</b>	<b>368 [100]</b>	<b>101 [100]</b>	<b>267 [100]</b>		
<b>Lusaka</b>					
Yes	153 [36.1]	72 [54.5]	81 [27.7]	27.17	<0.001
No	271 [63.9]	60 [45.5]	211 [72.3]		
<b>Total</b>	<b>424 [100]</b>	<b>132 [100]</b>	<b>292 [100]</b>		
<b><u>You swallow medicine when given</u></b>					
<b>Chongwe</b>					
Yes	298 [90.0]	88 [94.6]	210 [88.3]	4.10	0.128
No	33 [10.0]	5 [5.4]	28 [11.7]		
<b>Total</b>	<b>331 [100]</b>	<b>93 [100]</b>	<b>238 [100]</b>		
<b>Lusaka</b>					
Yes	153 [97.5]	73 [55.3]	80 [27.2]	32.12	<0.001
No	4 [2.5]	0 [0.00]	4 [1.4]		
<b>Total</b>	<b>157 [100]</b>	<b>73 [100]</b>	<b>84 [100]</b>		
<b><u>You take fansidar later on</u></b>					
<b>Chongwe</b>					
Yes	62 [87.3]	10 [76.9]	52 [92.2]	5.71	0.057
No	9 [12.7]	4 [23.1]	5 [8.8]		
<b>Total</b>	<b>71 [100]</b>	<b>14 [100]</b>	<b>57 [100]</b>		
<b>Lusaka</b>					
Yes	250 [91.6]	57 [95]	193 [91.4]	29.78	<0.001
No	23 [8.4]	3 [5]	20 [8.6]		
<b>Total</b>	<b>273 [100]</b>	<b>60 [100]</b>	<b>211 [100]</b>		

Table 9 shows that respondents taking fansidar in presence of nurses and swallowing the fansidar when given and taking the fansidar later on were significantly associated

with the utilisation of IPT/SP in Lusaka only, ( $P < 0.001$ ,  $P < 0.001$  and  $P < 0.001$ ) respectively). In Chongwe, majority of the clients took fansidar in the presence of nurses 327 (88.9 percent) from a total of 368 of which 33 (10 percent) of them did not swallow the fansidar when they were given and 52 (86.4 percent) out of a total of 62 who did not take fansidar in the presence of nurses did not fully utilize the IPT/SP service. In Lusaka, 72(54.5 percent) who utilized the service took fansidar in the presence of nurses while 211 (72.3 percent) who did not take medicine in the presence of nurses did not fully utilize the service. All clients who utilized the service 73 (55.3 percent) swallowed the medicine when they were given and 20 (8.6 percent) who did not take the medicine in the presence of nurses did not utilize the service. Clients who took fansidar in the presence of nurses, swallowed it when given and took it later on for those who did not take in the presence of nurses were more likely to utilize the IPT/SP service.

## SOCIO-CULTURAL FACTORS

**TABLE 10. RESPONDENTS' OPINION ON WHETHER FANSIDAR IS BENEFICIAL OR HARMFUL TO PREGNANT WOMEN AND THEIR BABIES IN RELATION TO UTILISATION OF IPT/SP**

Characteristics	Total n[%]	Fully Utilized IPT/SP n[%]	Not Utilized IPT/SP n[%]	X <sup>2</sup>	P-Value
<b>Whether fansidar beneficial or harmful</b>					
<b>Chongwe</b>					
Beneficial	362 [97.8]	95 [94.1]	267 [99.3]	7.08	0.008
Harmful	8 [2.2]	6 [5.9]	2 [0.7]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
Beneficial	416 [97.7]	129 [97.7]	287 [97.6]	<0.01	1.000
Harmful	10 [2.3]	3 [2.3]	7 [2.4]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 10 shows that there was a significant association between respondents' opinion on whether fansidar is beneficial or harmful to pregnant women and their babies and utilisation of IPT/SP in Chongwe ( $P=0.008$ ), and no significant association was shown in Lusaka ( $P=1.000$ ). In Chongwe, clients who said that fansidar was beneficial 95(94.1 percent) were less likely to have fully utilized the IPT/SP service. In Lusaka a total of 416 (97.7 percent) clients out of 426 who were interviewed said fansidar was beneficial.

**TABLE 11. KNOWLEDGE ON TRADITIONAL MEDICINE, WHETHER USED THE TRADITIONAL MEDICINE AND WHETHER WOMEN ARE SUPPOSED TO TAKE FANSIDAR WHEN THEY ARE PREGNANT IN RELATION WITH UTILISATION OF IPT/SP.**

Characteristics	Total n[%]	Fully Utilized IPT/ SP n[%]	Not Utilized IPT/ SP n[%]	X <sup>2</sup>	P- Value
<b>Any knowledge on some traditional medicine</b>					
<b>Chongwe</b>				0.406	0.308
Yes	262 [70.8]	74 [73.3]	188 [69.9]		
No	108 [29.2]	27 [26.7]	81 [30.1]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>				2.348	0.077
Yes	145 [34.0]	38 [28.8]	107 [36.4]		
No	281 [66.0]	94 [71.2]	187 [63.6]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		
<b>Whether there were traditional medicine that prevent malaria</b>					
<b>Chongwe</b>				1.68	0.462
Yes	86 [23.4]	21 [20.8]	65 [24.4]		
No	281 [76.6]	80 [79.2]	201 [75.6]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>				15.92	<0.001
Yes	63 [23.4]	6 [4.5]	57 [19.4]		
No	363 [85.2]	126 [95.5]	237 [80.6]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		
<b>Use of traditional medicine with current pregnancy</b>					
<b>Chongwe</b>				0.01	0.941
Yes	79 [21.5]	22 [21.8]	57 [21.4]		
No	288 [78.5]	79 [78.2]	209 [78.6]		
<b>Total</b>	<b>367 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>				0.12	0.722
Yes	42 [9.9]	12 [9.1]	30 [10.2]		
No	384 [90.1]	120 [90.9]	264 [89.8]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 11 shows that in Lusaka there was a significant association between respondents knowledge of some traditional medicine that prevent malaria in pregnancy ( $P < 0.001$ )

and utilisation of IPT/SP. Clients who knew that there were traditional medicines that prevent malaria were less likely to have fully utilized the IPT/SP service in Lusaka.

There were no significant associations between the rest of the characteristics and utilisation of IPT/SP. In Chongwe, a total of 262 (70.8 percent) had knowledge of traditional medicines, 86 (23.4 percent) agreed that there were traditional medicines that prevent malaria in pregnancy and 79 (21.5 percent) agreed to have used traditional medicine with the current pregnancy. In Lusaka, 6 (4.5 percent) of those who fully utilized the service and 57 (19.4 percent) of those who did not fully utilize the service agreed that there were traditional medicines that prevent malaria in pregnancy. Also a total of 145 (34.0 percent) and 42 (9.9 percent) respondents respectively had knowledge of traditional medicine and had used them with the current pregnancy.

## SERVICE FACTORS

**TABLE 12. AVAILABILITY OF FANSIDAR IN THE CLINICS IN RELATION WITH UTILISATION OF IPT/SP**

Characteristics	Total n[%]	Fully Utilized IPT/SP n[%]	Not Utilized IPT/SP n[%]	X <sup>2</sup>	P-Value
<b>Is fansidar always available in clinics</b>					
<b>Chongwe</b>					
Yes	351 [94.9]	98 [97.0]	253 [94.1]	0.79	0.373
No	19 [5.1]	3 [3.0]	16 [5.9]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
Yes	390 [91.5]	128 [97.0]	262 [89.1]	6.28	0.012
No	36 [8.5]	4 [3.0]	32 [10.9]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		

Table 12 shows a significant association between availability of fansidar in the clinics and utilisation of IPT/SP in Lusaka ( $P=0.012$ ). Clients who said fansidar was not always available at the clinics were less likely to have fully utilized the IPT/SP service in Lusaka. No significant association in Chongwe ( $P=0.333$ ). Totals of 98 (97.0 percent) and 253 (94.1 percent) of those who fully utilized and did not fully utilize the service respectively said fansidar was always available in the clinics in Lusaka while in Chongwe a total of 351 respondents also said that fansidar was always available in the clinics.

**TABLE 13. TIME TAKEN FROM HOME TO THE CLINIC, WAITING TIME AND THE BEHAVIOUR OF THE HEALTH PROVIDERS (NURSES) IN RELATION WITH UTILISATION OF IPT /SP.**

Characteristics	Total n[%]	Fully Utilized IPT/ SP n[%]	Not Utilized IPT/ SP n[%]	X <sup>2</sup>	P-value
<b><u>Time taken from home to clinic</u></b>					
<b>Chongwe</b>					
Less than 30 minutes	122 [33.0]	31 [30.7]	91 [33.8]	3.74	0.154
30 minutes to 1 hour	150 [40.5]	36 [35.6]	114 [42.4]		
More than 1 hour	98 [26.5]	34 [33.7]	64 [23.8]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
Less than 30 minutes	220 [51.6]	72 [54.5]	48 [50.5]	0.89	0.641
30 minutes o 1 hour	153 [35.9]	46 [34.8]	107 [36.4]		
More than 1 hour	53 [12.4]	14 [10.6]	36 [13.3]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		
<b><u>Waiting time at the clinic</u></b>					
<b>Chongwe</b>					
Less than 30 minutes	79 [19.8]	20 [19.8]	59 [21.9]	0.44	0.802
30 minutes to 1 hour	154 [41.6]	41 [40.6]	113 [42.0]		
More than 1 hour	137 [37.0]	40 [39.6]	97 [36.1]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
Less than 30 minutes	171 [40.1]	55 [41.7]	116 [39.5]	0.21	0.899
30 minutes o 1 hour	147 [34.5]	45 [34.1]	102 [34.7]		
More than 1 hour	108 [25.4]	32 [24.2]	76 [25.9]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		
<b><u>Behaviour of health workers</u></b>					
<b>Chongwe</b>					
Behave well and are pleasant	242 [65.4]	61 [60.4]	181 [67.4]	8.65	0.013
Behave badly and not pleasant	39 [10.5]	6 [5.9]	33 [12.3]		
Some yes some no	89 [24.1]	34 [33.7]	55 [20.4]		
<b>Total</b>	<b>370 [100]</b>	<b>101 [100]</b>	<b>269 [100]</b>		
<b>Lusaka</b>					
Behave well and are pleasant	406 [95.3]	127 [96.2]	279 [94.9]	0.65	0.719
Behave badly and not pleasant	19 [4.5]	5 [3.8]	14 [4.8]		
Some yes some no	1 [0.2]	0 [0.0]	1 [0.3]		
<b>Total</b>	<b>426 [100]</b>	<b>132 [100]</b>	<b>294 [100]</b>		



Table 13 only shows a significant association between the behaviour of health workers towards respondents and utilisation of IPT/SP for Chongwe ( $P=0.013$ ). Clients who said health workers behaved well and were pleasant were more likely to have fully utilized the IPT/SP service. The rest of the characteristics were not significantly associated with utilisation of IPT/SP. In Chongwe, a total of 98 (26.5 percent) respondents took more than one hour to travel from their homes to the clinics and 154 (41.6 percent) and 137 (37.0 percent) waited for 30 minutes to one hour and more than one hour respectively before they were attended to by the health workers at clinics. In Chongwe still, 61 (60.4 percent) and 181 (67.4 percent) of those who fully utilized the service and who did not utilize the service respectively said health workers behaved well and were pleasant. In Lusaka, a total of 53 (12.4 percent) took more than one hour to travel from their homes to the clinics, 108 (25.4 percent) waited for more than one hour before they were attended to by the health workers at the clinics and 406 (95.3 percent) said health workers behaved well and were pleasant.

#### **RESPONDENTS' ADVICE/RECOMMENDATIONS ON HOW TO IMPROVE THE DELIVERY OF IPT/SP IN RELATION TO UTILISATION**

In both Chongwe and Lusaka, the majority of clients 58(57.4 percent) and 71 (53.8 percent) respectively who fully utilized the IPT/SP service recommended to continue giving fansidar to pregnant women. The majority of those who did not fully utilize the service also recommended to improve on drug supply [Chongwe-107 (39.8 percent)] and to continue giving fansidar to pregnant women [Lusaka-144 (49.0 percent)].

## **CHAPTER FIVE**

### **DISCUSSION OF FINDINGS**

#### **5.1 INTRODUCTION**

The study sought to assess utilisation of Intermittent Presumptive Treatment of malaria using fansidar and also to determine factors that were associated with it, among pregnant woman in the third trimester (7-9 months) of their pregnancies. Full utilisation of the service was measured by those women who had received three (3) or more doses or were receiving the third dose of IPT/SP on the day of the interviews. Those women who received less than three (3) doses were considered not to have fully utilized the service considering the Zambian policy on IPT/SP. The results were based on the analyses of the responses from a sample size of 370 pregnant women in third trimester from four (4) clinics in Chongwe district and also 426 from four clinics in Lusaka district.

#### **5.2 UTILISATION LEVELS**

Chongwe and Lusaka districts are part of Lusaka Province, where as Chongwe is situated in a rural setting, Lusaka is in the urban setting. This study has shown that utilisation levels of IPT/SP in the two districts of Lusaka Province were very low. The study revealed that in Chongwe a total of 370 pregnant women were interviewed, and of these only 27.3 percent had fully utilized the IPT/SP service having taken fansidar three times or more, 42.4 percent had taken two times, 24.3 percent had taken once and 6.0 percent had taken nothing at all. In Lusaka, the study revealed that out of a total of 426 respondents that were interviewed, only 31.0 percent fully utilized the service also having taken fansidar three times or more, 35.7 percent had taken fansidar

two times, 32.2 percent once and 1.2 percent had taken nothing at all. Similar findings were also reported by Guyatt et al (2004) in a study on “Use of Presumptive Treatment and Insecticide-treated bed nets by pregnant women in four Kenyan Districts”. The study revealed that only five percent of pregnant women had received two or more doses of fansidar as preventive treatment and only 14 percent of the women had received at least one dose of fansidar.

### **5.3 DEMOGRAPHIC FACTORS**

Demographic factors that were considered were; age, marital status, religion, level of education and occupation. The study found no significant associations between these demographic characteristics and utilisation of IPT/SP. Both in Chongwe and Lusaka, the majority of respondents (47.0 percent) and (53.8 percent) respectively were aged between 24-34 years, were married (80.8 percent) and (89.0 percent) respectively. With regards to education level, the majority of respondents in Chongwe had attained primary education (51.9 percent), while in Lusaka they had attained secondary education (44.8 percent).

Although the situation came out as it did, a study that was conducted by Hotz et al (2000) in Malawi on “use of ante-natal services and IPT/SP for malaria among pregnant women” found that women who were older and multigravida were more likely to fail to receive the recommended IPT/SP regimen. This could perhaps be attributed to the fact that they had gained enough experience in pregnancy and child bearing and felt they knew best what was good for them.

#### **5.4 THE PREGNANCY AND UTILISATION OF IPT/SP**

Although the number of pregnancies a woman has had and the age (months) of the pregnancy when a women started ante-natal care were not significant in this study, various studies have found these to be some of the factors that determine full utilisation of IPT/SP and ante-natal services. A study by Hotz et al (2004) on “Use of ante-natal services and IPT for malaria among pregnant women in Blantyre, Malawi District” stated that appropriate care during pregnancy and timely attendance at ANC clinics as factors for the effective delivery of IPT services. Another study by Uganda Bureau of Statistics (2002), found that in Sub-Sahara African, women do not seek ANC until late in pregnancy and they attend irregularly. This study has also shown that majority of the clients who were interviewed, (88.1 percent) in Chongwe and (81.5 percent) in Lusaka commenced their ANC late (at 4 months and above).

The current study revealed that the age (months) of the pregnancy at first dose of IPT/SP was significantly associated with full utilization of IPT/SP for both Chongwe and Lusaka. The women who got their first IPT/SP early, between 4-6 months of pregnancy, also fully utilized the service more than those who started late, 7-9 months, for both Chongwe (92.1 percent) and Lusaka (92.4 percent). This shows that if women start their IPT/SP early enough beginning from 4 months to about 6 months, then they stand a better chance of receiving all the three recommended doses of IPT/SP unlike when they start late, 7 to 9 months. Schultz et al (2004) in a study conducted in Kenya revealed that the late timing of the first dose of IPT/SP corresponding with late

registration at ANC clinics among pregnant women were also some of the determinants of non utilisation of IPT/SP service.

When women start receiving their IPT/SP at 4 month (16 weeks) as recommended and continue to receive the remaining two doses monthly, that would mean that by the time they were 7 to 9 months, they would have already completed receiving all their three doses and they would have fully utilised the service. The study revealed a significant association between the age (months) of the pregnancy at the time of data collection and utilisation of IPT/SP for both Chongwe and Lusaka Districts.

## **5.5 KNOWLEDGE ON MEDICINE USED FOR IPT OF MALARIA**

In this category, respondents were asked three questions; whether they knew that there was medicine for prevention of malaria in pregnancy, to mention the name of the medicine and the number of the tablets that were being given. Knowledge of the number of tablets that were being given came out significant in Lusaka but not in Chongwe and the rest were not significant. About 97.7 percent of the respondents who fully utilized in Lusaka and 96.0 percent respondents in Chongwe knew the number of tablets of fansidar that were given at the clinics. Respondents were generally very knowledgeable about the medicine used for prevention of malaria in pregnancy in both areas (97.0 percent in Chongwe and 98.6 percent in Lusaka) although some mentioned Chloroquine, iron and folic acid (3.0 percent in Chongwe and 1.4 percent in Lusaka). This is a situation of knowledge-practice gap where knowledge and usage do not go together as it is a case in many other circumstances. The study has demonstrated that

despite the high knowledge levels exhibited by the respondents, the over all utilization levels of IPT/SP service were very low in both districts. Guyatt et al (2004) in a study conducted in Kenya on “use of Presumptive Treatment and Insecticide-Treated bed nets by pregnant women in four Kenya District” also revealed similar findings. The study also found that despite high awareness about the IPT strategy, only 5 percent of pregnant women had received two or more doses of SP and only 14 percent had received at least one dose.

## **5.6 PATTERN OF IPT/SP UTILISATION**

In this category, respondents were asked whether they took the fansidar in the presence of nurses (Directly Observed Therapy), or not, whether they swallowed the tablets, and for those that did not take fansidar in the presence of nurses, whether they took fansidar later on. A significant association was shown for Lusaka on taking fansidar in the presence of nurses and swallowing the fansidar when given to take. A significant association was also shown for both Chongwe and Lusaka on taking fansidar later on.

The study revealed that in Lusaka, 72.3 percent of clients who did not fully utilize the service did not take fansidar in the presence of nurses and only about 54.5 percent pregnant women who fully utilized the service took their fansidar in the presence of nurses while in Chongwe 88.9 percent respondents took fansidar in the presence of nurses. The Zambian policy on IPT/SP administration follows the Directly Observed Therapy (DOT) Strategy. The study has also revealed that some pregnant women do not swallow the fansidar even when they were given under DOT strategy as it was the case

in Chongwe where 10.0 percent of the total clients who took fansidar in the presence of nurses did not swallow the medicine when they were given. These are the women who pretended to take the medicine when nurses were looking but spat it out later on. This calls for nurses to be very observant when administering the fansidar and to ensure that all the women swallow the medicine when given to take. The study has also revealed that some pregnant women who take the medicine home do not actually take it. About nine percent of clients who carried the fansidar to their homes and did not fully utilize the service in Chongwe actually did not take the fansidar at home and in Lusaka, the scenario was almost the same. A study by Mubyazi et al (2004) conducted in Tanzania also revealed similar findings. They stated that some women threw away the fansidar on their way home because they thought fansidar would cause abortion whilst others took smaller dosages than what was recommended because they alleged that fansidar caused one's body to weaken. These findings could also apply to Zambia as it is also one of the African countries with strong background of traditional medicines and cultural values.

## **5.7 SOCIO – CULTURAL FACTORS**

Respondents were asked for their opinion on whether fansidar was beneficial or harmful to pregnant women and their babies. A significant association was shown for Chongwe and not Lusaka. In Chongwe majority of the respondents, 95.1 percent and 99.3 percent of those who fully utilized the service and did not fully utilize the service respectively said that fansidar was beneficial. In Lusaka, 97.7 percent also said that fansidar was beneficial. Respondents who said that fansidar was beneficial to both mothers and their

unborn babies were less likely to have fully utilized the IPT/SP service in Chongwe. This is again a situation of knowledge-practice gap and perhaps compounded with traditional beliefs which have a great deal of influence on people especially those who live in rural areas. These people might have been taught the benefits of fansidar but continue to practice what they believe in.

A significant association was also shown for respondents' responses on whether there were traditional medicines that prevent malaria in pregnancy for Lusaka and not for Chongwe. About five percent of those who utilized the service and 19 percent of those who did not utilize the service agreed to the availability of traditional medicine that prevent malaria in pregnancy in Lusaka, while 23.4 percent out of the total of respondents who were interviewed in Chongwe also agreed to the availability of traditional medicines that prevent malaria in pregnancy. Although use of traditional medicine with the current pregnancy was not significant for both areas, 21.5 percent and 9.9 percent from the totals that were interviewed in both Chongwe and Lusaka respectively agreed to having used traditional medicines with the current pregnancies. Use of traditional medicines by pregnant women is part of our African-Zambian culture. There are traditional medicines for almost all ailments and a number of Zambians would actually try to use these medicines before consulting a health practitioner. Mubyazi et al (2004) also found that traditional beliefs about modern medicine were some of the reasons for low use of ante-natal care and IPT/SP services in rural communities. A study conducted by Kengeya et al (1994) also revealed that when pregnant women got malaria, care seeking behaviours included self medication with



anti malaria drugs from shops or use herbs, whilst visiting a health unit may be a last resort if there was no improvement. This study has therefore revealed that clients who knew that there were traditional medicines that prevent malaria in pregnancy were less likely to have fully utilized the IPT/SP service in Lusaka.

## **5.8 SERVICE FACTORS**

The quality of health services offered is an important factor in determining health seeking behaviour of clients. The term “quality service” in this case includes all services pertaining to customer care such as health workers’ behaviours when dealing with the clients, waiting time at the service facility, availability of drugs and other services.

A significant finding on availability of fansidar in the clinics was shown for Lusaka only. It is important that fansidar should always be available in the clinics if the IPT/SP service has to be fully utilized by the pregnant women. In Lusaka, 97.0 percent and 89.1 percent of those who fully utilized the service and did not fully utilize the service respectively said fansidar was always available in the clinics while in Chongwe 91.5 percent of respondents who were interviewed said fansidar was always available in the clinics. The study has shown that clients who said that fansidar was always available in the clinics were more likely to have fully utilized the IPT/SP service in Lusaka.

Although time taken from home to the clinic and waiting time at the clinic were not significant for both areas, the study results revealed that 26.5 percent and 12.4 percent of respondents out of the totals that were interviewed in both Chongwe and Lusaka respectively took more than one hour to travel from their homes to the clinics. The



study has also revealed that 37.0 percent and 25.4 percent of the respondents that were interviewed in both Chongwe and Lusaka respectively waited for more than one hour at the clinics before they were attended to by the health workers. Utilization of a maternal health service will always be affected if pregnant women have to travel long distances or spend more money on transport and also wait for a very long time in queues before they are attended to by health workers as this group of women have a lot of competing needs for their time and going to clinics to receive fansidar may not be a priority need.

Behaviour of health workers was significantly associated with utilisation of IPT/SP for Chongwe. The study revealed that 60.4 percent and 67.4 percent of respondents who did and did not utilize the service said that health workers behaved well and were pleasant in Chongwe while 95.3 percent of respondents who were interviewed in Lusaka also said the same. A study by De-Savigny (2004) in Tanzania, also observed a relationship between a user-perception of quality of care and their health care seeking behaviour for malaria and other illnesses, and found that that a negative implication on users' compliance with the recommended treatment procedures. This study has revealed that clients who said that health workers behaved well and were pleasant were less likely to have fully utilized the IPT/SP service. One of the reasons for such a situation could be clients' fear of victimization by the health staff even though confidentiality was assured before the interview. This could have made them say something which they did not mean.

The advice/recommendations that the respondents gave were significantly associated with utilisation of IPT/SP for both Chongwe and Lusaka. In both Chongwe and Lusaka, the majority of clients 57.4 percent and 53.8 percent respectively who utilized the IPT/SP service recommended to continue giving fansidar to pregnant women while the majority of those who did not utilize the service recommended to improve on drug supply in Chongwe (39.8 percent) and to continue giving fansidar to pregnant women in Lusaka (49.0 percent).

## **CHAPTER 6**

### **CONCLUSION AND RECOMMENDATIONS**

#### **6.1 CONCLUSION**

The study findings have demonstrated that utilisation levels of IPT/SP of malaria were low in both Chongwe and Lusaka Districts. In Chongwe, out of a total of 370 respondents who were interviewed, only 27.3 percent got three or more doses of fansidar (fully utilised), 42.4 percent got two doses, 24.3 percent got one dose and 6 percent got nothing at all. In Lusaka, out of a total of 426 respondents who were interviewed, only 31.0 percent got three or more doses of fansidar (fully utilised), 35.7 percent got two doses, 32.2 percent got one dose and 1.2 percent got nothing at all. With regards to utilization levels among the four different clinics in each district, the study has revealed that in Lusaka, Mtendere had the highest (64 percent) while Chawama had the lowest (2.3 percent). In Chongwe, Chongwe clinic had the highest (46.5 percent) while Chalimbana had the lowest (15.8 percent). The coverage of pregnant women with IPT/SP is far behind the National target of 80 percent by 2008 according to National Malaria Control Programme (2005).

The study findings also revealed that although all the demographic characteristics were not significantly associated with utilisation of IPT/SP, both in Chongwe and Lusaka, the majority of respondents (47.0 percent) and (53.8 percent) respectively were aged between 24-34 years, were married (80.8 percent) and (89.0 percent) respectively. With regards to education level, the majority of respondents in Chongwe had attained

primary education (51.9 percent), while in Lusaka they had attained secondary education (44.8 percent).

Another observation from the study results was that in both areas, pregnant women started ante-natal care late (4 months and above) and this translates into them also starting to receive their IPT/SP late. When pregnant women receive the first IPT/SP dose early enough during their pregnancy, then they stand a better chance of receiving the remaining two doses during the course of their ante-natal visits. This study has revealed that among the women who fully utilised the service, majority (92.1 percent for Chongwe and 92.4 percent for Lusaka) had got their first IPT/SP when their pregnancies were 4-6 months old. Therefore, age of the pregnancy at the first dose of IPT/SP was significantly associated with utilization of IPT/SP of malaria.

Knowledge and practice have always been assumed that they go together. Several studies have refuted this notion. This study has also agreed with other studies. The study has revealed that generally the majority of the respondents who were interviewed had knowledge about fansidar being used for malaria prevention in pregnancy (97.0 percent in Chongwe and 98.8 percent in Lusaka), knew the number of tablets that were being given (96.0 percent in Chongwe and 97.7 percent and 92.5 percent of those who did and did not utilize in Lusaka). This was significant for Lusaka district. Furthermore, majority of respondents believed that fansidar was more beneficial rather than harmful to them and their unborn babies (94.1 percent and 99.3 percent of those who did and did not utilize in Chongwe and 97.7 percent of those that were interviewed in Lusaka). This

was significant for Chongwe. With all these high levels of knowledge possessed by the respondents from both areas, it would have been expected that the overall utilization levels would also have been high but that was not the case. The study has revealed that it was only in Lusaka where clients who knew the number of tablets of fansidar being given were more likely to have fully utilized the service. In Chongwe, respondents who said that fansidar was beneficial to them and their unborn babies were less likely to have fully utilized the service. Despite the fact that the respondents knew the benefits they derived from taking the fansidar, still they did not see the need to take the required three doses. They have the knowledge which they do not apply to their benefit and IPT/SP utilisation continues to be very low.

Directly Observed Therapy (DOT) is a strategy that has been widely applied in the administration of some drugs to ensure that the clients take and swallow the drugs. Clients take the drugs in the presence of a nurse, a relative or treatment supporter. The Zambian policy emphasizes on the DOT strategy in the IPT/SP administration. The study findings revealed that taking fansidar in the presence of nurses, swallowing fansidar when respondents were given to take were significant for Lusaka, while taking the fansidar later on for those who did not take in the presence of nurses was significant for both Chongwe and Lusaka. Furthermore, the study has revealed that generally Chongwe had more respondents (88.9 percent) than Lusaka (36.1 percent) who took fansidar in the presence of nurses and at the same time, Lusaka had more respondents (91.6 percent) than Chongwe (87.3 percent) who took the medicine later on.

With regards to knowledge of traditional medicine that prevent malaria in pregnancy and use of traditional medicine with the current pregnancy, the study has revealed that more respondents in Chongwe (70.8 percent and 23.4 percent respectively) than in Lusaka (34.0 and 14.8 percent) had knowledge of some traditional medicine, and those that prevent or treat malaria in pregnancy and more respondents in Chongwe (21.5 percent) than in Lusaka (9.9 percent) had used traditional medicine with the current pregnancy. Therefore, clients who knew that there were traditional medicines that prevent malaria were less likely to fully utilize the IPT/SP service in Lusaka.

The quality of service encompasses availability of drugs in the clinics, waiting time at the clinic before clients are attended to and behaviour of health workers towards the clients. The study has revealed that availability of fansidar in the clinics was significant for Lusaka and the majority of respondents in both areas mentioned that fansidar was always available in the clinics (94.9 percent in Chongwe and 97.0 percent and 89.1 percent who did and did not utilize the service in Lusaka). Pregnant women would feel encouraged to utilize a service if they believed that they would always find the medicine at the clinic, but if the medicines were not always available at the clinics, then they would not be very keen to attend the clinics. A general observation was also made on the waiting time at the clinic before clients were attended to by the health workers. About 37.0 percent and 25.4 percent of the clients in Chongwe and Lusaka respectively revealed that they waited for more than one hour at the clinic before they were attended to by the health workers. Women usually have many competing needs for their time and waiting for a long time at the ante-natal clinics may not always be priority.

The way the health workers behave towards the clients will also determine the utilisation levels of a service offered. Where health workers were pleasant, sensitive and treated clients with respect and dignity, utilisation levels would also be high and where the opposite applied, utilisation levels would also be low. This characteristic was significant for Chongwe. The study has revealed that majority of respondents (95.3 percent) in Lusaka mentioned that health workers behaved well and were pleasant while in Chongwe 60.4 percent and 67.4 percent who did and did not fully utilize the service respectively mentioned that health workers behaved well and were pleasant. Clients who said that health workers behaved well and were pleasant were less likely to fully utilize the IPT/SP service. These are the type of people who may be afraid to say the truth about the way they were treated by the health workers at the clinics or they just do not know their rights.



## **6.2 RECOMMENDATIONS**

Zambia through the National Malaria Control Programme has embarked on implementing interventional measures to reduce the prevalence of malaria. The country intends to have 80 percent coverage of all pregnant women and under five children with Insecticide treated nets (ITNs), protect 80 percent of the pregnant women with IPT/SP, to spray up to 80 percent of all structures with Indoor residual spray (IRS) and to use appropriate diagnostic tools and treat 80 percent of simple malaria cases with coartem to achieve substantial reduction of malaria.

The present study carried out a survey to look at utilisation of IPT/SP in the clinics of rural Chongwe and urban Lusaka. This was an attempt to find out how far IPT strategies have worked in protecting women and their unborn babies and how close we are in attaining our objectives of controlling malaria. In this context, the findings of the study have prompted the author to make some recommendations which will substantially contribute to achieving the objectives of National Malaria Control Program.

1. The study has revealed that utilization levels of IPT/SP of malaria in Lusaka and Chongwe Districts are very low, and way below the national target. It is therefore recommended that the Ministry of Health should make the ante-natal clinics more focused. Health workers need to strengthen health education on the importance of IPT/SP of malaria to the pregnant women and at the same time to be very vigilant and ensure that all pregnant women who visit the ANC clinics are given the fansidar whenever they are due to have it.
2. The study also revealed that fansidar was not always available in some clinics. The Ministry of Health through the respective District Health Management

Teams should devise strategies which will help to ensure that fansidar is always available at the clinics so that all pregnant women are given the fansidar whenever they are due to have it.

3. The findings of the study revealed that there is poor adherence to the practice of DOT strategy in the administration of fansidar by the nurses. The Ministry of Health through the respective District Health Management Teams should emphasize to the nurses that DOT strategy should always be followed when administering fansidar for IPT of malaria so as to ensure that the women take the medicine and to avoid instances where women do not actually take the medicine when they carry it home. The nurses should sensitize the women on the importance of the DOT strategy to gain their cooperation.
4. The knowledge-practice gap which was revealed by the study need to be addressed. Majority of the clients knew the medicine for prevention of malaria in pregnancy and they were also aware of the benefits of taking the medicine but still did not utilize the service fully. Majority of these women are coming from low social-economic backgrounds. The IEC specialists in the Ministry of Health and National Malaria Control Centre need to devise motivational strategies which will be convenient, advantageous, and free of stress for pregnant women to make them want to utilize the service.
5. Lusaka Urban District needs to take an active part in instituting malaria control interventions. With good public and private mix, the Lusaka Urban District can subcontract private clinics to give IPT/SP to pregnant women. In the rural areas, Chongwe District Health Management Team should ensure that out-reach

activities should be intensified and Traditional birth attendants should be considered to start giving fansidar to the pregnant women as they live together in the community. This will substantially contribute to high utility of IPT/SP to pregnant women.

6. Finally, the study believes that IPT/SP strategy is very important for not only reducing malaria during pregnancy, but also preventing various complications of malaria if one successfully took all the three doses of fansidar according to the recommended time. If Zambia has to achieve 80-90 percent coverage of all pregnant women in the country to be protected by IPT/SP, and also achieve the Millennium Development Goal of combating malaria among other diseases, then the recommendations made in this study should be seriously looked at.

***“Service to people at home is service to the entire nation as a whole”.***

The Ministry of Health should aspire to do just that!

## 7.0 REFERENCES

- Alilio, M, Bakeere, S, Collins, A, Gausi, K, Govere, J, Kureri, P, Lang, A, Sipilanyambe. (2000). *Zambia Roll Back Malaria Consultative Mission Final Report: Essential Action to Support the Attainment of the Abuja Targets*. Lusaka.
- Brabin, B.J. (1991). *The Risks and Severity of Malaria in Pregnant Women. Applied field research in malaria report*. WHO, Geneva.
- Central Statistical Office. (2000). *Provincial Census-Lusaka*. Lusaka, Zambia
- Central Statistical Office [Zambia], Central Board of Health [Zambia], ORC Macro. (2003). *Zambia Demographic and Health Survey 2001-2002*. Calverton, Maryland, USA: Central Statistical Office, Central Board of Health, and ORC Macro.
- De Savigny, D, Mayombana, C, Mwageni, E, Masanja, H, Minhaj, A, Mkilindi, Y, Mbuya, C, Kasale, H, Reid, G. (2004). *Care-seeking patterns for fatal malaria in Tanzania*. Malaria Journal, 3:27
- Fosu, G.B. (1994). *Children Mortality and Health Services Utilization: Cross-national Comparison of user-related factors from DHS data*. Soc. Sci. Med. 38,1209-1220.
- Gulmezoglu, A.M. and Garner, P. (1997). *Interventions to prevent malaria\_during pregnancy in endemic malarious areas*. In: Garner,P., Gelband, H., Olliaro, P., Salinas, R., Volmink, J., Wilkinson, D. (Eds.). Infectious Disease Module of the Cockrane Database of Systematic Reviews.
- Guyatt, H.L, Noor, A. M, Ochola, S. A, Snow, R. W. (2004). *Use of Presumptive Treatment and Insecticide- treated bednets by pregnant women in four Kenyan Districts*. Trop Med Int Health, 9:255-261.

Hanson, K, Goodman, C, Lines, J, Meek, S, Bradley, D, Mills, A. (2004). *The economics of malaria control interventions*. In Global Forum for Health Research. WHO. Geneva.

Holtz, T.H, Kachur, S.P, Roberts, J.M, Marum L.H, Mkandala, C, Macheso, A. (2004). *Use of ante-natal services and IPT for malaria among pregnant women in Blantyre, Malawi District*. Trop Med Int Health, 9:77-82

Kasonka. (2006). *Presentation on Malaria in Pregnancy at the National Malaria Control Centre*. Lusaka

Kengeya, J.K, Seeley, J.A, Kajura,-Beganja, E. (1994). *Recognition, treatment seeking behaviour and perception of cause of malaria among rural women of Uganda*. Acta Trop.,58, 267-273.

Lusaka Provincial Health Office. (2005). *Population Parameters Report, all quarters*. LPHO, Lusaka.

Lusaka Provincial Health Office. (2005). *Service Delivery Report, all quarters*. LPHO, Lusaka.

Lusaka Provincial Health Office. (2005). *Disease Summary Report, all quarters*. LPHO, Lusaka.

Lusaka Provincial Health Office. (2005). *Malaria by Total incidence Report, all quarters*. LPHO, Lusaka

Magnussen, P. (2003). *Antimalarial intermittent treatment during pregnancy: how do we ensure coverage and compliance in Africa*. PREMA-EU Newsletter, Issue 2.

Mc Gregor, I. A. (1984). *Epidemiology, malaria and pregnancy*. Am. J. Trop. Med. Hyg., 33, 517-525.

Ministry of Health. (2005). A 5-year Strategic Plan, 2006-2010. A Road Map for Impact on Malaria in Zambia, Lusaka.

Ministry of Health. (2005). *Zambia Report to the World Health Organization, 58<sup>th</sup> World Health Assembly 16-25 May, 2005*. Lusaka

Mubyazi, G, Bloch, P, Kamugisha, M, Kitua, A, Ijumba, J. (2005), *Intermittent Preventive Treatment of malaria during pregnancy: a qualitative study of knowledge, attitudes and practices of district health managers, ante-natal care staff and pregnant women in Karogwe District, North-Eastern Tanzania*. <http://www.malarialjournal.com/content/4/1/31.htm>

National Malaria Control Centre, (2005), *The National Strategic Plan, 2006-2011*. NMCC, Lusaka

Ndyomugenyi, R. Neema, S, Magnussen, P. (1998). *The Use of Formal and Informal Services for ante-natal care and malaria treatment in rural Uganda*. Health Pol. Plan. 13, 94-102.

Otolorin, D. (2005). *Malaria during Pregnancy*. John Hopkins University. USA

Rogerson, S. J, Chaluluka, E, Kanjala, M. (2001) *Intermittent Sulfadoxine-Pyrimethamine in pregnancy: effectiveness against malaria morbidity in Blantyre, Malawi* Trans. R. Soc. Trop. Med. Hyg., 94, 549-553

- Shachakanza, J, (2007). *Determinants of utilisation of Intermittent Presumptive Treatment of malaria in Ndola District*. Department of Community Medicine, University of Zambia
- Schultz, L, Steketee, R.W, Parise, M, William, J.J, Oloo, A, Nahlen, B. (2004). *A selection of Essays: Malaria during pregnancy: An ante-natal intervention strategy whose time has come*. [http://web.idrc.ca/en/ev/28394-201-1-DO\\_TOPIC.htm](http://web.idrc.ca/en/ev/28394-201-1-DO_TOPIC.htm)
- Shulman, C.E, Dorman, E. K, Cutts, F. et al. (1999). *Intermittent Sulfadoxine-Pyrimethamine to prevent severe anaemia and malaria in pregnancy: a randomized placebo-controlled trial*. Lancet, 353, 632-636.
- Steketee, R.W, Wirriam, J, Hightower, J. (1996). *The effects of malaria prevention in Pregnancy of offspring birth weight, prematurity and intra uterine growth retardation in rural Malawi*. Am.J. Trop. Med. Hyg., 55, 33-45
- Sukwa, T. et al. (2004). *Combination Therapy in Malaria: Orientations and Options for the African Region*. WHO, Brazaville.
- Uganda Bureau of Statistics. (2002). *The Uganda Demographic and Health Survey*. Uganda Bureau of Health Statistics, Entebbe, Uganda.
- United Nations. (2000). *2001-2010, Decade to Roll Back Malaria*. <http://www.rbm.who.int/cmc-upload/0/000/015/370/RBMInfosheet-3.htm>.
- USAID. (2005). *Maximizing Access and Quality: Prevent and Treat Malaria during Pregnancy*. <http://www//E:IPT in malaria prevention.htm>
- Van Eijk, A.M, Ayisi A.G, Kuile, F.O, Otieno, J.A, Misore-Odoni, J.O, Rose, D.H, Kager, P.A, Steketee, R.W, Nahlen, B.L. (2004). *Implementation of intermittent preventive treatment with Sulfadoxine-Pyrimethamine for control of malaria in pregnancy in Kisumu, Western Kenya*. Trop Med Int Health, 9: 630-637.

WHO. (2004). *Malaria Control in the WHO African Region. Turning the corner on malaria control: Scaling up interventions to reach the most vulnerable.* WHO



## INFORMED CONSENT

### RESEARCH STUDY PARTICIPANT INFORMATION SHEET

*Note that the eligible participants are those women that are pregnant, from 7-9 months, and having their usual ante-natal clinic visits at the selected clinics both in Lusaka and Chongwe Districts.*

#### **Introduction**

This form gives you information about the study in which you are being requested to participate. To make sure that you have all the facts about the study you must read this form or have someone read it to you. If you agree to participate in the study, you should sign this form or put a mark in the space on the form if you can not sign. You will get a copy of this form to keep. Discuss any unclear section on this form with the staff who will interview you. If you feel that you do not want to take part, you are free not to participate in the study and your refusal will in no way influence your care from the health staff or the interviewers.

#### **Purpose of the Research**

This study is being carried out by the Department of Community Medicine of the University of Zambia. We would like to ask you questions on the use of Fansidar in the prevention of malaria in pregnancy and what factors encourage or discourage pregnant women from taking Fansidar. The answers you and others will give will help us to find ways of how to properly assist pregnant women prevent malaria by taking Fansidar three times during pregnancy so that they can maintain their health and those of their unborn babies. The amount of your time needed will be about 20 minutes. Participation in the study is voluntary. Even if you participate, you may decide to stop answering questions at any time. This will in no way affect how the interviewers will treat you. If you would like to know more about your rights as a research volunteer, you may contact the following people:

Priscar S Mukonka, UNZA, School of Medicine, Dept of Community Medicine, Box 50110, Lusaka. Phone No 097 798383

Supervisor's address

Professor K.S. Baboo, UNZA, School of Medicine, Dept of Community Medicine, Box 50110, Lusaka. Phone No 095 832672  
The Chairperson, University of Zambia Research Committee, Box 50110, Lusaka.

I hope you will participate in this study since your views are very important.

**Risks, Discomforts and Benefits**

There are no risks or discomforts that will arise from taking part in this study. However, the results of the study will be used to make recommendations that may improve the health of the pregnant women and their unborn babies by preventing malaria in pregnancy by taking the three recommended doses of Fansidar given at the ante-natal clinics. Malaria in pregnancy is very dangerous to both the mother and the unborn baby.

**Confidentiality**

Whatever answers you will provide, will be kept confidential and will not be shown to other persons who are not connected to the study. Interviews will also be conducted in privacy and your name will not appear anywhere on the paper.

-----  
By signing below, I confirm that I understand that participation in this research is entirely voluntary. The material in this consent has been explained to me and my questions answered to my satisfaction. I freely and voluntarily choose to participate. I understand that I can stop answering questions at any time during the interview. I understand that my rights and privacy will be maintained.

I hereby give my consent to participate in the study on “Factors that encourage or discourage pregnant women from taking Fansidar to prevent malaria in Lusaka Province”.

----- Signature/Thumb print of participant -----	----- Date -----
----- Name of participant (BLOCK LETTERS) -----	
----- Signature of witness -----	----- Date -----
----- Name of witness (BLOCK LETTERS) -----	

APPENDIX H

**THE UNIVERSITY OF ZAMBIA**

**SCHOOL OF MEDICINE**

**DEPARTMENT OF COMMUNITY MEDICINE**

**RESEARCH INTERVIEW SCHEDULE**

**TITLE OF THE STUDY**

Determinants of utilization of Intermittent Presumptive Treatment of malaria by pregnant women in the urban and rural clinics of Lusaka Province.

DATE : .....TIME .....

NAME OF CLINIC ..... QUESTIONNAIR NO. ....

A research proposal submitted to the University of Zambia in partial fulfillment of the requirements of the degree of Master in Public Health.

**INSTRUCTIONS TO RESEARCH ASSISTANTS**

1. Always introduce yourself before interview.
2. Explain the purpose of the study and ask for permission to conduct the interview.
3. Make the respondent sign/thumb print the consent form before you start the interview.
4. Assure confidentiality of information collected.
5. Do not force a respondent to participate, pull out politely where respondent is reluctant or unwilling.
6. Do not write the name of the respondent on the questionnaire.
7. Write the appropriate responses in the spaces provided.
8. Thank the interviewee after the interviews.

**DEMOGRAPHIC DATA**

1. Date of birth .....
2. Residential Address
  - 1) Chongwe-rural..... [ ]
  - 2) Lusaka-urban..... [ ]
3. What is your marital status?
  - 1) Married..... [ ]
  - 2) Divorced..... [ ]
  - 3) Widowed..... [ ]
  - 4) Single..... [ ]
  - 5) Separated ..... [ ]
  - 6) Cohabiting ..... [ ]
4. What is your religion?
  - 1) Christian..... [ ]
  - 2) Moslem..... [ ]
  - 3) Hindu ..... [ ]
  - 4) Other, specify .....
5. What level of education did you attain?
  1. University/College..... [ ]
  2. Secondary..... [ ]
  3. Primary..... [ ]
  4. No Education..... [ ]
6. What is your occupation?
  1. House wife..... [ ]
  2. Formally employed..... [ ]
  3. Business/self employed ..... [ ]
  4. Others, Please specify .....

## **SERVICE UTILIZATION INFORMATION**

7. How many months of pregnancy were you when you started visiting the ante natal clinic?
- 1) Less than 2 months..... [   ]
  - 2) 2 – 3 months..... [   ]
  - 3) 4 – 5 months ..... [   ]
  - 4) 6 – 7 months..... [   ]
  - 5) 8 – 9 months..... [   ]
8. What number is the pregnancy you are carrying now?
- 1) 1<sup>st</sup> pregnancy..... [   ]
  - 2) 2<sup>nd</sup> pregnancy..... [   ]
  - 3) 3<sup>rd</sup> pregnancy ..... [   ]
  - 4) 4<sup>th</sup> pregnancy..... [   ]
  - 5) 5<sup>th</sup> pregnancy and above..... [   ]
9. How many months is your pregnancy at the moment?
- 1) 7 months..... [   ]
  - 2) 8 months..... [   ]
  - 3) 9 months..... [   ]
10. In your own opinion, do you think malaria in pregnancy can be prevented?
- 1) Yes..... [   ]
  - 2) No..... [   ]
11. If the answer to question 10 is YES, do you know the medicine which is being given at the clinic for prevention of malaria in pregnancy?
- 1) Yes..... [   ]
  - 2) No..... [   ]
12. If the answer to question 11 is YES, what medicine is given at the ante-natal clinic to prevent malaria in pregnancy?
- 1) Chloroquine..... [   ]
  - 2) *Coartem*..... [   ]

- 3) Iron..... [ ]
- 4) Folic acid..... [ ]
- 5) Fansidar..... [ ]
13. How many tablets of the medicine are you being given at the clinic?
- 1) 1 tablet..... [ ]
- 2) 2 tablets..... [ ]
- 3) 3 tablets..... [ ]
- 4) 4 tablets..... [ ]
14. How many months of pregnancy were you when you were given the first dose of medicine for prevention of malaria?
- 1) 4 months..... [ ]
- 2) 5 months..... [ ]
- 3) 6 months..... [ ]
- 4) 7 months..... [ ]
- 5) 8 months..... [ ]
- 6) 9 months..... [ ]
15. How many times have you taken the medicine for the prevention of malaria up to now?
- 1) None..... [ ]
- 2) Once..... [ ]
- 3) Twice..... [ ]
- 4) Three times..... [ ]
- 5) Four times..... [ ]

### **SOCIO-CULTURAL FACTORS**

16. When you are given the medicine, do you take them there and then, while the nurses are looking?
- 1) Yes..... [ ]
- 2) No..... [ ]

17. If the answer is YES to question 16, do you really swallow the medicine when you are given to take?
- 1) Yes..... [ ]
- 2) No..... [ ]
18. If the answer is NO to question 16, do you really take the medicine later on?
- 1) Yes ..... [ ]
- 2) No..... [ ]
19. In your own opinion, do you think taking antimalarial medicine while pregnant is beneficial or harmful to you and the baby?
- 1) Beneficial..... [ ]
- 2) Harmful..... [ ]
20. In your culture, are there some traditional medicines that you take when you are pregnant?
- 1) Yes..... [ ]
- 2) No..... [ ]
21. Are there some traditional medicines that one can take to prevent or cure diseases like malaria in pregnancy?
- 1) Yes..... [ ]
- 2) No..... [ ]
22. Have you taken some traditional medicine with the present pregnancy?
- 1) Yes..... [ ]
- 2) No..... [ ]
23. In your own opinion, do you really think that pregnant women should take the medicine they are given at the clinic?
- 1) Yes..... [ ]
- 2) No..... [ ]

## SERVICE FACTORS

24. Has the antimalarial medicine always been available  
at the clinic when you were due to have it?

- 1) Yes..... [ ]
- 2) No..... [ ]

25. How long does it take you to travel from your home to the clinic?

- 1) Less than 30 minutes walk... [ ]
- 2) 30 minutes to 1 hour's walk.. [ ]
- 3) More than 1 hour's walk..... [ ]

26. Does the distance sometimes make you not  
go to the ante-natal clinic when you are due for the malaria  
medicine?

- 1) Yes it does ..... [ ]
- 2) No it doesn't ..... [ ]

27. When you go to the ante-natal clinic, how long do you have  
to wait before you are attended to?

- 1) Less than 30 minutes..... [ ]
- 2) 30 minutes to 1 hour..... [ ]
- 3) More than 1 hour..... [ ]

28. Does the waiting time sometimes make you not  
attend the ante-natal clinic to get your antimalarial  
medicine when you are due to have it?

- 1) Yes it does ..... [ ]
- 2) No it doesn't ..... [ ]

29. In your own opinion, what would you say about the behaviour  
of the health staff's towards you?

- 1) They behave well, and are pleasant..... [ ]
- 2) They behave badly, and are unpleasant..... [ ]



30. Does the behaviour of the health staff sometimes encourage/  
discourage you from attending the ante-natal clinic to get the  
antimalarial medicine?

- 1) Encourages me..... [ ]
- 2) Discourages me..... [ ]

31. What would be your advice to improve the delivery of  
antimalarial medicine to the pregnant women?

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**Thank you for answering the questions. God bless.**