

CHAPTER ONE 1.0 INTRODUCTION

1.1 BACKGROUND INFORMATION

It has been documented that forty percent of the world's pregnant women are at risk of malaria infection (Shulman, 2003). Each year, approximately 25 million African women become pregnant in malaria endemic areas and are at risk of *Plasmodium falciparum* infection during pregnancy (Steketee et al, 2001). Most women in the African region reside in areas of relatively stable malaria transmission, where the principal effects of malaria infection during pregnancy are associated with malaria related anaemia in the mother and with the presence of parasites in the placenta. The resultant impairment of fetal nutrition contributes to low birth weight (LBW), which is a leading cause of infant survival and development in Africa (McCormick, 1985). Although the serious impact of malaria infection during pregnancy has been known for a half century, coverage of pregnancies at risk of malaria infection, according to World Health Organization (WHO) and national guidelines, has been low in most malaria endemic countries.

The effectiveness of the previous policy of weekly chemoprophylaxis with chloroquine (CQ), was limited by poor compliance outside the clinic setting. The expansion of drug resistance of *P. Falciparum* to CQ and other medicines has further eroded the effectiveness of CQ Chemoprophylaxis (Sirima et al, 2003).

In the past decade, strategies have been developed to more effectively control the adverse effects of malaria in pregnancy and these serve as the basis for highly effective programmes in the African Region. The development of the Intermittent Preventive Treatment in

Pregnancy (IPTp) approach, constitutes a major advance for achieving high programme coverage and effectiveness (WHO, 2000). The IPT in pregnancy programme in the Ashanti Region has experienced vast differences in coverage between actual results and the WHO recommended outcome (Ejisu-Juaben Municipal Health Directorate, Annual Report, 2007).

Malaria has been the leading cause of morbidity and mortality in the Ejisu-Juaben Municipality since 2003 (Ejisu-Juaben Municipal Health Directorate, Annual Report, 2007). The cases, which include malaria in pregnant women, kept on increasing from year to year.

Table 1.1 Incidence of malaria in the Ejisu-Juaben Municipality, 2003-2007

YEAR	NO OF CASES
2003	20,947
2004	21,442
2005	32,081
2006	37,987
2007	42,543

SOURCE: EJMHD-Annual Report-2007

The WHO policy for malaria prevention and control during pregnancy in areas of stable malaria transmission in Africa is a package of Intermittent Preventive Treatment in Pregnancy (IPTp) and Insecticide Treated Nets (ITN), together with effective management of clinical malaria and anaemia (WHO 2004). The recommended drug for IPT in Pregnancy (IPTp) in areas of Africa where the transmission of *P. falciparum* malaria is stable, and

where resistance to the medicine is low, is Sulfadoxine Pyrimethamine (SP), which has a good safety profile in pregnancy and good programme feasibility, with the opportunity for delivery as a single dose treatment, under direct observation. (WHO 2004)

The policy states that, all pregnant women in stable malaria transmission areas should receive at least two doses of the recommended anti malaria medicine at the first and second regularly scheduled antenatal clinic (ANC) visits after quickening (first movement of foetus). WHO .presently recommends an optimal schedule of four ANC visits with three visits occurring after quickening .The delivery of IPT at each scheduled visit after quickening would ensure that a high proportion receive the minimum of two doses of SP. The Roll Back Malaria targets set by African leaders in Abuja in 2000 include a target that by 2005 at least 60% of all pregnant women who are at risk of malaria, especially those in their first pregnancies, have access to chemoprophylaxis or IPT (WHO 2000). The aim of this present study is to find out the factors that have led to wide variances in the IPTp-SP results and expected outcome in the Ejisu -Juaben Municipality.

1.2 PROBLEM STATEMENT

Intermittent preventive treatment of malaria during pregnancy (IPTp) is a key intervention in the national strategy for malaria control in Ghana. SP, the current drug of choice, is recommended to be administered in the second and third trimesters of pregnancy during antenatal care (ANC) visits. To be fully protected from malaria, pregnant women are supposed to take at least 2 doses of SP (WHO, 2005). The African Summit on Roll Back Malaria (RBM) in April 2000 adopted the Abuja Declaration, in which regional leaders

committed to achieving 60% of pregnant women having access to chemoprophylaxis or IPT by the year 2005 (WHO, 2000).

In the Ejisu –Juaben Municipality, the Municipal Health Directorate has identified that there is a wide variance between the IPT Coverage Results and the expected outcomes. In 2006 only 762 out of the 1917 pregnant women who started IPT, representing 39.7%, had at least two doses (Annual Report, Ejisu –Juaben Municipal Health Directorate, 2007). The 39.7% is well below the Abuja target of 60%. This low coverage is of much concern to the Municipal Health Management Team (MHMT). To increase it, reasons for the low coverage must be found, hence this research work.

1.3 RATIONALE FOR STUDY

The wide variance between the IPTp Programme Results in the Ejisu-Juaben Municipality and the WHO recommended outcome is of much concern to the MHMT. Its main preoccupation as far as the programme is concerned, is to find out the reasons and design appropriate measures to curb the problem. There has been no true scientific research into the problem in the district. This study aims at filling these knowledge gaps in literature by investigating into the determinants of the wide variation.

1.4 RESEARCH QUESTIONS

1.4.1 Service factors

Are there shortages of SP?

Do clients pay for SP?

What is the extent of DOTS practice in the programme?

What is the level of knowledge of staff about the programme content?

Are IPT guidelines available at Ante Natal Clinics (A N C)?

How accessible are ANC services?

How well is data managed?

What is the average waiting time?

Do clients perceive this as adequate or long?

Is water available for use by clients?

What are the actual coverages for IPT1, IPT2 and IPT3?

1.4.2 Client factors

What is the average gestational period at IPT1?

What is the level of awareness of clients on the benefits of IPT (p)?

Any perception of side effects?

Does the distance to health facility affect ANC attendance?

Do clients know the effect of malaria on the health of the mother and the unborn child?

What is the extent of male involvement in ANC attendance?

1.4.3 Socio- Demographic factors

Age

Educational Level of clients

Economic status

Marital status of clients

1.5 STUDY OBJECTIVES

1.5.1 Main objective

The main objective of this research is to identify the reasons for the wide variance of the IPTp-SP results and the expected outcome in the Ejisu-Juaben municipality.

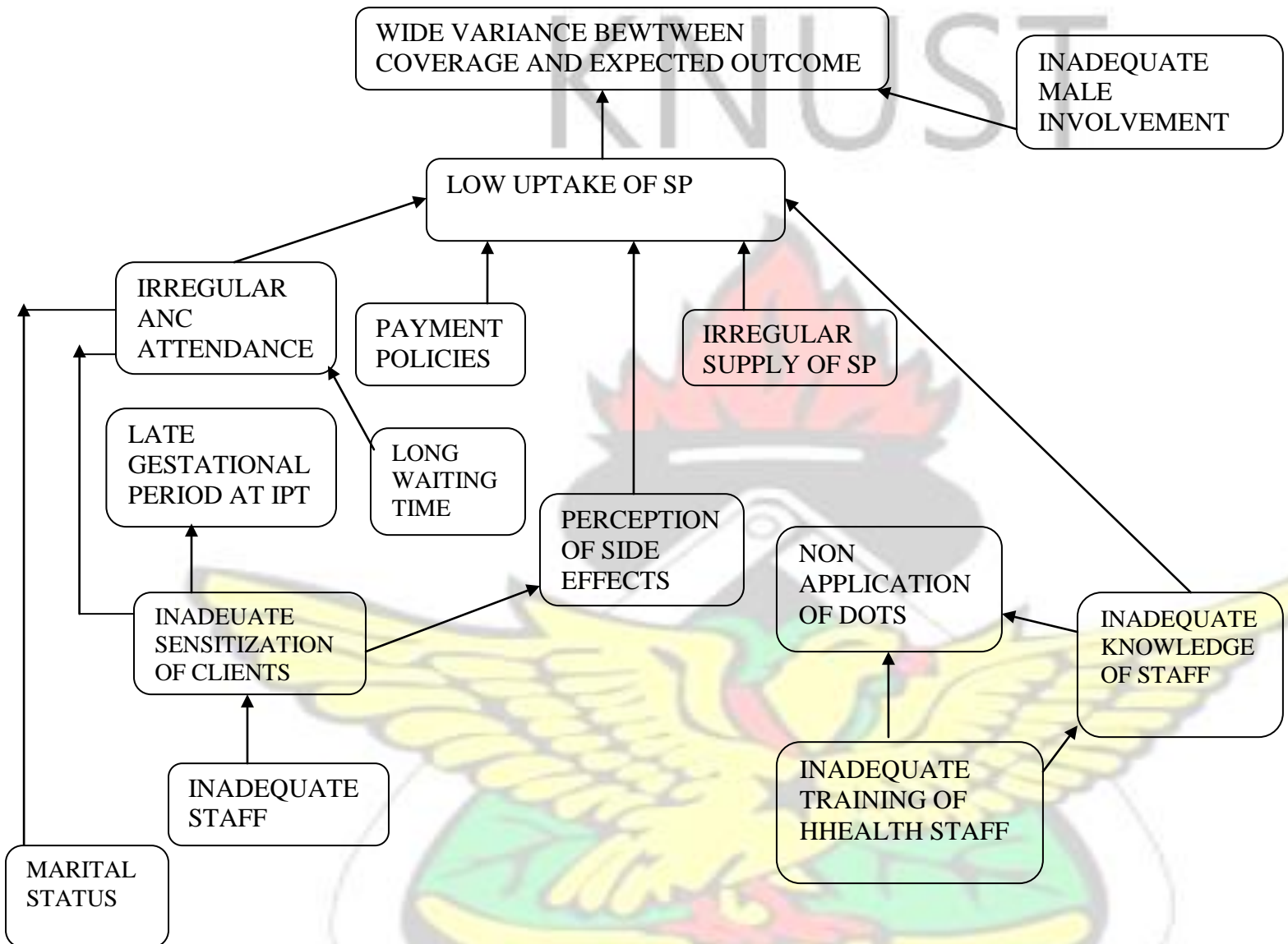
1.5.2 Specific objectives

- 1 To determine factors that affect IPT coverage.
- 2 To determine the percentage of pregnant women who had at least two doses of SP during pregnancy.
- 3 To investigate the extent of male partner involvement in ANC attendance.
- 4 To make recommendations on how to use the results of the research to improve the IPT (p) program.

1.6 ANALYSIS OF THE PROBLEM /CONCEPTUAL FRAMEWORK

The problem is analyzed in Table 1.2 below

Table 1.2 Analysis of the problem



1.7 SCOPE OF STUDY

Geographically the study was carried out within the boundaries of the Ejisu –Juaben Municipality in the Ashanti Region, Ghana.

As observed in the conceptual framework, many factors affect the IPT programme, but for the purposes of this study, attention was focused on identifying some of these determinants.

Data collection was undertaken at three levels, ie two hospitals, two health centres and a

maternity home. These were: Juaben and Ejisu Government Hospitals, Kwaso and Essienimpong Health Centres and Tina's Maternity Home.

1.8 PROFILE OF STUDY AREA

The Ejisu- Juaben Municipality is situated in the central part of the Ashanti Region with an area of 637.2 square kilometers. The Municipality has an overall population of about 151,761 projected from the 2000 census. There were 36405 Women in Fertility Age (WIFA) and 6277 expected pregnancies in the year 2007. While 2734 (43.5%) supervised deliveries were conducted by skilled and professional health workers in 2007, registered Traditional Birth Attendants (TBAs) in the Municipality conducted 1567 (25%). ANC attendance was 5252 (83.8 %).

There was no maternal death. An ambulance service to support referral systems within and outside the district exists. The main causes of morbidity are malaria and its complications, hypertension, anaemia, and diarrhoeal diseases whilst mortalities were mainly due to malaria and its complications in the under five year group, pneumonia and respiratory failure account for the rest.

The District Hospital is located at Juaben, a sub municipal capital, and serves as referral point for the twenty three health facilities located in the five sub municipalities. The main economic activities are cultivation of cocoa, oil palm, maize, coffee, sunflower, rice, plantain etc. Poultry is reared on both domestic and industrial scale.

Family Planning and Reproductive Health Services are offered in almost all the health centres and hospitals in the municipality. The Juaben hospital offers Comprehensive Emergency Obstetric Care. IPTp-SP services are offered in all the facilities. Public Health and Community Health Nurses carry out weekly outreach services. In 2006, only 39.7% of pregnant women who attended ANC had at least 2 doses of SP. The Health Directorate is presently implementing the High Impact Rapid Delivery (HIRD) of maternal and child health services programme, whereby delivery of these services are accelerated with special funds made available by the WHO. The main objective of this strategy is to ensure the achievement of Millennium Development Goals 4 and 5. This chapter dealt with the introduction to the research, the next is a review of literature on the IPT Implementation Policy and on the Specific Objectives

CHAPTER TWO

2.0 LITERATURE REVIEW

Literature is reviewed under the following headings:

1. The National Anti-Malaria Policy Guidelines on IPT-SP Implementation.
2. Factors Affecting IPTp-SP Implementation
 - a) Service Factors
 - b) Pregnant Woman's Risk Factors
3. Extent of Male Involvement in ANC Attendance

2.1 THE NATIONAL ANTI-MALARIA POLICY GUIDELINES ON IPTP-SP IMPLEMENTATION

In response to the WHO recommendation, the Ghana Malaria Control Programme and the Reproductive and Child Health Unit with support from partners developed the following guidelines/strategy for the implementation of IPTp-SP (GHS/NMCP/JHPIEGO/GLOBAL FUND, 2005)

2.1.1 General objective of the strategy ○ To contribute to the reduction of malaria related maternal and perinatal morbidity and mortality.

- The specific objectives of the programme are:
 - To reduce malaria episodes among pregnant women attending ANC services
 - To contribute to the reduction of maternal anemia amongst pregnant women attending ANC (Ante Natal Clinic)
 - To contribute to the reduction of low birth weight (LBW) amongst pregnant women attending ANC services

2.1.2 Components of the strategy ○ Integrating IPT with the following package of interventions within the Safe Motherhood Programme.

- Iron and folate supplementation ○ Deworming ○ Case management ○ ITN
- Increasing awareness at all levels about integrated strategies for control and prevention of malaria during pregnancy

- Ensuring that all health facilities/staff in the country are fully equipped to provide IPT with SP according to national guidelines.
- Regularly assessing the efficacy of the drugs used for IPTp.
- Regularly assessing the effectiveness of IPTp including monitoring side effects.

Fortunately, more than 90% of pregnant women attend ANC at least once during pregnancy, making this clinic based prevention feasible.

2.1.3 Intermittent Preventive Treatment in Pregnancy with Sulphadoxine-

Pyrimethamine (IPTp-SP)

All asymptomatic pregnant women receive regular doses of Sulphadoxine-Pyrimethamine (SP) as an intermittent preventive treatment (IPTp) during the second and third trimesters, while mothers with signs and symptoms of malaria get prompt treatment according to the national treatment guidelines.

The IPT with SP should be provided as part of a comprehensive antenatal package with other drugs like haematinics and anti-helminthics to control maternal anaemia that is highly prevalent during pregnancy in the country.

Intermittent preventive treatment (IPTp) is based on the use of anti-malarial drugs given in treatment doses at predefined intervals after quickening to clear a presumed burden of malaria parasites.

2.1.4 Why IPTp-SP

Intermittent preventive treatment (IPT) of malaria during pregnancy is based on the assumption that pregnant women living in areas of high malaria transmission have malaria parasites in their blood or placenta, whether or not they have symptoms of malaria infection in the mother, thereby increasing the risk of:

- Spontaneous abortion
- Stillbirth
- Pre-term birth
- Low birth weight
- Maternal anaemia.

These effects are caused by malaria parasites being present in the placenta. These parasites are at the placenta sites, impairing passage of nutrients and oxygen from passing from the mother to the foetus. The use of the anti-malarial drugs given in treatment doses clears the sites of these parasites, allowing the free passage of nutrients and oxygen to the foetus. The free movement of nutrients and oxygen enables the foetus to develop normally, reducing the chances that a foetus will suffer the effects of malaria. It also reduces the chances that a mother will end up with maternal anaemia.

IPT is important because many pregnant women have malaria parasites without symptoms.

2.1.5 Target group

IPT is given to all asymptomatic pregnant women who report at the antenatal clinic in the second or third trimester.

2.1.6 Drug of choice in Ghana

The drug of choice for IPTp in Ghana is Sulphadoxine-Pyrimethamine This is because of:

- a) **Effectiveness:** SP is the single-dose anti-malarial with the best overall effectiveness for prevention of malaria in pregnancy in areas of Africa with stable transmission of *Plasmodium falciparum* malaria as in Ghana, and also where resistance to SP is low.
- b) **Efficacy:** Very good in clearing placental parasites
- c) **Safety:** No significant side effect when used appropriately in pregnancy
- d) **Acceptance:** Demonstrated high levels of IPT acceptance by pregnant women
- e) **Programme feasibility:** Good programme feasibility and can be delivered as a single dose treatment under observation by the health worker and thereby minimizing compliance problems.
- f) **Low resistance:** Resistance to SP is quite low in Ghana. (i.e. low treatment failure rate in Ghana as at now). (GHS/NMCP/JHPIEGO/GLOBAL FUND, 2005)

2.2 FACTORS AFFECTING IPT-SP IMPLEMENTATION

2.2.1 Service factors

2.2.1.1 Payment policies for IPT services.

In a research project in five East African countries, it was found out that Government antenatal services are provided free in Kenya, Tanzania, Uganda, Zambia and Malawi.. Conversely, NGO, mission and private clinics often adopted independent payment policies for health services, leading to different payment policies amongst clinics providing same services. In Malawi, for example, health facilities run by Christian Hospitals Association of Malawi (CHAM), charge a fee for the second dose of SP and this differential payment policy was thought to have accounted for the lower uptake of second dose of SP in CHAM facilities (17% compared to 40% in government health facilities). Similarly, in Tanzania, Mission health facilities charged a fee for IPTp-SP. In Zambia, in contrast, it is free in both government and mission facilities (Ashwood – Smith et al, 2002).

The impact of variable pricing policies on IPTp-SP uptake in Malawi demonstrate that coordination of payment policies across delivery channels and networks is an important consideration in delivery of IPTp-SP, as with ANC service. Payment discrepancies can also occur in public health facilities if they do not adhere to government policy on payment of fees. There are examples of these in Kenya, where staff in government facilities in Busia and Kilifi district were charging for SP, resulting in low adherence for the second dose of SP (Lynam and Munguti , 2003).

2.2.1.2 Extent of staff knowledge on IPTp-SP implementation guidelines.

Many problems of delivery of IPTp-SP are linked to broader weaknesses within the overall health system, such as inadequate resources, inadequate and or poorly trained staff and inappropriate incentives for health workers. In Malawi, confusion among health workers

about the timing and spacing of the two SP doses was the major reason for the low coverage with the second dose (Verheoff et al, 1998).

Incorrect identification of trimesters, inaccurate counting and poor recording in ANC cards were other key problems identified among health staff (Ash Wood – Smith et al 2002).

Health worker confusion over appropriate gestational age for IPTp was also reported in a Kenyan study (Van Eij et al, 2004). In an intervention in Blantyre, Malawi, simplified message and low cost job aids for health workers and the introduction of feedback sessions to health staff during supervisory visits, addressed some of the weaknesses in health worker practices and dramatically increased coverage with the second dose of SP from 45% to 79% (Holtz et al 2004).

Training of health staff in two pilot districts in Kenya revealed poor knowledge among health workers with only 24% of health staff familiar with IPTp-SP guidelines (Ferguson et al, 2002). Reasons given by health providers in health facilities for not providing IPTpSP included resistance among pregnant women to take the drug (Guyaatt et al, 2004).

2.2.1.3 Staff shortages at ANC

Very high client to staff ratios and inadequate supervision have been significant barriers to effective delivery of IPT in Uganda. Non formal health workers, such as nurse aids, have been trained to deliver IPTp-SP in order to overcome the shortage of health staff

(Mubenga, 2003). Similarly in Malawi, providers may attend to 75 pregnant women daily, resulting in poor quality of service, minimal counseling and long waiting times.

2.2.1.4 Drug shortages

Of five countries in East Africa that were reviewed, Tanzania was the only country to cite high SP availability in 91% of health facilities surveyed. Tanzania has a variety of different sources of SP, including the District Medical office (43%), Essential Drug Programme kits (44%), private market (4%) and others (9%) This is in contrast to the other four countries where SP supply had been reported to be a major constraint to the delivery of IPTp-SP. (Molteni, 2003).

2.2.1.5 Directly observed therapy

In Blantyre, Malawi, only 56% of women were observed taking SP at one clinic i.e. as directly observed therapy (DOT) (Ashwood Smith et al 2002). The main constraints to practicing DOT were lack of clean water and cups at ANC clinics, together with the belief among staff and patients that SP should not be taken on an empty stomach. DOT ensures that pregnant women actually take the drug in the presence of health workers.

2.2.2 Pregnant woman's risk factors

2.2.2.1 Antenatal care services utilization

Demand for ANC services is determined by many socio-economic and cultural factors, including perceived burden of diseases, quality of care/service including waiting times, prior experience with health providers , drugs prescribed, ANC access and travel time and costs. For example, complaints raised by pregnant women in Kenya include the poor

organization in health care facilities generally, long waiting times, delays in clinic opening, poor attitudes and poor communication skills of health workers (Leavens 2002; Mubyaze et al, 2005). Other quality issues included inaccurate diagnosis, inappropriate prescription and advice, drug stock outs and continued use of ineffective drugs. In a recent study in Uganda, of the 769 participating women, 722 (94.4%) reported having visited an antenatal clinic during their most recent pregnancy. Antenatal clinic attendance was verified among 344 (86%) participants who presented ANC records at the time of the interview. Antenatal clinic attendance did not differ among those who lived within a distance of 4 km from the nearest formal health unit compared to those living beyond, $P=0.84$. Approximately 88% of the women made more than one ANC visit. The frequency of 4 or more self reported antenatal care visits among ANC attendees was 266 (37.1%).

Women who had not attained post-primary education, 39 (90.7%), were almost three times more likely not to have visited an ANC compared to women who had completed primary education, (Kiwuwa and Mufubenga, 2008).

2.2.2.2 Gestational age at IPT 1

The timing of ANC visits is critical for effective delivery of IPTp-SP. Approximately 25% of women attend ANC for the first time in the third trimester (WHO & UNICEF 2003). Late ANC attendance is a barrier to delivering the second dose of SP and will not provide adequate protection for the mother and foetus. (Mufubenga, 2003).

The majority of the women 417 (57.7%) reported attending the ANC for the first time in the second trimester, while 242 (33.5%) commenced in the third trimester in a study in Uganda. (Kiwuwa and Mufubengs, 2008).

2.2.2.3 Perceptions of drug safety

Women are generally reluctant to take medicines during pregnancy unless absolutely necessary because of concerns for potential effects on the unborn child. The use of SP has raised concerns among pregnant women over risk of severe skin reactions known as Steven Johnsons syndrome (Tanzania) (Mubyazi et al, 2005), and the belief that SP should be taken with food (Malawi) (Ashwood-Smith et al 2002).

2.2.2.4 IPTp-SP uptake at the antenatal clinics

In a study in Uganda, approximately 544 (71.7%) of the postpartum women had taken at least one dose of SP while they were pregnant. All SP treatments were presumptive (taken when they were not sick), and, they were all administered at an ANC. However fewer mothers 272 (35.8%) received at least two doses of IPTp-SP at an ANC visit. Only 417 (57.7%) reported taking the first dose of IPTp-SP within the second trimester of pregnancy and occasionally in 9% of women, it was given during the first trimester. (Kiwuwa and Mufubenga, 2008).

2.3 MALE INVOLVEMENT IN ANC ATTENDANCE

There is increasing recognition that men's attitudes and behaviors during a partner's pregnancy influence the outcome of the pregnancy and the couple's risk of HIV/STIs, malaria infection etc. The role that antenatal clinic (ANC) services can play to foster couple communication and disease prevention behaviors among pregnant women and their male partners is the focus of an intervention study in Zimbabwe. As part of formative research, 30 focus groups and 30 in-depth interviews were held with pregnant women, men,

community leaders, and ANC staff. Researchers explored respondents' definition of and desire for male involvement in a partner's pregnancy and antenatal care. Findings show that interest in increasing men's involvement is widespread. Men want to know more about pregnancy, which they perceive is shrouded in mystery. Women would welcome additional involvement by men, and believe it would strengthen the bond within the family. While both women and men agreed upon the importance of providing financial support to the mother and baby, women's definition of male involvement included other issues. Women said that involved men would offer emotional support and engage in a regular dialogue with them and ANC providers about their reproductive health needs. Women stated that involved men would notice changes in their pregnant partner's body and be available to help out at home (Marindo et al, 2008).

From the foregoing review, it is apparent that there are several factors influencing the high dropout rate and that no one factor or group of factors could account for the global situation. Each study reflects the socio-cultural, economic and geographical circumstances of the country studied.

Therefore the influencing factors may be different in Ejisu-Juaben Municipality.

Again most of the studies were done in foreign countries. None was found to have been done in Ghana. It is therefore necessary to determine the influencing factors in the study population using methods and study design described in the next chapter.

CHAPTER THREE 3.0 METHODOLOGY 3.1 RESEARCH METHODS AND DESIGN

Three out of the five sub-municipalities were randomly selected and used for the research. The names of the five were written on pieces of paper, crumbled and mixed. Three were then picked out of the five. Those selected were, Ejisu, Kwaso and Juaben sub-municipalities

The study was descriptive cross sectional. 320 women, attending Post Natal Clinic, within three months post partum were selected and interviewed. The District Director of Health Services was interviewed, as well as the staff of the Reproductive and Child Health Centers. The results were analyzed using percentages

3.2 DATA COLLECTION TECHNIQUES AND TOOLS

3.2.1 Data collection techniques

Interviewer –administered questionnaire was used. Each of the 320 women was interviewed separately using face to face approach and the interview guide. Core ANC staff were also interviewed and made to answer questions on the IPT programme. The Municipal Director of Health Services was interviewed to iron out some problems encountered on the field.

3.2.2 Data collection tools

A structured questionnaire was the main tool used in the data collection.

The questionnaire consisted of 5 parts: (Appendix I)

1. Socio-Demographic factors
2. Knowledge and use of ANC by Pregnant women
3. Knowledge and use of IPTp-SP
4. Socio-economic factors.
5. Male Involvement in ANC attendance by clients.

The questionnaire was made up of open and close- ended questions so both qualitative and quantitative data was collected.

Another questionnaire to investigate staff knowledge of IPT Guidelines was administered. (Appendix II)

A checklist to determine availability of logistics was used. (Appendix III)

There was a face to face discussion with the Municipal Director of Health Services. (Appendix V). Clients were also observed receiving services at the ANC clinics. (Appendix IV)

3.3 STUDY POPULATION

The study population consisted of women attending post natal clinic within 3 months post partum

3.4 STUDY VARIABLES

3.4.1 Dependent

Wide variance between IPTp-SP coverage and the WHO recommended outcome.

3.4.2 Independent

Table 3.1 Pregnant Woman Risk Factors

Variable	Operational Definition	Scale of Measurement
Educational Level	Level of formal education attained by pregnant woman - No education -Less than secondary -Secondary and above	Ordinal
Marital Status	Type of legal sexual union of Pregnant woman -Married -Single -Divorced -Widowed	Nominal
Ethnicity	Tribal grouping which pregnant Woman belongs -Akan -Non-Akan (another tribal grouping)	Nominal
Religion	Type of religious affiliation of pregnant Woman -Christian -Moslem -Other	Nominal
Age	Age of respondent at the time of interaction	

Table 3.1 Cont'd

Variable	Operational Definition	Scale of
-----------------	-------------------------------	-----------------

		Measurement
Occupation	Unemployed Farmer Other	Categorical
Gestational Period at 1st ANC Visit	1st Trimester 2nd Trimester 3rd Trimester	Ordinal
Gestational Period at IPT 1	4th Month 5th Month 6th Month Other	Ordinal
Knowledge of need for IPT	Ability to mention prevention and Treatment of malaria. -knows -do not know	Ordinal
Knowledge of effect of malaria on mother and unborn child	Mother---sick ,loss of appetite Vomits , pale , stillbirth Baby -----sick , LBW , Pale	Categorical
Distance to Health Facility	Distance from home of mother to ANC -Near (less than 1km) -Far (1km or more)	Ordinal
Educational Level of Partner	No Education Less than Secondary Secondary and beyond	

Safety of SP	Experienced side effects after taking SP -Yes -No	
Male Involvement In ANC Attendance	Ability of male partner to offer Financial support, remind partner to attend ANC and initiate discussions on the pregnancy	
Staff Knowledge on IPT Guidelines	Ability to score any of the following upon answering questions on the IPT Guidelines(APPENDIX II) 70%-100%-----Excellent 65%-69%-----Very Good 60%-64%-----Good 50%-59%-----Fair Below 50%-----Poor	

3.5 SAMPLING

The Expected Pregnancy was 6277 (District Profile 2007). Using EPI INFO version 6, with a current coverage of 40% and an expected coverage of 60%, 262 subjects were supposed to be studied, based on a 95% confidence interval. It was estimated that 20% might not respond, so this was added. $262 + 52 = 317$. However, 320 subjects were studied due to the large number of women available to be interviewed. Post and ante natal clinics in three randomly selected sub-municipalities were used.

3.6 PRE-TESTING

Pre-testing of the data collection tool was carried out in the Sekyere East district. Twenty mothers attending PNC within 3 months post partum were interviewed. The results enabled some questions to be revised.

3.7 STUDY LIMITATIONS

1. It was not possible to cover all the 5 sub municipalities due to financial and time constraints. Due to this 3 of them were selected randomly.
2. Control of recall bias was difficult as study subjects had to delve into the past to provide information.
3. The fact that male partners were not interviewed about their roles could affect validity.

3.8 ASSUMPTIONS

- 1 It has been assumed that a sample of 320 subjects is truly representative of the WIFA and those who delivered in the municipality, 0-3months prior to the study.
- 2 Also it has been assumed that all information provided by subjects were accurate.
- 3 Another assumption is that recall and interviewer biases, if at all, will be minimal.

3.9 ETHICAL CONSIDERATIONS

The Ejisu-Juaben Municipal Chief Executive, The Municipal Director of Health Services and the Municipal Health Management Team were contacted and consent sought for the research. In each community entered, community heads and assembly men were

approached for the go ahead to undertake the study. Permission was also sought from heads of facilities visited.

Permission was sought from individual participants for the release of information and the use of their time. Participation was by choice and post partum mothers were permitted to withdraw at anytime from the study if they so wished. Participants were assured of confidentiality and that they would incur no liabilities with regards to the information given and the research as a whole.

Using these methods and design, results were obtained from the study which are presented in the next chapter.



CHAPTER FOUR 4.0 RESULTS

4.1 BACKGROUND INFORMATION

Of the 320 women interviewed, 46.87% had delivered two months prior to the study, the same percentage had delivered three months earlier and 6.26% had delivered one month to the study.

Most of them were within the 26-30 age group (34.38%) whilst the least were 41 years and above (0.94%). Majority of the women, 72.24% had completed Middle School/Junior High School whilst 6.56% had never attended school. Only 1.34% had tertiary education.

The community is predominantly Christian, accounting for 94.69% whilst 4.69% were Moslems and 0.62% had no religion. Akan form the majority of the population 92.19%. More than half of the women were married, 65% of them and 30.94% were co-habiting with their partners.

Almost 54% of them were self employed whilst 18.44% were farmers and 4.38% were salaried workers. The district was a standard one with most of the basic social amenities- 77% of the households had electricity, 79% had radio, 69% had television, and 78% had mobile phones. 43% of respondents were covered by the National Health Insurance Scheme when they were pregnant.

Table 4.1 Background Characteristics

CHARACTERISTICS	FREQUENCY	PERCENTAGE
Age Group of Mothers		
15-20	36	11.25
21-25	82	25.62
26-30	110	34.38
> 30	92	28.75
Ever Attended School		
No	21	6.56
Yes	299	93.44
Highest Educational Level		
Primary	52	16.25
Middle/JHS	216	67.5
Secondary/SHS	48	15
Tertiary	4	1.25
Religion		
Christian	303	94.69
Moslem	15	4.68
No Religion	2	0.63
Ethnicity		
Akan	295	92.19
Others	25	7.81
Marital Status		
Single	13	4.06
Married	208	65.00
Co-habiting	99	30.94
Household has Electricity		

No	66	20.63
Yes	254	79.37
Household has Television		
No	99	30.94
Yes	221	69.06
Mobile Phone in Household		
No	70	21.87
Yes	250	78.13
Covered by NHIS when Pregnant		
No	180	56.25
Yes	140	43.75
Occupation		
Farmer	59	18.43
Salaried Worker	14	4.38
Self Employed	173	54.06
Other	74	23.13

4.2 PERCENTAGE OF PREGNANT WOMEN WHO HAD AT LEAST TWO DOSES OF SP

Of the 320 women interviewed, most of them, 247 (77.19%) took SP at least once, whilst 43.2% had it, at least twice. Only 12% had SP three times before delivery. A substantial proportion, 22.81% never took SP during their pregnancy.

Table 4.2 Distribution of Pregnant women by doses

IPTp-SP	FREQUENCY	%
First Dose	247	77.19
Second Dose	96	30
Third Dose	38	12

4.2.1 Reasons for not receiving IPTp-SP

Of the 72 women who did not receive IPTp-SP, 27.77% said they were told SP was out of stock. However, 41.67% of them were not given and were not told why.

A significant proportion of them, (30.56%) said they felt they did not complete because they missed some of the ANC clinic days.

TABLE 4.3 Reasons for not receiving IPTp-SP 3 (n=72)

REASON	FREQUENCY	% PERCENTAGE
Drug out of stock	20	27.77
Was told nothing	30	41.67
Missed ANC	22	30.56
Total	72	100

4.3 FACTORS AFFECTING IPTP-SP IMPLEMENTATION

4.3.1 Service factors

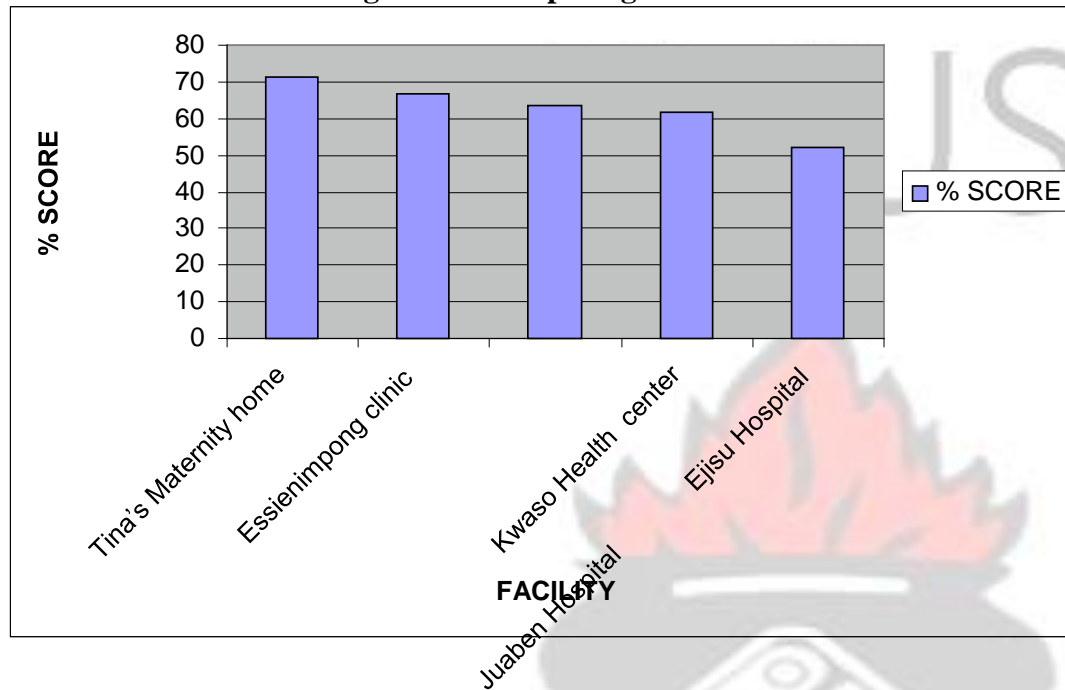
4.3.1.1 Extent of staff knowledge of the IPT guidelines

Extent of staff knowledge of the IPTp-SP guidelines was determined by the ability of ANC staff to answer questions on the guidelines. (Appendix II)

The staff of Tina's Maternity Home, a private enterprise, were the most knowledgeable as far as the IPTp-SP guidelines were concerned (71.4%). However, they had limited knowledge on the contraindications of SP.

The Essienimpong clinic, also a private facility, had 66.70%.

FIG.1. Staff Knowledge on the IPTp-SP guidelines



4.3.1.2 Availability of logistics at ANC Clinics as specified by the IPTp-SP Guidelines

SP was available at all the 5 ANC clinics at the time of the research. However, 3 clinics had had SP shortages in December 2007, January and March 2008. Water was also available for clients but there had been water shortages in March 2008 and clients had to purchase water for DOT. None of the clinics had the Guidelines on IPTp-SP. Adverse event forms which are used to document the side effects of SP were not available in all the health facilities involved in the study. None of the facilities had the monitoring and evaluation forms.

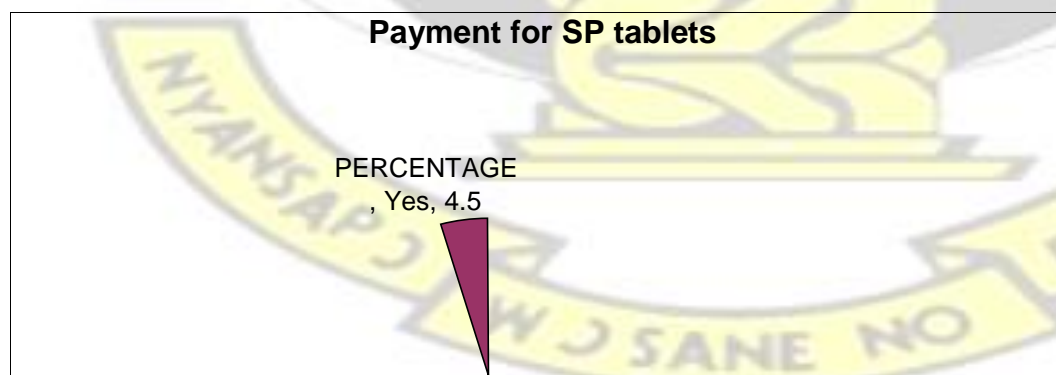
Table 4.4 Availability of logistics at health facilities

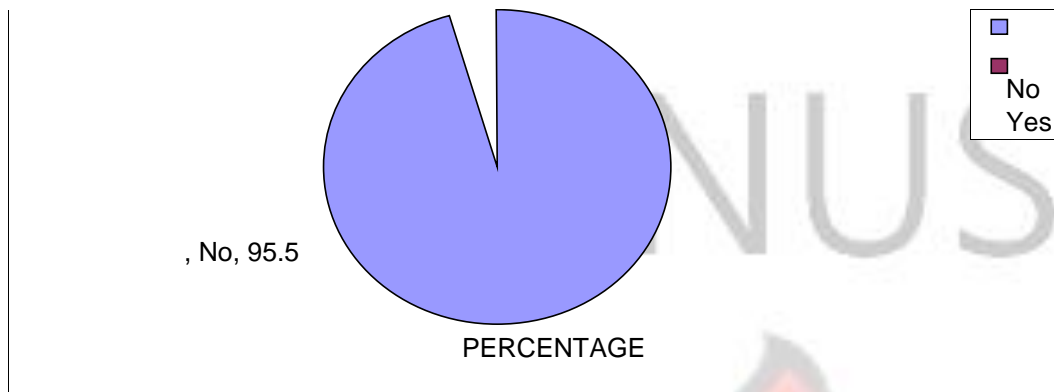
ITEM	KWASO	ESSIENIMPONG	JUABEN	EJISU	TINA'S
SP Available	Yes	Yes	Yes	Yes	Yes
Water Available	Yes	Yes	Yes	Yes	Yes
ANC Daily Summaries	Yes	Yes	Yes	Yes	Yes
Monthly data Returns	Yes	Yes	Yes	Yes	Yes
Adverse Event forms	None	None	None	None	None
Monitoring & Evaluation Forms	None	None	None	None	None
IPTp-SP Guidelines	None	None	None	None	none
Ever had SP shortages	Yes	Yes	No	No	Yes
Ever had water shortages	Yes	Yes	No	No	Yes

4.3.1.3 Payment for SP tablets

Of the 247 mothers who were given SP, 4.50% said they paid for the tablets, however, most of the women, 95.50%, were actually given the drug free of charge.

FIG.2 Payment for SP Tablets





4.3.1.4 Waiting time

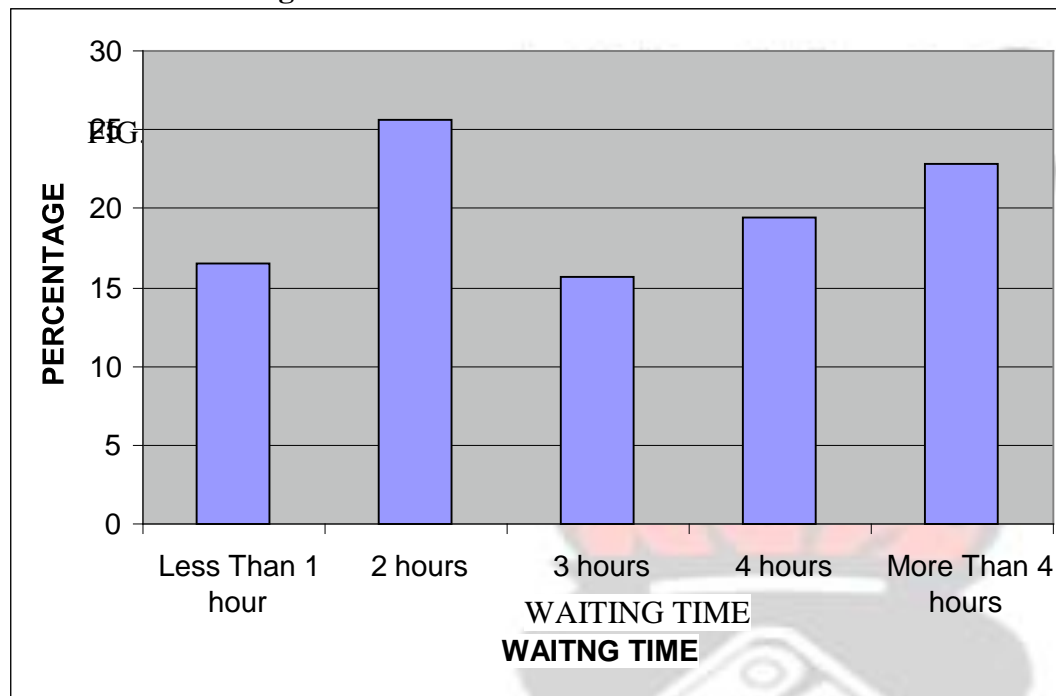
Mothers seen within one hour were 16.56%, whilst 22.9% spent more than four hours at the facilities. Most of them, 25.62% were seen in 2 hours.

Average waiting time was 3 hours. Some of the comments made by the mothers were as follows:

“We come here as early as 7.00 am but have to wait until 9.00am or even 9.30am before being attended to.”

“We sit there and they keep going up and down doing nothing. Nobody tells us anything”

FIG. 3 Waiting time



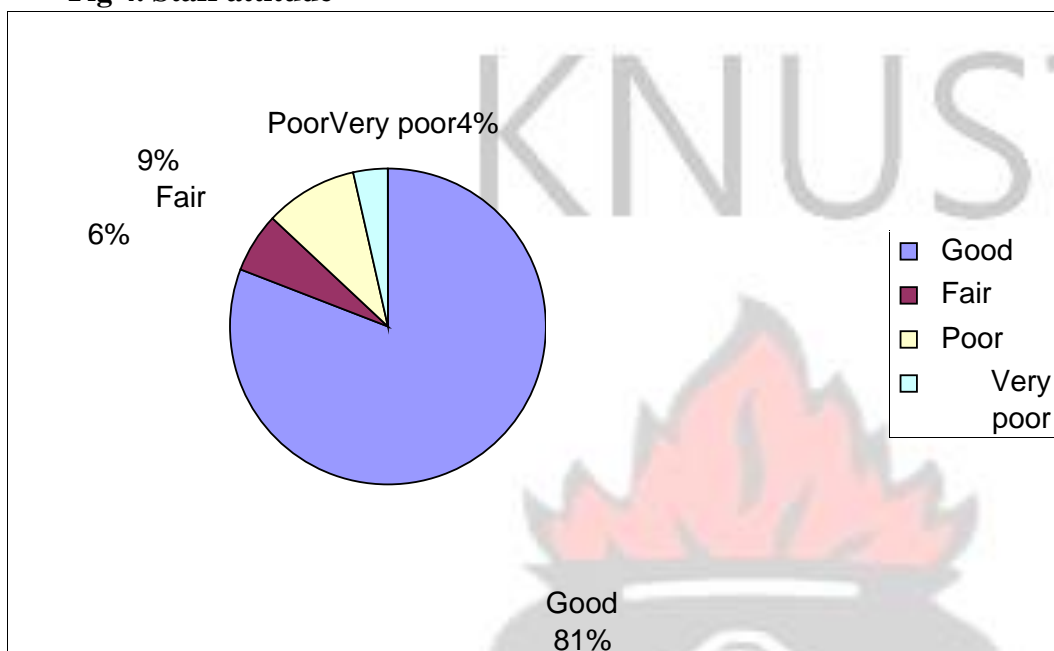
4.3.1.5 Staff attitude

Attitude of health staff was rated as good by 80.70% whilst 9.37% rated it as poor (n=320). Some of the mothers made the following comments:

“Oh, the nurses here at Juaben Hospital are good. They treat us nicely. The problem was with some of us. We talk too much and that’s why they shout at us.”

“There was one nurse who, thanks to God, has been transferred. She was always shouting at us.”

Fig 4. Staff attitude



4.3.1.6 Extent of DOT practice

Directly Observed Therapy (DOT) in IPTp-SP, is the process whereby women take SP at the health facility under the supervision of a health worker. This is to ensure that the drug is actually taken.

Of the women who had SP (n=247), 97.57% took the drug at the facility as DOT, whilst 2.43% took their medicine at home because they were asked to.

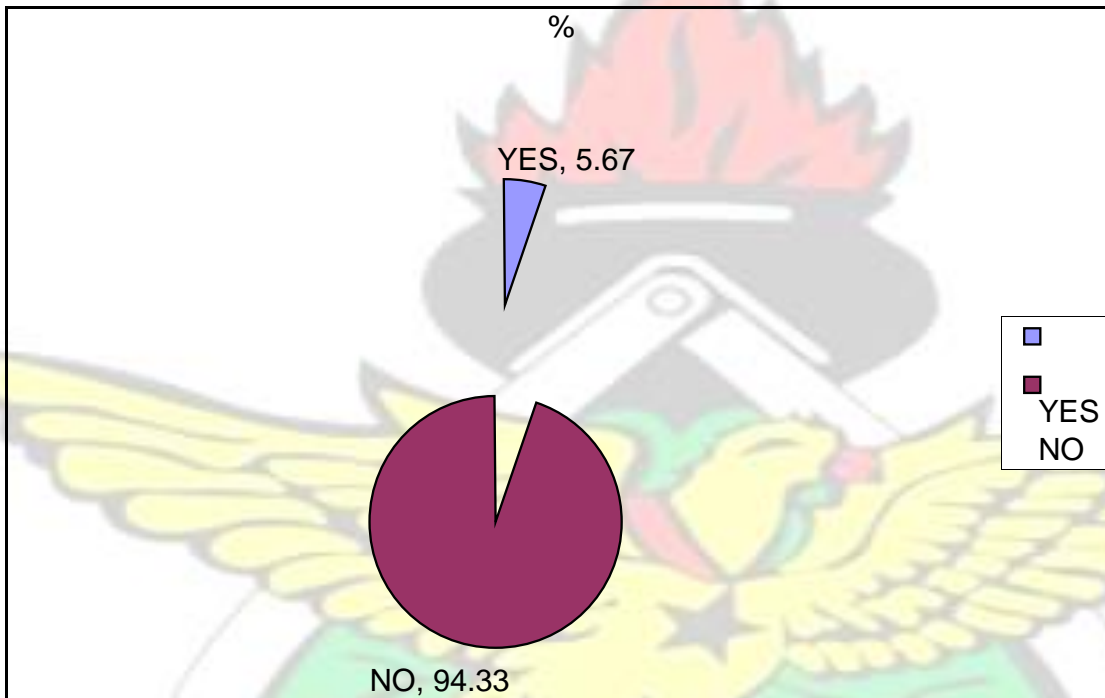
Table 4.5 Extent of DOT practice

WHERE SP WAS ADMINISTERED	FREQUENCY	%
At the Facility	241	97.57
At Home	6	2.43
Total	247	100

4.3.1.7 Side effects after taking SP

Of those who were given SP, 94.33% experienced no side effects. Of the 5.67% who experienced side effects, 57% continued to take SP. None of the side effects, which were mainly itching of the skin, was reported to the Municipal Health Directorate.

FIG.5. Women having side effects after taking SP



4.3.1.8 Staff shortages

Due to the fact that there were specific days for the provision of ANC services, there were very high attendances on these days, ranging from 25 at Kwaso, to 120 at Ejisu and Juaben. Essienimpong Health Centre, a private facility, had one midwife and a nurse at post taking care of 80 clients. All the staff at the various facilities, apart from working at the ANC units, also assists in maternal deliveries

Table 4.6 Staffing levels and average attendance at the various facilities

FACILITY	STAFFING LEVEL	AVERAGE ATTENDANCE ON CLINIC DAYS
KWASO	2	25
ESSIENIMPONG	2	80
EJISU	10	120
JUABEN	10	120
TINA'S MATERNITY	4	50
TOTAL	28	395

4.3.2 Client factors affecting IPTp-SP implementation

Table 4.7 Pregnant woman's risk factors and uptake of SP. Logistic regression

Variables	Crude OR (95% CI)	P- value
Age Group		
15-20	1	
21-25	0.88 (0.28,2.75)	0.83
26-30	1.93 (0.38, 3.42)	0.82
Above 30	0.95 (0.32,2.80)	0.93
Religion		
Moslem	1	
Christianity	0.74 (0.33, 4.38)	0.81
Ethnicity		
Others	1	
Akan	0.74 (0.30, 1.85)	0.78
Trimester of ANC Attendance		
First	1	
Second	0.83 (0.48, 1.46)	0.52
Third	0.71 (0.30, 1.66)	0.43

Marital Status		
Single	1	
Married	2.93 (0.94)	0.064
Co-habiting	3.39 (1.02)	0.046
Number of times attended ANC		
Once	1	
More than once	0.89 (0.43,1.84)	0.76
Time Spent at ANC		
Less Than 2 hours	1	
More Than 2 hours	0.81 (0.47,1.39)	0.45
Distance From Home to Facility		
Less Than One km	1	
More than One km	0.66 (0.37, 1.15)	0.14

Table 4.8 Adjusted Odd Ratios

Variable	Adjusted OR	P-value
Distance From Home to Facility		
Less Than one km	1	
More Than one km	0.46 (0.21, 0.98)	0.044
Time spent at Health Facility		
Less Than 2 hours	1	
More than 2 hours	0.45 (0.21, 0.98)	0.045
Marital Status		
Single	1	
Married	2.77 (0.21,0.97)	0.083
Co-habiting	3.17 (0.95,10.63)	0.062

4.3.2.1 Age and SP uptake

Table 4.1 shows that 11.25% of the subjects were in the 15-20 age group, 25.2% in the 21-25, 34.68% in the 26-30 and 28.75% were more than 30 years old. Table 4.12 also shows that, pregnant woman's age did not significantly affect the odds of completing the SP regimen in this survey.

4.3.2.2 Religion and SP uptake

Pregnant woman's religion did not significantly affect SP uptake . $P = 0.81$, $OR=0.74$.

4.3.2.3 Ethnicity and SP uptake

It is evident from Table 4.12 that, the odds of completing the SP regimen based on ethnicity was 0.74 and $p=0.78$. Thus ethnicity is not a strong predictor of SP uptake in this study.

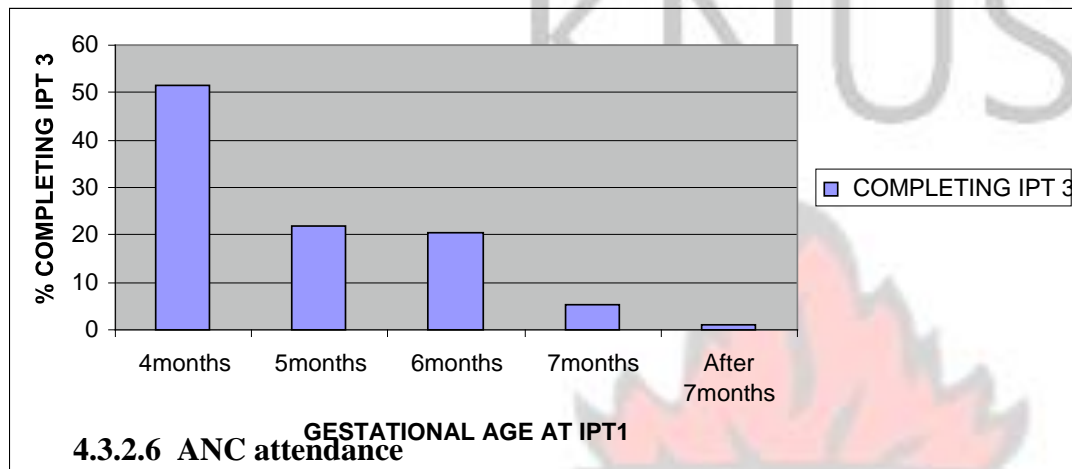
4.3.2.4 Marital status and SP uptake

The adjusted OR Table (Table 4.8) shows that in this study, married and co-habiting women were more likely of completing the SP regimen than single women. ($P = 0.083$)

4.3.2.5 Gestational age at IPTI

The guidelines on IPTp-SP expect women to start taking SP at 4 months of gestation. This is to ensure that they complete the regimen and also to reduce any adverse effect on the unborn baby. Of those who started IPTp at 4 months, 51.4% completed taking their doses, whilst only 20.3% of those who started at 6 months were able to complete the number of doses required to be taken.

FIG 6. Gestational age at 1st Dose and completion of 3rd Dose

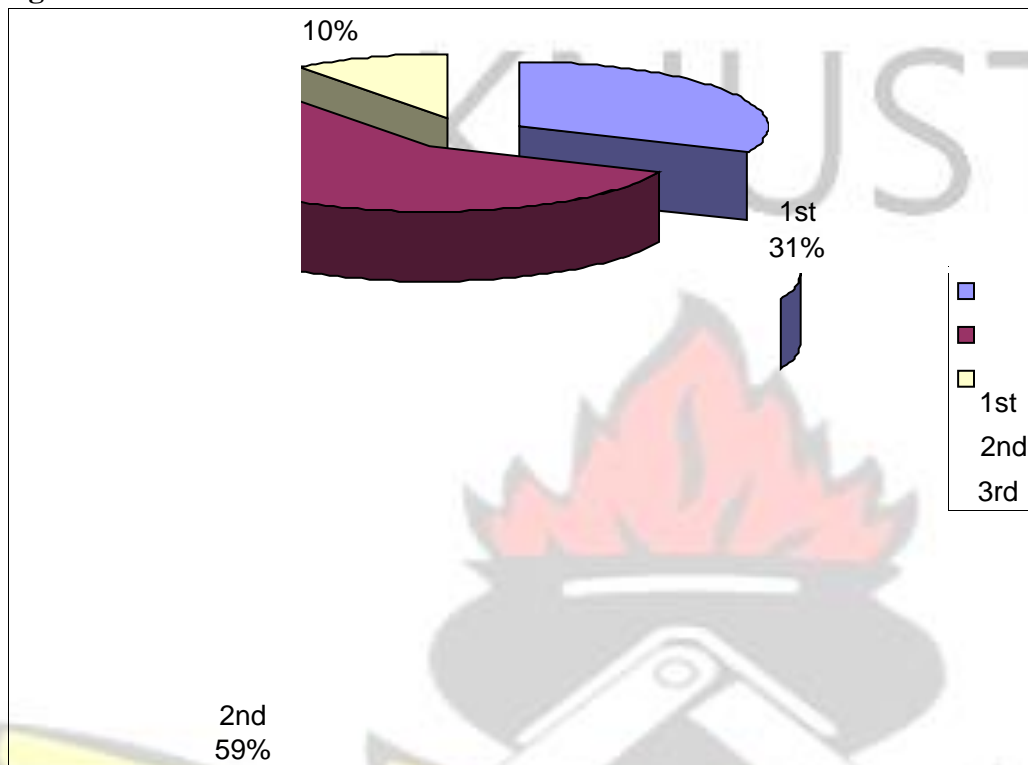


All the 320 respondents (100%) had attended ANC at least once.

4.3.2.6 Trimester of ANC attendance

The percentage of women who attended ANC for the first time in the 1st trimester was 31.25%, whilst 10.31% did so in the third. The majority of them, 58.44%, attended for the first time in the second trimester.

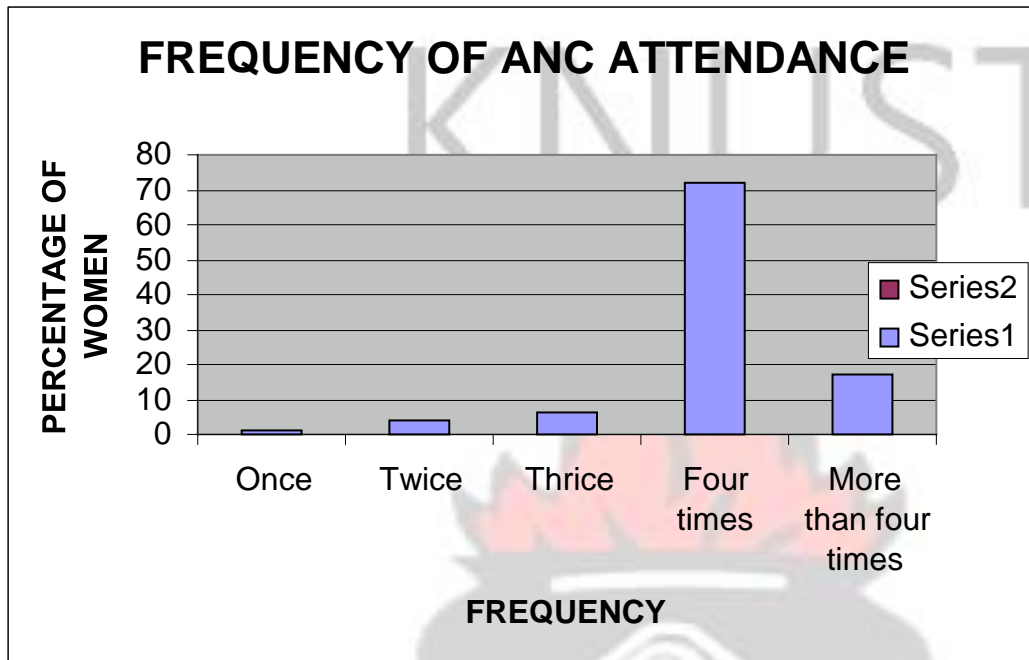
Fig 7. Trimester at 1st ANC attendance



4.3.2.7 Frequency of ANC attendance

Majority of the women, 71.88% attended ANC four times, whilst 0.94% attended only once. A woman, who attended only once had this comment to make when asked why. *“I have delivered three times without attending ANC and had no problems. This time, I have to attend because of sickness.”*

FIG. 8. Frequency of ANC Attendance



4.3.2.8 Reasons for ANC attendance

The reason assigned by some of the women (43.12%) was that, they attended ANC because they wanted to prevent diseases in order to give birth safely. Multiple reasons, made up of combinations of the reasons below, were assigned by most of them (55.95%).

Nobody talked about education on breastfeeding practices.

Table 4.9 Reasons for ANC attendance.

REASONS	FREQUENCY	%
1	138	43.12
2	2	0.62
4	1	0.31
5	140	43.75
Other	38	12.2
Total	320	100

- 1 To prevent Disease in order to give birth safely
- 2 Family Planning education
- 3 Education on breast feeding
- 4 Care of the newborn
- 5 Multiple Responses

4.3.2.9 Reasons for missing ANC

Of the 320 women, (48.12%) missed ANC at least once. These were their reasons

Table 4.10 Reasons why ANC was missed.

REASONS	FREQUENCY	%
Financial	48	31.17
Distance	5	3.25
Other	93	60.39
Financial/Distance	2	1.30
Financial/Other	5	3.25
Distance/Other	1	0.65
Total	154	100

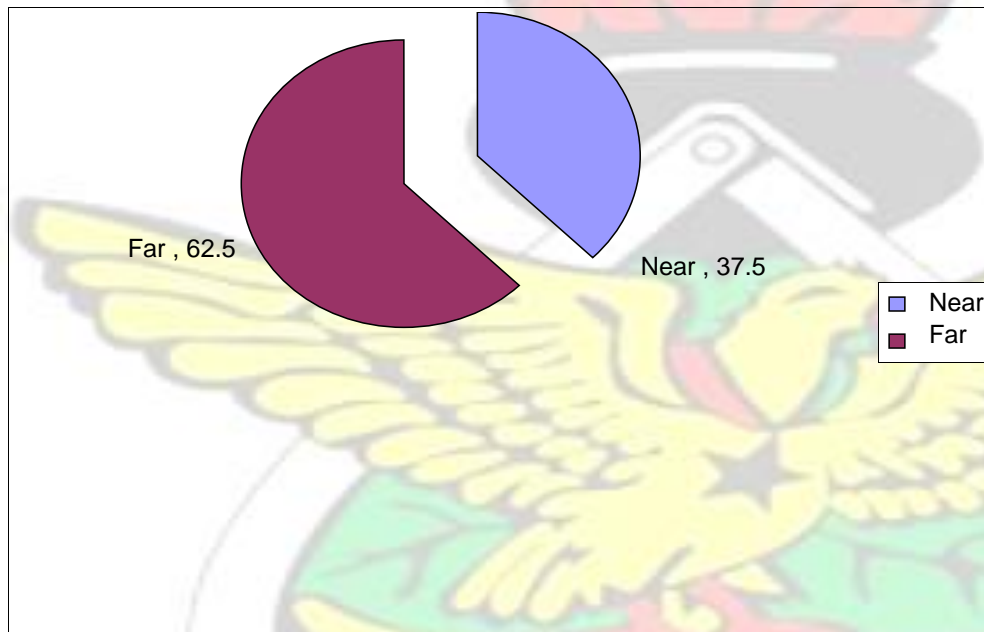
4.3.2.10 Distance from home to facility

Another factor, which is likely to affect ANC attendance and hence, the uptake of IPTpSP is distance from home to health facility .Of the women interviewed,(n=320) 27.50% viewed distance from home to facility as near whilst 62.5% viewed it as far. A woman from Bonwire made the following comment:

“We, the women from Bonwire don’t know the sins we’ve committed. We have to travel all the way to either Ejisu, Juaben , or Abira to attend ANC. Why can’t they open one here?”

However, Table 4.13 shows that the distances involved in this study did not affect SP uptake. ($P=0.044$) ($OR=0.46$)

Fig. 9 Distance from home to facility



4.4 Extent of male partner involvement in ANC attendance.

Of the 208 respondents, 62% were financially assisted by their husbands to attend ANC.

Table 4.11 Role played by husbands

ROLE PLAYED BY HUSBAND	%
------------------------	---

Assisted financially	62.0
Reminded wife to attend ANC	2.4
Disinterested	30.7
Financial Support as well as reminded	4.8

CHAPTER 5 5.0 DISCUSSIONS

5.1 BACKGROUND CHARACTERISTICS

The results of the study reveal that only 43% of the pregnant women at the time of pregnancy were covered by the NHIS. This is worrying since the NHIS takes the burden of ante natal care off the shoulders of families. It is hoped that a lot of education will be done

to bring on board all pregnant women to ensure financial accessibility to health services. This will stimulate ANC attendance and improve SP uptake. The study also reveals that, (30.94%), were co-habiting with their partners.

The fact that 93.44% had ever attended school is encouraging since this will lead to a better understanding of the need for antenatal care and IPTp-SP to prevent malaria. 76.82% were gainfully employed and this might lead to a higher involvement in decision making on health at home. Only 8.75% were above 35 years. This reduces the risk of maternal deaths as the older the pregnant woman, the higher the risk. It is not surprising that 94.69% were Christians and 92.19% were Akans since the Ejisu Juaben Municipality is inhabited predominantly by Christians and Akans.

More than 10% were adolescents. This is worrying, since they are supposed to be in school and most of them were either single or were co-habiting with their male partners.

Those who have received tertiary education were under 2%. This indicates two issues. Either fewer highly educated women are giving birth or few of them live within the municipality. Over 69% had radio, television, and mobile phone. This shows that the inhabitants are relatively not very poor.

5.2 PERCENTAGE OF PREGNANT WOMEN WHO HAD AT LEAST TWO DOSES OF SP

At the various facilities, 247 respondents took SP at least once. This represents 77.19% (n=320) and 43.2% took at least two doses. This 43.2% is slightly higher than the baseline data (39.7%) obtained from the Municipal Health Directorate before the commencement of this study. (Kiwuwa and Mubenga, 2008) established in a Ugandan survey that 71.7%

of the post partum women had at least one dose of SP and 35.8% received at least two doses. Though the results of this current research compare almost favourably with the Ugandan one, the 43.2% is far from the target of 60% established by the WHO for the African Region . To be fully protected from malaria, pregnant women are supposed to take at least 2 doses of SP (WHO, 2005).

Reasons given for the non completion of the IPT schedule were diverse. Amongst them were the following;

- was told drug was out of Stock
- Missed ANC
- Money for transport was not available

About 70% of them did not know why they were not given SP because they were not told. However, health facility staff admitted to non availability of the drug for three consecutive months and this, indisputably, might have led to some of those who attended ANC not receiving SP.

In an interview with the Municipal Director of Health Services, he was surprised at the fact that drugs were not available in some of the facilities. He maintained that SP had been available at the Directorate at all times. This indicates lack of effective monitoring and feedback.

Results from the research identified various factors that might account for this variance between the IPTp-SP coverages in the Municipality and the WHO established target and these are discussed below.

5.3 FACTORS AFFECTING IPT-SP COVERAGE

5.3.1 Service factors

5.3.1.1 Extent of staff knowledge of the IPT guidelines

The current study shows that the average score for the municipality on staff knowledge of the IPT guidelines (Appendix II), was 63.2% (Good). In the first place, the IPT guidelines were physically unavailable at all the facilities. Since it is not possible to remember everything in the guidelines, it must be available for staff to refer to when necessary.

Only one member of staff was able to tell us what Focused Antenatal Care was. This important process of care, whereby individualized, client centered, comprehensive antenatal care with emphasis on disease detection, was not known to the staff. It is not even practised in any of the health facilities.

There was poor knowledge on the contraindications for SP. This is very dangerous since when the drug is given, for an example, to a pregnant woman who is allergic to sulphur, there will be serious reaction by the client to the drug leading to rejection by clients.

On why it is necessary for pregnant women to be given SP, 90% of the answers were limited to prevention of malaria. They failed to add that, it is generally assumed that, pregnant women in malaria endemic areas have malaria parasites in their blood or placenta whether or not they have symptoms of malaria.

These results confirm those of a study in rural Malawi, where confusion among health workers about certain aspects of SP administration to pregnant women were the major reasons for the low coverage with the second dose of SP (Verheoff et al, 1998).

In a face to face discussion with the Municipal Director of Health Services, it became apparent that, there had not been any training on IPTp-SP for staff within the past year. This, coupled with the absence of the Guidelines at facilities can lead to confusion.

However, the 62.3% score is better than what Ferguson found out in Kenya where only 24% of health staff were familiar with the IPT guidelines (Ferguson et al, 2002).

5.3.1.2 Availability of logistics at the ANC clinics as specified by the guidelines.

It is refreshing to find out that SP was physically available in the facilities visited.

However, three facilities had, had shortages of SP in December 2007 and in January and February 2008. In the study, 97.11% of those who were never given SP (n=173) said they were not given SP despite their presence. Also water was available at all the facilities visited but these same three facilities said they had, had water shortages before and clients were asked to purchase their own water for DOTS. 29% of the pregnant women said they were not given water at the facility level.

These intermittent shortages might be a major constraint to practicing DOT. It was found out in a study organized in Malawi that, only 56% of women were observed taking SP at one clinic as DOT. (Ashwood- Smith et al, 2002)

However, in this current study, 97.57% of the pregnant women who were given SP, took SP at the facility as DOTS. All the facilities had ANC Daily Summaries available (80%), with the exception of Juaben Hospital. All the facilities had monthly data returns (100%) which can facilitate proper data management.

None of the facilities had adverse event forms. These are supposed to be used to report any side effects that occur when clients take SP. Of the 5.67% of respondents who had side effects, none was reported to the Municipal Health Directorate. There were no monitoring and evaluation forms at any of the facilities (0%) and none at the municipal level. As said earlier none of the facilities had the IPT guidelines

5.3.1.3 Payment policies for SP

The policy of the Ministry of Health on IPTp-SP is free service. Of the 247 respondents who used the service, only 4.05% said they paid for the SP tablets. When contacted on the issue, health staff in the facilities visited insisted they had never offered SP for sale and that clients might have confused it with a different service.

A study conducted in Kenya found out that staff in government facilities in Busia and Kilifi districts charged for SP resulting in low adherence for the second dose of SP (Lynam and Munguti, 2003)

5.3.1.4 Waiting time

Almost 23% of the pregnant women in the study spent more than four hours before being seen by a health worker and they considered this as too long. In a study in Kenya, long

waiting times, delays in clinic opening, were some of the complaints pregnant women at ANC clinics gave (Leavens, 2002).

5.3.1.5 Attitude of health staff

84.38% rated the attitude of health staff as good. This is commendable and will go a long way to increase ANC attendance and consequently SP uptake. Studies in Kenya showed that poor staff attitude and poor communication skills of health workers contributed to low ANC services utilization (Leavens, 2002).

5.3.1.6 Extent of DOT practice

97.57% of respondents who were given SP (n=247) said they took SP at the facility and these were actually administered by the nurses at the ANC. This high achievement is at variance with results from other researches done to actually observe DOT practice within the facilities. For an example, in Blantyre, Malawi, only 56% of women were observed taking SP at one clinic as Directly Observed Therapy (DOT) (Ashwood Smith et al 2002)

5.3.1.7 Experienced side effects of SP

The researcher has established through this study that 94.33% of those who took SP experienced no side effects and only 14 women (5.67%) (n=247) had nausea, and or vomiting and itching. However, of those who experienced the side effects, 8 of them (57.14%) continued to take the drugs despite the side effects.

In Tanzania, the use of SP raised concerns among pregnant women over risk of Steven Johnsons syndrome (Mubyazi et al, 2005). However, none of this severe skin reaction had ever been observed in the Ejisu-Juaben Municipality.

5.3.1.8 Staff shortages

ANC clinics are organized on certain days set aside for the purpose. Due to this, the number of clients seen on clinics days are very high. (range 25-120). With the average number of nurses being 5.6 (range 2-10), it is difficult to provide quality service. No wonder Focused Antenatal Care was not provided in any of the facilities. Insufficient staffing levels can seriously affect antenatal services including IPT. Mubenga's study in Uganda showed that very high client to staff ratios and inadequate supervision have been significant barriers to effective delivery of IPT – SP. (Mufubenga, 2003).

5.3.2 Client Factors Affecting SP Implementation

5.3.2.1 Age and SP uptake

This study has shown that the age of the pregnant woman has no significant effect on ANC attendance and hence, SP uptake. In a similar study in Malawi, using data from 187 women, it was found out that age was not associated with failure to receive IPTp-SP (Holtz et al, 2004). This finding is not surprising since pregnant women of all ages have the opportunity of attending ANC and SP administration.

5.3.2.2 Religion and SP uptake

The fact that the religion of the pregnant woman was not associated significantly with SP uptake was not surprising. Opportunity must be given to health workers to discuss these issues in churches and mosques.

5.3.2.3 Ethnicity and SP uptake

This study reveals that ethnicity is not a strong predictor of SP uptake in the Ejisu-Juaben municipality. This is not surprising since the municipality is predominantly Akan with only 7.8% non-Akans.

5.3.2.4 Marital Status and SP uptake

The researcher has established in this study that married or co-habiting pregnant women are more likely to attend ANC and have better SP uptake record than single women. ($P=0.083$) ($OR=0.062$). This may have something to do with male involvement in ANC attendance.

5.3.2.5 Gestational age at IPTI

Of those who started IPT1 at 4 months, 51.4% completed IPT3, whilst of those who started IPT1 at 6 months only 20.3% completed the third dose of SP. As the Gestational age at IPT1 increases the percentage of pregnant women who complete IPT3 decreases.

Gestational age at IPT1 is a very important factor in completing the IPTp-SP schedule. IPTp-SP is started at 16 weeks of pregnancy. In order to be able to complete the 3 doses which are given in monthly intervals, it is necessary to start early in the fourth month. The researcher found out that about 46.6% of pregnant women took SP after 5 months. It is difficult to complete the schedule under these circumstances. Late ANC attendance is a barrier to delivering the second dose of SP and will not provide adequate protection for the mother and foetus. (Mufubenga, 2003).

5.3.2.6 ANC attendance

All the respondents (n=320) had had at least one visit to ANC. This offers an opportunity for at least one ANC service to be provided. This is similar to a study in Uganda in which 94.4% (n=769) reported having visited an antenatal clinic at least once during their most recent pregnancy (Kiwuwa and Mubenga, 2008).

The number of women who visited the ANC within the first trimester in this Ejisu-Juaben study was 31.25%, 58.44% in the second trimester and 10.31% in the third trimester. In the Kiwuwa study in Uganda, the majority of women (57.7%) reported attending ANC in the second trimester while 33.5% attended in the third trimester.

If IPT p-SP is started in the second trimester, and the pregnant woman consistently maintains monthly visits, all things being equal, she is likely to complete the IPT p-SP schedule. Majority of the women (71.88%) attended 4 times. There were several opportunities to administer SP in order to ensure completion of the schedule.

48% of the respondents had missed an ANC visit and the predominant reasons were financial, travel and sickness. Of them, 3% attributed their absence to distance. A private facility at Bonwire, a relatively highly populated community; does not offer any ANC services. Pregnant women have to travel to Ejisu, Juaben and St. Joseph's Clinic at Abira (which is outside the Municipality) for their ANC services.

Missing an ANC visit means an opportunity to receive a service has been missed.

Of the 320 women interviewed, 37.5% viewed the distance from their homes to ANC facilities as near, while 62.5% viewed it as far. In a Ugandan study, antenatal clinic attendance did not differ among those who lived within a distance of 4 kilometres from the nearest health facility (Kiwuwa and Mufubenga, 2008).

5.4 MALE INVOLVEMENT IN ANC ATTENDANCE

Some communities frown upon women who seek health care in the absence of their husbands. The researcher found out that 96.63% of women will seek antenatal care services in the absence of their husbands without him reacting upon his return. Also 62% of the pregnant women were helped financially by their husbands to attend ANC. 2.4% actually had their husbands reminding them when their antenatal care visits were due.

30.77% of pregnant women said their husbands were disinterested. Their husbands did not care whether they visited ANC or not. 58% said their husbands actually initiated discussions on ANC attendance and their pregnancy. These findings are consistent with the results of a study in Zimbabwe where women wanted men to be involved financially, emotionally and actually visit the ANC centers with them to discuss with nurses their reproductive health needs (Marindo et al 2008)

KNUST

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS 6.1 CONCLUSIONS

6.1.1 Background characteristics

The researcher recruited 320 women 0-3months post partum into a descriptive cross sectional study in the Ejisu-Juaben Municipality. Nine members of staff of five health facilities attached to ANC were made to answer questions on IPTp-SP. The District Director of Health Services was also interviewed to clarify certain issues affecting the programme. Only about 7 percent of the pregnant women had never been to school. 95% and 93% of them were Christians and Akans respectively. All the respondents (n=320) had ever attended ANC before. 54% were self employed and 18% were farmers. Almost 44% were covered by the National Health Insurance Scheme at the time they were pregnant and 78% had mobile phones within their household. 62% viewed distance from their home to the ANC as far and 46% walked to the ANC facility.

6.1.2 Proportion of pregnant women receiving at least 2 doses of SP

This proportion is low (43.2%). WHO recommends a target of 60%.

6.1.3 Factors Affecting IPTp-SP Coverage

6.1.3.1 Staff knowledge of IPTp-SP guidelines

This was 62%. This is a very important factor. Though good, staff had scanty knowledge of contraindications for SP which does not augur well for the success of the programme.

There was 0% availability of the IPT guidelines. There was nothing for ANC staff to refer to in times of need. This might lead to mistakes in implementing the programme, especially when knowledge on the Guidelines is not good among some of the health staff. For an example, lack of knowledge on when to start SP might lead to staff starting it at an earlier or a latter date.

6.1.3.2 Logistics for IPTp-SP programme

There was 100% availability of SP and water to ensure DOT. However, there had been several intermittent shortages in late 2007 and early 2008 which might have led to several clients being denied SP.

6.1.3.3 Payment policies for SP

Though SP is supposed to be absolutely free 4.05% paid for the tablets. The free policy is to motivate pregnant women to patronize the programme.

6.1.3.4 Waiting time

The average waiting time was three hours, and clients viewed this as too long. The longer the waiting time the more likely clients are de-motivated.

6.1.3.5 Staff attitude

Staff attitude was viewed by 84.38% as good and this can increase ANC attendance and SP uptake.

6.1.3.6 Distance to health facility

Majority of the pregnant women (62%) considered the distance to the nearest facility as far.

6.1.3.7 Extent of DOT practice

Extent of DOT practice was 97.57%, a very positive factor for the IPTp-SP Programme.

6.1.3.8 Experienced side effects of SP

Very few pregnant women (5.6%), experienced nausea and vomiting .However there was no documentation.

6.1.3.9 Staff shortages

There are so many clients to be served on clinic days that sometimes health workers are over whelmed. This affects the quality of service .Ten nurses work 24 hours in shifts and this means very few of them are on hand to serve the 120 clients who visit the ANC on a clinic day .They are at the same time, likely to be called to assist in maternal deliveries.

6.1.3.10 Gestational age at first dose of IPT

With 72% of pregnant women taking the first dose of SP after 5 months and almost 20% after 7 months it is extremely difficult to meet the recommended WHO target of 60% pregnant women taking at least 2 doses before delivery.

6.1.3.1 ANC attendance

58.4% of pregnant women attended ANC for the first time in their second trimester and 31.25% in their first trimester. This offers an excellent opportunity for IPTp-SP and other ANC services to be offered.

All the 320 respondents had attended ANC at least once. This will augur well for SP uptake 43.12% attended ANC because they wanted to prevent disease in order to give birth safely. Only few talked about family planning education, education on breastfeeding and care of the newborn.

6.1.4 Extent of male involvement in ANC attendance

62% were financially supported by their partners to attend ANC. Male involvement is very necessary to enable women meet their financial needs, to give them emotional support and get to know the reproductive health needs. The more pregnant women attend ANC, the more likely it is for her to complete the IPTp-SP regimen. Male involvement was mainly limited to financial assistance

6.1.5 General Conclusion

IPTp-SP coverage is low partly because the programme is not systematically enforced like programmes on immunization, tuberculosis, leprosy and other infectious diseases. Documentation of coverage, supervision and of staff within the sub municipalities and management of logistics are not the best.

6.2 RECOMMENDATIONS

6.2.1 Recommendations to the MHMT.

The following recommendations are made to the Municipal Health Management Team:

The Municipal Health Directorate in collaboration with the Regional Health Directorate should as a matter of urgency organize refresher training for the staff of the Antenatal clinics on the IPT guidelines. The immediate goals could be:

- (i) To update the knowledge of ANC staff on IPTp-SP guidelines
- (ii) To improve upon documentation of services provided.

The programme objectives could be

- (i) To equip the nurses to offer excellent services to clients in order to achieve maximum IPT uptake.
- (ii) To provide the nurses with the ability to properly document services offered.

Key activities to improve upon staff knowledge should consist of:

- (i) Lectures on the contents of the IPT guidelines
- (ii) Observation of staff while services are being rendered.
- (iii) Documentation of hypothetical results of ANC services offered.

Logistics for IPTp-SP should be constantly replenished. In this study it was found out that though SP was always available at the Municipal Health Directorate, there were intermittent shortages at the facility level. IPT Guidelines should also be made available to all the facilities. Efforts should be made to establish antenatal clinic outreaches to reduce the distance traveled by pregnant women to receive services.

The MHMT should ensure that SP is provided absolutely free since 4% said they paid for SP. Staffing levels should be boosted in order to reduce the client nurse ratio. This will reduce time spent at the ANC. The MHMT should ensure that side effects of SP are reported to the National Center for Pharmacovigilance.

ANC staff should educate pregnant women on the need to visit ANC regularly and immediately after conception.

Staff should be motivated to offer their best.

Antenatal Services should be offered daily in the bigger facilities. This will reduce the number of pregnant women seeking services at any point in time and offer the opportunity for Focused Antenatal Care. Pregnant women must be encouraged to discuss their problems as far as ANC is concerned with their partners. If pregnant women are able to visit ANC at least once with their partners, it will go a long way to elicit their sympathy and support.

Concerted efforts towards fostering uptake and coverage of two doses of SP must be made. Local operational health systems research must be periodically undertaken to understand challenges and suggest ways forward for effective implementation.

6.2.2 Recommendations to the Municipal Assembly

The Ejisu-Juaben Municipal Assembly should assist the MHMT to open ANC clinics and outreach centers in areas which are far from the nearest facility. Priority should be given to Bonwire, due to its size, the number of inhabitants and distance to the nearest antenatal clinic.

The Assembly should give scholarships to prospective student health workers to enable them return to the Municipality to offer their services upon completion, in order to increase staff levels.

It should also increase its assistance to the MHMT in Reproductive and child health programmes and activities.

REFERENCES

Ashwood S, Coombes Y, Kaimila M, Bokosi M and Lungu K (2002). *Availability and Use of Sulphadoxine- Pyrimethamine (SP) in Pregnancy in Blantyre District*. Malawi Medical Journal 2002, 14: 8-11.

Ejisu-Juaben Municipal Health Directorate Annual Report (2007)

Ferguson A, Gachuhi MJ, Ndwiga C (2002) *Malaria in pregnancy: report of baseline findings of knowledge, attitude and practice for intermittent presumptive treatment in two malaria endemic districts of Kenya*. JHPIEGO.

GHS/NMCP/JHPIEGO/GLOBAL FUND, (2005). *Intermittent Preventive Treatment of Malaria in Pregnancy: Training Manual for Health Providers*. Participants Guide. May, 2005

Guyatt, HL; Noor, AM; Ochola, SA; Snow, RW.(2004). *Use of intermittent presumptive treatment and insecticide treated bed nets by pregnant women in four Kenyan districts*. Trop Med Journal Int Health. 2004; **9**:255–261. [PubMed]

Holtz, TH; Kachur, SP; Roberts, JM; Marum, LH; Mkandala, C; Chizani, N; Macheso, A Parise, ME (2004). *Use of antenatal care services and intermittent preventive treatment for malaria among pregnant women in Blantyre District, Malawi*. Trop Med Int Health. 2004;**9**:77–82.[PubMed]

Kiwuwa MS and Mufubenga P,(2008). *Use of ANC, Maternity Services, IPT and Insecticide Treated Bed Nets by Pregnant Women in Luwero District, Uganda*. Malaria Journal 2008; 7:44

Leavens A (2002) .*Malaria in pregnancy; from policy to implementation*. MPH Thesis.

London School of Hygiene and Tropical Medicine.

Lynam PA & Munguti K (2003) *MIPESA: Focused antenatal care and malaria in pregnancy*. MIPESA Annual General Meeting, Dar es Salaam, Tanzania

Marindo R, Legrand T, Koppenhauer T, Shankar A, Gittelsohn J, Greiser M (2008). *To reproduce or not; HIV concordant couples make a critical decision during pregnancy*. Journal of Midwifery and Women's Health, 2008; 50:23-30

McCormick MC, (1985). *The Contribution of Low Birth Weight to Infant Mortality and Childhood Morbidity*. The New England Journal of Medicine 1985; 312; 82-90.[PubMed]

Molteni F (2003) *Malaria in pregnancy: Tanzania Update*. MIPESA Annual General Meeting. Dar es Salaam, Tanzania

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, antenatal care staff and pregnant women in Korogwe District, North-Eastern Tanzania*. Malaria Journal 4, 31.

Mufubenga P, (2003). *Prevention and Control of Malaria in Pregnancy: The Ugandan Experiences*. PREMA-EU 2003; PREMA-EU Newsletter. The Newsletter of Pregnancy Malaria [PubMed]

Shulman C, (2003). *Prevention of Severe Anaemia and Malaria in Pregnancy in Kenya*. Malaria Consortium, Unpublished Report.

Sirima SB, Sairadogo R, Moran AC, Konate A, (2003). *Failure of Chloroquine hemoprophylaxis Program to adequately Prevent Malaria in Pregnancy*. Clinical Infectious Diseases. University of Chicago Press, 2003; 36:1374-1382.

Steketee, RW; Nahlen, BL; Parise, Menendez, C (2001). *The Burden of Malaria in Pregnancy in Malaria-endemic Areas*. Journal of Tropical Medicine and Hygiene, 2001; 64: 28-35 [PubMed]

van Eijk, AM; Ayisi, JG; ter Kuile, FO; Slutsker, L; Otieno, JA; Misore, AO; Odoni, JO; Rosen, DH; Kager, PA; Steketee, RW; Nahlen, BL.(2004) *Implementation of Intermittent preventive treatment with sulphadoxine-pyrimethamine for control of malaria in pregnancy in Kisumu, western Kenya*. Trop Med Int Health. 2004;9:630–637 [PubMed]

Verhoeff FH, Brabin BJ, Chimsuku L, Kazembe P, Russell WB & Broadhead RL (1998) *An evaluation of the effects of intermittent sulfadoxine-pyrimethamine treatment in pregnancy on parasite clearance and risk of low birthweight in rural Malawi*. Annual Tropical Medicine and Parasitology 92, 141– 150.

WHO (2000). *ANC randomized trial: malaria control and prevention during Pregnancy in the Africa Region*. WHO Regional Office for Africa 04/01.

WHO. (2005) *Expert committee on malaria. Twentieth report*. WHO document. Geneva: 2005

WHO, UNICEF (2003): *The Africa Malaria Report*.

Website: [<http://www.mosquito.who.int/am2003/amr2003/pdf>]

World Health Organization, Geneva; (WHO/CDS/MAL/2003.1093)

WHO (2005) *Roll Back Malaria. Sulfadoxine-pyrimethamine (SP) for intermittent preventive treatment of malaria during pregnancy in areas of moderate to high-level SP resistance*. Geneva: WHO; 2005

WHO (2004) *A Strategic Framework for Malaria Prevention and Control During Pregnancy in the African Region*. WHO Regional Office for Africa, Brazaville 2004, AFR/MAL/04/01.



APPENDICES Appendix 1 Questionnaire Client Factors

What is your Name.....Sub-district.....

Community.....

1. When did you deliver your baby

2. How old were you at your last birthday?

3. Have you ever attended school? 1) No ☐ 2) Yes ☐

4. What is the highest level of school attended?

1) Primary ☐ 2) Middle/ JSS ☐ 3) Secondary/SSS ☐ 4) Tertiary ☐

5. What is your Religion? 1) Christian ☐ 2) Moslem ☐

3) Traditional/Spiritualist ☐ 4) No Religion ☐ 5) Other ☐

6. To which ethnic group do you belong? 1) Akan ☐ 2) Ewe ☐

3) Ga/Adangbe ☐ 4) Mole-Dagbani ☐ 5) Grushie ☐ 6) Hausa ☐

7) Frafra ☐ 8) Other ☐

7. What is your Marital Status? 1) Single ☐ 2) Married ☐ 3) Divorced

☐ 4) Widowed ☐ 5) Just living together ☐

Knowledge and Use of ANC

8. Did you attend ANC when you were pregnant? 1) No ☐ 2) Yes ☐
9. Within which trimester did you attend ANC for the first time?
1) 1st ☐ 2) 2nd ☐ 3) 3rd ☐
10. How many times did you attend ANC? 1) Once ☐ 2) Twice ☐
3) Thrice ☐ 4) Four times ☐ 5) More than four ☐
11. Is it necessary for a pregnant woman to attend ANC? 1) No ☐ 2) Yes ☐
12. If yes, why? (Please, circle as many answers as mentioned)
1) To prevent disease in order to give birth safely
2) Family planning education
3) Education on breastfeeding
4) Care of the newborn
5) Other
13. Did you ever miss attending ANC? 1 Yes ☐ 2 No ☐
14. If yes what was/were the reasons?
1) Financial ☐
2) Distance ☐
3) Waiting time ☐
4) Staff attitude ☐
5) Other ☐

Knowledge and Use of IPT

15 Were you ever given 3 whitish tablets (SP) at the ANC? (Show Tablets) 1)

No ☐ 2) Yes ☐

16 . If yes, how old was your pregnancy when you were first given the tablets?

1) 4 months ☐ 2) 5 months ☐ 3) 6 months ☐ 4) 7 months ☐ 5) After 7mths ☐

17. How many times were you given the tablets? 1) Once ☐ 2) Twice ☐ 3) Thrice ☐

18 If you did not take it three times, what prevented you from doing so?

- 1) Was told drug was out of stock ☐
- 2) Financial ☐
- 3) Distance ☐
- 4) Waiting time ☐
- 5) Other ☐

19. Did you take the drugs at the facility or you were told to take them at home?

1 At the facility ☐ 2 At home ☐

20. If at home, did you take them? 1) No ☐ 2) yes ☐

21. If at the facility, were you supplied with water? 1) No ☐ 2) Yes ☐

22. Did you experience any side effects when you took them? 1) No ☐ 2) Yes ☐

23. Did you continue taking the tablets after experiencing the side effects?

1) No ☐ 2) Yes ☐

24 What disease was the tablets supposed to prevent? 1) Malaria ☐ 2) Others ☐

25 Has malaria any effects on the pregnant woman? 1) No ☐ 2) Yes ☐

26 If yes, what are these effects? (Please, circle as many as mentioned)

- 1) Maternal anaemia ☐
- 2) Spontaneous abortion ☐
- 3) Severe malaria ☐
- 4) Placental Infection ☐
- 5) Other ☐

27. Has malaria any effect on the unborn child? 1) No ☐ 2) Yes ☒

28. If yes, what are the effects of malaria on the unborn child?

- 1) Foetal Anaemia ☐
- 2) Pre-maturity ☐
- 3) Low Birth Weight ☐
- 4) Still birth ☐
- 5) Other ☐

29. What are the control strategies for malaria?

- 1) Use of ITN ☐
- 2) Use of IPT ☐
- 3) Proper management of malaria illness ☐
- 4) Other ☐

30. Did you pay for the tablets? 1) No ☐ 2) Yes ☐

31. How long did you stay at the health facility before being seen by a health worker?

- 1) Less than one hour ☐ 2) Two hours ☐
3) three hour ☐ 4) Four ☐ 5) More
than four hours ☐

32. How do you consider the time spent at the ANC?

- 1) Too long ☐ 2) Okay ☐

33. How do you rate the attitude of health staff?

- 1) Good ☐ 2) Fair ☐ 3) Poor ☐ 4) Very Poor ☐

34 How do you consider the distance from your home to the ANC Facility?

- 1) Near (less than one km) ☐ 2) Okay (one km) ☐
3) Far (More than one km) ☐ 4) Very far (over 2km) ☐

35. Do you walk or take a vehicle to ANC? 1) Walk 2) Take a vehicle

Socio-economic Factors

36. What is your occupation? 1) ☐ Farmer 2) ☐ Salaried
Worker ☐
3) Self-employed ☐ 4) Other ☐

37. Has your husband ever attended school? 1) No 2) Yes

38. What is the educational level of your husband?

- 1) Primary ☐ 2) Middle/JSS ☐ 3) Secondary/SSS ☐ 4) Tertiary ☐

39. What is your husband's occupation?

1) Farmer ☐ 2) Salaried Worker ☐ 3) Self employed ☐ 4) Other ☐

40. Does your household have:

Electricity	1) No <input type="checkbox"/>	2) Yes <input type="checkbox"/>
Radio	1) No <input type="checkbox"/>	2) Yes <input type="checkbox"/>
Television	1) No <input type="checkbox"/>	2) Yes <input type="checkbox"/>
DVD	1) No <input type="checkbox"/>	2) Yes <input type="checkbox"/>
Mobile phone	1) No <input type="checkbox"/>	2) <input type="checkbox"/>
Yes Refridgerator	1) <input type="checkbox"/>	No <input type="checkbox"/>
2) Yes		

41. Were you covered by the NHIS when you were pregnant? 1 Yes 2 No

☐ ☐

Male Involvement

42. What do you think will be your husband's reaction if you attended ANC in his absence? 1) Negative ☐ 2) Positive ☐

43. What role or roles did your husband play in your ANC visits?

1 Financial ☐ 2 Reminded me ☐ 3 Disinterested ☐ 4 Other ☐

44. Did your husband ever initiate discussions concerning your ANC attendance and delivery? 1 Yes ☐ 2 No ☐

Appendix II

Questionnaire

KNUST

Staff Knowledge

To be administered to ANC Staff only

- 1 How is malaria transmitted?
 - a) By being bitten by an infective female anopheles mosquito ☐
 - b) Other ☐
- 2 Which group of people are at highest risk of malaria infection?
 - a) Pregnant women and children ☐
 - c) Other ☐
- 3 What are the control strategies for malaria?
 - a) Use of ITN ☐
 - b) Use of IPT ☐
 - c) Proper management of malaria illness ☐
 - d) Other ☐
- 4 What are the effects of malaria on pregnancy?

- a) Maternal anemia
- b) Spontaneous abortion
- c) Severe malaria
- d) Placental Infection
- e) Other

5 What are the effects of malaria on the unborn baby?

- a) Foetal Anaemia
- b) Pre-maturity
- c) Low Birth Weight
- d) Still birth
- e) Other

7 What is Focused ANC?

- a) Individualized, client centered, comprehensive antenatal care with emphasis on disease detection
- b) Other

8 What is Intermittent Preventive Treatment (IPT)?

- a) Is based on the use of anti malaria drugs given in treatment doses at pre-defined intervals after quickening to clear a presumed burden of parasites
- b) Other

9 Why is IPT necessary for pregnant women?.

- a) Based on the assumption that pregnant women living in areas of high malaria transmission has malaria parasites in their blood or placenta, whether or not she has symptoms of malaria
- b) Other

10 What medicine is used for IPT

- a) Sulphadoxine/Pyrimethamine
- b) Other

- 11 What are the contraindications for this drug ?
- a) Pregnancy in 1st Trimester
 - b) Pregnant woman who has received SP less than one month
 - c) Pregnant woman allergic to sulphur
 - d) Pregnant woman on co-trimoxazole
- 12 How is IPT given?
- a) Directly Observed Therapy (DOTS)
 - b) Other
- 13 At which gestational age is IPT started?.
- a) 16 weeks
 - b) Other

Appendix III

Checklist for Monitoring Logistics for IPT

Facility..... Date

Please check availability of the following:

1 SP	1) No	<input type="checkbox"/>	2)	<input type="checkbox"/>
Yes				
2 Water for DOTS	1) No	<input type="checkbox"/>	2) Yes	<input type="checkbox"/>
3 ANC Report Book for daily summaries	1) No	<input type="checkbox"/>	2) Yes	<input type="checkbox"/>
4 ANC Monthly Data Returns	1) No	<input type="checkbox"/>	2) Yes	<input type="checkbox"/>
5 Adverse Event Forms	1) No	<input type="checkbox"/>	2)	<input type="checkbox"/>
Yes		<input type="checkbox"/>		
6 Monitoring and Evaluation Form	1) No		2) Yes	
7 IPT Guidelines	1) No	<input type="checkbox"/>	2) Yes	<input type="checkbox"/>

Appendix IV

Observation of Care of Clients at ANC

Facility

Date

- 1 When did the nurses actually start seeing clients?
- 2 How many clients were seen?
- 3 How many nurses actually attended to these clients?
- 4 What was the average time spent on a client?
- 5 Observe staff attitude 6 Observe closing time.

Please, tick these services, if provided

- a) IPT Chemo-prophylaxis
- b) Focused ANC
- c) Directly Observed Therapy (DOT).
- d) Water available for DOT

Appendix V

Discussions with Municipal Director of Health Services

Date.....

Venue.....

Topics Discussed

- 1 Date IPTp-SP was started in the district
- 2 Operational Challenges
- 3 Logistic problems
- 4 Current coverage of IPTp-SP
- 5 Issues from the field
- 6 Any other related issues

Appendix VI Map of Ejisu- Juaben Municipality

