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Malaria in Pregnancy: A Rapid Assessment

**Focused Antenatal Care
&
Intermittent Preventive Treatment**



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Zambia Integrated Systems Strengthening Program

MALARIA IN PREGNANCY

Focused Antenatal Care And Intermittent Preventive Treatment

A Rapid Assessment

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Abbreviations/Acronyms

ANC	Antenatal Clinic
CHWs	Community Health Workers
DHO	District Health Officer
DOT	Direct Observation Therapy
FANC	Focused Antenatal Care
Hb	Haemoglobin Test
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information Systems
HSSP	Health Services and Systems Programme
IEC	Information Education Communication
IPT	Intermittent Preventive treatment
ITN	Insecticide Treated Nets
NHC	Neighbourhood Health Committee
NHSP	National Health Strategic Plan
NMMC	National Malarial Mobilization Committee
MIS	Malaria Indicator Survey
MOH	Ministry of Health
MP	Malaria Parasite
PHO	Provincial Health Officer
PMTCT	Prevention of Mother to Child Transmission
RDTs	Rapid Diagnostic Tests
SMAGs	Safe Motherhood Action Groups
SP	Sulfadoxine-Pyrimethamine
TB	Tuberculosis
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
ZDHS	Zambia Demographic Health Survey
ZISSP	Zambia Integrated Systems Strengthening Programme

Summary

Introduction

The strategy of Intermittent Preventive treatment (IPT) for prevention of malaria during pregnancy has been implemented in Zambia since 2003. According to the National Malaria Control Programme (NMCP) Strategic Plan (2006-2010), the Ministry of Health (MOH) recommends three IPT doses of an effective antimalarial drug during routine antenatal care (ANC) visits for malaria prevention in pregnancy. IPT is offered starting from the second trimester and thereafter at intervals of a month apart. It is offered through focused antenatal care (FANC). FANC which promotes provision of quality antenatal care by a skilled provider reduces the number of required antenatal visits to four. Under this package therefore, women receive three doses of an effective antimalarial, insecticide treated nets (ITNs), anemia screening and treatment during these routine antenatal visits. The purpose of this rapid assessment survey is therefore to measure progress made on IPT and FANC adherence and identify possible challenges.

An assessment was carried out in 18 of the 27 Zambia Integrated Systems Strengthening Programme (ZISSP) target districts. The top two districts per province were selected based on malaria incidence for the under- five year old children and also low IPT uptake. Health facilities were then randomly selected based on a multi-stage stratified probability approach, where a district with higher number of facilities had a larger sample size.

Three data collection methods were used: (i) interviews with health providers involved in ANC provision; (ii) health facility interviews administered to the heads of selected facilities, and (iii) exit interviews with women who had attended ANC. A sample of 71 health providers, 69 health facility interviews and 1,050 exit interviews were done.

Health Facility Staffing, Supplies and Equipment

- According to the survey, on average a health centre serves a population of 13,642 however there were huge variations across the provinces.
- Health centres have an average of 3.8 enrolled/registered nurses/midwives which translates to one enrolled/registered nurse/midwife per every 3,590 persons.
- With the exception of one facility, all submit monthly Health Management Information System (HMIS) reports to the District Health Office (DHO). They cite lack of equipment, stationary and personnel as the most pressing challenges in delivering these reports.
- Most of the routine HMIS data collection tools were available at the facilities. However, the Prevention of Mother-to-Child (PMTCT) Child Health register sheet is very rare as only three out of the nine provinces had this tool available in all facilities.
- All facilities offer supplements to deal with anaemia, and they all offer intermittent preventive treatment (IPT) which is core under FANC.
- Across all the 69 facilities, the following medicines/supplies were offered free of charge within the FANC package: (i) Fansidar (Sulfadoxine-Pyrimethamine or SP) for IPT, (ii) folic acid supplements, (iii) iron supplement, (iv) antibiotics, (v) tetanus (vi) ITNs (vii) Mebendazole for de-worming and (viii) tetanus toxoid. In a few facilities (10%), women pay for consultation.
- Most of the facilities (94%) provide ANC services for less than five days in a week owing mainly to pressure to run other programmes.

- Sixty-five percent (65%) of the 69 facilities indicate that they have shortages of supplies for FANC provision, especially Fansidar. Sixty-four percent (64%) of the facilities have experienced stock-outs of supplies for FANC provision in the past quarter. Stock outs were attributed mainly to late deliveries from the Medical Stores.

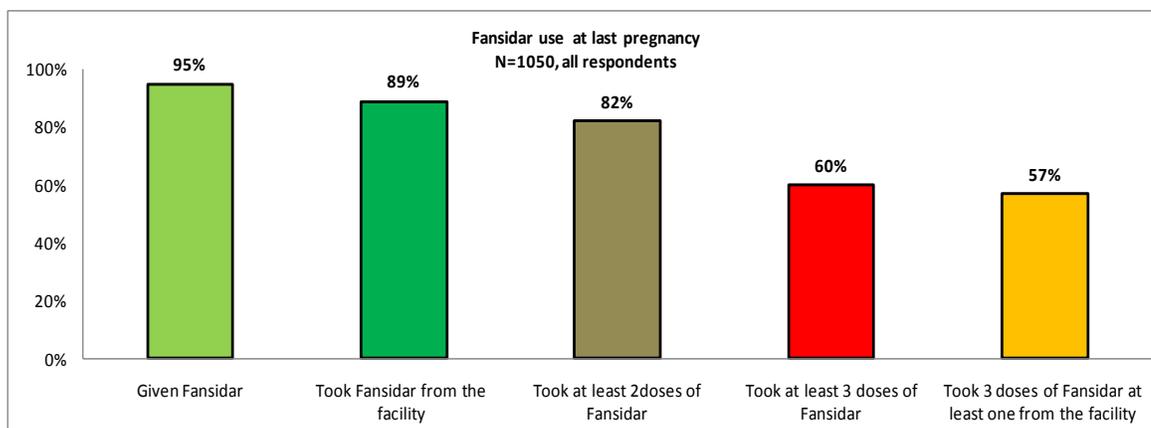
FANC Provision

- Sixty – four percent (64%) of all facilities have job aids on FANC and seventy-four percent (74%) have Safe Motherhood guidelines.
- Sixty – one percent (61%) of the health workers have been oriented on FANC, forty one percent (41%) have been oriented within the last two years.
- Health workers identify co-workers (48%) as their main source of information; however pamphlets and brochures (37%), and in-service training (32%) were considered the most credible.
- Eighty – three percent (83%) of the health workers indicate that they can do an obstetric examination and only nineteen percent (19%) can take a haemoglobin test using centrifuge.
- A fifth of the women (20%) reported attending ANC in the first trimester during their last pregnancy although provincial variations were apparent with Western recording the lowest at eight percent (8%).
- From the health facility interviews (based on actual facility records), twenty-nine percent (29%) of the women start ANC visits within the first 20 weeks of pregnancy. However, there were variations across the provinces.

Intermittent preventive treatment

- Slightly over two thirds (69%) of the health providers who were interviewed indicated that they have been oriented on IPT prophylaxis (IPTp); 34% has been oriented in the past two years.
- The survey sought to establish the number of staff in the facilities which were visited. Out of 1,433 health facility staff in the facilities visited, only 435 staff have been oriented on IPTp and this constitutes only 30% of the total staff numbers.
- Forty-four percent (44%) of the health care providers do not use IPTp job aids.
- Fansidar use at last pregnancy, as determined from the exit interviews, is presented in the graph below, however provincial differences were apparent.

Fansidar use in the last pregnancy



- The main reason reported for not receiving Fansidar at the facility was due to stock out of the drug.
- Eighty percent (80%) of the 69 health facilities was offering IPT to all pregnant women during the survey.
- Ninety – three percent (93%) of the facilities use direct observation therapy (DOT) to deliver IPT.
- Fifty-seven percent (57%) of the facilities reported running out of Fansidar in the past twelve months with Southern Province recording the highest proportion (64%).
- Numbers of ANC bookings, at least IPT1 and IPT3, as a percentage of total ANC bookings are presented in the table below.

Numbers receiving IPT from the health facilities

Province	Base	Total ANC	Total IPT 1	Total IPT 3	% of total ANC taking IPT1	% of total ANC taking IPT3
Central	8	2,812	2,120	1,121	75%	40%
Copperbelt	4	1,316	665	278	51%	21%
Eastern	5	1,905	1,207	372	63%	20%
Luapula	7	6,751	3,513	1,426	52%	21%
Lusaka	3	1,300	831	669	64%	51%
Northern	7	5,215	3,329	1,391	64%	27%
North-Western	10	7,474	5,416	2,708	72%	36%
Southern	2	1,113	805	295	72%	27%
Western	5	1,913	1,775	797	93%	42%
Total	51	29,799	19,661	9,057	66%	30%

Provider behavior in relation to IPT is indicated in the table below

Provider knowledge/behavior	
Provider / behavior	Total
Base health providers	70
Give 3 doses of SP for IPT	90%
First dose at 16 weeks	71%
Administer IPT in pregnancy through DOT	96%
Don't give SP for IPT to women on Cotrimoxazole	74%
Give SP for IPT to women on Amoxicillin	89%
Give SP for IPT to women on anti TB drugs	79%

- Fansidar is not recommended during the first 0-3 months of pregnancy, yet 14% of the women indicated that they were given Fansidar within this period.

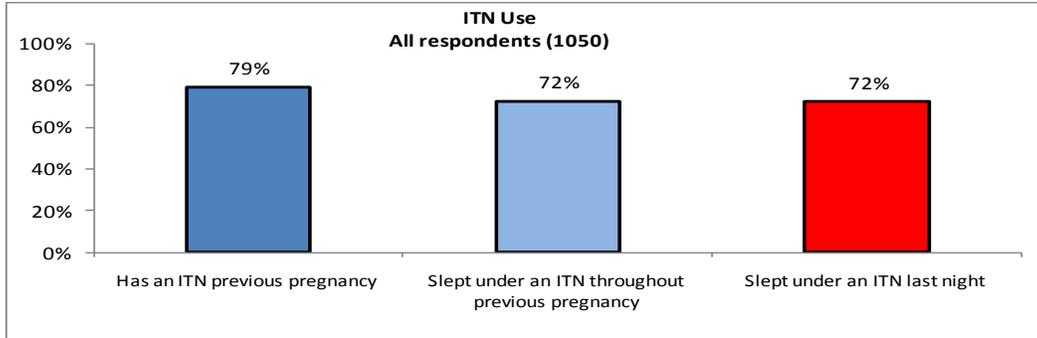
Haemoglobin test

- Seventy–eighty percent (78%) had a haemoglobin (Hb) test during their last pregnancy; provincial differences were apparent with Western Province recording the lowest at 57%.
- Only 73% of the 69 health facilities offer Hb testing and only 64% of the health providers checked for Hb on all ANC clients. Those that do not offer these services cite lack of equipment as the main challenge.

Insecticide Treated Nets Usage

- Usage based on the last pregnancy is shown in the graph below.

ITN usage



- Of those that have an ITN, 79% were given by the health provider/facility.
- Forty-nine percent (49%) of the 69 facilities provide all first time ANC bookings with an ITN; those facilities that do not cite stock outs as the main hindrance.

Malaria Case Management

- Guidelines indicated that for uncomplicated malaria, pregnant women should be given quinine in their first trimester, then Coartem in their second and third trimesters. Twenty-eight percent (28%) of the health provider gave this correct combination.
- Availability of supplies for malaria case management is as per the table below.

Test kits and other malaria drugs

Facilities N (base)	Total 69
Availability	
Have RDTs	88%
Do malaria parasite slide	32%
Neither do RDT or malaria parasite slides	10%
Have oral quinine	74%
Have Coartem	93%
Have no oral quinine and Coartem	3%

Sources of information on malaria

- Eighty-nine percent (89%) of the women had a discussion with the health provider on malaria during the last pregnancy.
- Eighty-seven percent (87%) of all women had a discussion with the health provider on Fansidar and ITNs during the last pregnancy.
- The community health workers (CHWs) (This category does not include Safe Motherhood Action Groups) were the most active volunteer group in malaria and FANC sensitization.

- Only 16% of facilities indicated that they used community radio for health communication.

Client satisfaction

- Forty-one percent (41%) of women had to wait for over an hour during the current post-natal visit. The conduct of health staff as well as the general quality of care was rated as good -very good at 81% and 74% respectively.
- Overall, 75% of the women were satisfied (very satisfied – satisfied) with the services they received at the health facility.

I. INTRODUCTION

I.1 Background

The Government of Zambia has identified malaria eradication as a priority to attaining the Millennium Development Goals for reducing maternal mortality rates. As a result, various targeted short and medium term programmes are being implemented under the National Malaria Control Action Plan (NMCAP) in a bid to eradicate the disease.

For pregnant women in areas of high and moderate malaria transmission, such as in Zambia, the primary risk from malaria infection is anaemia in the mother and placental parasitemia, resulting in impaired fetal nutrition and low birth weight. One of the key methods adopted by the Zambian Ministry of Health (MOH) for prevention of malaria in pregnancy is a systematic use of IPTp. In 2003 Zambia introduced IPT for pregnant women to mitigate the above-stated effects of malaria in pregnancy. Currently, IPT consists of three doses of SP to be taken one month apart in the second and third trimesters of pregnancy. This is to be taken as a DOT in antenatal clinics. Further, these women receive an ITN), anemia screening and treatment.

IPT is offered through FANC which promotes reduction in the number of required antenatal visits to four, while providing information that helps women maintain normal pregnancies through promotion of healthy practices such as nutrition, child spacing, post-partum care and early detection of complication during delivery. The Zambia Demographic Health Survey 2007 (ZDHS), indicates that 94% of pregnant women received antenatal care from a skilled provider, clearly showing the high usage of antenatal services which makes antenatal facilities important channels for malaria prevention in pregnancy.

Over 90% of pregnant women in Zambia had at least one antenatal visit during their pregnancy¹. This has led to 86% of women taking at least one dose of IPT during a single pregnancy². However, few women who attend ANC for the first time completed the three doses. The key challenge is that pregnant women do not attend ANC as per the recommended practice, and many of them start ANC visits late as the median gestation age at the first ANC visit is 5.1 months³. The recommendation in the malaria treatment policy is that each pregnant woman takes all three doses of IPT, and this is the basis of setting the current target to have at least 90% of women taking all the three doses of IPT.

ZISSP is an United States Agency for International Development (USAID) funded project and works closely with the MOH at the national, provincial, district and community levels to strengthen skills and systems for planning, management, and delivery of health services. The programme is also working with communities to foster increased use of public health services

¹ Central Statistical Office (CSO), Ministry of Health, Macro International Inc., 2009. Zambia Demographic and Health Survey 2007. Calverton, Maryland, USA: CSO and Macro International Inc.

² Ministry of Health, Central Statistical Office, 2010 Zambia National Malaria Indicator Survey, Lusaka, Zambia MoH and CSO.

³ USAID President's Malaria Initiative, CDC. 2010 Malaria Operational Plan 2010, Lusaka Zambia: USAID and CDC.

by Zambians and their families. This approach is achieved through working closely with the MOH to support activities in line with the National Health Strategic Plan (NHSP) and annual plan. According to the Malaria Indicator Survey (MIS 2010), FANC and IPT uptake still remains a challenge in some parts of Zambia.

It is against this background that the MOH in collaboration with ZISSP conducted a rapid assessment survey on malaria in pregnancy.

1.2 Objectives

The goal of the rapid assessment survey was to measure progress made on IPT and FANC adherence and identification of possible challenges. Although the survey discussed other broad areas such as sources of information on malaria and ANC users' satisfaction, the study focused specifically on:

- Measuring the percentage of women who received the malaria prevention package (three doses of IPT, an ITN, and treatment of anaemia) and other FANC related information,
- Measuring the health care provider's knowledge and behaviour in relation to IPT and FANC and adherence to guidelines on the same,
- Identifying challenges facing health providers and facilities in the provisions of quality maternal health care specific to IPT and FANC.

1.3 Methodology

The health facilities were the primary unit and a multistage stratified probability sample design was used. The assessment was carried out in 18 of the 27 ZISSP target districts. The top two districts per province were selected based on the malaria incidence for the under-five year children and also low IPT uptake. Based on the 18 districts, samples of 72 facilities were deemed as sufficient to provide the measurements for a rapid assessment. In the first stage, the 72 facilities were distributed proportionately based on the total health facilities within the province, such that a province with a higher number of health facilities had a higher number of selected facilities. In the second stage, facilities were further distributed proportionately across the districts. Finally, in the third stage, facilities were selected randomly using equal probability and allocated to the rural and urban strata accordingly. If the selected facility was not offering ANC at the day of the interview or within two or so days, this was substituted with another randomly selected facility.

Three data collection methods were used to capture the key metrics of the study,

- (i) **Health provider interviews:** one provider in each facility who was actively involved in ANC provision was interviewed to assess the knowledge and skills relevant to FANC and IPT provision. Seventy one (71) health provider interviews were completed.

- (ii) **Facility assessment interviews:** a structured check-list was administered on the facility in-charge to determine availability of equipment, supplies and services that relate to the provision of FANC and IPT. Sixty nine (69) facility assessment interviews were completed.
- (iii) **Exit interviews:** 15 mothers who had brought their children for the under-five clinic at each facility were targeted to be interviewed at point of exit. Since the interview focused on the last pregnancy, a conscious effort was made to interview women who had children aged below six months. A data collector was stationed outside the selected facility for a full working day and administered a structured, pre-tested questionnaire to all exiting women who gave consent. A total sample of 1,080 was proposed, however, a total of 1,050 interviews were achieved. This sample of 1,050 has a margin of error of +/-3% at 95% confidence level⁴. As part of the screening, the mothers must have attended ANC clinic at the same facility, and their experiences were specific to that facility. In addition to discussing their prior pregnancy, these women rated their satisfaction level with the clinic services on the interviewing day.

Tools for each data collection method were developed by the MOH in collaboration with ZISSP, piloted, and then refined further. Whereas the facility tools were administered in English, the exit interviews were translated into local languages (Bemba, Nyanja, Lozi, Kaonde and Tonga). At each facility, the three approaches were sequential with the health provider interview being first followed by facility assessment and finally the exit interviews. Fieldwork ran from 31st May 2011 to 15th June 2011 for a period of two weeks using a team of 23 interviewers trained by the MOH with support from ZISSP.

Completed questionnaires were entered, verified, cleaned and analyzed using SPSS. Various data checks were incorporated during data entry and analysis as part of the quality control measures.

Table 1.1: Achieved Sample Distribution

Province	Districts	Health provider interviews	Facility assessment interviews	Exit Interviews
Central	Mkushi	5	5	71
	Kapiri Mposhi	5	4	77
Copperbelt	Masaiti	3	3	45
	Luashya	3	2	45
Eastern	Nyimba	3	3	46
	Lundazi	7	7	98
Luapula	Mansa	5	5	75
	Nchelenge	2	2	30
Lusaka	Chongwe	4	5	73
	Luangwa	2	2	30
Northern	Mbala	3	3	44
	Mpika	5	5	60
North – Western	Mwinilunga	5	5	70
	Solwezi	9	9	136

⁴ 95% confidence level means that should the study be duplicated, there is a 95% chance that the results will be identical. A margin of error of +/-3% means that any percentage has an upper and lower limit of 3% , e.g. 50% has an upper limit of 53% and a lower one of 47%.

Province	Districts	Health provider interviews	Facility assessment interviews	Exit Interviews
Southern	Sinazongwe	2	2	33
	Gwembe	2	1	30
Western	Lukulu	3	3	39
	Kalabo	3	3	48
Total		71	69	1,050

1.4 Limitations of the Study

During the health facility assessment interviews, ANC attendance and use of IPTp were verified with the actual facility records (HIA2) however, some of the records were incomplete or inconsistent which affects the number of cases that were used in some of the analysis.

Despite efforts taken to target women with children below six months, owing to the low client flow in the clinics, respondents were not restricted to this criterion. Exit interviews focused on ANC usage for a prior pregnancy without establishing a time frame. This means women who had a last pregnancy over three years ago were aggregated with those that went through the same process more recently. ANC experience must be linked to a specified time frame as a basis of tracking changes over time. Secondly, recall of events at ANC facilities may have been poor, especially where the occurrence happened over two years ago.

The study could have benefited from focus group discussions with women who had received FANC; this would help in better understanding of the perceived benefits from the actual women who had gone through the experience recently.

2. RESULTS

2.1 Sample Profile

2.1.1 Health facilities

Interviewees for the health provider interview and facility assessment were based on those who were actively involved in ANC provision; in most cases the same person was interviewed for the two components. Over 60% of the interviewees were qualified nurses. A third (34%) of the facilities was located in an urban setting, however their catchment area included a substantial rural population. With low numbers of facilities under the category of district and general hospital, analysis focuses on total column estimates and only provides indicative measures for the provincial breakouts.

Table 2.1: Facility Profile

		Health providers		Facility assessment	
		No.	%	No.	%
Interviewee	Enrolled nurse/registered nurse	23	32%	21	30%
	Enrolled nurse-midwife/registered	22	31%	20	29%
	Environment health technician	8	11%	7	10%
	(Certified) nurse/midwife	6	8%	3	4%
	Clinical Officer	3	4%	13	19%
	Medical licentiate	2	3%	1	1%
	Doctor	1	1%	1	1%
	Other	6	8%	3	4%
Locality	Rural	47	66%	48	70%
	Urban	24	34%	21	30%
Type	Health centre	66	93%	65	94%
	District hospital	2	3%	1	1%
	General hospital	3	4%	3	4%
Total		71	100%	69	100%

2.1.2 Exit interviews profile

The majority of the mothers using ANC facilities were married (83%), and this is fairly consistent across the provinces with the exception of Western Province where four in every 10 mothers visiting ANC clinics were actually single. A quarter (25%) of the women using these facilities were fairly young mothers aged below 21 years, and all the nine provinces record between 20% to 29% on this measure.

Very few (8%) of the women have not been to school with slightly higher proportions in Eastern (14%) and Southern (13%) provinces as shown in Table 2.2 below.

Table 2.2: Exit Interviews Profile

Respondents N (base)	Total 1,050	Central 148	Copper- belt 90	Eastern 144	Luapula 105	Lusaka 103	Northern 104	North- Western 208	Southern 61	Western 87
Marital Status										
Married	83%	89%	79%	94%	84%	88%	82%	80%	89%	59%
Single	14%	7%	18%	3%	16%	10%	15%	17%	10%	41%
Divorce/separated	2%	3%	2%	4%	-	2%	2%	2%	2%	-
Widow	1%	1%	1%	-	-	-	1%	1%	-	-
Age										
<21 or younger	25%	23%	22%	22%	25%	20%	29%	29%	23%	29%
21-36	65%	68%	66%	60%	68%	65%	67%	63%	64%	67%
36-50	8%	10%	10%	11%	4%	12%	4%	8%	13%	5%
Don't know	2%	-	2%	7%	4%	3%	-	-	-	-
Highest level of education										
None	8%	9%	3%	14%	5%	9%	12%	7%	13%	5%
Primary (1-7)	49%	47%	33%	64%	44%	50%	39%	50%	62%	44%
Secondary (8-12)	41%	43%	58%	22%	45%	42%	47%	42%	25%	51%
Tertiary/college	2%	1%	6%	-	7%	-	2%	1%	-	1%
Other specify	-	-	-	1%	-	-	-	-	-	-

2.2 Health Facility Staffing, Supplies and Equipment

2.2.1 Staffing

Availability of skilled providers is critical in the provision of quality services, and a starting point would be to understand the catchment area of these health facilities. On average, a health centre serves a population of 13,642 people but at one extreme end, there is a health centre serving a population of 78,312. A health centre in Luapula serves a population of 25,105 that is five times higher than that of a health centre in Lusaka, which serves a population 5,472. Western and Luapula were the provinces with the lowest population in Zambia; however the catchment populations of the health centres were totally different with a median of 6,315 in the former and 25,105 in the latter.

Table 2.3 Catchment population by facility type, and by health centres

Facility level	Number	Average	Maximum	Median	
General hospital	3	3,300,191	836,683	58,333	
District hospital	1	26,238	26,238	26,238	
Health centre	64	13,642	78,312	10,181	
Health Centres	Central	9	10,481	36,764	6,930
	Copperbelt	4	15,776	27,000	13,122
	Eastern	10	14,795	47,000	13,192
	Luapula	7	32,281	78,312	25,105
	Lusaka	6	6,004	12,089	5,472
	Northern	8	16,749	32,830	14,826
	North-Western	11	7,333	14,026	8,474
	Southern	3	12,237	14,086	13,835
	Western	6	9,053	18,380	6,315

*One facility with missing data was excluded from the analysis.

Table 2.4 below indicates the total and average number of staff across various categories. Looking at the total column, there were an average of 5.8 (4.1 and 1.7) certified nurses/midwives at a facility and this is driven mainly by the high average of 49.6 recorded for the three general hospitals that were interviewed for this survey.

Focusing on the health centres, data are in line with MOH reports which indicate that nurses constitute the majority of health providers. Overall health centres have an average of 3.8 enrolled/registered nurses/midwives (1.3 + 2.5) and with an average catchment of 13,642 as per the Table 2.3 above shows. This translates to 1/3,590, which means one enrolled/registered nurse/midwife for every 3,590 persons.

Table 2.4 Staffing numbers by health facility type

Average number of staff (facilities)	Total facilities (68)		Health centres (64)		District hospital (1)		General hospital (3)	
	Total	Avg.	Total	Avg.	Total	Avg.	Total	Avg.
Doctors	29	0.4	10	0.2	-	-	19	9.5
Medical licentiate	4	0.1	4	0.1	-	-	-	-
Enrolled nurses/registered nurses	281	4.1	160	2.5	3	-	121	40.3
Enrolled/ nurse-midwives/registered nurses/midwives*	113	1.7	82	1.3	-	3.0	28	9.3
Clinical Officers	104	1.5	54	0.8	-	-	50	16.7
Environment Health Technicians (EHT)	58	0.9	54	0.8	-	-	4	1.3
Certified midwives	27	0.4	21	0.3	-	-	6	2.0
Traditional birth attendants	340	5.0	337	5.3	-	-	3	1.0
Casual Daily Employees (CDEs)	230	3.4	178	2.8	1	-	52	17.3
Community health workers	247	3.7	243	3.9	4	1.0	3	1.0

4 facilities had don't know or missing for some categories

* midwives should be shown separately from nurses in future surveys.

2.2.2 Recordkeeping

Of the 69 facilities, all with the exception of one submit monthly HMIS reports to the DHO (the one facility submits on a quarterly basis). When probed as to the challenges with recording or submitting these reports, lack of equipment and human resources top the list. The former comment on equipment is not substantiated, yet it is distinguished from lack of stationary.

Table 2.5 Challenges with submitting HMIS reports
N=69 facilities

Equipment	25%
Inadequate stationary	23%
Human resources	19%
Transport/communication	3%
Other	6%
No problems	19%
No response	7%

As indicated in Table 2.6 below, all registers/data collection tools were supplied by the government through the DHO (Two facilities indicated that they got them from the MOH directly.). Generally, most of the data collection tools were available and all facilities had the Safe Motherhood and Integrated Voluntary Counselling and Testing (VCT) registers. However, the PMTCT child health activity sheets were very rare as only three provinces had this tool available in all facilities. Here, there were cases of stock outs in the last quarter especially for the latter register where 15% of the facilities had run out of these. One facility actually noted that the PMTCT activity sheets were yet to be introduced in the facilities, while another noted that ANC/postnatal care sheets were “not being used”. During stock outs, facilities were more likely to take on a “wait and see approach,” i.e., waiting to receive these activity sheets rather than keeping the records in improvised handbooks, photocopies or paper.

Table 2.6 Availability of data collection tools

Availability of data collection tools /registers	Total	Safe Motherhood	Integrated VCT	Family planning activity sheet	Child health activity sheet	PMTCT Child health activity sheet	ANC/postnatal activity sheet	PMTCT/ANC activity sheet
Total	69	ALL	ALL	93%	99%	84%	94%	83%
Central	9	ALL	ALL	ALL	ALL	ALL	ALL	ALL
Copperbelt	5	ALL	ALL	80%	80%	ALL	ALL	ALL
Eastern	10	ALL	ALL	ALL	ALL	90%	90%	90%
Luapula	7	ALL	ALL	ALL	ALL	86%	ALL	ALL
Lusaka	7	ALL	ALL	86%	ALL	86%	86%	71%
Northern	8	ALL	ALL	ALL	ALL	88%	100%	88%
North-Western	14	ALL	ALL	86%	ALL	57%	93%	57%
Southern	3	ALL	ALL	ALL	ALL	67%	ALL	ALL
Western	6	ALL	ALL	83%	ALL	ALL	83%	67%

Availability of data collection tools /registers	Total	Safe Motherhood	Integrated VCT	Family planning activity sheet	Child health activity sheet	PMTCT Child health activity sheet	ANC/postnatal activity sheet	PMTCT/ANC activity sheet
Overall stock outs of registers last quarter	69	4%	3%	10%	12%	15%	13%	10%

ALL= 100%

2.2.3 Health facility fees

The MOH guidelines outline which health services should be offered for free, but this is not necessarily followed uniformly across the facilities. Across all the 69 facilities sampled during the survey, the following medicines/supplies were offered free of charge within the FANC package:

- SP for IPTp
- Folic supplements
- Iron supplements
- Antibiotics
- Tetanus
- ITNs
- Mebendazole for de-worming
- Tetanus toxoid

Women also receive HIV testing at no charge. In a few facilities, women pay for consultation (10%) and pregnancy tests (12%). Table 2.7 below indicates other tests for which women had to pay, however, the proportions are negligible.

Table 2.7 Services charged at the health facilities
N=69 facilities

Pay for consultation	10%
Pay for pregnancy tests	12%
Pay for	1%
Pay for Hb testing	1%
Pay for urinalysis	3%

2.2.4 Services, supplies and equipment

Although the base numbers per province are low, they are indicative and the emphasis is on cells that have “ALL”. All facilities offer supplements to deal with anaemia and they all offer IPTp which are core FANC services. However, only about a half offers urinalysis (55%) and about two thirds (64%) offer pregnancy tests. Southern Province facilities were the best performing as they offer all the 11 services as shown in Table 2.8 below, while Central, Copperbelt, Eastern, and North-Western provinces provided the least number services. Capillary tubes and Hemocue are core for FANC provision, however the former is rare especially in Eastern and Central Provinces. All the facilities in Luapula had a Hemocue, and overall 70% of the facilities had the same situation.

Only a very few (6%) facilities offer ANC services for five days a week. In Central, Copperbelt, North Western and Southern Provinces, none of the health facilities comply with this. Overall, only four facilities justify offering ANC services for less than five days a week, i.e., basing this on low patient volume, with the rest owing this to the low staffing levels and the need to run other scheduled activities such as outreach programmes. Therefore, they have had to be selective on the number of days in a week they can offer ANC services.

Two-thirds (65%) of the 69 facilities indicate that they have had some shortage of supplies for FANC provision, especially Fansidar (59%) and to a lesser extent folic acid/iron supplements (18%). A similar proportion (64%) indicated that they experienced stock outs in the past quarter; items listed under stock out are a reflection of the same ones identified as being in short supply, with Fansidar topping the list.

Table 2.8 Availability of services, equipment and supplies for FANC provision

Services, equipment available	Total	Central	Copperbelt	Eastern	Luapula	Lusaka	Northern	North-Western	Southern	Western
N (base) facilities	69	9	5	10	7	7	8	14	3	6
Iron, folic, counselling, IPTp	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
HIV testing	99%	ALL	ALL	90%	ALL	ALL	ALL	ALL	ALL	ALL
ITN distribution	97%	ALL	ALL	ALL	ALL	ALL	ALL	86%	ALL	ALL
De-worming	97%	89%	80%	ALL	ALL	ALL	ALL	ALL	ALL	ALL
RPR	81%	67%	80%	80%	ALL	ALL	75%	64%	ALL	ALL
Hb testing	73%	56%	80%	60%	ALL	71%	50%	79%	ALL	83%
Pregnancy test	64%	22%	80%	90%	71%	71%	75%	64%	67%	33%
Urinalysis	55%	89%	40%	70%	57%	57%	50%	36%	ALL	17%
Offer ANC 5 days/ week	6%	0%	0%	0%	14%	14%	13%	0%	0%	17%
Have capillary tubes	41%	11%	60%	10%	57%	57%	50%	57%	67%	17%
Have a Hemocue	70%	44%	80%	60%	ALL	86%	50%	86%	67%	50%
Have had supplies shortages (for FANC)*	65%	33%	60%	100%	71%	43%	50%	79%	67%	67%
Have had stock outs last quarter	64%	33%	80%	90%	86%	29%	63%	71%	33%	67%

*Items with shortages: n= 4; top mentioned- Fansidar - 49%, folic/iron - 18%, urinalysis reagents - 18%, other (job aids, specimen bottle, scales, etc.) -18%, pregnancy tests kits - 16%, Hb tests/centrifuge - 16%, RPR test kits - 11%, micro cuvettes - 9%

The Health Services and Systems Programme (HSSP)⁵ 2008 Rapid Assessment Report which focused on IPT in Central and Eastern Provinces in Zambia indicated that 95% of facilities in

⁵ Health Services and Systems Programme. 2008. Intermittent Preventive Treatment for Malaria in Pregnancy and Focused Antenatal Care in Central and Eastern Provinces Zambia. Report on the Findings from a Rapid

the two provinces reported stock-outs of SP sometime in the period from July 2007 to July 2008. In this current survey, all the facilities sampled in Eastern Province recorded shortages of FANC, whereas 33% recorded likewise in Central Province. This indicates that the situation in Central is improving while in the Eastern region the situation does not seem to be improving yet.

From the perspective of those facilities that had experienced shortages, there were two main contributing factors: inefficiencies from the Medical Stores (47%) and inability of the facilities to make orders that match the demand (33%). This is compounded by the influx of clients from other catchment areas (7%) and late submissions by the DHO (5%). Other operational factors were more marginal contributors to this issue of shortages then listed above.

Of the 44 facilities that had experienced stock-outs in the last quarter, close to a third (30%) had not taken any measure to redress the situation, a quarter (26%) asked patients to buy the supplies themselves, another quarter (23%) borrowed from other facilities which probably means that the problem is simply transferred to another facility. Twelve percent (12%) indicated that they make emergency orders, however, it is unclear how effective the latter action is given the inefficiencies in the Medical Stores noted above.

Table 2.9 Understanding shortages

Factors that lead to shortages N=44 facilities with stock-outs last quarter		Dealing with shortages N=44 facilities with stock-outs last quarter	
Late delivery from Medical Stores	47%	No action taken	30%
Given less than ordered	36%	Ask client to buy themselves	26%
Influx from neighbouring catchment area	7%	Borrow from nearby facility	23%
Late in submitting a facility order to DHO	5%	Make an emergency order	12%
Incorrect quantification by DHO	2%	Facility buys from private pharmacy	5%
Other	7%	Other	5%

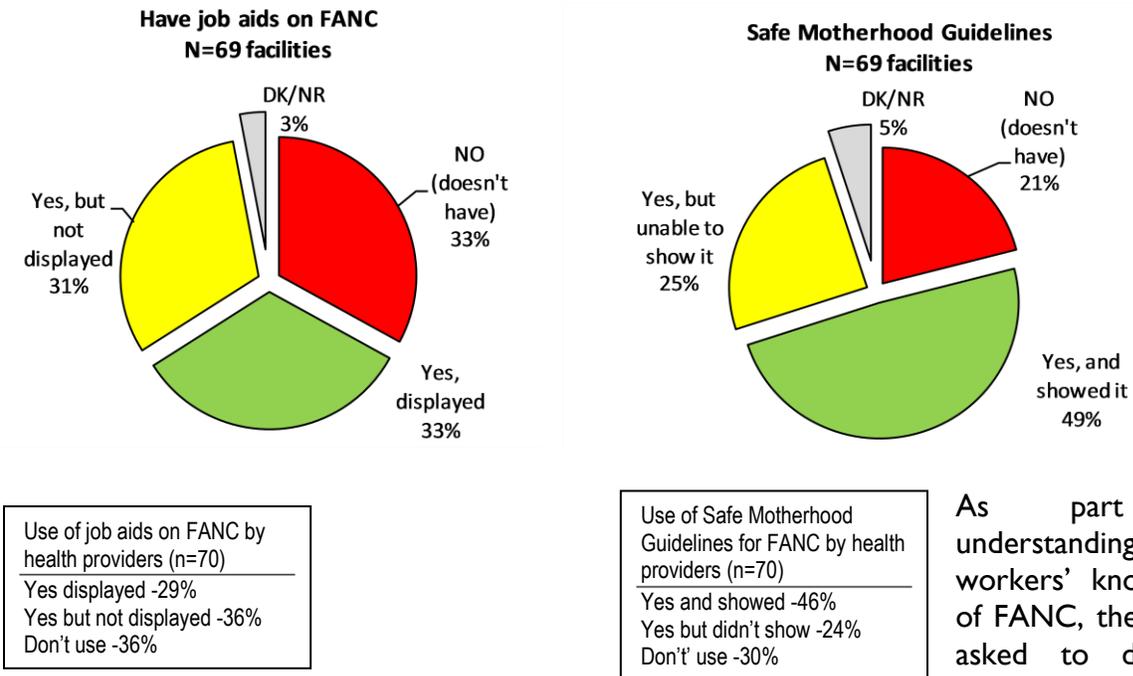
2.3 General Focused Antenatal Care Provision

2.3.1 Guidelines and orientation

Guidelines are an important tool for facilitating uniform application of services. About two thirds (64%) of all facilities had job aids on FANC and 74% had Safe Motherhood guidelines, although a number of them could not provide the respective guidelines for verification. Similarly, when the actual health providers were asked whether or not they use job aids for FANC, 65% answered in the affirmative even though these aids were not necessarily displayed.

Supervisory support is important in ensuring guidelines are adhered to. Of the 69 facilities, all but one indicated that the DHO visits at least once a year, with 49 of them (71%) being visited quarterly or more often.

Fig 2.1 Use of FANC Job Aids and Guidelines



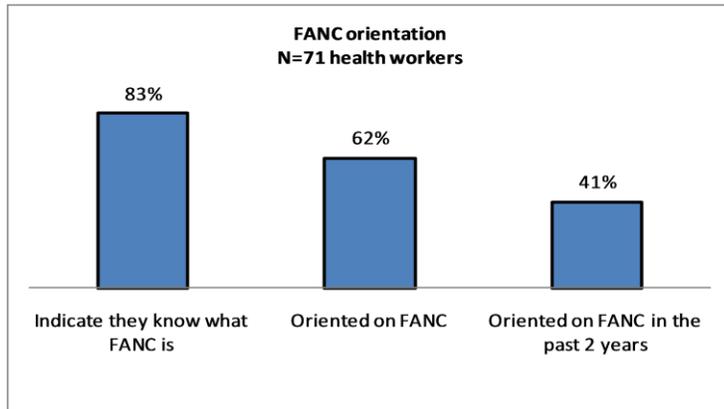
As part of understanding health workers' knowledge of FANC, they were asked to describe FANC in their own

terms. Seventy-one (71) health workers were selected based on their involvement in service provision in relation to ANC. FANC is mainly characterized by the mandatory four ANC visits as well as service provision by a skilled provider. However, when these interviewees were probed to define FANC, only eight of them mentioned the four visits.

Six in every ten (61%) health workers who represent the various facilities had been oriented on FANC with Luapula having the lowest proportion on this measure (29%). Forty-one percent (41%) of the health providers were oriented on FANC recently (within the last two years) mainly through in-service training. Most of the training has been a one off without follow up sessions.

Frequency of FANC orientation for Central and Eastern Provinces were lower than those recorded in the HSSP 2008 Rapid Assessment survey which focused on the two provinces and had 79% of the health providers oriented. Yet in this survey, for the two provinces this measure is less than 50%. It could indicate that with staff turn-over the numbers oriented in these sites over time has been reduced.

Fig 2.2 FANC Orientation



Health providers oriented on FANC

	Base	%
Central	11	45%
Copperbelt	5	60%
Eastern	10	40%
Luapula	7	29%
Lusaka	6	67%
Northern	8	88%
North-Western	14	64%
Southern	4	100%
Western	6	100%

N=44 oriented on FANC

No of orientations: Once - 61%, 2+ times - 39%; **Method:** Pre-service - 27%, In-service - 57%, Both - 11%, Other - 5%

Fig 2.3 Health Workers General Training

Generally, health workers are constantly being trained. In the previous 12 months, 82% of health workers had gone for an in-service training mainly on PMTCT. On further probing, a number of those that attended any training did mention that modules of FANC (67%) and IPTp (62%) were included in the sessions.



In-service training is essential to providers of FANC and IPTp. However, health workers identified fellow workmates (48%) as their main source of information (without clarifying cadre). They do not necessarily rate these workmates as a reliable source of information; their most reliable source includes pamphlets and brochures (37%) followed by in-service training (32%).

Whereas radio is a popular source of information on social issues, it does not feature as a main source of information and neither is it considered as credible amongst the health workers.

Table 2.10 Source of Information

Base N=71	Main source of information	Most reliable source of information
Co-workers/workmates	48%	8%
In-service trainings	23%	32%
Pamphlets and brochures	17%	37%
Media (radio, TV)	0%	8%
Other (specify)	3%	14%

2.3.2 Provider skills in relation to FANC

Whereas all providers were able to do an HIV test (draw the blood for a test) and they all can competently provide the prescriptions for iron, Mebendazole, SP and tetanus toxoid (not included in the table), the outliers at the bottom end are more concerning: only 19% can take an Hb test using a centrifuge. The majority (83%) indicated they can do an obstetric examination; 17% that cannot do this might not be able to identify women with risky pregnancies. Some of those charged with seeing these ANC women might not have the authority to issue ITNs as 71% indicate that they can personally provide ITNs, or it could be an indication that they could not provide ITNs since they were out of stock.

Table 2.11 Services that health providers perform

Are you personally able to perform the following (n=70)	
Provide information and counselling to ANC clients	99%
Take history of an ANC client	99%
Physically exam an ANC client	97%
Provide HIV/PMTCT counselling	97%
Collect blood for Hb, RPR, blood group	87%
Perform a pregnancy test	84%
Perform an obstetric examination	83%
Perform urinalysis	81%
Check Hb using a Haemocue	74%
Perform rapid syphilis testing	71%
Provide ITNs	71%
Check Hb using a centrifuge	19%

Excludes one health provider that did not answer these questions

2.3.3 ANC visits and time of first visit

For a normal pregnancy, the FANC approach recommends four visits: the first visit should be scheduled at the start of the second trimester with subsequent visits at intervals of a month. The emphasis is on quality contact with a skilled health provider where women are educated

on early detection of possible complications and encouraged to adopt practices that maintain a normal, healthy pregnancy.

Forty seven percent (47%)⁶ of the women went for four or more ANC visits during their last pregnancy, although provincial differences were apparent: North Western records the highest proportion (56%) while Eastern (38%) has the lowest. Few women go for only one ANC visit (2%). A substantial number of women (50%) will go for two to three visits which could be explained by the fact that many of them started ANC during the second trimester. The proportion of 47% that went for four or more ANC visits is significantly lower than the 60% recorded in the ZDHS 2007.

Early start of ANC visits results in earlier detection of possible complications and subsequent referrals. A fifth of the women (20%) attended ANC in the first trimester during their last pregnancy. Provincial variations were apparent. Whereas 8% of the women in Western Province attended ANC in their first trimester, the proportion in Eastern Province is 38%. Despite being the most urbanized province with minimal physical barriers to accessing ANC facilities, only 15% in Lusaka attended ANC in their first trimester. The ZDHS 2007 indicates that 19% of the women start ANC in their first trimester of their pregnancy which is similar to the proportions recorded in Table 2.12 below.

Table 2.12 Number of ANC visits and time of first visits

Respondents N (base)	Total 1,050	Central 148	Copper- belt 90	Eastern 144	Luapula 105	Lusaka 103	Northern 104	North- Western 208	Southern 61	Western 87
Number of ANC visits for the last pregnancy(verified and unverified)										
1 time	2%	2%	2%	4%	0%	2%	3%	3%	3%	2%
2-3 times	50%	46%	50%	58%	49%	51%	56%	41%	54%	56%
4 +	47%	52%	48%	38%	51%	47%	41%	56%	43%	41%
Number of months pregnant at time of first ANC**										
0-3 (1st trimester)	20%	28%	17%	38%	20%	15%	11%	15%	20%	8%
4-6 (2nd trimester)	69%	60%	70%	55%	71%	75%	70%	76%	67%	86%
7-9 (3rd trimester)	10%	12%	12%	6%	8%	11%	19%	9%	10%	6%
Don't know	1%	1%	1%	1%	1%	-	-	-	3%	-

** Question on start of ANC banded the months as 0-3, 4-6 and 7-9. FANC recommends that ANC starts at (16-20 weeks) which is around four months. Owing to the structure of the question, it is not possible to establish how many started at 4-5 months.

Data on ANC visits in the first 20 weeks were also sought from the health facilities. They were asked to provide the numbers of ANC first-booking clients and those that make such bookings within the first 20 weeks of pregnancy. Data were collected for every quarter from

⁶ 47% that went for four or more ANC visits is significantly lower than the 60% recorded in the ZDHS 2007

April 2010 to March 2011 then aggregated to get the annual estimates. From Table 2.13 below, overall 29% of the women start ANC visits within the first 20 weeks; however, there were variations within the provinces with Northern recording the highest proportion (35%) and Central the least (18%). Owing to differences in the measurement, it is difficult to compare these findings with the ZDHS 2007 which measures ANC bookings within the first 16 weeks (> four months). The table below looks at bookings within the first 20 weeks.

Table 2.13 ANC bookings within the first 20 weeks of pregnancy

Provinces	No. of facilities	ANC first booking	ANC first booking within first 20 weeks	% of ANC booking with first 20 weeks
Central	9	5,163	945	18%
Copperbelt	4	1,316	423	32%
Eastern	4	1,301	348	27%
Luapula	7	6,751	2,104	31%
Lusaka	5	1,930	573	30%
Northern	8	5,904	2,066	35%
North-Western	13	9,416	2,906	31%
Southern	3	1,239	313	25%
Western	6	2,855	619	22%
Total	59	35,875	10,297	29%

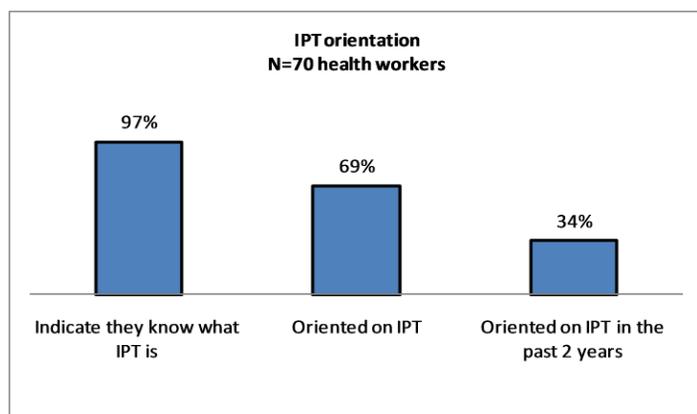
Ten facilities had inconsistent or missing data on the above of which six are from Eastern Province

2.4 Intermittent preventive treatment

2.4.1 IPTp guideline and orientation

Provider orientation and knowledge are critical for delivery of IPTp. When probed as to what is IPT, all (97%) with the exception of two indicated they know what it is. From the explanation, it is clear that they were aware of what it is; however there were two qualitative comments that sought clarification as to whether it should be administered in four doses or three doses. Slightly over two thirds (69%) of the health providers had been oriented on IPTp which is comparable to the 62% oriented on FANC. Similar to FANC, orientation has mainly been a one-off session (58%), and it is an in-service module (60%). The difference with FANC orientation though, is that very few health workers had received the IPTp orientation within the past two years (34%).

Fig 2.4: IPT Orientation



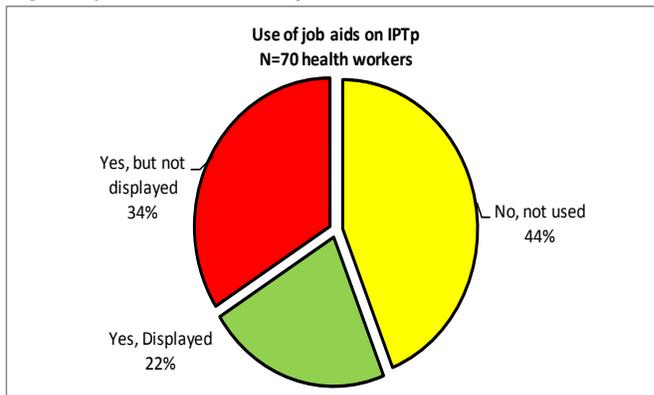
Health provider oriented on IPT

	Base	%
Central	11	46%
Copperbelt	5	60%
Eastern	10	67%
Luapula	7	86%
Lusaka	6	50%
Northern	8	100%
North-Western	14	50%
Southern	4	100%
Western	6	100%

N=48 oriented on IPT

No. of orientations: Once - 58%, 2+ times - 42%; Method: Pre-service - 19%, In-service - 60%, Both - 21%, Other - 5%

Fig 2.5 Job aids for IPTp

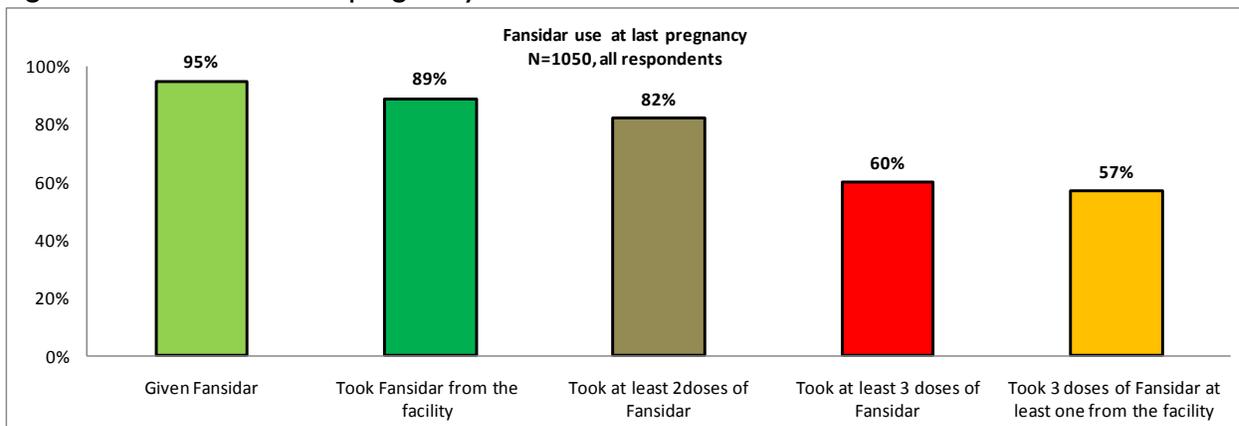


Of the total health providers who were interviewed, many (44%) do not use job aids on IPTp, 34% percent use these aids but have not displayed them which makes it difficult to verify whether or not they are used. Only one fifth (22%) indicated that they use the IPTp job aids and also display the aids as shown in Figure 2.5.

2.4.2 Women’s access to IPTp (based on the last pregnancy)

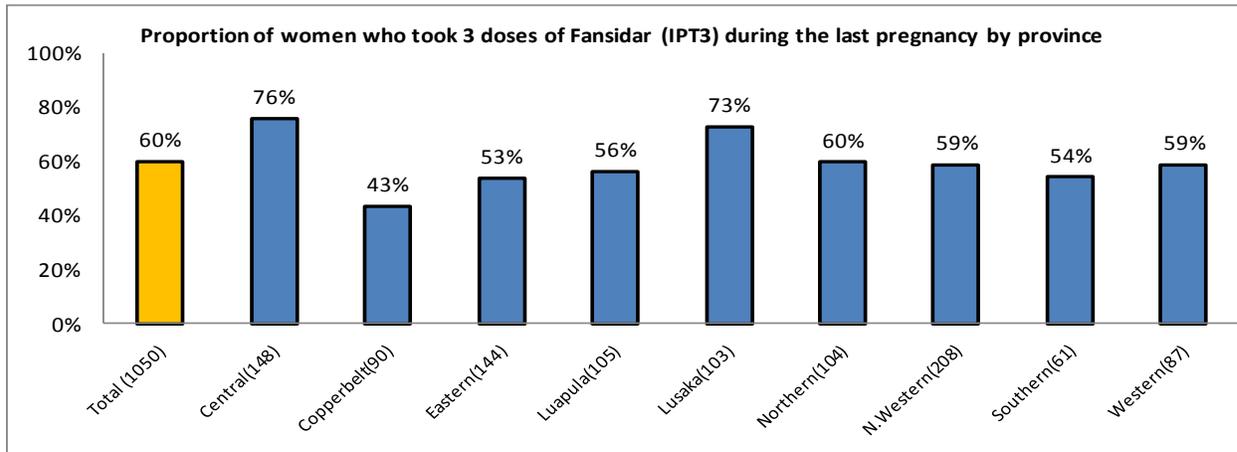
The majority (95%) of women were given Fansidar during their last pregnancy, though only 89% received Fansidar from the facility. Although three doses of SP are recommended for pregnant women, a two dose course is considered the minimum. Compliance to the minimum two doses of Fansidar is high (82%), however only one in every six (60%) pregnant women received three doses of Fansidar. Fifty-seven percent (57%) of all women took the three doses of Fansidar, plus took at least one dose at the health facility. The Zambia MIS 2010 indicates that 86% of women took at least IPTI at routine ANC visit during their last pregnancy which is lower than the 95% recorded in this survey. The differences in sample compositions could account for this; the former is a random household survey while the latter is an exit survey from the ANC/postnatal clinic which potentially increases the incidence of IPT/Fansidar use.

Fig 2.6 Fansidar use at last pregnancy



Provincial differences were apparent with the core indicator of women receiving IPT3. Central Province scored the highest in terms of compliance to three doses of Fansidar for pregnant women at an incidence of 76% followed closely by Lusaka at 73%, while Copperbelt Province scored the least at 43%.

Fig 2.7 Proportions that received three doses of Fansidar during the last pregnancy by province



Whereas all women in Western Province were given Fansidar, only 84% took it at the actual facility. From Figure 2.7 and Table 2.14, across all the nine provinces, the use of IPT2 is higher than the use of IPT3 which indicates a tendency to comply to the minimal requirement as opposed to the optimal.

Table 2.14 Fansidar use at last pregnancy by province

Respondents N (base)	Central 148	Copper- belt 90	Eastern 144	Luapula 105	Lusaka 103	Northern 104	North- Western 208	Southern 61	Western 87
Given Fansidar	97%	89%	92%	91%	98%	95%	98%	97%	100%
Took Fansidar from this facility	97%	86%	85%	89%	94%	85%	89%	97%	84%
Took at least 2 doses of Fansidar	89%	66%	76%	78%	91%	82%	85%	84%	82%
Took at least 3 doses, of which one was at the facility	75%	43%	46%	54%	70%	55%	53%	54%	56%

Reasons for not being given Fansidar at the said facilities point at stock outs as illustrated by 40% of the 64 respondents that did not get Fansidar. Though minimal, 11% of those that were not given Fansidar pointed at lack of drinking water.

Of those 25 respondents that did not get Fansidar owing to a stock out, nine of them did not get the drug from any other source. (Caution small base and the high number of non-response).

Table 2.15 Reasons for not getting Fansidar at the facility

n base Respondents	64
There was no Fansidar	40%
Did not eat	30%
I don't Know	13%
No drinking water	11%
Other specify	6%

Table 2.16 If no Fansidar, where did they get it from

N base Respondents	25*	
Private pharmacy	2	8%
Drug vendor	2	8%
No other source	9	36%
No response	12	48%

*Small base

The guidelines recommend early preventive measures to avoid complications of malaria in pregnancy. However, Fansidar is not recommended during the first 0-3 months of pregnancy, yet 14% of women indicate that they were given Fansidar within this period. This is an area that needs to be addressed especially in Eastern Province where slightly over a third (35%) of the women was given Fansidar when they were only 0-3 months pregnant.

Table 2.17 Fansidar use at 0-3 months

Province	Base	Given Fansidar during month 0-3 of pregnancy
Total	1050	14%
Central	148	24%
Copperbelt	90	8%
Eastern	144	35%
Luapula	105	12%
Lusaka	103	5%
Northern	104	7%
North Western	208	8%
Southern	61	11%
Western	87	6%

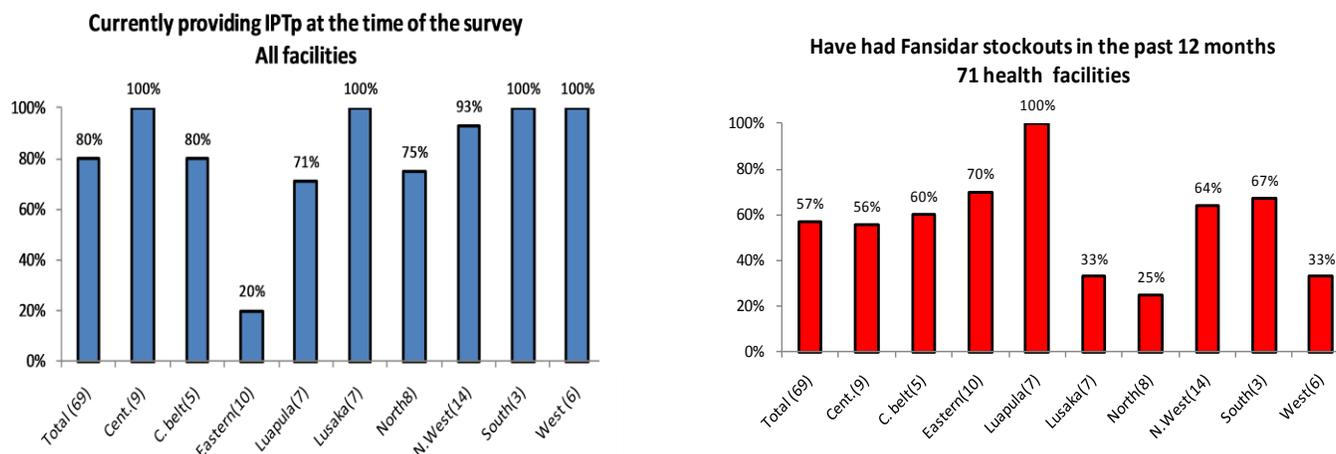
Provision of IPTp was also explored at the health facilities; first, it was important to establish whether the facilities were providing IPTp to all pregnant women at the time of the survey. Eighty percent (80%) of facilities were offering IPTp at the time of the survey to all pregnant women as part of the FANC package. However, Eastern Province stands out, as only two out of the 10 facilities were offering IPTp to all pregnant women on account of frequent stock outs. Of the fourteen facilities that were not offering IPTp at the time of the survey, eleven of them attribute it to shortages, while two point at staffing constraints.

The majority of the facilities adhere to the requirement that they observe the pregnant women take the malaria medication (DOT is 93%). In five facilities, women were allowed to take the Fansidar outside the facility as they were given a prescription, or the provider did not have time to observe them.

Fansidar stock outs were definitely a concern. Fifty-seven percent (57%) of the facilities reported running out of the drug in the past 12 months with Southern Province recording the highest proportion (64%). These stock outs would last for about a month and as is the case with the other supplies in general, facilities were not in a position to make alternative arrangements to deal with the shortages. However, a few of the facilities will borrow from nearby facilities or give prescriptions for women to get drugs elsewhere; there is also the option of making emergency orders. As discussed earlier, it is unclear how effective the latter

approach is. As discussed under supplies in general, stock outs were as a result of the inefficiencies of Medical Stores.

Fig 2.8 Facilities providing IPTp at the time



Reason for not currently offering IPTp (n=14)	IPTp dose delivered: (n=69)	Period of stock out (n=39)	Measures taken to address SP stock out (n=39)
<ul style="list-style-type: none"> Drug shortages (79%) Staffing issues (14%) Other (7%) 	<ul style="list-style-type: none"> Through DOT (93%) At home (7%) 	<ul style="list-style-type: none"> 1-4 weeks (51%) 5-8 weeks (26%) 9-12 weeks (23%) 	<ul style="list-style-type: none"> No action (33%) Emergency orders (21%) Borrow from other facilities (15%) Refer clients to buy else (13%) Ask them to come later (13%) Facility buys from elsewhere (3%) Other (3%)

Health facilities provided numbers of ANC clients that received IPT1, IPT2 and IPT3 plus the number of total ANC bookings. Two-thirds of all ANC bookings (66%) received at least IPT1, however, the attrition by IPT3 is high as less than a third (30%) took IPT3. Copperbelt (21%) and Luapula Provinces (21%) recorded the lowest proportion for women who took IPT3. Western Province started off on a high note with 93% taking IPT1, but only 42% took IPT3.

Table 2.18 Numbers receiving IPT from the health facilities

Province	Base	Total ANC	Total IPT 1	Total IPT 3	% of total ANC taking IPT 1	% of total ANC taking IPT 3
Central	8	2,812	2,120	1,121	75%	40%
Copperbelt	4	1,316	665	278	51%	21%
Eastern	5	1,905	1,207	372	63%	20%
Luapula	7	6,751	3,513	1,426	52%	21%
Lusaka	3	1,300	831	669	64%	51%
Northern	7	5,215	3,329	1,391	64%	27%

Province	Base	Total ANC	Total IPT 1	Total IPT 3	% of total ANC taking IPT1	% of total ANC taking IPT3
North-Western	10	7,474	5,416	2,708	72%	36%
Southern	2	1,113	805	295	72%	27%
Western	5	1,913	1775	797	93%	42%
Total	51	29,799	19,661	9,057	66%	30%

Eighteen facilities did not provide data for ANC bookings or IPT1 or IPT3, while others had more patients receiving IPT than total ANC bookings. The 18 were excluded from the table above.

It is important to analyse staffing numbers in relation to IPT provision. Overall, 435 staff were oriented on IPT but they constitute less than a third (30%) of the staff members. Sixty-seven percent (67%) of the staff in Northern Province were oriented on IPTp and this is higher than that of the other provinces; notably, only 11% of the health workers in Southern Province have been oriented on IPT.

Table 2.19 Health providers oriented in IPTp by province

Facilities (69 total)	Total trained	Total number of staff in the facilities	IPTp oriented verses total staff*
Central	29	124	23%
Copperbelt	54	109	50%
Eastern	13	85	15%
Luapula	48	141	34%
Lusaka	50	142	35%
Northern	158	235	67%
North-Western	59	480	12%
Southern	8	74	11%
Western	16	43	37%
Total	435	1433	30%

Excludes facilities with missing data on any of the above measures. Total staff counts include doctors, medical licentiates, enrolled nurses/registered nurses, enrolled nurses-midwives/registered nurses/midwives, Clinical Officers, EHTs, certified midwives, traditional birth attendants, CDEs and CHWs

2.4.3 Health providers behaviour in relation to SP for IPTp

Table 2.20 below indicates the correct behaviour in relation to SP for IPTp; nine in every ten (90%) of the health providers correctly indicated that three doses of Fansidar should be given for IPTp, with Lusaka Province scoring the lowest proportion on this variable (79%). Seventy-one percent (71%) correctly indicated that they give the first dose of Fansidar at 16 weeks. However, a worrying 13% gave Fansidar at 14 weeks or below which is in the first trimester and this is not recommended.

Almost all (96%) indicated that they observe the client take the IPTp dose at the facility; this figure was also high from the facility interviews and the exit interviews. The guidelines contraindicate IPTp for women who are HIV positive and on Cotrimoxazole, however, if they are not taking Cotrimoxazole, ARVs alone will not contraindicate the use of IPTp. Since the survey did not structure the question in this manner, it is difficult to draw conclusive

comments on the nine percent (9%) that indicated SP should not be prescribed for women on ARV. Seventy-four percent (74%) of the providers though indicated that they do not prescribe Fansidar to women on Cotrimoxazole, which is the correct behavior. Eighty-nine percent (89%) and seventy-nine percent (79%) of the health providers correctly indicated that they do prescribe SP to women on Amoxicillin and Anti TB drugs respectively.

Table 2.20 Provider behaviour

Provider / behaviour	Total	Central	Copper-belt	Eastern	Luapula	Lusaka	Northern	North-West.	Southern	Western
Base health providers	70	11	5	9	7	6	8	14	4	6
Give 3 doses of SP for IPTp*	90%	91%	80%	100%	100%	67%	100%	79%	100%	100%
First dose at 14 weeks or below	13%	1%	20%	11%	14%	17%	0%	7%	75%	0%
First dose at 16 weeks	71%	82%	40%	56%	57%	83%	88%	79%	25%	100%
First dose at 17-20 weeks	9%	17%	40%	0%	15%	0%	0%	14%	0%	0%
First dose over 20 weeks	7%			33%	14%	0%	13%	0%	0%	0%
Administer IPTp in pregnancy through DOT	96%	100%	80%	100%	86%	100%	100%	100%	75%	100%
Don't give SP for IPTp to women on ARV	9%	0%	0%	0%	0%	17%	0%	29%	0%	17%
Don't give SP for IPTp to women on Cotrimoxazole	74%	55%	80%	100%	71%	83%	38%	79%	100%	83%
Give SP for IPTp to women on Amoxicillin	89%	73%	80%	100%	86%	67%	100%	93%	100%	100%
Give SP for IPTp to women on Anti TB drugs	79%	46%	100%	100%	86%	83%	88%	71%	75%	83%

Table 2.21 Challenges in IPTp delivery

Challenges with the provision of IPTp	N=71
SP stock-outs	54%
Client misconceptions/beliefs	25%
Human resources constraints	4%
Provider misconceptions/briefs	3%
Other	6%
No problem	6%

From the health providers' perspective, SP stock-outs were the main challenge in the provision of IPTp. Although client misconceptions were the second most common challenge, some of the open end responses pointed out that clients starting off ANC visits late or failed to adhere to follow up visits.

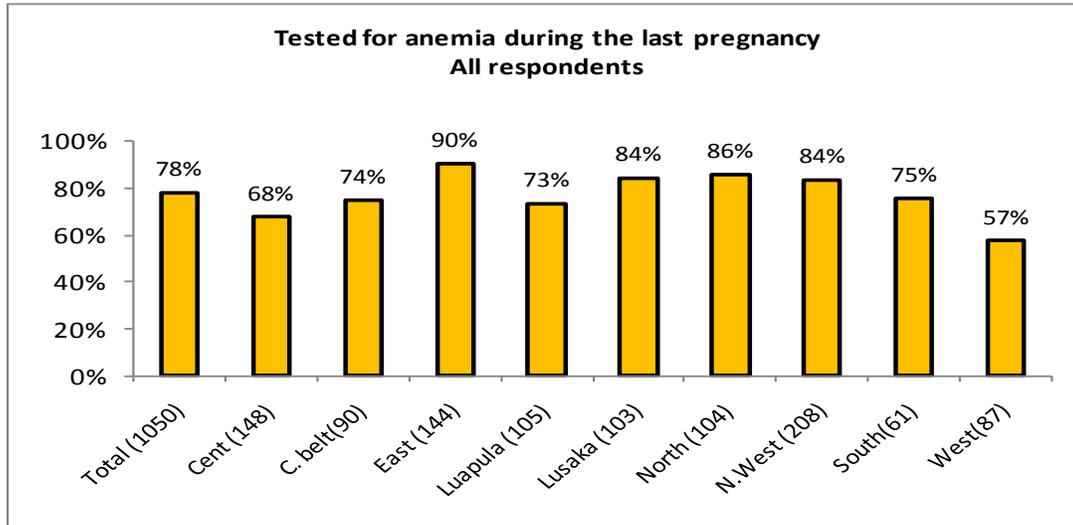
2.5 Haemoglobin test

Testing for anaemia is an important component in FANC procedures given the high prevalence of anaemia in pregnant women. Based on the last pregnancy, 57% of the women in Western Province had an Hb test. This figure shoots up to 90% in Eastern Province, which is significantly higher than the national average of 78%. It is important to note that women might not be too familiar with some of the blood tests, and provider data are a more reliable source for this measure.

The HSSP 2008 Rapid Assessment Survey pointed out that 48% of providers in Central and

67% of providers in Eastern Province did not perform an Hb test for all ANC clients; in this exit survey, the proportions of clients indicating that they received the said test are high, which could indicate that the situation has improved, or, that the pregnant women are unable to provide reliable feedback on this measure.

Fig 2.9 Haemoglobin tests at the last pregnancy



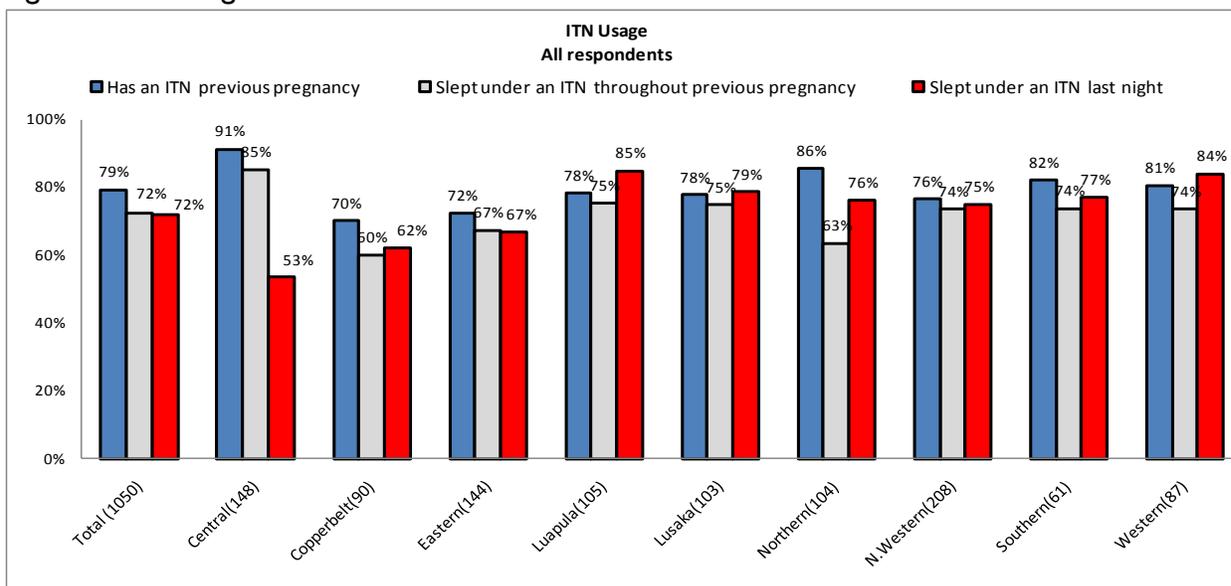
From the facility interviews, (results shown earlier on), 73% of the 69 offered Hb testing. From the health providers, only 64% checked for Hb for all ANC clients, and the main reason for this was due to lack of equipment (accounts for 19 of the 32 health providers who don't do Hb tests for all clients).

In other cases the equipment available is faulty. Lack of equipment is then followed at a distance second by staff shortages. Here it is pointed out that some facilities do not have trained personnel. With the need to prioritize, two health providers indicated that they give the Hb test to pregnant women who look pale or unwell.

2.6 Insecticide treated nets

An ITN is one of the most cost effective approaches promoted for prevention of malaria transmission especially for pregnant women. Figure 2.10 below indicates high usage of ITNs in the last pregnancy. Even when focusing on ITN usage based on the previous night (it is a more reliable measure owing to recall), the proportions are significantly higher than the 2010 National MIS (percentage of pregnant women who slept under an ITN is 52%). It could be argued that women who attend ANC are more likely to use ITNs than is the case with a random sample of pregnant women at household level. It can also be argued that there is a possibility of an over claim when women are interviewed after visiting ANC where ITNs are heavily promoted.

Fig 2.10 ITN Usage



Of those that had an ITN, 79% was given by the health provider/facility, without necessarily linking it back to the particular facility. This is reflective of the success of the mass distribution campaigns. The remaining balance of 16% bought it themselves, while six percent (6%) got it from either friends, NGOs or other sources.

The obvious reason for not using an ITN is when one does not have one, either because one does not have the money to buy one or they were not given a free one, the two responses accounts for over 70% of the reasons.

Table 2.22 Source of ITN

N base respondents	832
The health facility	79%
Bought it	16%
Given by relative/friend	2%
NGO	2%
Other specify	2%

Table 2.23 Reasons for not using an ITN

N base respondents	240
I was not given	64%
Didn't have money to buy an ITN	7%
Feel suffocated when under an ITN	9%
Difficult to hang the ITN	2%
Others (It's dirty, torn, etc.)	18%

Distribution of ITNs was probed with the health facilities and one in every two (49%) of the facilities gave all pregnant women an ITN during the first ANC visit. The other facilities were not able to offer ITNs to all pregnant women owing to stock-outs. The seven facilities in Luapula Province and the three in Southern Province were particularly hard hit as none of them were in a position to provide ITNs to all women who sign up for ANC. These ITNs were mainly distributed through the government structures, mainly the DHO, although partners such as World Vision also provide ITNs occasionally. Less than a third of the facilities (26%) received ITN stocks on a quarterly basis, which means they need to have adequate storage, plus be able to make realistic estimates of ANC bookings to estimate the required number of ITNs. Not only were these stock outs widespread (68%), they could last for up nine months. From the facilities' perspective, stock outs were mainly as a result of the inefficiencies of the distribution system which is characterized by late deliveries and incorrect

quantities, and the situation is can worsen when there are increased numbers of patients that come from other catchment areas.

Table 2.24 ITN distribution

Respondents N (base)	Total 69	Central 9	Copperbelt 5	East 10	Luapula 7	Lusaka 7	North. 8	N?West 14	South 3	West 6
Availability										
All women receive an ITN at first ANC visit	49%	78%	100%	30%	-	29%	75%	57%	-	50%
ITN stock outs past 12 months	68%	44%	60%	80%	100%	71%	38%	71%	100%	67%
Sources of nets										
DHO	86%	89%	100%	90%	86%	71%	75%	86%	67%	100%
Provincial Health Office/MOH	6%	-	-	10%	-	-	-	14%	33%	-
Partners	9%	11%	-	-	14%	29%	25%	-	-	-
Distribution cycle										
Quarterly	26%	22%	40%	-	14%	14%	88%	14%	67%	17%
Bi annually	35%	67%	20%	70%	43%	43%	0%	21%	33%	-
Less often	39%	11%	40%	30%	43%	43%	13%	64%	-	83%

Length of time of the stock outs (n=47), 1-3 months -30%, 4-6 months - 34%, 7-9 months -11%, and 10 months and over 14%

2.7 Malaria case management

In additional to looking at IPTp, it was important to look at the other components relating to malaria treatment at the health facility. Of interest is to look at malaria treatment (curative measures) for pregnant women. Guidelines indicated that for uncomplicated malaria, pregnant women should be given quinine in first trimester, then Coartem in second and third trimesters. Twenty-eight percent (28%) of the health providers give the correct combination as indicated in Table 2.25 below. There is high use of SP/Fansidar within the first trimester as 16% of the health workers indicated that they treat malaria in pregnant women during the first trimester using SP/Fansidar.

Table 2.25 Drugs used for treatment of malaria in pregnant woman

1 st trimester	2 nd trimester	3 rd trimester	N=71 health providers
Quinine,	Coartem,	Coartem	28%
Quinine	Quinine	Quinine	23%
Quinine	SP/Fansidar	SP/Fansidar	10%
SP/Fansidar	Quinine	Quinine	8%
Quinine	Quinine	Quinine	4%
SP/Fansidar	Fansidar	Fansidar	4%
Quinine	SP/Fansidar	SP/Fansidar	4%
SP/Fansidar	Coartem	Coartem	3%
Quinine	Quinine	Fansidar	3%
Coartem	Quinine	Quinine	1%
SP/Fansidar	Coartem	Coartem	1%
Quinine	Quinine	Coartem	1%
Missing on dose			9%

Overall a third (32%) of the facilities did not have the malaria parasite testing kit during the time of the survey, and the main reason is that they were using rapid diagnostic tests (RDTs). Similarly, those that did not have RDTs indicated they were using malaria parasite slides (MPs) (nine facilities though indicated that they did not have RDT owing to late deliveries or incorrect deliveries). More worrying are the seven facilities (10%) that did not have either of the testing kits for malaria; four of these facilities are in North -Western Province.

Availability of Coartem is more widespread (93%) than that of oral quinine (74%), and the issue of unavailability of the latter is attributed to the late deliveries by either Medical Stores or the DHO. Two facilities, both in Eastern Province (3% of total facilities), did not have either of the two drugs during the time of the survey.

Table 2.26 Testing kits and other malaria drugs

Facilities N (base)	Total	Cent.	Copper -belt	East	Luapula	Lusaka	North.	North West	South	West
Availability										
Have RDTs	88%	89%	100%	100%	86%	100%	88%	71%	100%	83%
Do malaria parasite slides	32%	11%	60%	20%	29%	43%	38%	36%	67%	17%
Neither do RDT or malaria parasite slides	10%	11%					13%	29%		17%
Have oral quinine	74%	56%	80%	60%	100%	100%	100%	50%	100%	67%
Have Coartem drugs	93%	100%	80%	70%	100%	86%	100%	100%	100%	100%
Have no oral quinine and Coartem	3%			20%						
Stock outs										
Stock outs of RDTs	49%	44%	-	90%	100%	43%	25%	43%	33%	33%
Stock outs MPs	8%	-	-	20%	17%	-	-	7%	33%	-
Stock outs of oral quinine	40%	44%	20%	70%	57%	17%	-	57%	-	33%
Stock outs of Coartem	28%	22%	40%	70%	-	33%	-	36%	-	17%

Looking in more depth into RDTs and Coartem, most of these shortages lasted for about a month, and whereas RDT shortage is attributed to late deliveries either by Medical Stores, DHO or the Provincial Health Office, for Coartem the issue is that of the orders supplied verses the demand by the facility. It is unclear whether this is entirely as a result of the inaccurate orders placed or inaccurate amounts delivered. Irrespective of whether or not they had experienced Coartem shortages, facilities were probed as to what they would do in an event of a stock out and the responses were as per Table 2.27 below.

Table 2.27 Understanding RTDs and Coartem stock outs

Base health facilities that have had stock-outs of RDT or Coartem	RTDs		How to address stock outs of Coartem	
	n=34	Coartem n=19*	N=70 health facilities	
Stock out period				
1 to 4 weeks	76%	79%	Borrow from nearby facility	29%
5 to 8 weeks	18%	16%	Make an emergency order	23%
9 to 12 weeks	6%	5%	Use SP	23%
Reasons for the stock outs				
Late delivery from Medical Stores	35%	11%	Tell clients to buy from private pharmacy	20%
Given less than ordered	35%	53%	Use quinine	6%
Late delivery from DHO/Provincial Health Office	21%	26%	Facility buys private pharmacy	4%
Influx from neighbouring catchment area	3%	-		
No transport to pick supplies from DHO		11%		
Other (specify)	6%	-		

*small base

2.8 Information on malaria

Health providers are tasked with giving women information on malaria as part of routine ANC visits. Not only do women need information on complications of malaria in pregnancy, but they also need to be informed on disease recognition, treatment and prevention. Nine in every ten women (89%) had a discussion with the health provider on malaria during their last pregnancy. In Lusaka Province, there might be an assumption that pregnant women are already well informed on this topic as providers were more likely to skip this important discussion compared to other provinces.

Fig 2.11 Malaria discussed with the provider

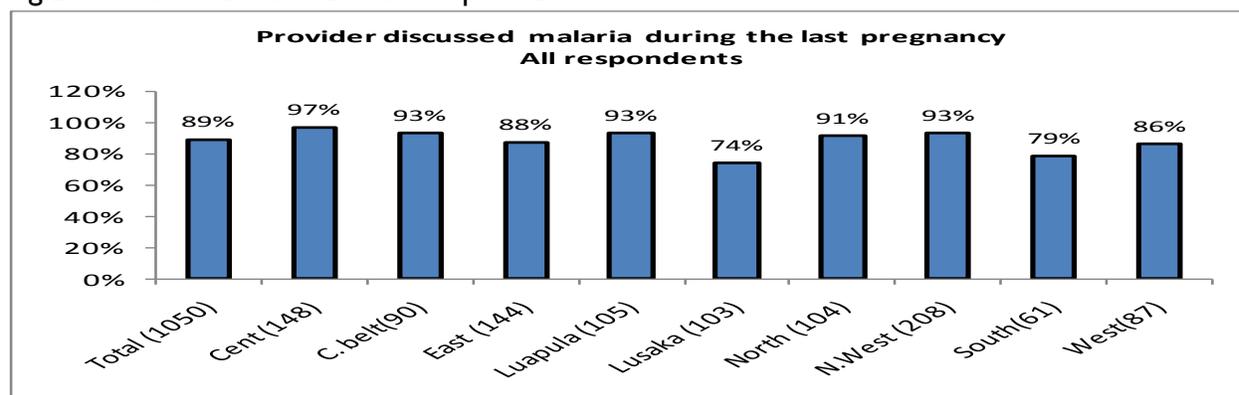


Table 2.28 below shows the specific topics on malaria discussed with the health providers. Whereas 77% had a discussion on symptoms of malaria, slightly less than two thirds (64%) discussed how to treat malaria and this variation is driven by the very low proportion (9%) recorded in Western Province for the latter topic. Despite possible personnel and time

constraints, the ideal would be to take pregnant women through all five topics in the shortest time possible. One in every two women (50%) were taken through the five topics during their last pregnancy, however in Western Province, not one single woman had this experience. Yet of every ten women in Eastern, eight of them (85%) had a discussion on all five topics.

Table 2.28 Topics relating to malaria discussed with the provider

Respondents N (base)	Total 1,050	Central 148	Copper- belt 90	Eastern 144	Luapula 105	Lusaka 103	Northern 104	North- Western 208	Southern 61	Western 87
Symptoms / signs of malaria	77%	85%	90%	86%	89%	53%	90%	72%	48%	66%
How to prevent malaria	78%	87%	88%	86%	91%	61%	79%	73%	69%	60%
How to diagnose malaria	76%	87%	84%	87%	77%	57%	86%	78%	67%	40%
Complications of malaria in pregnancy	72%	92%	91%	86%	60%	52%	75%	75%	66%	28%
How to treat malaria	64%	76%	87%	87%	44%	63%	65%	67%	43%	9%
All 5 topics above	50%	61%	76%	85%	31%	33%	56%	49%	26%	0%

Of particular interest, is the number of women who were talked to about the importance of Fansidar and ITN with the ideal being that women had discussions on both items during their last pregnancy. Clearly, a lot of effort has been put into addressing both areas as 87% of all women had a discussion with the provider on Fansidar and ITNs during their last pregnancy. Even the worst performing province (Western) recorded 78%.

Table 2.29 Providers discussions on both Fansidar and ITN

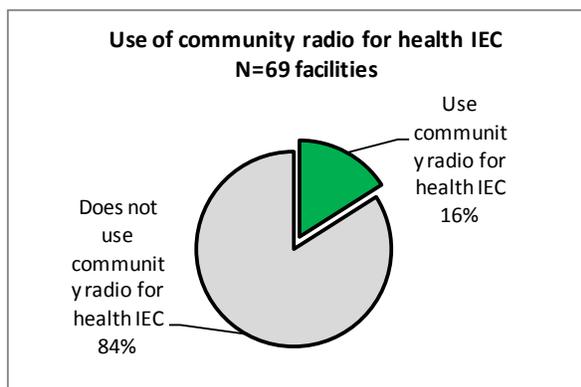
Respondents N (base)	Total 1,050	Central 148	Copper- belt 90	Eastern 144	Luapula 105	Lusaka 103	Northern 104	North- Western 208	Southern 61	Western 87
Provider discussed importance of Fansidar	95%	99%	96%	88%	91%	97%	94%	98%	93%	91%
Provider discussed the importance of ITN	91%	97%	92%	88%	89%	95%	88%	95%	79%	86%
Provider discussed both ITN and Fansidar	87%	96%	89%	80%	85%	92%	84%	93%	79%	78%

With the pressure on human resources, it follows that these facilities rely on volunteer groups to run community sensitization activities. All the volunteer groups in Table 2.30 below did run some community sensitization activities on FANC and malaria with the CHWs being the most active. It is interesting to note that malaria agents were active in sensitization on the same topic as would be expected, however they were not as active when it came to community activities relating to FANC. Yet, malaria is an integral part of FANC. It is important that malaria sensitization activities be integrated in the other “specialized volunteer groups” such as tuberculosis (TB) supporters, home-based care givers, peer supporters and nutrition promoters.

Table 2.30 Volunteer Group Activities

Base = 69 facilities	Community health volunteers groups linked to facilities	Groups that run community education on FANC	Groups that run community education on malaria
Safe Motherhood Action Groups (SMAGs)	56%	49%	50%
CHWs	93%	71%	81%
Neighbourhood Health Committees (NHCs)	96%	57%	62%
Malaria agents	81%	37%	69%
Home-based givers	80%	19%	25%
Nutrition promoters	58%	21%	24%
Peer educators	77%	29%	28%
TB treatment supporters	83%	18%	19%

Fig 2.12 Use of community radio for malaria education



Radio remains one of the most effective methods to reach the masses and 16% of the facilities indicated that they use community radio for health communication. Of the facilities using community radio (11 in total), five are in Luapula, three in North Western and one each in Eastern, Northern and Southern. Some of the additional comments point at areas that can be tackled on radio, for example, five facilities raised the issue of male involvement in PMTCT as a challenge in the provision of ANC.

2.9 Client satisfaction

Waiting time has a bearing on overall satisfaction. Focusing on the waiting time for the current visit, it varied across the provinces. Whereas over a half (56%) of the women only waited for less than 30 minutes in Eastern Province, close to two thirds (64%) of the women in Luapula Province had to wait for more than an hour. Excluding this and two outlier provinces, the other provinces had 33% - 52% of the women having to wait for more than an hour, and this is the case even in the most urbanized provinces.

Table 2.31 Waiting time to see a provider (a)

All respondents	Total	Central	Copper-belt	Eastern	Luapula	Lusaka	Northern	North-Western	Southern	Western
N (base)	1,050	148	90	144	105	103	104	208	61	87
< 30 minutes	27%	12%	26%	56%	11%	20%	14%	26%	36%	37%
30 min to one hour	32%	45%	30%	27%	25%	28%	44%	33%	20%	30%
>one hour	41%	42%	44%	17%	64%	52%	40%	40%	44%	33%

It is important to assess the women's perception to waiting time. One simplistic approach is to ask them to rate the waiting time on a scale of long to short. A waiting time of 30 minutes to one hour is considered as fair, while a wait for over an hour is considered long. Questions on satisfaction with the waiting time were not asked, but it can be inferred that those that rated waiting time as long–very long were dissatisfied.

Table 2.32 Waiting time to see a provider (b)

Time		> 30 minutes	30min to 1 hour	< an hour
Base = 1050		278	340	429
Very short	13%	46%	3%	1%
Short	27%	46%	40%	4%
Fair	19%	6%	37%	14%
Long	25%	2%	19%	46%
Very long	15%	-	2%	34%

Still focusing on the current visit, there are consistently high ratings on the treatment by health providers (81%) and the general quality of care (74%). The latter would encompass facility amenities and cleanliness, while the former would include provider explanations/discussions and examination. It follows therefore that there will be high levels of satisfaction (75%) despite the fact that 40% rated the waiting time as long-very long.

Table 2.33 Client satisfaction

Base 1050 respondents	Rating how health worker treated you	Rating quality of care	Satisfaction with the services	
Very good	33%	24%	Very satisfied	23%
Good	48%	50%	Satisfied	52%
Fair	14%	20%	Fairly	17%
Bad	4%	5%	Dissatisfied	7%
Very bad	1%	1%	Very Dissatisfied	1%

3. DISCUSSIONS

While many surveys have been conducted on malaria in Zambia previously, this survey was unique as it focused on prevention of MIP through IPTp as well as FANC. The survey brought out a number of strengths and weaknesses in provision of IPT and FANC in Zambia.

Though minimal there are women who are not literate and might not comprehend written IEC material on FANC. There are opportunities to explore the possibilities of using pictorial content in the IEC material on FANC to effectively reach this group.

At the health centres, the ratio averages of one enrolled /registered nurse/ midwife for every 3,590 persons presents a major challenge. Further, inadequate staffing has been mentioned

several times as an inhibitor to the provision of IPT_p, yet health needs have resulted in the inclusion of additional components such as PMTCT. When you add these up, these have resulted in increased demands on the health worker. There are components of IPT_p such as malaria education that can be delegated to the volunteer associations linked to these facilities to avoid overburdening the health worker. Hopefully, this could result in a shorter contact time with the health provider, and reduce the pregnant woman's waiting time. However, a review as to whether this is an effective and sustainable approach is still needed.

Across all the 69 facilities, the following medicines and commodities were offered free of charge within the FANC package: (i) Fansidar for IPT, (ii) folic acid supplements, (iii) iron supplements, (iv) antibiotics, (v) tetanus, (vi) ITNs, (vii) Mebendazole for de-worming, and (viii) tetanus toxoid. The study concluded that 78% of women had Hb done in their previous pregnancy while 73% of the facilities provided Hb services. Health facilities through partners have continued to subsidize services under FANC. However, lack of consistent supplies has resulted in cases where pregnant women are unable to receive these free services.

Generally, most of the data collection tools were available and all facilities had the Safe Motherhood and Integrated VCT registers. The PMTCT child health activity sheets were very rare as only three provinces had this tool available in all facilities. The number of reporting forms that health facilities are expected to fill could be overwhelming, especially given the staffing issues and the current workload. Some facilities even noted that some of the tools like the ANC/postnatal sheets were "not being used". There is need to re-evaluate the various tools and integrate them into one summarized manageable tool.

4. RECOMMENDATIONS

Shortages of supplies greatly inhibit the delivery of IPTp. Fifty seven (57%) of the health facilities had experienced stock-outs of Fansidar within the last 12 months preceding the survey. Luapula is the worst hit; all the seven facilities (100%) have had Fansidar shortages in the past 12 months, yet the 2010 Zambia MIS noted the resurgence of malaria in this province. The procurement and delivery constraints need to be urgently addressed and where possible, priority should be given to provinces that record high incidence of Fansidar stock outs and increases in malaria parasitaemia.

The guidelines for IPTp are clear that the first dose should be at sixteen weeks. Whereas this is the common practice for most providers, 13% of the 70 health providers indicated that they give the first dose before the 14th week of pregnancy. Further, 14% of women indicate that they received their first dose of Fansidar when they were 0-3 months pregnant. The two findings point at significant use of Fansidar before the recommended time and therefore, health providers need to be sensitized accordingly.

From the health facility data, only 29% of pregnant women had their first ANC visit within the first 20 weeks. This has a knock-on effect on the number of women adhering to the four ANC visits and the three IPTp doses. Health providers are currently intervening once the women come in for the first ANC visit; community sensitization at household level is therefore needed to increase the numbers coming to the facilities for the very first visit, and intensive mass media campaigns might be effective.

Health facilities' data indicate that whereas 66% of pregnant women received IPTp1, only 30% received IPTp3. Bridging this gap is important in achieving the overall targets set out by the MOH and partners. Midwives need to be sensitized about the importance of their role in encouraging their clients to complete the entire IPTp dose regimen.

Despite guidelines indicating that for uncomplicated malaria, pregnant women should be given quinine in their first trimester, then, Coartem in the second and third trimesters, only 28% of the health providers gives this correct combination. Therefore there is need to orient health workers in management of malaria in pregnancy.

Health facility data on IPTp and ANC are an objective source of information, however, some of the data are incomplete or inconsistent. For example, out of 69 facilities, data from 18 facilities were not used in the computation of IPTp usage as a proportion of all ANC bookings owing either to inconsistencies or incompleteness (for example, numbers receiving IPT3 exceeding those of IPT1 or exceeding the total ANC bookings). Health providers need to be sensitized on the importance of maintaining accurate data; where possible, reports generated using the data and decisions that have been guided by the data need to be clearly communicated to the health providers for them to be more appreciative of the value.

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