



Republic of Zambia

MINISTRY OF HEALTH



**Annual Health Statistical Bulletin
2007
Western Province**

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Health Management Information System (HMIS) Unit
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Preface

The 2007 Western Province Statistical bulletin is a reflection of the disease burden and service delivery statistics arising from implementation of activities planned for 2007. The statistics in here are as much as possible on the major causes of visitations to health facilities and outputs on service delivery.

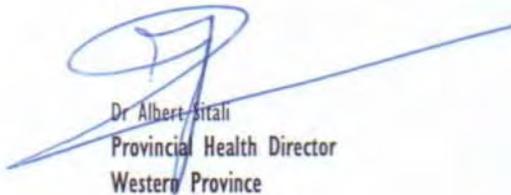
In comparison to the Annual Health Report that gave progress on the various activities against the Provincial Action plan, this documents mostly just gives statistics on services monitored through routine information, the HMIS. This will partly provide evidence on the performance of the health sector and progress towards the attainment of the Millennium Development Goals (MDGs), in Western province.

We anticipate that this information will benefit different users; Patients, communities, service providers, programme managers, policy-makers, providers of funds, global agencies and organizations. All these need information in order to measure mortality and morbidity; disease outbreaks; access, coverage and quality of services.

As new programme areas have emerged over the years, the HMIS has not been able to meet all the data requirements. The revision of the HMIS started in 2006 and continued in 2007. This may well be the last bulletin to be compiled using the 1996-2008 HMIS as the revised version was rolled out in December 2007.

An attempt has been made to provide some analysis and explanation of the data. It remains however for further analysis by the various levels. In some cases local knowledge is an advantage to explain the meaning of the picture portrayed. This bulletin provides a basis for further analysis to facilitate use of this information to improve health status of Western province.

Finally, I hope this report will provide insight into the trends of morbidity, mortality and service delivery to the satisfaction of our esteemed readers.



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Acknowledgements

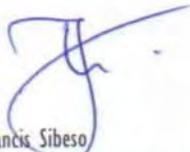
The successful production of the *2007 Annual Health Statistical Bulletin* would not have been possible without the active and dedicated efforts of all the Health Personnel at Community, Health centre and Hospital levels who tirelessly provided the health services and their commitment to compiling the data we have used in this report .

My sincere gratitude goes to all personnel at the District health offices and the Provincial Health office for the support they provided to the lower levels. They provided an enabling environment for information flow.

My thanks and appreciation is extended to the National level Directorate of Planning for supporting the province to ensure smooth operation of the HMIS in Western Province.

The DMS, HIO and DHIOs whose efforts were instrumental in the compilation of this bulletin respectively are Francis Sibeso (Provincial Health Office), Paul Munsanje (Lewanika General Hospital), Timothy Masuka (Mongu), Britty Simundo (Sesheke), Fabian Kaingu (Senanga), Martin Liyungu (Lukulu) and Justins Wamulungwe (Kalabo).

Special thanks go to Health Services and Systems Programme for giving financial support to produce this bulletin.



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List of Abbreviations

AFP	Acute Flaccid Paralysis
ANC	Antenatal Care
AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Treatment
BCG	Bacillus Calmette Guerin
CDE	Classified Daily Employees
CFR	Case Fatality Rate
CHW	Community Health Worker
CS	Caesarean Section
DHMT	District Health Management Team
DHO	District Health Office
DHIO	District Health Information Officer
DPT-Hib + HepB	Diphtheria, Pertusis, Tetanus, Haemophilus Influenza and Hepatitis B
EPI	Expanded Programme of Immunisation
FP	Family Planning
HC	Health Centre
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HR	Human Resources
HSSP	Health Services and Systems Programme
IDSR	Integrated Disease Surveillance and Response
IP	In Patient
IPC	Infection Prevention and Control
MCH	Mother and Child Health
MMR	Maternal Mortality Ratio
NHSP	National Health Strategic Plan
OPC	Out Patient Consultation
OPD	Out Patient Department
OPV	Oral Polio Vaccine
PEM	Protein Energy Malnutrition
PHO	Provincial Health Office
PNC	Post Natal Consultation
RI	Respiratory Infections
RPR	Rapid Plasma Reagent
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infections
TB	Tuberculosis
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
tTBA	trained Traditional Birth Attendant
UTH	University Teaching Hospital
ZDHS	Zambia Demographic and Health Survey

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Glossary of Terms

Antenatal First Attendance: First time pregnant woman attends antenatal clinic during that pregnancy.

Average Antenatal Attendance: Number of return visits to the Antenatal clinic by a pregnant woman for that particular pregnancy.

Average length of stay: The average number of days a patient spends in a health facility from the time of admission to the time of discharge.

BCG - Measles Dropout Rate: The difference in proportion between children under one year who received BCG and Measles.

Bed Occupancy Rate: This is an average percentage of used beds in a given period of time.

Bed Turnover: The number of admissions per bed during a given period of time.

Case Fatality Rate: The number of deaths due to a certain illness out of the cases resulting from that illness.

Case Load: The number of times a child less than five years is attacked by a disease or condition in a year.

Disease Incidence Rate: The number of new cases that occur within a given period, at a given location in a given population group.

Full Immunisation: The number of children aged one year and below who received or completed a full series of the recommended immunisations.

Health Centre Daily Staff Contacts: The average number of clients and patients a trained staff attends to in a day.

Incidence Rate: The number of cases of a disease out the total catchment population.

Institutional Delivery: A delivery that takes place in a health centre or hospital.

Maternal Death: A death of a woman during pregnancy or within 42 days after delivery or termination of pregnancy from bleeding, seizures, infection or any pregnancy related cause (excluding accidents).

Maternal Mortality Ratio: The rate of mortality associated with pregnancy and child bearing expressed per 100,000 live births.

Morbidity Rate: The proportion of people suffering from a particular disease or condition out of a 1000 population.

Mortality Rate: The proportion of people dying of a particular disease out of a 1000 admissions.

New Family Planning Acceptors: A person who has never before used a modern method of contraception as prescribed by any registered health facility.

Per Capita Attendance: The average number of people in a catchment area that attended a health service.

Peri-Natal Mortality: The proportion of neonates dying from the time of birth up to the 28th day after birth.

Post Natal Care First Attendance: The proportion of women attending PNC for the first time after delivery out of the estimated deliveries.

Prevalence Rate: The proportion of people suffering from a disease or condition out of the total catchment area population.

Rational Drug Prescription: Prescribing the right medicine, for the right diseases to the right patient in right dosages for right time.

Sexually Transmitted Disease: A disease or condition that is transmitted or contracted through coitus.

Supervised Delivery: A delivery assisted by either trained Traditional Birth Attendant or any trained Health Staff.

Tuberculosis Completion Rate: The proportion sputum smear positive cases who completed treatment with negative sputum smear results at the end of the initial phase but with no or only one negative sputum examination in the continuation and none at the end of treatment out of a total of TB cases enrolled in the same period.

Tuberculosis Cure Rate: The proportion of new smear positive cases in a given period of time, who completed treatment and that are declared cured at the end of treatment with a confirmation of at least two negative smear results, one of which must be at completion of treatment out of the new smear positive cases registered for treatment during the same time period.

Tuberculosis Treatment Success Rate: The total coverage of cured patients and those completing treatment out of the total tuberculosis cases enrolled in the same period.

Underweight Ratio: The number of children aged five years and below whose weight fell below the lower reference line of the under-five card.

Executive Summary

Introduction

The statistics in this document give a picture of the status of health care delivery in Western Province in 2005, 2006 and 2007. The report has indicators of disease burden, morbidity and mortality; health inputs such as drugs; and human resources utilised in health care delivery.

Disease burden

▪ **Malaria**

Malaria is the top cause of morbidity. The incidence rate of malaria in 2007 at 433 per 1000 population in all age groups was the highest among the top ten diseases in Western Province. The incidence rate of 1093 per 1000 children aged less than 5 years was 3.5 times higher than among those older than five years with an incidence rate of 301 per 1000 population. Malaria case fatality rate is a major concern. Apart from Sesheke, the case fatality rate was above the threshold of 15 per 1000 admissions in the total population and in the under-fives. It was above the threshold in all the districts among those older than five years. A 13 per cent reduction in the incidence rate from 496 per 1000 population in 2006 to 433 per 1000 population in 2007 was recorded in the province.

▪ **Respiratory infections (non-pneumonia)**

In 2007, respiratory infections non-pneumonia was the second highest cause of morbidity. The incidence rate was 241 per 1000 population. The incidence rate for respiratory infections non-pneumonia increased from 137 per 1000 population in 2005 to 241 per 1000 population in 2007, an increase of 76 per cent. The incidence rate also increased in all the districts over this period.

▪ **Respiratory infections (pneumonia)**

Pneumonia is not among the top ten causes of morbidity but is a major cause of mortality. Both the incidence and case fatality rate were higher among the under-fives than among the older population. The incidence rate for pneumonia in the province reduced from 33 per 1000 population in 2005 to 28 per 1000 population in 2007, a reduction by 15 per cent. All the districts recorded a reduction in incidence with the exception of Senanga.

▪ **Diarrhoea diseases (non-bloody)**

This was the fourth highest cause of morbidity. In 2007 the incidence rate for diarrhoea non-bloody was 70 per 1000 population for all age groups; 250 per 1000 among the under-fives and 34 per 1000 in the older population. The case fatality rate for diarrhoea non-bloody in all age groups was at 68 per 1000 admissions; 61 per 1000 admissions in children under five years and 76 per 1000 among the older population. Incidence was 7 times higher among the under-fives than among the older population.

▪ **Notifiable diseases**

- **Acute flaccid paralysis/suspected polio.**

In 2007, the provincial target for detected suspected Acute Flaccid Paralysis cases was 8. There were 10 suspected cases detected. Non-polio Acute Flaccid Paralysis rate reduced from 1.8 to 1.44 but is still within required level. This shows that surveillance is satisfactory.

- **Measles Surveillance**

Specimens were collected and sent to virology laboratory for 27 suspected cases of measles out of which 2 were positive for measles and 11 for rubella.

- **Tuberculosis notifications**

The number of tuberculosis notifications in the province in 2007 was 3,032 out of which 1,530 notifications were of females and 1,502 notifications for males. Sesheke recorded the highest number of 441 notifications followed by Kaoma with 420, Kalabo with 396, Senanga with 358, Mongu with 210, Lukulu with 140 and Shang'ombo with the lowest notifications of 127.

The tuberculosis cure rate in the province decreased from 79 per cent in 2005 to 78 per cent in 2006 and 77 per cent in 2007. The treatment success rate dropped from 85 per cent in 2005 to 84 per cent in 2006 and 83 per cent in 2007 respectively.

Lukulu recorded the highest cure rate of 85 per cent in 2007. This was followed by Sesheke with 84 per cent, Senanga 83 per cent, Kaoma 82 per cent, Mongu 73 per cent, Kalabo 71 per cent and Shang'ombo the lowest with 68 per cent. The low cure rate in the province is attributed to difficulties in accessing laboratory facilities for checks at 8 months particularly due to long distances to the hospital laboratories.

The treatment success rate was highest in Lukulu at 96 per cent in 2007, followed by Kaoma 92 per cent, Sesheke and Shang'ombo at 87 per cent respectively, Senanga 84 per cent, Mongu 78 per cent and Kalabo with 77 per cent.

- **Number of patients on antiretroviral therapy**

The total number of patients ever enrolled on antiretroviral therapy increased from 6,974 in 2006 to 12,638 in 2007. A total cumulative number of 7,673 females were enrolled as compared to 4,965 males at the end of 2007. Mongu reported the highest number of 5,148 patients ever enrolled on antiretroviral therapy at the end of 2007. This was followed by Sesheke with 2,083 patients ever enrolled. Shang'ombo reported the lowest number of 138 patients ever enrolled. In all the districts, the number of females ever enrolled on antiretroviral therapy is higher than that of males by the end of 2007.

Human Resource

There was a critical shortage of staff in the province. Only 34 per cent of the required staff was available.

- **Health centre staff load**

In 2007, the average daily staff contact was 25 per staff. Kalabo has the highest number of staff contacts (46) while Mongu had the least staff contacts (18) in 2007. Relatively, more urbanised districts (i.e. Mongu and Senanga) have more staff compared to the more rural remote districts.

As a result, the staffs in the more urban districts also have lower workload compared to the relatively rural districts such as Kalabo, Lukulu, Shang'ombo and Sesheke. However, considering that most of the staff in health facilities providing antiretroviral therapy and Prevention of Mother to Child Transmission is not employed by the Ministry of Health, the indicator could be overstating the workload.

- **Trained traditional birth attendants**

The number of active tTBAs reduced from 410 to 343 between 2006 and 2007. A tTBA delivered an average of 15 births.

- **Community health workers**

The number of active community health workers reduced from 595 to 413 between 2006 and 2007 due to inadequate incentives. The decrease has negatively affected health care delivery at community level.

Availability of essential drugs

- **Drugs availability**

The months of a year in which drugs were available for the whole month reduced from 77 per cent in 2006 to 74 per cent in 2007.

Among the monitored drugs, anti-malaria ones were not in stock for the least time (58 per cent of the months). On average, tracer drugs fansidar, amoxicillin and benzyl penicillin were all available throughout the month for 95 per cent of the months in 2007 in the hospitals in the province. Among the districts, these drugs never ran out of stock throughout the year in 2007 only in Senanga.

- **Drug kit utilisation at health centres**

Health centre drug kit utilisation in the province reduced from 1 per 1000 patients in 2005 to 0.6 per 1000 patients in 2007.

Health service delivery indicators

- **Health centre utilisation**

- **Out patients: under 5 years**

A reduction in outpatient department utilisation has been recorded in the age group under five from 3.4 to 2.9 per capita between 2005 and 2007.

- **Out patients: 5 years and above**

An increase in outpatient department utilisation was recorded in the age group above five from 0.9 to 1.3 per capita between 2005 and 2007.

- **Bed occupancy rate**

A reduction was recorded from 32 per cent in 2005 to 27 per cent in 2007.

- **Maternal health**

- **Antenatal visits**

On average 2 visits were recorded per pregnancy in 2007 in the province against the required standard of 4 visits.

- **Institutional deliveries**

The percentage of institutional deliveries increased from 46 in 2005 to 50 in 2007.

- **Caesarean section rate**

According to World Health Organisation standards, 15% of all births must be delivered by caesarean section. The aim is to minimise complications during delivery. In the province in 2007 5 per cent of the births were delivered by caesarean section. In two districts, this percentage was below the provincial average (Mongu 4 per cent and Lukulu 1 per cent).

- **Stillbirth**

The percentage of still births was at 3 per cent in each year 2005–2007. However, it is worth noting that individual districts had some fluctuating figures. Senanga district recorded the highest (8 per cent) of still births in 2007 followed by Shang'ombo district with 4 per cent. The lowest was in Mongu district (2 per cent).

- **Institutional maternal mortality ratio**

Maternal Mortality Ratio measures the rate of deaths of women associated with the pregnancy and delivery per 100,000 live births at health facilities. The maternal mortality ratio in Western Province was

143 per 100,000 live births in 2005, 107 per 100,000 in 2006 and 116 per 100,000 deliveries in 2007.

- **Postnatal attendances**

A reduction in the province was recorded from 42 per cent in 2005 to 38 per cent in 2007.

- **Family planning**

The acceptor rate increased from 99 per 1000 women of child bearing age in 2005 to 113 per 1000 women of child bearing age in 2007.

- **Pregnancies protected against tetanus**

A reduction was recorded from 85 per cent in 2005 to 80 per cent in 2007.

- **Child health**

- **Expanded programme for immunisation**

A slight reduction was recorded from 81 per cent in 2006 to 80 per cent in 2007.

- **Growth monitoring**

There was a reduction in the under-weight prevalence from 14 per cent in 2005 to 10 per cent in 2007.

Chapter 1: Background

In 1998, the Health Management Information System was installed as part of the health reforms. The first annual statistical bulletin of Western Province health information was produced in 2001. This statistical bulletin provides information on the disease burden in Western Province, showing trends in the incidence of the top 10 causes of morbidity and some selected diseases of public health importance. Progress on health service delivery is shown in selected maternal and child health indicators and other preventive services including voluntary counselling and testing, Prevention of Mother to Child Transmission and antiretroviral therapy. Selected indicators on health inputs include human resources and the drug situation.

1.1 Geography and Administration

Western Province is one of the 9 Provinces of Zambia. It is located 22 degrees and 25.30 degrees east and 13.45 degrees and 17.45 degrees south. It has 2 international boundaries – Angola in the west and Namibia in the south. It covers 126386 square kilometres which is 16.8 per cent of the total land of Zambia. There are 7 districts namely Kalabo, Kaoma, Lukulu, Mongu, Senanga, Sesheke and Shang'ombo.

Western province is the poorest province in Zambia. The percentage of the population who were poor in the province was 83 in 2004.

Most of Western Province consists of savannah woody forests on sandy plateau and flood plains. The Zambezi River divides the Province into eastern and western parts. Its flood plains make most parts of the province inaccessible by road during the rainy season. Because of these characteristics, only a limited area in the province is suitable for commercial arable farming. This is mainly Kaoma District. In the other districts, the main cash generating activities are cattle keeping, rice growing, timber and fishing. Some of the natural resources not fully exploited are the Liuwa National park in Kalabo and the Sioma-Ngwezi National Park in Shang'ombo and Sesheke, Sioma falls, Kaale falls, and the Zambezi River with its potential for fishing and tourism.

1.2 Demographic information

Table 1.1: Distribution of district population by selected age groups

District	Population proportions							
	Children			Women	Adults	Total males	Total females	Pregnancies
	0-11 months	5 years	5-14 years	15-49 years	15 years+			
Kalabo	5,314	23,924	33,521	33,724	77,720	64,319	70,848	5,4
Kaoma	7,734	35,778	50,685	48,078	112,303	97,334	101,431	7,8
Lukulu	3,509	16,055	22,443	19,590	45,559	41,380	42,679	3,7
Mongu	7,349	33,757	46,534	46,912	110,424	93,989	96,726	7,6
Senanga	4,980	22,413	33,620	31,317	72,779	62,603	66,209	5,2
Sesheke	3,213	15,123	23,330	21,903	53,760	46,199	46,014	5,0
Shang'ombo	3,136	14,661	23,424	20,632	46,174	40,551	43,711	3,5
Province	35,235	161,711	233,557	222,156	518,719	446,375	467,618	38,5

Source: Central Statistical Office.

Note: Expected number of pregnancies, deliveries, births and children 0-11 months were estimated by applying HMIS to population estimates obtained from the Central Statistical Office

1.3 Data sources

The facility based information in this report was collected using the Health Management Information System (HMIS) from all the public health institutions. Other data sources are the Antiretroviral Information System (*ARTIS*), *VCT PMTCT*, *IDSR* and the *Human Resource database*. Only data from public health facilities is incorporated.

1.4 Scope of analysis

Information included in this report is for the period 2005 to 2007. The district is the lowest unit of analysis. This provides a comparative picture by districts to which all health facilities have contributed. District health offices are encouraged to start compiling district health statistical reports so that detailed health facility data is analysed.

1.5 Limitations of the report

Data used to compile this report came from various sources. The current scenario in some districts is that the DHIO maintains the main HMIS while the ZVCTS/PMTCT data base and tuberculosis are maintained by other officers. This has in some cases led to internal inconsistencies within reports. Limitations in facility staff in some cases contribute to poor quality reports. Therefore, we are not able to guarantee that different sources have compiled or reported data in a consistent way. There were also 3 private facilities that were not yet reporting in the HMIS.

Chapter 2: Disease Burden

This chapter discusses the major causes of attendances in the health facilities of Western province. The causes are compared by district and two broad age groups, under-five and over five using incidence rates, prevalence and case fatality rates.

2.1 Major causes of illnesses

As shown in Table 2.1, the incidence rate of malaria at 433 per 1000 population in all age groups was the highest of the top ten diseases. This was followed by respiratory infections non-pneumonia at 241 cases per 1000 population. Others among the top ten were muscular skeletal conditions (72 per 1000 population), diarrhoea non bloody (70 per 1000 population), eye infections (66 per 1000 population), trauma (58 per 1000 population), dental diseases (47 per 1000 population), skin infections (46 per 1000 population), ear nose and throat infections (36 per 10000 population and digestive system disorders (32 per 1000 population).

Table 2.1: Ten Major causes of visitations to health facilities, Western Province, 2007

Disease	Incidence per 1,000 population		
	Under 5	5 years and above	Total
Malaria	1093	301	433
Respiratory infections non-pneumonia	505	188	241
Muscular skeletal (not trauma)	7	85	72
Diarrhoea: non-bloody	250	34	70
Eye infections	233	33	66
Trauma	66	60	58
Dental disease	6	55	47
Skin infections	99	36	46
Ear, nose and throat infections	78	28	36
Digestive system (not infectious)	23	34	32

Source: HMIS

2.1.1 Malaria

The data in Table 2.2 shows that children are more vulnerable to malaria than adults. The highest malaria incidence rate among children below the age of five in 2007 was recorded in Mongu (1,382 per 1000) followed by Sesheke (1163 per 1000), Shang'ombo (1146 per 1000) and Kalabo (1071 per 1000). In total, malaria continues to be the major cause of visitation to health facilities in Western Province with Mongu District recording the highest incidence rate of 534 per 1000 population in 2007 followed by Sesheke District with an incidence rate of 522 per 1000 population, followed by Shang'ombo with 504 per 1000 population.

Table 2.2: Malaria incidence and case fatality rates by age group in Western Province, 2007

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Hospitals only)		
	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Mongu	1382	379	534	19	69	49
Sesheke	1163	395	522	12	21	15
Shang'ombo	1146	336	504	57	18	36
Kalabo	1071	286	417	27	51	39
Kaoma	999	257	384	19	28	23
Senanga	881	225	336	35	45	40
Lukulu	957	199	334	43	41	42
Province	1093	301	433	25	42	33

Source: HMIS

Malaria case fatality rate in the province was 33 per 1000 admissions in 2007. The highest case fatality rate among the under-fives was in Shang'ombo (57 per 1000). The provincial average rate among the under-fives was 25 per 1000 admissions among under-fives and 42 per 1000 among the older age group.

Figure 2.1 shows a reduction in malaria incidence in all the districts except Senanga.

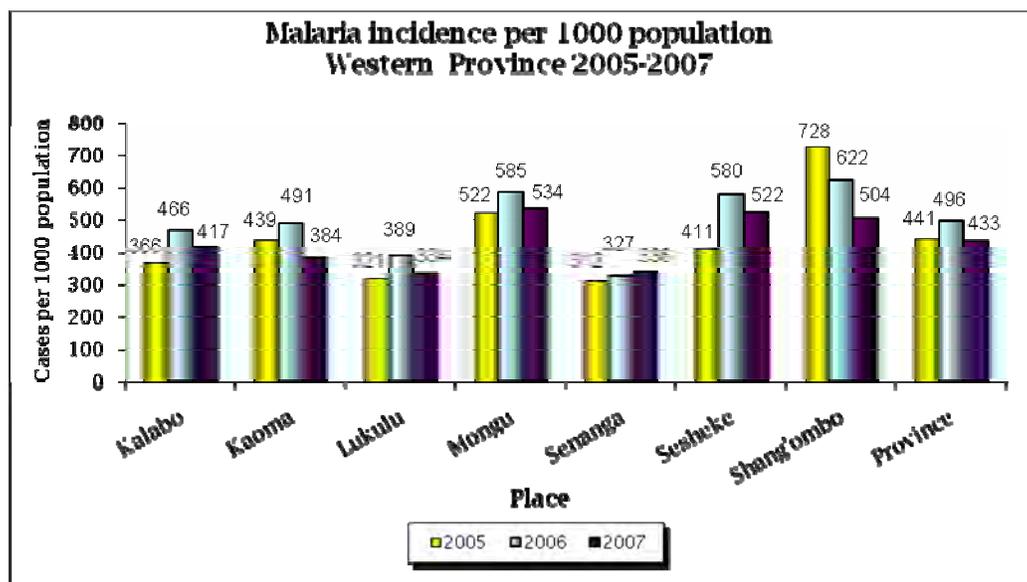


Figure 2.1: Malaria incidence rate

2.1.2 Respiratory infections (non-pneumonia)

As outlined in Table 2.3 and Figure 2.2, the incidence rate of respiratory infections in Western Province in 2007 was at 241 per 1000 population with the highest incidence rate recorded in Mongu (328 per 1000 population).

Table 2.3: Respiratory infections (non-pneumonia) incidence per 1,000 population, 2007

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Health centres and hospitals)		
	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Mongu	765	284	328	32	40	36
Kaoma	619	209	279	8	33	21
Sesheke	498	207	258	97	49	74
Shang'ombo	439	195	238	23	17	20
Senanga	351	159	192	47	39	43
Kalabo	364	141	178	9	11	10
Lukulu	230	92	117	44	0	17
Province	505	188	241	31	30	30

Source: HMIS

Respiratory infection non-pneumonia incidence rate among the under-fives in Western Province was at 505 per 1000 population. The case fatality rate among them was 31 per 1000 admissions in 2007, while in the older age group, the incidence rate was 241 per 1000 population and the case fatality rate in this age group was 30 per 1000. The incidence rate for respiratory infection non-pneumonia among under-fives was highest in Mongu (765 per 1000).

The incidence rate of respiratory infection non-pneumonia in Western Province increased by 76 per cent between 2005 and 2007. It was 137 per 1000 in 2005 and 247 per 1000 population in 2007. This is shown in Figure 2.2. The incidence rate increased in all the districts over this period.

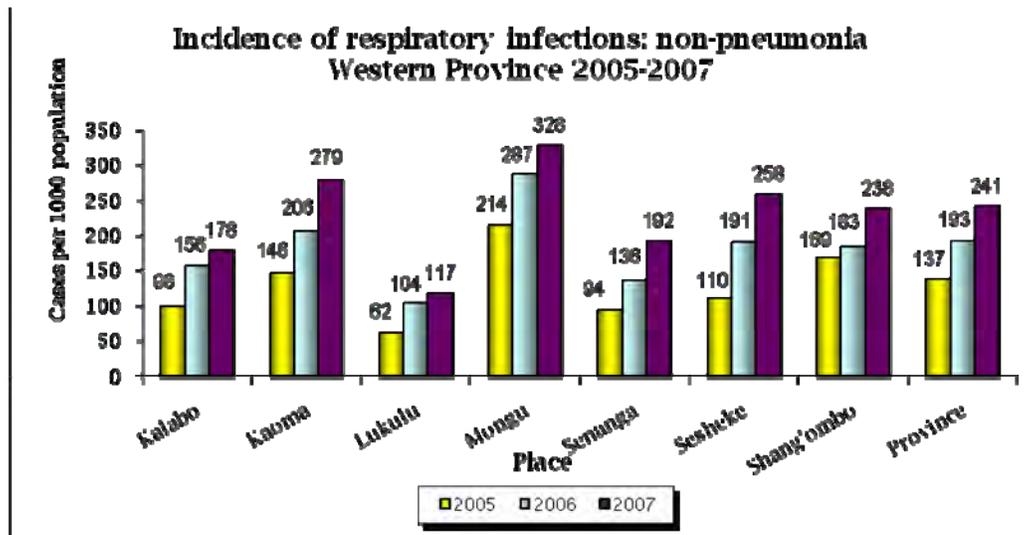


Figure 2.2: Incidence of respiratory infections: non-pneumonia

2.1.3 Respiratory infections (pneumonia)

Pneumonia is not among the top ten causes of morbidity but is a major cause of mortality. Both the incidence and case fatality rate were higher among the under-fives than among the older population.

Table 2.4: Respiratory infections (pneumonia) incidence and case fatality rates by age group, 2007

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Health centres and hospitals)		
	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Kalabo	105	34	46	40	44	42
Shang'ombo	75	30	38	64	37	53
Lukulu	103	24	38	90	32	69
Sesheke	72	19	28	168	81	130
Senanga	81	13	25	47	30	42
Mongu	72	15	24	49	71	57
Kaoma	34	9	14	63	49	56
Province	73	19	28	69	51	62

Source: HMIS

As shown in Figure 2.3, the incidence rate for pneumonia in the province reduced by 15 per cent from 33 per 1000 population in 2005 to 28 per 1000 population in 2007. All the districts recorded a reduction in incidence except Senanga.

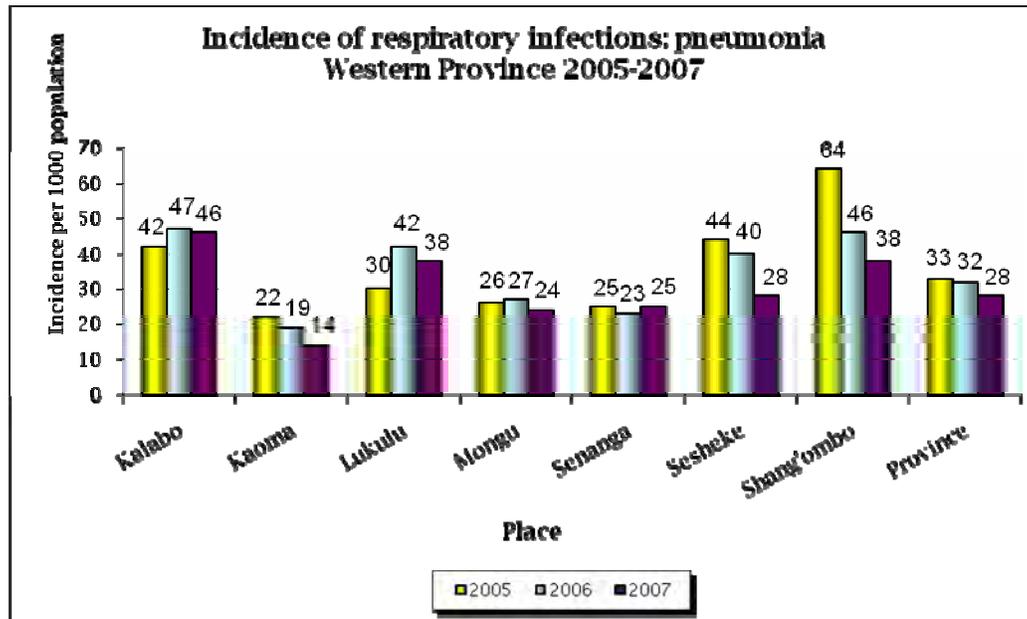


Figure 2.3: Incidence rate of respiratory infections: pneumonia

2.1.4 Diarrhoea non-bloody

In 2007 the incidence rate for diarrhoea non-bloody was 70 per 1000 population for all age groups; 250 per 1000 in among the under-fives and 34 per 1000 in the older population. The case fatality rate for diarrhoea non-bloody in all age groups was at 68 per 1000 admissions; 61 per 1000 admissions in children under five years and 76 per 1000 among the older population.

Table 2.5: Diarrhoea-non-bloody incidence and case fatality rates by age group, 2007

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Hospitals only)		
	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Kaoma	310	42	88	42	38	40
Sesheke	251	42	77	106	94	102
Shang'ombo	254	32	71	46	88	60
Mongu	253	37	70	67	94	84
Kalabo	243	32	67	14	78	42
Lukulu	221	18	54	46	48	46
Senanga	177	25	51	98	67	86
Province	250	34	70	61	76	68

Source: HMIS

The highest case fatality rate in all age groups was recorded in Sesheke (102 per1000), and the lowest was recorded in Kaoma District (40 per 1000). The incidence rate of diarrhoea (non-bloody) increased by 6 per cent in Western Province from 58 per 1000 in 2006 to 61 per 1000 in 2007 in all age groups.

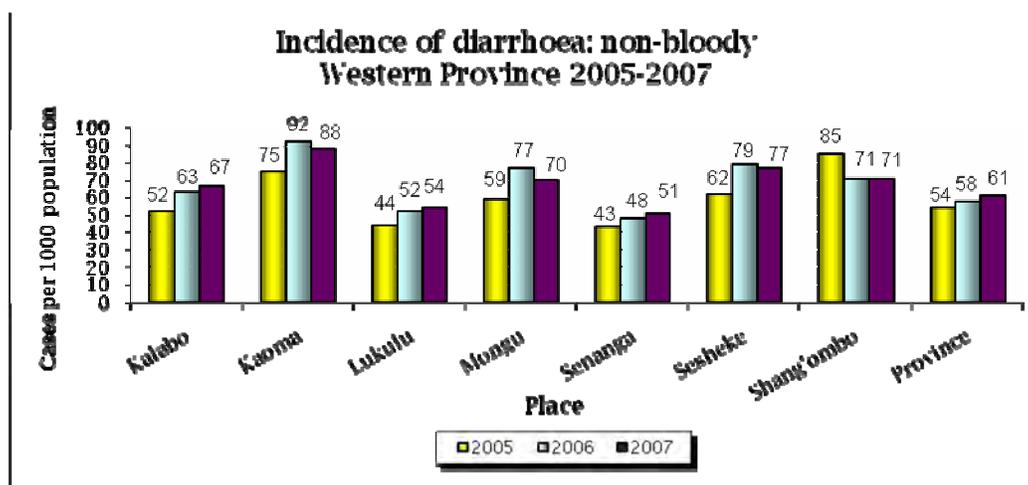


Figure 2.4: Incidence rate of diarrhoea: non-bloody

2.1.5 Diarrhoea-bloody (suspected dysentery)

Diarrhoea–bloody (suspected dysentery) incidence rate in Western Province in 2007 was 10 per 1000 in all age groups; 14 per 1000 in children under the age of five and 9 per 1000 in the age group 5 years and above. Diarrhoea-bloody (suspected dysentery) Case fatality rate was 16 per 1000 admissions in all age groups; 38 per 1000 admissions in children under 5 and 12 per 1000 admissions in above 5 years. Except for Shang’ombo and Mongu Districts the rest of the Districts did not have any deaths in 2007.

The incidence rate of diarrhoea-bloody (suspected dysentery) in Western Province increased by 11 per cent from 9.2 per 1000 to 10 per 1000 population in 2007. Apart from Lukulu and Kalabo, there was an increase in cases in the rest of the districts.

Table 2.6: Diarrhoea-non-bloody incidence and case fatality rates by age group, 2007

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Health centres and hospitals only)		
	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Kaoma	30	17	19	0	30	26
Sesheke	20	10	12	0	0	0
Shang'ombo	18	11	12	118	28	46
Mongu	9	9	9	0	0	0
Kalabo	11	7	8	0	0	0
Lukulu	12	6	7	0	0	0
Senanga	8	5	6	0	0	0
Province	14	9	10	38	12	16

Source: HMIS

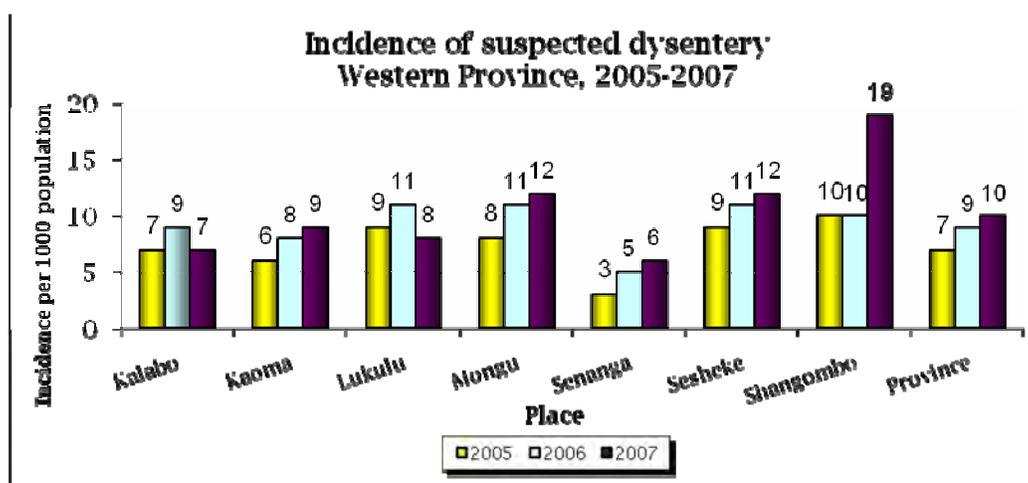


Figure 2.5: Incidence rate of suspected dysentery

2.1.6 Trauma (accidents, injuries, wounds, burns)

As shown in Table 2.7, the incidence rate of trauma (accidents, injuries, wounds and burns) in all age groups was 58 per 1000 population in 2007. The average case fatality rate was 6 per 1000 admissions in hospitals.

Table 2.7: Trauma (accidents, injuries, wounds, burns) incidence and case fatality rates by age group, 2007

District	Incidence rate per 1,000 population (All health facilities)			Case Fatality rate per 1,000 admissions (Hospitals only)		
	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Mongu	83	67	69	30	9	13
Shang'ombo	74	63	65	0	0	0
Kalabo	80	57	61	10	7	8
Sesheke	51	56	55	0	0	0
Kaoma	63	52	54	13	5	7
Senanga	51	52	52	13	0	2
Lukulu	50	48	48	0	4	3

Province	66	60	58	12	5	6
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Source: HMIS

Figure 2.6 shows that the incidence rate for trauma in Western Province increased from 54 per 1000 in 2006 to 57 per 1000 population in 2007, an increase by 6 per cent. There was an increase in trauma cases in all the districts except in Senanga and Lukulu.

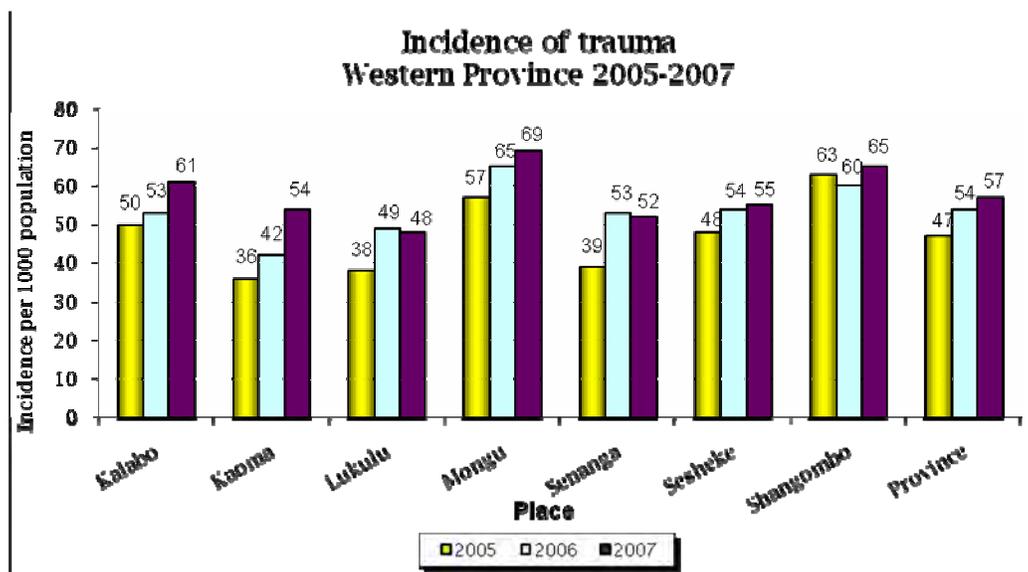


Figure 2.6: Incidence rate of trauma

2.1.7 Eye infections

The incidence rate of eye infections in Western Province in 2007 was 66 per 1000 population in all age groups; 233 per 1000 in children under five years of age and 33 per 1000 in the age group 5 years and above. Table 2.8 shows that the highest incidence rate (94 per 1000) was in Shang'ombo. The lowest was in Sesheke (43 per 1000 population of all age groups).

District	Incidence rate per 1,000 population (All health facilities)		
	Under 5	5 years and above	Total
Shang'ombo	335	43	94
Kaoma	251	30	68
Kalabo	244	36	71
Mongu	234	33	64
Senanga	220	36	67
Lukulu	215	27	60
Sesheke	132	25	43
Province	233	33	66

Source: HMIS

As shown in Figure 2.7, there was an increase in the incidence rate of eye infections between 2006 and 2007 in all the districts except in Mongu and Sesheke.

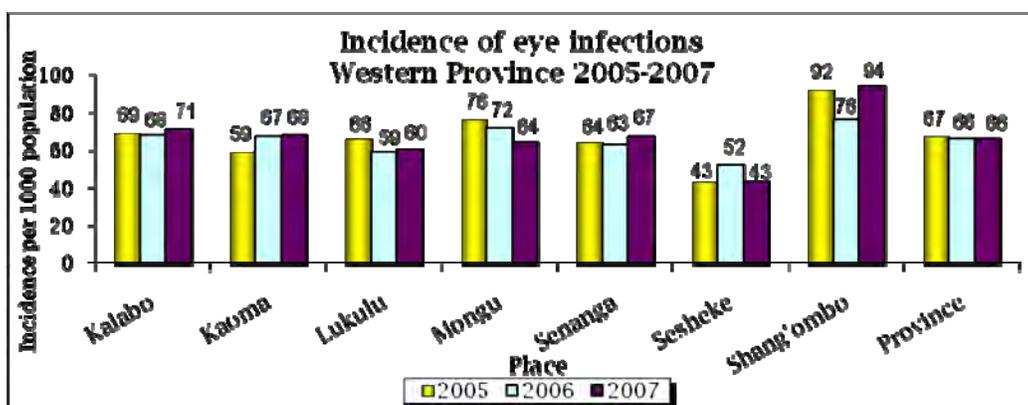


Figure 2.7: Incidence of eye infections

2.2 Patient case load

The proportion of children under five years case load in Western Province reduced from 20 per cent in 2006 to 19 per cent in 2007. All the Districts recorded a decrease in the under five case load between 2006 and 2007.

Table 2.9: Proportion of children under 5 years case load by district, 2005-2007

District	Proportion of children under 5 years case load		
	2005	2006	2007
Lukulu	56	39	37
Kaoma	51	40	34
Shang'ombo	43	38	33
Mongu	39	51	32
Senanga	39	51	32
Kalabo	47	34	32
Sesheke	43	33	30
Province	26	20	19

Source: HMIS

2.3 Under-five case fatality rates

Table 2.10 shows that the under-five case fatality rate in the province increased from 48 per 1000 population in 2006 to 52 per 1000 population in 2007. Between 2006 and 2007, it reduced in four districts namely Kalabo (by 28 per cent), Shang'ombo (by 23 per cent), Mongu (by 12 per cent) and Senanga District (by 4 per cent).

Table 2.10: Under 5 years case fatality rate by district, 2005-2007

District	Under 5 years mortality rate		
	2005	2006	2007
Senanga	71	61	68
Sesheke	61	48	62
Lukulu	53	32	60
Mongu	67	59	59
Kaoma	22	48	36
Kalabo	50	50	36
Shang'ombo	47	36	36
Province	48	48	52

Source: HMIS

2.4 Selected notifiable diseases

These are diseases that are reported to other levels of care immediately they are diagnosed. These diseases can quickly spread within the community causing high morbidity and mortality. They have been classified in the IDSR strategy in order to effectively prevent, manage and control them. There are ten notifiable diseases in the HMIS namely; acute flaccid paralysis, measles, neonatal tetanus, dysentery, cholera, plague, rabies, typhoid fever, yellow fever and tuberculosis.

2.4.1 Acute flaccid paralysis

In 2007, the provincial target for detected suspected acute flaccid paralysis cases was 8. There were 10 suspected cases detected. See Table 2.11. Acute flaccid paralysis specimen stool adequacy in Western Province remained at 100 per cent during the period 2005 to 2007.

District	Number of Acute Flaccid paralysis cases		Annualised non-polio acute flaccid paralysis rate *	(Stool adequacy) *	
	Expected	Detected		Number	Percent
Sesheke	1	2	2.84	2	100
Kalabo	1	2	1.95	2	100
Lukulu	1	1	1.57	1	100
Shang'ombo	1	1	1.57	1	100
Kaoma	2	2	1.33	2	100
Senanga	1	1	1.03	1	100
Mongu	1	1	0.68	1	100
Province	8	10	1.44	10	100

Source: Acute flaccid paralysis surveillance database

* **Acute flaccid paralysis cases with 2 stools within 14 days of onset (1 per 100,000 children less than 15 years of age)**

2.4.2 Non-polio acute flaccid paralysis rate

Figure 2.8 shows that non-polio Acute Flaccid Paralysis rate reduced from 1.8 in 2006 to 1.44 in 2007 but is still within the required level. This shows that surveillance is satisfactory.

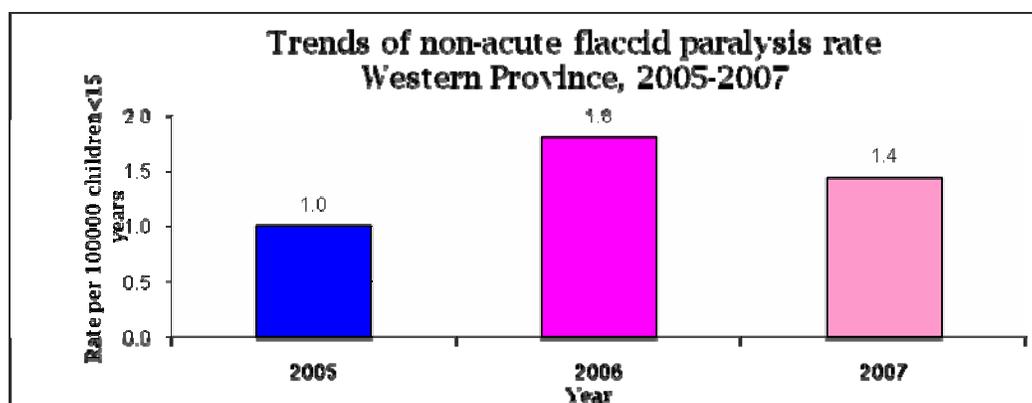


Figure 2.8: Non-acute flaccid paralysis rate

2.4.3 Measles

The number of suspected measles cases among children under five years of age reduced from 315 in 2006 to 121 cases in 2007. Kaoma reported the highest number of cases (56) while Lukulu reported the lowest (1). The number of suspected measles cases among the population older than five years reduced from 507 in 2006 to 149 in 2007.

The incidence rate for suspected measles reduced from 2.1 per 1000 in 2006 to 0.8 per 1000 population in 2007 among the under-fives. A total of 27 suspected cases were investigated. Blood specimen was sent to a virology laboratory out of which 2 were positive for measles and 11 positive for rubella.

In Kaoma 14 specimens were sent out of which none was positive for measles and 9 were positive for rubella. In Mongu 1 specimen was sent and it was not positive for measles and for rubella. In Senanga, 6 specimens were sent out of which, 1 was positive for measles and 1 was positive for rubella. In Shang'ombo, 6 were sent and 1 was found positive for measles and 1 for suspected rubella. The increase after 2005 follows a major reduction after the 2003 national mass immunisation. The follow up campaign was delayed.

Table 2.12: Measles (suspected) cases reported to health facilities by age and district, 2005-2007

District	Under-five years			5 years and above			Incidence per 1000 children under five years old		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Kaoma	0	3	56	4	7	69	0	0.1	1.6
Mongu	5	106	45	2	194	56	0.2	3.6	1.5
Senanga	7	19	7	9	49	6	0.3	0.9	0.3
Sesheke	2	15	5	20	3	11	0.1	1	0.3
Kalabo	0	104	5	0	190	1	0	4.7	0.2
Shang'ombo	3	3	2	2	1	6	0.2	0.2	0.2
Lukulu	1	65	1	0	63	0	0.1	4.5	0.1
Province	18	315	121	37	507	149	0.1	2.1	0.8

Source: HMIS

Chapter 3: HIV/AIDS, Tuberculosis, and Sexually Transmitted Infections

This section presents data on antiretroviral therapy, PMTCT, tuberculosis and the incidence of sexually transmitted infections in Western Province.

3.1 Counselling and testing

Table 3.1 shows that the number of clients counselled for HIV in the Province increased from 16,739 in 2005 to 17,745 in 2006 and 24,076 in 2007. The number of clients taking an HIV test against the number of clients attending counselling and testing increased from 17,067 (96 per cent) in 2006 to 23,898 (99 per cent) in 2007. Kalabo, Kaoma, Mongu and Shang'ombo districts recorded a 100 per cent testing rate for clients who came in for counselling in 2007. This was followed by Sesheke (98 per cent), Lukulu (97 per cent) and Senanga (93 per cent).

The increase of clients attending counselling and testing could be due to an increase in the number of HIV testing sites in the districts and an increase in the number of health staff trained in counselling and testing.

Table 3.1: Proportion of clients taking an HIV test

District	Number of counselling and testing clients								
	2005			2006			2007		
	Attended	Testing	Percentage tested	Attended	Testing	Percentage tested	Attended	Testing	Percentage tested
Kalabo	1,131	1,131	100	1,833	1,833	100	4,189	4,189	100
Kaoma	5,814	2,835	100	1,404	1,287	92	2,297	2,297	100
Shang'ombo	189	189	100	878	878	100	1,138	1,138	100
Mongu	6,789	5,911	87	8,741	8,510	97	10,712	10,712	100
Sesheke	415	412	99	859	843	98	2,577	2,533	98
Lukulu	510	510	100	931	931	100	680	661	97
Senanga	1,891	1,473	78	3,099	2,787	90	2,483	2,368	93
Province	16,739	12,461	74	17,745	17,069	96	24,076	23,898	99

Source: ZVCT database

As shown in Table 3.2, the proportion of clients who tested positive for HIV in the province increased from 31 per cent in 2006 to 35 per cent in 2007. Kaoma reported the highest percentage (48 per cent) in 2007, followed by Senanga (45 per cent) and Kalabo the least with 25 per cent. Mongu constantly recorded the lowest percentage (13 per cent in 2005 and 15 per cent in 2006). The high percentages with HIV could be attributed to the increase in testing among sick clients i.e. in the wards and during counselling and testing in the outpatient department.

Table 3.2: Proportion of clients testing positive to HIV test

District	Number of counselling and testing clients								
	2005			2006			2007		
	Tested	Positive	Percentage positive	Tested	Positive	Percentage positive	Tested	Positive	Percentage positive
Kaoma	2835	798	28	1287	564	44	2297	1101	48
Senanga	1473	745	51	2787	1313	47	2368	1055	45
Shang'ombo	189	76	40	878	303	35	1138	453	40
Mongu	5911	748	13	8510	1248	15	10712	3681	34
Sesheke	412	306	74	843	746	88	2533	831	33
Lukulu	510	173	34	931	349	37	682	199	29
Kalabo	1131	607	54	1833	749	41	4189	1054	25

Province	12,461	3453	28	17,069	5272	31	23,919	8,374	35
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Source: ZVCT database

3.2 Prevention of Mother-to-Child Transmission of HIV/AIDS

There are many stages in the prevention of HIV transmission from mothers to their infants because HIV can be transmitted at many stages. The means to prevent HIV transmission at these stages is different. In order for pregnant women to make informed decisions that would favour a healthy pregnancy and delivery, they need information. HIV counselling is routinely offered to all antenatal care attendees in order to maximise the opportunities to prevent the transmission of HIV from mothers to their infants.

3.2.1 Antenatal HIV Testing

Table 3.3 shows the number of women starting antenatal care and taking the HIV test during the first visit in 2007. Out of 41,716 pregnant women who made at least one visit to antenatal care clinic in the province, 19,371 (46 per cent) took the HIV test. Mongu reported the highest HIV test uptake rate of 77 per cent. Shang'ombo reported the lowest rate of 27 per cent. The low up take could be attributed to the few facilities providing PMTCT services.

Table 3.3: Proportion of women starting antenatal care who took an HIV test by district, 2007.

District	Antenatal first visits	Tested for HIV	Percentage tested
Mongu	8858	6844	77
Lukulu	3947	2068	52
Senanga	5756	2643	46
Kaoma	8680	3327	38
Sesheke	3857	1477	38
Kalabo	6421	1874	29
Shang'ombo	4197	1138	27
Province	41,716	19,371	46

Source: ZVCT Database

3.2.2 Antenatal women tested with HIV found with HIV

As shown in Table 3.4, the percentage of the pregnant women who tested positive at the antenatal care clinic was 12 (278) in 2007. Sesheke reported the highest prevalence rate of 25 per cent, followed by Shang'ombo with 24 per cent. Mongu reported the lowest prevalence of 8 per cent.

Table 3.4: Proportion of women testing HIV positive by district, 2007.

District	Tested for HIV	Tested positive	Percentage positive
Sesheke	1477	368	25
Shang'ombo	1138	278	24
Senanga	2643	329	13
Kalabo	1874	212	11
Lukulu	2,068	205	10
Kaoma	3327	315	10
Mongu	6844	573	8
Province	19371	2280	12

Source: ZVCT Database

3.2.3 Antiretroviral prophylaxis

As shown in Table 3.5 a total of 1023 HIV exposed babies (81 per cent) were given antiretroviral prophylaxis in 2007. Mongu recorded the highest coverage of 100 per cent, followed by Kaoma with 98 per cent, and Lukulu and Senanga with 94 per cent respectively. Shang'ombo reported the lowest coverage of 20 per cent.

Figure 3.1 compares the coverage of antiretroviral prophylaxis given to HIV positive Mothers and HIV exposed Babies, respectively in 2007. The graph indicates that the total coverage of the Mothers receiving prophylaxis was at 79.7 per cent as compared to 80.3 per cent for the exposed Babies. Mongu District with the highest coverage shows 100 per cent coverage for the mothers and babies, respectively. Kalabo, Lukulu, Sesheke and Kaoma recorded a difference in the coverage between the mothers and the babies receiving prophylaxis.

District	HIV-exposed births	Number given prophylaxis	Percentage of HIV-exposed babies given prophylaxis
Mongu	285	285	100
Kaoma	322	315	98
Lukulu	113	106	94
Senanga	117	110	94
Kalabo	67	58	87
Sesheke	158	109	69
Shang'ombo	199	40	20
Province	1261	1023	81

Source: ZVCT Database

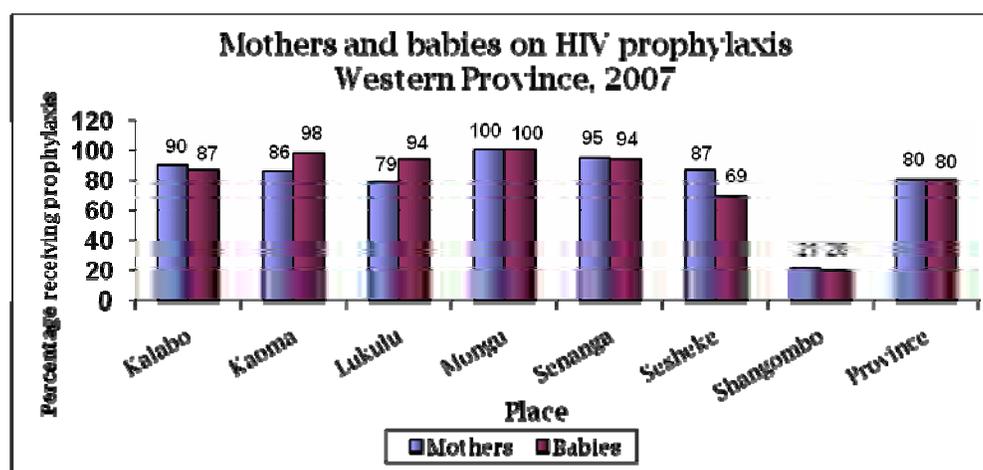


Figure 0.1: Antiretroviral prophylaxis for preventing transmission of HIV virus from mothers to their babies

3.3 Antiretroviral therapy

3.3.1 Ever-enrolled on antiretroviral therapy

As shown in Table 3.6, the total number of patients ever enrolled on antiretroviral therapy increased from 6,974 in 2006 to 12,638 in 2007. A total cumulative number of 7,673 females were enrolled as compared to 4,965 males at the end of 2007. Mongu reported the highest number of 5,148 patients ever enrolled on antiretroviral therapy at the end of 2007. This was followed by Sesheke with 2,083 patients ever enrolled. Shang'ombo reported the lowest number of 138 patients ever enrolled. In all the districts in the province, there were a higher number of females than males ever enrolled on antiretroviral therapy by the end of 2007.

Table 3.6: Cumulative number of patients ever enrolled on antiretroviral therapy by district, 2006-2007.

District	2006			2007		
	Males	Females	Total	Males	Females	Total
Mongu	1,213	1,814	3,027	2,184	3,348	5,532
Sesheke	435	825	1,260	787	1,296	2,083
Kalabo	363	593	956	532	968	1,500
Senanga	167	279	446	539	814	1,353
Kaoma	329	439	768	564	762	1,326
Lukulu	180	303	483	298	408	706
Shang'ombo	16	18	34	61	77	138
Province	2,703	4,271	6,974	4,965	7,673	12,638

Source: HMIS

3.3.2 Ever-enrolled on antiretroviral therapy against target

Table 3.7 shows the proportion of patients ever started on antiretroviral therapy against the targeted number of patients by district. In 2007, the target in Mongu and Sesheke was exceeded. In Shang'ombo 6 per cent were started on treatment, far below the target. The low attainment of targets outside Mongu and Sesheke could be attributed to the low number of facilities providing antiretroviral therapy services.

Table 3.7: Proportion ever started on antiretroviral therapy against target by district and year.

District	2006			2007		
	Target	On antiretroviral therapy	Percentage attained	Target	On antiretroviral therapy	Percentage attained
Mongu	2572	3027	118	5296	5532	104
Sesheke	1231	1260	102	2529	2083	82
Senanga	1703	446	26	3501	1353	39
Kalabo	1791	956	53	3684	1500	41
Lukulu	1112	483	43	2299	706	31
Kaoma	2696	768	28	5428	1326	24
Shang'ombo	1115	34	3	2292	138	6
Province	12,220	6,974	57	25,029	12,638	50

Source: HMIS

3.3.3 Currently on treatment by end the year

As shown in Table 3.8, the highest number of clients (11067) currently on antiretroviral therapy in the province in 2007, was in the population 15 years and older. They were 94 per cent of the total on antiretroviral therapy. Out of these 60 per cent (6790) were females and males (4277) were 40 per cent. Children 0-14 years (679) contributed 6 per cent to the total number of clients in 2007. In all

the districts, there were more females aged 15 years and above currently on antiretroviral therapy compared to males within the same age group.

Table 3.8: Patients currently on antiretroviral therapy by age and sex at end of each year by district

District	2006					2007				
	0-14 years		15 and above		Total	0-14 years		15 and above		Total
	Male	Female	Male	Female		Male	Female	Male	Female	
Mongu	105	108	1108	1706	3027	148	188	1917	2972	4955
Sesheke	38	33	397	792	1260	78	81	519	1011	1689
Kalabo	6	17	323	521	867	12	23	460	848	1343
Kaoma	20	17	309	422	768	20	26	544	736	1326
Senanga	13	23	149	247	432	31	38	493	757	1319
Lukulu	14	12	166	291	483	12	14	286	394	706
Shang'ombo	0	1	16	17	34	3	5	58	72	138
Province	196	211	2468	3996	6871	304	375	4277	6790	11476

Source: HMIS

3.4 Tuberculosis

3.4.1 Tuberculosis notifications in 2007

Tuberculosis is one of the notifiable diseases and one of the important diseases of public health concern in the province. As shown in Table 3.9, a total of 3,032 notifications were made in the province in 2007 out of which 1,530 were females and 1,502 were males. Sesheke recorded the highest number of 441 followed by Kaoma with 420, Kalabo with 396, Senanga with 358, Mongu with 210, Lukulu with 140 and Shang'ombo with the lowest, 127.

Table 3.9: Tuberculosis notifications by type, sex and district, 2007

District	Sex	Notifications by type							Total
		Sputum Smear		Extra pulmonary Tuberculosis	Relapse positive	Others previously treated	Treatment after default	Treatment after failure	
		Positive	Negative						
Kalabo	Male	99	54	30	7	23	3	2	218
	Female	71	57	28	5	14	1	2	178
	Total	170	111	58	12	37	4	4	396
Kaoma	Male	66	68	56	14	15	1	0	220
	Female	37	80	56	2	21	4	0	200
	Total	103	148	112	16	36	5	0	420
Lukulu	Male	28	16	22	4	0	0	0	70
	Female	23	13	30	1	2	1	0	70
	Total	51	29	52	5	2	1	0	140
Mongu	Male	42	23	18	6	5	6	0	100
	Female	47	27	30	4	0	2	2	112
	Total	89	50	48	10	5	8	2	210
Senanga	Male	66	122	42	10	12	1	1	254
	Female	82	157	47	8	16	1	0	311
	Total	148	279	89	18	28	2	1	358
Sesheke	Male	55	63	56	5	10	5	0	194
	Female	62	115	47	10	12	1	0	247
	Total	117	178	103	15	22	6	0	441
Shang'ombo	Male	33	6	9	5	0	0	0	53
	Female	52	8	10	4	0	0	0	74
	Total	85	14	19	9	0	0	0	127
Province	Male	528	511	266	71	91	31	4	1502
	Female	457	583	322	37	110	14	7	1530
	Total	985	1094	588	108	201	45	11	3032

Source: Tuberculosis database

A total of 1094 (36 per cent of the total) sputum smear negative tuberculosis notifications were recorded in the province. There were 985 cases (32 per cent) of sputum smear positive cases. Extra pulmonary cases were 588 (19 per cent). Other previously treated case were 201 (7 per cent) and smear positive relapse cases were 107 (4 per cent). Treatment after default cases were 45 (2 per cent) and treatment after failure cases were 11 (1 per cent). The high percentage of sputum smear negative tuberculosis cases could be attributed to the tuberculosis/HIV co-infection.

3.5 Tuberculosis cure, completion and success rate

Table 3.10 shows the tuberculosis cure rate, completion rate and the treatment success rate between 2005 and 2007. The tuberculosis cure rate in the province decreased from 79 per cent in 2005 to 78 per cent in 2006 and 77 per cent in 2007. The treatment success rate dropped from 85 per cent in 2005 to 84 per cent in 2006 and 83 per cent in 2007.

Among the districts in 2007, Lukulu recorded the highest cure rate of 85 per cent, followed by Sesheke 84 per cent, Senanga 83 per cent, Kaoma 82 per cent, Mongu 73 per cent, Kalabo 71 per cent and Shang'ombo the lowest at 68 per cent.

Table 3.10: Tuberculosis cure rate 2005 to 2007

District	Cure rate (percentage)			Completion rate (percentage)			Treatment success (percentage)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Lukulu	78	62	85	9	20	11	87	82	96
Kaoma	83	79	82	8	10	10	91	89	92
Sesheke	75	80	84	8	8	3	83	88	87
Shang'ombo	74	74	68	15	8	8	19	89	87
Senanga	84	85	83	0	1	2	84	86	84
Mongu	74	79	73	6	6	5	80	85	78
Kalabo	84	69	71	2	3	6	86	72	77
Province	79	78	77	6.4	6	6	85	84	83

Source: Tuberculosis database

In 2007, the treatment success rate was highest in Lukulu at 96 per cent, followed by Kaoma 92 per cent, Sesheke and Shang'ombo at 87 per cent respectively, Senanga 84 per cent, Mongu 78 per cent and Kalabo with 77 per cent.

The low cure rate in the province is attributed to difficulties in accessing laboratory facilities for checks at 8 months particularly due to long distances to the hospital laboratories.

3.6 Sexually transmitted infections

Sexually transmitted infections are one of the diseases of public health concern in the province. Table 3.11 shows the incidence of sexually transmitted infections in the districts of the province in 2007. Kalabo recorded the highest incidence of 37.9 per 1000 population. It was followed by Mongu with 36.8 per 1000 population, Shang'ombo with 34 per 1000 population, Sesheke 27 per 1000 population, Senanga 26 per 1000 population, Lukulu 17 per 1000 population and Kaoma with the lowest incidence of 14 per 1000 population. The province recorded an average incidence of 23 per 1000 population in 2007.

Table 3.11: Sexually transmitted infection incidence, 2007

District	Incidence rate per 1,000 population (All health facilities)		
	Under 5	5 years and above	Total
Kalabo	0.6	37.9	31.7
Mongu	1.1	36.8	31.2
Shang'ombo	0	34	28
Sesheke	0.3	27	23
Senanga	2	26	22
Lukulu	1	17	14
Kaoma	0.7	14	12
Province	0.9	27.5	23

Source: HMIS

Figure 3.2 presents the trend of sexually transmitted infections from 2005–2007. The province recorded a decline in the incidence of sexually transmitted infections from 25.1 per 1000 population in 2006 to 21 per 1000 population in 2007 after an increase between 2005 and 2006. Shang'ombo recorded an increase in the incidence of sexually transmitted infections. The incidence was stable in Senanga. The rest of the districts recorded a decline in the same period. Kalabo and Mongu constantly recorded the highest incidence of over 30 per 1000 population between 2005 and 2007. Kaoma and Lukulu recorded the lowest incidence rates of less than 17 per 1000 population in the same period.

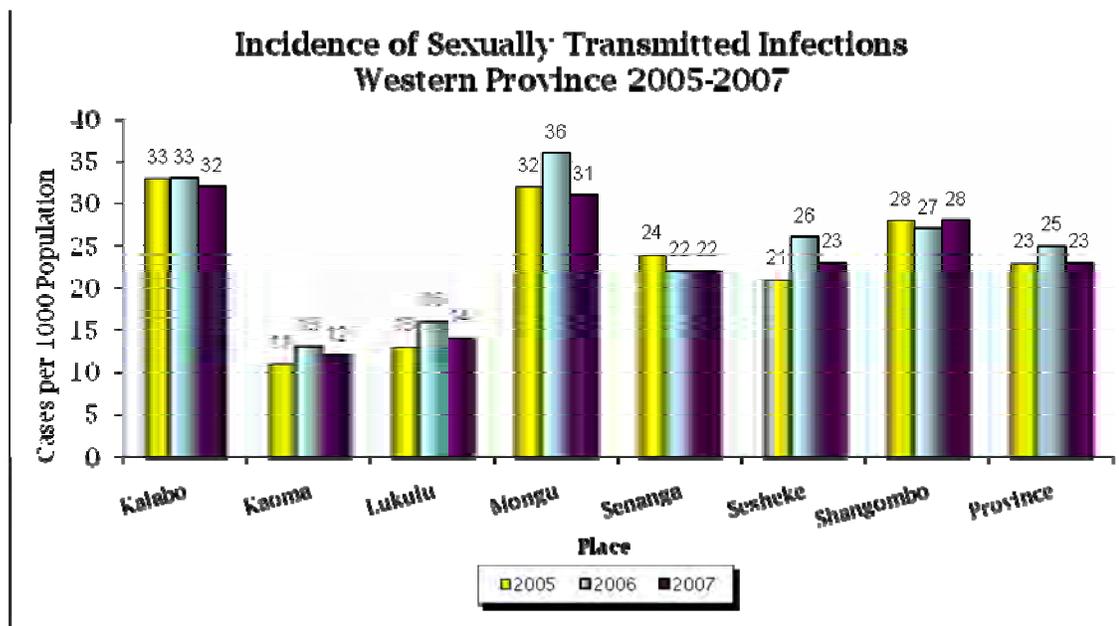


Figure 0.2: Incidence of sexually transmitted infections

Chapter 4: Human Resources

This chapter discusses human resource indicators collected by the HMIS. These indicators are discussed in relation to different districts. The chapter also discusses distribution of health personnel such as medical doctors, nurses, midwives, clinical officers, health inspectors, environmental health technologists, laboratory technologists, pharmacy technologists and pharmacists. Human resources has been recognised as the most important component in achieving our health goal of providing health care as close to the household as possible.

4.1 Number of medical personnel by district

The estimated number of health care delivery personnel required in the province in 2007 was estimated to be 2311. As shown in Table 4.1, the current level of 789 is only 34 per cent of the required human resources. As a result, classified daily employees end up providing health care services for which they are not qualified to do in some health facilities in almost all districts in Western Province.

Table 4.1: Number of health staff by district, December 2007

Districts	Staff cadre								Total
	Medical Doctors	Clinical Officers	Nurses	Mid-wives	Environmental Health Officers/ Technicians	Pharmacists	Laboratory Technicians	Others	
Mongu	1	11	82	18	22	0	1	12	148
Kaoma	5	29	62	25	20	0	5	6	152
Sesheke	4	15	54	31	10	0	3	5	122
Senanga	2	10	51	8	14	0	2	7	94
Kalabo	5	13	26	8	11	0	1	3	67
Lukulu	2	4	25	5	10	0	1	14	47
Shang'ombo	1	7	10	6	8	0	0	0	32
Lewanika Hospital	11	5	76	13	1	2	4	15	127
Total	31	94	386	114	96	2	17	62	789

Source: District Human Resource Register

4.2 Health centre staff daily contacts

This indicator measures the average number of patients each qualified staff in a health facility attends to in a day per quarter or year. The total number of patients attended to in a given period is divided among the total number of qualified staff available in the same period. Figure 4.1 shows that in 2007, the average daily staff contact was 25. It was the highest in Kalabo (46) and the lowest in Mongu (18) in 2007.

There is more qualified staff in relatively urban districts (i.e. Mongu and Senanga). As a result, staff in these districts has a lower workload compared to those in relatively rural districts. However, considering that most of the staff in health facilities providing antiretroviral therapy and PMTCT is not employed by the Ministry of Health, the indicator could be overstating the workload.

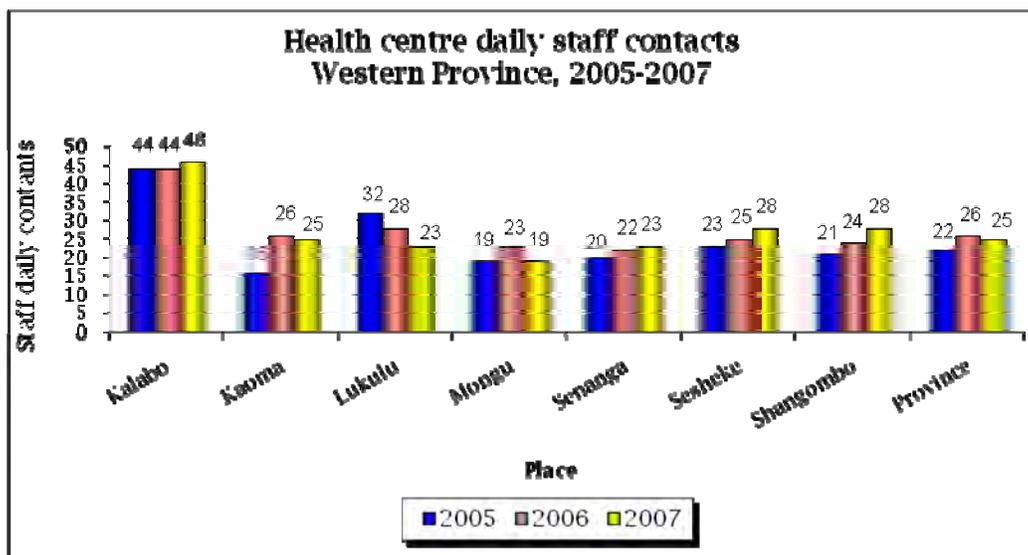


Figure 4.1: Daily staff contacts

4.3 Community Health Workers

These are members of the community chosen and supported by the community to provide health care at community level. They are trained in basic preventive, promotion and curative skills. They attend to minor ailments in the community and refer cases to the health centres. At the end of each month, they compile and submit reports to the health centre. The standard ratio is one community health worker per 500 people.

Table 4.2 shows that there was a general decrease in Community Health Workers from 595 in 2006 to 413 by the end of 2007. The number of clients seen by community health workers also reduced from 502,743 in 2006 to 140,150 in 2007. This could be attributed to the following:

- a. None availability of CHW's drug kits especially in 2006 and 2007.
- c. Community support has either been minimal or negligible

Table 4.2: Number of active community health workers and patients attended to by them, 2005-2007

District	2005			2006			2007		
	Number. of active community health workers	Number of patients		Number. of active community health workers	Number of patients		Number. of active community health workers	Number of patients	
		Total	Average		Total	Average		Total	Average
Shang'ombo	86	107,248	232	77	79,809	331	46	34,870	758
Kaoma	85	96,096	127	92	84,492	918	67	31,581	471
Mongu	89	70,551	795	85	65,409	774	44	16,924	385
Lukulu	72	48,102	673	56	28,729	510	23	7,384	321
Kalabo	120	103,578	863	116	96,967	836	94	26,862	286
Sesheke	64	55,759	872	76	71,104	933	48	12,970	273
Senanga	95	81,457	855	93	76,233	818	91	9,559	106
Province	611	562,791	4,417	595	502,743	5,120	413	140,150	2,600

Source: HMIS

4.4 Trained traditional birth attendants

These are women trained for six weeks in provision of basic safe motherhood services. They are provided with basic delivery packs. They submit monthly reports to the nearest health centre. The standard ratio is one tTBA per 1,000 people. Table 4.3 shows that in 2007 a total of 343 tTBAs conducted 4,966 deliveries giving an average of 15 per tTBA.

Table 4.3: Number of active tTBAs and the deliveries they carried out 2005-2007

District	2005			2006			2007		
	Active tTBAs	Deliveries		Active tTBAs	Deliveries		Active tTBAs	Deliveries	
		Actual	Average		Actual	Average		Actual	Average
Kaoma	51	3,260	64	50	3,387	68	49	3,959	81
Shang'ombo	51	819	22	46	721	19	32	591	18
Mongu	56	971	17	72	1,102	15	63	1,138	18
Lukulu	57	542	10	50	553	11	26	377	15
Kalabo	73	1,057	15	68	942	14	65	884	14
Senanga	71	1,400	20	71	1,349	19	66	859	13
Sesheke	39	520	13	53	657	12	42	380	9
Province	397	6,115	15	410	6,053	15	343	4,966	15

Source: HMIS

Chapter 5: Availability of Drugs

Critical medical supplies should always be in stock at any given health facility. Indicators to monitor the utilisation and stock management of basic drugs and medical supplies have been put in place to ensure the efficient management of drugs and supplies at all levels of health care delivery. Western Province is one of the rural Provinces in Zambia and as such delivery and distribution of medical supplies in hard to reach areas is a major challenge and requires concerted efforts from all stakeholders.

5.1 Medical supplies in stock at health facilities

The medical supplies at health facilities indicator is monitored to ensure that there is adequate supply of medical supplies at health facilities (Health Centres and Hospitals). At the end of the month, the health facility staff notes from the stock control cards whether there was at any occasion in the previous month when the critical drug or supply was out of stock. The indicator gives a rough measure of the proportion of time that critical supplies have been in stock. Critical medical supplies should always be in stock. Stock outs should be investigated by the health facility management. Stock outs could be due to poor logistics management, pilferage, prescription habits of staff and changes in disease patterns.

5.2 Availability of tracer drugs by health centre and hospital

Tracer drugs are selected to be monitored as a proxy to ensure the availability of adequate, quality, efficacious, safe and affordable drugs. Some tracer drugs at health centres are Coartem, paracetamol and Cotrimoxazole. In hospitals the tracer drugs were fansidar, amoxicillin and benzyl penicillin.

The information presented in Table 5.1 shows the percentage of months in which tracer drugs were in stock throughout the month in health centres and hospitals in 2007. Anti-malarial drugs were not in stock for the least time (58 per cent of the months). On average tracer drugs fansidar, amoxicillin and benzyl penicillin were all available throughout the month for 95 per cent of the months in 2007. Among the districts, these drugs never ran out of stock throughout the year in 2007 only in Senanga.

Table 5.1: Percentage of months in which tracer drugs were available, 2007

District	Health centre			Hospital		
	Anti-malarial	Paracetamol	Cotrimoxazole	Fansidar	Amoxicillin	Benzyl Penicillin
Kalabo	75	85	84	88	88	83
Kaoma	10	67	67	50	50	46
Lukulu	85	77	87	50	50	50
Mongu	68	68	71	82	88	72
Senanga	77	80	83	100	100	100
Sesheke	73	79	79	92	92	86
Shang'ombo	76	99	97	-	-	-
Province	58	71	72	95	95	95

5.3 Percentage of months in which drugs were in stock

Table 5.2 presents the percentage of time in which drugs were in stock throughout a month in the health facilities in Western Province from 2005 to 2007. On average availability was below the 100 per cent target in the province at both health centre and hospital level. In health facilities, drugs were best stocked in Shang'ombo district where drugs were available throughout the month for 91 per cent of the months in 2006 and for 95 per cent of the months in 2007. In the whole province, drugs were better stocked in hospitals than in health centres.

Table 5.2: Percentage of months for which drugs were in stock by district, 2005-2007

District	Health centre months in stock			Hospitals months in stock			Summary of percentage of months in stock		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Shang'ombo	89	91	95	0	0	0	89	91	95
Kalabo	88	87	85	94	98	86	91	93	86
Senanga	75	73	68	99	95	100	87	84	84
Lukulu	67	79	80	97	91	97	29	80	81
Mongu	69	75	73	33	40	44	67	74	72
Kaoma	64	69	65	67	76	84	64	70	67
Sesheke	76	77	67	96	92	90	68	69	61
Province	72	76	72	85	88	89	73	77	74

Source: HMIS

Note: There was no hospital in Shang'ombo

5.4 Drug kit utilisation at health centres

Drug kit utilisation indicator measures the number of drug kits used per 1000 patients. The health centre drug kit is intended to serve 1000 patients. Opening a drug kit should depend on the number of patients seen, and not on the time period elapsed. Supplementary drugs are supplied to cater for specific diseases depending on quantity or presence in the kit. Sometimes kits are opened just before the end of the quarter, which gives an impression of "overuse" in small centres. The acceptable levels are between 0.8 kit and 1.2 kits per 1,000 patients beyond which further investigation is required. Figure 5.1 below shows drug kit utilisation. The average utilisation declined from 1 in 2005 to 0.9 in 2006 and to 0.6 in 2007. It appears that the drug supply deteriorated in the province between 2005 and 2007.

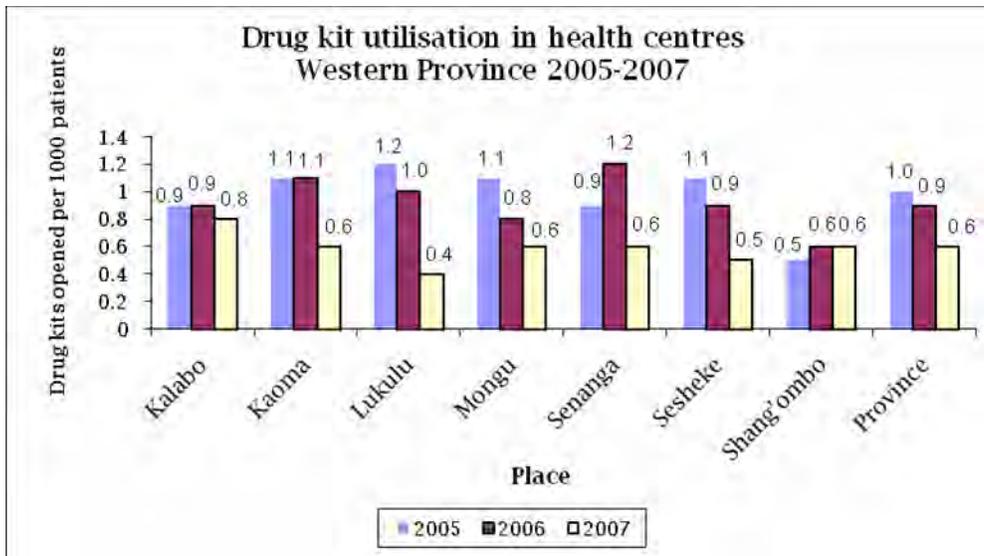


Figure 5.1: Drug kit utilisation

Chapter 6: Health Services Delivery Indicators

The availability of doctors, paramedical staff, drugs and supplies affect the delivery of health services. This chapter highlights the key health facility utilisation indicators by district. After the abolition of user fees in 2005, there was a remarkable increase in utilisation rates for those aged 5 years and above as their attendance was more subjected to user fees.

6.1 Health facility utilisation

Table 6.1 shows the trend of selected service delivery indicators from 2005–2007. Health centre outpatient department utilisation in general, increased from 1.27 in 2005 to 1.49 in 2006 and further to 1.51 in 2007. The per capita attendances for under-fives reduced from 2.46 in 2005 to 2.16 in 2007. That of the older age group increased from 0.61 to 1.01 during the same period. The bed occupancy rate decreased at both hospitals and health centres. Health centre bed occupancy rate reduced from 23 per cent in 2005 to 17 per cent in 2007. The hospital bed occupancy reduced from 41 per cent in 2005 to 35 per cent in 2007.

Table 6.1: Trends of selected service delivery indicators by year

Indicator	Year		
	2005	2006	2007
Health centre outpatient department utilisation	1.27	1.49	1.51
Health centre under 5 per capita attendance	2.46	2.32	2.16
Health centre over 5 per capita attendance	0.61	0.89	1.01
Health centre bed occupancy rate	23	20	17
Hospital occupancy rate	41	41	35
Hospital average length of stay	6	5	5

Source: HMIS

6.1.1 Health centre outpatient department utilisation

This refers to the number of first attendances at facility outpatient department during a given period. The indicator assists managers to develop measures for the optimal utilisation of health facilities.

As shown in Table 6.2, the highest health centre outpatient department utilisation in 2007 was in Mongu (1.8) followed by Sesheke (1.7). The lowest utilisation rate, 1.2 was in Lukulu followed by Senanga 1.3. The health centre outpatient department utilisation in the province increased from 1.3 in 2005 to 1.5 in 2006 and to 1.6 in 2007. This could be due to the scrapping of user fees by government in April 2005 and the shortage of community health worker kits between 2006 and 2007 which resulted in people seeking treatment for simple ailments from the health centres which could have been dealt with by the community health workers.

Table 6.2: Outpatient department utilisation rate in Western Province, 2005-2007

District	Outpatient department utilisation rate		
	2005	2006	2007
Mongu	1.7	2.1	1.8
Sesheke	1.2	1.6	1.7
Shang'ombo	1.9	1.4	1.5
Kaoma	1.2	1.4	1.4
Kalabo	1.1	1.4	1.4
Senanga	1.0	1.2	1.3
Lukulu	0.6	0.9	1.2
Province	1.3	1.5	1.6

Source: HMIS

6.1.2 Health centre per capita attendance

As shown in Table 6.3, under 5 per capita attendances in Kalabo, Kaoma, Lukulu and Shang'ombo reduced between 2005 and 2007. Attendance increased in Sesheke. In the whole province, per capita attendances for under-fives reduced from 3.4 in 2005 to 3.1 in 2006 and to 2.9 in 2007.

The per capita attendance increased for the population aged 5 years and above from 0.9 in 2005 to 1.2 in 2006 and to 1.3 in 2007. It increased in all the districts except Shang'ombo between 2005 and 2007. This is attributed to the scrapping of user fees in 2005 which this age group was paying.

Table 6.3: Health centre per capita attendances Western Province, 2005-2007

District	2005			2006			2007		
	Under 5 year	5 years and above	Total	Under 5 year	5 years and above	Total	Under 5 year	5 years and above	Total
Mongu	3.4	0.9	1.3	4.5	1.6	2.1	3.7	1.5	1.8
Sesheke	2.7	1.1	1.1	2.8	1.2	1.5	2.9	1.4	1.6
Shang'ombo	4.9	1.2	1.9	3.2	1.1	1.4	2.9	1.3	1.5
Kaoma	3.3	0.7	1.2	3.1	1.1	1.4	2.8	1.1	1.4
Kalabo	2.8	0.7	1.1	2.7	1.1	1.4	2.6	1.2	1.4
Senanga	2.4	0.8	1.0	2.1	1.0	1.2	2.3	1.1	1.3
Lukulu	2.0	0.3	0.6	1.9	0.7	0.9	1.7	1.6	1.2
Province	3.4	0.9	1.3	3.1	1.2	1.5	2.9	1.3	1.6

Source: HMIS

6.1.3 Bed occupancy rate-health centre and hospital

Bed occupancy rate is defined as the percentage of available beds occupied during a given period of time. It measures the utilisation of admission health facilities. Ideally, 80 per cent of the beds should be utilised.

Table 6.4 shows that the provincial health centre bed occupancy rate decreased continuously from 23 per cent in 2005 to 19 per cent in 2006 and to 17 per cent in 2007. In the province, it remained at 41 per cent from 2005 to 2006. It dropped drastically in 2007 to 35 per cent. Among the districts in 2007, the highest health centre bed occupancy rate was in Shang'ombo district at 27 per cent followed by Senanga, 24 per cent. The highest hospital bed occupancy rate of 53 per cent in 2007 was in Kalabo and then in Senanga, 47 per cent.

Table 6.4: Bed occupancy rate per District and Year, 2005-2007

District	Health centre bed occupancy rate			Hospital bed occupancy rate			Summary bed occupancy rate		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Kalabo	20	21	18	36	47	53	28	34	33
Kaoma	15	12	9	44	43	24	59	65	33
Lukulu	21	21	20	38	45	37	31	36	30
Mongu	21	17	16	42	36	32	32	27	24
Senanga	29	26	24	42	47	47	36	37	36
Sesheke	18	16	10	42	40	40	37	35	34
Shang'ombo	39	32	27	-	-	-	39	32	27
Province	23	19	17	41	41	35	32	31	27

Source: HMIS

Note There was no hospital in Shang'ombo

As shown in Table 6.5, there was slight fluctuation in the hospital outpatient department utilisation rate in the province. The indicator reduced from 0.04 in 2005 to 0.03 in 2006 and then it increased to 0.04 in 2007. With the exception of Mongu where the hospital outpatient department utilisation rate was above 0.1 from 2005 to 2007, it was less than 0.1 in the three years in the rest of the districts with hospitals. This is because the only second level referral hospital in the province is in Mongu. There was no hospital in Shang'ombo.

Table 6.5: Hospital outpatient department utilisation

District	Outpatient department utilisation rate		
	2005	2006	2007
Mongu	0.14	0.14	0.13
Sesheke	0.05	0.07	0.05
Kalabo	0.05	0.05	0.05
Lukulu	0.04	0.04	0.04
Kaoma	0.01	0.01	0.04
Senanga	0.02	0.01	0.01
Shang'ombo	-	-	-
Province	0.04	0.03	0.04

Source: HMIS

6.1.4 Hospital outpatient department percentage by-pass first attendances

Referrals are measured by two indicators; the hospital outpatient department percentage by-pass first attendance and the hospital outpatient department percentage referred first attendance. Reasons for by-passing a health centre include preference for expert attention, inadequate logistics and human resource at health centres and sometimes attitudes by either patients or staff at the health centre.

Table 6.6 shows that the outpatient department first attendance by-pass at hospitals in Western Province increased from 5 per cent in 2006 to 11 per cent in 2007. This was higher among the under-fives than among the older population. Among the districts, hospital outpatient department percentage by-pass in 2007 of 36 per cent was the highest in Kaoma district followed by Sesheke (19 per cent). The lowest was in Mongu (1 per cent).

Table 6.6: Hospital outpatient department percentage by-pass first outpatient department attendance, 2005-2007

District	Under 5 Years			5 Years and above			Total by-pass attendance		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Kaoma	59	53	43	12	14	31	20	28	36
Sesheke	19	12	28	20	10	16	20	11	19
Senanga	7	9	25	3	3	4	3	3	6
Kalabo	0	2	8	0	3	1	0	3	2
Mongu	1	1	1	1	1	1	1	1	1
Lukulu	1	1	0	34	45	0	0	0	0
Shang'ombo	-	-	-	-	-	-	-	-	-
Province	7	9	25	4	4	7	5	5	11

Source: HMIS

6.1.5 Inpatient turnover rate

The inpatient turnover rate measures the number of admissions against the usable beds in a health facility in a period. Ideally, it should be 50 per cent in district hospitals. Table 6.7 shows that the difference in this rate between hospitals and health centres over the three years was small. Beds were also under-utilised.

Table 6.7: Health centre and hospital inpatient turnover rate per district and year, 2005-2007

District	Health centre inpatient turnover rate			Hospitals inpatient turnover rate		
	2005	2006	2007	2005	2006	2007
Kalabo	5	5	4	6	9	9
Kaoma	5	4	4	8	8	4
Lukulu	4	5	7	8	7	8
Mongu	5	4	7	8	6	7
Senanga	5	5	4	5	7	7
Sesheke	4	5	3	6	6	6
Shang'ombo	8	7	6	-	-	-
Province	5	5	5	7	7	6

Source: HMIS

6.1.6 Average length of stay

This indicator measures the average number of days a patient stays in an inpatient health facility. The recommended average length of stay in a district hospital is 6 days or less.

Table 6.8 shows that a decrease was recorded from 6 days in 2005 to 5 days in 2006 and 2007 in the province. Among the districts, the average length of stay decreased from above the threshold in Senanga in 2005 (8 days) to 6 days in 2006 and 2007.

Table 6.8: Hospital average length of stay by district, 2005 -2007

District	Hospital Average Length of Stay		
	2005	2006	2007
Senanga	8	6	6
Sesheke	6	6	6
Kalabo	6	5	5
Kaoma	5	5	5
Lukulu	5	6	4
Mongu	5	5	4
Shang'ombo	-	-	-
Province	6	5	5

Source: HMIS

6.2 Maternal health and family planning

Maternal health provides a foundation for the success of child health. Risks in pregnancy both to the mother and unborn child need to be identified early so that timely interventions are done. Early post-natal care and access to family planning are also essential. The aspects of maternal health covered in this section are antenatal care, supervised deliveries, postnatal care and family planning.

6.2.1 Summary of maternal health indicators

Table 6.9 shows that first antenatal coverage increased between 2005 and 2007. Average antenatal visits on the other hand decreased from 3 in 2005 to 2 in 2007.

Institutional deliveries and the supervised deliveries increased between 2005 and 2007. The percentage of deliveries performed by tTBA appears to have decreased from 17 per cent in 2006 to 13 per cent in 2007.

Table 6.9: Maternal Health Indicators, Western Province, 2005-2007

Indicator	Period in years			Average
	2005	2006	2007	2005-2007
Percentage of expected pregnancies first antenatal coverage	102	105	108	105
Average Antenatal Visits	3	2	2	2
Percentage of institutional deliveries	46	45	50	47
Percentage of deliveries by trained Traditional Birth Attendants	17	17	13	16
Percentage of supervised deliveries	64	62	63	63
Percentage of deliveries with first postnatal attendance	42	36	38	39

Source: HMIS

6.2.2 Antenatal care

First antenatal coverage is the percentage of expected pregnancies, in the catchment population, in a given period who present themselves to the health institutions for antenatal services for the first time in the pregnancy. The target for this indicator is 90 per cent. Table 6.10 shows that coverage for first antenatal attendance between 2005 and 2007 was above 100 per cent. There should be numerous inaccuracies in capturing the attendance data. The HMIS methods could also understate targets for first attendances.

Table 6.10: First antenatal attendance coverage, 2005-2007

District	2005			2006			2007		
	Contacts	Target	Percentage	Contacts	Target	Percentage	Contacts	Target	Percentage
Kalabo	5546	5157	108	5795	5311	109	6421	5458	118
Kaoma	7796	7250	108	8262	7463	111	8680	7837	111
Lukulu	3,221	3,497	92	3,753	3,622	104	3,947	3,733	106
Mongu	8198	7480	110	8845	7536	117	8858	7625	116
Senanga	5212	5171	101	5107	5233	98	5756	5296	109
Sesheke	3498	4788	73	3688	4919	75	3874	5077	76
Shang'ombo	4,513	3,820	118	4,506	3,939	114	4,197	3,504	120
Province	37,984	37,163	102	39,956	38,023	105	42,716	38,530	108

Source: HMIS

6.2.3 Average antenatal visits

Average antenatal visits measure the average number of visits to the facility per expectant mother before delivery. The national target is 4 visits per pregnancy. Table 6.11 shows that pregnant women in all the province went to antenatal clinic an average of 3 times in 2005, 2 times in 2006 and 2 times in 2007. The low coverage of this indicator can be directly attributed to long distances from communities to health centres in the province and also the tendency by some women to register late for antenatal services.

Table 6.11: Average antenatal visit, 2005-2007

District	Antenatal attendance by year								
	2005			2006			2007		
	Total	First	Average	Total	First	Average	Total	First	Average
Kaoma	22255	7796	3	20088	8262	2	22121	8680	3
Kalabo	14486	5546	3	13283	5795	2	14533	6421	2
Lukulu	8,049	3,221	3	8,724	3,753	2	9,119	3,947	2
Mongu	21704	8198	3	21189	8845	2	20353	8858	2
Senanga	13480	5212	3	11532	5107	2	13289	5756	2
Sesheke	9824	3498	3	8597	3688	2	9339	3874	2
Shang'ombo	12,091	4,513	3	9,738	4,506	2	8,206	4,197	2
Province	101,680	37,984	3	93,151	39,956	2	96,922	41,716	2

Source: HMIS

6.2.4 Supervised deliveries

Supervised deliveries are those that are delivered in health facilities or are assisted by tTBA.

Table 6.12 shows that institutional deliveries in Western Province increased from 45 per cent in 2006 to 50 per cent in 2007. On the other hand tTBA deliveries reduced from 17 per cent in 2006 to 13 per cent in 2007. There was an increase in supervised deliveries in all the districts except for Shang'ombo where coverage reduced by 3 per cent.

Table 6.12: Percentage of supervised deliveries by place of delivery and district, 2005-2007

District	Institutional deliveries			trained Traditional Birth Attendants			Supervised deliveries		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Mongu	59	58	66	13	15	15	72	73	82
Kalabo	49	49	51	21	18	17	71	67	68
Kaoma	47	48	53	12	10	10	59	58	63
Lukulu	44	46	53	16	16	10	60	62	63
Senanga	38	36	41	28	27	17	66	63	58
Sesheke	35	35	41	11	14	8	46	49	49
Shang'ombo	44	33	30	22	19	18	67	52	48
Province	46	45	50	17	17	13	64	62	63

Source: HMIS

6.2.5 Complicated deliveries

Deliveries other than by spontaneous vertex are considered complicated. That includes caesarean section births. According to WHO standards, 15 per cent of all deliveries must be by caesarean section in order to avert potential complications during attempted deliveries by spontaneous vertex.

As shown in Table 6.13, 9 per cent of deliveries in all hospitals in the province were complicated. In all the health centres in the province, 4 per cent were complicated. A higher proportion of complicated deliveries at hospitals than at health centres could be due to the transfer of complicated cases in hospitals and the better ability of hospitals to spot potential complications.

Among the districts, the highest percentage of complicated deliveries in health centres was in Shang'ombo (9 per cent) and the lowest in Senanga (1 per cent). There is no hospital in Shang'ombo and the health centres there end up handling cases that would usually be referred to hospitals. Some cases from Shang'ombo are referred to Senanga. Probably as a result, the percentage of complicated deliveries in the hospitals was the highest in Senanga (13 per cent) among the districts. The next highest among the hospitals was in Kalabo (11 per cent). The lowest were in Lukulu and Sesheke (8 per cent in each district).

Table 6.13: Percentage of complicated deliveries, health centres and hospitals by district, 2007

District	Health Centre		Hospital		
	All deliveries	Percentage complicated	All deliveries	Percentage complicated	Percentage caesarean
Senanga	1236	1	855	13	5
Kalabo	1625	4	876	11	6
Kaoma	2292	5	1667	9	7
Mongu	2509	3	2157	9	4
Lukulu	915	4	985	8	1
Sesheke	673	2	1327	8	5
Shang'ombo	1011	9	-	-	-
Total	10,330	4	8,174	9	5

Source: HMIS

On average 5 per cent of all births in hospitals were delivered by caesarean section in the province. Among the districts, the highest percentage of caesarean section births were in Kaoma (7 per cent) followed by Kalabo (6 per cent). In Lukulu only 1 per cent of the deliveries were by caesarean section despite 8 per cent of the deliveries being complicated.

6.2.6 Prevalence of still births

As shown in Table 6.14, 3 per cent of recorded deliveries in each year from 2005–2007 in the province were still borne. Among the districts in 2007, the proportion was the highest in Senanga (8 per cent) followed by Shang'ombo (4 per cent). The lowest was in Mongu (2 per cent).

Table 6.14: Proportion of total births that were still borne by district, 2005-2007

District	2005			2006			2007		
	Still Births	Total Births	Percentage	Still Births	Total Births	Percentage	Still Births	Total Births	Percentage
Senanga	111	1994	6	83	1850	4	72	2114	8
Shang'ombo	56	1,588	4	51	1,254	4	36	1,011	4
Kalabo	80	2469	3	94	2519	4	93	2712	3
Kaoma	97	3293	3	88	3404	3	137	3990	3
Lukulu	51	1,603	3	37	1,603	2	66	1,915	3
Sesheke	65	1648	4	34	1677	2	59	2038	3
Mongu	113	4009	3	112	4026	3	101	4603	2
Total	573	16,837	3	499	16,445	3	564	18,589	3

Source: HMIS

6.2.7 First postnatal attendance

After delivery, mothers should present themselves to a postnatal clinic conducted by health professionals for the first time within 6 weeks of delivery. The national target is 80 per cent. Table 6.15 shows that postnatal coverage in the province was 42 per cent in 2005, 36 per cent in 2006 and 38 per cent in 2007. This was way below the national target. That was also the case in the districts.

Table 6.15: First postnatal coverage, 2005-2007

District	2005			2006			2007		
	Contacts	Target	Percentage	Contacts	Target	Percentage	Contacts	Target	Percentage
Kalabo	2033	4966	41	1932	5114	38	2099	5257	40
Kaoma	3037	6878	44	2314	7081	33	2172	7436	29
Lukulu	644	3,368	19	655	3,491	19	667	3,595	19
Mongu	3161	7208	44	3278	7265	45	3962	7345	54
Senanga	2585	4979	52	2092	5038	42	2609	5100	51
Sesheke	1265	4612	27	1323	4734	28	1504	4887	31
Shang'ombo	2,428	3,679	66	1,394	3,794	37	968	3,371	29
Province	15,133	35,690	42	12,988	36,517	36	13,971	36,991	38

Source: HMIS

6.2.8 Maternal mortality in health facilities

Maternal Mortality Ratio measures the rate of deaths of women associated with the pregnancy and delivery in a 100,000 live births. Table 6.16 shows the maternal mortality ratio trends in health facilities by district for the period 2005–2007. The maternal mortality ratio in Western Province was 143 per 100,000 live births in 2005, 107 per 100,000 in 2006 and 116 per 100,000 deliveries in 2007. Among the districts, Mongu and Kalabo recorded the highest number of maternal deaths (10 each) in 2007. The lowest was in Lukulu (1 death).

Table 6.16: Maternal mortality rate trends in health facilities 2005-2007

District	2005			2006			2007		
	Deaths	Deliveries	Rate	Deaths	Deliveries	Rate	Deaths	Deliveries	Rate
Kalabo	6	2454	121	6	2494	117	10	2670	190
Mongu	12	4009	166.4	11	4026	151.4	10	4603	136.1
Senanga	9	1916	181	7	1814	139	7	2091	137
Sesheke	2	1598	43	5	1638	106	6	2000	123
Kaoma	12	3260	175	5	3387	71	5	3959	67
Shang'ombo	2	1,637	54	2	1,250	53	2	1,011	59
Lukulu	4	590	119	0	782	0	1	915	28
Province	51	16,584	143	39	16,407	107	43	18,504	116

Source: HMIS

6.2.9 New family planning acceptors

New family planning acceptors rate is the proportion of women of childbearing age group 15-49 years taking up a modern family planning method for the first time. Table 6.17 shows that the new family planning acceptors rate has been increasing steadily from 99 per 1,000 women aged 15-49 years in 2005, 110 per 1,000 women of childbearing age in 2006 and then to 113 per 1,000 women of childbearing age in 2007.

Among the districts in 2007, the highest rate was in Mongu (157 per 1,000 women aged 15-49 years) followed by Kalabo (141 per 1,000 women aged 15-49 years) and the lowest in Shang'ombo (61 per 1,000 aged 15-49 years).

Table 6.17: New family planning acceptors per 1000 women of childbearing age by district 2005-2007

District	2005		2006		2007	
	Number	Rate	Number	Rate	Number	Rate
Mongu	6621	144	6250	135	7365	157
Kalabo	3101	97	4170	127	4746	141
Lukulu	1,645	89	2,394	126	2,370	121
Sesheke	2315	119	2740	137	2969	114
Senanga	2086	73	2340	81	2872	98
Kaoma	2748	60	3122	67	4033	82
Shang'ombo	2,123	113	2,516	130	2,096	61
Total	20,639	99	23,532	110	26,440	113

Source: HMIS

6.3 Child health indicators

Child health indicators in this section, includes fully immunisation coverage, BCG-measles dropout rate, pregnancies protected with tetanus toxoid and underweight prevalence.

As shown in Table 6.18, fully immunisation coverage of under-ones increased from 78 per cent in 2005 to 81 per cent in 2006 but it reduced to 80 per cent in 2007. BCG-Measles dropout rate remained at 26 per cent throughout 2005 up to 2007. Pregnancies protected by tetanus toxoid were at 80 per cent in 2007, 5 per cent less than in 2006 (85 per cent). Underweight prevalence rate reduced at a constant rate from 14 per cent in 2005 to 12 per cent in 2006 and 10 per cent in 2007.

Table 6.18: Child health indicators, 2005-2007

Indicator	Period in years			Average
	2005	2006	2007	2005-2007
Percentage fully immunised under 1 year	78	81	80	80
BCG-Measles dropout rate	26	26	26	26
Percentage of pregnancies with tetanus toxoid protection	85	85	80	83
Underweight prevalence (percentage)	14	12	10	12

Source: HMIS

6.3.1 Fully immunisation coverage

Fully immunisation indicator is used to measure the number of children less than 1 year old who complete the series of immunisations before reaching 1 year. The national target is 80 per cent. Children are considered to be fully immunised when they have received a vaccination against tuberculosis (BCG), three doses each of the diphtheria, pertussis, tetanus/hepatitis B/Haemophilis influenza type (DPT-HepB-Hib), and polio vaccines, and a measles vaccination by the age of 12 months. The BCG vaccination should be given at birth or at the first clinical contact (not long after birth). The DPT-HepB-Hib and polio immunisations require three doses of the vaccines at approximately 6, 10 and 14 weeks of age; and measles should be given at or soon after reaching 9 months of age.

As shown in Table 6.19, fully immunisation coverage in 2005 and 2006 in Lukulu, Shang'ombo and Sesheke was below the target. The target was surpassed in Lukulu in 2007 but the target was still not attained in Sesheke. In this year attainment was below target in Senanga which was not the case in 2005 and 2006. The highest fully immunisation target was attained in Mongu in all the three years. It was 87 per cent in 2005, 96 per cent in 2006 and 88 per cent in 2007.

Table 6.19: Fully immunised children under 1 year by district, 2005-2007

District	2005			2006			2007		
	Immunised	Target	Percentage	Immunised	Target	Percentage	Immunised	Target	Percentage
Mongu	5101	5817	87	5654	5903	96	5247	5966	88
Kalabo	3286	4070	81	3544	4191	85	3615	4309	84
Kaoma	4834	5763	84	4830	5933	81	5179	6227	83
Lukulu	1,618	2,763	59	1,954	2,861	68	2,404	2,946	82
Shang'ombo	2,290	3,010	76	2,354	3,103	76	2,157	2,944	73
Senanga	3528	4080	86	3545	4130	86	3008	4179	72
Sesheke	2117	3547	60	2220	3646	61	2678	3759	71
Province	22,774	29,110	78	24,101	29,767	81	24,287	30,330	80

Source: HMIS

Occasional stock outs of antigens, transport and staff shortages negatively affected coverage. Sesheke and Kalabo districts received a Suzuki vehicle each for the Expanded Programme of Immunisations in 2007. The transport situation was much improved in 2008. There were at least 3 running vehicles in each district in 2008.

6.3.2 BCG -Measles dropout rate

As shown in Table 6.20, the BCG-Measles dropout rate remained at 26 per cent from 2005 to 2007 in the whole province. Among the districts, it was the highest in Senanga and Kalabo (35 per cent in each district). They were followed by Mongu (24 per cent). It was the lowest in Kaoma (15 per cent).

Table 6.20: BCG -measles dropout rate by district, 2005-2007

District	2005			2006			2007		
	Coverage		Drop Out Rate	Coverage		Drop Out Rate	Coverage		Drop Out Rate
	BCG	Measles		BCG	Measles		BCG	Measles	
Kalabo	142	99	31	153	110	28	154	100	35
Kaoma	140	116	17	136	103	24	124	106	15
Lukulu	148	88	40	115	76	34	102	86	16
Mongu	132	96	28	132	96	22	129	98	24
Senanga	133	86	23	139	86	26	131	72	35
Sesheke	83	70	16	91	67	26	100	79	21
Shang'ombo	142	99	30	136	99	27	142	86	16
Province	132	98	26	130	97	26	127	93	26

Source: HMIS

6.3.3 Pregnancies protected against tetanus

Tetanus toxoid vaccines can prevent infections and save the lives of mothers and infants alike. Pregnant women should receive at least two doses of tetanus toxoid, which provide one to three years of protection. Pregnancies protected against tetanus are the proportion of pregnant women that have received two or more doses of tetanus toxoid over the course of the pregnancy. The national target is 80 per cent.

As shown in Table 6.21, the average coverage was 85 per cent in 2005, 85 per cent in 2006 and 80 per cent in 2007. Among the districts, the national target was not attained in all the three years 2005 to 2007 in Lukulu and Sesheke. Coverage in Sesheke was way below the national target in these three years. It was 57 per cent in 2005, 59 per cent in 2006 and 57 per cent in 2007. Performance among the districts was the poorest in the three years in 2007 when the national target was not attained in four districts (Kalabo, Kaoma, Lukulu and Sesheke).

Table 6.21: Pregnancies with tetanus toxoid protection, 2005-2007

District	2005			2006			2007		
	Immunised	Target	Percentage immunised	Immunised	Target	Percentage immunised	Immunised	Target	Percentage immunised
Kalabo	5076	5157	98	4533	5311	85	4229	5458	77
Kaoma	6810	7250	94	6894	7463	92	6105	7837	78
Lukulu	2,348	3,497	67	2,666	3,622	74	2,747	3,733	74
Mongu	6338	7480	85	7478	7536	99	6963	7625	91
Senanga	4633	5171	90	4234	5233	81	4712	5296	89
Sesheke	2739	4788	57	2917	4919	59	2911	5077	57
Shang'ombo	3,683	3,820	96	3,627	3,939	92	3131	3,504	89
Province	31,627	37,163	85	32,349	38,023	85	30,776	38,530	80

Source: HMIS

6.3.4 Underweight prevalence

Underweight prevalence measures the proportion of children under the age of 5 years whose weight less than expected.

As shown in Table 6.22, the percentage of underweight under-fives in the province reduced from 14 per cent in 2005 to 12 per cent in 2006 and to 10 per cent in 2007. This is a 29 per cent reduction between 2005 and 2007 and a more than 5 per cent reduction in each year. According to the HMIS standards, an

increase or decrease of more than 5 per cent per year in the underweight percentage should be investigated. These reductions could be due to poor practices by health personnel during growth monitoring sessions. Further investigation should be done because the chronic food shortages that periodically occur in a year do not support a trend of reduction in the underweight prevalence.

The data might be accurate and no foul practices in taking measurements by nurses occurred, but it was affected by selectivity in that well off households and not affected by the periodic food shortages would be more likely to have their children attend growth monitoring sessions.

Table 6.22: Percentage of under- five children who were underweight by year, 2005-2007

District	2005	2006	2007
Kalabo	14	12	11
Kaoma	17	11	9
Lukulu	12	8	5
Mongu	11	9	6
Senanga	17	16	14
Sesheke	13	15	11
Shang'ombo	15	16	14
Province	14	12	10

Source: HMIS

Chapter 7: Environmental and Public Health

Environmental health aims to tame the environment in such a way that it no longer poses a health hazard to human beings. It has two sub-areas:

- Malaria control
- Water and Sanitation

7.1 Malaria control

Some of the interventions that can be carried out to control malaria are;

- The use of ITNs.
- The application of indoor residual spraying.
- Proper case management.

If satisfactorily implemented, these can reduce the incidence and case fatality rates of malaria in the districts. Indoor residual spraying was not being done in the province.

7.1.1 Insecticide treated nets

Table 7.1 shows that the ITNs handed out during the year under review covered 16 per cent of the clients. To be an effective intervention, 80 per cent of the clients should be covered. Among the districts, the coverage was the highest in Kaoma (29 per cent) and lowest in Sesheke (7 per cent).

Table 7.1: Distribution of insecticide treated nets to pregnant women and under 5 children (2007)

District	Target Group** (a)	Number of ITNs		Coverage per cent (c/a)*100	Source of ITNs
		Received (b)	Distributed (c)		
Kalabo	28294	2500	2500	9	Society for family
Kaoma	42151	12,000	12,000	29	Society for family
Lukulu	14005	2700	2700	19	Society for family
Mongu	38109	3280	3280	9	Society for family
Senanga	27828	4800	4800	17	Society for family
Sesheke	20679	1500	1500	7	Society for family
Shang'ombo	16457	2400	3178	19	Society for family
Province	187523	29,180	29,958	16	

Source: Environmental Health Reports

*** Estimated pregnancies and Under Fives*

7.2 Water and Sanitation

Communities require safe drinking water and proper and clean sanitary facilities to prevent water born diseases such as diarrhoea. The Water and Sanitation programme in the provinces focussed on monitoring water quality, domestic chlorination of water, pit latrine liming and medical waste management.

7.2.1 Water quality monitoring

The number of samples of collected in 2007 was low in all the districts. Among the districts, no water samples were collected for analysis in Lukulu and Sesheke. The highest number of water samples collected for analysis was in Mongu.

Table 7.2: Water quality monitoring, 2007

District	Number of water samples collected	Number of water samples with satisfactory results	Satisfactory percentage
Kalabo	4	2	50
Kaoma	5	5	100
Lukulu	0	0	0
Mongu	88	24	27
Senanga	8	8	100
Sesheke	0	0	0
Shang'ombo	4	0	0
Province	109	39	36

Source: Environmental Health Reports

7.2.2 Domestic chlorination of water

Domestic water chlorination could reduce the prevalence of diarrhoeal diseases in households which draw water from untreated sources. It is evident that the domestic chlorination programme is not fully established in the districts.

Table 7.3 shows that on average only about 16 per cent of the households received at least 1 bottle of chlorine during the year under review. Worse still, there was no mechanism in place to monitor the utilisation of chlorine in households.

Table 7.3: Distribution of household chlorine

District	Targeted households (a)	Number of houses visited and IEC given (b)	Number of chlorine bottles distributed (c)	Coverage percentage (c/a)*100
Kalabo	22,791	3,005	3,005	13
Kaoma	33,453	4,221	4,221	13
Lukulu	14,005	3,200	3,200	23
Mongu	37,723	5,347	5,347	16
Senanga	20,636	3,104	3,104	15
Sesheke	7,832	1,500	1,500	19
Shang'ombo	12,267	1728	1728	14
Province	148,707	22,105	22,105	16

Source: Environmental Health Reports

7.3 Management of medical waste

Medical waste is usually highly infectious. Despite a good number of health workers acquiring skills in the handling of medical waste, much is still desired in its disposal. Table 7.4 shows that there is no incinerator in Shang'ombo while repairing or replacing the non functional incinerators should be considered in Kalabo and Lukulu.

Table 7.4: Inventory of incinerators in each district

District	Total incinerators	Number Operational	Number non-operational	Remarks
Kalabo	2	1	1	One still under construction
Kaoma	4	4	0	
Lukulu	1	0	1	Never worked since inst.
Mongu	2	2	0	Still too few
Senanga	1	1	0	
Sesheke	2	2	0	Only 2/3 hospitals have
Shang'ombo	0	0	0	
Province	12	10	2	

Source: Environmental Health Reports

Chapter 8:

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