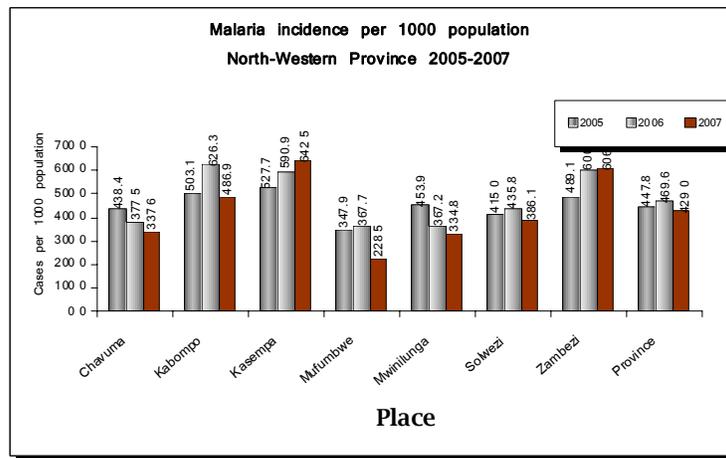




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Ministry of Health

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Preface

The Health Management Information System has demonstrated over the years that it is a useful facility based information system for monitoring and evaluating the performance of the health sector in general. The HMIS enables evidence based decisions on health policy, programme design and resource allocation. We have seen how respective health facilities, districts, provinces and the national level use HMIS data to come up with action plans detailing trends of particular disease such as malaria, diarrhoea, pneumonia, cholera, to mention only a few.

However, more work needs to be done to ensure that the quality of HMIS data is enhanced. Regular training of new and old staff on the use and management of HMIS data, supportive visits to health facilities and the ongoing performance assessments to districts need to be encouraged by all parties as they play an integral part in the improvement of the quality of HMIS data.

I wish to mention that the training of DHMT and health facility staff in the new HMIS data collection tools in November 2007 conducted by the ministry of health in conjunction with European Union is a step forward in the right direction.

Given that HMIS data covers all the public health facilities in the country and a few privately owned ones, there is need to incorporate more private health facilities so that we have a comprehensive picture of the utilisation of health services in the country.

The information in this bulletin mainly gives the provincial picture; details of health facilities are not included. Therefore the District Health Management Teams have to produce similar Annual Health Statistical Bulletins at District level so that the data is analysed by health facilities for informed decision making. If utilised appropriately, these analyses have the potential to encourage greater efficiency in the allocation of resources, as well as the development of more appropriate responses to disease affecting our society.

Finally, I wish to urge our esteemed readers to make as many suggestions as possible so that we have improved versions of subsequent bulletins.



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List of Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
BCG	Bacillus Calmette Guerin
CHW	Community Health Workers
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
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSSP	Health Services and Systems Programme
IDSR	Integrated Disease Surveillance and Response
MMR	Maternal Mortality Ratio
NHSP	National Health Strategic Plan
OPV	Oral Polio Vaccine
PHO	Provincial Health Office
PMTCT	Prevention of Mother to Child Transmission
STI	Sexually Transmitted Infections
tTBA	trained Traditional Birth Attendant
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

Fully 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 100000 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 post natal care 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 tuberculosis 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 bulletin presents major indicators about the disease burden at health facilities, state of major equipment in health facilities, availability of major drugs, and staffing mainly in the public health sector from 2005 to 2007 in North-Western Province.

Disease burden

- **Malaria**

Suspected and confirmed malaria is the major cause of attendances at health facilities in the province. The incidence rate of suspected and confirmed malaria in the province decreased from 447.8 per 1,000 population in 2005 to 469.6 per 1,000 population in 2006. It then increased in 2007 to 429.0 per 1,000. Among the districts in the province, the incidence rate in 2007 was the highest in Kasempa at 642.5 per 1,000 population followed by Zambezi at 606.8 per 1,000 population. The incidence rate was the lowest in Mufumbwe district at 228.5 per 1,000 population. Among the under-fives, the incidence rate was the highest in Zambezi at 1,809.7 per 1,000 population followed by Kasempa at 1,707.3 per 1,000 population. In hospitals, the case fatality rate was the highest in Solwezi (46.3 per 1,000 admissions) and the lowest in Chavuma (3.9 per 1,000 admissions). Among the under-fives, the case fatality rate was also the highest in Solwezi at 66.8 per 1,000 admissions and the lowest in Chavuma at 4.2 per 1,000 admissions.

- **Respiratory Infections (non-Pneumonia)**

The incidence rate of respiratory infections (non-Pneumonia) in the province increased continuously from 2005 (192.2 per 1,000 population) to 2006 (232.5 per 1,000 population) and to 248.4 per 1,000 population in 2007. Districts in which the incidence rate also increased were Chavuma from 354.2 in 2005 to 414.3 in 2007, Kasempa from 199.4 in 2005 to 374.2 in 2007, Mufumbwe from 171.8 in 2005 to 246.3 in 2007 and Solwezi from 171.3 in 2005 to 205.6 in 2007

- **Respiratory Infections (Pneumonia)**

The province recorded a slight decrease in the incidence rate from 42.9 per 1000 population in 2006 to 42.7 per 1000 in 2007. Zambezi recorded the highest incidence rate (58.2 per 1000) and Chavuma the lowest (17.5 per 1000). Kabompo and Kasempa recorded the highest case fatality rates of 79.3 per 1000 admissions and 63.2 per 1000 admissions respectively, while Zambezi recorded the lowest case fatality rate of 13.3 per 1000 admissions.

- **Diarrhoea diseases (non-bloody)**

The incidence rate of diarrhoea non-bloody in the health facilities in 2007 was the highest in Zambezi district at 133.1 per 1000 population. This was more than twice as high as the lowest incidence rate in Mwinilunga district at 62.7 per 1000 population. In 2007, the case fatality rate in the hospitals was the highest in Kasempa at 45.2 per 1000 admissions followed by Zambezi district at 36.4 per 1000 admissions.

The annual incidence rate for diarrhoea non-bloody in the province fluctuated between 2005 and 2007. The incidence rate in 2005 was 82.4 per 1,000 population. It increased to 92.2 per 1,000 population in 2006 and then it decreased slightly to 89.1 per 1,000 in 2007.

- **Notifiable diseases**

Among the notifiable diseases, measles and Acute Flaccid Paralysis surveillance are the focus of this report.

1. Acute Flaccid Paralysis /suspected polio.

The expected number of Acute Flaccid Paralysis cases in the province was 3.5 per 100,000 population under 15 years. The province attained a 2.8 annualised non-polio Acute Flaccid Paralysis rate (10 Acute Flaccid Paralysis cases). However, even though this was achieved, no Acute Flaccid Paralysis cases were detected in Chavuma, and Zambezi districts. The detection rate of Acute Flaccid Paralysis cases steadily increased in the province from 0.9 in 2005 to 2.3 in 2006 and then to 2.8 in 2007 per 100,000 population under 15 years.

2. Measles surveillance

Measles surveillance is focussed among the under-fives. In 2007, case detection was not good, as no cases were reported in Chavuma,

Kasempa, Mufumbwe, Mwinilunga and Zambezi. The pattern of suspected cases detected has fluctuated over the past three years. Among the under fives, there were 86 suspected cases in 2005, 14 cases in 2006 and 59 suspected cases in 2007. The number of suspected cases among the population older than 5 years in 2005 (98) and 2006 (17) was higher than among the population under-five in 2005 (86) and 2006 (14). The annual incidence rate of suspected cases remained lower than 1 per cent among the under-fives in 2005 (0.6), 2006 (0.1) and 2007 (0.4).

3. Tuberculosis notifications

Table 3-9 shows that total cases notified in 2007 were 2137. Of this number, 50.4 per cent were males and 49.6 per cent were females. The majority of cases, 52.39 per cent were extra pulmonary due to the increase in HIV and tuberculosis co-infection. The majority of the notifications were in Solwezi district (38.88 per cent) and the least in Chavuma (3.28 per cent).

▪ Number of patients on antiretroviral therapy

The cumulative number of antiretroviral therapy patients increased remarkably in 2006 and 2007 due to an increase in health facilities providing the therapy. People were also more willing to seek treatment. Clients enrolled on antiretroviral therapy almost doubled from 2426 in 2006 to 4697 in 2007. The number of sites offering antiretroviral therapy also increased from 8 in 2006 to 11 in 2007. The ratio of males to females was almost 1:1 in 2007 (2144:2454) compared to 2006 when the females (1589) were more than twice the males (709).

Human resource

▪ Health centre staff load

The staff work load in the province is high. The total contacts seen in a period excluding weekends and holidays divided among the available qualified health workers in the health facilities in the province was 22.8 in 2005, 12.4 in 2006 and 19.3 in 2007.

Among the districts, average annual staff daily contacts reduced between 2005 and 2007 in Chavuma, Kabompo, Mwinilunga and Solwezi. The reduction in Chavuma was from 42.0 in 2005 to 26.7 in 2006 and 17.6 in 2007. The reduction Kabompo was by small margins from 28.4 in 2005 to 28.2 in 2006 and to 27.2 in 2007. The reduction in Solwezi was also by small margins from 14.3 in 2005 to 12.9 in 2006 and to 12.3 in 2007. An annual increase over this period was only recorded in Kasempa. The average staff daily contacts in the health centres were 14.3 in 2005, 12.9 in 2006 and 12.3 in 2007.

▪ Trained Traditional Birth Attendants

These provide basic safe motherhood services. They undergo a six weeks basic training in reproductive health. Ministry of Health policy requires that there should be one trained Traditional Birth Attendant per 1000 inhabitants.

There were a total of 493 trained Traditional Birth Attendants in the province in 2005. They increased to 525 in 2006 and reduced to 468 in 2007. This was also the trend in their average deliveries—15.6 in 2005, 16.0 in 2006 and 15.4 in 2007. Among the districts, the highest number of active trained Traditional Birth Attendants was in Solwezi. There were 189 in 2005, 231 in 2006 and 187 in 2007. The lowest number was in Chavuma. There were 13 in 2005, 16 in 2006 and 7 in 2007. The lowest average number of deliveries by trained Traditional Birth Attendants was also in Chavuma. It was 4.7 in 2005, 5.9 in 2006 and 7.4 in 2007. The highest average number of deliveries in 2005 was in Mwinilunga (16.9). In 2006, they were in Kabompo (19.6) and in 2007; they were also in Kabompo (22.8).

▪ Community Health Workers

CHWs are volunteer members of the community that undergo a six weeks training course in basic curative and preventive skills. CHWs live in communities that they serve. They refer serious cases to the health centre which serves the catchment area in which their community is for further investigations and management.

The number of active CHWs in the province reduced over the three years from 341 in 2005 to 322 in 2006 and to 210 in 2007. The average number of patients seen by the CHWs in the province was 931 in 2005, 1005 in 2006 and 325 in 2007. Among the districts in 2005, CHWs in Zambezi attended to the highest average number of patients (957) followed by Chavuma (870). This was also the case in 2006. CHWs in Zambezi attended to an average of 928 patients followed by those in Chavuma with an average of 636. In 2007 the highest average number of patients attended to by CHWs was in Kabompo (931) followed by Solwezi (329).

Availability of essential drugs

- **Drugs availability**

In 2007 tracer drugs were rarely continuously available in a whole month in the health centres and hospitals. Anti-malarial drugs were continuously available in the whole month for only 22 per cent of the months, paracetamol for 50 per cent of the months and cotrimoxazole for 50 per cent of the months. In hospitals, Fansidar was available in 46 per cent of the months, Amoxicillin for 49 per cent of the months and Benzyl-Penicillin for 47 per cent of the months.

- **Drug kit utilisation at health centres**

The essential drug kits packaged by the Ministry of Health have sufficient essential drugs for a 1000 patients given the diseases burden. It is expected that between 0.8 and 1.2 drug kits should be used per 1,000 patients' failure to which further investigation is required. Drug kit utilisation in health centres in the province reduced from 1.2 in 2005 to 1.1 in 2006 and to 0.8 in 2007 per 1000 patients.

Despite a decreasing trend as well, among the districts, the highest number of drug kits were used in Kasempa. In 2005 1.8, in 2006 1.5 and in 2007 1.1 drug kits per 1000 patients were used. In these respective years, the lowest drug kit utilisation which was also below the threshold was in Zambezi where 0.7, 0.6 and 0.4 drug kits were used in 2005, 2006 and 2007. Drug kit utilisation in Chavuma was also below the minimum threshold in 2007 when 0.5 drug kits were used per 1000 patients in the health centres. It was also below the threshold in Kabompo in 2007 when 0.7 drug kits were used per 1000 patients. Utilisation rates above the threshold of 1.2 which should also be investigated were 1.8 and 1.5 in Kasempa in 2005 and 2006 respectively, 1.3 in Mwinilunga in 2006 and 1.4 and 1.5 in 2005 and 2006 respectively in Solwezi.

Health service delivery indicators

▪ Health centre utilisation

1. Out patients: under 5 years

Under-fives utilised the health centres more than the older population in the province in 2005, 2006 and 2007. The per capita attendance in health centres was higher among the under-fives than among the population older than 5 years in 2005, 2006 and 2007. In the whole province the per capita attendance was at least three times higher among the under-fives than among the older population. The per capita attendance among the under-fives in the province also appears to have reduced from 3.62 in 2005 to 3.32 in 2006 and to 2.31 in 2007. Among the districts, the utilisation of health centres by the under-fives was the highest in Chavuma in each of the three years. It was 5.57 in 2005, 4.25 in 2006 and 3.14 in 2007. Solwezi recorded the lowest under-five outpatient department utilisation rates in the same period; 2.82 (2005), 2.73 (2006) and 1.86(2007).

2. Out patients: 5 years and older

Unlike among the under-fives, there was no clear trend in reduction of utilisation of the outpatient department over the three years among the population 5 years and older. However, there was a reduction in the health centre per capita attendances from 0.97 in 2006 to 0.72 in 2007. Among the districts, the highest health centre utilisation rate by the over-fives just as by the under-fives was also in Chavuma. It was 1.38 in 2005, 1.70 in 2006 and 1.16 in 2007. Solwezi recorded the lowest over-fives health centre per capita attendances of 0.72 (2005), 0.71 (2006) and 0.46 (2007).

▪ Bed occupancy rate

Bed occupancy rate is defined as the percentage of available beds occupied over a given period of time in a health facility. The bed occupancy rate in hospitals in the province reduced from 60 per cent in 2005 to 53 per cent in 2006 and to 50 per cent in 2007. The highest average bed occupancy rate in hospitals was in Mwinilunga. It was 45 per cent in 2005 57 per cent in 2006 and 53 per cent in 2007. Due to lack of a first level referral hospital, it was the lowest in Mufumbwe, 16 per cent in 2005, 19 per cent in 2006 and 12 per cent in 2007.

- **Maternal health**

- 1. Antenatal visits**

This indicator measures the health care pregnant women receive before they are able to give birth. First antenatal attendances in the province in 2005 and 2006 were high. Pregnant women who made an antenatal attendance in 2005 were 91 per cent and in 2006 97 per cent. Coverage in 2007 had dropped drastically to 75 per cent.

The recommended average number of visits per pregnancy is 4. The average number of visits in the province appears to have reduced from 3.3 in 2005 to 3.2 in 2006 and to 3.1 in 2007. It is only in Chavuma district that the average number of visits was above the recommended 4 visits. In Chavuma, the average number of visits was 5.2 in 2005, 4.8 in 2006 and 5.2 in 2007

- 2. Institutional deliveries**

These are deliveries conducted by either qualified health workers or trained traditional birth attendants in the facility. Deliveries by classified daily employees and untrained traditional birth attendants are not classified as supervised deliveries.

The percentage of deliveries that were supervised in the province from 2005 to 2007 was the lowest in 2007 (53 per cent). Among the districts in 2007, the percentage of supervised deliveries was the highest in Kasempa (68 per cent) and lowest in Zambezi district (40 per cent).

Among the districts, tTBAs delivered the highest percentage of babies in Mwinilunga. The percentage of expected deliveries they did in the district in 2005 was 47, in 2006 53 and in 2007 28. In contrast, the tTBAs in Chavuma delivered 3 per cent in 2005, 5 per cent in 2006 and 2 per cent in 2007.

However, most of the deliveries in Chavuma were in institutions. In 2005, 80 per cent, in 2006 78 per cent and in 2007 65 per cent of the expected deliveries in Chavuma were in health facilities. In contrast, 55 per cent in 2005, 52 per cent in 2006 and 33 per cent in 2007 were in health facilities in Mwinilunga.

- 3. Caesarean section rate**

Deliveries other than by spontaneous vertex are considered complicated. That includes caesarean section births. According to World Health Organisation standards, 15% of all deliveries must be by caesarean section in order to avert potential complications during attempted deliveries by spontaneous vertex. The percentage of deliveries conducted by caesarean section in the province in 2007 was far below 15 per cent. The highest was in Mwinilunga (8 per cent). There were no caesarean section deliveries in Mufumbwe and Chavuma. In Mufumbwe, that could have been compounded because it has no first level referral hospital with a hospital theatre.

4. Stillbirths

A still birth refers to infant death at delivery. The highest percentage was recorded in 2007 (4 per cent) with the least in 2006 (2 per cent) while in 2005 it stood at 3 per cent. Mwinilunga recorded the highest percentage of still births in 2007 (13 per cent) while the least was recorded by Kasempa (1 per cent).

5. Institutional maternal mortality rate

The indicator reflects the availability, accessibility, acceptability and quality of antenatal and delivery services. It is influenced by the quality of interventions designed to improve antenatal care, detection of high risk pregnancies, and provision of delivery services by a qualified attendant. There was a reduction in the maternal mortality rate in the health facilities in the province from 1.98 in 2005, to 1.74 in 2006 to 0.99 per 1,000 deliveries in 2007. Among the districts, the highest percentage was in Mwinilunga (1.61) while no maternal death was recorded in the health facilities in Chavuma.

6. Postnatal attendances

This is the proportion of new attendances at postnatal clinic against the estimated deliveries in catchment population at the given time. The national target is 80 per cent. The provincial coverage was below 50 per cent in 2005, 2006 and 2007. However, it improved from 28 per cent in 2005 to 33 per cent in 2006 and to 36 per cent in 2007. Coverage in some of the districts also improved. In Chavuma, coverage improved from 43 per cent in 2005 to 59 per cent in 2006 to 73 per cent in 2007. It also improved in Kasempa and Mufumbwe. It was 18 per cent in 2005, 19 per cent in 2006 and 25 per cent in

2007 in Kasempa. In Mufumbwe, it was 33 per cent in 2005, 35 per cent in 2006 and 41 per cent in 2007.

7. Family planning

The provincial rate of new family planning acceptors among women in the childbearing age group 15–49 years was 114.9 per 1000 women in 2005. It increased to 116.2 in 2006 and dropped to 96 per 1000 women in 2007. Among the districts, a reducing trend was observed in Chavuma where the rate increased from 272.6 in 2005 to 134.8 in 2006 and to 110.3 in 2007. It was also observed in Mwinilunga where the rate was 132.6 in 2005, 102.4 in 2006 and 92.0 in 2007. In Zambezi, the rate increased from 65.3 in 2005 to 75.4 in 2006 and to 88.6 in 2007. The trends were not clear in the other districts.

8. Pregnancies protected against tetanus

Pregnancies protected against tetanus protect the woman against tetanus and the unborn child against neonatal tetanus. The national target for pregnancies protected against tetanus is 80 per cent and the threshold is 70 per cent.

The provincial coverage increased from 76.6 per cent in 2005 to 80.1 per cent in 2006. It then reduced to 73.3 per cent in 2007. The threshold was attained in all the districts in all the three years except in Zambezi in 2005 (65.7 per cent) and in 2007 (57.2 per cent); in Kasempa in 2005 (55.4 per cent); and in 2007 (63.4 per cent).

▪ Child health

1. Expanded programme for immunisation

Full immunisation coverage refers to the number of children under the age of one who have completed the recommended series of immunisations. That is BCG and OPV0 from birth to 13 days, OPV, DPT Hib HepB1 at 6 weeks, OPV2, DPT2 Hib2 HepB2 after 4 weeks, OPV3. The national target is to fully immunise 80 per cent of the children under one. The threshold is 70 per cent.

There was an improvement in the provincial fully immunised coverage from 69.4 per cent in 2005 to 89.4 per cent in 2006. However, it dropped to 65.6 per cent in 2007, which was attributed to the shortage of BCG and OPV vaccines in third and fourth quarters

of the year. The same trend was observed in all the districts with a rise in 2006 and a drop in 2007. In 2006 all district except Chavuma (68.1 per cent) reached the threshold and Solwezi district had the highest coverage (101.7 per cent), followed by Zambezi (98.1 per cent), and then Mufumbwe (94.8 per cent). In 2007 only Mufumbwe (77.0 per cent), Solwezi (75.9 per cent) and Zambezi (69.6 per cent) managed to reach the threshold, with Kasempa (49.6 per cent) having the lowest coverage.

2. Growth monitoring

Underweight prevalence shows the short term nutritional status of under-five children who attend the child health clinic. The acceptable national minimum standard is that less than 10 per cent of the under-fives should be underweight.

There was a decline in the underweight prevalence in North-Western Province from 18.5 per cent in 2005 to 14.3 in 2006 and to 10.8 per cent in 2007. There was a decline in all the three years in all districts except in Kasempa in which it remained at 16.0 per cent in 2005 and 2006 but dropped to 10.7 per cent in 2007. These trends suggest that the nutritional status of under-fives in the province is improving.

Chapter 1: Background

1.1 Introduction

The main objective of this document is to provide trends of selected indicators on disease burden and service delivery in the province from 2005 to 2007. This bulletin presents data on indicators collected from the HMIS and those not captured in the main stream HMIS such as antiretroviral services and human resources. The indicators are compared by districts and two broad age groups namely under-fives and the rest of the older population. The report does not provide detailed explanations about the factors behind the trends in the indicators.

1.2 Geography and administration

North-western province shares international boundaries with the Democratic Republic of Congo on the north and east, Republic of Angola on the west, and provincial boundaries with western province on the south, central province on south-east and Copperbelt province on the east. There are seven districts in the province. These are Chavuma, Kabompo, Kasempa, Mufumbwe, Mwinilunga, Solwezi and Zambezi. Solwezi district is the headquarters of the provincial administration.

1.3 Demographic information

In 2007, the estimated population in the province was 731,093¹. There were more females (366,389) than males (364,704). The most populous district in the province was Solwezi with a population estimated at 250,418. The least populous was Chavuma with a population estimated at 36,812.

Table 1.1: Distribution of district population by selected age groups

District	Population distribution								Expected	
	Children			Women 15-49 years	Adults 15Years+	Total Males	Total Females	Pregnancies	Deliveries	Births
	0-11 months	> 5 years	5-14 years							
Chavuma	1,473	6,884	10,381	16,271	19,510	18,217	18,595	1,990		
Kabompo	3,654	19,095	25,125	39,194	47,143	45,305	46,057	4,933		
Kasempa	2,638	13,243	18,474	30,062	34,499	32,926	33,290	3,547		
Mufumbwe	2,241	11,855	15,882	24,787	28,984	28,361	28,360	3,023		
Mwinilunga	5,431	30,140	42,971	64,606	76,095	74,462	74,744	6,427		
Solwezi	10,017	47,079	68,615	116,945	134,725	125,504	124,914	13,529		
Zambezi	3,267	15,268	22,741	35,358	42,429	39,929	40,429	4,409		
Province	28,721	143,563	204,189	327,223	383,385	364,704	366,389	37,858		

1.4 Data sources

Data used to compile this report is from all public health institutions in the province and a few private institutions where the HMIS is running. The HMIS includes the Antiretroviral Information System (ARTIS), Integrated Disease Surveillance and Response (IDRS), Zambia Prevention Care and Treatment (ZPCT) reporting forms and the human resource establishment registers from the districts.

1.5 Limitations of this report

Data from most private health institutions was not included in this report as most private health institutions do not report in the HMIS. While every care was taken in the preparation and collection of this data, there is no guarantee that different sources have compiled or reported data in a consistent way.

Chapter 2: Disease burden

This chapter discusses the major causes of illnesses in the health facilities. It also covers notifiable diseases such as Acute Flaccid Paralysis, Measles, Tuberculosis and Dysentery. The disease burden is reported by its incidence and case fatality rates. The first part of this chapter looks at the top ten causes of morbidity in health facilities and also discusses the top five causes of illnesses by age groups in different districts. The second part of the chapter discusses the notifiable diseases Acute Flaccid Paralysis, Measles and Dysentery. The Chapter ends with a section on Anti-retroviral therapy services.

2.1 Major causes of illnesses

Table 2.1 presents information on the top ten causes of visitation to health facilities in the province in 2007. Malaria was the number one cause of morbidity among all age groups in the province with an incidence rate of 429.0 per 1000 population. Respiratory infection non-pneumonia was second with an incidence rate of 248.4 per 1000 population, then diarrhoea non-bloody (89.1 per 1000 population). The least in the top ten was intestinal worm (22.5 per 1000 population).

Table 2.1: Ten major causes of attendances at health facilities, North-Western Province, 2007

Disease	Incidence per 1,000 population		
	Under 5	5 years and above	Total
Malaria	1,185.3	241.6	429.0
Respiratory infection non-Pneumonia	665.6	145.0	248.4
Diarrhoea non-bloody	300.1	36.8	89.1
Muscular skeletal	5.9	70.9	58.0
Trauma : accidents, injuries, Burns	65.0	47.8	51.2
Respiratory infection Pneumonia	128.9	21.0	42.5
Eye infection s	128.7	18.2	40.2
Digestive system (not infectious)	52.4	32.6	36.5
Skin infection	83.4	21.0	33.4
Intestinal worms	48.5	16.0	22.5

Source: HMIS 2007, North-Western province

2.1.1 Malaria

Table 2.2 presents malaria incidence per 1000 population and case fatality rates per 1000 admissions (hospitals only) by age group. Overall; malaria was about five times higher among the under-fives than among the older age group. Among the districts, the incidence rate was highest among the under-fives in Zambezi district (1,809.7 per 1000 population) followed by Kasempa district (1,707.3 per 1000 population). It was the lowest in Mwinilunga district (803.8 per 1000 population).

The malaria case fatality rate in 2007 was slightly higher among the under-fives (26.8 per 1000 admissions) than among the older population (24.4 per 1000 admissions). Solwezi district recorded the highest case fatality rate (46.3 per 1000 admissions) followed by Kabompo district (26.9 per 1000 admissions) while Chavuma district had the lowest case fatality rate (3.9 per 1000 admissions) in all age groups. Mufumbwe district was not included in the analysis of the case fatality because there is no hospital.

Table 2.2: Malaria incidence and case fatality rates by age group in North-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
Chavuma	1 010.1	160.5	227.6	4.2	0	2.0
Kabompo	1 301.7	260.8	486.0	30.7	22.5	26.0

Kasempa	1 707.2	278.0	642.5	20.1	0.0	25.2
Mufumbwe	010.2	183.1	228.5			
Mwinilunga	802.8	222.4	224.8	10.8	21.7	22.2
Solwezi	1 070.0	212.8	286.1	66.8	28.4	46.2
Zambezi	1 809.7	306.1	606.8	16.4	21.5	18.0
Province	1,185.3	241.6	429.0	26.8	24.4	26.0

Source: HMIS 2007, North-Western Province

Malaria continues to be the leading cause of morbidity in North-Western Province. Figure 2.1 presents malaria incidence rate from 2005 to 2007. It indicates that malaria increased from 447.8 per 1000 population in 2005 to 469.6 per 1000 population in 2006 and reduced to 429.0 per 1000 population in 2007.

A comparison of malaria incidence by districts shows that in 2007 the incidence was highest in Kasempa district (642.5 per 1000 population) followed by Zambezi district (606.8 per 1000 population). The lowest incidence was in Mufumbwe (228.5 per 1000 population). Except for Kasempa and Zambezi, incidence rates decreased between 2006 and 2007. See Figure 2.1

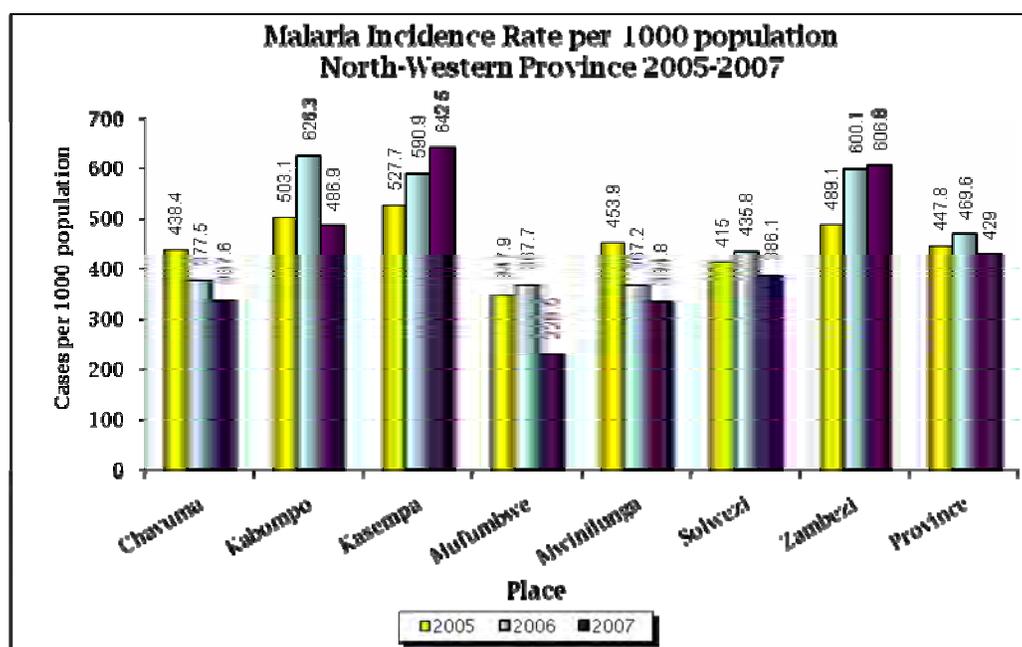


Figure 2.1: Malaria Incidence rate per 1000 population by district and year

2.1.2 Respiratory Infections (non-pneumonia)

Respiratory infections (non-Pneumonia) are defined as one or all of the following: cough, runny nose, sore throat; there is no fast or difficult breathing and no chest in-drawing, no stridor.

As shown in Table 2.3, in 2005, the incidence rate was seven times higher among under-fives (611.1 per 1000 population) than in the older population (88.1 per 1000 population). In the under-fives among the districts, the highest incidence rate was in Chavuma district (1,208.8 per 1000 population) followed by Zambezi district (867.1 per 1000 population). The lowest incidence rate was in Solwezi district (509.7 per 1000 population) in under five age group.

Overall, the case fatality rate was three times lower among the under-fives (13.9 per 1000 admissions) than among the older age group (48.2 per 1000 admissions) in 2007. The highest case fatality was in Kabompo district (55.3 per 1000 admissions) whilst the lowest was in Zambezi district (16.7 per 1000 admissions).

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
Chavuma	1,208.8	140.5	354.2	0	0	0
Kabompo	583.4	82.4	182.6	29.1	83.3	55.3
Kasempa	549.1	112.3	199.4	0	45.5	17.2
Mufumbwe	586.0	68.3	171.8			
Mwinilunga	551.3	61.4	156.1	14.1	30.6	17.2
Solwezi	509.7	86.7	171.3	19.4	40.8	26.3
Zambezi	867.1	120.5	269.8	6.3	38.0	16.7
Province	611.1	88.1	192.2	13.9	48.2	23.9

Source: HMIS 2007, North-Western Province

Figure 2.2 shows that the incidence rate of Respiratory Infections non-pneumonia in the province increased from 192.2 in 2005 to 284.4 per 1000 population in 2007.

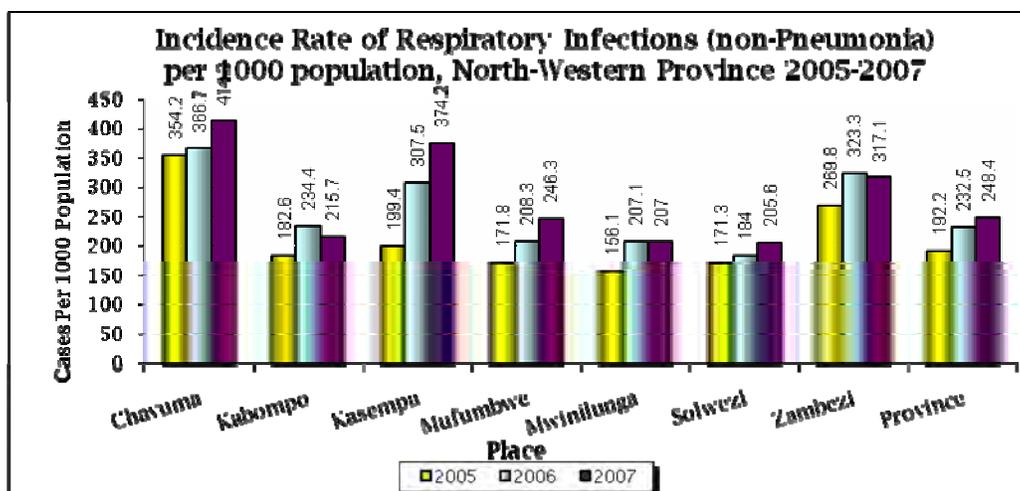


Figure 2.2: Incidence of respiratory infection (non-Pneumonia) per 1000 population by district and year

2.1.3 Diarrhoeal non-bloody

As shown in Table 2.4, the incidence rate of diarrhoea non-bloody in the health facilities in 2007 was the highest in Zambezi district at 133.1 per 1000 population. This was more than twice as high as the lowest incidence rate in Mwinilunga district at 62.7 per 1000 population. In 2007, the case fatality rate in the hospitals was the highest in Kasempa at 45.2 per 1000 admissions followed by Zambezi district at 36.4 per 1000 admissions.

Table 2.4: 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)		
	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Chavuma	300.9	39.0	91.4	22.4	28.6	23.7
Kabompo	322.6	39.9	96.5	37.7	64.5	45.2
Kasempa	396.3	46.1	116.0	49.8	8.2	35.8
Mufumbwe	340.0	43.8	103.0	18.7	0	13.7
Mwinilunga	219.8	25.0	62.7	19.2	12.8	17.6
Solwezi	258.6	32.0	77.3	29.1	23.5	27.2
Zambezi	439.4	56.5	133.1	19.0	81.3	36.4
Province	300.1	36.8	89.1	28.2	31.9	29.3

Source: HMIS 2007, North-Western Province

As shown in Figure 2.4, the annual incidence rate for diarrhoea non-bloody in the province fluctuated between 2005 and 2007. The incidence rate in

2005 was 82.4 per 1,000 population. It increased to 92.2 per 1,000 population in 2006 and then it decreased slightly to 89.1 per 1,000 in 2007.

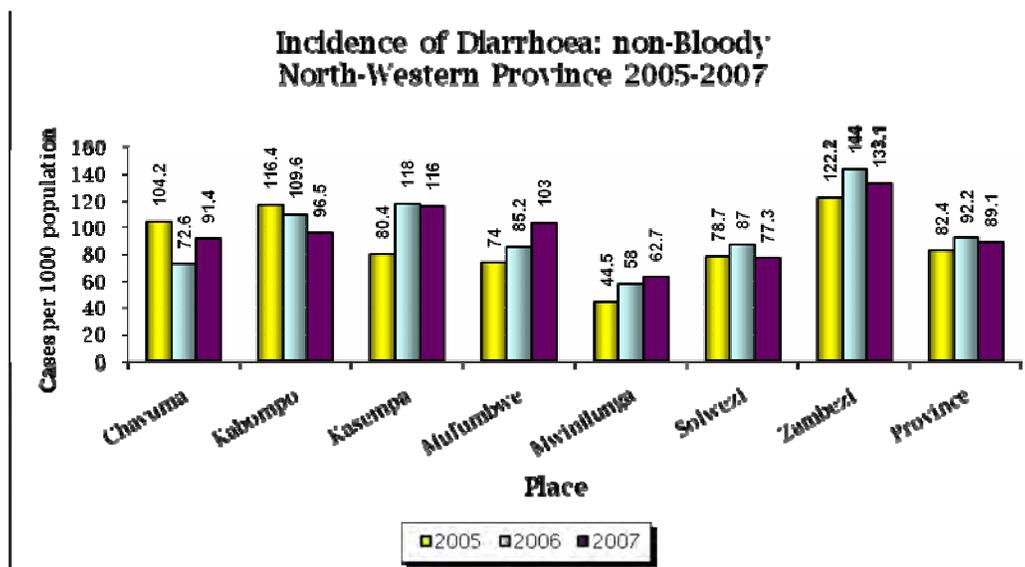


Figure 2.3: Incidence rate of diarrhoea non-bloody by district, 2005-2007

2.1.4 Muscular skeletal incidence

This refers to an acute or chronic pain in muscles or joints not related to recent injuries. Table 2.5 shows that muscular skeletal incidence rate was 14 times higher in the age group older than 5 years (70.9 per 1000 population) than among the under-fives (5.9 per 1000 population) in 2007. The highest incidence rate among the districts was recorded in Chavuma district (178.3 per 1000 population) followed by Kabompo district (107.1 per 1000 population). The incidence rate was the lowest in Solwezi district (30.1 per 1000 population).

The case fatality rate in hospitals from this ailment in the province in 2007 was 17.9 per 1000 admissions. Among the districts, the highest case fatality rate in all age groups was in Solwezi (45.5 per 1000 admissions). There were no fatal cases in the hospitals in Kabompo and Mwinilunga districts. There is no hospital in Mufumbwe district.

Table 2.5: Muscular Skeletal incidence and case fatality rates by age group, 2007

	Incidence rate per 1,000 population (All health facilities)	Case Fatality rate per 1,000 admissions (Hospitals only)

District	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Chavuma	6.4	221.2	178.3	0	0	0
Kabompo	5.0	132.7	107.1	0	0	0
Kasempa	13.4	64.2	54.0	0	18.5	13.3
Mufumbwe	8.8	38.8	32.8	-	-	-
Mwinilunga	4.6	67.7	55.5	0	0	0
Solwezi	3.5	36.7	30.1	0	49.5	45.5
Zambezi	8.2	72.4	59.5	0	24.4	20.8
Province	5.9	70.9	58.0	0	20.1	17.9

Source: HMIS 2007, North-Western Province

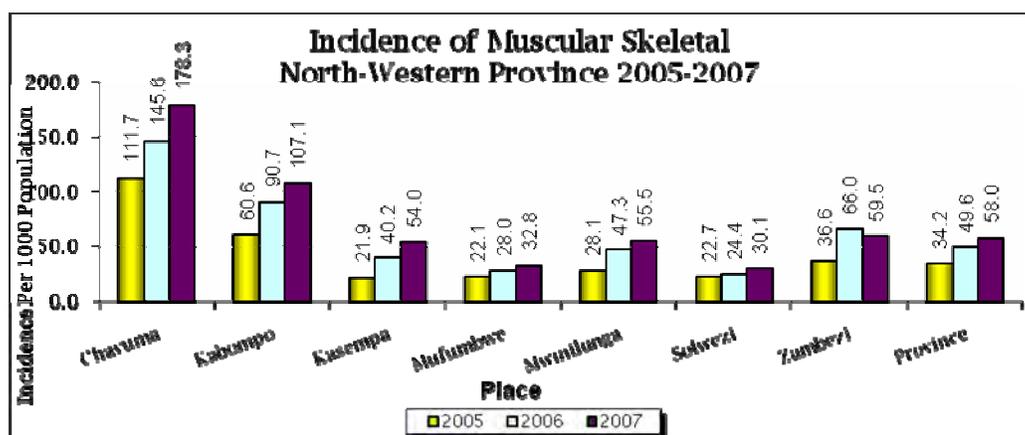


Figure 2-4: Incidence rate of muscular skeletal by district, 2005-2007

Figure 2-4 indicates that, the incidence has continued to increase in the past three years in the province. All districts show an increase trend in the three years, except Zambezi that recorded a reduction in 2007; from 144 per 1000 in 2006 to 133.1 per 1000 in 2007. Chavuma and Kabompo Districts recorded higher incidences of 178.3 per 1000 and 107.1 per 1000 respectively, while the least was Solwezi with 30.1 per 1000.

2.1.5 Trauma (accidents, injuries, wounds, burns)

Trauma comprises accidents, injuries, wounds, broken bones or burns which are inflicted or due to an accident.

Table 2.6 shows that the incidence rate of Trauma was higher among the under-fives than the older population. In the hospitals, however, the case fatality rate was higher among the under-fives than the older population. In the province, the incidence rate among the under-fives was 65.0 per 1000 population compared to 47.8 among the older population while the case fatality rate in hospitals was per 10.1 per 1000 admissions among the

under-fives compared to 13.4 per 1000 admissions among the older population.

Table 2.6: 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
Ch	65.8	53.6	55.2	25.7	0	8.8
Kabompo	62.7	50.2	52.0	0	2.6	2.1
Kasempa	74.5	82.5	80.0	16.7	8.7	10.2
Mufumbwe	47.0	27.0	30.2			
Mwinilunga	37.8	26.0	27.1	11	18.6	17.8
Solwezi	67.4	48.0	51.8	14.2	18.2	17.6
Zambezi	111.1	42.1	55.0	0	4.3	3.3
Province	65.0	47.8	51.2	10.1	13.4	12.7

Source: HMIS 2007, North-Western Province

As shown in Figure 2.5, the recorded incidence rate of trauma in the province was the lowest in 2005 between 2005 and 2007. The recorded incidence rate of Trauma in the province in 2005 was 45.7 per 1000 population. Among the districts in 2005, the incidence rate of Trauma was the lowest in Zambezi at 31.2 per 1000 population and highest in Kasempa at 62.9 per 1000 population

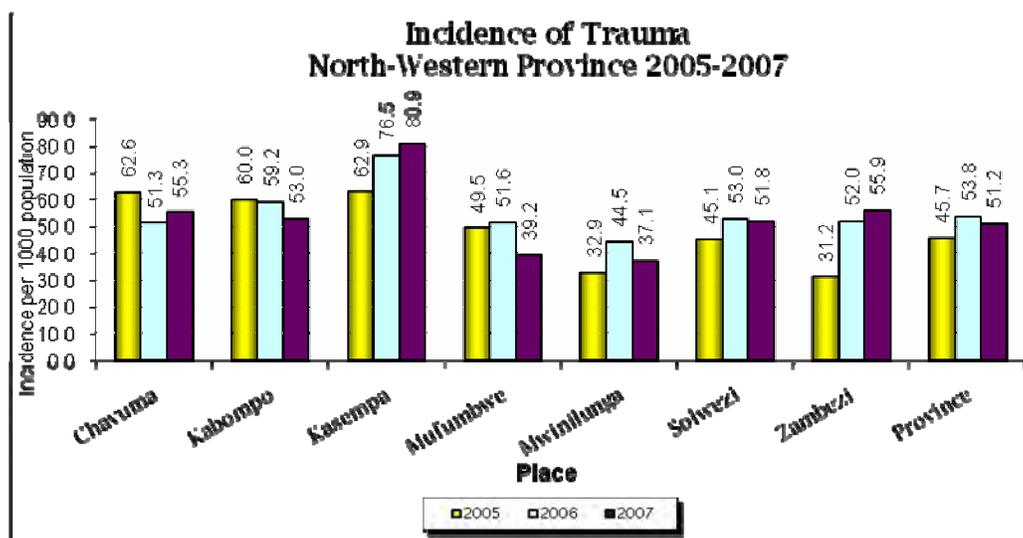


Figure 2.5: Incidence rate of trauma by district, 2005–2007

2.1.6 Respiratory infections–pneumonia

Pneumonia is defined as a cough and fast breathing, of 60 breaths or more per minute in neonates up to 2 months, chest in drawing in children aged 2 months up to 5 years or stridor in a calm child. In adults it is characterised by severe cough, difficulties in breathing, high fever, and chest pains with superficial breathing or coughed yellow sputum.

Figure 2.6 presents trends of respiratory infections–Pneumonia for the period 2005 to 2007. The province recorded a slight decrease in the incidence from 42.9 per 1000 in 2006 to 42.7 per 1000 in 2007. Zambezi recorded the highest incidence rate (58.2 per 1000) while Chavuma was the lowest with 17.5 per 1000. Kabompo and Kasempa Districts recorded the highest Case Fatality Rates of 79.3 per 1000 and 63.2 per 1000 admissions respectively, while Zambezi recorded the lowest case fatality rate 13.3 per 1000 admissions.

Table 2.7: Respiratory Infections (Pneumonia):

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Hospitals and Health Centres)		
	Under 5	5 years and above	Total	Under 5	5 years and above	Total
Chavuma	60.0	6.7	17.5	20.8	88.2	47.6
Kabompo	142.4	26.2	40.6	78.8	80.0	70.2
Kasempa	108.2	30.2	45.8	52.1	78.0	62.2
Mufumbwe	107.4	8.0	28.6	20.2	12.2	17.5
Mwinilunga	136.5	21.4	42.6	22.1	17.2	28.4
Solwezi	114.4	21.2	30.0	54.0	52.7	52.0
Zambezi	205.4	21.4	58.2	12.1	16.1	12.8
Province	128.9	21.0	42.5	43.6	48.7	45.4

Source: HMIS 2007, North-Western Province

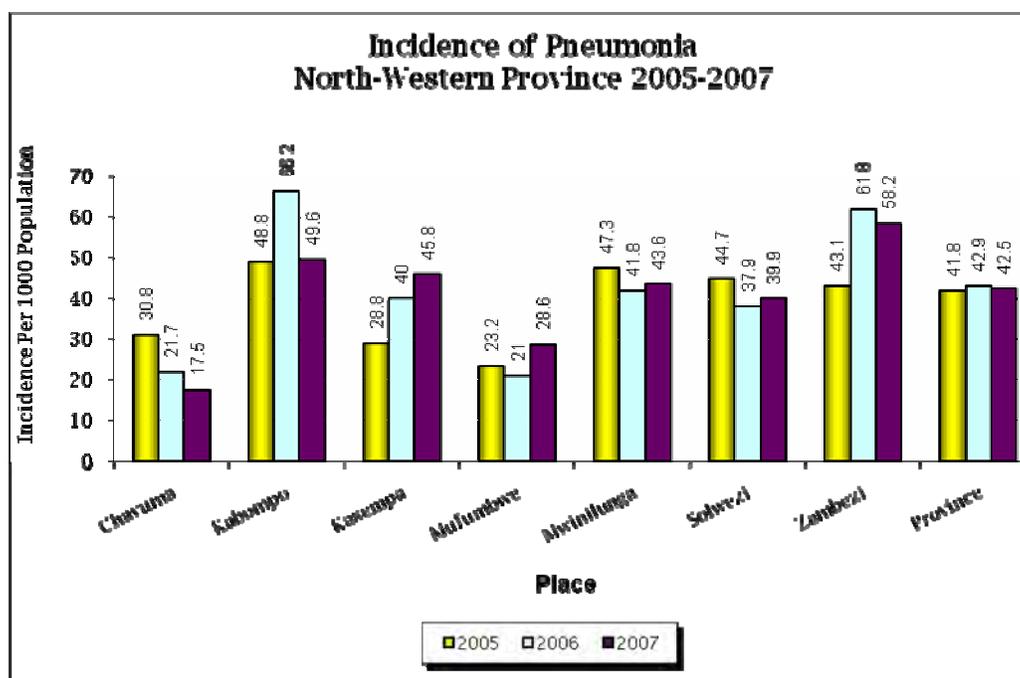


Figure 2.6: Incidence of pneumonia by district, 2005–2007

2.1.7 Eye infections

Eye infections present with watery or purulent discharge and the lashes may be stuck together on waking up. There is no pain or blurring of vision. Table 2.8 shows that the incidence of eye infections was much higher among the under-fives than among the older population. The incidence rate in the province was about seven times higher among the under-fives (128.7 per 1,000) than among the older population (18.2 per 1,000 population).

As shown in Figure 2.7, the province recorded a decrease in eye infections from 46.7 per 1,000 population in 2006 to 40.2 per 1,000 in 2007. All the districts recorded a reduction in 2007, except Mufumbwe. The highest incidence was recorded in Kabompo and the lowest was Solwezi.

Table 2.8: Eye infection incidence rate by age group and district, 2005 to 2007

District	Incidence rate per 1,000 population (All health facilities)		
	Under 5	5 years and above	Total
Chavuma	164.9	25.5	53.4
Kabompo	235.6	30.5	71.5
Kasempa	194.5	23.6	57.7
Mufumbwe	132.1	17.0	40.0
Mwinilunga	77.9	15.4	27.5
Solwezi	79.4	11.2	24.8
Zambezi	179.3	24.4	55.4

Province	128.7	18.2	40.2
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Source: HMIS

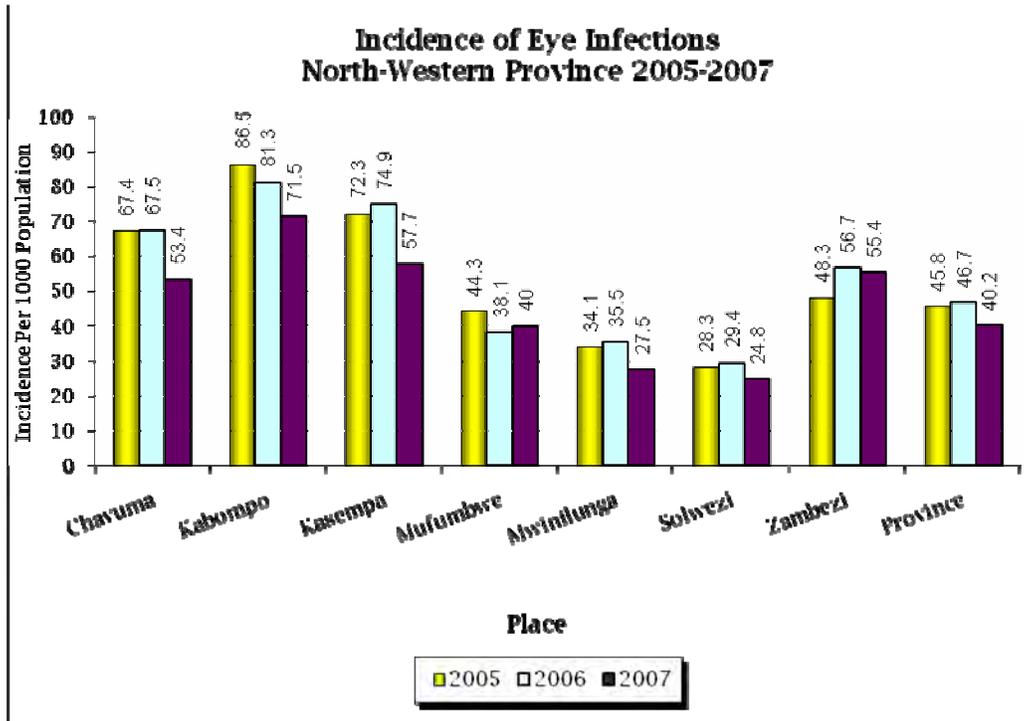


Figure 2.7: Incidence rate of eye infections, 2005–2007

2.2 Under-five patient case load

This is the proportion of the total under 5 outpatient department attendance out of the total outpatient department attendance in all the health facilities. The under five patient case load is used to assess the degree of accessibility and utilisation of curative services by this age group.

Table 2.9 shows the proportion of children under-fives case load out the total first attendances by districts from 2005 to 2007. There has been a decrease in the case load in the province from 2005 to 2007. With the exception of Chavuma district which recorded a drop then an increase (0.51, 0.37, and 0.40 in 2005, 2006 and 2007 respectively), all the other districts recorded a downward trend in the under-fives case load proportions between 2005 and 2007.

District	Proportion of children under 5 years case load		
	2005	2006	2007
Chavuma	0.51	0.37	0.40

Kabompo	0.53	0.49	0.41
Kasempa	0.49	0.41	0.41
Mufumbwe	0.57	0.50	0.47
Mwinilunga	0.55	0.41	0.38
Solwezi	0.48	0.48	0.46
Zambezi	0.54	0.48	0.45
Province	0.51	0.45	0.43

Source: HMIS North-Western Province

2.3 Under-five case fatality rates

The under five case fatality rate refers to the number of children under five years who die out of the total number of admissions in this age group in a health facility in a particular period. This is in line with Millennium Development Goals number four (MDG 4) to reduce mortality rates in children under five by two thirds by 2015.

Table 2.10 shows under-fives case fatality rates for the province by districts from 2005 to 2007. The table shows the province had an increase in under five CFR from 2005(31.1 per 1000) to 2006(39.7 per 1000), and reduced in 2007 (34 per 1000). In 2007 Solwezi and Kasempa showed the highest under five CFR (51.3 and 48.1 respectively), this was expected as these two districts have level two hospitals which also offer level one services and hence have more admissions.

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

District	Under 5 years mortality rate per 1000 admissions		
	2005	2006	2007
Chavuma	19.2	16.5	18.1
Kabompo	51.2	44.6	34.2
Kasempa	49.4	54.9	48.1
Mufumbwe	13.4	14.5	16.6
Mwinilunga	21.0	25.4	24.3
Solwezi	50.3	64.6	51.3
Zambezi	26.0	25.6	22.4
Province	31.1	39.7	34.0

Source: HMIS North-Western Province

2.4 Selected notifiable diseases

Notifiable diseases are diseases that should be reported to the responsible unit immediately they are diagnosed because they are preventable or very infectious and can cause suffering and death in the population. There are ten notifiable diseases in the HMIS, namely: Acute Flaccid Paralysis, Cholera,

Dysentery, Measles, Neonatal tetanus, Plague, Rabies, Tuberculosis, Typhoid fever, Yellow fever. These cases must be investigated and followed at each level of the service delivery system.

2.4.1 Acute flaccid paralysis

Acute flaccid paralysis is the sudden onset of weakness of the limbs without prior history of injury in a person under 15 years of age. The two main acute flaccid paralysis surveillance indicators are non-polio acute flaccid paralysis rate and stool adequacy rate. There would be at least a case of *non-polio acute flaccid paralysis* in every 100,000 children less than 15 years of age. Such cases have to be proven to be not due to the wild poliovirus². Zambia was declared polio free in November, 2005 on condition that no acute flaccid paralysis cases will be found positive for polio 5 years after the declaration³. The country should continue detecting Acute Flaccid Paralysis cases as neighbouring countries like the Democratic Republic of Congo and Angola are still reporting polio cases⁴.

All the detected cases should be adequately investigated by having two stool samples collected within 14 days of onset of paralysis. The stool specimen should be transported and tested at a WHO accredited national laboratory. The nationally accredited polio laboratory is at the University Teaching Hospital. Stool adequacy rate is the percentage of two stools collected within 14 days of onset of paralysis.

Table 2.11 shows acute flaccid paralysis surveillance indicators with expected and suspected cases per 100,000 population under 15 years. The expected number of cases in the province was 3.5 per 100,000 population under 15 years. The province managed to achieve 2.8 annualised non-polio acute flaccid paralysis rate (10 cases). However, even though this was achieved, no cases were detected in Chavuma, and Zambezi districts.

District	Number of Acute Flaccid Paralysis cases		Annualised non-polio Acute Flaccid Paralysis rate *	Stool adequacy*	
	Expected	Detected		Number	Percent
Chavuma	0.2	0	0	0	0
Kabompo	0.44	2	4.6	2	100
Kasempa	0.32	1	0.0	1	100
Mufumbwe	0.30	1	3.3	0	0
Mwinilunga	0.73	2	2.7	2	100

Solwezi	1.3	4	3.8	4	100
Zambezi	0.32	0	0.0	0	0
Province	3.52	10	2.8	9	90

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

The detection rate of acute flaccid paralysis cases steadily increased in the province from 0.9 in 2005 to 2.3 in 2006 and then to 2.8 in 2007 per 100,000 population under 15 years.

Stool adequacy rate

Stool adequacy rate is the percentage of acute flaccid paralysis stool specimen collected and transported at accepted conditions; two (2) stool specimens collected 24 hours apart, the size of 8–10 grams (or size of an adult thumb) from each case within fourteen days of onset of paralysis. The specimen must be transported using reverse cold chain at temperatures of +2 degree Celsius to +8 degree Celsius, temperatures where polio virus can survive. Specimen collected to reach the Virology Laboratory at UTH, Lusaka within 72 hours.

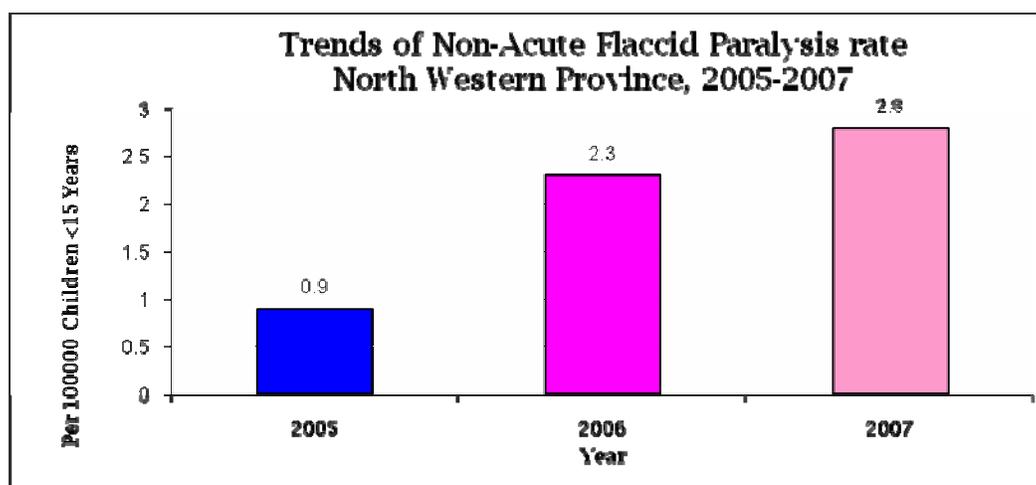


Figure 2.8: Non-acute flaccid paralysis rate, 2005–2007

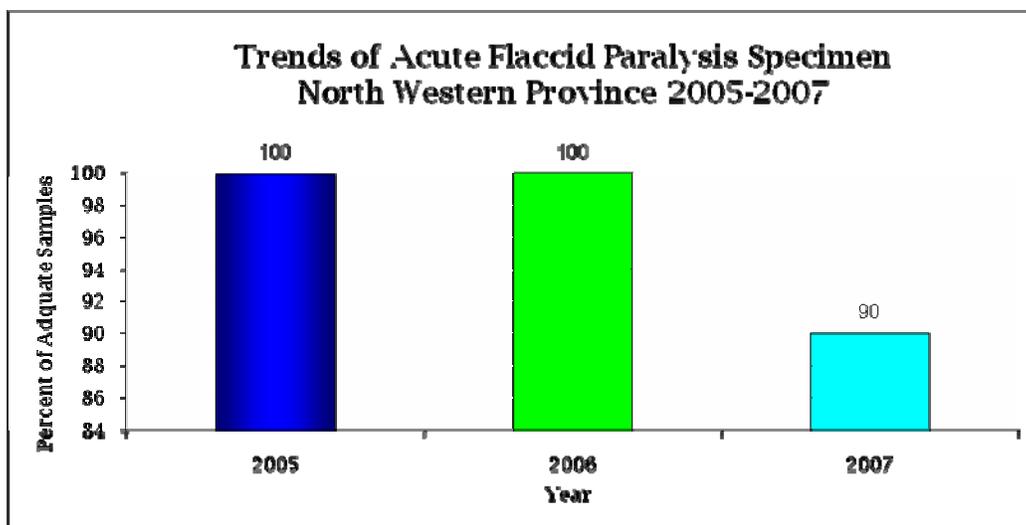


Figure 2.9: Stool adequacy rate, 2005–2007

Figure 2.9 shows stool adequacy from 2005 to 2007. Stool adequacy rate as an indicator should be objectively at 80 percent or more. It should be collected 24 hours apart and within 14 days from date of onset of paralysis. Stool specimen arriving at Virology Laboratory in good condition (moist and frozen or on ice) objectively should be at 90 percent or above. The province is above 90 percent on both objectives of stool adequacy rate and stool reaching Virology Laboratory in good condition⁵.

2.4.3 Measles

Measles is a highly infectious viral disease which mainly affects children. It may be fatal to children who are not immunised against the disease. Measles vaccine is administered at nine months to reduce the severity of measles. In a population of 100 children, 15 per cent will not sero-convert. The province was part of the national measles campaign of 2003 and 2007 respectively⁶. Each district is expected to report at least one case of suspected measles⁷.

Measles surveillance is focussed among the under-fives. Table 2.12 shows the suspected measles cases reported in the province by age and district in 2005, 2006 and 2007. In 2007, case detection was not good, as no cases were reported in Chavuma, Kasempa, Mufumbwe, Mwinilunga and Zambezi. The pattern of suspected cases detected has fluctuated over the past three years. Among the under fives, there were 86 suspected cases in 2005, 14 cases in 2006 and 59 suspected cases in 2007. The number of suspected cases among the population older than 5 years in 2005 (98) and 2006 (17)

was higher than among the population under-five in 2005 (86) and 2006 (14).

The annual incidence rate of suspected cases remained lower than 1 per cent among the under-fives in 2005 (0.6), 2006 (0.1) and 2007 (0.4).

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

District	Under-five years			5 years and above			Under-five Incidence		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Chavuma	17	0	0	32	0	0	2.5	0	0
Kabompo	0	2	1	0	1	1	0	0.1	0.1
Kasempa	1	0	0	1	0	0	0.1	0	0
Mufumbwe	4	0	0	1	3	0	0.3	0.0	0
Mwinilunga	0	5	0	2	10	1	0	0.2	0
Solwezi	17	6	58	19	3	37	0.3	0.1	1.2
Zambezi	47	1	0	43	0	0	3.0	0.1	0
Province	86	14	59	98	17	39	0.6	0.1	0.4

Source: HMIS North-Western Province

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

The ZDHS shows that the HIV prevalence in the province reduced from 9 per cent in 2001–2002⁸ to 7 per cent in 2007⁹. The primary objective of the health sector for HIV, AIDS, tuberculosis and STIs is to provide prevention, care, and treatment and supportive interventions to at least 80 per cent of people who need them as interim targets towards universal access by 2010.

3.1 HIV counselling and testing

Counselling and testing is a procedure that any person that wants or agrees to take an HIV test under goes. This is important because the person should understand what HIV is, what a positive or negative result implies and makes an informed decision to live a positive life whether positive or negative.

Table 3.1 shows data on the number of clients tested for HIV by district. The table shows that the overall number of clients tested for HIV increased three fold from 2005 to 2007. In 2005, 96.9 per cent of clients attending CTC services tested for HIV, 96.9 per cent and 94.4 per cent tested for HIV in 2006 and 2007 respectively. As can be seen, the acceptance rate for people taking an HIV test is above 80 per cent for all the districts in 2007. Table 3.1 shows that Zambezi and Mufumbwe recorded low numbers of clients testing for HIV in 2005 and 2006. This was because HIV/AIDS activities were intensified starting in 2006.

Table 3.1: Percentage of counselling and testing clients taking an HIV test

District	Number of counselling and testing clients					
	2005		2006		2007	
	Attended	Percentage tested for HIV	Attended	Percentage tested for HIV	Attended	Percentage tested for HIV
Chavuma	1107	100	1213	100.00	913	100.00
Kabompo	1250	100	2481	99.1	2698	98.81
Kasempa	729	84.63	902	77.71	1430	58.60
Mufumbwe	82	100	78	100.00	1082	100.00
Mwinilunga	127	100	1260	99.68	2665	99.70
Solwezi	1540	99.48	3750	97.63	6279	96.11
Zambezi	20	100	798	95.10	1184	96.96
Province	4885	96.92	10482	96.59	16251	94.38

Table 3.2 shows the HIV prevalence amongst clients that were tested for HIV in the districts. The HIV prevalence in clients who were counselled and tested in the province reduced from 33.7 per cent in 2005 to 19.2 per cent in 2007. Among the districts in the province, Solwezi recorded the highest HIV prevalence of 24.4 per cent while Chavuma recorded the lowest HIV prevalence of 9.5 per cent in 2007 among the clients of counselling and testing services.

Table 3.2: Percentage of counselling and testing clients tested for HIV found with HIV

District	Number of counselling and testing clients					
	2005		2006		2007	
	Tested	Percentage HIV positive	Tested	Percentage HIV positive	Tested	Percentage HIV positive
Chavuma	1107	10.93	1213	11.62	913	9.53
Kabompo	1250	18.56	2459	17.24	2666	13.50
Kasempa	617	63.65	701	41.91	838	40.09
Mufumbwe	82	32.92	78	20.51	1082	12.85
Mwinilunga	127	37.01	1256	23.96	2657	13.70
Solwezi	1532	47.39	3661	33.38	6035	24.43
Zambezi	20	65.00	757	21.13	1148	12.98
Province	4735	33.70	10125	26.14	15339	19.25

3.2 Prevention of mother to child transmission of HIV

This refers to interventions to reduce the risk of babies acquiring HIV from the mother. More than 90 per cent of HIV in children is as a result of mother to child transmission of HIV. This can occur during pregnancy, child birth, or breast feeding.

Table 3.3 shows the proportion tested for HIV at first antenatal visit. Only 35.1 per cent of women were tested at first visit for HIV in the province in 2007. This is attributed to few facilities that offer PMTCT services – 19 out of 144 health centres (13.2 per cent) in the province. Among the districts in 2007 the percentage tested for HIV at the first visit was the highest in Chavuma (61.2 per cent) and lowest in Mufumbwe (17.4 per cent). Performance was better in Chavuma partly because most mothers access antenatal services from the mission hospital which offers incentives to mothers to deliver from there.

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

District	Antenatal first visits	Tested for HIV	Percentage Tested
Chavuma	1944	1190	61.21
Kabompo	5672	2764	48.73
Kasempa	3784	1456	38.48
Mufumbwe	2909	507	17.43
Mwinilunga	7631	1436	18.82
Solwezi	12755	5049	39.68
Zambezi	3488	996	28.56
Province	38183	13398	35.08

Source: ZVCT Database/HMIS

3.3 HIV positive results

As shown in Table 3.4, the percentage of pregnant women who tested positive for HIV at first antenatal visit in 2007 was 8.95 per cent in the province. Solwezi District recorded the highest HIV prevalence in these women (13.2 per cent) while Chavuma District recorded the lowest (5.4 per cent).

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

District	Tested for HIV	Tested Positive	Percentage positive
Chavuma	1190	64	5.37
Kabompo	2764	159	5.75
Kasempa	1456	103	7.07
Mufumbwe	507	37	7.29
Mwinilunga	1436	105	7.31
Solwezi	5049	667	13.21
Zambezi	996	65	6.53
Province	13398	1200	8.95

Source: ZVCT Database

3.4 Antiretroviral prophylaxis

Antiretroviral therapy refers to the administration of some drugs to babies that were born to mothers with HIV immediately after birth or within 72 hours of birth to prevent HIV transmission from the mother.

Table 3.5 shows that only 21.4 per cent of the babies born to mothers with HIV were given antiretroviral therapy prophylaxis in the province in 2007. Among the districts, this percentage was the highest in Chavuma (45.7 per cent). It was the lowest in Mufumbwe and Mwinilunga districts (6.2 per cent and 6.9 per cent respectively).

Table 3.5: Proportion of expected infants exposed to HIV given antiretroviral prophylaxis by district, 2007.

District	Births exposed to HIV	Number given antiretroviral prophylaxis	Percentage of babies exposed to HIV given antiretroviral prophylaxis
Chavuma	127	58	45.7
Kabompo	316	111	35.1
Kasempa	227	66	29.1
Mufumbwe	194	12	6.2
Mwinilunga	412	33	8.1
Solwezi	868	231	26.6
Zambezi	282	25	6.9
Province	2426	465	21.4

Source: ZVCT database

3.5 Ever-enrolled on antiretroviral therapy

This refers to the cumulative number of patients who have ever been on antiretroviral therapy including those who died, still on therapy, transferred

out, lost to follow-up, or stopped the therapy. It does not include those who started the therapy elsewhere and have transferred to the current health facility.

Table 3.6 shows the cumulative number of patients ever enrolled on antiretroviral therapy by sex and by district between 2006 and 2007. It shows that the clients enrolled almost doubled from 2426 in 2006 to 4697 in 2007 in the province. The number of sites offering antiretroviral therapy also increased from 8 in 2006 to 11 in 2007. The ratio of males to females was almost 1:1 in 2007 (2144:2454) compared to 2006 when the females (1589) were more than twice the males (709).

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
Chavuma	0	0	0	0	0	0
Kabompo	86	152	238	178	328	506
Kasempa	17	322	339	280	422	702
Mufumbwe	0	0	0	54	101	155
Mwinilunga	70	175	245	150	306	456
Solwezi	515	707	1322	1351	1038	2389
Zambezi	11	233	244	131	259	390
Province	709	1589	2388	2144	2454	4598

Source: HMIS

Note: No data from Chavuma. Patients were referred to Zambezi because there were no facilities for antiretroviral therapy. Patients from Mufumbwe were also referred to Solwezi in 2006 because health facilities in Mufumbwe were not certified for antiretroviral therapy.

3.6 Ever-enrolled on antiretroviral therapy against target

Ever enrolled on therapy against target compares the actual number of clients started on antiretroviral therapy per district against the national targets provided by Ministry of Health for each district in 2006 and 2007.

Table 3.7 shows that the province exceeded the set target by 24 per cent in 2007. There was also an increase in the number of facilities offering antiretroviral therapy by about 30 per cent from 8 in 2006 to 11 in 2007. Targets in 2007 were exceeded in Kabompo, Kasempa, Solwezi and Zambezi districts. Chavuma district had not yet started providing antiretroviral therapy in this period, while Mufumbwe district has just begun to intensify its efforts in antiretroviral therapy service provision with support from Zambia Prevention Care and Treatment (ZPCT).

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

District	2006			2007		
	Target	On Therapy	per cent	Target	On Therapy	per cent
Chavuma	138	0	0.00	168	0	0.00
Kabompo	271	238	87.82	329	506	153.80
Kasempa	205	339	166.37	249	702	281.93
Mufumbwe	173	0	0.00	210	155	73.81
Mwinilunga	566	245	43.29	687	456	66.38
Solwezi	1375	13322	96.15	1669	2389	143.14
Zambezi	302	244	80.78	367	390	106.27

Province	3030	14388	474.8	3679	4598	124.97
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Source: HMIS

3.7 Currently on treatment by end the year

Currently on treatment refers to HIV positive patients who are taking antiretroviral therapy medication. It includes all patients that received ARV's, new transfers in, minus those who have died, lost to follow up, stopped or transferred out.

Table 3.8 shows patients currently on antiretroviral therapy by age and sex from 2006 to 2007. The number of children on antiretroviral therapy was still below the recommended threshold of 10-15 per cent of adults on antiretroviral therapy (144 children compared to 3087 adults) which was 4.45 per cent children of the adult on antiretroviral therapy in 2007 in the province. There were also more women (60.4 per cent) than men (37.1 per cent) accessing antiretroviral therapy services in 2007.

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	
Chavuma	0	0	0	0	0	0	0	0	0	0
Kabompo	6	26	47	86	165	6	2	124	229	361
Kasempa	11	6	119	203	339	14	12	277	365	668
Mufumbwe	0	0	0	0	0	4	4	35	64	107
Mwinilunga	5	4	39	135	183	6	6	90	216	318
Solwezi	24	26	372	562	984	40	37	564	786	1427
Zambezi	5	4	60	147	216	7	6	111	226	350
Province	51	66	637	1133	1887	77	67	1201	1886	3231

Source: HMIS

3.8 Tuberculosis notifications from 2005 to 2007

Table 3.9 shows that total cases notified in 2007 were 2137. Of this number, 50.4 per cent were males and 49.6 per cent were females. The majority of cases, 52.39 per cent were extra pulmonary due to the increase in HIV and tuberculosis co-infection. The majority of the notifications were in Solwezi district (38.88 per cent) and the least in Chavuma (3.28 per cent).

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

District	Sex	Notifications by tuberculosis type						Total
		Sputum Smear	Extra	Relapse	Others	Treatment	Treatment	

		Positive	Negative	pulmonary Tuberculosis	positive	previously treated	after default	after Failure	
Chavuma	Male	11	5	16	0	0	0	0	32
	Female	7	14	15	1	0	1	0	38
	Total	18	19	31	1	0	1	0	70
Kabompo	Male	27	18	50	1	4	2	0	102
	Female	23	16	83	2	9	1	1	135
	Total	50	34	133	3	13	3	1	237
Kasempa	Male	50	55	45	13	3	2	2	170
	Female	39	35	60	18	2	5	0	159
	Total	89	90	105	31	5	7	2	329
Mufumbwe	Male	4	9	25	0	5	0	0	43
	Female	6	8	20	0	4	1	0	39
	Total	10	17	45	0	9	1	0	82
Mwinilunga	Male	24	77	86	1	3	2	0	193
	Female	19	74	96	2	4	1	0	196
	Total	43	151	187	3	7	3	0	389
Solwezi	Male	176	145	111	1	9	3	0	445
	Female	133	128	108	0	10	5	0	384
	Total	309	273	219	1	19	9	0	829
Zambezi	Male	10	51	16	1	16	0	0	94
	Female	7	50	29	0	16	0	0	102
	Total	17	101	45	1	32	0	0	196
Province	Male	302	360	349	17	40	9	2	1079
	Female	234	325	411	23	45	14	1	1053
	Total	536	685	760	40	85	23	3	2132

Source: Tuberculosis database

3.9 Tuberculosis cure, completion and success rate

Table 3.10 shows that the cure rate increased from 62.6 per cent in 2005 to 71.9 per cent in 2007, which was below the nation target. Completion rate increased from 28.6 per cent in 2005 to 69.8 per cent and the treatment success rate increased from 88.6 per cent in 2005 to 88.8 per cent in 2007.

Mwinilunga and Chavuma Districts had the cure rate of 88.8 per cent and 87.5 per cent respectively above the national target of 85 per cent, while the other districts had the cure rate below the target with Kabompo recording the lowest rate of 60.0 per cent. Mwinilunga District had the highest completion rate of 81.4 per cent while Chavuma District had the lowest rate of 25 per cent. Solwezi District had the highest treatment success rate of 95.7 per cent while Chavuma District had the lowest rate of 75.8 per cent.

Table 3.9: Tuberculosis cure rate 2005 to 2007

District	Cure rate (per cent)			Completion rate (per cent)			Treatment success (per cent)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Chavuma	38.4	72.1	87.5	23	48.1	25.0	67	87.3	75.8

Kabompo	67.9	67.6	60.0	11	86.5	52.1	79	76.8	78.8
Kasempa	0	56.6	72.1	20	65.9	55.8	77	79.3	75.5
Mufumbwe	14.2	69.6	78.6	85	79.0	77.3	100	94.3	93.3
Mwinilunga	74	80.7	88.8	9	80.0	81.4	84	90.8	92.3
Solwezi	58.9	66.0	67.2	39	74.2	73.4	99	95.4	95.7
Zambezi	93.3	82.2	78.3	0	74.0	73.7	93	87.0	84.4
Province	62.6	67.8	71.9	28.6	67.6	69.8	88.6	88.7	88.8

Source: Tuberculosis database

3.10 Sexually transmitted infections (STIs)

STIs are infections or conditions that are acquired through having unprotected sexual intercourse or contact with an infected sexual partner. Table 3.11 shows STI incidence rate of 11.9 per 1000 in 2007 in the province. It shows a high incidence rate among the population 5 years and older and low incidence rate among the under-fives of 14.2 per 1000 and 2.9 per 1000 respectively. Mufumbwe district had the highest STI incidence rate of 24.8 per 1000 in under 5 years population, compared to other Districts in the province in 2007, while Zambezi District recorded the least incidence rate of 0.2 per 1000. On the other hand, Kasempa District had the highest STI incidence rate of 25.1 per 1000 in 5 years and above and the least being Mufumbwe District with an incidence rate of 9.8 per 1000.

District	Incidence rate per 1,000 population		
	Under 5	5 years and above	Total
Ch	4.6	12.5	10.0
Kabompo	0.0	16.0	12.0
Kasempa	0.2	25.1	20.2
Mufumbwe	24.8	9.8	12.8
Mwinilunga	1.5	16.6	13.6
Solwezi	0.0	11.1	9.0
Zambezi	0.2	12.5	9.8
Province	2.9	14.2	11.9

Source: HMIS

Figure 3.2 shows a representation of incidence of Sexually Transmitted Infections for North Western Province from 2005 to 2007.

The incidence rate of STIs slightly increased in 2006 and reduced in 2007 for the provincial picture. As for the districts, Solwezi showed a decline in the incidence rate from 2005 to 2007 while other districts had fluctuating figures in all the three years.

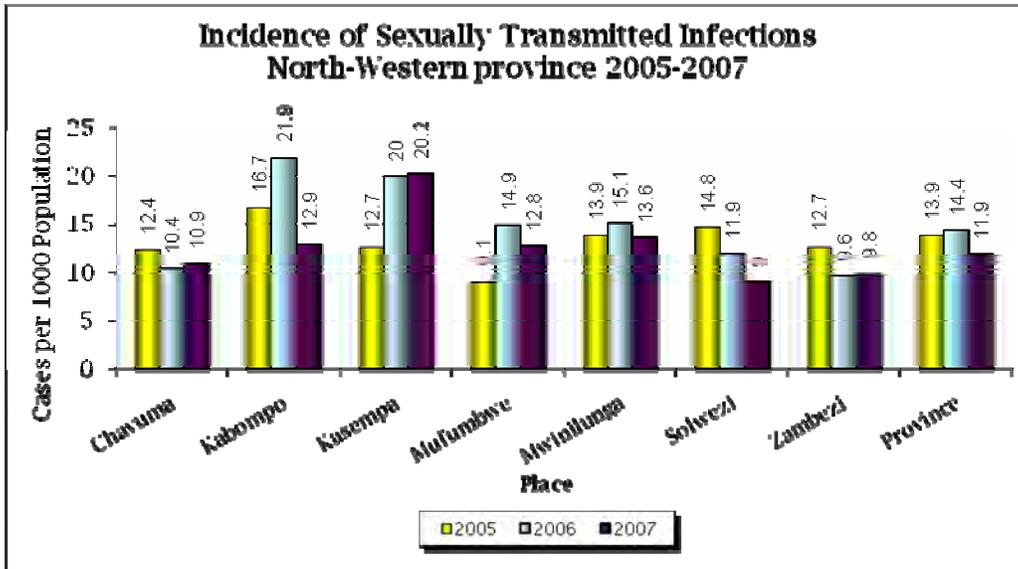


Figure 3.1: Incidence rate of sexually transmitted infections by district and year, 2005–2007

Chapter 4: Human Resources

4.1 Introduction

Human resources are essential for the delivery of quality health care services. This chapter highlights the number of medical personnel per district, health centre staff daily contacts, community health workers and trained traditional birth attendants.

4.2 Number of health personnel by district

As shown in Table 4.1, there was no medical doctor in Mufumbwe in 2007. The highest number of each staff cadre was in Solwezi and Chavuma fared the worst overall.

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

Districts	Medical Doctors	Clinical Officers	Nurses	Mid-wives	Staff Cadre Environmental Health Officers/ Technicians	Pharmacists	Laboratory Technicians	Others	Total
Chavuma	2	1	23	3	1	0	0	0	30
Kabompo	1	6	33	5	5	0	2	3	55
Kasempa	4	9	73	15	6	0	1	4	112
Mufumbwe	0	2	23	2	6	0	1	1	35
Mwinilunga	4	5	59	2	5	0	3	6	83
Solwezi	6	22	148	30	22	5	6	97	336
Zambezi	3	4	36	5	6	0	2	3	59
Province	20	49	395	62	51	5	15	7	118

Source: District Human Resource Register

4.3 Health centre staff daily contacts

This measures the average number of contacts each qualified health worker in a facility attends to over a period. The total contacts seen in a period excluding weekends and holidays is divided among the available qualified health workers in a health centre. Qualified health workers include Medical Doctors or physicians, clinical officers, environmental health technicians and nurses who work in outpatient departments, maternal and child health and inpatient departments.

Figure 4.1 shows the health centre daily staff contacts in the period 2005 to 2007. The staff work load in the province is high. The average contacts among the available qualified health workers in the health centres in the province was 22.8 in 2005, 12.4 in 2006 and 19.3 in 2007.

Among the districts, average annual staff daily contacts reduced between 2005 and 2007 in Chavuma, Kabompo, Mwinilunga and Solwezi. The reduction in Chavuma was from 42.0 in 2005 to 26.7 in 2006 and 17.6 in 2007. The reduction Kabompo was by small margins from 28.4 in 2005 to 28.2 in 2006 and to 27.2 in 2007. The reduction in Solwezi was also by small margins from 14.3 in 2005 to 12.9 in 2006 and to 12.3 in 2007. An annual increase over this period was only recorded in Kasempa. The average staff daily contacts in the health centres were 14.3 in 2005, 12.9 in 2006 and 12.3 in 2007.

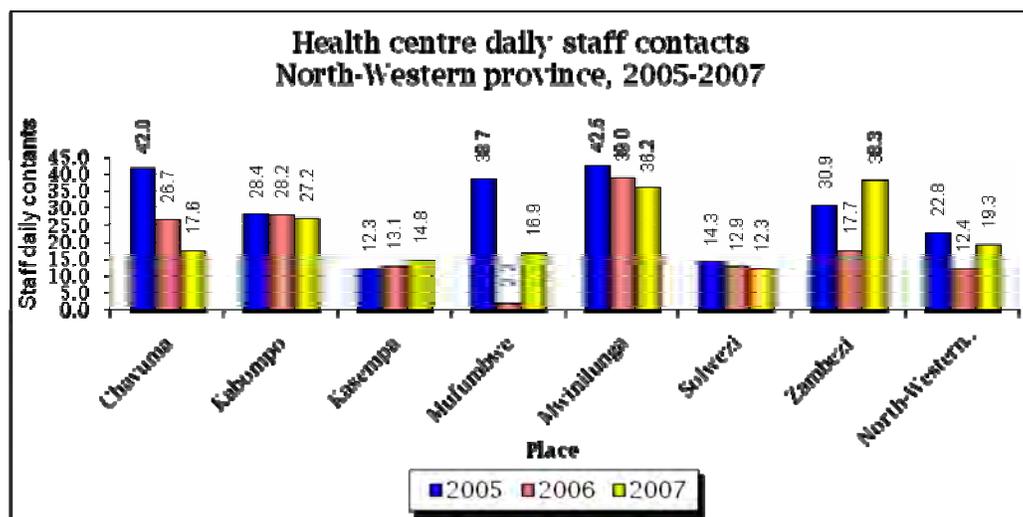


Figure 4.1: Daily staff contacts by district, 2005-2007

4.4 Community health volunteers

These are community-based volunteers chosen by community members. This cadre consists of Community Health Workers and trained Traditional Births Attendants (tTBAs).

4.5 Trained traditional birth attendants (tTBAs)

These provide basic safe motherhood services. They undergo a six weeks basic training in reproductive health. Ministry of Health policy requires that there should be one tTBA per 1000 inhabitants.

As shown in Table 4.2, there were a total of 493 tTBAs in the province in 2005. They increased to 525 in 2006 and reduced to 468 in 2007. This was also the trend in their average deliveries-15.6 in 2005, 16.0 in 2006 and 15.4 in 2007. Among the districts, the highest number of active tTBAs was in Solwezi. There were 189 in 2005, 231 in 2006 and 187 in 2007. The lowest number was in Chavuma. There were 13 in 2005, 16 in 2006 and 7 in 2007. The lowest average number of deliveries by tTBAs was also in Chavuma. It was 4.7 in 2005, 5.9 in 2006 and 7.4 in 2007. The highest average number of deliveries in 2005 was in Mwinilunga (16.9). In 2006, they were in Kabompo (19.6) and in 2007; they were also in Kabompo (22.8).

Table 4.2: Number of active tTBAs and deliveries done, 2005-2007

District	2005			2006			2007		
	Active tTBAs	Deliveries		Active tTBAs	Deliveries		Active tTBAs	Deliveries	
		Actual	Average		Actual	Average		Actual	Average
Chavuma	13	61	4.7	16	93	5.9	7	54	7.4
Kabompo	42	666	15.9	35	676	19.6	31	714	22.8
Kasempa	37	393	10.5	44	358	8.1	39	352	9.0
Mufumbwe	28	357	12.7	21	383	18.2	24	372	15.5
Mwinilunga	159	2690	16.9	162	3145	19.4	157	2302	14.6
Solwezi	189	3177	16.8	231	3567	15.4	187	3088	16.5
Zambezi	25	346	13.8	16	184	11.3	23	308	13.7
Province	493	7689	15.6	525	8406	16.0	468	7190	15.4

Source: HMIS

4.6 Community health workers (CHWs)

CHWs are volunteer members of the community that undergo a six weeks training course in basic curative and preventive skills. Ministry of Health policy states that one CHW should serve a population of 500 inhabitants. CHWs live in communities that they serve. They refer serious cases to the health centre which serves the catchment area in which their community is further investigations and management.

As shown in Table 4.3, the number of active CHWs in the province reduced over the three years from 341 in 2005 to 322 in 2006 and to 210 in 2007. The average number of patients seen by the CHWs in the province was 931 in 2005, 1005 in 2006 and 325 in 2007.

Among the districts in 2005, CHWs in Zambezi attended to the highest average number of patients (957) followed by Chavuma (870). This was also the case in 2006. CHWs in Zambezi attended to an average of 928 patients followed by those in Chavuma with an average of 636. In 2007 the highest

average number of patients attended to by CHWs was in Kabompo (931) followed by Solwezi (329).

Table 4.3: Number of active Community Health Workers and patients attended to by community health workers, 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
Chavuma	28	53307	870	30	109975	636	4	805	201
Kabompo	45	61905	376	40	45721	150	11	10241	931
Kasempa	19	9492	486	39	10655	347	12	3648	317
Mufumbwe	19	8670	456	13	7024	540	12	2163	180
Mwinilunga	87	58320	668	88	44788	509	86	26776	311
Solwezi	102	47437	467	94	47053	498	64	20868	329
Zambezi	40	78776	957	30	56861	928	22	3750	169
Province	341	317907	931	322	322077	1005	210	68251	325

Source: HMIS

Chapter 5: Availability of Drugs

5.1 Introduction

Drug availability is an important component of the delivery of health services.

The drugs and supplies indicators monitor the following:

1. Utilisation of basic drugs and supplies
2. Stock management, to avoid outages and overstocking
3. Prescription patterns, to support the rational use of pharmaceuticals.

These indicators have been chosen to support efficient management of drugs and supplies in a pool system, in which districts and institutions order supplies as needed.

5.2 Medical supplies in stock at health facilities

The indicator measures the proportion of months during a time period that indicator supplies were in stock throughout the month. At the end of the month the health centre staff notes from a stock control card whether there was any occasion in the previous month when a critical drug or supply was out of stock, that is, when the stock level reached zero. The indicator gives a rough measure of the proportion of time that critical supplies have been in stock.

5.3 Availability of tracer drugs by health centre and hospital

This section looks at drugs availability for health centres and hospitals. Table 5.1 shows the percentage of months for which drugs were in stock in 2005–2007. Over this period, the availability of drugs at health centres and hospitals dropped drastically with no district having drugs for more than 50 per cent of the months in 2007. In 2005, the districts had drugs for 65 per cent of the months, in 2006, for 69 per cent of the months and in 2007, for 49 per cent of the months.

Availability of drugs was better in hospitals than in health centres in the three years 2005–2007. Drugs were in stock in 63 per cent of the months in health centres compared to 71 per cent of the months in 2005. Respective percentages in 2006 were 62 and 76 and in 2007, 41 and 46.

The best stock-in in 2007 was recorded in Kasempa with drugs available for 42 per cent of the months in health centres and for 66 per cent of the months in hospitals. The least stocked was Mufumbwe with drugs available for 46 per cent of the months in health centres. The months for which drugs were in stock in health centres varied from 2005 to 2007. Among the districts, drug availability was the highest in Mufumbwe with drugs available 79 per cent of the months in 2005. At 57 per cent of the months, this was the lowest in Chavuma. In 2006, this was the highest in Kasempa at 72 per cent of the months and lowest in Kabompo at 50 per cent of the months.

District	Health centre months in stock (Percentage)			Hospitals months in stock (Percentage)			Summary of percentage of months in stock (Percentage)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Chavuma	57	66	43	–	–	–	57	66	43
Kabompo	59	50	37	100	99	63	80	75	50
Kasempa	64	72	42	50	66	66	57	69	54
Mufumbwe	79	65	46	14	44	–	47	55	23
Mwinilunga	64	54	37	80	90	48	72	72	43
Solwezi	61	66	42	91	89	58	76	78	50
Zambezi	63	58	38	98	93	57	81	76	48
Province	63	62	41	71	76	46	67	69	49

Source: HMIS

5.4 Drug kit utilisation at health centres

The indicator seeks to measure the number of essential drug kits opened and used per 1000 patients over a period of time and also ensure proper management and use of Health Centre drugs. A standard drug kit should be able to serve a population of 1000 patients. There should be an investigation on the misuse of drugs if more than 1.2 kits per 1000 patients or less than 0.8 kits per 1000 patients are opened. The investigations can be done through a drug store and patient register review.

In 2007 tracer drugs were rarely continuously available in a whole month in the health centres and hospitals. Anti-malarial drugs were continuously available in the whole month in health centres for only 22 per cent of the months, paracetamol for 50 per cent of the months and cotrimoxazole for 50 per cent of the months. In hospitals, Fansidar was available for the whole month in 46 per cent of the months, Amoxicillin for 49 per cent of the months and Benzyl-Penicillin for 47 per cent of the months.

Table 5.2: Percentage of months in which tracer drugs were available, 2007

District	Health centre			Hospital		
	Anti-malarial	Paracetamol	Cotrimoxazole	Fansidar	Amoxicillin	Benzyl Penicillin
Chavuma	54	51	49	0	0	0
Kabompo	46	54	46	63	63	63
Kasempa	33	55	48	75	75	75
Mufumbwe	2	55	62	0	0	0
Mwinilunga	19	49	38	38	38	50
Solwezi	15	47	55	58	67	58
Zambezi	20	43	63	63	75	54
Province	22	50	50	46	49	47

Source: HMIS

Figure 5.1 presents data on drug kits opened in the health centres per 1000 patients by district and year. Drug kit utilisation in health centres in the province reduced from 1.2 in 2005 to 1.1 in 2006 and to 0.8 in 2007 per 1000 patients.

Despite a decreasing trend as well, among the districts, the highest number of drug kits were used in Kasempa. In 2005 1.8, in 2006 1.5 and in 2007 1.1 drug kits per 1000 patients were used. In these respective years, the lowest drug utilisation was in Zambezi where 0.7, 0.6 and 0.4 drug kits were used in 2005, 2006 and 2007. These levels of utilisation should be investigated because they were below the minimum threshold. Drug kit utilisation in Chavuma was also below the minimum threshold in 2007 when 0.5 drug kits were used per 1000 patients in the health centres. It was also below the threshold in Kabompo in 2007 when 0.7 drug kits were used per 1000 patients. Utilisation rates above the threshold of 1.2 which should also be investigated were 1.8 and 1.5 in Kasempa in 2005 and 2006 respectively, 1.3 in Mwinilunga in 2006 and 1.4 and 1.5 in 2005 and 2006 respectively in Solwezi.

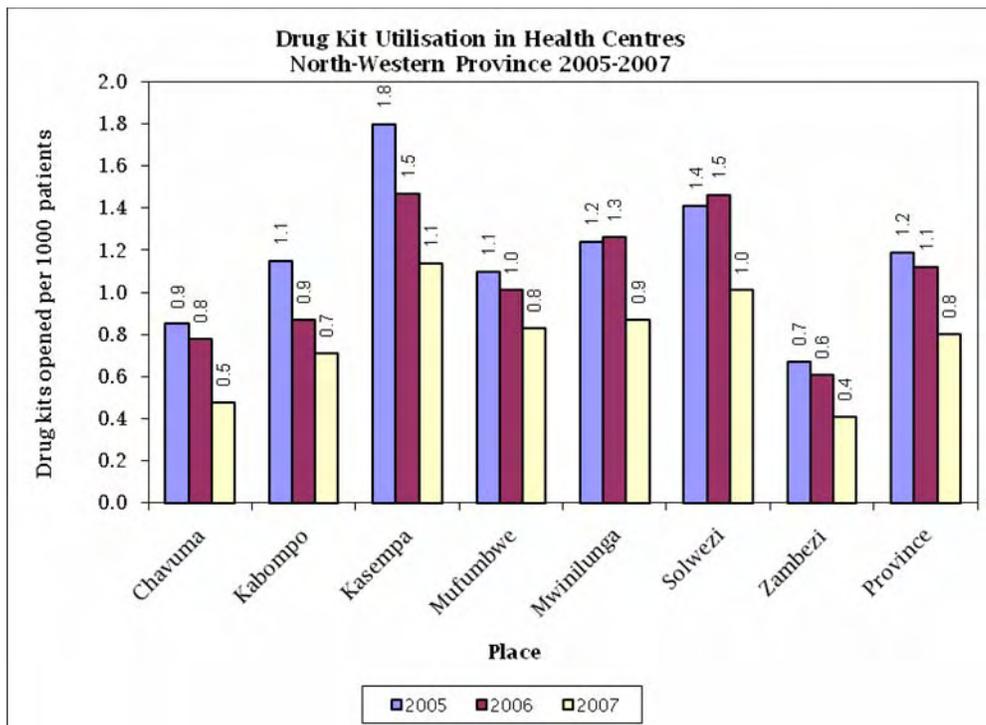


Figure 5.1: Drug kit utilisation by district, 2005-2007

Chapter 6: Health Services Delivery Indicators

6.1 Introduction

These indicators reflect the amount and kind of services that are being offered by health personnel in the health care system. They include health service performance indicators such as health centre utilisation, maternal health, family planning indicators and child health indicators.

6.2 Health facility utilisation

Table 6.1 presents a summary of health service indicators for the period 2005 to 2007. In 2005, health centre outpatient department utilisation rose steadily in 2005 and 2006 however stabilised in 2007, the same with health centre and hospital bed occupancy rate.

Table 6.1: Trends of selected service delivery indicators by year

Indicator	Period in years		
	2005	2006	2007
Health centre outpatient department utilisation	0.87	0.95	0.69
Health centre under 5 per capita attendance	3.62	3.32	2.31
Health centre over 5 per capita attendance	0.84	0.97	0.72
Health centre bed occupancy rate (per cent)	17	19	19
Hospital bed occupancy rate (per cent)	60	52	50
Hospital average length of stay	7.9	202.4	6.2

Source: HMIS

6.3 Outpatient department utilisation

This indicator measures the number of patients who seek medical attention for the first time or revisit a health centre or hospital. As shown in Table 6.2, the outpatient department utilisation rate in the province reduced from 1.40 in 2005 to 1.44 in 2006 and to 1.04 in 2007.

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

District	Outpatient department utilisation rate		
	2005	2006	2007
Chavuma	2.22	2.21	1.55
Kabompo	1.46	1.77	1.23

Kasempa	1.21	1.51	1.14
Mufumbwe	1.36	1.13	0.97
Mwinilunga	1.38	1.37	0.99
Solwezi	1.14	1.11	0.74
Zambezi	1.96	2.21	1.56
Province	1.40	1.44	1.04

Source: HMIS

6.3.1 Health centre per capita attendance

As shown in Table 6.3, the per capita attendance in health centres was higher among the under-fives than among the population older than 5 years in 2005, 2006 and 2007. In the whole province the per capita attendance was at least three times higher among the under-fives than among the older population. The per capita attendance among the under-fives in the province also appears to have reduced from 3.62 in 2005 to 3.32 in 2006 and to 2.31 in 2007.

Unlike among the under-fives, there was no clear trend in reduction of utilisation of the outpatient department over the three years among the population 5 years and older. However, there was a reduction in the health centre per capita attendances from 0.97 in 2006 to 0.72 in 2007. Among the districts, the highest health centre utilisation rate by the over-fives just as by the under-fives was also in Chavuma. It was 1.38 in 2005, 1.70 in 2006 and 1.16 in 2007. Solwezi recorded the lowest over-fives health centre per capita attendances of 0.72 (2005), 0.71 (2006) and 0.46 (2007).

Table 6.3: Health centre per capita attendances North-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
Chavuma	5.57	1.38	6.95	4.25	1.70	5.95	3.14	1.16	4.30
Kabompo	3.81	0.88	4.69	4.16	1.17	5.33	2.51	0.91	3.42
Kasempa	2.99	0.76	3.75	3.10	1.11	4.21	2.21	0.87	3.08
Mufumbwe	3.83	0.74	4.57	2.74	0.73	3.47	2.33	0.62	2.95
Mwinilunga	3.74	0.82	4.56	3.04	0.97	4.01	2.05	0.73	2.78
Solwezi	2.82	0.72	3.54	2.73	0.71	3.44	1.86	0.46	2.32
Zambezi	5.22	1.15	6.37	4.82	1.26	6.08	3.64	1.04	4.68
Province	3.62	0.84	4.46	3.32	0.97	4.29	2.31	0.72	3.03

Source: HMIS

6.3.2 Bed occupancy rate–health centre and hospital

Bed occupancy rate is defined as the percentage of available beds occupied over a given period of time in a health facility. As shown in Table 6.4, the bed occupancy rate in hospitals in the province reduced from 60 per cent in 2005 to 53 per cent in 2006 and to 50 per cent in 2007. The highest average bed occupancy rate in hospitals was in Mwinilunga. It was 45 per cent in 2005 57 per cent in 2006 and 53 per cent in 2007. Due to lack of a first level referral hospital, it was the lowest in Mufumbwe, 16 per cent in 2005, 19 per cent in 2006 and 12 per cent in 2007.

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
Chavuma	21	18	22	45	34	44	33	26	33
Kabompo	17	13	8	73	48	38	45	31	23
Kasempa	11	10	14	68	67	78	40	39	46
Mufumbwe	21	14	18	16	19	12	19	17	15
Mwinilunga	16	34	38	74	79	67	45	57	53
Solwezi	11	11	10	42	42	42	27	27	26
Zambezi	41	31	32	59	52	34	50	42	33
Province	17	19	19	60	53	50	39	36	35

Source: HMIS

Table 6.5 presents Hospital outpatient department utilisation which shows non utilisation in Chavuma and Mufumbwe due to lack of hospital facilities.

Table 6.5: Hospital outpatient department utilisation

District	Outpatient department utilisation rate		
	2005	2006	2007
Chavuma	0	0	0
Kabompo	0.10	0.07	0.05
Kasempa	0.52	0.31	0.35
Mufumbwe	0	0	0
Mwinilunga	0.07	0.06	0.04
Solwezi	0.09	0.07	0.06
Zambezi	0.27	0.31	0.23
Province	0.13	0.11	0.09

Source: HMIS

6.3.3 Hospital outpatient department percentage by-pass first attendances

This indicator measures the proportion of outpatient department first attendants who by-passed health centres and went to Hospitals directly. A high percentage signifies a problem in the Health Centres. Table 6.6 indicates Zambezi as the highest in Hospital outpatient department by-pass first attendances whilst Chavuma and Mufumbwe recorded the lowest due to absence of Hospital facilities.

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
Chavuma	0	0	0	0	0	0	0	0	0
Kabompo	71	56	56	43	32	21	57	46	38.5
Kasempa	43	32	33	23	16	18	33	24	25.5
Mufumbwe	0	0	0	0	0	0	0	0	0
Mwinilunga	37	45	60	22	24	27	29.5	34.5	43.5
Solwezi	65	56	52	52	47	45	58.5	51.5	48.5
Zambezi	88	89	90	73	76	78	80.5	82.5	84
Province	64	68	65	42	43	40	53	55.5	52.5

Source: HMIS

6.3.4 In-patient turnover rate

This measures the number of admissions per bed in a period. As shown in Table 6.7, the health centre inpatient turnover has decreased in the past three years from 6.0 in 2005, to 5.5 in 2006 and to 4.9 in 2007 whereas the hospital inpatient turn-over has increased from 6.8 in 2005, to 7.0 in 2006 and to 7.2 in 2007. Among the districts, both health centre and hospital inpatient turn-over in 2007 were highest in Kasempa at 7.5 and 9.9 respectively.

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
Chavuma	5.1	4.7	4.8	5.1	4.6	3.9
Kabompo	3.5	3.6	2.9	5.0	5.0	4.8
Kasempa	5.3	5.3	7.5	7.4	7.8	9.9
Mufumbwe	3.7	4.5	7.4	7.2	4.3	2.9
Mwinilunga	5.1	7.1	6.9	7.0	8.5	7.7
Solwezi	3.5	5.1	3.2	9.3	8.2	9.6
Zambezi	8.0	6.6	6.4	5.9	6.4	6.6
Province	6.0	5.5	4.9	6.8	7.0	7.2

6.3.5 Average length of stay

The indicator measures the average number of days a patient stays in an inpatient health facility. Table 6.8 presents a decreasing hospital average length of stay for the province from 7.9, 6.9 to 6.2 in the past three years. Shown in the table is an above threshold length of stay (6 days) in most districts except for Mufumbwe where there was no district hospital.

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

District	Hospital average length of stay		
	2005	2006	2007
Chavuma	8.0	6.6	10.2
Kabompo	13.0	8.7	7.1
Kasempa	8.3	7.7	7.1
Mufumbwe	2.0	3.3	6.0
Mwinilunga	9.5	8.4	7.9
Solwezi	4.1	4.6	3.9
Zambezi	8.9	7.3	4.6
Province	7.9	6.9	6.2

Source: HMIS

6.4 Maternal health and family planning

This is defined as the health care women receive from the attainment of child bearing age up to the menopause stage. It includes antenatal care, supervised deliveries, postnatal care and family planning.

6.4.1 Summary of maternal health indicators

Table 6.9 presents a provincial summary of maternal health indicators over a three year period.

Indicator	Year			Average 2005-2007
	2005	2006	2007	
First antenatal coverage (Percentage)	91	97	75	87.7
Average antenatal Visits	3.3	3.2	3.1	3.2
Institutional deliveries (Percentage)	47	50	38	45.0
trained Traditional Birth Attendants (Percentage)	22	24	15	20.3
Supervised deliveries (Percentage)	69	74	53	65.3
First postnatal attendance (Percentage)	36	33	28	23.7

Source: HMIS

6.4.2 First antenatal attendance

As shown Table 6.10, first antenatal attendances in the province in 2005 and 2006 were high. In 2005, 91 per cent of pregnant women went to antenatal clinic at least once. In 2006 97 per cent did so. Coverage in 2007 had dropped to 75 per cent.

District	2005			2006			2007		
	Contacts	Target	Percentage	Contacts	Target	Percentage	Contacts	Target	Percentage
Chavuma	1695	1867	91	1842	1926	96	1482	1990	74
Kabompo	3348	4572	73	4373	4745	92	3505	4933	71
Kasempa	2997	3311	91	3623	3426	106	3077	3547	87
Mufumbwe	2530	2842	89	2681	2930	92	2149	3023	71
Mwinilunga	7011	5938	118	7228	6145	118	5943	6350	94
Solwezi	11241	13295	85	12613	13346	95	9636	13529	71
Zambezi	4012	4180	96	3473	4293	81	2636	4409	60
Province	32834	36005	91	35833	36811	97	28428	37781	75

Source: HMIS

6.4.3 Average antenatal visits

The recommended average number of visits per pregnancy is 4. As shown in Table 6.11, the average number of visits in the province appears to have reduced from 3.3 in 2005 to 3.2 in 2006 and to 3.1 in 2007. It is only in Chavuma district that the average number of visits was above the recommended 4 visits. In Chavuma, the average number of visits was 5.2 in 2005, 4.8 in 2006 and 5.2 in 2007.

Table 6.11: Average antenatal visit, 2005–2007

District	Antenatal attendance types by year								
	2005			2006			2007		
	Total	First	Average	Total	First	Average	Total	First	Average
Chavuma	8758	1695	5.2	8758	1842	4.8	7767	1482	5.2
Kabompo	12302	3348	3.7	4938	4373	3.4	11476	3505	3.3
Kasempa	8652	2997	2.9	11175	2623	3.1	10076	3077	3.3
Mufumbwe	7683	2530	3.0	8292	2681	3.1	6006	2149	2.8
Mwinilunga	24532	7011	3.5	21623	7228	3.0	17135	5943	2.9
Solwezi	35569	11241	3.2	38352	12613	3.0	26710	9636	2.8
Zambezi	12378	4021	3.1	12224	3473	3.5	7984	2366	3.0
Province	109874	32834	3.3	115362	35833	3.2	87154	28428	3.1

Source: HMIS

6.4.4 Supervised deliveries

These are deliveries conducted by either qualified health workers or trained traditional birth attendants in the facility. Deliveries by classified daily employees and untrained traditional birth attendants are not classified as supervised deliveries.

Table 6.12 shows that the percentage of deliveries that were supervised in the province from 2005 to 2007 was the lowest in 2007 (53 per cent). Among the districts in 2007, the percentage of supervised deliveries was the highest in Kasempa (68 per cent) and lowest in Zambezi district (40 per cent).

Among the districts, tTBAs delivered the highest percentage of babies in Mwinilunga. The percentage of expected deliveries they did in the district in 2005 was 47, in 2006 53 and in 2007 28. In contrast, the tTBAs in Chavuma delivered 3 per cent in 2005, 5 per cent in 2006 and 2 per cent in 2007. However, most of the deliveries in Chavuma were in institutions. In 2005, 80 per cent, in 2006 78 per cent and in 2007 65 per cent of the expected deliveries in Chavuma were in health facilities. In contrast, 55 per cent in 2005, 52 per cent in 2006 and 33 per cent in 2007 were in health facilities in Mwinilunga.

Table 6.12: Supervised deliveries by place of delivery and district, 2005–2007

District	Institutional deliveries			trained Traditional Birth Attendants (tTBA)			Supervised deliveries		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
	Chavuma	80	78	65	3	5	2	84	83
Kabompo	44	44	35	15	15	12	59	59	46

Kasempa	74	70	61	12	11	7	86	81	68
Mufumbwe	41	51	28	13	14	10	54	64	37
Mwinilunga	55	52	33	47	53	28	102	106	61
Solwezi	35	45	36	25	28	17	59	73	53
Zambezi	44	41	34	9	4	5	53	46	40
Province	47	50	38	22	24	15	69	74	53

Source: HMIS

6.4.5 Complicated deliveries

Complicated deliveries require a high degree of skills and equipment that can only be used with specialised training in order to conduct them successfully.

Table 6.13 shows the number of deliveries and the percentage that were complicated in health centres and hospitals by district in 2007. There were 12,705 deliveries in health centres in 2007. That was almost twice the number in hospitals (6,528). However, the percentage of complicated deliveries in hospitals (8 per cent) was slightly higher than in health facilities (6 per cent). In addition to the complicated deliveries, 4 per cent of the deliveries in hospitals were by caesarean section. According to WHO standards, 15 per cent of all deliveries must be by caesarean section. In this way almost all the potential complications that can arise during attempted normal delivery can be avoided.

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

District	Health centre		Hospital		
	All deliveries	Percentage Complicated	All deliveries	Percentage complicated	Percentage caesarean
Chavuma	182	14	1109	2	0
Kabompo	1071	9	1127	3	2
Kasempa	1512	10	82	5	9
Mufumbwe	1082	7	0	0	0
Mwinilunga	2484	6	1234	14	8
Solwezi	5292	4	1635	12	3
Zambezi	1082	7	599	9	2
Total	12705	6	6528	8	4

Source: HMIS

The percentage of complicated deliveries was higher in health centres than in hospitals in Chavuma, Kabompo, Kasempa and Mufumbwe. It was higher in hospitals than in health facilities in Mwinilunga, Solwezi and Zambezi.

6.4.6 Prevalence of still births

A still birth refers to infant death at delivery. Table 6.14 indicates the proportion of still births and total births from 2005 to 2007 in the province. The highest percentage was recorded in 2007 (4 per cent) with the least in 2006 (2 per cent) while in 2005 it stood at 3 per cent. Mwinilunga recorded the highest percentage of still births in 2007 (13 per cent) while the least was recorded by Kasempa (1 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
Chavuma	38	1461	3	25	1459	2	33	1252	3
Kabompo	85	2030	4	63	2061	3	30	1675	2
Kasempa	40	2336	2	27	2329	1	24	2116	1
Mufumbwe	32	1069	3	27	1126	2	26	808	3
Mwinilunga	153	3181	5	97	3145	3	319	2036	13
Solwezi	109	4434	2	146	5830	3	126	4662	3
Zambezi	40	1718	2	48	1724	3	64	1511	4
Total	499	16326	3	435	17995	2	622	14060	4

Source: HMIS

6.4.7 First postnatal attendance

This is the proportion of new attendances at postnatal clinic against the estimated deliveries in catchment population at the given time. Table 6.15 shows that the provincial coverage was below 50 per cent in 2005, 2006 and 2007. However, it improved from 28 per cent in 2005 to 33 per cent in 2006 and to 36 per cent in 2007. Coverage in some of the districts also improved. In Chavuma, coverage improved from 43 per cent in 2005 to 59 per cent in 2006 to 73 per cent in 2007. It also improved in Kasempa and Mufumbwe. It was 18 per cent in 2005, 19 per cent in 2006 and 25 per cent in 2007 in Kasempa. In Mufumbwe, it was 33 per cent in 2005, 35 per cent in 2006 and 41 per cent in 2007.

Table 6.15: First postnatal coverage, 2005–2007

District	2005			2006			2007		
	Contacts	Target	Percentage	Contacts	Target	Percentage	Contacts	Target	Percentage
Chavuma	824	1914	43	1090	1854	59	1307	1799	73
Kabompo	1145	4752	24	1946	4567	43	1606	4402	36
Kasempa	620	3414	18	643	3299	19	801	3187	25
Mufumbwe	957	2911	33	991	2824	35	1111	2733	41
Mwinilunga	2753	6103	45	3361	5913	37	3522	5712	62

Solwezi	3365	13028	26	2855	12850	22	3637	12794	28
Zambezi	477	4247	11	749	4135	18	365	4026	9
Province	10141	36374	28	11635	35442	33	12349	34653	36

Source: HMIS

6.4.8 Maternal mortality

The indicator reflects the availability, accessibility, acceptability and quality of antenatal and delivery services. It is influenced by the quality of interventions designed to improve antenatal care, detection of high risk pregnancies, and provision of delivery services by a qualified attendant.

As shown in Table 6.16, there was a reduction in the maternal mortality rate in the health facilities in the province from 1.98 in 2005, to 1.74 in 2006 and to 0.99 per 1,000 deliveries in 2007. The highest rate was in Mwinilunga (1.61). No maternal deaths were recorded in the health facilities in Chavuma.

Table 6.16: Maternal mortality ratio trends in health facilities 2005–2007

District	2005			2006			2007		
	Deaths	Deliveries	Rate	Deaths	Deliveries	Rate	Deaths	Deliveries	Rate
Chavuma	1	1448	0.69	2	1446	1.38	0	1291	0.00
Kabompo	3	1924	1.56	3	2021	1.48	1	2198	0.45
Kasempa	1	2355	0.42	0	2312	0.00	2	2333	0.86
Mufumbwe	2	1031	1.94	3	1111	2.70	1	1082	0.92
Mwinilunga	11	3120	3.63	9	3094	2.91	6	3718	1.61
Solwezi	9	4427	2.03	14	5798	2.41	8	6927	1.15
Zambezi	5	1789	2.79	0	1705	0.00	1	1681	0.59
Province	32	16191	1.98	31	17808	1.74	19	19230	0.99

Source: HMIS

6.4.9 New family planning acceptors

Table 6.17 shows that the provincial rate of new family planning acceptors among women in the childbearing age group 15–49 years was 114.9 per 1000 women in 2005. It increased to 116.2 in 2006 and dropped to 96 per 1000 women in 2007. Among the districts, a reducing trend was observed in Chavuma where the rate increased from 272.6 in 2005 to 134.8 in 2006 and to 110.3 in 2007. It was also observed in Mwinilunga where the rate was 132.6 in 2005, 102.4 in 2006 and 92.0 in 2007. In Zambezi, the rate increased from 65.3 in 2005 to 75.4 in 2006 and to 88.6 in 2007. The trends were not clear in the other districts.

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

District	2005		2006		2007	
	Number	Rate	Number	Rate	Number	Rate
Chavuma	2074	272.6	1057	134.8	893	110.3
Kabompo	2371	127.3	3233	167.3	2384	118.6
Kasempa	1282	94.5	1711	121.8	1606	110.5
Mufumbwe	2341	202.3	1764	147.7	1889	154.3
Mwinilunga	4072	132.6	3255	102.4	3023	92.0
Solwezi	4360	80.5	5892	108.4	4064	73.7
Zambezi	1112	65.3	1318	75.4	1591	88.6
Province	17612	114.9	18230	116.2	15450	96.0

Source: HMIS

6.5 Child health indicators

Child health services are aimed at preventing major causes of death in the early years of life. The national goal is to reduce under five mortality by two thirds by 2015 (MDG4). This section looks at four indicators of child health, namely: fully immunised under 1 year, BCG–measles dropout rate, pregnancies with tetanus toxoid protection and underweight prevalence. Table 6.18 is a summary of child health indicators for North–Western Province from 2005 to 2007.

Table 6.18: Child health indicators, 2005–2007

Indicator	Period in years			Average
	2005	2006	2007	2005–2007
Fully immunised under 1 year (percentage)	69.4	89.4	65.6	74.8
BCG–Measles dropout rate (percentage)	20.3	24.9	23.6	22.9
Pregnancies with Tetanus Toxoid protection (percentage)	76.6	80.1	73.3	76.6
Under weight prevalence (percentage)	18.5	14.3	10.8	14.5

Source: HMIS North–Western Province

6.5.1 Fully immunisation coverage

Fully immunisation coverage refers to the number of children under the age of one who have completed the recommended series of immunisations. That is BCG and OPV0 from birth to 13 days, OPV, DPT Hib HepB1 at 6 weeks, OPV2, DPT2 Hib2 HepB2 after 4 weeks, OPV3. The national set target for the indicator is 80 per cent and the threshold is 70 per cent. Table 6.19 shows the immunisation coverage for North–Western Province by district from 2005 to 2007.

Table 6.19 shows an improvement in the provincial fully immunised coverage from 69.4 per cent in 2005 to 89.4 per cent in 2006. However, it dropped to 65.6 per cent in 2007, which was attributed to the shortage of BCG and OPV vaccines in third and fourth quarters of the year. The same trend was observed in all the districts with a rise in 2006 and a drop in 2007. In 2006 all district except Chavuma (68.1 per cent) reached the threshold and Solwezi district had the highest coverage (101.7 per cent), followed by Zambezi (98.1 per cent), and then Mufumbwe (94.8 per cent). In 2007 only Mufumbwe (77.0 per cent), Solwezi (75.9 per cent) and Zambezi (69.6 per cent) managed to reach the threshold, with Kasempa (49.6 per cent) having the lowest coverage.

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
Chavuma	828	1383	59.9	971	1426	68.1	931	1,473	63.2
Kabompo	2419	3387	71.4	2584	3514	73.5	2002	3,654	54.8
Kasempa	1564	2461	63.6	2201	2549	86.3	1309	2638	49.6
Mufumbwe	1659	2103	78.9	2059	2172	94.8	1725	2241	77.0
Mwinilunga	3244	5018	64.6	3966	5194	76.4	3003	5431	55.3
Solwezi	7175	9847	72.9	10053	9886	101.7	7606	10017	75.9
Zambezi	2049	3096	66.2	3120	3181	98.1	2275	3267	69.6
Province	18938	27295	69.4	24954	27922	89.4	18851	28721	65.6

Source: HMIS North-western province

6.5.2 BCG–Measles dropout rate

BCG–Measles dropout rate refers to the number of children who are enrolled on the expanded programme on immunisation and fail to complete all the recommended vaccinations from BCG to Measles before they reach their first birthday.

Table 6.20 shows that there was an increase in the provincial dropout rate from 20.3 per cent in 2005 to 24.9 per cent in 2006. It reduced to 23.6 per cent in 2007. In 2007, the least dropout rates were in Zambezi and Solwezi (10.1 per cent and 12.7 per cent respectively). The highest were in Kasempa and Mwinilunga (38.3 per cent in each). The decrease was only in Mwinilunga and Zambezi between 2006 and 2007.

Table 6.20: Percentage distribution of BCG–Measles dropout rate by district, 2005–2007

District	2005			2006			2007		
	Coverage (per cent)		Dropout Rate (per cent)	Coverage (per cent)		Dropout Rate (per cent)	Coverage (per cent)		Dropout Rate (per cent)
	BCG	Measles		BCG	Measles		BCG	Measles	
Chavuma	117.6	77.1	34.4	108.3	82.4	23.9	113.5	79.2	30.2
Kabompo	135.2	87.9	35.0	107.7	85.9	20.1	109.3	86.1	21.2
Kasempa	136.4	91.3	33.1	139.9	115.5	17.4	101.4	62.6	38.3
Mufumbwe	108.4	96.8	10.7	126.6	110.2	13.0	128.5	87.5	31.9
Mwinilunga	108.5	91.1	16.0	246.0	108.6	55.9	116.8	72.1	38.3
Solwezi	103.1	93.7	9.1	114.6	114.6	0	104.3	91.1	12.7
Zambezi	119.4	86.7	27.4	132.6	110.6	16.6	105.5	94.2	10.1
Province	114.1	90.9	20.3	143.1	107.5	24.9	109.5	83.7	23.6

Source: HMIS North-Western Province

6.5.3 Pregnancies protected against tetanus

Pregnant women should be protected against tetanus and the unborn child should be protected against neonatal tetanus. The national target for pregnancies protected against tetanus is 80 per cent and the threshold is 70 per cent.

Table 6.21 shows the number of pregnancies with tetanus toxoid protection by district from 2005 to 2007. The provincial coverage increased from 76.6 per cent in 2005 to 80.1 per cent in 2006. It then reduced to 73.3 per cent in 2007. The threshold was attained in all the districts in all the three years except in Zambezi in 2005 (65.7 per cent) and in 2007 (57.2 per cent); in Kasempa in 2005 (55.4 per cent) and in 2007 (63.4 per cent).

District	2005			2006			2007		
	Immunised	Target	Percentage	Immunised	Target	Percentage	Immunised	Target	Percentage
Chavuma	1391	1867	74.5	1425	1926	74.0	1540	1990	77.4
Kabompo	3551	4572	77.7	3330	4745	70.2	4164	4933	84.4
Kasempa	1836	3311	55.4	2752	3426	80.3	2248	3547	63.4
Mufumbwe	2786	2842	98.0	2757	2930	94.1	2264	3023	74.9
Mwinilunga	5138	5938	86.5	5758	6145	93.7	4610	6427	71.7
Solwezi	10148	13295	76.3	10387	13346	77.8	10414	13529	76.9
Zambezi	2747	4180	65.7	3084	4293	77.8	2520	4409	57.2
Province	27597	36005	76.6	29493	36811	80.1	27760	37858	73.3

Source: HMIS North–Western Province

6.5.4 Underweight prevalence

Underweight prevalence shows the short term nutritional status of under-five children who attend the child health clinic. The acceptable national minimum standard is that less than 10 per cent of the under-fives should be underweight. If prevalence was higher than 10 per cent it must be reduced but the reductions should not be by more than 5 per cent. If reductions or increases are by more than 5 per cent, its most likely due to data errors such as poor measurement practice by clinic staff or selectivity in the attendance at the clinics such that babies who are gaining or losing weight rapidly are taken to the clinics.

Table 6.22 shows that there was a decline in the underweight prevalence in North–Western Province from 18.5 per cent in 2005 to 14.3 in 2006 and to 10.8 per cent in 2007. There was a decline in all the three years in all districts except in Kasempa in which it remained at 16.0 per cent in 2005

and 2006 but dropped to 10.7 per cent in 2007. These trends suggest that the nutritional status of under-fives in the province is improving.

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

District	2005 (percentage)	2006 (percentage)	2007 (percentage)
Chavuma	9.9	9.2	4.2
Kabompo	16.1	13.4	11.4
Kasempa	16.0	16.0	10.7
Mufumbwe	12.1	12.6	8.2
Mwinilunga	26.2	20.4	13.6
Solwezi	14.2	10.8	9.0
Zambezi	21.3	14.3	10.8
Province	18.5	14.3	10.8

Source: HMIS North-Western Province

Chapter 7: Environmental and Public Health

7.1 Malaria control

This chapter contains interventions which are put in place to reduce malaria prevalence in the province. The interventions include the distribution of Insecticide treated nets (ITNs) to pregnant women and children under the age of five and also the Indoor Residue House Spraying (IRHS)

7.1.1 Insecticide Treated Nets (ITNs).

Table 7.1 shows details of ITN distribution in North Western Province. The provincial target was to distribute 183 413. 158 853 nets out of which 129 173 were distributed. Chavuma had the highest ITN distribution coverage (156.1 per cent), while Mwinilunga had the lowest (13.8 per cent). Mufumbwe District did not receive any nets in 2007. Chavuma, Kabompo, Kasempa, Mwinilunga, Solwezi and Zambezi districts received a total of 158 853 and distributed 129 173 ITNs which is 70.4 per cent coverage. Although Kabompo received 40 000 ITNs only 13 800 nets were distributed (59.5 per cent of the target population).

Table 7.1: Distribution of insecticide treated mosquito nets to pregnant women and children under 5

District	Target Group *	Number of insecticide treated mosquito nets		Coverage per cent	Source of ITNs
		Received	Distributed		
	(a)	(b)	(c)	(c/a)*100	
Chavuma	9351	14600	14600	156.1	Churches Health Association of Zambia
Kabompo	23203	40000	13800	59.5	Churches Health Association of Zambia
Kasempa	16764	20000	20000	119.3	Churches Health Association of Zambia
Mufumbwe	14224	0	0	-	
Mwinilunga	35499	4900	4900	13.8	Churches Health Association of Zambia
Solwezi	63630	55353	51873	82	Society for Family Health
Zambezi	20742	24000	24000	115.7	Churches Health

					Association of Zambia
Province	18341 3	158853	129173	70.4	

Source: Environmental Health Reports

** Estimated pregnancies and Under Fives*

7.1.2 Indoor residual spraying

The indoor residual spraying has only been carried out under the National Malaria Control Centre in Solwezi as a pilot district for North-Western Province. The programme would be rolled out to the six remaining districts in the coming years. In 2005, 3060 out of a target of 10000 households were sprayed. That represented 31 per cent coverage. In 2006, the coverage increased to 48 per cent (10240 out of 24000 targeted) and in 2007 the coverage was 70 per cent (14037 out of 20220 targeted households).

7.2 Water and sanitation

Water and sanitation refers to the activities that are undertaken in the prevention and control of waterborne diseases, water related diseases and water washed diseases. This is done through water quality monitoring, domestic chlorination of water, pit latrine liming and medical waste management.

7.3 Water quality monitoring

This mainly involves sampling water for bacteriological and chemical analyses and the subsequent interpretation of results for public health use.

Reports on this activity were only received from two districts which had received the testing kits. Table 7.2 shows details of the samples taken in Mwinilunga and Solwezi. However, even where sampling was done, results were not immediately available to help determine the quality as can be seen from the table.

7.1.2 Indoor residual spraying

The indoor residual spraying has only been carried out under the National Malaria Control Centre in Solwezi as a pilot district for North-Western Province. The programme would be rolled out to the six remaining districts in the coming years. In 2005, 3060 out of a target of 10000 households were sprayed. That represented 31 per cent coverage. In 2006, the coverage increased to 48 per cent (10240 out of 24000 targeted) and in 2007 the coverage was 70 per cent (14037 out of 20220 targeted households).

District	Number of water samples collected	Number of water samples with satisfactory results	Percentage satisfactory
Chavuma	0	0	0
Kabompo	0	0	0
Kasempa	0	0	0
Mufumbwe	0	0	0

Mwinilunga	40	No Data	No Data
Solwezi	673	No Data	No Data
Zambezi	0	0	0
Province	713		

Source: Environmental Health Reports

7.4 Chlorination of domestic water

Safe water is vital for the health of the communities. In the year, 2007, Chavuma and Kabompo received 42 109 bottles of liquid chlorine for distribution to the members of the public. Table 7.3 shows the number of households that were visited for IEC and eventually supplied with the chlorine. The provincial coverage was 40 per cent. The highest coverage was recorded by Solwezi (73 per cent) while the least was by Mwinilunga (10 per cent)

Table 7.3: Distribution of household chlorine

District	Targeted households	Number of houses visited and information education and communication given	Number of chlorine bottles distributed	Coverage percentage
	(a)	(b)	(c)	(c/a)*100
Chavuma	6 130	6 130	2 484	41
Kabompo	15 227	7 116	4 560	30
Kasempa	8250	7003	1400	17
Mufumbwe	7000	5812	1500	21
Mwinilunga	18798	11331	1915	10
Solwezi	39000	12000	28500	73
Zambezi	10207	6776	1750	17
Province	104612	56168	42109	40

Source: Environmental Health Reports

7.5 Management of medical waste

This is the indicator that measures the safe and hygienic management of waste generated from health centres and hospitals. Table 7.4 indicates the distribution of incinerators in the province. There were a total of 15 incinerators of which 9 were operational while 6 were not.

Table 7.4: Inventory of incinerators in each district

District	Total incinerators	Number operational	Number not operational	Remarks
Chavuma	1	0	1	Facilities use pits

Kabompo	2	2	0	Not used consistently
Kasempa	2	1	1	Need to put up one at Kasempa Urban Clinic and rehabilitate the one at Mukinge Hospital
Mufumbwe	1	1	0	Functioning
Mwinilunga	3	2	1	Need to rehabilitate the one at the District Hospital
Solwezi	5	3	2	New incinerator for Solwezi urban clinic is faulty and the old one at the General Hospital is not used because it is near the wards
Zambezi	2	1	1	The old one at Zambezi District Hospital is faulty
Province	15	9	6	

Source: Environmental Health Reports

Chapter 8: Data Submission

8.1 Completeness of reports

Report completeness refers to the number of expected health facilities that actually report in a given period. In the current HMIS, the recommended reporting period is a quarter. The target for report completeness is 100 per cent. As shown in Table 8.1, three districts Kabompo, Mufumbwe and Mwinilunga completed all the required reports while Zambezi and Kasempa completed less than 80 per cent.

Table 8.1: Data input coverage by district

District	Total catchment Population	Coverage by the disease report (HIA1)		Coverage by the disease report (HIA2)	
		Population	Percentage reported	Population	Percentage reported
Chavuma	36,812	36,182	100	35,892	98
Kabompo	79,362	79,362	100	79,362	100
Kasempa	66,002	47,132	71	49,502	75
Mufumbwe	55,997	55,997	100	55,997	100
Mwinilunga	150,387	146,863	98	150,387	100
Solwezi	250,494	232,642	95	233,184	93
Zambezi	81,657	55,124	68	58,795	72
Province	720,711	617,156	86	663,119	92

Source: HMIS North -Western Province

8.2 Information flow

In 2007 most of the health facilities and hospitals in the province reported on a quarterly basis. As shown in Table 8.2, report completeness was 100 per cent in Kabompo and Mufumbwe. Report completeness fell short in the rest of the districts in the province.

Table 8.2: Information Flow

District	Existing			Reporting			Coverage percentage
	Hospitals	Health centres	Total	Hospitals	Health centres	Total	
Chavuma	1	6	7	1	6	7	99
Kabompo	2	13	15	2	13	15	100
Kasempa	1	16	17	1	16	17	73
Mufumbwe	0	13	13	0	13	13	100
Mwinilunga	2	25	27	2	25	27	99

Solwezi	1	46	47	1	46	47	94
Zambezi	2	11	13	2	11	13	70
Province	9	130	139	9	130	139	91

Source: HMIS

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