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Preface

The Health Management Information System (HMIS) was first implemented in Luapula Province in 1999. Since then it has been found to be a useful facility based system for assessing the status of the health sector and the disease burden. Routine information on epidemiology and delivery of health services is collected using this system. The information collected is used for measuring morbidity and mortality; disease outbreaks; determinants of health such as nutrition and the environment; costs and expenditure; and access and equity.

HMIS data has been used by health facilities, districts and the province to develop action plans for diseases interventions such as against malaria, diarrhoea, pneumonia, to mention but a few. Therefore, the importance of collecting routine data through the HMIS cannot be overemphasised. This information provides evidence for guidance of the health sector towards the attainment of the Millennium Development Goals, programme design and resource allocation.

However, more work still has to be done to enhance the quality and reliability of HMIS data. Regular trainings of new and old staff on the use and management of HMIS data, technical support visits to health facilities and the ongoing performance assessment visits to districts and health facilities need to be encouraged by all parties as this plays an important role in the improvement of the HMIS data. I should mention that the quarterly data review meetings held in the province are a major positive stride in identifying problem areas and the required technical support at lower levels of care such as health centres, health posts and communities in the province.

Data was captured from all the public health facilities but only few private health facilities. Given the many users, it is important to incorporate information from private health facilities so that there is a comprehensive picture of not only the disease burden but also the health seeking behaviour such as the utilisation of the health facilities. Despite the limitations of coverage, if utilised appropriately, these analyses have the potential to improve efficiency in the allocation of resources, as well as the development of more appropriate responses to diseases affecting the communities.

Finally I wish to encourage all our esteemed readers to make as many suggestions as possible so that we have improved versions of subsequent bulletins. It is my expectation that the general readership will champion and promote the use of the routinely collected indicators aimed at measuring progress towards the attainment of the Millennium Development Goals.

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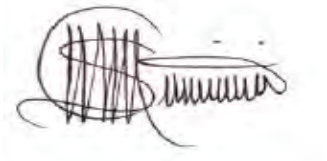
I also wish to recognise the contributions made by various other organisations and individuals either directly or indirectly towards the successful production of this bulletin but could not be mentioned by name.

I embrace and cherish the support from you all.



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List of Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
BCG	Bacillus Calmette Guerin
CHAZ	Churches Health Association of Zambia
CHW	Community Health Worker
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
NMCC	National Malaria Control Centre
OPV	Oral Polio Vaccine
PHO	Provincial Health Office
PMTCT	Prevention of Mother to Child Transmission
RPR	Rapid Plasma Reagent
SFH	Society for Family Health
STI	Sexually Transmitted Infections
tTBA	trained Traditional Birth Attendant
ZDHS	Zambia Demographic and Health Survey
ZVCTS	Zambia Voluntary Counselling and Testing Services

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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: This is 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 postnatal clinic 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 spear 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

This Provincial Statistical Bulletin provides an overview of the common diseases afflicting the population, the situation of human resource for health, availability of drugs in the health facilities as well as selected health service delivery indicators.

Disease burden

- **Malaria**

  Malaria was the leading cause of morbidity in the province in 2007. It accounted for 36.7 per cent of the total diagnoses. The incidence rate dropped from 482 per 1,000 in 2006 to 384 per 1,000 populations in 2007 and was highest in Milenge district with an incidence rate of 637 per 1,000.

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

  The provincial incidence of respiratory infections (non pneumonia) increased from 122 per 1,000 in 2005 to 179 per 1,000 in 2006 and then to 191 per 1,000 population in 2007. Apart from Mansa District that showed a fluctuation, all the other districts exhibited an increase in the incidence of respiratory infections (non pneumonia since 2005.

- **Respiratory infections (pneumonia)**

  The incidence of respiratory infection (pneumonia) in the province decreased from 57 per 1,000 in 2005 to 53 per 1,000 in 2006 and then to 51 per 1,000 population in2007. Among the districts, the highest incidence of respiratory infection (pneumonia) was at 163 per 1,000 populations in Milenge and the lowest was in Samfya (32 per 1,000).

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

  The incidence of diarrhoea (non bloody) in the province increased from 71 per 1,000 population in 2005 to 89 per 1,000 population in 2006 and then it dropped to 74 per 1,000 population in 2007. There was an upward swing in incidence in Mansa and Milenge districts, whereas fluctuations characterised the trend in incidence in Chienge, Kawambwa, Mwense, Nchelenge, and Samfya districts from 2005 to 2007.

- **Notifiable diseases**

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

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

  A total of eight (8) acute flaccid paralysis cases were investigated in 2007. All these cases were in 4 districts namely Mansa, Chienge, Kawambwa and Nchelenge. The other three districts Mwense, Samfya and Milenge were "silent" during this period. Non-polio acute flaccid paralysis rate was at 2.0 per 100,000 children under 15 years. The stool adequacy rate, i.e. two stools collected at an interval of 14 days and checked at a virology laboratory was 100 per cent.

- **Measles surveillance**

  A total of 581 cases of measles were investigated during the year 2007 with 82 samples collected and sent to Virology Laboratory in Lusaka. Of these, 50 (61 per cent) were positive of measles. All districts except Mansa investigated some measles cases.

- **Tuberculosis notifications**

  A total of 2305 tuberculosis cases were notified in 2007. Most of these cases were smear-negative (981) whereas new smear-positive were 614. The tuberculosis burden has worsened from the recent past due to the association of tuberculosis with the HIV pandemic. A total of 1052 (46 per cent) tuberculosis cases were also tested for HIV. Of these, 647 (62 per cent) had HIV and 284 (27 per cent) were put on antiretroviral therapy.

- **Number of patients on antiretroviral therapy**

  By the end of the year 2007, a total of 7,852 clients had been put on antiretroviral therapy. However, less than 10 per cent of these were children below 15 years of age. However, the drop-out rate was high (26.5 per cent).

Human resources

- **Health centre staff load**

  On average, there were 27 staff daily client contacts at health centres in 2007 in the province. In 2005 and 2006, the respective numbers were 26 and 27. This was higher than the national target of 10 to 15 clients per staff per day. Big differences were observed among districts. The highest average number of daily staff contacts of 49 was in Milenge. The lowest of 20 was in Mwense.

- **Trained Traditional Birth Attendants**

  There were a total of 424 active trained traditional birth attendants in the province during the year 2007. Most of these were in Milenge, Kawambwa, Nchelenge and Samfya districts who recently trained this cadre with support from local cooperating partners. A total of 13,979 deliveries were assisted by these trained traditional birth attendants representing 28 per cent of the expected deliveries.

- **Community health workers**

  There were a total of 326 active community health workers in the province during the year 2007. Most of them were in Milenge and Nchelenge districts. A total of 143,676 patients were attended to by these community health workers.

Availability of essential drugs

- **Drugs availability**

  The general drug situation for the province during the year 2007 was bad. Through monitoring tracer drug, only 64 per cent of the tracer drugs were available throughout the year. Variations from district to district were observed and the mostly affected districts were Samfya, Mwense and Nchelenge where the stock levels were below 60 per cent.

- **Drug kit utilisation at health centres**

  A total of 869 rural health centre drug kits were opened in 2007 (0.82 kits per 1,000 patients). Among the districts, only the average in Samfya (1.0 kit per 1,000 patients was within the national standard range of 1 to 1.2 kits per every 1,000 patients. The lowest utilisation rate was Nchelenge with 0.59 kits per 1,000 patients.

Health service delivery indicators

- **Health centre utilisation**
  - **Out patients: Under-five years**

    In 2007 alone, 46 per cent of the total Outpatient attendances were children below 5 years. Since 2005, out-patient attendance for children under-fives has continued to drop (from 60 per cent in 2005 to 52 per cent in 2006).

  - **Outpatients: 5 years and above**

    In 2007 alone, 54 per cent of the total outpatient attendances were 5 years and above. Since 2005, out-patient attendance for patients aged five years and above has continued to increase (from 40 per cent in 2005 to 48 per cent in 2006).

- **Bed occupancy rate**

  The bed occupancy rate, the percentage of available beds occupied during a given period in an admitting health facility, in health centres in the province in 2007 was 18 per cent. In hospitals, it was 60 per cent. However, there were no hospitals in three districts namely Chienge, Mwense and Milenge. Among the districts, the lowest bed occupancy rate in health facilities at 14 per cent was in Nchelenge and the highest at 24 per cent was in Mansa. In hospitals, the highest bed occupancy rate at 81 per cent was in Nchelenge and the lowest at 44 per cent was in Samfya.

- **Maternal health**
  - **Antenatal visits**

    The average number of antenatal visits per pregnancy in the province in 2007 was 2.8. This is was below the national recommendation of 4 visits. District variations were observed. The highest was in Nchelenge (3.2 visits) and the lowest in Milenge (2.2 visits).

  - **Institutional deliveries**

    In 2007 the provincial average for institutional deliveries was 39 per cent. Institutional deliveries face a major challenge in an event of poor staffing levels where 24 per cent of the health centres had no professional staff (particularly in Mwense and Samfya districts), poor infrastructure and inadequate delivery equipment.

    There were variations among the districts. The highest in Mansa was 50 per cent and the lowest in Milenge was 21 per cent.

  - **Caesarean section rate**

    Caesarean births were only done in hospitals. In 2007, only 3 per cent of the total births in the province were by caesarean section.

    In the districts with hospitals namely Kawambwa, Mansa, Nchelenge and Samfya, the proportion of caesarean births was highest in Nchelenge (6 per cent) and lowest in Kawambwa (2 per cent).

  - **Stillbirth**

    Stillbirths in the province in 2007 were 4.1 per cent of the total births. Among the districts, the highest was in Mwense at 6.1 per cent of total births and the lowest was in Samfya and Chienge districts at 3.4 per cent. The proportion of stillbirths in hospitals (6.0 per cent) was higher than in health centres (3.2 per cent).

  - **Institutional maternal mortality ratio**

    The institutional maternal mortality ratio for the province for 2007 was 132 per 100,000 deliveries. This was worse than in 2005 (127.66 per 100,000) and in 2006 (80.07 per 100,000 deliveries respectively).

    Among the districts, the ratio was the highest in Nchelenge at 432.96 per 100,000 deliveries and lowest in Samfya at 31.47 per 100,000 deliveries.

  - **Postnatal attendances**

    The provincial average for post-natal attendance was 63 per cent in 2007. Among the districts, the highest coverage was in Kawambwa at 77 per cent and the lowest in Samfya at 43 per cent.

- **Family planning**

  The new family planning acceptance rate in the province in 2007 was 100 per 1,000 women of child bearing age. This was a reduction from 105 per 1,000 women of child bearing age in 2006.

- **Pregnancies protected against tetanus**

  The coverage in the province for protecting pregnancies against tetanus was 67 per cent in 2007. Among the districts, the coverage was the highest in Milenge and lowest in Nchelenge.

- **Child health**
  - **Expanded programme for immunisation**

    The fully immunisation coverage for children under one year in 2007 in the province was 68 per cent. This was below the national target of 80 per cent. The coverage was also below the national target in 2005 (70 per cent) and in 2006 (73 per cent). However, the BCG-Measles dropout rate reduced from 19 per cent in 2006 to -5 per cent in 2007.

    Among the districts, the highest coverage was in Mansa (93 per cent) and the lowest in Chienge (48 per cent). With the exception of Mansa, the national target was not attained in Chienge, Kawambwa, Milenge, Mwense, Nchelenge and Samfya.

  - **Low birth weight**

    The provincial average rate for low birth weight in 2007 was at 7 per cent. Comparing to 2005 and 2006, the indicator had showed a decline from9 per cent in 2005 to 8 per cent in 2006.

  - **Growth monitoring**

    The proportion of under-five under-weights in the province in 2007 was 14 per cent. This was a reduction from 25 per cent in 2005 and 21 per cent in 2006. Since the reduction in the ratio was more than 5 per cent, the Provincial Health Office should investigate as per guidelines. Among the districts, the highest proportion of under-weight under-fives was in Samfya (22 per cent) and the lowest in Nchelenge (7 per cent).

Chapter 1: Background

This Provincial Statistical Bulletin is the first of its kind. Compilation of data for this bulletin was carried out in August 2008. The main objective of this bulletin is to provide trends of selected indicators on disease burden and service delivery in order to assess the overall performance of the health sector in the province. It also serves as a platform for sharing data with all partners. The indicators were compared by different districts and age groups.

The indicators in this bulletin were compiled from data collected in the Health Management Information System and closely associated systems such as the Antiretroviral Information System, the Tuberculosis database, the ZVCTS database, and environmental health. Plans to incorporate all the other databases into the HMIS are at an advanced stage. Much of the data used in this bulletin is from all public health facilities. Data from a few private health facilities was also included. There is need to incorporate all private health facilities in order to have a more comprehensive picture of health delivery in the province.

1.1 Geography and administration

Luapula Province is one of the nine provinces of Zambia. It is in the northern part of Zambia. It shares boarders with Democratic Republic of Congo in the southern, western and northern parts where the Luapula River is a natural international demarcating feature with Zambia. On the eastern side, the province is bordered by Northern Province. The Muchinga escarpment runs north to south through the province.

The total surface area for the province is 50,556 square kilometres constituting 6 per cent of the total area of Zambia. The four major physical features are the valley along the Luapula River, the plateau running parallel to the river in a north-south direction, then Lake Mweru in the north in Chienge and Nchelenge Districts and Bangweulu in Samfya district. The swampy area to the east of Lake Bangweulu, Lake Mweru and Lake Bangweulu and its swamps take up 40 per cent of the total area of the province. Rainfall levels are high throughout the province ranging from 1,115 mm to 1,500 mm per annum with the northern plateau areas and the Bangweulu swamps receiving most of the rain.

Administratively the province is divided into seven districts. These are Chienge, Nchelenge, Kawambwa, Mwense, Mansa, Samfya and Milenge. Mansa is the provincial headquarters. Chienge is a new district created in 1997 by dividing Nchelenge district. Milenge district was formed in 1998 by dividing Mansa district.

All districts except Milenge are linked by an all weather road which is tarred up to Nchelenge district. Telecommunication and facsimile facilities are poor and limited to Mansa, Samfya, Kawambwa and Nchelenge districts. Much of the communication depends on mobile communication facilities. More than 75 per cent of the health facilities had radio communication facilities and each district health office had at least one moving vehicle.

1.2 Demographic information

Table 1.1 shows population distribution by district and by selected age groups. Milenge district has the lowest population in the province (34,709). Mansa district has the highest population (231,120). The average annual population growth rate in the province was 3.20 per cent.

Table 1.1: Distribution of population by district and selected age groups

District	Populations by age groups, sex and maternal status									
	Children							Expected		
	0-11 months	< 5 years	5-14 years	Women 15-49 years	Adults 15 years+	Total males	Total females	Pregnancies	Deliveries	Births
Chienge	4,177	20,883	35,501	22,971	48,031	50,642	53,774	5,638	5,429	5,168
Kawambwa	4,791	22,528	43,627	29,423	59,024	62,232	66,082	6,197	5,968	5,722
Mansa	9,244	46,226	78,581	50,847	106,315	112,093	119,027	12,484	12,019	11,440
Milenge	1,388	6,943	11,801	7,634	15,966	16,834	17,875	1,875	1,805	1,718
Mwense	5,339	26,685	45,367	29,356	61,379	64,715	68,717	7,207	6,937	6,535
Nchelenge	5,685	28,426	48,325	31,267	65,381	68,934	73,198	7,675	7,391	7,034
Samfya	7,678	36,725	68,046	45,093	92,062	97,065	103,070	9,899	9,534	9,077
Province	38,302	188,416	331,248	216,591	448,159	472,515	501,743	50,975	49,083	46,694

1.3 Data sources

Data compiled for this bulletin was collected from all the public health facilities through the HMIS. No private health facilities in the province compile data for the HMIS. Data from private health facilities is compiled for other data bases used for the report such as the ZVCT and environmental health.

1.4 Scope of analysis

The information provided in this bulletin is mainly for 2007 although some data for 2005 and 2006 is also included for comparison. Details for health facilities are beyond the scope of this bulletin.

Some plausible reasons for the trend and status of some indicators were given. However, they are not conclusive. Districts Health Management Teams could conduct detailed investigations on status and trends of indicators of interest.

1.5 Limitations of the report

Data used to compile this bulletin came from various sources. While every care was taken in the preparation and collection of this data, the data from the different sources might not have been compiled in a consistent way. Some of the limitations of the data compiled for this bulletin may include the following:

1. **General problem with aggregated data:** Since the unit of analysis for this report is the district, those interested in a comparative analysis by health facilities for example, would be disappointed.

2. **Exclusion of data from most private health facilities:** Data analysed in this bulletin was from all public health facilities (and a few private health facilities). Therefore, overall utilisation of health facilities might not be a reflection of all health facilities in the province, as most private health facilities are not part of the HMIS.

Chapter 2: Disease burden

The chapter highlights diseases which accounted for attendance at health facilities from 2005 to 2007 for the under-fives and older age groups. Disease burden is measured by its incidence and fatality recorded at health facilities. Disease incidence is defined as the number of new cases that occurred during a specified period in a defined population, while case fatality rate is the number of deaths from a particular illness out of total admissions over a specified period.

2.1 Major causes of illnesses

As can be seen from Table 2.1, malaria with an incidence rate in the province of 384.1 per 1000 was the leading cause of illness in 2007 in both the under-fives and older population. Respiratory infection: non pneumonia was the second. Its incidence rate was 190.9 per 1000 followed by diarrhoea: non bloody with an incidence rate of 74.3 per 1000.

Table 2.1: Ten major causes of visitations to health facilities, Luapula Province, 2007

	Incidence per 1,000 population		
Disease Name	**Under-five**	**5 years and above**	**Total**
Malaria	1091.1	214.6	384.1
Respiratory infection: non pneumonia	496.2	117.7	190.9
Diarrhoea non bloody	246.3	33.0	74.3
Respiratory infection: pneumonia	146.8	27.8	50.8
Trauma: accidents, wounds, injuries, burns	52.5	42.8	44.7
Digestive system (not infectious)	42.5	30.3	32.6
Skin infections	75.1	21.3	31.7
Eye infections	87.6	14.7	28.8
Muscular skeletal and connective tissue (not trauma)	2.9	25.5	21.2
Ear/Nose/Throat infections	35.6	13.5	17.7

Source: HMIS

2.1.1 Malaria

Table 2.2 shows that the total incidence rate in the province in 2007 was 384.1 per 1000. The incidence rate in 2007 was nearly five times higher among the under-fives (1091.1) than among the older population (214.6). The case fatality rate in hospitals was 49.5 per 1000 admissions in 2007. Among the districts, the highest case fatality rate of 62 per 1000 admissions was in Nchelenge and the lowest at 24.9 per 1000 was in Samfya.

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

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Hospitals only)		
	Under-five	5 years and above	Total	Under-five	5 years and above	Total
Milenge	1,751.5	358.2	636.9	-	-	-
Mwense	1,211.5	258.8	449.3	-	-	
Kawambwa	1,175.5	241.9	405.8	46.4	43.7	45.3
Samfya	1,243.0	188.5	382.0	20.2	39.6	24.9
Mansa	1,009.5	221.9	379.5	42.8	35.1	39.3
Nchelenge	966.2	169.5	328.8	68.4	54.3	62.0
Chienge	710.0	171.6	279.3	-	-	-
Province	1,091.1	214.6	384.1	42.4	64.6	49.5

Note: There are no hospitals in Milenge, Mwense and Chienge

As shown in Figure 2.1, the incidence rate of malaria in the province increased by 22.7 per cent from 392.6 per 1000 of the total population in 2005 to 481.7 per 1000 of the total population in 2006. It reduced by 20.3 per cent between 2006 and 2007 from 481.7 in 2006 to 384.1 in 2007.

Apart from Milenge, all the districts recorded a reduction in the incidence rate of malaria from 2005 to 2006. In Milenge, the incidence rate increased annually between 2005 and 2006. It was 441.5 in 2005, 504.2 in 2006 and 636.9 in 200700.

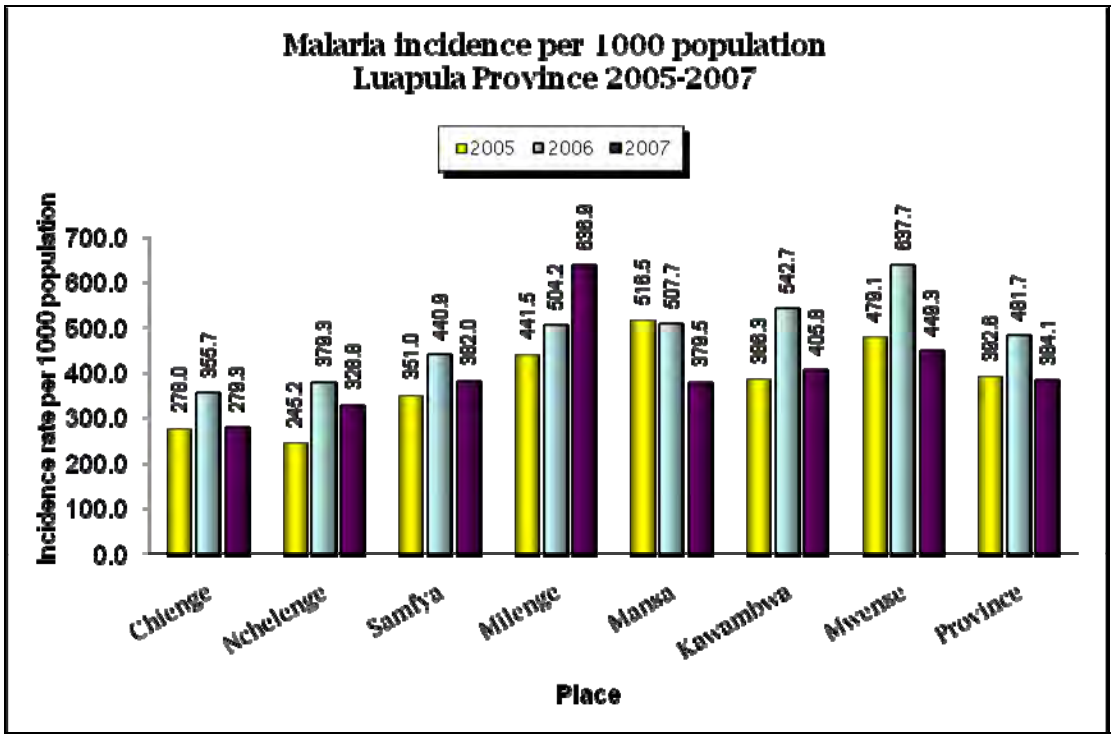

Figure 2.1: Malaria incidence

2.2 Respiratory infections (non-pneumonia)

Respiratory infection; non-pneumonia is characterised by one or all of the following: cough, runny nose and sore throat. There is no fast or difficult breathing, no chest in drawing and no stridor.

As shown in Table 2.3, the total incidence rate in the province in 2007 was 190.9 per 1000. Among the districts, the highest was recorded in Mwense at 269.4 per 1000 followed by Kawambwa at 226.6 per 1000. The lowest was in Chienge at 121.2 per 1000 in all age groups. The total case fatality rate in health centres and hospitals in the province was 18.8 per 1000 admissions and the lowest was in Mwense at 6.3 per 1000 admissions.

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

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Health centres and hospitals)		
	Under-five	5 years and above	Total	Under-five	5 years and above	Total
Mwense	662.8	171.0	269.4	5.4	7.4	6.3
Kawambwa	622.7	142.2	226.6	23.5	45.5	34.7
Samfya	568.2	117.9	200.6	12.0	17.4	14.8
Nchelenge	485.2	96.8	174.4	18.8	17.1	18.1
Mansa	397.4	104.7	163.2	27.5	12.7	21.6
Milenge	440.0	93.3	162.7	0	0	0
Chienge	272.1	83.5	121.2	0	0	0
Province	**496.2**	**117.7**	**190.9**	**18.7**	**18.9**	**18.8**

Figure 2.2 shows the trends of incidence rates for respiratory infections; non pneumonia in the province in the period 2005 to 2007. Figure 2.2 shows that the total incidence rate in the province increased by 46.7 per cent between 2005 and 2006 and by 6.8 per cent between 2006 and 2007.

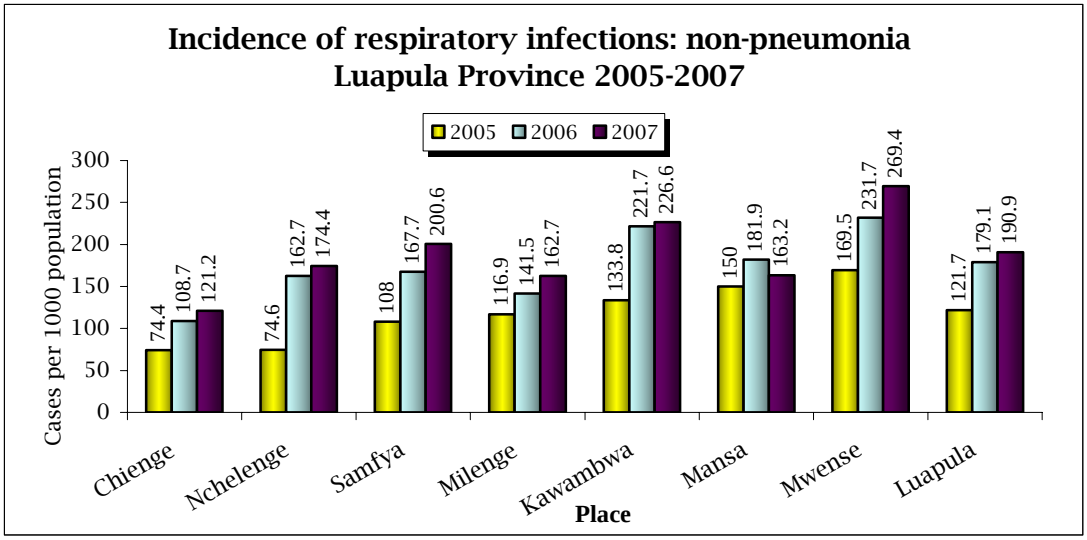

Figure 2.2: Incidence of respiratory infections: non-pneumonia

2.3 Respiratory infections (non-pneumonia)

Respiratory infection; pneumonia is a disease of the lungs. It is characterised by a cough and fast breathing in children. In adults, it is characterised by a severe cough, fever, difficult breathing and chest pain with superficial breathing.

Table 2.4 shows that the total incidence rate in 2007 in the province was 50.8 per 1000 population. Among the districts, the highest rate at 163 per 1000 population was in Milenge and the lowest at 31.9 per 1000 population was in Samfya. The total case fatality rate in the province was 41.8 per 1000 admissions. Among the districts, the highest rate was in Nchelenge at 64.6 and the lowest in Milenge at 17.4 per 1000 admissions.

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

District	Incidence rate per 1,000 population (All health facilities)			Case fatality rate per 1,000 admissions (Health centres and hospitals)		
	Under-five	5 years and above	Total	Under-five	5 years and above	Total
Milenge	445.2	93.0	163.4	21.1	6.7	17.4
Nchelenge	169.4	30.6	58.3	60.8	70.8	64.6
Mansa	159.6	29.4	55.4	43.8	43.4	43.7
Kawambwa	139.8	33.2	51.9	41.0	37.6	39.5
Chienge	126.9	26.1	46.3	34.5	15.2	27.1
Mwense	98.6	20.8	36.4	35.6	82.6	52.0
Samfya	107.2	15.0	31.9	57.6	35.2	47.0
Province	146.8	27.8	50.8	42.5	40.6	41.8

Source: HMIS

In Figure 2.3, it can be seen that the total incidence rate per 1000 population in the province reduced from 57.2 in 2005 to 52.7 in 2006 and to 50.8 in 2007.

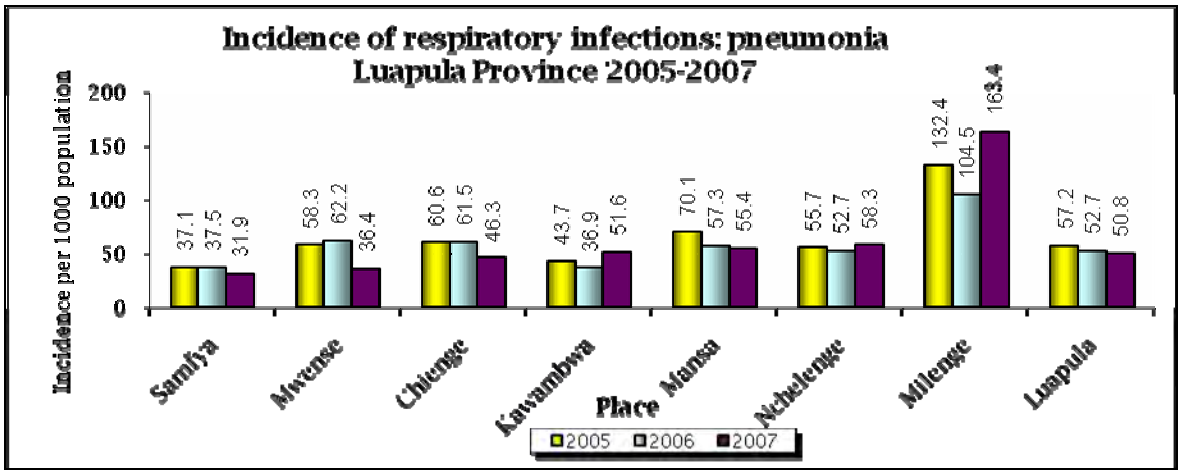

Figure 2.3: Incidence rate of respiratory infection: pneumonia

2.3.1 Diarrhoeal diseases (non-bloody)

The diagnosis of diarrhoea; non-bloody is the passing of three or more loose non-bloody stools per day. As shown in Table 2.5, in 2007, the total incidence rate for diarrhoea non-bloody in the province was 74.3 per 1000 population. Among the districts, the highest rate was in Milenge at 120.5 per 1000 population. The lowest was in Chienge at 60.6 per 1000 population. The case fatality rate in 2007 in the province was 70.5 per 1000 admissions in the hospitals. Among the districts, the highest fatality rate of 95.8 per 1000 admissions in hospitals was in Mansa. The lowest at 28.7 per 1000 admissions was in Kawambwa.

Table 2.5: Diarrhoea-non-bloody 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-five**	**5 years and above**	**Total**	**Under-five**	**5 years and above**	**Total**
Milenge	409.5	48.2	120.5	-	-	-
Samfya	321.1	38.7	90.6	66.7	83.3	76.9
Mwense	268.5	35.4	82	-	-	-
Nchelenge	215.2	31.7	68.4	58.0	52.4	55.4
Kawambwa	238.4	28.2	65.1	20.0	38.8	28.7
Mansa	207.5	27.7	63.7	82.2	117.9	95.8
Chienge	168.7	33.5	60.6	-	-	-
Province	246.3	33.0	74.3	63.9	79.2	70.5

Figure 2.4 shows that the incidence rate of diarrhoea; non-bloody increased by 25.8 per cent between 2005 and 2006. It reduced by 16.8 per cent between 2006 and 2007. The incidence rate in the province was 70.6 in 2005, 88.8 in 2006 and 75.3 in 2007.

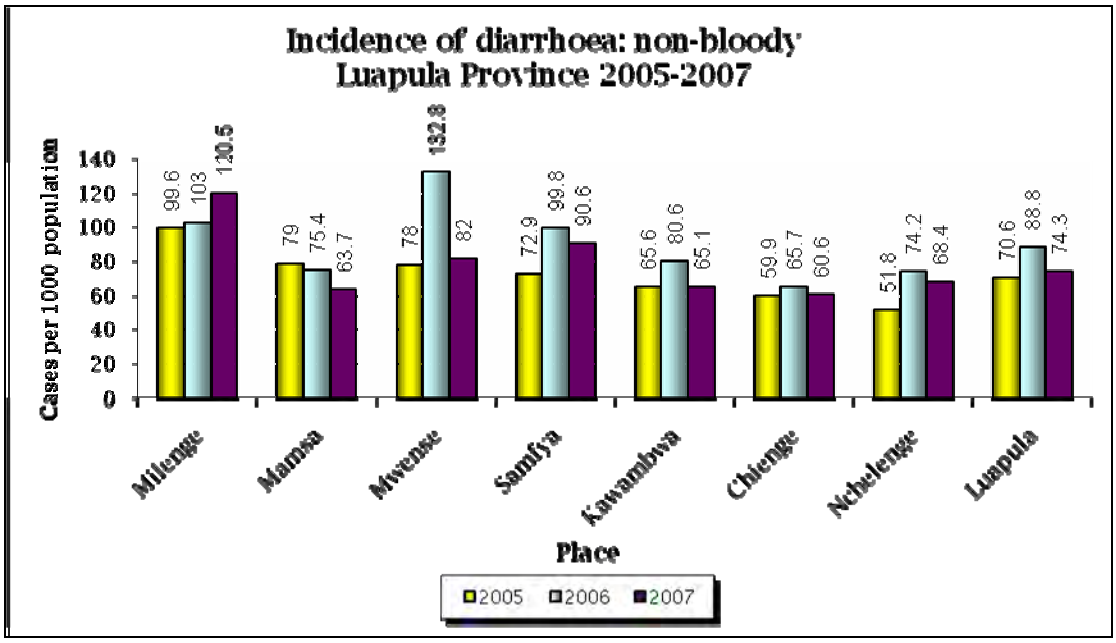

Figure 2.4: Incidence rate of diarrhoea: non-bloody

2.3.2 Diarrhoea–bloody (suspected dysentery)

Diarrhoea bloody is the passing of at least 3 loose stools with visible blood per day. As can be seen in Table 2.6, the incidence rate was 6.7 per 1000 in the province in 2007. Among the districts, the highest incidence rates in 2007 at 16.5 per 1000 and 11.4 per 1000 were in Chienge and Milenge respectively, while Samfya recorded the lowest at 3.2 per 1000.

Table 2.6: Dysentery incidence rate by age group, 2007

District	Incidence rate per 1,000 population (All health facilities)		
	Under-five	5 years and above	Total
Chienge	23.4	14.8	16.5
Milenge	21.2	90	11.4
Nchelenge	17.4	7.3	9.4
Mwense	9.7	4.2	5.3
Kawambwa	10.4	3.8	5.0
Mansa	7.5	3.7	4.5
Samfya	5.6	2.7	3.2
Province	11.6	5.5	6.7

The highest incidence rate of suspected dysentery in the province was 7.8 per 1000 in 2006 as shown in Figure 2.5. Among the districts, the incident rates were the highest in 2005, 2006 and 2007 in Chienge. The respective rates were 16.9, 19.9 and 16.5. The lowest rates in each of the years were in Samfya. The respective rates were 1.9, 1.7 and 3.2.

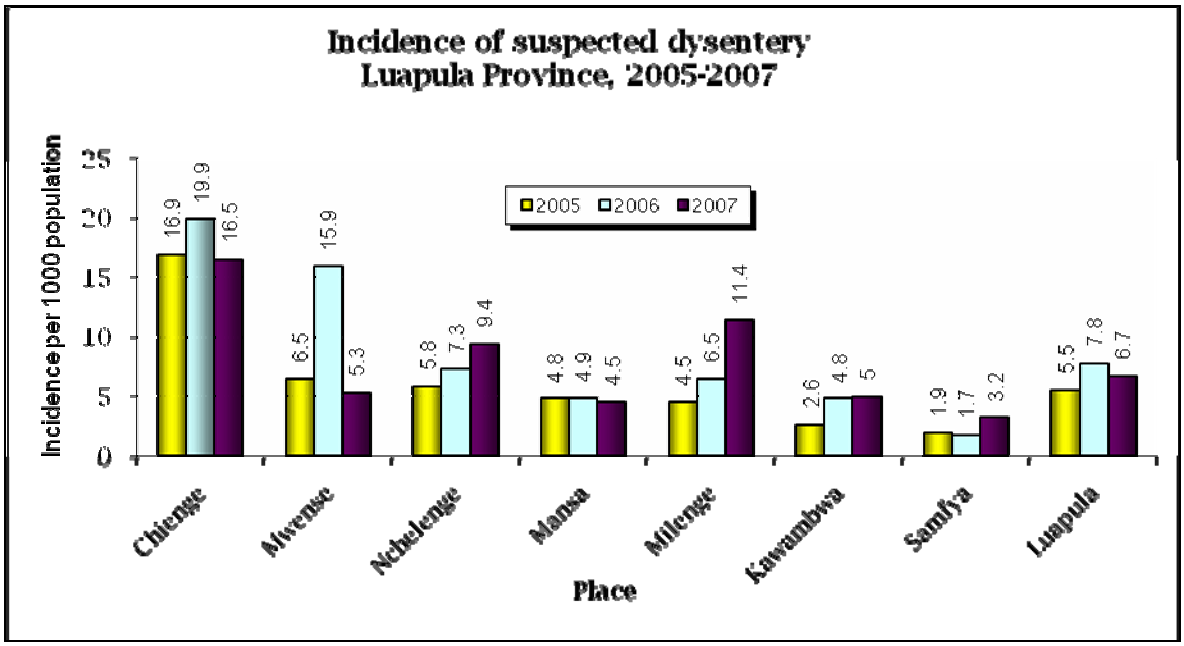

Figure 2.5: Incidence rate of suspected dysentery

2.3.3 Trauma (accidents, injuries, wounds, burns)

Trauma was the fifth leading cause of morbidity in the province in 2007. It refers to all accidents, injuries, wounds, broken bones or those occurring due to an accident or is purposely inflicted. Table 2.7 shows that the incidence rate for trauma was 44.7 per 1000 per 1000 population. Among the districts, the highest incidence rate at 61.1 per 1000 population was in Milenge. Chienge recorded the lowest at 27.0 per 1000 population. The total case fatality rate for the province was 23.3 per 1000 admissions. Among the districts, the highest was in Mansa with 32.4 per 1000 population. The lowest was in Kawambwa with 11.0 per 1000 population.

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

District	Incidence rate per 1,000 population (All health facilities)			Case Fatality rate per 1,000 admissions (Hospitals only)		
	Under-five	5 years and above	Total	Under-five	5 years and above	Total
Milenge	57.3	62	61.1	-	-	-
Mansa	67.8	56.3	58.6	35	31.8	32.4
Kawambwa	63.2	55.6	56.9	7.1	12.8	11
Mwense	60.7	38.8	43.1	-	-	-
Samfya	41.6	35.5	36.6	22.9	11.2	15
Nchelenge	39.7	30.8	32.6	27.8	13.4	17.4
Chienge	31.5	25.9	27	-	-	-
Province	**52.5**	**42.8**	**44.7**	**25.3**	**22.6**	**23.3**

***Source**: HMIS*

As shown in Figure 2.6, the incidence rate for trauma in the province increased by 22.8 per cent between 2005 and 2006 and by 4.6 per cent between 2006 and 2007. All the districts recorded an increase over the three year period except for Samfya that recorded a decrease between 2006 and 2007.

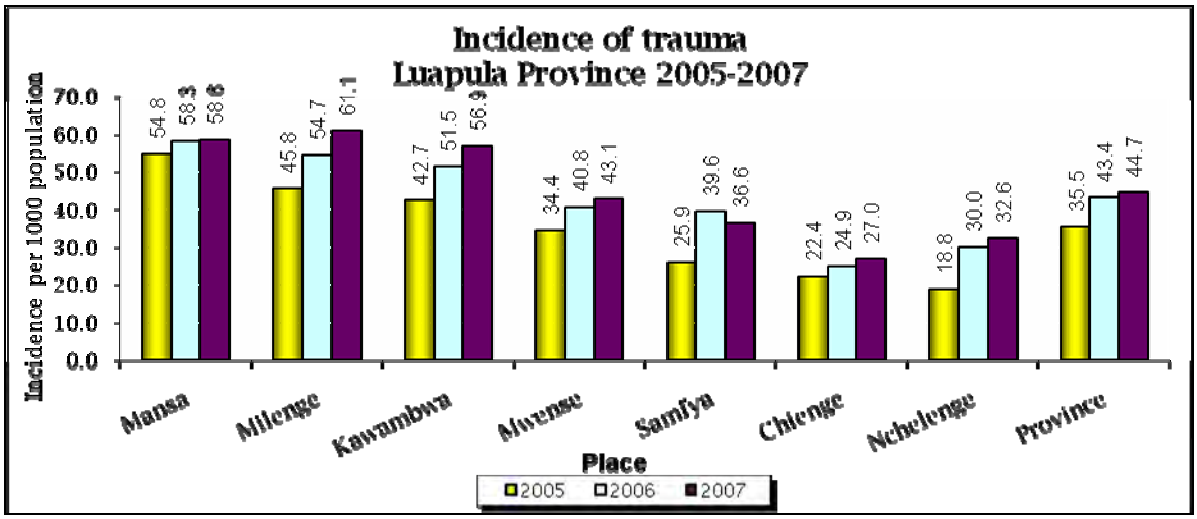

Figure 2.6: Incidence rate of trauma

2.3.4 Eye infections

Eye infections include conjunctivitis and trachoma. Conjunctivitis may present with watery or purulent discharge, redness, itchiness and eyelashes stuck together while trachoma may present with bilateral follicular conjunctivitis, blurring cornea and scaring of one or both eyes in advance cases in turn upper lid with eye lashes scratching the cornea.

Table 2.8 shows the incidence rate of eye infections in 2007 among the under-fives and older age group. The incidence rate in the province in 2007 was 28.8 per 1000 population. Among the districts, the highest incidence rate was in Milenge at 65.6 per 1000 population and the lowest was in Chienge at 17.5 per 1000 population.

Table 2.8: Incidence rate of eye infections by age group and district, 2007

District	Incidence rate per 1,000 population (All health facilities)		
	Under-five	5 years and above	Total
Milenge	207.3	30.2	65.6
Samfya	111.9	17.7	34.5
Mansa	94.0	16.9	32.3
Mwense	83.9	14.1	28.0
Kawambwa	60.2	13.5	21.7
Nchelenge	66.5	10	21.3
Chienge	53.6	8.5	17.5
Province	**87.6**	**14.7**	**28.8**

***Source**: HMIS*

As shown in Figure 2.7, the incidence of eye infections in the province was the highest in 2006. Among the districts, there was a reduction in the incidence of eye infections in Mansa and an increase in Milenge between 2005 and 2007.

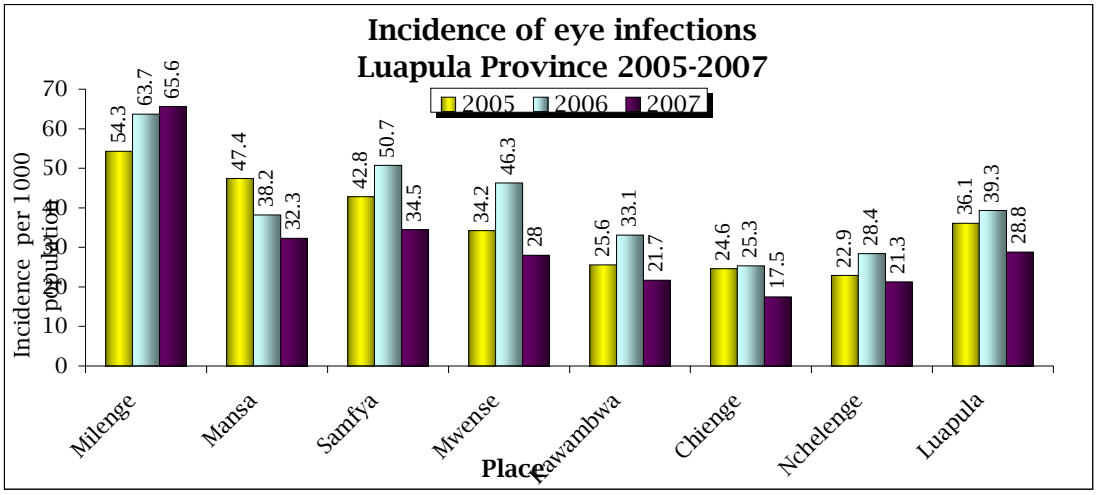

Figure 2.7: Incidence of eye infections

2.4 Under-five year olds patient case load

This is the proportion of the total under-five outpatient department attendance out of the total outpatient department attendance in all the health facilities.

As shown in Table 2.9, the province recorded a reduction in the proportion of under-fives case load. The proportion of under-fives seen at health facilities in 2005 (60 per cent) was higher than in 2007 (46 per cent). All the districts recorded a decline in the under-five patient case load proportion. This may attributed to the mass distribution of insecticide treated nets in 2006 and 2007 which might have lessened the incidence of malaria which among the leading causes of morbidity.

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

District	Year		
	2005	2006	2007
Chienge	0.58	0.48	0.41
Kawambwa	0.59	0.49	0.42
Mansa	0.54	0.49	0.45
Milenge	0.65	0.53	0.48
Mwense	0.64	0.52	0.47
Nchelenge	0.61	0.54	0.48
Samfya	0.67	0.57	0.51
Province	**0.60**	**0.52**	**0.46**

***Source**: HMIS*

2.5 Under-five case fatality rates

This is the number of deaths in the under-five age group per 1000 under-five admissions during the year. Table 2.10 shows the under-five case fatality rate by district from 2005 to 2007. The province recorded a reduction in the under-five case fatality rate from 43 per 1000 in 2005 to 37 per 1000 in 2007. Nchelenge is the only district which recorded an

increase in the under-five case fatality rate over the period. Chienge and Samfya districts recorded reductions between 2005 and 2006, but an increase between 2006 and 2007. Kawambwa and Mwense are the only districts which recorded a reduction in the under-five case fatality rates throughout the period.

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

District	Under-five years mortality rate		
	2005	2006	2007
Chienge	49.5	18.7	21.8
Kawambwa	41.4	37.5	33.6
Mansa	48.0	57.2	46.1
Milenge	21.9	23.3	14.6
Mwense	47.2	39.7	28.5
Nchelenge	46.1	47.6	54.6
Samfya	37.1	30.6	33.1
Province	**42.5**	**40.2**	**37.0**

***Source**: HMIS*

2.6 Selected notifiable diseases

Notifiable diseases are diseases that should be reported to other levels immediately they are diagnosed. They are classified as such because they can easily and quickly spread within a population, causing significant morbidity and mortality. In the HMIS, there are ten notifiable diseases. However this section only discusses acute flaccid paralysis and measles.

2.6.1 Acute flaccid paralysis

This is an acute onset of flaccid paralysis of one or more limbs with decreased or absent deep tendon reflexes, without other apparent cause, and without loss of mental functioning or sensation in the affected limb, among children younger than 15 years. Table 2.11 shows acute flaccid paralysis performance indicators by district in 2007. In 2007, 8 cases, 1 more than the expected 7 cases were detected in the province. Out of the 7 districts, only in 4 districts (Chienge, Nchelenge, Mansa and Kawambwa) were acute flaccid paralysis cases detected with a stool adequacy rate of 100 per cent. No acute flaccid paralysis cases were detected in Milenge, Samfya and Mwense districts. This could have been due to inadequate community sensitisation and weak surveillance.

Table 2.11: Acute flaccid paralysis surveillance performance indicators by district, 2007

District	Number of acute flaccid paralysis cases		Annualised non-polio acute flaccid paralysis rate *	(Stool adequacy)*	
	Expected	Detected		Number	Percent
Chienge	1	3	5.9	6	100
Kawambwa	1	3	4.9	6	100
Mansa	1	1	0.9	2	100
Milenge	1	0	0	0	0
Mwense	1	0	0	0	0
Nchelenge	1	1	1.5	2	100
Samfya	1	0	0	0	0
Province	**7**	**8**	**1.7**	**16**	**100**

Source: *Acute flaccid paralysis surveillance database*

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

2.6.2 Non-polio acute cute flaccid paralysis rate

This indicator measures investigation performed on the detected acute flaccid paralysis cases in children younger than 15 years old. It is computed on condition that 2 adequate stool samples were taken within 14 days of onset of paralysis and transported in reverse cold chain within 72 hours of collection to virology laboratory. It is measured per 100,000 children.

As shown in Figure 2.8, the non acute flaccid paralysis rate in the province was 1.8 per 100,000 children under 15 in 2005. In 2006 the rate dropped to 0.65 per 100,000 but it increased to 1.7 per 100,000 in 2007. The reduction in case detection in 2006 could be attributed to the reduced surveillance activities. Surveillance was strengthened in 2007and more cases were detected.

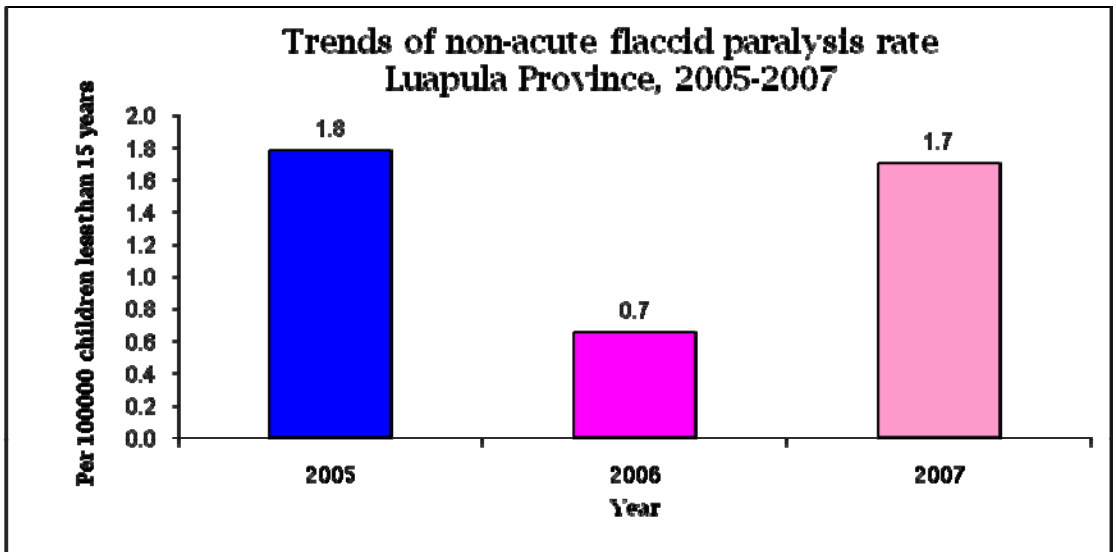

Figure 2.8: Non acute flaccid paralysis rate

2.6.3 Measles

Measles is an illness characterised by insidious onset of fever and a red blotchy rash lasting 3 or more days and one of the following: cough, runny nose (coryza) or red eyes (conjunctivitis).

As shown in Table 2.12, the number of suspected cases among the under-fives increased from 117 in 2005 to 431 in 2007. In the older age group of five years and above, the number of cases reduced from 222 in 2005 to 154 in 2006 and then increased in 2007 to 351. In all age groups, Chienge district recorded the highest number of cases in 2007(515), followed by Milenge (99) and Kawambwa (71), whilst Mwense recorded the lowest number of cases

(11). In 2007, there were out breaks in Chienge, Kawambwa, Mansa and Milenge because immunisations in the Democratic Republic of Congo which the districts have a boundary with are not done. There are a lot of movements of people to and from Congo in these districts.

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

District	Under-five years			5 years and above			Under-five incidence		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Chienge	1	1	289	0	0	226	0.1	0	13.8
Kawambwa	20	10	47	28	8	24	0.9	0.5	2.1
Mansa	81	159	7	178	140	14	1.9	3.6	0.2
Milenge	1	5	49	0	1	50	0.2	0.7	7.1
Mwense	3	0	7	10	0	4	0.1	0	0.3
Nchelenge	3	0	17	1	1	18	0.1	0	0.6
Samfya	8	4	15	5	4	15	0.2	0.1	0.4
Province	**117**	**179**	**431**	**222**	**154**	**351**	**0.7**	**1.0**	**2.3**

***Source**: HMIS*

Chapter 3: HIV/AIDS, tuberculosis and sexually transmitted infections

This chapter discusses the incidence of HIV/AIDS, tuberculosis and sexually transmitted infections in the province. Tuberculosis and sexually transmitted infections are closely associated with HIV/AIDS. Due to their depressed immunity, persons with HIV are likely to suffer from tuberculosis because most of the population has the tuberculosis germ. Persons with a sexually transmitted infection especially the ulcerative ones like syphilis and herpes can easily infect others with HIV or get infected.

3.1 Counselling and testing for HIV

Counselling is the processes of helping a client make an informed decision. Testing is the process of detecting HIV in the body. In order to access treatment and prophylaxes, a client should first be tested.

As shown in Table 3.1, there was an increase in the number of people being counselled. The percentage accepting to test for HIV increased from 94 per cent in 2005 to 99 per cent in 2006 and to 99.1 per cent in 2007. In 2005, counselling and testing services were not being provided in Chienge and Milenge. In 2006 and 2007, almost all clients counselled in the districts also agreed to be tested.

Table 3.1: Number of counselling and testing clients attended to and tested by district and year

District	Year								
	2005			2006			2007		
	Attended	Testing	Percentage tested	Attended	Testing	Percentage tested	Attended	Testing	Percentage tested
Chienge	0	0	0	186	186	100	271	271	100
Kawambwa	1,205	958	80	1,315	1,315	100	5723	5703	99
Mansa	2,234	2,192	98	6,212	6,174	99	20500	20157	98
Milenge	0	0	0	21	21	100	56	56	100
Mwense	42	42	100	1,644	1,642	99	1917	1911	99
Nchelenge	5,200	4,914	95	8,120	7,869	97	14137	14081	99
Samfya	1,618	1,572	97	1,740	1,737	99	3569	3567	99
Province	**10,299**	**9,678**	**94**	**19,238**	**18,944**	**99**	**46173**	**45746**	**99**

Source: *ZVCTS database*

Table 3.2 presents data on the number of clients tested who were found with HIV in 2005, 2006 and 2007. The percentage of clients found with HIV in the province reduced from 27 per cent in 2005 to 26 per cent in 2006 and to 18 per cent in 2007. Among the districts, the highest percentage found with HIV in 2006 (51 per cent) and in 2007 (36 per cent) was in Chienge. In 2005 it was in Mwense (55 per cent). The lowest in 2005 and 2006 was in Nchelenge (16 and 13 per cent respectively).

Table 3.2: Number of counselling and testing clients tested and found to have HIV by district and year

District	Year								
	2005			2006			2007		
	Tested	Positive	Percentage with HIV	Tested	Positive	Percentage with HIV	Tested	Positive	Percentage with HIV
Chienge	0	0	0	186	94	51	271	98	36
Kawambwa	958	248	26	1,315	457	35	5,703	953	17
Mansa	2,192	1,041	47	6,174	2,446	40	20,157	3,554	18
Milenge	-	-	-	21	7	33	56	12	21
Mwense	42	23	55	1,642	352	21	1,911	468	25
Nchelenge	4,914	813	16	7,869	1,066	13	14,081	2,560	18
Samfya	1,572	511	32	1,737	576	33	3,567	820	23
Province	9,678	2,636	27	18,944	4,998	26	45,746	8,465	19

Source: *ZVCTS database*

3.2 Prevention of HIV transmission from mothers to their infants

This is an intervention of preventing the transmission of HIV from mother to her infant.

3.2.1 Antenatal HIV testing

Mothers attending antenatal clinics are educated in groups about the benefits of testing for HIV so that they can take prophylaxes to prevent its transmission to their infants in case they are infected. Those who want to take the test are counselled individually.

Table 3.3 shows the proportion of women on the first antenatal visit that accepted to be tested for HIV. The average in the province in 2007 was 43 per cent; however there were variations among the districts. The highest percentage (90 per cent) was in Chienge and the lowest 1 per cent was in Milenge. There was only one facility in Chienge providing counselling and testing services.

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

District	Antenatal first visits	Tested for HIV	Percentage tested
Chienge	5,630	189	3
Kawambwa	5,898	3,127	53
Mansa	5,095	4,590	90
Milenge	1,700	17	1
Mwense	2,077	1,016	49
Nchelenge	6,683	1,597	24
Samfya	3,270	2,657	81
Province	**30,353**	13,193	**43**

Source: *ZVCTS database*

3.2.2 Positive HIV test results

Table 3.4 shows the proportion of women who accepted the test and those that were found with HIV in 2007. In the province, 15 per cent were found with HIV. Among the

districts, the highest percentage was in Milenge (47 per cent) and the lowest in Samfya (8 per cent).

Table 3.4: Proportion of women found to have HIV by district, 2007.

District	Tested for HIV	Found with HIV	Percentage with HIV
Chienge	189	21	11
Kawambwa	3,127	383	13
Mansa	4,798	735	15
Milenge	17	8	47
Mwense	1,016	108	11
Nchelenge	4,401	923	21
Samfya	2,657	215	8
Province	**16,205**	**2,413**	**15**

Source: *ZVCTS database*

3.2.3 Antiretroviral prophylaxis

Antiretroviral prophylaxis is one of the means used to prevent the transmission of HIV from mothers to their infants. Table 3.5 shows the proportion of infants exposed to HIV and those that received antiretroviral therapy prophylaxis in 2007. The provincial average was 58 per cent. All the infants exposed to HIV in Mansa and Mwense received the prophylaxis. The lowest percentage was in Kawambwa (15 per cent). Antiretroviral therapy prophylaxis was not being offered in Milenge and Chienge by then.

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

District	Infants exposed to HIV	Number given antiretroviral prophylaxis	Percentage of infants exposed to HIV given antiretroviral prophylaxis
Chienge	-	-	-
Kawambwa	383	57	15
Mansa	272	272	100
Milenge	-	-	-
Mwense	15	15	100
Nchelenge	165	92	56
Samfya	106	105	99
Province	941	541	**58**

Source: *ZVCTS database*

3.3 Antiretroviral therapy

3.3.1 Ever enrolled on antiretroviral therapy

All the districts were implementing antiretroviral therapy programmes by 2007. Table 3.6 shows that there was an increase in the number of clients enrolled on antiretroviral therapy from 4584 by 2006 to 8070 by 2007. There was an increase in the number of clients that started antiretroviral therapy in all the districts, with Mansa having the

highest number of clients with a cumulative total of 3237 by 2007, followed by Nchelenge with 1787 and Milenge with the lowest number at 12. Antiretroviral therapy services were only started in Milenge in 2007.

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

District	2006			2007		
	Males	Females	Total	Males	Females	Total
Chienge	21	31	52	49	67	116
Kawambwa	224	272	496	397	531	928
Mansa	741	1003	1,744	1,419	1,818	3,237
Milenge	-	-	-	4	8	12
Mwense	41	68	109	109	184	293
Nchelenge	622	907	1,529	726	1,061	1,787
Samfya	255	399	654	700	997	1,697
Province	**1,904**	**2,680**	**4,584**	**3,404**	**4,666**	**8,070**

***Source**: HMIS*

3.3.2 Ever enrolled on antiretroviral therapy against target

Table 3.7 shows proportion of targets achieved for putting clients on therapy by district and year in 2006 and 2007. In the whole province, 33 per cent of the target number was attained by the end of 2007. Among the districts, the highest was in Nchelenge (60.2 per cent) followed by Mansa (59.9 per cent). The lowest attainments were in Milenge (1.8 per cent) and Chienge (2.1 per cent). There is need for capacity building and logistics to overcome the low attainments.

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

District	2006			2007		
	Target	On therapy	Percentage	Target	On therapy	Percentage
Chienge	2,177	52	2.4	2,318	69	2.1
Kawambwa	2,788	496	18	2,848	826	29
Mansa	4,967	1,998	40.2	5,131	3,071	59.9
Milenge	-	-	-	760	14	1.8
Mwense	2,893	109	3.8	2,962	287	9.7
Nchelenge	3,016	1,529	50.7	3,155	1,899	60.2
Samfya	4,296	654	15.2	4,443	881	19.8
Province	**20,137**	**4,838**	**24**	**21,617**	**7,047**	**32.6**

***Source**: HMIS*

3.3.3 Currently on antiretroviral treatment by end of the year

As shown in Table 3.8, there were 3074 females on therapy compared to 2066 males aged 15 years and older in 2007 in the province. The number of males and females below 15 years on therapy more than doubled between 2006 and 2007 in the province. The number of males increased from 53 in 2006 to 190 in 2007. The number of females increased from 81 in 2006 to 197 in 2007.

Table 3.8: Patients currently on antiviral 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	
Chienge	1	0	9	11	21	1	3	26	35	65
Kawambwa	3	3	33	74	113	16	16	253	363	648
Mansa	11	15	43	51	120	100	91	888	1,184	2,263
Milenge	0	0	0	0	0	1	0	3	10	14
Mwense	2	3	39	65	109	2	3	97	170	272
Nchelenge	26	44	416	630	1,116	49	63	462	810	1,384
Samfya	10	16	245	383	654	21	21	337	502	881
Province	**53**	**81**	**785**	**1,214**	**2,133**	**190**	**197**	**2,066**	**3,074**	**5,527**

***Source**: HMIS*

3.4 Tuberculosis

Tuberculosis is an airborne disease caused by mycobacterium tuberculosis infection. It normally affects the lungs although sometimes other parts of the body are also affected.

3.4.1 Tuberculosis notifications from 2005 to 2007

Tuberculosis case notifications have been on the increase largely due to HIV co-infection. In addition, tuberculosis case detection has been greatly improved by capacity building in health workers in the STOP Tuberculosis strategy. Table 3.9 shows tuberculosis notification by type and sex for 2007 in Luapula province.

The case notifications were higher for males (1229) than for females (1036). The total number of notifications was 2312 out of which 26.7 per cent were new smear positive cases and 42.4 per cent were smear negative. There were more smear negative tuberculosis cases than smear positive cases because of HIV co-infection. HIV co-infected cases are more likely to be smear negative. The Table also shows that 475 cases (20.5 per cent) were for extra-pulmonary tuberculosis.

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

District	Sex	Notifications by type							
		Sputum Smear		Extra pulmonary tuberculosis	Relapse positive	Others previously treated	Treatment after default	Treatment after Failure	Total
		Negative	Positive						
Chienge	Male	30	7	4	0	0	0	0	**41**
	Female	30	10	9	1	0	0	0	**50**
	Total	**60**	**17**	**13**	**1**	**0**	**0**	**0**	**91**
Kawambwa	Male	36	25	26	0	4	0	0	**91**
	Female	27	26	34	0	2	1	0	**90**
	Total	**63**	**51**	**60**	**0**	**6**	**1**	**0**	**181**
Mansa	Male	113	330	53	14	69	6	3	588
	Female	80	213	63	5	32	7	0	400
	Total	193	543	116	19	101	13	3	988
Milenge	Male	18	10	12	0	0	2	0	**42**
	Female	12	6	11	0	2	3	0	**34**
	Total	**30**	**16**	**23**	**0**	**5**	**5**	**0**	**76**
Mwense	Male	38	55	64	6	10	0	0	**173**
	Female	38	74	75	2	13	1	0	**203**
	Total	**76**	**129**	**139**	**8**	**23**	**1**	**0**	**376**
Nchelenge	Male	52	30	32	3	4	3	0	**124**
	Female	50	40	37	3	2	1	0	**133**
	Total	**102**	**70**	**69**	**6**	**6**	**4**	**0**	**257**
Samfya	**Male**	**40**	**73**	**29**	**6**	**4**	**8**	**0**	**159**
	Female	**50**	**82**	**37**	**2**	**6**	**6**	**0**	**184**
	Total	**90**	**165**	**66**	**8**	**10**	**14**	**0**	**343**
Province	Male	328	530	220	29	91	29	3	**1,229**
	Female	287	451	208	13	57	19	0	**1,036**
	Total	**614**	**981**	**475**	**42**	**148**	**48**	**0**	**2,312**

***Source**: Tuberculosis database*

3.4.2 Tuberculosis cure, completion and success rate

Tuberculosis cure rate is the proportion of new smear positive cases that completed treatment with negative sputum smear results after 8 months of treatment. Tuberculosis completion rate is the proportion sputum cases that completed treatment at 8 months without doing a smear at the end of treatment.

Table 3.10 shows provincial and district cure rates for 2005, 2006 and 2007. In the province, the cure rate was below the national cure rate target of 85 per cent i.e. 48 per cent in 2005, 65 per cent in 2006 and 62 per cent in 2007. Among the districts, not even in one was the cure rate was above the national target in 2005, 2006 and 2007.

The treatment success rate in the province improved from 67 per cent in 2005 to 75 per cent in 2006 and to 77 per cent in 2007.The completion rate reduced from 19 per cent in 2005 to 11 per cent in 2006 and to 15 per cent in 2007.

Table 3.10: Tuberculosis cure rate 2005 to 2007

District	Cure rate (percentage)			Completion rate (percentage)			Treatment success (percentage)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Chienge	38	60	62	0	4	12	38	64	74
Kawambwa	69	76	74	17	5	2	86	81	76
Mansa	68	70	62	11	12	13	79	82	75
Milenge	0	65	65	0	14	23	0	76	88
Mwense	29	70	39	67	13	25	96	83	64
Nchelenge	73	71	68	12	12	12	85	83	80
Samfya	62	41	66	24	14	16	86	55	82
Province	**48**	**65**	**62**	**19**	**11**	**15**	**67**	**75**	**77**

***Source**: Tuberculosis database*

3.5 Sexually transmitted infections

STIs are infections that are passed from an infected person to another through sexual intercourse. Since some STIs facilitate the transmission of HIV it is strongly recommended that STI clients should undergo counselling and testing for HIV.

Table 3.11 shows that the incidence rate of sexually transmitted infections per 1000 population in the province in 2007 was 8.9. Among the districts, the highest incidence rate was in Chienge (12.5 per 1000 population) followed by Nchelenge (11.3 per 1000 population). The lowest was in Milenge and Mwense (5 per 1000 and 6.6 per 1000 population respectively). The incidence could be justified in that Chienge is a busy fish trading area with a lot of fish mongers, general traders. There are also lots of security personnel being near an international boundary. All these are high risk groups for STIs. Milenge is isolated and there are not many social amenities.

Table 3.11: Incidence rate of sexually transmitted infection, 2007

District	Incidence rate per 1,000 population (All health facilities)		
	Under-five	5 years and above	Total
Chienge	0	15.6	12.5
Kawambwa	0.2	9.9	8.2
Mansa	0.6	10.7	8.7
Milenge	0	6.3	5.0
Mwense	0.2	8.2	6.6
Nchelenge	0	14.0	11.3
Samfya	0.4	10.2	8.4
Province	**0.3**	**11.0**	**8.9**

***Source**: HMIS*

Figure 3.1 shows that the incidence rate of STIs increased annually in Samfya. It reduced annually in Kawambwa.

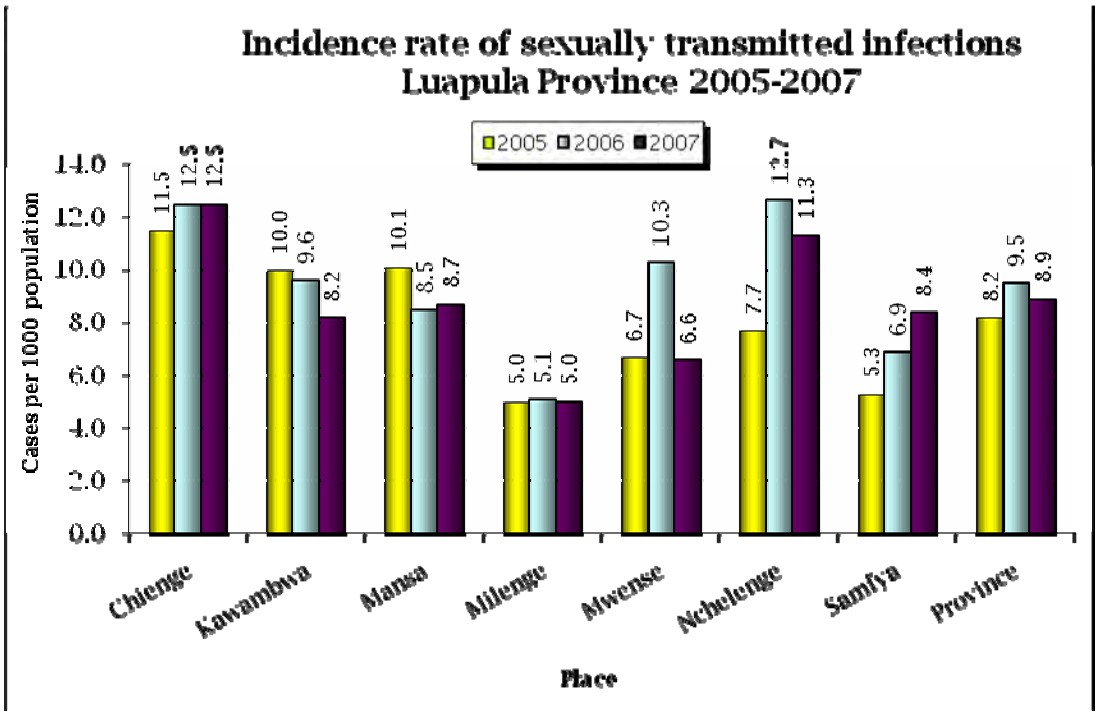

Figure 3.1: Incidence rate of sexually transmitted infections, 2005-2007

Chapter 4: Human resources

This chapter discusses human resource indicators derived from the HMIS such as staff work load, health centre daily staff contact as well as active community based volunteers (tTBAs and community health workers). Data was obtained from end district human resource registers and staff return reports for 2007.

Human resource is recognised globally as one of the most important element in the effective and efficient delivery of health services. Quality standard of performance cannot be achieved without adequate staffing levels of those directly providing health care services.

4.1 Number of medical personnel by district

This section discusses data on the number of Medical Doctors, Clinical Officers, Environmental Health Technologists, Nurses, Midwifes, Lab Technologists, Pharmacy Technologist and Medical Licentiate.

Table 4.1 shows that the province had 38 per cent of its staff establishment filled during the period under review. The province operated below the standard of 75 per cent. However, Mansa and Chienge Districts were better than the rest of the districts as they had 68 per cent and 54 per cent staffing levels respectively. The most adversely affected district was Milenge which had only 25 per cent of its establishment filled.

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

Districts	Staff Cadre								Total
	Medical Doctors	Clinical Officers	Nurses	Mid-wives	Environmental Health Officer/ Technicians	Pharmacists	Laboratory Technicians	Medical Licentiate	
Chienge	0	3	12	2	3	0	1	0	21
Kawambwa	2	6	56	11	4	0	3	0	83
Mansa	0	9	55	14	17	1	4	0	99
Milenge	0	2	4	1	3	0	0	0	10
Mwense	0	4	25	4	6	1	1	1	42
Nchelenge	2	10	35	9	5	1	1	1	64
Samfya	2	17	55	15	11	4	4	2	110
Province	**7**	**51**	**242**	**56**	**49**	**7**	**14**	**5**	**429**

Source: *District Human Resource Register.*

Samfya and Mwense had 12 out of 30 and 14 out of 24 centres manned by support staff respectively. In this regard, the performance of Milenge, Samfya and Mwense were greatly affected as evidenced in Table 5.12 on supervised deliveries.

4.2 Health centre staff daily contacts

Figure 4.2 shows that there was high staff work load in the province of above 25 patients per staff per day. The districts which were most over burdened were Milenge with 48 patients per staff per day followed by Nchelenge which recorded 42 contacts per staff per day. Hence, there was still a major problem of understaffing in the province and individual districts in 2007. All the districts had patient contacts above 10 to 15 as per national standard.

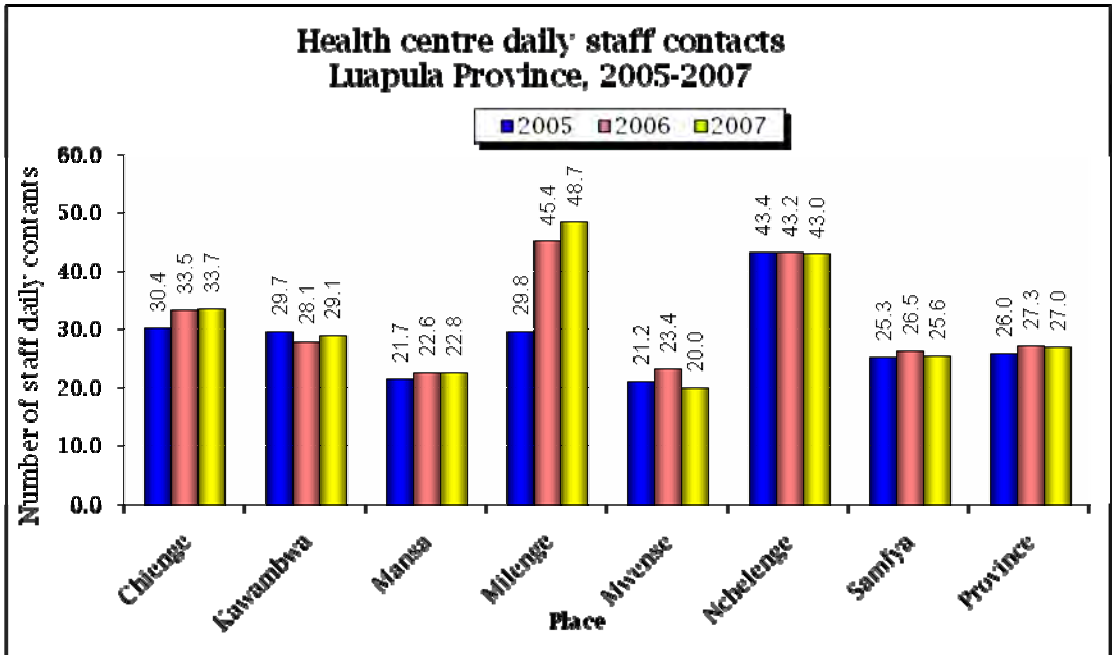

Figure 4.1: Number of daily staff contacts

4.3 Community health volunteers

4.3.1 Trained traditional birth attendants

Table 4.2 presents absolute figures on active trained Traditional Birth Attendants (tTBAs) and deliveries they conducted. It also shows the average number of deliveries each tTBA conducted during the period under review (2005 to 2007).

The number of deliveries conducted by tTBAs in the province increased from 12198 in 2005 to 13979 in 2007. Chienge District had extremely low number of tTBAs due to various factors such as lack of TBA training. This implies also that most of the deliveries in Chienge were conducted by untrained TBAs.

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

District	2005			2006			2007		
	Active tTBAs	Deliveries		Active tTBAs	Deliveries		Active tTBAs	Deliveries	
		Actual	Average		Actual	Average		Actual	Average
Chienge	3	314	114	4	264	75	3	332	111
Kawambwa	80	2776	35	86	2782	32	86	2764	32
Mansa	59	2216	38	59	2698	46	73	3770	46
Milenge	20	522	26	38	998	26	31	833	27
Mwense	43	1149	27	51	1386	27	38	1372	36
Nchelenge	49	2498	51	72	2264	32	80	2331	29
Samfya	112	2723	24	97	2542	26	112	2977	37
Province	**364**	**12198**	**34**	**405**	**12934**	**32**	**424**	**13979**	**33**

***Source**: HMIS*

4.3.2 Community health workers

Table 4.3 shows the number of active community health workers against number of patients seen for the period from 2005 to 2007. Generally, average number of patients seen by each community health worker in the province decreased by 48.6 per cent (295608 to 143676) from 2006 to 2007. This could be attributed to a number of reasons such as lack of motivation and erratic supplies of community health worker drug kits among others.

Table 4.3: Number of active community health workers and patients they attended to, 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
Chienge	11	14985	394	18	10381	540	17	6562	380
Kawambwa	48	36896	777	52	53289	1025	41	19180	474
Mansa	49	61341	246	68	100408	471	94	56442	602
Milenge	18	11464	646	32	2036	631	22	5321	245
Mwense	61	38439	633	75	41623	559	37	9245	248
Nchelenge	46	42035	909	93	39141	421	78	31947	408
Samfya	55	38261	693	50	30484	607	37	14971	402
Province	**288**	**243421**	**847**	**388**	**295608**	**762**	**326**	**143676**	**441**

***Source**: HMIS*

Chapter 5: Availability of drugs

Drug availability is the number of times drugs were in or out of stock during the period under review. This section presents indicators on parameters such as months drugs were in stock at health facilities, availability of tracer drugs and drug kit utilisation in 2005 to 2007.

5.1 Medical supplies in stock at health facilities

Table 5.1, shows the percentage of months for which drugs were in stock by districts from 2005 to 2007. The provincial drug availability reduced from 68 per cent in 2006 to 66 per cent in 2007. In 2007, Mansa recorded the highest percentage (85 per cent) whilst Samfya had the lowest availability of drugs (53 per cent). Milenge, Mwense and Chienge Districts have no hospitals hence recoded zeros.

Table 5.1: Percentage of months for which drugs were in stock by district, 2005-2007

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
Chienge	66	80	68	0	0	0	66	80	68
Kawambwa	55	73	70	90	94	90	58	75	72
Mansa	91	91	84	100	100	99	91	91	85
Milenge	44	75	70	NA	NA	NA	44	75	70
Mwense	44	48	55	NA	NA	NA	44	48	55
Nchelenge	63	68	59	100	100	98	66	70	62
Samfya	52	50	51	99	91	91	54	52	53
Province	**61**	**67**	**64**	**96**	**95**	**93**	**62**	**68**	**66**

***Source**: HMIS*

5.2 Availability of tracer drugs by health centre and hospital

Tracer drugs include antimalarials, paracetamol, fansidar, cotrimoxazole, benzyl penicillin, amoxicillin which should be available at all times. Table 5.2 shows that Mansa recorded the highest in anti-malarial while Mwense recorded lowest. All the hospitals scored over 80 per cent for all the three tracer drugs monitored.

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
Chienge	49	71	75	NA		
Kawambwa	38	88	85	83	100	100
Mansa	66	83	80	92	100	100
Milenge	57	78	76	NA	NA	NA
Mwense	26	69	58	NA	NA	NA

Nchelenge	45	70	81	100	100	100
Samfya	33	79	76	75	96	100
Province	43	78	76	85	99	100

5.3 Drug kit utilisation at health centres

This is the number of drug kits used per 1000 patients and measures the number of essential drug used during the period. Figure 5.1 shows drug kit utilisation in the districts from 2005-2007 in the Province. Generally, the utilisation rate dropped in 2007 (0.8) for the province as compared to 2005 and 2006 (1.5, 1.2). In 2007, Samfya was the highest with the lowest being Nchelenge as graphically presented.

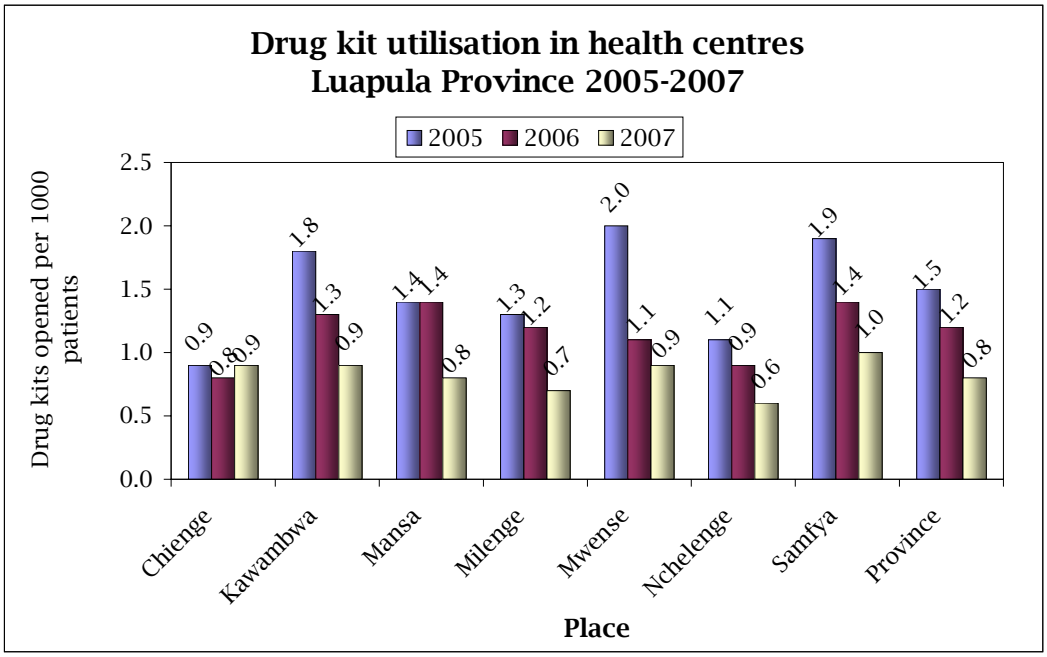

Figure 5.1: Drug kit utilisation in the health centres

Chapter 6: Health services delivery indicators

This section looks at the selected number of indicators on service delivery for the period 2005 to 2007. The following indicator sets are discussed;

i. Health centre outpatient department utilisation
ii. Health centre under-fives and above per capita attendances
iii. Health centre bed occupancy rate
iv. Hospital bed occupancy rate and
v. Hospital average length of stay.

6.1 Health facility utilisation

Health facility utilisation is the number of first attendances and admissions during a given period per population. Table 6.1 shows high coverage for health centre outpatient department utilisation. However there was a reduction from 96 per cent in 2005 and 2006 to 94 per cent in 2007. Hospital average length of stay was at 6 days in the period 2005 to 2007 as compared to the national threshold of 5 days.

The average health centre bed occupancy rate was low (19 per cent) in the period 2005 to 2007 as compared to the national target of 50 per cent for rural areas. This could be attributed to inadequate space for admissions of patients, inadequate qualified staff as contained in Table 4.1 among others. Bed occupancy rate for the hospital increased from 59 per cent in 2006 to 60 per cent in 2007 although it was still below the national standard which is 80 per cent.

Table 6.1: Trends of selected service delivery indicators by year

Indicator	Year		
	2005	2006	2007
Health centre outpatient department utilisation (percentage)	96	96	94
Health centre under-five per capita attendance	0.7	0.8	0.8
Health centre over 5 per capita attendance	0.6	0.5	0.4
Health centre bed occupancy Rate (percentage)	19	20	18
Hospital bed occupancy rate (percentage)	66	59	60
Hospital average length of stay	6.9	5.9	5.9

***Source**: HMIS*

6.2 Outpatient department utilisation

Table 6.2 illustrate outpatient department utilisation rates in the province for the period 2005 to 2007. In 2007, Milenge District recorded highest utilisation rate (1.47) and the lowest was Chienge with 0.61. The trend for Milenge has remained high since 2005. The standard for rural area is above 1.

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

District	Year		
	2005	2006	2007
Chienge	0.63	0.71	0.61
Kawambwa	0.57	0.85	0.84
Mansa	0.74	0.76	0.68
Milenge	0.93	1.11	1.47
Mwense	0.65	0.89	0.81
Nchelenge	0.54	0.64	0.66
Samfya	0.58	0.74	0.70
Province	**0.64**	**0.78**	**0.74**

***Source**: HMIS*

6.3 Health centre per capita attendance

Table 6.3 illustrates coverage indicators from 2005 to 2007 excluding hospital attendances. The Province had higher health centre per capita attendance in children under-fives (2.42) than that of adults (0.7). In 2007, Milenge had the highest per capita attendance for children under-fives (4.13) in 2007. Overall picture for the province shows a decrease in 2007 comparing to previous two years.

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

District	2005			2006			2007		
	Under-five year	5 years and above	Total	Under-five year	5 years and above	Total	Under-five year	5 years and above	Total
Chienge	2.62	0.52	0.94	2.30	0.70	1.02	1.62	0.61	0.81
Kawambwa	2.77	0.47	0.88	3.29	0.74	1.19	2.74	0.76	1.11
Mansa	3.22	0.70	1.20	2.85	0.76	1.18	2.37	0.72	1.05
Milenge	3.88	0.63	1.28	3.46	0.71	1.42	4.13	1.26	1.83
Mwense	3.42	0.56	1.09	3.58	0.91	1.40	2.47	0.89	1.21
Nchelenge	2.58	0.41	0.84	2.58	0.58	0.98	2.37	0.61	1.00
Samfya	2.88	0.42	0.87	3.00	0.62	1.06	2.40	0.60	0.93
Province	**2.98**	**0.53**	**1.00**	**2.95**	**0.72**	**1.15**	**2.42**	**0.72**	**1.05**

***Source**: HMIS*

6.4 Bed-occupancy rate – health centre and hospital

Bed occupancy rate is the percentage of available beds occupied during a period in an admitting health facility.

Table 6.4 describes bed occupancy rates by district for the period 2005 to 2007. Note that there were no district hospitals in Chienge, Milenge and Mwense were low. Hence the total bed occupancy rates in these districts were low because some patients are referred to hospitals the districts. Among the districts, the highest bed occupancy rate recorded in the period under review was in Nchelenge (92 per cent in 2005). The lowest was in Mansa (52 per cent in 2006).

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
Chienge	15	26	21	-	-	-	15	25	21
Kawambwa	16	20	15	60	71	68	40	46	42
Mansa	20	19	24	62	52	59	48	42	48
Milenge	21	20	22	-	-	-	21	20	22
Mwense	17	18	17	-	-	-	17	18	17
Nchelenge	22	16	14	92	80	81	68	57	57
Samfya	22	20	15	59	53	44	40	35	28
Province	**19**	**20**	**18**	**66**	**60**	**60**	**39**	**37**	**37**

***Source**: HMIS*

Table 6.5 shows that three districts in the province (Chienge, Milenge and Mwense) have no hospitals hence they recorded zero utilisation. Among the districts with hospitals, Mansa recorded high Hospital OPD utilisation rates of 0.14 in 2007 and the least being Samfya District with 0.02.

Table 6.5: Hospital outpatient department utilisation rate by district and year

District	Year		
	2005	2006	2007
Chienge	0	0	0
Kawambwa	0.07	0.08	0.09
Mansa	0.08	0.09	0.14
Milenge	0	0	0
Mwense	0	0	0
Nchelenge	0.08	0.07	0.10
Samfya	0.03	0.03	0.02
Province	**0.05**	**0.05**	**0.06**

***Source**: HMIS*

6.5 Hospital outpatient department percentage by-pass first attendances

Hospital outpatient department percentage by-pass is the proportion of first time outpatients that by-passed health centres to go directly to the hospital without being referred.

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

District	Under-five years			5 years and above			Total by-pass attendance		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Chienge	0	0	0	0	0	0	0	0	0
Kawambwa	18	16	19	9	13	9	11	12	9
Mansa	5	6	12	5	3	5	5	3	6
Milenge	0	0	0	0	0	0	0	0	0
Mwense	0	0	0	0	0	0	0	0	0
Nchelenge	5	5	2	2	1	3	2	2	2
Samfya	36	17	6	32	16	17	32	15	5
Province	**18**	**11**	**10**	**8**	**6**	**5**	**9**	**7**	**5**

Source: HMIS

Table 6.6 shows percentages of patient by-passing lower levels of care by district for period 2005 to 2007. Looking at the districts with hospitals, Samfya District recorded high percentages (32 per cent, 15 per cent) followed by Kawambwa (11 per cent, 12 per cent) in 2005 and 2006. In 2007 Samfya improved to 5 per cent and Kawambwa also came to 9 per cent. Overall indicators for the province showed an improvement in 2007 with 5 per cent. Nchelenge is doing fine and records reasonably very low percentage (2 per cent) of patients seeking services from hospital without referral from lower level of care.

6.6 Inpatient turnover rate

Table 2.11 shows acute flaccid paralysis performance indicators by district in 2007. As shown in the Table, in 2007 the province detected more cases (8) than the expected (7) cases. Out of the 7 districts, only 4 districts (Chienge, Nchelenge, Mansa and Kawambwa) detected acute flaccid paralysis cases with stool adequacy rate of 100 per cent. Milenge, Samfya and Mwense districts did not detect any acute flaccid paralysis cases. This could have been due to inadequate community sensitisation and weak surveillance.

Table 6.7 indicates health centre and hospital inpatient turnover. Turnover rates by district and year respectively for the period 2005 to 2007. Provincial health centre turnover rate showed an increase from 2005 to 2007(6.9, 7.2, 7.4). During the same period, hospital inpatient turnover rates increased.

Turnover rates for Kawambwa, Samfya and Nchelenge districts were high in hospitals than in health centres. Associated factors could be that many facilities were not admitting patients due to shortage of qualified staff for Kawambwa, Mwense and Samfya in some facilities.

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
Chienge	5.8	8.3	8.0	0	0	0
Kawambwa	5.1	5.9	5.8	10.8	12.1	12.7
Mansa	10.7	8.7	13.4	6.8	7.0	6
Milenge	7.8	7.3	8.2	0	0	0
Mwense	4.8	6.2	5.1	0	0	0
Nchelenge	8.9	6.0	8.0	11.1	11.3	12.5
Samfya	7.6	7.6	5.6	8.8	9.8	9.5
Province	**6.9**	**7.2**	**7.4**	**8.7**	**9.1**	**9.2**

6.7 Average length of stay

This is the number of days a patient stays in the inpatient health facility. It should not be more than 5 days. Table 6.8 shows that the average length of stay in the province was 6.9 days in 2005. It improved to 5.9 days in 2006 and 2007. In 2007, the average length of stay

in Kawambwa and Samfya was below the threshold of 5days. It was above in Mansa and Nchelenge.

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

District	Hospital average length of stay		
	2005	2006	2007
Chienge	0	0	0
Kawambwa	5.0	5.3	4.8
Mansa	8.1	6.8	7.9
Milenge	0	0	0
Mwense	0	0	0
Nchelenge	7.5	6.4	5.8
Samfya	6.0	4.2	4.1
Province	**6.9**	**5.9**	**5.9**

***Source**: HMIS*

6.8 Maternal health and family planning

6.8.1 Summary of maternal health indicators

Maternal health indicators in 2005-2007 as shown in Table 6.9 were not good except for first antenatal attendance coverage (100 per cent). Many women did not deliver from health institutions. The percentage for institutional deliveries was 35.3 in this period 2005-2007. Institutional deliveries in the province were below the rural national target of 40 per cent due to inadequate health care infrastructure. Traditional Birth Attendants were not very active over the period due to many reasons such as inadequate motivation and lack of refresher courses. Therefore, supervised deliveries were below 70 per cent.

Table 6.9: Maternal health indicators, Luapula Province, 2005-2007

Indicator	Year		Average	
	2005	2006	2007	2005-2007
First antenatal coverage (percentage)	102	100	99	100
Average antenatal visits	3.0	2.8	2.8	2.9
Institutional deliveries (percentage)	32	35	39	35.3
Trained traditional birth attendants (percentage)	26	27	28	27
Supervised deliveries (percentage)	59	63	67	63
First postnatal attendance (percentage)	65	63	63	63.7

***Source**: HMIS*

6.8.2 Antenatal care

Antenatal care is rendering health services to a woman from pregnancy up to the time of labour and delivery. Table 6.10 shows that the performances of the province have been very good because the coverage during the period under review in its districts was above the national target of 80 per cent.

Table 6.10: First antenatal attendance coverage, 2005-2007

District	2005			2006			2007		
	Contacts	Target	Coverage percentage	Contacts	Target	Coverage percentage	Contacts	Target	Coverage percentage
Chienge	6,184	5,295	117	5,735	5,464	105	5,630	5,638	100
Kawambwa	6,107	5,922	103	5,780	6,041	96	5,898	6,197	95
Mansa	10,834	11,707	93	11,410	12,085	94	11,819	12,484	95
Milenge	1,671	1,762	95	1,713	1,818	94	1,876	1,875	100
Mwense	6,321	6,685	95	7,364	6,966	106	7,126	7,207	99
Nchelenge	6,971	7,015	99	7,072	7,337	96	6,683	7,675	87
Samfya	10,891	9,606	113	9,984	9,573	104	11,271	9,899	114
Province	**48,979**	**47,992**	**102**	**49,058**	**49,282**	**100**	**50,303**	**50,975**	**99**

***Source**: HMIS*

6.8.3 Average number antenatal visits

It is recommended that a pregnant woman makes 4 antenatal visits before delivering. As can be seen from the Table 6.11, the first antenatal visits, which is the number of pregnant women presenting themselves to the health institutions for antenatal services for the first time at 16 weeks gestation increased from 48,979 in 2005 to 49,058 in 2006 and to 50,303 in 2007 in the province. The average number of antenatal visits in the province was 3.0 in 2005, 2.8 in 2006 and 2.8 in 2007. There was a yearly reduction in the number of districts where the average number of antenatal visits was more than 3 from 2005 to 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
Nchelenge	25,291	6,971	3.6	22,604	7,072	3.2	21,373	6,683	3.2
Mwense	19,881	6,321	3.1	20,768	7,364	2.8	20,020	7,126	2.8
Mansa	33,429	10,834	3.1	34,089	11,410	3.0	32,550	11,819	2.8
Kawambwa	17,820	6,107	2.9	16,500	5,780	2.9	16,925	5,898	2.9
Chienge	17,112	6,184	2.9	15.762	5,735	2.7	15,931	5,630	2.8
Samfya	28,234	10,891	2.6	25,771	9,980	2.6	29,146	11,271	2.6
Milenge	3,452	1,671	2.1	3,898	1713	2.3	4,161	1,876	2.2
Province	**145,219**	**48,979**	**3.0**	**139,392**	**49,058**	**2.8**	**140,106**	**50,303**	**2.8**

***Source**: HMIS*

6.8.4 Supervised deliveries

Pregnant women should have access to trained attendants during labour to reduce risks of complications and infections that may pose a danger to both the mother and baby. Supervised delivery is an indicator that measures the proportion of estimated deliveries in health facilities or assisted by tTBAs.

As shown in Table 6.12, there was a general increase in institutional deliveries and deliveries conducted by tTBAs such that there was an increase in the percentage of supervised deliveries from 59 per cent in 2005 to 63 per cent in 2006 and to 67 per cent in 2007 in the province.

The percentage of supervised deliveries in Nchelenge (74 per cent) Mansa (78 per cent) and Kawambwa (96 per cent) was above the provincial average of 67 per cent in 2007. Deliveries conducted by tBAs were above the provincial average of 28 per cent in 2007 in Nchelenge (32 per cent), Kawambwa (46 per cent), Samfya (31 per cent) and Milenge (46 per cent).

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

District	Institutional deliveries			trained Traditional Birth Attendants			Supervised deliveries		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Nchelenge	47	46	43	37	32	32	84	78	74
Mansa	42	44	50	20	23	28	62	68	78
Mwense	29	36	37	18	21	20	47	56	56
Chienge	28	30	28	6	5	6	35	35	34
Kawambwa	28	34	49	49	48	46	76	82	96
Samfya	20	24	26	29	28	31	50	52	58
Milenge	14	14	21	31	57	46	45	71	67
Province	**32**	**35**	**39**	**26**	**27**	**28**	**59**	**63**	**67**

***Source**: HMIS*

6.8.5 Complicated deliveries

Such deliveries are characterised by among other things, delayed progress of labour, significant distress to the mother or foetus, abnormal bleeding or death of the foetus.

Table 6.13 shows the percentage of complicated deliveries in health centres and hospitals by district in 2007. The percentage of complicated deliveries in hospitals in the province was 12.9. Of all deliveries in the province, 12.9 per cent were caesarean. Among the districts, the highest percentage of complicated deliveries in health centres was in Chienge (5.9 per cent) and the lowest in Mansa (1.9 per cent).

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

District	Health centre		Hospital		
	All deliveries	Percentage complicated	All deliveries	Percentage complicated	Percentage caesarean
Nchelenge	1,344	3.1	1,801	9.4	10
Mansa	3,595	1.9	2,410	16.4	13
Mwense	2,545	4.6	-	-	-
Chienge	1,538	5.9	-	-	-
Kawambwa	1,586	4.5	1,364	11.2	5
Samfya	1,818	4.9	703	13	11.0
Milenge	385	2.3	-	-	-
Total	**12,811**	**3.8**	**6,278**	**12.9**	**10**

***Source**: HMIS*

6.8.6 Prevalence of still births

Stillbirths are those babies born dead after 28 weeks completed gestation. The prevalence of still births is the proportion of still births out of the total births.

Table 5.14 shows the trends of proportion of total births that were still borne by district from 2005–2007. As can be seen in the Table, the percentage of stillbirths in the province reduced from 4.6 per cent in 2005 to 4.4 per cent in 2006 then to 4.1 per cent in 2007.

Among the districts in 2005 the highest percentages were in Kawambwa (7.3 per cent), Mwense (6.8 per cent) and Samfya (4.9 per cent). These percentages were above the provincial average of 4.6 per cent. The percentage in Kawambwa reduced annually from 7.3 in 2005 to 5.1 in 2006 and to 3.9 in 2007. This was also the case in Samfya from 4.9 in 2005 to 3.7 in 2006 and to 3.4 in 2007. In 2007, the percentage of stillbirths was much higher than in the other districts in Mwense (6.1 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
Nchelenge	112	3,239	3.4	195	3,238	6.0	136	3,186	4.3
Mansa	188	4,738	3.9	231	5,184	4.4	231	6,079	3.8
Mwense	135	1,957	6.8	88	2,429	3.6	169	2,792	6.1
Chienge	47	1,455	3.2	66	1,563	4.2	52	1,538	3.4
Kawambwa	117	1,597	7.3	101	1,975	5.1	117	3,007	3.9
Samfya	94	1,896	4.9	71	2,261	3.7	85	2,536	3.4
Milenge	8	234	3.4	7	249	2.8	14	288	3.6
Total	**701**	**15,116**	**4.6**	**759**	**16,899**	**4.4**	**804**	**19,426**	**4.1**

***Source**: HMIS*

6.8.7 First postnatal attendance

This is the proportion of women attending postnatal care clinic for the first time after delivery out of the estimated deliveries within 42 days of delivery. The national target is 80 per cent.

Table 6.15 shows that the coverage of first postnatal care reduced from 65 per cent in 2005 to 63 per cent in 2006 and in 2007. Among the districts, there were annual reductions in Chienge, Nchelenge and Samfya. There was an annual increase in Mansa and Milenge. In 2007, the lowest coverage was in Samfya (43 per cent) and in Kawambwa (77 per cent).

Table 6.15: First postnatal attendance coverage, 2005-2007

District	2005			2006			2007		
	Contacts	Target	Percentage	Contacts	Target	Percentage	Contacts	Target	Percentage
Chienge	3,524	5,100	69	2,784	5,261	53	2,738	5,429	50
Kawambwa	3,825	5,703	67	4,506	5,817	77	4,577	5,968	77
Mansa	7,601	11,273	67	8,393	11,634	72	8,937	12,019	74
Milenge	776	1,697	46	1,000	1,750	57	1,157	1,805	64
Mwense	4,260	6,441	66	4,168	6,709	62	4,274	6,937	67
Nchelenge	5,453	6,757	81	4,848	7,065	69	5,040	7,391	68
Samfya	4,387	9,249	47	4,271	9,220	46	4,104	9,534	43
Province	**29,826**	**46,217**	**65**	**29,970**	**47,456**	**63**	**30,827**	**49,083**	**63**

***Source**: HMIS*

6.9 Maternal mortality

A maternal death is that of a woman during pregnancy or within 42 days after delivery or termination of pregnancy from bleeding, seizures, infection or any pregnancy related causes excluding accidents.

Table 6.16 shows trends of maternal mortality ratio in the health facilities from 2005 to 2007 in the province. The maternal mortality ratio reduced from 127.7 per 100,000 deliveries in 2005 to 80.0 per 100,000 in 2006 but it increased to 132.4 per 100,000 in 2007. In 2007, the highest maternal mortality ratio was recorded in Nchelenge (432.96 per 100,000) probably due to the complicated cases referred from Chienge and Kaputa where there were no district hospitals. It was followed by Mansa with 141.4 per 100,000 deliveries.

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

District	2005			2006			2007		
	Deaths	Deliveries	Rate	Deaths	Deliveries	Rate	Deaths	Deliveries	Rate
Chienge	2	5,100	39.2	0	5,261	0	2	5,429	36.8
Kawambwa	9	5,703	157.8	15	5,817	257.9	8	5,968	134.1
Mansa	21	11,273	186.3	12	11,634	103.2	17	12,019	141.4
Milenge	0	1,697	0	0	1,750	0	2	1,805	110.8
Mwense	1	6,441	15.5	2	6,709	29.8	1	6,937	14.4
Nchelenge	20	6,754	296.1	7	7,065	99.1	32	7,391	433.0
Samfya	6	9,249	64.9	2	9,220	21.7	3	9,534	31.5
Province	**59**	**46,217**	**127.7**	**38**	**47,456**	**80.0**	**65**	**49,083**	**132.4**

***Source**: HMIS*

6.10 New family planning acceptors

A new family planning accepter is a person who has never before used a modern family planning method. The new family planning acceptor rate is the proportion of new acceptors among the women of child bearing age (15- 49 years) in the catchment population. The numerator includes both women and men, while the denominator only includes women. This indicator does not include persons who are prescribed a contraceptive method by a private non-registered practitioner or who obtain a non-prescription contraceptive method from commercial outlets.

Table 6.17 shows new family planning acceptors per 1000 women of child bearing age from 2005–2007 in the province. The rate in the province was 94.7 per 1000 women of child bearing age in 2005, 104.6 per 1000 women of child bearing age in 2006 and 99.8 per 1000 women of child bearing age in 2007.

Among the districts, the highest acceptance rate in 2007 was in Kawambwa (131.5 per 1000 women of child bearing age), followed by Chienge with 130.7 per 1000 women of child bearing age. Mansa recorded the lowest with 81.9 per 1000 women of child bearing age. The drop in number of new family planning acceptors was due to non availability of some contraceptive methods like pills.

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
Chienge	2,389	110.8	2,227	102.1	3,003	130.7
Kawambwa	2,762	97.8	3,280	113.9	3,868	131.5
Mansa	3,763	78.9	4,588	93.2	4,162	81.9
Milenge	727	101.2	688	92.9	796	104.3
Mwense	2,824	101.0	3,625	124.5	2,625	89.4
Nchelenge	3,378	118.2	3,131	104.7	3,407	109.0
Samfya	3,564	81.5	4,415	101.2	3,758	83.3
Total	**19,407**	**94.7**	**21,999**	**104.6**	**21,619**	**99.8**

***Source**: HMIS.*

6.11 Child health indicators

These are measurable attributes of children's health related to growth, nutrition and preventable diseases.

Table 6.18 shows child health indicators which are; fully immunised less than 1 year, BCG-Measles drop-out rate, pregnancies with tetanus toxoid protection and underweight prevalence. On average fully immunised for the province for the past 3 years was at 70.3 per cent, BCG- Measles drop-out rate 11.7 per cent, Pregnancies with tetanus toxoid protection 77 per cent and underweight Prevalence was at 20 per cent. The reduction in BCG- Measles drop-out rate is attributed to Measles campaign which was conducted in 2007 in all the districts during the 1st round child Health Week and shortage of BCG antigen more especially in 2005.

Table 6.18: Child health indicators, 2005-2007

Indicator	Period in years			Average
	2005	2006	2007	2005-2007
Fully Immunised under 1 year (percentage)	70	73	68	70.3
BCG-Measles Dropout Rate (percentage)	16	19	0.5	11.7
Pregnancies with tetanus toxoid protection (percentage)	83	81	67	77
Under Weight Prevalence (percentage)	25	21	14	20

***Source**: HMIS*

6.11.1 Fully immunisation coverage

According to the WHO guidelines, infants are considered to be fully immunised when they have received a vaccination against tuberculosis (BCG), three doses each of the diphtheria, pertussis, tetanus/hepatitis B/Haemophilis influenza type (DPT-HepB-Hib), and polio vaccines, and a measles vaccination by the age of 12 months. The BCG vaccination should be given at birth or at the first clinical contact (not long after birth). The DPT-HepB-Hib and polio immunisations require three doses of the vaccines at approximately 6, 10 and 14 weeks of age; and measles should be given at or soon after reaching 9 months of age.

Table 6.19 shows fully immunised children less than 1 year from 2005–2007. It shows that the provincial immunisation coverage increased from 70 per cent in 2005 to 73 per cent in 2006 which later reduced to 68 per cent in 2007.The reduction in coverage may be attributed to stock out of antigens such as BCG and OPV in the province (HMIS report) Luapula province. The stocks of BCG were at a record low of 48 per cent in 4th quarter 2007.

Mansa district achieved 86 per cent, 88 per cent and 93 per cent coverage in 2005, 2006 and 2007 respectively. It was the only district which managed to exceed the target of 85 per cent in this period.

Samfya, Chienge and Milenge districts had serious challenges in the cold chain system with a number of health centres having no functional fridges. In Samfya district a total of 13 health centres were being managed by unqualified staff such classified daily employees.

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

District	2005			2006			2007		
	Immunised	Target	Percentage immunised	Immunised	Target	Percentage immunised	Immunised	Target	Percentage immunised
Chienge	1,897	3,021	48	2,886	4,046	71	1,987	4,177	48
Kawambwa	3,243	4,587	71	3,597	4,677	77	3,582	4,791	75
Mansa	7,439	8,672	86	7,833	8,949	88	8,552	9,244	93
Milenge	835	1,305	64	1,113	1,346	83	1,079	1,388	78
Mwense	3,721	5,174	72	4,014	5,388	74	3,843	5,339	72
Nchelenge	3,853	5,196	74	4,244	5,435	78	3,229	5,685	57
Samfya	4,338	7,446	58	3,570	7,426	48	3,870	7,678	50
Province	**25,326**	**36,301**	**70**	**27,257**	**37,267**	**73**	**26,142**	**38,302**	**68**

***Source**: HMIS*

6.11.2 BCG–Measles dropout rate

BCG–Measles dropout rate refers to the number of children who are enrolled in the expanded programme on immunisation who fail to complete all the recommended vaccinations from BCG to Measles before they reach their first birthday. It is the difference in the proportion between children less than one year of age who received BCG and measles vaccines. The BCG vaccine is supposed to be given to the infant immediately after birth or within one month after birth. Measles should be given at nine months of age.

Table 6.20 shows BCG-Measles drop-out rate by district in children less than one year from 2005-2007. It shows an increase in the dropout rate from 16 in 2005 to 19 in 2006 but reduced dramatically to -5 in 2007. The dramatic reduction in 2007 could be attributed to the Measles campaign which was conducted in all the districts during the first round child health week. Chienge conducted another campaign during the 2nd child health week in November, 2007. This created a chance for all those children who may have missed to receive the measles vaccine during routine immunisations. In 2007, Chienge recorded the lowest drop-out rate of -75, whilst Milenge recorded the highest drop-out rate of 28.

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

District	2005			2006			2007		
	Coverage		Dropout Rate	Coverage		Dropout Rate	Coverage		Dropout Rate
	BCG	Measles		BCG	Measles		BCG	Measles	
Chienge	122	119	2	156	109	30	121	212	-75
Kawambwa	109	94	13	105	86	18	104	92	11
Mansa	130	102	22	128	101	21	131	107	19
Milenge	119	92	22	133	107	19	122	87	28
Mwense	146	109	25	115	85	26	107	160	-49
Nchelenge	105	105	0	108	110	-2	77	82	-6
Samfya	105	88	17	114	91	20	110	91	17
Province	**120**	**101**	**16**	**121**	**97**	**19**	111	116	-5

***Source**: HMIS*

6.11.3 Pregnancies protected against tetanus

This is the proportion of pregnant women that have received two or more doses of tetanus toxoid. The national set target for pregnancies protected against tetanus is 80 per cent.

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

District	2005			2006			2007		
	Immunised	Target	Percentage immunised	Immunised	Target	Percentage immunised	Immunised	Target	Percentage immunised
Chienge	4,658	5,295	88	4,856	5,464	89	3,941	5,638	70
Kawambwa	4,457	5,922	75	4,854	6,041	80	4,027	6,197	65
Mansa	9,266	11,707	79	9,731	12,083	81	9,481	12,484	76
Milenge	1,867	1,762	106	1,581	1,818	87	1,803	1,875	96
Mwense	5,176	6,685	77	5,813	6,966	83	5,360	7,207	74
Nchelenge	6,639	7,015	95	6,655	7,337	91	3,175	7,675	41
Samfya	7,799	9,606	81	6,517	9,573	68	6,175	9,899	62
Province	**39,862**	**47,992**	**83**	**40,007**	**49,282**	**81**	**33,962**	**50,975**	**67**

***Source**: HMIS*

Table 6.21 shows trends in proportion of pregnancies protected against tetanus during the period 2005 to 2007. As a province, the percentage of pregnancies protected against tetanus had been reducing from 83 per cent in 2005 to 81 per cent in 2006 and further reduced to 67 per cent in 2007. The reduction may be attributed to break down of fridges and reduced outreach activities in some districts like Samfya and Nchelenge. Samfya and Nchelenge had the same scenario as that of the province. Mwense, Chienge and Kawambwa had an increase in 2006 but reduced in 2007. Milenge reduced in 2006(87 per cent) but managed to increase in 2007(96 per cent).

6.11.4 Underweight prevalence

Underweight prevalence measures the proportion of children, both new and old attendances, under the age of 5 years whose weight is below the lower line out of the total weighed.

Table 6.22: Percentage of under-fives children who were underweight, 2005-2007

District	Year		
	2005	2006	2007
Chienge	27	21	13
Kawambwa	26	19	11
Mansa	26	20	12
Milenge	27	21	16
Mwense	24	26	16
Nchelenge	18	12	7
Samfya	28	24	22
Province	**25**	**21**	**14**

***Source**: HMIS*

Table 6.22 shows the underweight prevalence by district and year for the period 2005 to 2007. The Table shows that the provincial underweight prevalence has been reducing from 25 per cent in 2005 to 21 per cent in 2006 and then to 14 per cent in 2007. The Table also shows that Milenge and Mwense recorded the highest underweight prevalence of 16 per cent each than any other district. Nchelenge recorded the lowest underweight prevalence of 7 per cent.

Table 6.22 also shows that the trend for underweight prevalence has been declining in all the districts.

Chapter 7: Environmental and public health

Environmental health is a subset of public health. It comprises those aspects of human health, including the qualities of life that are determined by physical, chemical biological, social and psychological factors in the environment. It also involves assessing, correcting, controlling, preventing those factors in the environment that can potentially affect adversely the health of the present and future generation. Environmental health is an outdoor activity. There were two main sub-areas of environmental health in the province namely:

- Malaria control
- Water and Sanitation

7.1 Malaria control

This is a national programme that looks at community interventions that are aimed at reducing malaria incidence. The programme involves creating community awareness on malaria prevention by providing interventions such as insecticide treated bed nets distribution, indoor residual spray and community health education programmes.

7.1.1 Insecticide treated nets

Insecticide treated nets are bed nets impregnated with residual insecticide to kill mosquitoes and prevent mosquito stings.

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

District	Target group**	Number of insecticide treated mosquito nets		Coverage percentage	Source of insecticide treated mosquito nets
		Received	Distributed		
	(a)	(b)	(c)	(c/a)*100	
Chienge	26,521	0	0	0	
Kawambwa	28,725	7,000	7,000	24	SFH, CHAZ
Mansa	58,710	5,520	5,520	9.4	
Milenge	8,818	1,200	1,200	13	SFH
Mwense	33,892	15,000	15,000	44	NMCC
Nchelenge	3,6101	55,000	55,000	152	NMCC
Samfya	46,624	78,000	78,000	167	NMCC
Province	**239,391**	**161,720**	**161,720**	**67**	

Source: *Environmental Health Reports*
*** Estimated pregnancies and Under-fives*

Table 7.1 shows the distribution of insecticide treated mosquito nets in the province in 2007. The coverage of 67.6 per cent indicates that not all the households targeted received nets in 2007. Chienge did not receive any net for distribution in 2007. Samfya and Nchelenge had distributed over their targets (167 per cent and 152 per cent respectively), while Mansa was the lowest with (9.4 per cent).

7.2 Water and sanitation

7.2.1 Water quality monitoring

Continuous monitoring of water quality should be done to ensure that it is safe for human usage. Water samples taken for analysis should meet World Health Organisation (WHO) standard. The standard threshold implies that 90 per cent of all the samples taken for analysis should give satisfactory results.

Table 7.2 shows the monitoring of water quality in the province in 2007. Out of 1,099 water samples collected and tested for bacteriological quality only 440 samples had satisfactory results, giving a percentage of 40 per cent as provincial coverage which is very low coverage.

Table 7.2: Water quality monitoring, 2007

District	Number of water samples collected	Number of water samples with satisfactory results	Percentage satisfactory
Chienge	63	12	19.0
Kawambwa	118	68	57.6
Mansa	310	28	9.0
Milenge	0	0	0
Mwense	170	105	61.8
Nchelenge	382	200	52.3
Samfya	56	27	48.4
Province	**1,099**	**440**	**40.0**

***Source**: Environmental Health Reports*

Note: No data was received for Milenge District about water samples collected for analysis.

Mwense District had a higher number of samples which were satisfactory (105), while Mansa recorded the lowest number of samples which met the WHO water quality standards. Only three (3) districts were above 50 per cent (Nchelenge, Mwense, and Kawambwa) but below target.

7.2.2 Domestic chlorination of water

This is the application of chlorine to water for domestic use to make it safe. The WHO standards recommend distribution of chlorine to 80 per cent of households without treated water supplies.

Table 7.3 shows the distribution of chlorine to households in the province in 2007. 16606 bottles of chlorine were distributed to households. Provincial coverage was too low (10.2 per cent). Nchelenge District distributed the highest number of household chlorine bottles (6000) while Mansa distributed the lowest number (2206) of chlorine bottles.

Table 7.3: Distribution of household chlorine

District	Targeted households (a)	Number of houses visited and information education and communication given (b)	Number of chlorine bottles distributed (c)	Coverage percentage (c/a)*100
Chienge	17,402	0	0	0
Kawambwa	21,386	2,000	4,800	22.4
Mansa	38,520	2,206	2,206	5.7
Milenge	5,785	0	0	0
Mwense	22,238	18,034	3,600	16.2
Nchelenge	23,688	4,121	6,000	25.3
Samfya	33,356	0	0	0
Province	**162,375**	**24,361**	**16,606**	**10.2**

Source: *Environmental Health Reports*

7.3 Management of medical waste

This is the process of collecting, transporting and disposing medical waste. Table 7.4 presents data on the availability of incinerators for the final disposal of medical waste in the province. In 2007, there were 22 incinerators in the health facilities in the province. That meant that there were incinerators only at 10 per cent of health facilities. The highest percentage of functional incinerators was in Nchelenge (91 per cent) and the lowest in Mansa (7 per cent).

Table 7.4: Number of incinerators in each district

District	Total incinerators	Number operational	Number non-operational	Remarks
Chienge	1	1	0	
Kawambwa	2	1	1	
Mansa	2	2	0	
Milenge	3	3	0	
Mwense	2	2	0	
Nchelenge	11	11	0	Only one Health Post has no Incinerator.
Samfya	6	2	4	Some are very old and others were poorly constructed
Province	**28**	**22**	**6**	

Source: *Environmental Health Reports*

Chapter 8: Data submission

This chapter discusses reporting completeness and the population covered by both service delivery and disease interventions. On reporting completeness, some health facilities particularly those that became operational midway in the year had their reports included in the health facilities where they earlier belonged before becoming a stand-alone health facility. In terms of population served, generally there is satisfactory coverage by both preventive (including health promotion) services and curative services.

8.1 Completeness of reports

Table 8.1 shows the population served by both preventive (including health promotion) services and curative services and it is evident that the general coverage was satisfactory.

Table 8.1.1: 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
Chienge	104,416	104,416	100	104,416	100
Kawambwa	128,314	128,314	100	128,314	100
Mansa	231,120	231,120	100	229,645	99
Milenge	34,709	34,709	100	34,709	100
Mwense	133,432	133,432	100	128,576	96
Nchelenge	142,132	142,132	100	142,132	100
Samfya	200,135	200,135	100	200,135	100
Province	**974,258**	**974,258**	**100**	**972,783**	**99**

Source: *HMIS*

8.2 Information flow

Table 8.2 shows that in 2007, most health facilities submitted reports, however, it is apparent that some health facilities in Mansa and Mwense districts did not submit all expected reports or missed a quarter or two to submit their reports. In Mansa district, Kalyongo Rural Health Centre did not submit all the expected reports whereas in Mwense district, Kaoma Makasa Rural Health Centre did not sub reports for the year 2007.

District Health Management Teams (Mansa and Mwense) should strengthen support and follow-up to such health facilities to ensure reporting completeness.

Table 8.1.2: Information flow

District	Existing			Reporting			Coverage percentage
	Hospital	Health centre	Total	Hospital	Health centre	Total	
Chienge	0	8	8	0	8	8	100
Kawambwa	2	21	23	2	21	23	100
Mansa	1	26	27	1	25	26	96
Milenge	0	6	6	0	6	6	100
Mwense	0	23	23	0	22	22	96
Nchelenge	1	11	12	1	11	12	100
Samfya	2	30	32	2	30	32	100
Province	**6**	**125**	**131**	**6**	**123**	**129**	**99**

***Source**: HMIS*

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