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MINISTRY OF HEALTH

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Ministry of Health
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PREFACE

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

However, more work still needs to be done to ensure that the quality of HMIS data and its reliability are enhanced. Regular trainings among new and old staff on the use and management of HMIS data, supportive visits to health facilities and the ongoing performance assessment visits to districts need to be encouraged by all parties as this plays an integral component in the improvement of the quality of HMIS data.

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

I wish to mention that the review of the current HMIS to be conducted by the Ministry of Health, is a step forward in the right direction as this would identify problem areas and needs of HMIS aimed at making evidence-based decisions on health policy, program design and resource allocation, within the health sector.

The information included in this bulletin only provided the national picture; details of facility and district differentials were not included. Therefore, the provincial health offices (PHOs) need to take this opportunity of producing similar *Annual Health Statistical* bulletins at Provincial Level so that detailed District Level information is analysed for informed decision-making.

It is worthy mentioning that the use of and potential analysis of this data either at facility, provincial or the national level is an invaluable aid in resource allocation. If utilized appropriately, these analyses have the potential to encourage greater efficiency in the allocation of resources, as well as the development of more appropriate responses to diseases affecting our society.

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

Hon. Sylvia T. Masebo, MP
MINISTER OF HEALTH

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The successful production of the *2005 Annual Health Statistical Bulletin* would not have been possible without the active and dedicated efforts of a number of institutions and individuals. My sincere gratitude goes to all personnel at the health facilities, the District, the Province and the National Level for their continued commitment in compiling data for this report.

My thanks and appreciation are extended to the Director of Planning, Mr. Davies Chimfwembe; Director of Public Health and Research, Dr. Victor Mukonka; Assistant Director in Charge of Management Information, Dr. Christopher Simoonga; the HMIS Specialist, Mr. Chipalo Kaliki; the Senior Statistician, Mr. Rutendo Chitembure; the Statistician, Mr. Chrispine Mwiiya; Research Monitoring and Evaluation Specialist, Mr. Bornwel Sikateyo; the Data Processing Officers, Mr. Chipo Mpampa and Mr. Masauso Phiri, from the Ministry of Health, for their tireless efforts and commitment shown throughout the compilation of this report.

Other individuals whose efforts were instrumental in the compilation of this report include the Data Management Specialists (DMS) for the provinces. They include Ms. Gloria Silondwa (Central Province), Mr. Edwin Gwai (Copperbelt Province), Mr. Mvula (Luapula Province), Mr. Wamunyima Lubinda (Lusaka Province), Mr. Charles Kachaka (Northern Province), Mr. Ndonji Kalezhi (North-Western Province), Mr. Chanda Mukuka (Southern Province) and Mr. Francis Sibeso (Western Province).

I also wish to recognize the contributions made by the ART Co-ordinator, Dr. Albert Mwango; the TB Specialist, Dr. Nathan Kapata; Mr. Paul Chishimba and Mr. Patrick Chewe from HSSP, the World Health Organisation for providing technical support through the WHO National Surveillance Officer, Mr. Belem Matapo.

I wish to make special mention of Mr. Makoselo Bowa and Mr. Webster Chileshe, from the Central Statistical Office (CSO), who assisted in formatting the final version of this report.

The financial support provided by my Ministry in the production of this report needs special acknowledgement.

Lastly, but certainly not the least, I wish to thank all those who contributed in one way or another in making the publication of this bulletin a success, but could not be individually mentioned here.

Dr. S.K. Miti
Permanent Secretary
MINISTRY OF HEALTH

LIST OF ABBREVIATIONS

AFP	Acute Flaccid Paralysis
AIDS	Acquired Immunodeficiency Syndrome
ARCC	African Regional Certification Commission
ART	Antiretroviral Treatment
BCG	*Bacillus Calmette Guerin*
CBoH	Central Board of Health
CDE	Classified Daily Employees
CHW	Community Health Worker
CSO	Central Statistical Office
DANIDA	Danish International Development Agency
DPT	*Dipthe Pertusis* and Tetanus
HC	Health Centre
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSSP	Health Services and Systems Program
IP	In Patient
IDSR	Integrated Disease Surveillance and Response
MCH	Maternal and Child Health
NHSP	National Health Strategic Plan
OPD	Out patient Department
OPV	Oral Polio Vaccine
RI	Respiratory Infections
SMC	Suspected Measles Cases
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infections
TB	Tuberculosis
TT	*Tetanus Toxoid*
tTBA	trained Traditional Birth Attendant
UTH	University Teaching Hospital
ZDHS	Zambia Demographic and Health Survey

DISEASE BURDEN

- **Malaria**

Although malaria continues to be the major cause of visitations to health facilities, the national incidence of the disease continues to decrease during the period 2003 to 2005. The incidence decreased from 425 per 1,000 population in 2003 to 383 per 1,000 population in 2004 and then to 373 per 1,000 population in 2005. Central, Copperbelt, Eastern, Southern and Western provinces recorded a decreasing trend of malaria during this period.

- **Respiratory Infections (Non-Pneumonia)**

The national respiratory infections (non-pneumonia) incidence reduced from 179 per 1,000 population in 2003 to 153 per 1,000 population in 2004 and then increased to 161 per 1,000 population. Except for Lusaka province, which showed a consistent reduction in the disease during the period 2003 to 2005; and Southern province, which showed a consistent increase during the same period under review, the rest of the provinces showed a fluctuating pattern.

- **Diarrhoea Diseases (Non-Bloody**)

The national incidence rate of diarrhoea diseases (non-bloody) reduced from 82 per 1,000 population in 2003 to 75 per 1,000 population in 2004 and then remained constant at 75 per 1,000 population in 2005. Although Lusaka province had the highest incidence of diarrhoea in 2003, 2004 and 2005, compared to the rest of the provinces, the incidence has been decreasing overtime. It reduced sharply from 165 per 1,000 population in 2003 to 118 per 1,000 population in 2004 and then further dropped to 114 per 1,000 population in 2005.

- **Trauma (accidents, injuries, wounds, burns)**

The national incidence rate of trauma increased slightly from 45 per 1,000 population in 2003 to 46 per 1,000 population in 2004 and then remained constant at 46 per 1,000 population in 2005. Lusaka, and Western provinces recorded a consistent decrease in trauma during the period 2003 to 2005.

- **Respiratory Infections (Pneumonia)**

The national incidence rate of respiratory infection (pneumonia) reduced from 50 per 1,000 population in 2003 to 44 per 1,000 population in 2004 and then further dropped to 42 per 1,000 population in 2005. Eastern and Lusaka provinces showed a fluctuating pattern of the incidence of respiratory infection (pneumonia) during the period 2003 to 2005 whereas Central, Copperbelt, Luapula, Northern, North-Western, Southern and Western provinces showed a downward trend during the same period under review.

NOTIFIABLE DISEASES

- **Acute Flaccid Paralysis (AFP) / Suspected polio**

Nine (9) provinces achieved certification level of AFP surveillance for both non-polio AFP rate and stool adequacy rate indicators. The non-polio AFP rate was at 3.2 per 100, 000 children less than 15 years of age and 94% stool adequacy rate.

The highest non-polio AFP rate was in Western Province with 8.3 per 100,000 children less than 15 years of age while the lowest were in Lusaka and Copperbelt provinces, each with 2.1 per 100,000 children less than 15 years of age. Districts that do not detect and report any AFP case are referred to as *"silent districts"* and such districts could reduce the performance indicators and hence need to be closely monitored. All provinces were above the expected minimum rate of 1 per 100,000.

- **Measles Surveillance**

The total number of confirmed measles cases was 45 only (7.1%) of 636 total suspected cases. All suspected cases were investigated and tested for *IgM* antibodies. A few cases were confirmed by epidemiological linkage.

The measles cases have continued to be less than 10% of all the blood samples tested during the year, following the Catch Up immunisation campaign conducted in June 2003. The annualised measles detection rate for the year 2005 was 5.82 per 100,000 population (minimum target is 1 per 100,000 population); *measles IgM* rate in the year 2005 was 7.1%, and the minimum target following a measles immunisation campaign should be less than 10%. Percentage of districts with at least 1 sample per year was 79% (target was 80%). About 26% of the suspected measles cases were Rubella *IgM* positive.

- **Dysentery**

In 2005, the incidence of dysentery was highest in Southern province (11.9 per 1,000 population) followed by Eastern province (8.9 per 1,000 population) and then Western at 6.9 per 1,000 population. At national level, the incidence of dysentery was about three times higher in the under 5 years age group (14.4 per 1,000 population) than the age group 5 years and above (4.4 per 1,000 population).

- **TB Notifications**

The notification rates countrywide have increased tremendously. The highest recorded since 1981 was experienced in 2004 with over 58,000 cases notified. The case detection of all forms of tuberculosis is at 81%, although the case detection of sputum positive cases is approximately 50%. The World Health Organisation (WHO) target is at least 70% case detection of sputum smear positive patients.

- **Number of patients on antiretroviral therapy (ART)**

A total of 51,764 patients on ART by December 2005 with Lusaka province recording the highest number of patients representing nearly half of the total patients (47%) followed by Copperbelt province (18.0%), then Southern province (11%). Luapula and North-Western provinces, each with 2%, had the lowest proportion of patients on ART.

HUMAN RESOURCE

- **Number of Medical personnel by province**

In 2005, Lusaka province had the highest number of Medical Doctors representing 33% followed by Copperbelt province (30.0%). Northern province (4.0%) has the lowest proportion of Medical Doctors. The picture is the same with regard to the distribution of Clinical Officers by province.

- **Health Centre Staff Load**

Copperbelt province recorded a consistent increase in staff patient ratios during the period 2003 to 2005; the rest of the provinces reflected a fluctuating pattern. Further analysis of the rural and urban provinces shows that qualified workers in rural provinces (i.e. Eastern, Luapula, Northern, North-Western and Western provinces) have a higher workload compared to their counterparts in urban provinces (i.e. Central, Copperbelt, Lusaka and Southern provinces).

- **Trained Traditional Birth Attendants**

There has been a steady increase in the number of active tTBAs over the years and that in 2005 there were more deliveries conducted by tTBAs than in the previous two years. Eastern, Northern and Southern provinces recorded a proportionately higher number of deliveries conducted by tTBAs in all the three years period under review.

- **Community Health Workers**

In 2003, 2004 and 2005, there were more Community Health Workers in Southern and Northern provinces than in Lusaka and Copperbelt. Overall, the number of Active Community Health Workers reduced from 4,845 in 2003 to 4,666 in 2004 and then increased to 4,954 in 2005.

AVAILABILITY OF ESSENTIAL DRUGS

- **Drugs Availability**

The percentage of months for which drugs were in stock in health centres reduced from 76% in 2004 to 74% in 2005. The drug availability remained constant in 2004 and 2005 in hospitals at 82%. Luapula province recorded the highest drug availability in hospitals at (96%) followed by Copperbelt at (95%). In 2005, Copperbelt province recorded the highest proportion of drug availability for health centres (91%) and lowest in Luapula province (61%) followed by North-Western Province (64%), Southern Province (70%) and Central province (72%). Four provinces recorded the lowest drug availability in

hospitals, these being North-Western Province (65%), followed by Lusaka province (72%), Northern (77%) and Southern province (79%).

- **Drug Kit Utilisation at Health Centres**

There was a consistent increase in the number of drug kits opened per 1,000 patients during the period 2003 to 2005 with Luapula province recording the highest in all the years. Overall, the national picture shows that drug kits opened have been increasing consistently over the past three years.

HEALTH SERVICE DELIVERY INDICATORS

- **Health Centre Utilisation**

For all provinces combined, health centre utilisation has declined from 0.85 per capita attendances in 2003 to 0.76 per capita in 2004 and then increased slightly to 0.78 in 2005. Overall, health centre utilisation during the period 2003 to 2005 for all provinces was higher for the age group 5 years and below than the age group 5 years and above. Western province had the highest health centre utilisation in both 2003 (0.99 per capita) and 2004 (0.88 per capita) compared to other provinces.

- **Hospital OPD percentage By-pass First Attendance**

In 2004, Hospital OPD percentage by-pass first attendance was highest in North-western and Central provinces at 45% and 23% respectively and lowest in Western (3%) and Northern (9%) provinces. In 2005, the indicator was still high in the same provinces.

- **Hospital OPD percentage Referred First Attendance**

The proportion of patients referred through the normal channels reduced slightly from 68% in 2004 to 67% in 2005. In 2004, the proportions of patients referred were more for the under 5 years age group than the age group 5 years and above. However, in 2005 there were more patients in the age group 5 years and above referred compared to those aged below the age of 5. Western and Lusaka provinces had the highest proportion of patients referred in both 2004 and 2005, compared to other provinces.

- **Bed Occupancy Rate**

The national bed occupancy rate for all hospitals declined from 55% in 2003 to 52% in 2004 and then increased to 56% in 2005. Most of the provinces had a fluctuating pattern of bed occupancy rate during the period 2003 to 2005 except for Central province, which showed a downward trend.

- **Average Length of Stay**

The national average length of stay in health facilities reduced from 5.3 in 2003 to 5.0 in 2004 and then increased again to 5.3 in 2005.

- **First Antenatal Coverage**

Antenatal coverage at National Level has been fluctuating during the period 2003 to 2005. The indicator increased from 95% in 2003 to 97% in 2004 and then dropped to 93% in 2005.

- **Hospital Average Antenatal visits**

An overall downward trend of Hospital average antenatal visits from 3.3 in 2003 to 3.1 in 2004 and then to 3.0 in 2005 was observed. Overall, all the provinces showed a downward trend in the average antenatal visits except for Copperbelt, Luapula and Western provinces which showed a fluctuating pattern during the period 2003 to 2005.

- **First Post natal attendances**

All provinces recorded increased coverage in 2005 compared to those of 2004 except for Copperbelt, Eastern and Western provinces, which recorded a reduction and Central Province which was static at 54%. The province with the highest first postnatal attendance in 2005 was Lusaka (71%) and the lowest was North-Western province (34%).

- **New Family Planning Acceptors**

New family planning acceptors rate has been increasing steadily from 113.0 per 1,000 Women in Child Bearing age Group (WCA) in 2003 to 127 per 1,000 WCA in 2004 and then to 138 per 1,000 WCA in 2005. Copperbelt, Lusaka, Southern and Eastern Provinces are still recording figures higher than 120 per 1,000 WCA taking up a new modern family planning method in 2003, 2004 and 2005.

- **Pregnancies Protected Against Tetanus**

Central, Eastern, North-Western, Southern, and Western provinces showed a fluctuating trend during the period 2003 and 2005. Luapula, Lusaka and Northern provinces showed a consistent increase in the proportion of pregnancies protected against tetanus. Copperbelt is the only province, which had a downward trend in the proportion of pregnancies protected against tetanus, during the same period under review. Overall, the national picture shows that the proportion of pregnancies protected against tetanus was static at 85% in 2003 and 2004 and then reduced to 83% in 2005.

- **Immunisation coverage in infants**

The percentage of fully immunised children nationwide has been increasing steadily during the period 2003 to 2005. The coverage increased from 75% in 2003 to 80% in 2004 and then to 82% in 2005. A look at the provincial variations indicates that Lusaka province had the highest coverage in 2005 (101%) followed by Southern and Central provinces each with 93%. Immunisation coverage has been increasing steadily during the period 2003 to 2005 for Eastern, Luapula, Lusaka and Western provinces.

- **Underweight Prevalence**

The national underweight prevalence has been declining from 21% in 2003 to 17% in 2004 and then to 16% in 2005. Luapula province recorded the highest underweight prevalence in both 2003 (27%) and 2005 (25%) than other provinces.

Chapter 1: BACKGROUND

1.1 Introduction

Compilation of data for this bulletin was carried out during the period March to April, 2006. The main objective of this bulletin is to provide trends of selected indicators on disease burden and service delivery for monitoring and evaluating the overall performance of the health sector. The indicators are compared by province and age group. This bulletin is the 7th in the series of statistical bulletins produced since 1999.

This bulletin presents data on indicators collected from the HMIS database and other data sources such as data on the number of patients on ART and number of health personnel in the country.

Note that information included in this report provides only the national picture, details of facility and district differentials are not included. Therefore, provincial health offices (PHO) are encouraged to start compiling provincial health statistical reports with the view to providing detailed analysis of health facility and district picture.

1.2 Data sources

Data compiled for this bulletin came from all the public health institutions and other data sources such as Antiretroviral Information System (*ARTIS), integrated disease Surveillance and response (IDSR)* and the *Ministry of Health Human Resource database***.**

1.3 Scope of analysis

The province was the unit of analysis. Each indicator was compared by province and age group. This report does not provide reasons why a given indicator has been increasing, decreasing or indeed fluctuating over a given period of time, but rather, it highlights particular areas that would require investigations.

1.4 Limitation

Data used to compile this report came from various sources. While every care was taken in the preparation and collection of this data, we are not able to guarantee that different sources have compiled or reported data in a consistent way. It is against this background that the quality of data may have been compromised.

Some of the limitations of the data compiled for this bulletin may include the following:

1.4.1 General problem with aggregated data

Since the unit of analysis for this report was the province, some data collected at the lower levels of the health care system (e.g. health centre) do not filter through to the national level. As a result, readers may not find certain indicators of their interest in this bulletin.

1.4.2 Exclusion of data sources from some private health facilities

Data included in this bulletin was based on all public health facilities (with few private health facilities) where the HMIS is running. Therefore, overall utilisation of health facilities might not be a reflection of all health facilities in the country, as most private health facilities are not yet incorporated into the HMIS. It is against this background that the MoH through the HMIS Unit would like to have private health facilities to report some selected indicators so as to provide a true picture of health facility utilisation.

1.5 Outline of the remaining chapters

The remaining Chapters have been organised as follows:

Chapter Two discusses *Disease Burden* and focuses on the major causes of visitations to the health facilities. The chapter then discusses in more detail the top 5 causes of morbidity in the health facilities, comparing them by age groups and province. Notifiable diseases as well as data on the number of patients on ART are discussed.

Chapter Three discusses *Human Resource* indicators collected from the HMIS such as health centre staff daily contacts, community health volunteers, community health workers, etc. These indicators are discussed by province. The chapter also discusses distribution of health personnel such as Medical Doctors, Nurses, Clinical Officers and Pharmacists by province.

Chapter Four discusses indicators collected from the HMIS on *Drug Availability* by provinces. These include medical supplies in stock at health facilities, drug availability at health centre and hospital and drug kits utilisation. Although HMIS does not report detailed information about drugs availability, there exist some summary pointers of drugs availability such as percentage of months for which drugs were in stock or out of stock in a given health facility.

Chapter Five presents data on selected *Health Service Delivery Indicators.* for the period 2003 to 2005 by provinces. The indicators include Health Centre (HC) utilisation, Hospital Utilisation, Bed Occupancy Rate, Hospital Average Length of Stay, First Antenatal Coverage, Average Antenatal Visits, Supervised Deliveries, First Postnatal Attendance, Pregnancies Protected Against Tetanus, fully immunised children and underweight prevalence (percent underweight).

Lastly, **Chapter Six** makes some concluding remarks on the observed trends of some selected indicators.

Chapter 2: DISEASE BURDEN

2.1 Introduction

In reporting the burden of disease, incidence and case fatality rates are used. Disease incidence is the number of new cases that occur during a specified period in a defined population, while case fatality rate is the number of deaths from a particular illness out of reported cases resulting from that illness.

The first part of this chapter looks at the 10 major causes of morbidity in the health facilities. The chapter also discusses the top 5 causes of illnesses by age group and province, in more detail. The second part of the chapter discusses the four notifiable diseases: Acute Flaccid Paralysis (AFP), measles, dysentery and tuberculosis.

2.2 Major Causes of Illnesses

Table 2.1 presents information on the top 10 causes of visitations to health facilities in 2005. The table shows that malaria, with an incidence rate of 373 per 1,000 population, continues to be the leading cause of morbidity in Zambia followed by respiratory infection: non-pneumonia (161 per 1,000 population) then diarrhoea: non-bloody (75 per 1,000 population). Digestive system (not infectious) and muscular skeletal diseases had the lowest incidence of 19 per 1,000 population and 18 per 1,000 populations, respectively.

Table 2.1: Ten Major Causes of Visitation to Health Facilities, Zambia 2005

Disease Name	Incidence per 1,000 population		
	Under 5	Over 5	Total
Malaria	1,108	197	373
Respiratory infection: non-pneumonia	469	87	161
Diarrhoea: non-bloody	258	31	75
Trauma (accidents, injuries, wounds, burns)	57	43	46
Respiratory Infections: pneumonia	132	21	42
Skin infections	111	26	42
Eye infection	145	14	40
Ear/Nose/throat infections)	57	16	24
Digestive system (not infectious)	23	18	19
Muscular skeletal	5	21	18

Source: *MoH, HMIS 2005*

2.2.1 Malaria

Although malaria continues to be the major cause of visitation to health facilities, the national incidence of the disease has been decreasing during the period 2003 to 2005. This information is presented in Figure 2.1. The figure shows that national malaria incidence decreased from 425 per 1,000 population in 2003 to 383 per 1,000 population in 2004 and then to 373 per 1,000 population in 2005 (see figure 2.1).

A comparison of malaria incidence by provinces shows that malaria incidence for Central, Copperbelt, Eastern, Southern and Western provinces have been decreasing over the past three years. The remaining provinces recorded a fluctuating pattern of malaria incidence during the period 2003 to 2005.

Figure 2.1: Malaria Incidence per 1,000 Population, 2003-2005

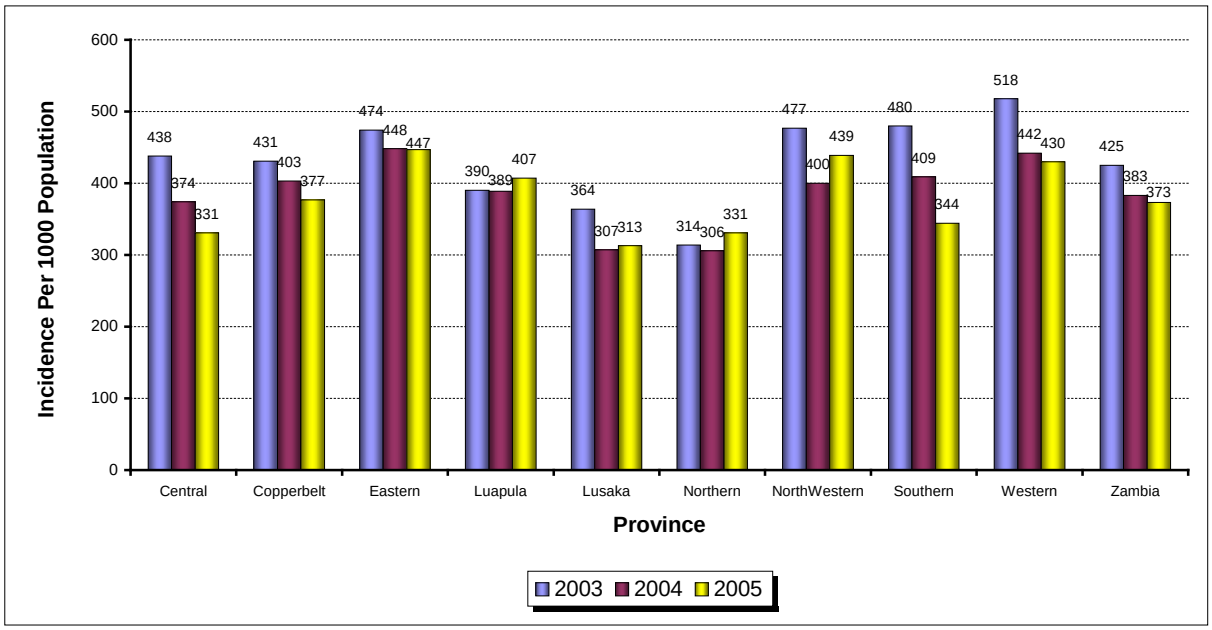


Table 2.2 presents data on malaria incidence per 1,000 population and case fatality rates per 1,000 admissions (hospitals only) by age group and province, in 2005. The Table shows that in 2005, malaria incidence was highest in Eastern Province (447 per 1,000 population) followed by North Western Province (439 per 1,000 population). Lusaka Province (i.e. 313 per 1,000 population) had the lowest incidence of malaria during the same period under review. Overall, malaria incidence was about six times higher in the under five 5 years age group than the age group 5 years and above.

The Table also shows that in 2005, Eastern province (68 per 1,000 admissions) had the highest malaria hospital case fatality rate followed by Southern province (55 per 1,000 population). The lowest hospital case fatality rate was in Northern Western Province (24 per 1,000 population). Overall, hospital case fatality rate was higher for the age group 5 years and above than the age group 5 years and below.

Table 2.2: Malaria Incidence and Case Fatality Rates by age group, Zambia, 2005

Province	Incidence rate per 1,000 population (All health facilities)			Case Fatality rate per 1,000 admission (Hospitals only)		
	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	1,017	187	331	43	59	50
Copperbelt	960	235	377	30	66	51
Eastern	1,392	213	447	58	84	68
Luapula	1,445	162	407	44	65	51
Lusaka	806	190	313	39	65	50
Northern	1,103	140	331	32	32	32
North-Western	1,353	212	439	20	35	24
Southern	933	198	344	41	69	55
Western	1,375	240	430	21	62	36
Zambia	**1,108**	**197**	**373**	**37**	**63**	**49**

Source: *MoH, HMIS 2005*

2.2.2 Respiratory Infections (Non-Pneumonia)

Figure 2.2 shows trends of the incidence of respiratory infections (non-pneumonia) per 1,000 population by province and year. The figure shows that the national respiratory infections (non-pneumonia) incidence rate reduced from 179 per 1,000 population in 2003 to 153 per 1,000 population in 2004 and then increased to 161 per 1,000 population. The figure also shows that except for Lusaka Province, which showed a consistent reduction in the disease during the period 2003 to 2005; and Southern province, which showed a consistent increase during the same period under review, the rest of the provinces showed a fluctuating pattern.

Figure 2.2: Respiratory Infection (Non-pneumonia) Incidence per 1,000 Population, 2003-2005

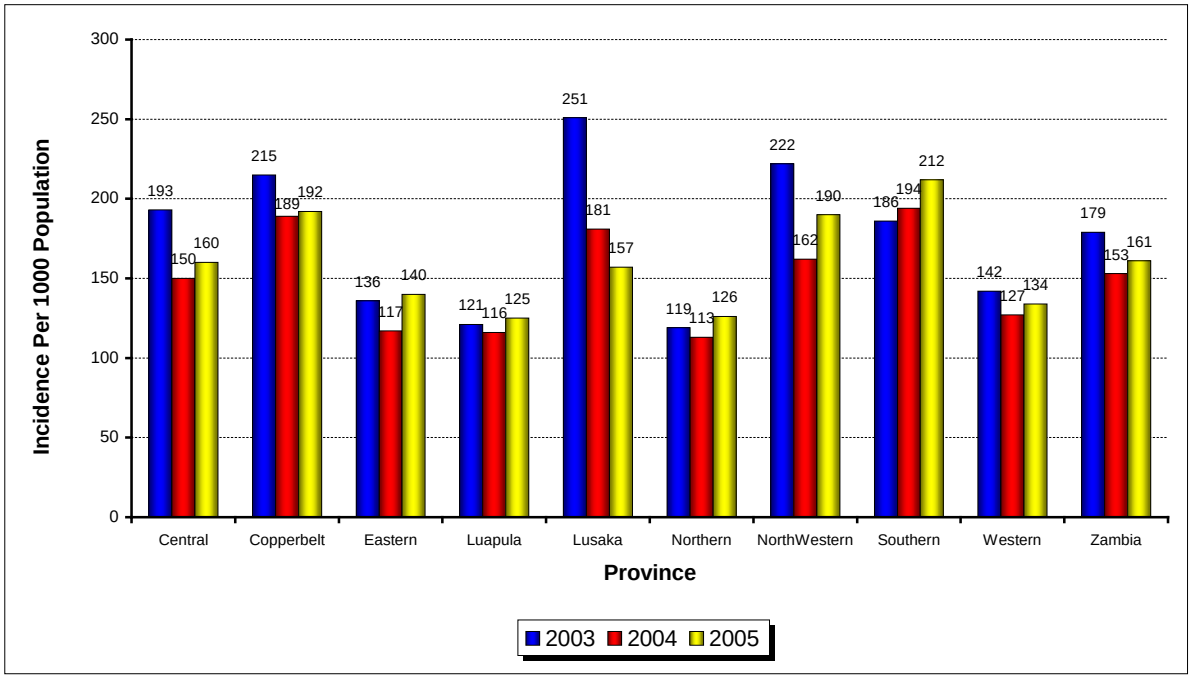


Table 2.3 presents 2005 data on the incidence of respiratory infection (non-pneumonia) per 1,000 population for all health facilities and case fatality rate per 1,000 admissions for hospitals only. Both the

incidence and case fatality rates were compared by age groups and different provinces. The Table shows that in 2005, Southern province (i.e. 212 per 1,000 population) had the highest incidence rate of respiratory infection (non-pneumonia) in both the under 5 years age group (i.e. 589 per 1,000 population) and the age group 5 years and below (i.e.119 per 1,000 population). Overall, the incidence of respiratory infection (non-pneumonia) in 2005 was about five times higher in the age group 5 years and below (i.e. 469 per 1,000 population) than the age group 5 years and above (i.e. 87 per 1,000 population).

Table 2.3: Respiratory Infections: Non-Pneumonia Incidence and Case Fatality Rates by age group, Zambia, 2005

Province	Incidence rate per 1,000 population (All health facilities)			Case Fatality rate per 1,000 admission (Hospitals only)		
	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	491	91	160	31	69	55
Copperbelt	488	119	192	23	54	41
Eastern	418	72	140	34	61	48
Luapula	434	53	125	16	34	23
Lusaka	440	87	157	17	12	14
Northern	407	56	126	2	9	6
North-Western	604	87	190	21	59	35
Southern	589	119	212	32	110	71
Western	380	84	134	28	47	38
Zambia	**469**	**87**	**161**	**24**	**60**	**44**

Source: *MoH, HMIS 2005*

Table 2.3 also shows that in 2005, Southern Province with 71 cases per 1,000 admissions, had the highest hospital case facility rate followed by Central province (55 per 1,000 admissions) whereas Northern Province with 6 per 1,000 admissions had the lowest case fatality rate. Overall, case fatality rate was about two times higher in the age group 5 years and over than the under 5 years age group.

2.2.3 Diarrhoea Diseases (Non-Bloody)

Diarrhoea diseases (non-bloody) were the third leading cause of morbidity in 2005 after malaria and respiratory infections (non-pneumonia). Figure 2.3 presents trends of diarrhoea diseases (non-bloody) by Province for the period 2003 to 2005. The figure shows that the national incidence rate of diarrhoea diseases (non-bloody) reduced from 82 per 1,000 population in 2003 to 75 per 1,000 population in 2004 and then remained constant at 75 per 1,000 population in 2005.

Figure 2.3 also shows that although Lusaka Province had the highest incidence rate of diarrhoea in 2003, 2004 and 2005, compared to the rest of the provinces, the incidence has been decreasing overtime. It reduced sharply from 165 per 1,000 population in 2003 to 118 per 1,000 population in 2004 and then further dropped to 114 per 1,000 population in 2005. Results from Figure 2.3 further shows that Northern Province has an increasing trend of Diarrhoea (non-bloody) incidence between 2003-2005.

Figure 2.3: Incidence of diarrhea non-bloody per 1,000 population by Province, 2003-2005

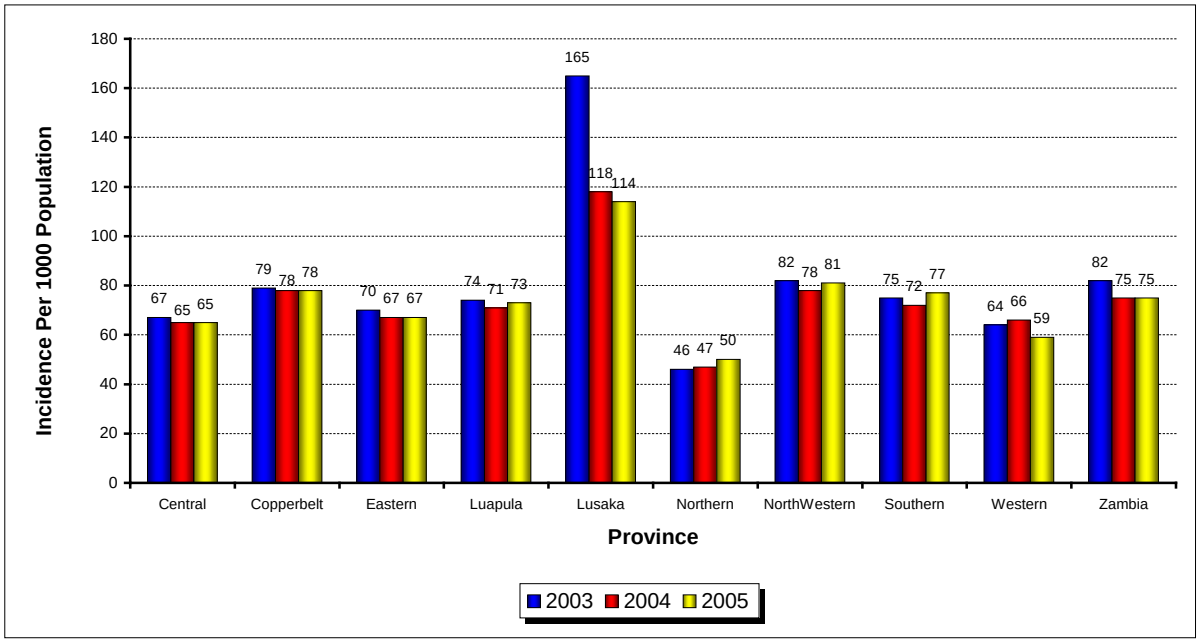


Table 2.4 presents data on diarrhoea (non-bloody) incidence in all health facilities per 1,000 population and case fatality rate per 1,000 admissions for hospitals only, by province and two broad age groups. The table shows that in 2005, Lusaka Province had the highest incidence of diarrhoea in both the under 5 years age group (335 per 1,000 population) and the age group 5 years and older (59 per 1,000 population) compared to the other provinces.

Overall, incidence of diarrhoea (non-bloody) in all the provinces combined was about 8 times higher in the under 5 years age group (258 per 1,000 population) than the age group 5 years and below (31 per 1,000 population).

Table 2.4: Diarrhoea: Non-Bloody Incidence and case fatality rates by age groups, Zambia, 2005

Province	Incidence rate per 1,000 population (All health facilities)			Case Fatality rate per 1,000 admission (Hospitals only)		
	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	246	27	65	70	90	81
Copperbelt	230	41	78	60	128	103
Eastern	255	20	67	108	75	93
Luapula	291	22	73	68	56	62
Lusaka	335	59	114	49	79	63
Northern	188	16	50	24	30	27
North-Western	281	31	81	49	55	52
Southern	267	31	77	136	126	131
Western	247	21	59	84	87	85
Zambia	**258**	**31**	**75**	**75**	**108**	**93**

Source: *MoH, HMIS 2005*

A look at the provincial differentials of hospital case fatality rate per 1,000 admissions by province shows that in 2005, Southern Province with 131 cases per 1,000 admissions, had the highest hospital case facility rate followed by Copperbelt Province with 103 per 1,000 admissions whereas Northern

Province at 27 per 1,000 admissions had the lowest case fatality rate. Overall, case fatality rate was higher in the age group 5 years and over (108 per 1,000 admissions) than the under 5 years age group (75 per 1,000 admissions).

2.2.4 Trauma (accidents, injuries, wounds, burns)

Trauma is the fourth leading cause of morbidity in the country after malaria, respiratory infection (non-pneumonia) and diarrhoea (non-bloody) and it refers to all accidents, injuries, wounds, broken bones or burns occurring due to an accident or purposely inflicted (e.g. road traffic accident and drowning).

Figure 2.4 shows trends of trauma incidence by province. The figure shows that the national incidence rate of trauma increased slightly from 45 per 1,000 population in 2003 to 46 per 1,000 population in 2004 and then remained constant at 46 per 1,000 population in 2005. Lusaka, and Western provinces recorded a consistent decrease in trauma during the period 2003 to 2005.

Figure 2.4: Trauma Incidence per 1,000 population, 2003-2005

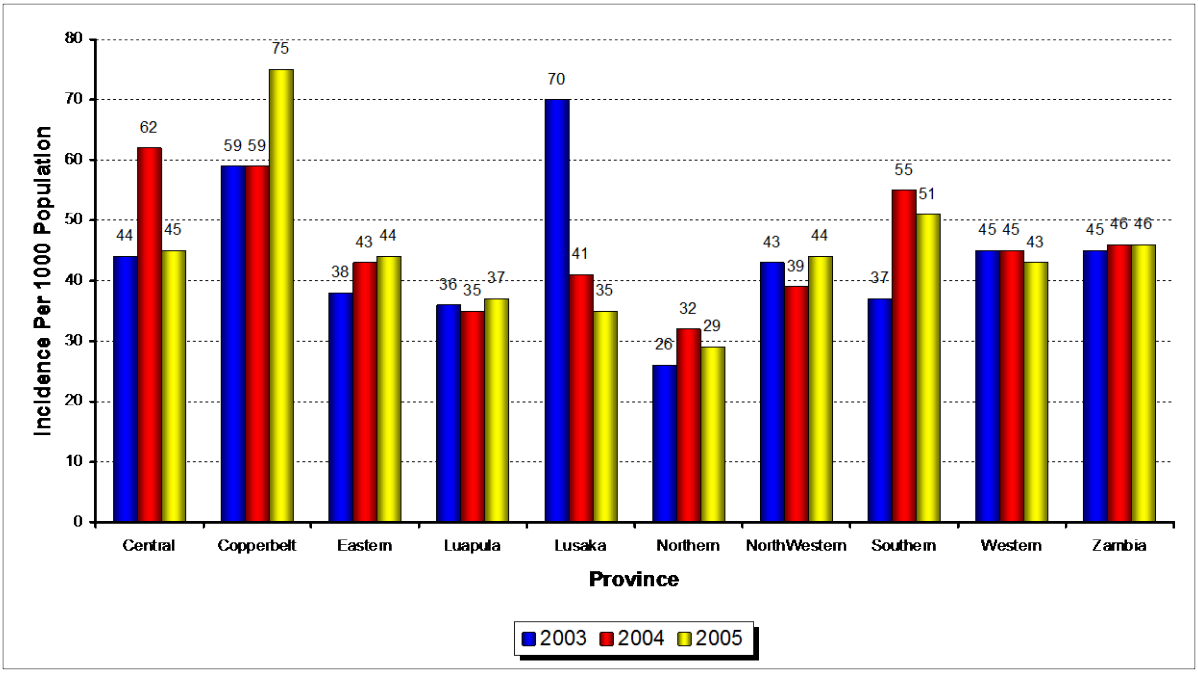


Table 2.5 shows data on trauma incidence rate per 1,000 population and case fatality rate per 1,000 admissions (hospitals only). The table shows that in 2005, Copperbelt Province had the highest trauma incidence with 75 per 1,000 population followed by Southern Province at 51 per 1,000 population. Northern Province (29 per 1,000 population) had the lowest incidence of trauma in 2005. Overall, trauma incidence was higher in the under 5 years age group (57 per 1,0000 population) than the age group 5 years and below (43 per 1,000 population).

The table also shows that for every 1,000 admissions to hospitals in all provinces in 2005, nearly 20 of them are likely to die of trauma, with Eastern Province (28 per 1,000 admissions) having the highest case fatality rate followed by Southern Province (27 per 1,000 admissions). The lowest hospital case fatality rate of trauma in 2005 was Lusaka Province (5 per 1,000 admissions). Overall, case fatality rate for trauma was higher in age group 5 years and above (27 per 1,000 admission) than the age group 5 years and below (17 per 1,000 admission).

Table 2.5: Trauma (accidents, injuries, wounds, burns) Incidence and Case Fatality Rates by age groups, Zambia, 2005

Province	Incidence rate per 1,000 population (All health facilities)			Case Fatality rate per 1,000 admission (Hospitals only)		
	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	61	42	45	55	17	24
Copperbelt	61	78	75	11	16	15
Eastern	64	40	44	49	23	28
Luapula	52	33	37	16	20	19
Lusaka	53	31	35	7	5	5
Northern	40	26	29	15	10	11
North-Western	61	39	44	23	18	19
Southern	59	49	51	55	21	27
Western	66	38	43	31	9	14
Zambia	**57**	**43**	**46**	**27**	**17**	**19**

Source: *MoH, HMIS 2005*

2.2.5 Respiratory Infection (Pneumonia)

In 2005, respiratory infection (pneumonia) was the fifth leading cause of morbidity in the country. Figure 2.5 presents trends of respiratory infections (pneumonia) for the period 2003 to 2005. The figure shows that the national incidence rate of respiratory infection (pneumonia) reduced from 50 per 1,000 population in 2003 to 44 per 1,000 population in 2004 and then further dropped to 42 per 1,000 population in 2005.

The figure also shows that Eastern and Lusaka provinces showed a fluctuating pattern of the incidence of respiratory infection (pneumonia) during the period 2003 to 2005 whereas Central, Copperbelt, Luapula, Northern, North-Western, Southern and Western provinces showed a downward trend during the period under review.

Figure 2.5: Respiratory infection (pneumonia) Incidence per 1,000 population by Province 2003-2005

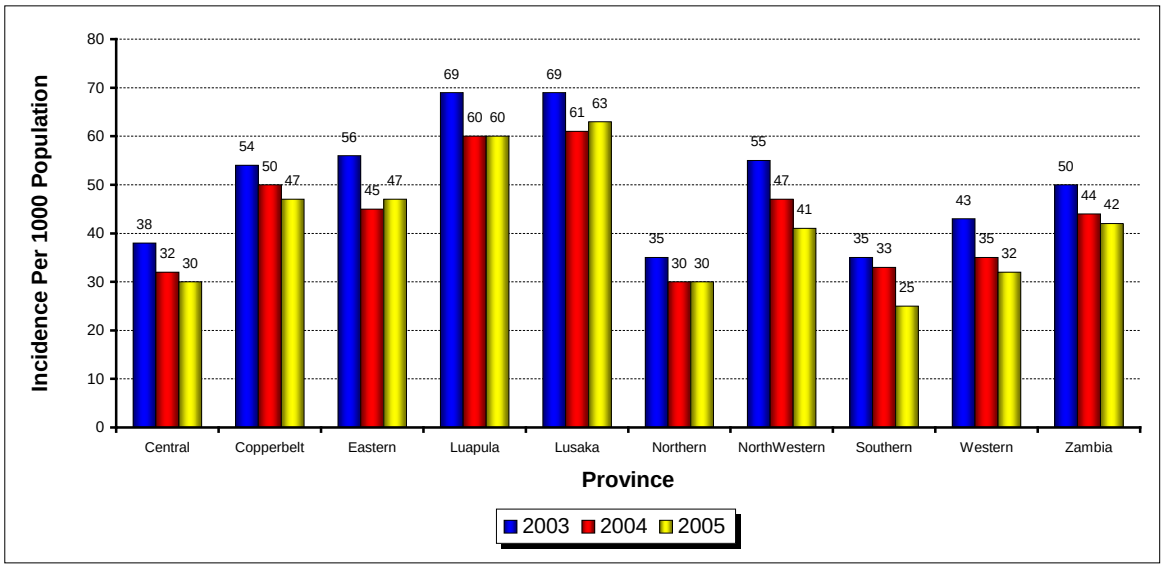


Table 2.6 presents data on the incidence and case fatality rates of respiratory infections (pneumonia) by province and two broad age groups in 2005. The Table shows that Lusaka Province with 63 per 1,000 population had the highest incidence of respiratory infection (pneumonia) followed by Luapula Province with 60 per 1,000 population.

Overall, the incidence of respiratory infection (pneumonia) for all provinces combined in 2005, was about 6 times higher in the age group 5 years and below (132 per 1,000 population) than the age group 5 years and older (21 per 1,000 population).

Table 2.6: Respiratory Infections: Pneumonia Incidence and case fatality rates by age groups, Zambia, 2005

Province	Incidence rate per 1,000 population (All health facilities)			Case Fatality rate per 1,000 admission (Hospitals only)		
	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	104	15	30	133	117	125
Copperbelt	141	25	47	117	140	129
Eastern	140	24	47	113	99	107
Luapula	210	24	60	112	80	100
Lusaka	185	32	63	85	116	96
Northern	100	13	30	79	66	73
North-Western	127	19	41	60	94	76
Southern	75	13	25	132	118	125
Western	99	19	32	109	85	99
Zambia	**132**	**21**	**42**	**113**	**119**	**116**

Source: *MoH, HMIS 2005*

Table 2.6 also illustrates variations of hospital case fatality rate per 1,000 admissions (hospitals only) by province and age group. The Table shows that in 2005, Copperbelt Province (129 per 1,000 admissions) had the highest rate followed by Central and Western provinces each with 125 cases per 1,000 admissions, whilst Northern Province (73 per 1,0000 admissions) had the lowest hospital case

fatality rate. Overall, hospital case fatality rate was higher in the age group 5 years and over than the under 5 years group.

2.3 Notifiable diseases

Notifiable diseases are diseases that should be reported to the next levels immediately they are diagnosed. They are classified as such because they can easily and/or quickly spread within the population, causing high morbidity and mortality. These diseases have been classified in the Integrated Disease Surveillance and Response (IDSR) strategy, to ensure that they are effectively prevented, managed and controlled when they occur.

In the HMIS, there are ten notifiable diseases namely; Acute Flaccid Paralysis (AFP), Measles, Neonatal Tetanus, Dysentery, Cholera, Plague, Rabies, Typhoid Fever, Yellow Fever, Tuberculosis (TB) and currently the eleventh notifiable disease is *Human Influenza*. Every single case should be investigated and followed up at each level of service delivery system. This section discusses a few of the notifiable diseases, which include AFP, measles, dysentery and TB.

2.3.1 Acute Flaccid Paralysis (AFP) /Suspected Polio

Acute flaccid paralysis (AFP) is a condition in a person under 15 years of age presenting with sudden onset of weakness of the limbs without prior history of injury. The two main AFP surveillance indicators are *non-polio AFP rate* and *stool adequacy rate.* According to WHO, a surveillance system that is able to detect at least one case non-polio AFP case for every 100,000 children under 15 years (non-polio AFP rate) will also be able to detect any wild poliovirus. Stool adequacy rate is the percentage of two (2) stools collected within 14 days of onset of paralysis and the target is 80%.

All detected AFP cases should be adequately investigated by having two (2) stool samples collected within 14 days post onset of paralysis, and spacemen transported under reverse cold chain within 72 hours of collecting the first stool sample for testing in a WHO accredited national polio laboratory. The national polio laboratory is located at the Virology Laboratory, University Teaching Hospital and also serves as an inter-country laboratory for Zambia and Tanzania.

Zambia successfully presented her complete country documentation for polio-free status in October 2005 to the African Regional Certification Commission (ARCC). The evidence documentation was satisfactory and Zambia was awarded status of having no indigenous *wild poliovirus* circulating.

Since there is no country that can be certified having eradicated wild poliovirus alone, Zambia has to wait for a time when all the 46 countries in the African Region would successfully submit their polio-free status documentation. Thereafter, the African Region shall be certified to have eradicated polio.

Table 2.7 shows that all nine (9) provinces achieved certification level of AFP surveillance for both non-polio AFP rate and stool adequacy rate indicators. The non-polio AFP rate was at 3.2 per 100, 000 children less than 15 years and 94% stool adequacy rate.

Table 2.7: AFP Surveillance Performance Indicators by Province, 2005

Province	Expected number of AFP Cases	Detected AFP cases	Annualised non-polio AFP rate *	AFP cases with 2 stools within 14 days of onset (Stool adequacy)*	
				Number	Percent
Central	8.0	17	2.1	15	88
Copperbelt	8.0	17	2.1	15	88
Eastern	7.3	22	3.0	22	100
Luapula	4.4	10	2.3	9	90
Lusaka	8.1	21	2.6	21	100
Northern	7.2	24	3.4	22	92
North-Western	3.3	8	2.4	7	88
Southern	6.6	21	3.2	20	95
Western	4.1	34	8.3	32	94
Zambia	**57.0**	**174**	**3.2**	**163**	**94.0**

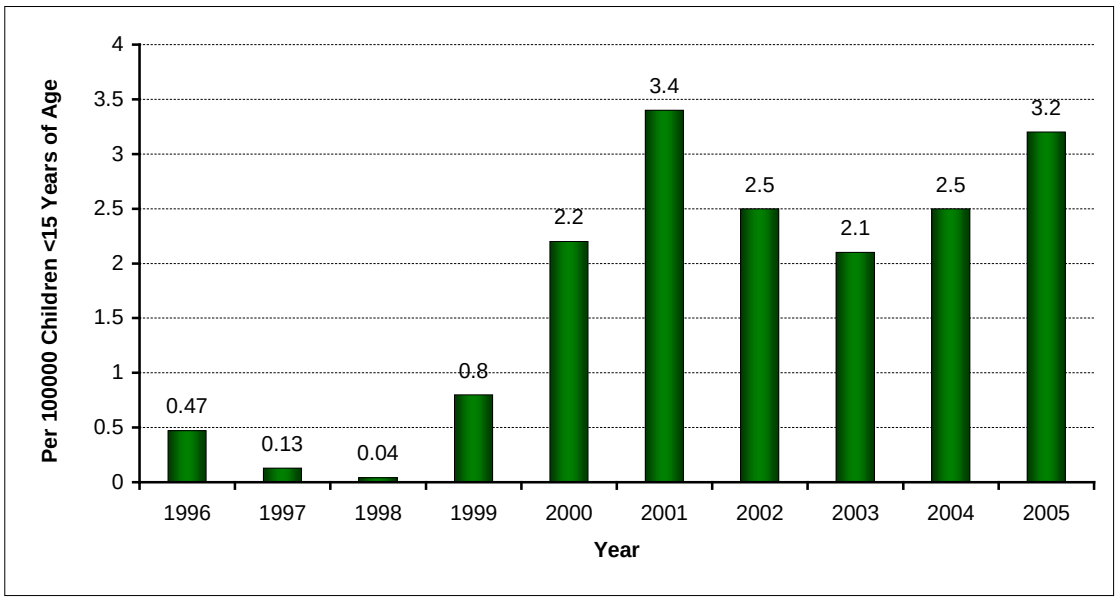
**1 per 100,000 children less than 15 years of age.*

2.3.2 Non- Polio AFP Rate

The highest non-polio AFP rate was in Western Province with 8.3 per 100,000 children less than 15 years of age while the lowest were in Lusaka and Copperbelt provinces each with 2.1 per 100,000 children less than 15 years of age. Districts that do not detect and report any AFP case are referred to as *"silent districts"* and such districts could reduce the performance indicators and hence need to be closely monitored. All provinces were above the expected minimum rate of 1 per 100,000.

To sustain the performance of these indicators, there are monthly provincial cluster surveillance monitoring meetings for the District Level surveillance staff while the National Level monitoring meetings are also held every quarter together with the provincial surveillance focal persons.

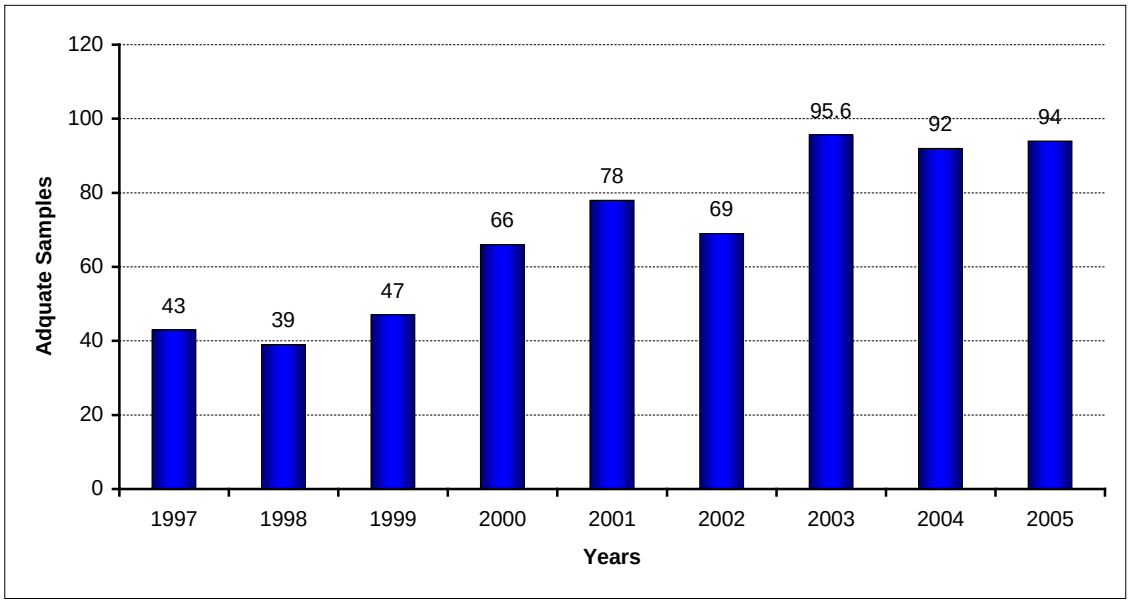
Figure 2.6: Trends of Non-AFP Rate by year, 1996 – 2005



2.3.3 Stool Adequacy Rate

Figure 2.7 shows that in the year 2005, the country achieved stool adequacy rate of 94%.

Figure 2.7: Trends of AFP Specimen, 1996 – 2005



Although the Non-polio AFP and the Stool Adequacy rates are presented by province, it is important to note that all facilities and consequently the districts should strive to satisfy the indicators at facility or district levels if the provincial and national indicators are to be achieved and sustained.

2.3.4 Measles Surveillance

Measles case and laboratory based surveillance involves confirming every suspected measles case. Serum samples are collected for antibody testing to confirm the disease. The process involves detecting *IgM* antibodies for measles virus in serum. The *rubella IgM* testing is done on negative samples.

Table 2.8: Measles surveillance performance indicators by Province, 2005

Provinces	# total SMC* with sample	Detection rate (Cases per 100,000 pop (target 1/100,000)	Number of Measles IgM positive cases	% of the Measles IgM Positive (target ≤10%)	Number of Rubella IgM positive cases	% of the Rubella IgM Positive	No. of districts with at least 1 sample per year	% districts with at least 1 sample per year (Target is 80%)
Central	62	5.6	4	6.5%	22	40%	3	57%
Copperbelt	123	7.1	6	4.9%	29	25%	10	100%
Eastern	21	1.4	1	4.8%	10	50%	6	75%
Luapula	45	5.3	3	6.7%	18	40%	4	57%
Lusaka	110	7.3	23	20.9%	16	19%	4	100%
Northern	97	6.8	1	1.0%	6	46%	11	92%
N/Western	21	3.3	1	4.8%	19	22%	5	71%
Southern	120	9.0	4	3.3%	33	30%	11	100%
Western	37	4.5	2	5.4%	12	34%	4	57%
Zambia	**636**	**5.8**	**45**	**7.1%**	**165**	**29%**	**57**	**79%**

- The annualised measles detection rate for the year 2005 was 5.82 per 100,000 population and the minimum target is 1 per 100,000 population;
- The measles *IgM* rate in the year 2005 was 7.1% and the minimum target following a measles immunisation campaign should be less than 10%.
- Percentage of districts with at least 1 sample per year was 79% and the target was 80%.
- 29% of the negative samples were *Rubella IgM* positive, representing 26% of all measles blood samples collected for testing.

2.3.5 Dysentery Incidence per 1,000 Population

Dysentery is one of the notifiable diseases that may not receive the attention it deserves. This may be because it has not caused high morbidity and mortality, but it is capable of causing an epidemic. The definition may seem loose, as the client just needs to mention that there is blood in stool. However, this is the more reason why spacemen collection for laboratory confirmation is important if we are to appreciate the presence of other diseases that may present with blood in stool, diseases like worm infestation, anal fissures and *schistosoma mansoni*, etc.

Table 2.9 presents data on the incidence of dysentery per 1,000 population and hospital case fatality rate per 1,000 admissions by age group and province. The table shows that in 2005, the incidence of dysentery was highest in Southern Province (11.9 per 1,000 population) followed by Eastern Province (8.9 per 1,000 population) and then Western Province with 6.9 per 1,000 population. At National Level the incidence of dysentery was about three times higher in the under 5 years age group (14.4 per 1,000 population) than the age group 5 years and above (4.4 per 1,000 population). The Table further shows that hospital case fatality rate was highest in Southern province (151.5 per 1,000 admissions). Note that no data was available for Lusaka.

Table 2.9: Dysentery incidence per 1,000 population and Case Fatality Rate per 1,000 Admissions, Zambia, 2005

Province	Incidence rate per 1,000 population (All health facilities)			Case Fatality rate per 1,000 admission (Hospitals only)		
	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	15.9	4.6	6.6	117.6	19.6	44.1
Copperbelt	10.4	3.1	4.5	14.9	33.8	27.9
Eastern	19.9	6.1	8.9	98.6	71.4	82.0
Luapula	14.2	3.8	5.8	0.0	0.0	0.0
Lusaka	10.3	2.8	4.3	***No Data Available***		
Northern	9.4	3.0	4.2	55.6	18.9	28.2
North-Western	6.5	3.3	4.0	66.7	60.3	61.6
Southern	28.0	8.0	11.9	176.5	142.9	151.5
Western	13.8	5.6	6.9	0.0	84.0	66.7
Zambia	**14.4**	**4.4**	**6.3**	**74.1**	**68.4**	**70.0**

Source: *MoH, HMIS 2005*

2.3.6 Tuberculosis (TB)

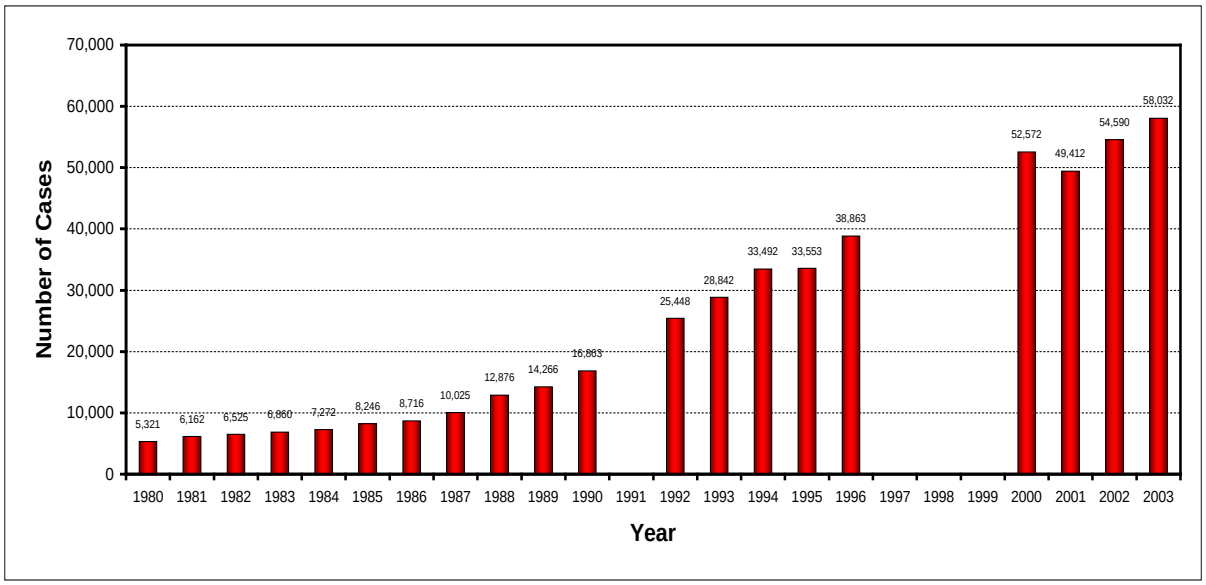
Tuberculosis (TB) is one of the notifiable diseases and is caused by a germ called *Mycobacterium Tuberculosis*. It normally affects the lungs although sometimes other parts of the body are also affected.

Anyone who has been coughing for more than two weeks and has night sweats, lost weight, and losing appetite could be having TB. The most important test to make a diagnosis is sputum smear examination. Sputum tests confirm the diagnosis and assists in helping the prescriber to put the patient on the correct treatment.

2.3.6.1 TB Notifications from 1980 to 2004

As shown in Figure 2.8 , the number of TB notifications have generally been increasing over time. The reasons for this are not conclusive. There are many factors, among them; general improvement in case notifications, genuine increase in the incidence of TB. In general terms, however, the notification rates countywide have increased tremendously. The highest recorded since 1981 was experienced in 2004 with over 58,000 cases notified.

Figure 2.8: Trends of TB Notifications from 1980 to 2004



Note: Data for 1991, 1997, 1998 and 1999 was incomplete and could not be included in the analysis

The case detection of all forms of tuberculosis is at 81%, although the case detection of sputum positive cases is approximately 50%. The World Health Organisation (WHO) target is at least 70% case detection of sputum smear positive patients.

Table 2.10: Distribution of TB notifications by province, 2004

Province	Sex	SM+	SM-	EPTB	REL+	REL -	RX FAIL	TOTAL
Central	Male	779	810	239	92	89	3	2,012
	Female	547	752	210	51	69	-	1,629
	Total	**1,326**	**1,562**	**449**	**143**	**158**	**3**	**3,641**
Copperbelt	Male	2,963	3,729	995	336	595	143	8,761
	Female	2,334	3,329	841	216	433	130	7,283
	Total	**5,297**	**7,058**	**1,836**	**552**	**1,028**	**273**	**16,044**
Eastern	Male	491	778	359	58	96	6	1,788
	Female	465	693	375	45	57	2	1,637
	Total	**956**	**1,471**	**734**	**103**	**153**	**8**	**3,425**
Luapula	Male	364	737	178	36	48	6	1,369
	Female	320	794	247	24	54	6	1,445
	Total	**684**	**1,531**	**425**	**60**	**102**	**12**	**2,814**
Lusaka	Male	2,515	3,853	1,594	398	674	44	9,078
	Female	1,885	3,152	1,516	270	521	35	7,379
	Total	**4,400**	**7,005**	**3,110**	**668**	**1,195**	**79**	**16,457**
Northern	Male	574	576	276	61	42	4	1,533
	Female	512	461	272	40	29	5	1,319
	Total	**1,086**	**1,037**	**548**	**101**	**71**	**9**	**2,852**
North-western	Male	371	525	468	37	62	9	1,472
	Female	292	643	492	35	64	12	1,538
	Total	**663**	**1,168**	**960**	**72**	**126**	**21**	**3,010**
Southern	Male	821	1,375	539	117	269	10	3,131
	Female	722	1,350	548	89	225	2	2,936
	Total	**1,543**	**2,725**	**1,087**	**206**	**494**	**12**	**6,067**
Western	Male	659	736	285	73	100	7	1,860
	Female	633	778	267	79	109	4	1,870
	Total	**1,292**	**1,514**	**552**	**152**	**209**	**11**	**3,730**
Zambia	Male	9,537	13,119	4,933	1,208	1,975	232	31,004
	Female	7,710	11,982	4,768	849	1,561	196	27,066
	Total	**17,247**	**25,101**	**9,701**	**2,057**	**3,536**	**428**	**58,070**

SM+=Smear positive; SM - = Smear negative; EPTB = Extra pulmonary TB
REL + = Relapse positive; REL - = Relapse negative; RX FAIL = Treatment failure

2.4 Number of patients on antiretroviral therapy (ART)

Table 2.11 presents data on the number of people ever commenced on ARVs. The table shows that there were 51,764 patients on ART as at 31st December, 2005. The Table also shows that Lusaka province has the highest number of patients on ART, representing nearly half of the total patients (47%) followed by Copperbelt Province (18.0%), then Southern Province (11%). Luapula and North Western Provinces, each with 2%, had the lowest proportion of patients on ART.

Table 2.11: **Number of patients on antiretroviral therapy (ART) by province, 2005**

Province	No.	%
Central	2,539	5.0
Copperbelt	9,233	18.0
Eastern	4,057	8.0
Luapula	1,102	2.0
Lusaka	24,227	47.0
Northern	1526	3.0
North-Western	895	2.0
Southern	5,612	11.0
Western	2,573	5.0
Zambia	**51,764**	**100.0**

Source: *Ministry of Health, 2005*

Chapter 3: HUMAN RESOURCES

3.1 Introduction

Human resource is recognised worldwide as the most important component in the effective delivery of health services. In Zambia, the availability of appropriate human resources is the most important pre-requisite for the delivery of Basic Health Care Package. It is critical to have not only adequate numbers of staff, but also appropriate skills mix to maximally benefit the consumers of health care services (MoH Action Plan Report, 2004).

This section discusses data on the number of Medical Doctors, Clinical Officers, Pharmacists and Nurses in the country by province, including health centre staff contacts, community health workers and traditional birth attendants.

3.2 Number of Medical personnel by province

Table 3.1 presents data on the number of health personnel in the country, which include Medical Doctors, Nurses, Clinical Officers and Pharmacists by province. The Table shows that Lusaka Province has the highest number of Medical Doctors representing 33% followed by Copperbelt province (30.0%). Northern Province (4.0%) has the lowest proportion of Medical Doctors. The picture is the same with regard to the distribution of Clinical Officers by province.

The Table also shows that, although Lusaka has the highest number of Medical Doctors compared to other provinces, the picture is however, different with regard to the number of Nurses. For example, Copperbelt Province with 25% has the highest proportion of nurses compared to other provinces followed by Lusaka province at 22.0%.

Table 3.1: Health Personnel by province, 2005

Province	Medical Doctors		Clinical Officers		Nurses		Pharmacists	
	No.	%	No.	%	No.	%	No.	%
Central	35	5.0	132	11.0	796	9.0	2	8.0
Copperbelt	213	30.0	186	16.0	2,256	25.0	11	46.0
Eastern	36	5.0	140	12.0	804	9.0	*	0.0
Luapula	30	4.0	66	6.0	378	4.0	1	4.0
Lusaka	231	33.0	226	19.0	1,976	22.0	5	21.0
Northern	40	6.0	110	9.0	598	7.0	1	4.0
North-Western	25	4.0	56	5.0	373	4.0	*	0.0
Southern	50	7.0	175	15.0	1,198	14.0	1	4.0
Western	46	7.0	92	8.0	480	5.0	3	13.0
Zambia	**706**	**100.0**	**1,183**	**100.0**	**8,859**	**100.0**	**24**	**100.0**

Source: *Ministry of Health Human Resource database, 2005*

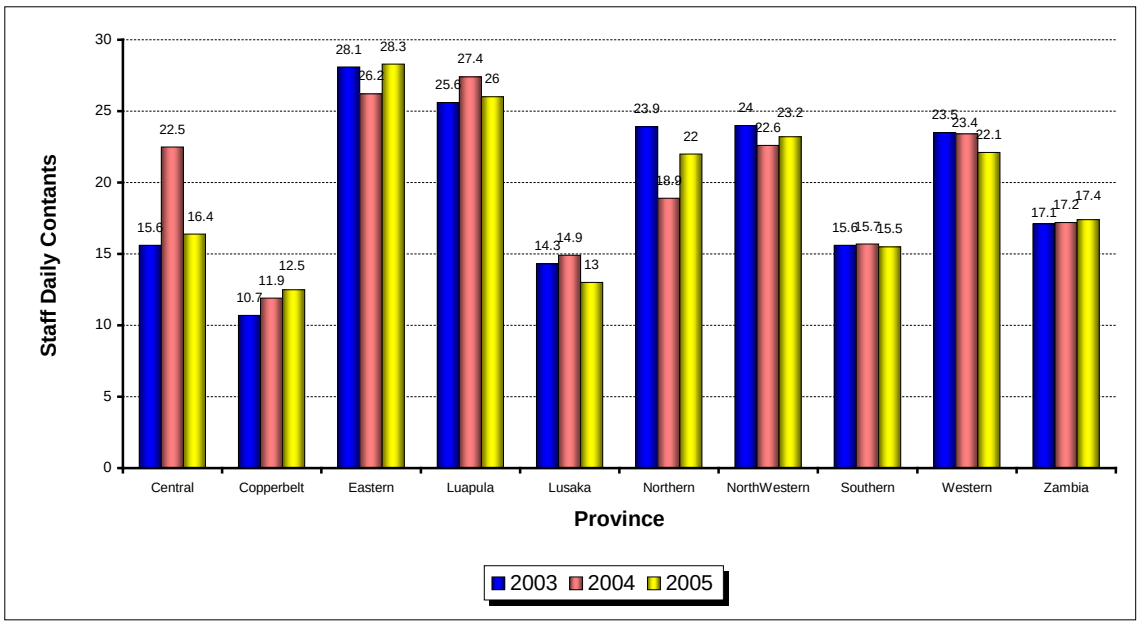
3.3 Health Centre Staff Daily Contacts

Health Centre Staff Daily Contacts measures the average number of contacts each qualified worker in an institution attends to, over a given reporting period (quarterly/year). The total number of contacts seen in a given period is shared among the total number of qualified staff available in the same period excluding holidays and weekends. Qualified worker refers to Medical *D*octors, Nurses and Clinical Officers working in the Out-Patient Departments, Maternal and Child Health and In-patient departments. The indicator can be used as a proxy to measure the distribution of staff in the various health institutions.

Figure 3.1 shows that Copperbelt Province recorded a consistent increase in staff patient ratios during the period 2003 to 2005; the rest of the provinces had a fluctuating pattern of the indicator.

Further analysis of the rural and urban provinces shows that qualified workers in rural provinces (i.e. Eastern, Luapula, Northern, North-Western and Western provinces) have a higher workload compared to their counterparts in urban provinces (i.e. Central, Copperbelt, Lusaka and Southern provinces).

Figure 3.1: Health Centre Staff Daily Contacts, Zambia, 2003-2005



3.4 Community Health Volunteers

The health sector over the recent years has been experiencing critical shortages of qualified staff. It is therefore important that staff such as community health volunteers (CHVs), trained traditional birth attendants (tTBAs) and community health workers (CHWs) be provided to supplement to the provision of health services at community level where Medical Doctors are not there.

Trained Traditional Birth Attendants (tTBAs) are personnel chosen by the community members within the communities they live to provide basic safe motherhood services after undergoing a six weeks basic training in reproductive health. Government policy requires that for every 1,000 inhabitants, there should be one (1) tTBAs.

3.5 Trained Traditional Birth Attendants

Table 3.2 shows the number of active tTBAs and the number of deliveries conducted, compared by province. The table shows that there has been a steady increase in the number of active tTBAs over the years and that in 2005 there were more deliveries conducted by the tTBAs (109,003) than in the pervious two years. Eastern, Northern and Southern provinces recorded high numbers of deliveries conducted by tTBAs in all the three years under review.

Table 3.2: Number of active tTBAs and deliveries conducted, 2003-2005

Province	2003			2004			2005		
	Active tTBAs	Deliveries		Active tTBAs	Deliveries		Active tTBAs	Deliveries	
		Actual	Average		Actual	Average		Actual	Average
Central	471	4,626	9.8	544	9,425	17.0	567	11,804	21
Copperbelt	449	8,632	19.4	547	10,030	18.0	555	10,138	18
Eastern	883	16,118	18.3	676	16,552	24.0	728	18,369	25
Luapula	273	8,795	32.2	332	10,208	31.0	364	12,214	34
Lusaka	112	1,110	9.9	121	1,996	17.0	159	2,957	19
Northern	807	15,341	19.0	10,007	19,871	20.0	1,308	23,297	18
N/Western	448	7,038	15.7	474	7,180	15.0	477	7,106	15
Southern	829	14,376	17.3	915	18,463	20.0	896	17,221	19
Western	373	6,175	16.6	378	6,215	16.0	387	5,897	15
Zambia	**4,641**	**82,211**	**17.6**	**4,993**	**99,940**	**20.0**	**5,441**	**109,003**	**20**

Source: *MoH, HMIS 2005*

3.6 Community Health Workers (CHWs)

Community Health Workers (CHWs) are members of the community chosen and trained in basic curative skill. Like Trained Traditional Birth Attendants are chosen by community members within the communities they live and trained in basic preventive and curative care of minor ailments for four weeks. They attend to minor ailments in the community and refer all cases to the next level. At the end of each month, they compile and submit their returns to the health center in their area.

Table 3.3: Number of active CHWs and patients attended to by CHWs, 2003-2005

Province	2003			2004			2005		
	No. of Active CHWs	Patients attended to by CHWs		No. of Active CHWs	Patients attended to by CHWs		No. of Active CHWs	Patients attended to by CHWs	
		No. of patients	Patients per no. of CHW		No. of patients	Patients per no. of CHW		No. of patients	Patients per no. of CHW
Central	480	465,243	976	518	528,884	1,019	557	426,902	766
Copperbelt	301	164,047	545	312	186,438	597	295	203,799	691
Eastern	512	449,445	878	513	511,554	997	725	580,485	801
Luapula	259	210,322	812	567	242,865	428	287	242,789	846
Lusaka	190	105,602	556	157	194,641	1,240	296	113,402	383
Northern	732	1,104,193	1,508	765	717,005	938	863	1,018,609	1,180
N/Western	349	309,204	886	432	324,737	751	329	315,718	960
Southern	760	799,473	1,052	818	716,149	876	1,006	684,871	681
Western	712	559,840	786	584	573,271	982	597	547,789	918
Zambia	**4,845**	**4,170,369**	**860**	**4,666**	**3,995,544**	**856**	**4,954**	**4,134,364**	**835**

Source: MoH, HMIS 2005

Table 3.3 presents data on the number of active CHWs and the number of patients attended to by CHWs by province for the period 2003 to 2005, by province. The Table shows that in 2003, 2004 and 2005, there were more Community Health Workers in Southern and Northern provinces than in Lusaka and Copperbelt. Overall, the number of Active Community Workers reduced from 4,845 in 2003 to 4,666 in 2004 and then increased to 4,954 in 2005.

Chapter 4: AVAILABILITY OF ESSENTIAL DRUGS

4.1 Introduction

Drug availability like human resource, is an important component in the delivery of health services. The demand for provision of quality health services is determined by among other factors, availability of essential drugs, qualified medical personnel, supplies and equipment.

The *drugs and supplies indicators* monitor the following:

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

These indicators have been selected to support efficient management of drugs and supplies in a "pull" system, in which Districts and Health Institutions order supplies as needed.

4.2 Medical Supplies in Stock at Health Facilities

This indicator measures the proportion of months during a time period that indicator supplies were in stock throughout the whole month. The main goal of this indicator is to ensure that there is appropriate availability of medical supplies at a given health facility (i.e. Health Centres and/or Hospital).

At the end of the month, the Health Centre staff notes from the stock control cards whether there was any occasion in the previous month when the critical drug or supply was out of stock in the store, i.e. when the stock level reached zero. The indicator gives a rough measure of the proportion of time that critical supplies have been in stock.

Critical medical supplies should always be in stock. Out of stock conditions for these supplies should lead to investigation by the Health Centre and DHMT. Various reasons may be found and may include: logistics, pilferage, prescription habits of staff or, disease patterns.

4.3 Drugs Availability by Health Centre, Hospital and Province

This section looks at drugs availability for health centres and hospitals by province. This information is presented in Table 4.1. The Table shows that the percentage of months for which drugs were in stock in health centres reduced from 76% in 2004 to 74% in 2005. The drug availability remained constant in 2004 and 2005 in hospitals at 82%.

In 2005, Luapula Province recorded the highest drug availability in hospitals at (96%) followed by Copperbelt at (95%). In the same year, Copperbelt Province recorded the highest drug availability for health centres at 91% and lowest in Luapula Province at 61% followed by North-Western Province (64%), Southern Province (70%) and Central Province (72%). North Western Province recorded the lowest drug availability in hospitals.

A comparison of drug availability for health centres and hospitals in 2005 indicate that hospitals with 82% had a high percentage of drug availability compared to health centres at 74%.

Table 4.1: Percentage of months for which drugs were in stock by province, 2003 to 2005

Province	Health centre months in stock (%)			Hospitals months in stock (%)			Summary of percentage of months in stock (%)		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Central	69	72	72	86	92	84	70	74	73
Copperbelt	85	89	91	80	91	95	86	89	91
Eastern	75	80	73	73	83	85	75	81	73
Luapula	59	63	61	87	85	96	59	64	63
Lusaka	82	83	82	98	73	72	82	82	81
Northern	73	78	76	72	73	77	74	78	76
North-Western	64	65	64	74	77	65	65	66	64
Southern	75	75	70	81	82	79	76	75	70
Western	54	74	76	51	73	81	73	74	77
Zambia	**73**	**76**	**74**	**76**	**82**	**82**	**74**	**76**	**74**

Source: *MoH, HMIS, 2005*

4.4 Drug Kit Utilisation at Health Centres

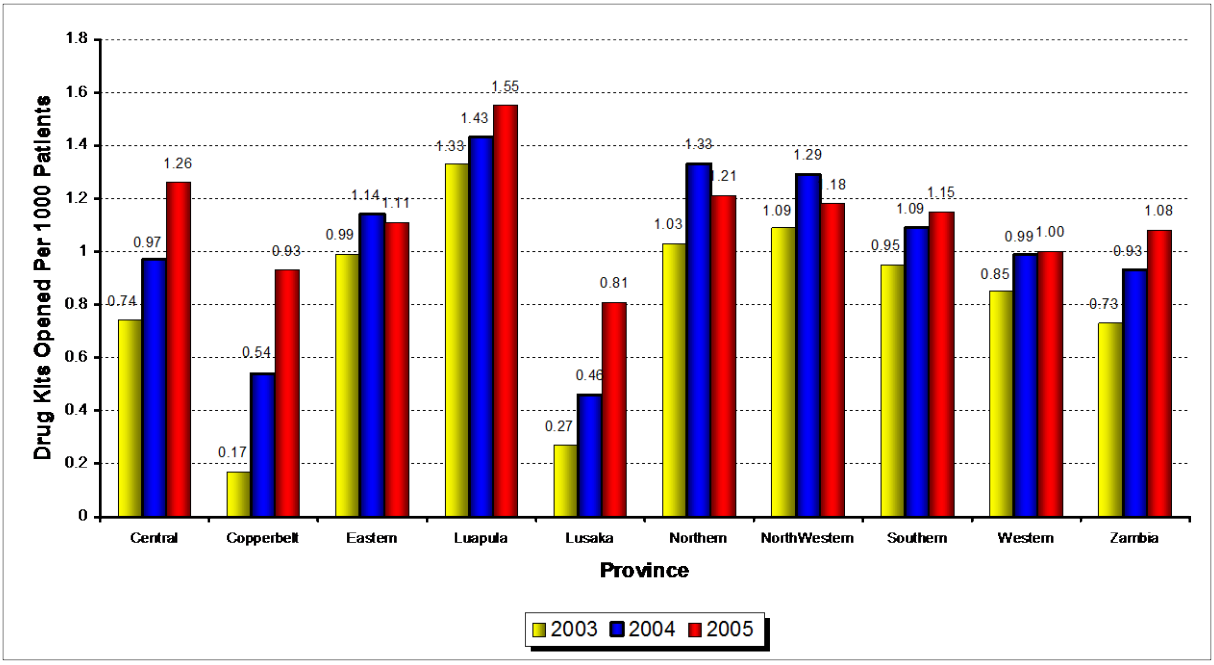
This indicator looks at the number of drug kits used per 1,000 patients. It measures the number of essential drug kits opened during the time period (x 1000) per number of curative contacts (first attendances and re-attendances, and admissions) during the same period. The main goal of this indicator is to ensure appropriate management of and adequate supply of Health Centre drugs.

The standard drug kit is intended to serve 1,000 patients. Opening a drug kit should depend on among other things, the number of patients seen, and not on the time period elapsed. Shortages of drugs (because of a specific disease pattern) can be compensated through the additional drug supply. Sometimes, kits are opened just before the end of the quarter, which gives an impression of "overuse" in small centres. There is need for further investigation if more than 1.2 kits per 1,000 patients or less

than 0.8 kit per 1,000 patients are opened. Overuse should be investigated through a drug stores and patient register review.

Figure 4.1 below presents data on drug kits opened per 1,000 patients by province. The figure reflects a consistent increase in the number of drug kits opened per 1,000 patients during the period 2003 to 2005 with Luapula Province recording the highest in all the years. Overall, the national picture shows that drug kits opened have been increasing over the past three years.

Figure 4.1: Drug Kit Utilisation at Health Centres



Chapter 5: HEALTH SERVICE DELIVERY INDICATORS

5.1 Trends of selected service delivery indicators by year

Table 5.1 shows that all indicators under the *health service performance indicators* reflect a fluctuating pattern during the period 2003 to 2005. All indicators under this category reduced in 2004 and picked up in 2005.

Indicator falling under *Maternal Health and Family Planning* showed a declining pattern during the period 2003 to 2005. Trained traditional birth attendants (tTBAs) and Supervised Deliveries reflect an increasing trend during this same period.

Under the *child health indicators*, two indicators namely Pregnancies Protected Against Tetanus and Fully Immunized Children under 1 year have been increasing during the period 2003 to 2005 whereas Underweight Prevalence has been decreasing over the same years.

Table 5.1 Trends of selected service delivery indicators by year

Indicator	Period in years		
	2003	2004	2005
Health Service Performance Indicators			
▪ Health Centre (HC) utilisation	0.84	0.76	0. 78
▪ Health Centre (HC) under 5 per capita attendance	2.15	1.88	2.04
▪ Health Centre (HC) over 5 attendance	0.55	0.30	0.48
▪ Bed Occupancy Rate	55%	52%	56%
▪ Hospital Average Length of Stay	5.3%	5.0%	5.5%
Maternal Health and Family Planning Indicators			
▪ First Antenatal Coverage	95%	97%	93%
▪ Average Antenatal Visits	3.3	3.1	3.0
▪ Institutional deliveries	39%	43%	43%
▪ Trained traditional birth attendants (tTBAs)	16%	18%	19%
▪ Supervised Deliveries	55%	61%	62%
▪ First Postnatal Attendance	46%	50%	51%
Child Health Indicators			
▪ Pregnancies Protected Against Tetanus	85%	85%	83%
▪ Fully Immunised Children under 1 year	74%	80%	82%
▪ Underweight Prevalence	21%	17%	16%

Source: MoH, HMIS, 2005

5.1.1 Health Centre utilisation

Health centre utilization is defined as the number of first attendances and admissions during a given period of time per the catchment population. The more the qualified health staff in a given province the fewer the clients each one of them will attend to per day. The purpose of this indicator is to assist

Managers of respective health facilities to direct their interventions towards health facilities under-utilised. In rural areas, the per capita attendances should not be less than 1 per year while urban areas should not be less than 3 attendances.

Table 5.2 presents data on health centre utilisation by province and age group. The Table shows that for all provinces combined, health centre utilisation declined from 0.85 per capita attendances in 2003 to 0.76 per capita in 2004 and then increased to 0.78 in 2005. Overall, health centre utilisation during the period 2003 to 2005 for all provinces was higher for the age group 5 years and below than the age group 5 years and above.

The Table also shows that Western province had the highest health centre utilisation in both 2003 (0.99 per capita) and 2004 (0.88 per capita) compared to the other provinces.

Table 5.2: Health Centre under 5 and over 5 per capita attendances Zambia, 2003 to 2005, Zambia

Provinces	2003			2004			2005		
	Under 5	Over 5	Total	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	2.09	0.53	0.80	1.83	0.48	0.71	1.88	0.48	0. 72
Copperbelt	2.1	0.53	0.79	1.79	0.57	0.81	1.92	0.53	0.80
Eastern	2.25	0.47	0.82	1.97	0.46	0.76	2.64	0.48	0.91
Luapula	2.18	0.33	0.67	2.0	0.32	0.64	2.00	0.32	0.64
Lusaka	2.35	0.65	0.99	1.98	0.61	0.88	1.98	0.55	0.83
Northern	1.58	0.58	0.78	2.18	0.49	0.83	1.66	0.31	0.58
N/Western	2.37	0.54	0.90	1.52	0.30	0.54	2.28	0.50	0.86
Southern	2.17	0.62	0.93	1.82	0.57	0.82	1.84	0.56	0.81
Western	2.66	0.67	1.01	2.22	0.61	0.97	2.36	0.59	0.89
Zambia	**2.15**	**0.55**	**0.85**	**1.88**	**0.30**	**0.76**	**2.04**	**0.48**	**0. 78**

Source: *MoH, HMIS, 2005*

5.1.2 Hospital OPD Utilisation

There are two indicators used to measure Hospital OPD Utilisation. These are Hospital OPD percentage by-pass first attendances and Hospital OPD percentage referred first attendance. The purpose of these indicators is to help reduce the congestion of Hospital OPDs in order to make them function as Health Centre referrals only. If there is over utilisation of the Hospital OPD, measures need to be taken to improve the quality of service at health centres and accessibility for the general public.

5.1.2.1 Hospital OPD Percentage By-pass First Attendances

This is the proportion of OPD first attendants who by-passed Health Centres and went to Hospitals directly. When the percentage by-pass is high, this signals a possible problem at the health center level or that the hospital may also be performing health center functions. This calls for managers to improve accessibility and services offered at Health Centres. The picture for the year 2004 and 2005 is shown in the Table 5.3.

Table 5.3: Hospital OPD percentage By-pass first attendance of total attendance at OPD – Zambia: 2004 - 2005

Province	2004			2005		
	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	23	27	23	20	18	17
Copperbelt	30	40	21	37	20	21
Eastern	22	28	15	22	14	15
Luapula	11	11	11	18	8	9
Lusaka	23	24	5	12	5	6
Northern	13	11	9	10	10	10
North-Western	55	52	45	68	42	41
Southern	22	27	20	24	19	18
Western	7	5	3	8	3	3
Zambia	**27**	**33**	**20**	**34**	**19**	**19**

Source: *MoH, HMIS 2005*

Table 5.3 shows a high Hospital OPD percentage by-pass first attendance, at an average of 20%. In 2004, Hospital OPD percentage by-pass first attendance was highest in North-western and Central provinces at 45% and 23% respectively and lowest in Western (3%) and Northern (9%). In 2005, the indicator was still higher in the same provinces. The ideal is that there should not be any by-pass if the referral system working well. These observed high by-pass rates might be explained by: (i) preference to seek services of a doctor, (ii) availability of materials and (iii) the administration of by-pass fees at Hospitals. Overall, by-pass reduced from 20% in 2004 to 19% in 2005.

5.1.2.2 Hospital OPD Percentage Referred First Attendance

This is the proportion of OPD first attendants who are referred to the hospital by the health centre. When the percentage referred is lower than the by-pass, this may signal a possible problem. It might imply that the majority of hospital OPD cases are by-pass cases. The challenge is to improve services so that only cases that should be referred are actually referred and minimise by-pass by the general population. The hospital OPD attendance is expected to be less than one-tenth of the average Health Centre attendances, as not more than 10 percent of the Health Centre first attendances are referred to the hospital.

Table 5.4 shows hospital OPD percentage referred first attendance levels. Results form the Tables shows that the proportion of patients referred reduced from 68% in 2004 to 67% in 2005. The Table also shows that in 2004, the proportion of patients referred were more for the under 5 years age group than the age group 5 years and above. However, in 2005, there were more patients in the age group 5 years or above referred compared to those aged below the age of 5. Western and Lusaka provinces had the highest proportion of patients referred in both 2004 and 2005, compared to other provinces.

Table 5.4: Hospital OPD Percentage Referred First Attendance, Zambia, 2004 and 2005

Province	2004			2005		
	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	64	63	64	80	76	77
Copperbelt	64	61	62	63	61	61
Eastern	86	79	81	78	78	78
Luapula	82	83	83	82	87	85
Lusaka	88	90	90	88	90	90
Northern	88	89	88	90	85	87
North-Western	35	32	33	32	32	32
Southern	81	71	73	76	69	71
Western	95	95	95	92	95	95
Zambia	**70**	**67**	**68**	**66**	**68**	**67**

Source: *MoH, HMIS 2005*

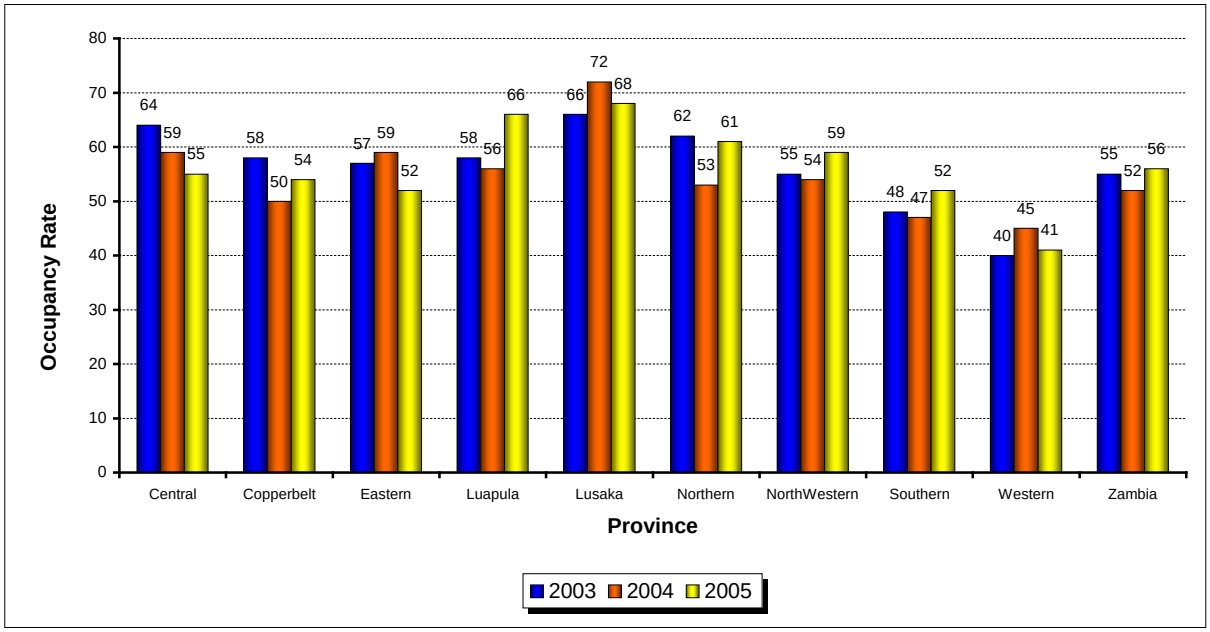
5.1.3 Bed Occupancy Rate

Bed occupancy rate is defined as the percentage of available beds occupied during a given period of time. In other words, the indicator is used for measuring efficiency of a given hospital. The purpose of this indicator is to maximize the utilization of health facilities for inpatient treatment. Bed Occupancy rates give the average percentage of beds in use during the period under review (usually one year). Ideally the bed occupancy rate should not be less than 80%.

Figure 5.1 shows data on the trends of bed occupancy rate (for hospitals) by province from 2003 to 2005. The figure shows that the national bed occupancy rate for all hospitals declined from 55% in 2003 to 52% in 2004 and then increased to 56% in 2005.

The figure also shows that all the provinces had a fluctuating pattern of bed occupancy rate during the period 2003 to 2005 except for Central Province, which showed a downward trend.

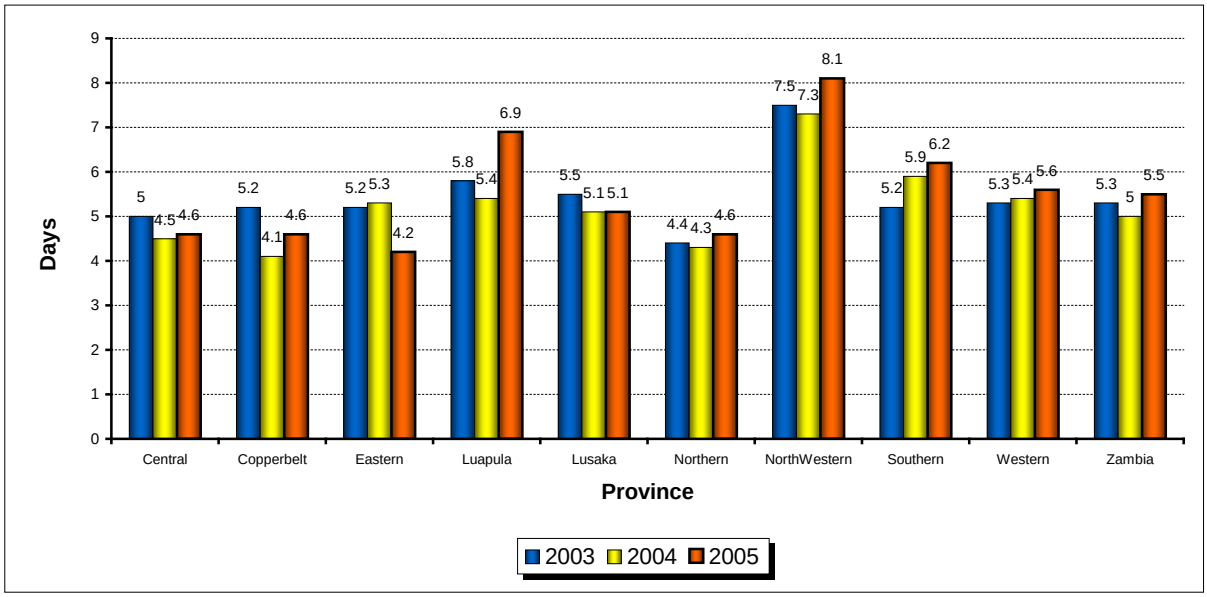
Figure 5.1: Hospital Bed Occupancy Rate by province 2003-2005, Zambia



5.1.4 Hospital Average Length of Stay by province 2003-2005, Zambia

This indicator measures the average number of days a patient stays in an inpatient health facility. The purpose of this indicator is to optimise the appropriate use of facilities for each patient. The recommended average length of stay in a District Hospital is 6 days or lower. When the bed occupancy rate drops and where the average length of stay remains stable, the (in-patient) staff workload reduces.

Figure 5.2: Hospital Average Length of Stay, by province, 2003-2005, Zambia



Trends of hospital average length of stay by province for the years 2003, 2004 and 2005 are presented in Figure 5.2. The figure shows that the national average length of stay reduced from 5.3 in 2003 to

5.0 in 2003 and then increased again to 5.3 in 2005. The figure also shows that the rest of the provinces had a fluctuating trend in hospital average length of stay except for Southern and western provinces, which show an increasing trend in hospital average length.

5.1.5 Maternal Health Services

Maternal Health issues are receiving significant recognition as major public health concern (CSO, 2000). Maternal health provides a foundation for the subsequent success to child health. Risks in pregnancy both to the mother and the unborn child need to be identified early so that proper interventions are put in place. Efforts to achieve this can be done during pregnancy, delivery and after delivery including regular access to family planning services. This section looks at the following aspects of maternal health: antenatal care, supervised deliveries, postnatal care and family Planning.

5.1.5.1 Antenatal Care

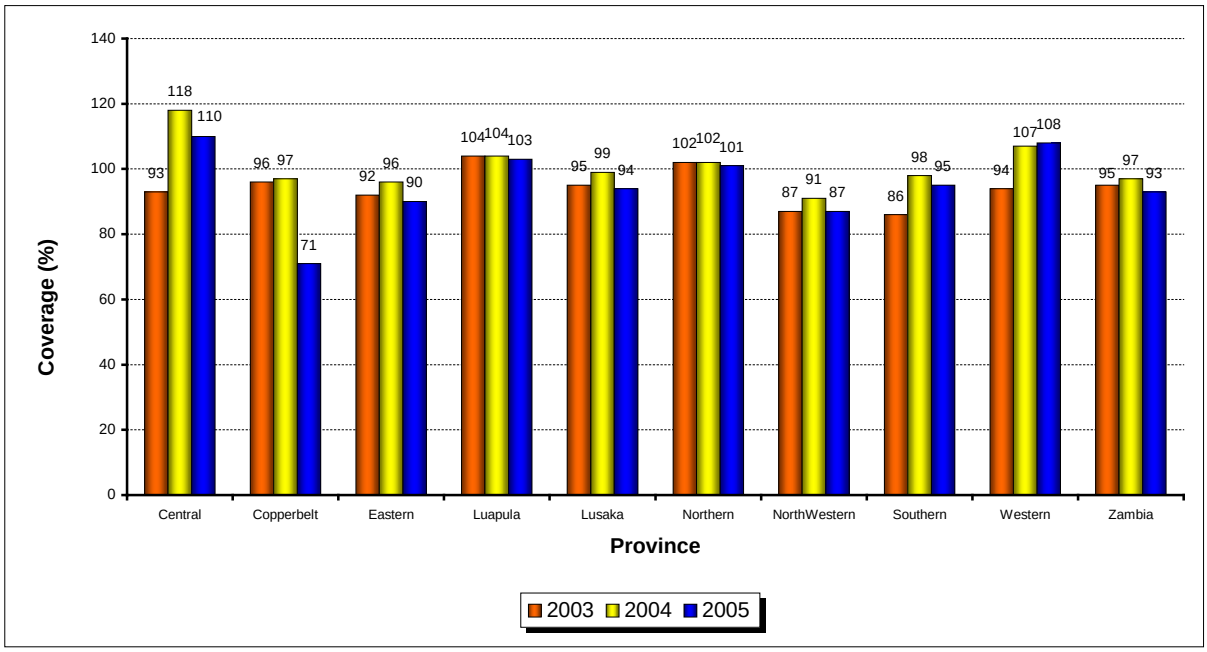
This section presents data on First Antenatal Coverage and Average Antenatal Visits.

(a) First Antenatal Coverage

First Antenatal Coverage is the percentage of expected pregnancies, in the catchment population, in a given period who present themselves to the health institutions for antenatal services for the first time during that pregnancy. The target in Zambia is 90% and if the figure falls below 80% the delivery system should be investigated.

Figure 5.3 shows that antenatal coverage at National Level has been fluctuating during the period 2003 to 2005. The indicator increased from 95% in 2003 to 97% in 2004 and then dropped to 93% in 2005.

Figure 5.3: First Antenatal Coverage, Zambia, 2003-2005, Zambia

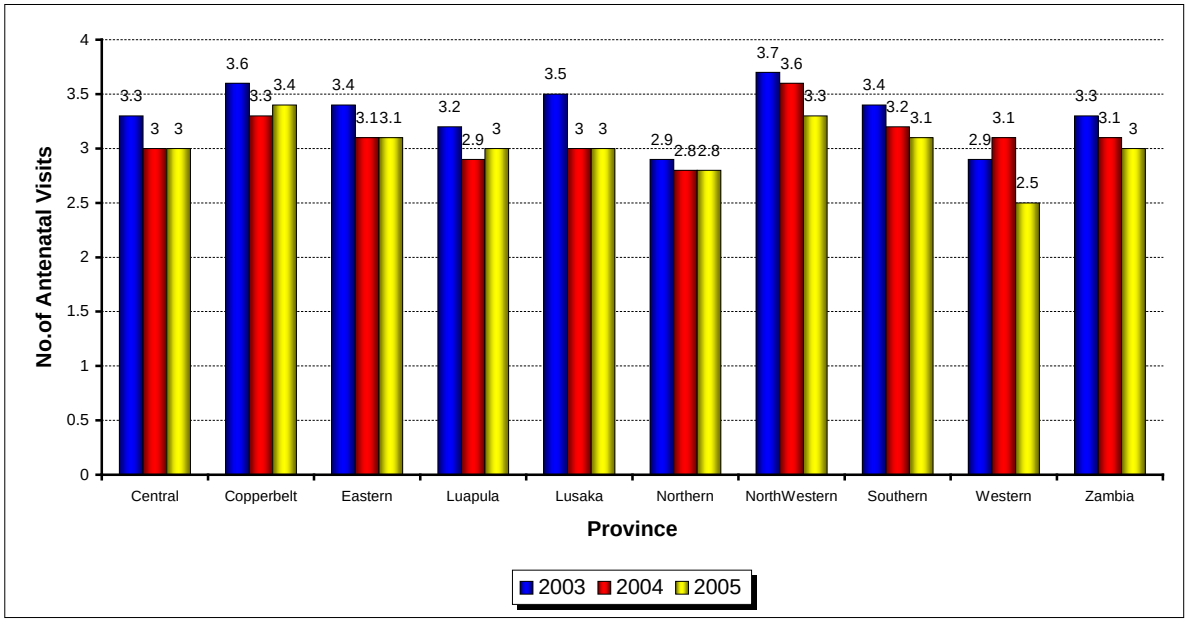


(b) Average Antenatal Visit

Average antenatal visits measures the average number of visits to the facility per expectant mother before delivery. At facility level, this indicator can be positively influenced by mass campaigns and also situations where a facility has just been opened. The national target is 4 visits per pregnancy and if the indicator falls below 3, an investigation should be undertaken.

Figure 5.4 shows an overall downward trend of the average antenatal visits from 3.3 in 2003 to 3.1 in 2004 and then to 3.0 in 2005. Overall, all the provinces showed a downward trend in the average antenatal visits except for Copperbelt, Luapula and Western provinces which showed a fluctuating pattern during the period 2003 to 2005.

Figure 5.4: Average Visits by province, Zambia, 2003-2005



5.1.5.2 Deliveries

(a) Supervised Deliveries

Supervised delivery is an indicator that measures the proportion of estimated deliveries in the catchment population of women who deliver at health facilities or are assisted by tTBAs. Safe conditions and appropriate interventions during delivery contribute to the reduction of risks of complications and infections that may pose a danger to both the mother and the baby.

Table 5.5 shows the percentage distribution of deliveries by province from 2003 to 2005 for both institutional and trained traditional birth attendants (tTBAs). The table shows that of all the delivers conducted in 2005, 19% were by tTBAs. The health provider at health institutions accounted for 43%,

which does not show an improvement from the previous year. It is also notable that Lusaka Province had the lowest deliveries from tTBAs.

Table 5.5: Supervised Deliveries by Place of Delivery and Province, 2003-2005, Zambia

Provinces	Institutional deliveries (%)			Trained traditional birth attendants (tTBA) -%			Supervised deliveries (%)		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Central	31	39	37	9	20	24	40	59	61
Copperbelt	69	56	53	12	11	11	81	67	63
Eastern	32	38	38	21	21	23	53	59	61
Luapula	32	32	33	21	23	27	53	56	59
Lusaka	47	53	64	1	2	4	48	56	67
Northern	30	31	34	21	26	30	53	57	63
North-Western	45	47	44	21	22	21	66	69	65
Southern	33	37	36	21	26	24	54	63	59
Western	32	48	43	15	18	16	47	66	60
Zambia	**39**	**43**	**43**	**16**	**18**	**19**	**55**	**61**	**62**

Source: *MoH, HMIS, 2005*

The national trend for the past three years shows that the proportion of deliveries assisted by tTBAs has been increasing. It rose from 16% in 2003 to 19% in 2005. Between 2004 and 2005 all the provinces, except North-Western, Southern and Western provinces recorded an increase in the deliveries assisted by tTBAs while Copperbelt province remained static at 11%.

Table 5.5 shows that while supervised deliveries have been increasing over the years, the proportion of institutional deliveries has been going down. However the percentage of deliveries from tTBAs has been increasing over the years.

(b) Complicated Deliveries

Table 5.6 shows information on complicated deliveries and caesarean section by health centre and hospitals for 2005. At Hospitals Level, nearly 15% of the deliveries are complicated deliveries. Ideally one would have expected complicated deliveries to be higher at the health centre than the hospitals. This picture of higher proportion of complicated deliveries at hospital than health centre could be attributed to better referral system in place as all complicated cases are referred to the hospitals.

Table 5.6: Percentage Distribution of Complicated Deliveries, Health Centres and Hospitals by Province, 2005.

Province	Health Centre		Hospital		
	All deliveries	% Complicated	All deliveries	% Complicated	% Caesarean
Central	11,643	3.1	6,416	10.6	9
Copperbelt	33,729	3.1	16,531	18.3	12
Eastern	19,963	3.7	10,677	19.7	7
Luapula	9,301	4.1	5,266	17.1	10
Lusaka	49,221	4.8	3,969	28	2
Northern	21,831	5.4	4,571	14.8	11
N/Western	7,481	5.7	7,647	9.9	4
Southern	14,874	2.2	11,203	15	6
Western	8,970	4.2	6,484	8.2	4
Zambia	**177,398**	**4**	**72,764**	**15**	**8**

Source*: MoH, HMIS, 2005*

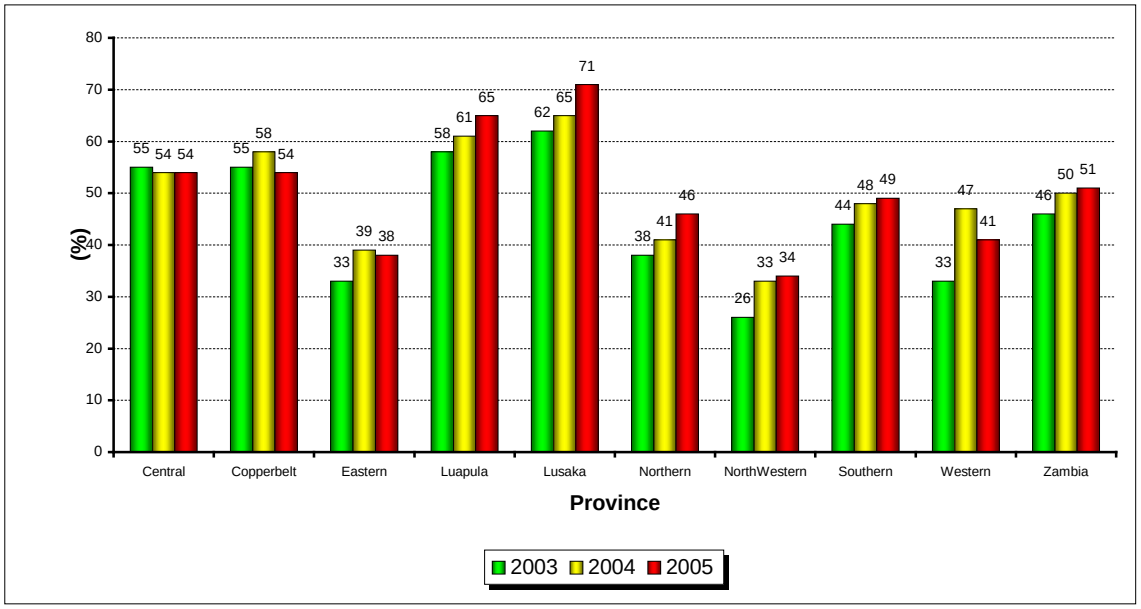
Table 5.6 also presents data on the prevalence of deliveries through caesarean section in hospitals in all the provinces. The Table shows that Copperbelt (12%) had the highest Caesarean rate followed by Northern (11%). Western and North-Western had the lowest rate each with 4%.

5.1.5.3 First Postnatal Attendance

The goal for this indicator is to improve the health and well-being of women who recently delivered. The indicator applies to women presenting themselves to a postnatal clinic conducted by health professionals for the first time within 6 weeks of delivery. The national target is 80% and the service delivery system should be investigated if the indicator falls below 70%.

Figure 5.5 above shows that all provinces recorded increased coverage in 2005 compared to those of 2004 except for Copperbelt, Eastern and Western provinces, which recorded a reduction and Central Province which was static at 54%. The province with the highest first postnatal attendance in 2005 was Lusaka (71%) and the lowest was North Western Province (34%).

Figure 5.5: First Postnatal Attendance by province, 2003-2005, Zambia



5.1.5.4 New Family Planning Acceptors

New family planning acceptors rate is the proportion of women of childbearing age group (WCA) 15-49 years taking up a modern family planning method for the first time. Table 5.7 shows that New family planning acceptors rate has been increasing steadily from 113.0 per 1,000 WCA in 2003 to 127 per 1,000 WCA in 2004 and then to 138 per 1,000 WCA in 2005.

Copperbelt, Lusaka, Southern and Eastern Provinces recorded figures higher than 120 per 1,000 women in child bearing age groups taking up a new modern family planning method in 2003, 2004 and 2005.

Table 5.7: New Family Planning Acceptors per 1,000 WCA by province , 2003-2005

Provinces	2003	2004	2005
Central	106.0	88.8	80.8
Copperbelt	171.0	175.7	168.5
Eastern	127.0	129.9	150.5
Luapula	72.0	85.8	95.3
Lusaka	160.0	159.2	181.0
Northern	92.0	113.5	141.1
North-Western	97.0	108.9	111.9
Southern	131.0	132.2	142.6
Western	58.0	89.5	11.2
Zambia	**113.0**	**127.0**	**138.3**

Source: *MoH, HMIS database, 2005*

5.1.6 Child Services

According to the 2001/2 Zambia Demographic and Health Survey (ZDHS), during the five years period before the survey, nearly 1 in 6 children born between 1997 and 2002 died before they reach their fifth birthday. A little more than half of all the early childhood deaths take place during the first year of life. Many of these deaths occurring during the first five years of life are preventable through vaccinations and education.

In Assessing child health, three indicators have been looked at namely: *pregnancy protected against tetanus, fully immunised children* and *underweight prevalence.*

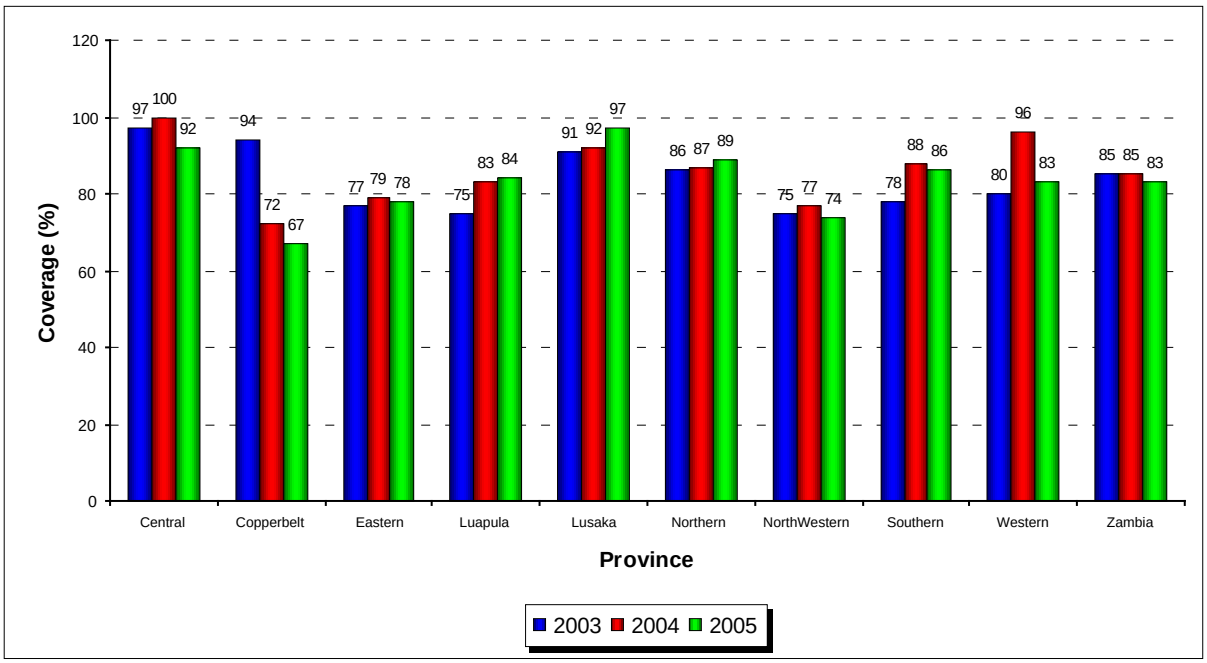
5.1.6.1 Pregnancies Protected Against Tetanus

Pregnancies protected against tetanus are the proportion of pregnant women that have received two or more doses of T.T. The national set target for pregnancies protected against tetanus is 80%.

Figure 15 shows trends of proportion of pregnancies protected against tetanus during the period 2003 to 2005. The figure shows that Central, Eastern, North-Western, Southern, and western provinces showed a fluctuating trend during the period 2003 and 2005. Luapula, Lusaka and Northern provinces showed a consistent increase in the proportion of pregnancies protected against tetanus. Copperbelt is the only province, which shows a downward trend in the proportion of pregnancies protected against tetanus, during the same period under review.

Overall, the national picture shows that the proportion of pregnancies protected against tetanus was static at 85% in 2003 and 2004 and then reduced to 83% in 2005.

Figure 5.6: Proportion of pregnancies protected against tetanus by province, Zambia, 2003-2005

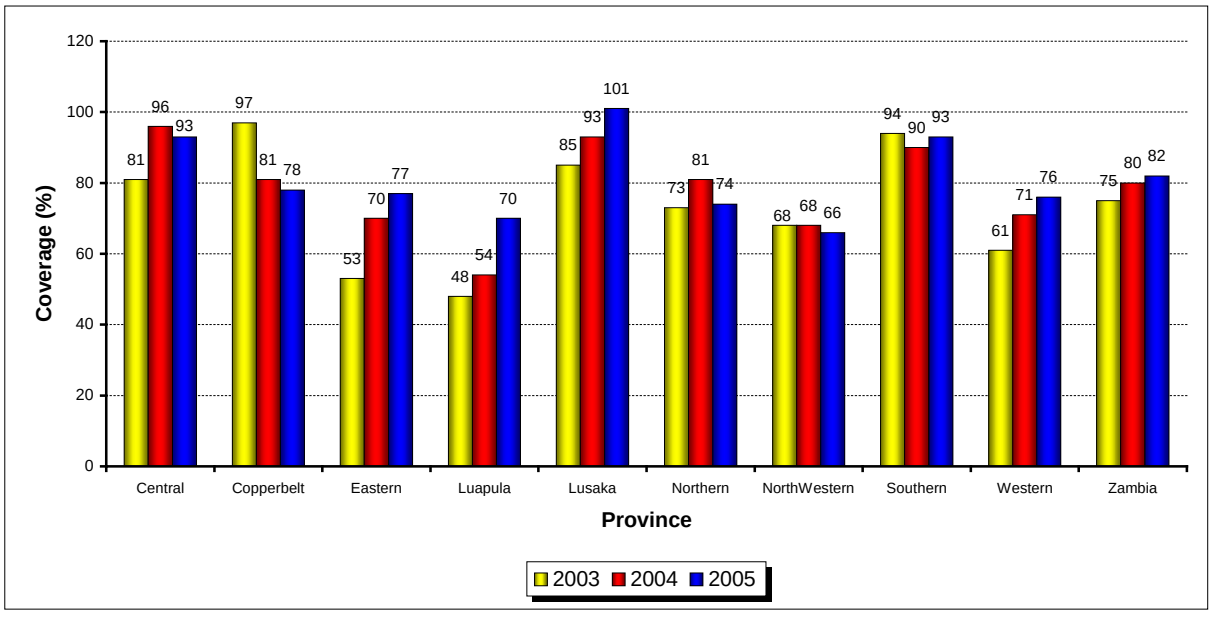


5.1.6.2 Full Immunisation Coverage

Full immunisation coverage refers to the number of children under the age of 1 who completed the recommended series of immunizations. Figure 5.7 shows data on the trends of immunisation coverage by province and year. National immunisation coverage has been increasing during the period 2003 to 2005. The coverage increased from 75% in 2003 to 80% in 2004 and then to 82% in 2005.

Figure 5.7 further shows that a look at the provincial variations indicates that Lusaka Province had the highest coverage in 2005 (101 %) followed by Southern and Central each with 93%. The figure also shows that immunisation coverage has been increasing during the period 2003 to 2005 for Eastern, Luapula, Lusaka and Western provinces.

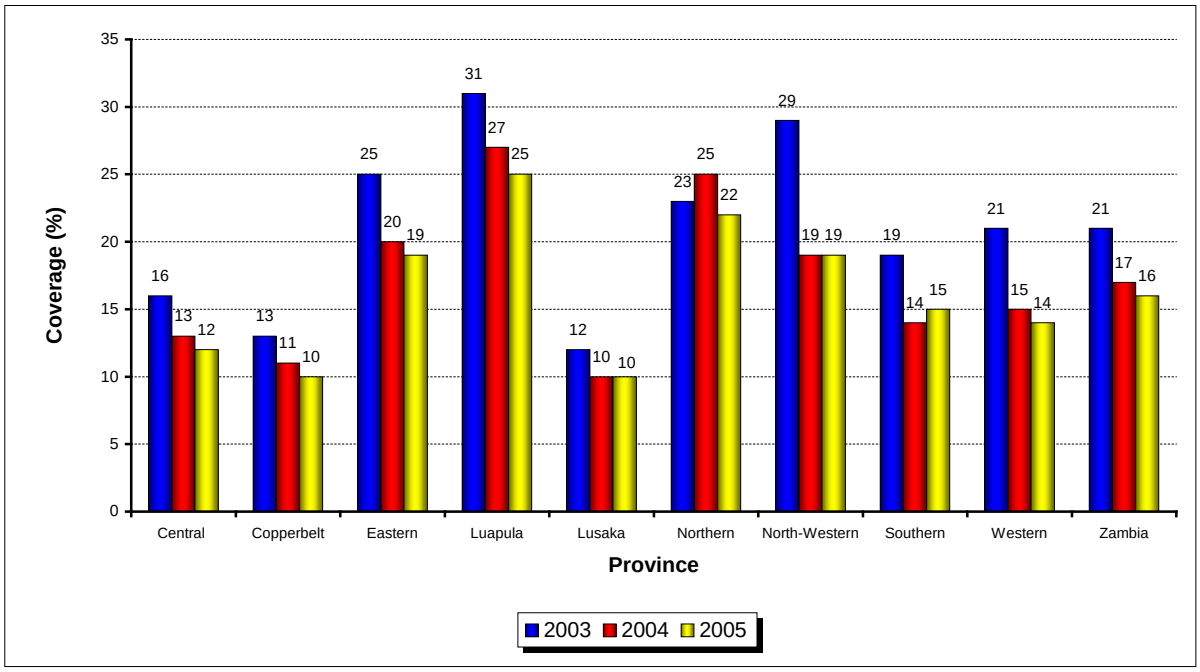
Figure 5.7: Fully Immunisation by province 2003- 2005, Zambia



5.1.6.3 Underweight Prevalence

Underweight prevalence measures the proportion of children under the age of 5 years whose weight is below the lower line out of the total weight. Figure 5.8 shows the underweight prevalence by province and year for the period 2003 to 2005. The figure shows that the national underweight prevalence has been declining from 21% in 2003 to 17% in 2004 and then to 16% in 2005. The figure also shows that Luapula Province recorded the highest underweight prevalence in both 2003 (27%) and 2005 (25%) than any other province.

Figure 5.8: Proportion of Children Underweight by province, 2003-2005



Chapter 6: CONCLUSION

Data included in this report was collected from the HMIS and other data sources not collected from the main stream HMIS such as ART, IDRS. This report provides vital information on disease burden and service delivery indicators necessary for monitoring the performance of the health sector. Information contained in this report has shown how certain provinces have performed over the three years period (i.e. 2003, 2004 and 2005).

There has been an improvement in a number of important indicators over the period 2003 to 2005. For example there was a downward trend in underweight prevalence from 21% in 2003 to 17% in 2004 and 16% in 2005. In addition, an increase in immunisation coverage from 74% in 2003 to 82% in 2005 shows that government is doing something in ensuring that the number of children under the age of one complete the recommended series of immunisation.

We have also seen that although malaria continues to be the major cause of morbidity in the country, the incidence reduced from 425 per 1,000 population in 2003 to 383 per 1,000 population in 2004 and then to 373 per 1,000 population in 2005. With intensified Roll Back Malaria activities of prevention and control, the indicator is expected to reduce over time.

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