Republic of Zambia

MINISTRY OF HEALTH

Annual Health Statistical Bulletin

2008

Third Draft

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"Good quality data from a routine information system not only accurately determines the effectiveness of health sector interventions, but also assists program managers to set targets and monitor outcomes, to design development policies and strategies, to make evidence-based decisions about the allocation and management of scarce resources, and to enable the population to make informed choices. Weaknesses in health statistics limit the ability of both policy makers and their development partners to measure successes and correct mistakes….."

"….To provide accurate, objective and timely statistics on a sustainable basis within the health sector, the Ministry of Health needs to play an active role in supporting and/or strengthening the HMIS through a wide range of statistical capacity measures such as enhanced training activities, technical supportive visits, data audit exercises, performance assessment visits, to mention only a few. ….."" (Kaliki, 2007)

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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 Pertusi*s 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
OPV	Oral Polio Vaccine
RI	Respiratory Infections
SMC	Suspected Measles Cases
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infections
TT	*Tetanus Toxoid*
tTBA	trained Traditional Birth Attendant
UTH	University Teaching Hospital
ZDHS	Zambia Demographic and Health Survey

PREFACE

This report presents findings of the 2008 Annual Health Statistical Bulletin, the tenth (10th) bulletin that my Ministry has produced since 1999. It is the latest in a series of comparable cross sectional data on public health interventions being implemented at all levels of health service delivery system.

The main objectives of this bulletin are to provide valuable information for assessing health status; health services utilisation and health outcomes as well as providing program interventions for monitoring health sector performance. This information is important because it enables the health sector to plan more effective and better targeted interventions.

Information provided in this report is for the period 2006 to 2008 and provides the national picture. Details of facility and district differentials are not included. Therefore, the provincial health offices (PHOs) are advised to take this opportunity of producing similar annual health bulletins at provincial level so that detailed district level information is analyzed for informed decision-making.

In order to ensure that the quality of this data and its reliability are enhanced, there is need to strengthen supportive interventions already in place. For example, regular trainings among new and old staff on the use and management of routine data, technical support visits, data audit exercises and performance assessment visits, should be encouraged because these interventions play an integral component in the improvement of the quality of routine information data at all levels of health care delivery.

I also wish to indicate that the use 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 interventions to diseases affecting our society.

In order to further strengthen this report, any feedback on the contents or presentation is greatly appreciated.

Hon. Kapembwa Simbao, MP
MINISTER OF HEALTH

ACKNOWLEDGEMENTS

Many people have contributed to the successful production of the *2008 Annual Health Statistical Bulletin.* The input of all personnel at the health facilities, the district, the province and the national level were vital to this process.

My thanks and appreciation are extended to the Dr. Christopher Simoonga (Acting Director of Policy & Planning), Mr. Chipalo Kaliki (Acting Deputy Director–Monitoring & Evaluation), Mr. Collins Chansa (Chief Planner-Budgeting), Mr. Richard Banda (Principal M & E Officer), Mr. Trust Mufune (Senior M & E Officer), Mr. Patrick Amanzi (M & E Officer), Mr. Chipo Mpamba and Mr. Masauso Phiri (Data Management Officers) and Mr. Nyambe Akabilwa (Intern attached to M & E Unit), for their tireless efforts and commitment shown throughout the compilation of this report.

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I also wish to recognize the contributions made by all program officers at national, provincial, district and facility level for there patience and generosity in providing the required information during the desk reviews and field interviews, without there co-operation, this bulletin would not have been a success.

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. Velepi Mtonga
Permanent Secretary
MINISTRY OF HEALTH

EXECUTIVE SUMMARY

The 2008 Annual Health Bulletin was designed to gather data on the number of health availability of drugs, child and maternal health, among others. These indicators are important in assessing health status, service utilisation and health outcomes for monitoring health sector interventions. The main source of this data is the health sector's facility based routine information system called the health management information system (HMIS). Information from this bulletin is for the period 2006 to 2008 and provides the national picture; details of facility and district differentials were not included.

Number of health facilities in 2008

✓ In 2008 **1,563 health facilities** were recorded in the country. Out of this number, **1,354** were **Governments** owned health facilities, **92** (private) and **117** (mission).
✓ There were **5** level 3 hospitals; **21** level 2 hospitals; **72** Level 1 hospitals; **1,029** rural health centres; **265** urban health centres and **171** health posts.
✓ Total number of beds and cots recorded in 2008 was **23,988** and **2,973**, respectively.

Malaria incidence

Results from the 2008 Annual Health Bulletin show that, malaria is the leading cause of morbidity in Zambia, with an annual malaria incidence rate estimated at **252 cases per 1,000** population in 2008, a drop from **358 cases per 1,000** population in 2007. Reasons

for the reduction in the incidence of malaria may be due to the following interventions:

✓ Use of RDTs to confirm malaria cases has helped rule out fevers not related to malaria.
✓ Distribution of ITNs has had a tremendous impact on the reduction of malaria incidence in all provinces.
✓ Intermittent Presumption Treatment (IPT), in pregnant women is an effective malaria prevention strategy.
✓ In-door residue spraying to high density, urban and peri-urban areas.
✓ Involvement of the communities in various malaria control strategies has proved to be very effective and sustainable.

The following are the main interventions on malaria that would need strengthening:

✓ There is need to intensify supervision in areas using RDTs.
✓ There is need to train more staff and/or communities using RDTs.
✓ Health education via local radio station is very vital and should be encouraged
✓ There is need to intensify indoor – residual spraying.

Diarrhoea (non-bloody) incidence

The national incidence rate of diarrhoea (non-bloody) has continued to reduce from **81 per 1,000 population** in 2006 to **76 per 1,000 population** in 2007 and then to **69 per 1,000 population** in 2008. The following are some key diarrhoea (non-bloody) interventions put in place:

✓ Most districts have sunk boreholes with support from UNICEF in 2008 and plans are still underway to sink more boreholes.

✓ The program to promote integrated pit-latrines and hand washing supported by UNICEF has contributed to the reduction of diarrhea incidence.

✓ Management of diarrhoea cases has generally improved and most districts have sufficient drugs and other logistics in the event of an outbreak like cholera.

✓ Improved awareness on the use of clean drinking water is an important intervention for the reduction of diarrhoea (non-bloody).

The following are the main interventions on diarrhoea (non-bloody) that would need strengthening:

✓ On-going sensitization of communities on diarrhea prevention should be encouraged if the incidence of diarrhoea (non bloody) has to reduce.

✓ Chlorination of water sources can help reduce the incidence of diarrhea.

✓ There is need to conduct regular inspection of food and premises

✓ There is need to protect wells by fencing them

✓ Strengthening epidemic preparedness committees at zonal and facility level should be encouraged.

Acute Flaccid Paralysis (AFP)

Data from the 2008 Annual Health Bulletin show that all provinces achieved certification level of AFP surveillance for both non-polio AFP rate and stool adequacy rate indicators. The following are the main reasons for the observed variations:

✓ The surveillance officers at national level, provinces and districts supported by four (4) four WHO Surveillance Officers ensure that the active surveillance for suspected poliomyelitis cases or AFP cases is conducted.

Measles Surveillance

Results from 2008 Annual Health Bulletin indicate that the annualized measles detection rate increased from **3.84 per 100,000 population** in 2006 to **6.9** in 2008 due to increased measles surveillance.

TB Notifications

Results from 2008 Annual Health Bulletin indicate that the there was a general decline in the number of notifications from **51,179** in 2006 to **50,415** in 2007 and then to **47,333** in 2008. Reasons for the reduction in the number of TB notifications may be due to the following challenges:

✓ Poor record keeping in TB data and completing the full process of treatment and lab screenings.

✓ Diagnosis not adequate.

✓ Community awareness not adequate to sensitise people on the need for seeking TB treatment early.

✓ The program mainly uses the passive case finding as part of the expanded DOT strategy, which relies on a mobilized community for bringing in new cases for TB screening. This is a challenge, besides the stigma that is a major influencing factor in the health seeking behaviour of TB suspects; health facilities are faced with declining numbers of volunteers to support this type

of work. This also influences the follow-up of patients that do not adhere to treatment, as this is the key function of the TB treatment supporters.

The following are the planned activities on TB:

✓ Improve laboratories for accurate diagnosis, especially for TB in children and TB/HIV co-infected patients.
✓ Improving advocacy, communication and social mobilization for improved community awareness and addressing issues of stigma.
✓ There is need to begin to implement active case finding using interventions that work such as symptom screening.

The national TB program is currently using the WHO recommended program on the stop TB strategy which addresses the following 6 components:

(i) Pursuing quality DOTS expansion and enhancement.
(ii) Addressing TB/HIV, multi-drug resistance (MDR)-TB and other challenges.
(iii) Contributing to health system strengthening.
(iv) Engaging all case providers.
(v) Involving affected communities & patients
(vi) Enabling & promoting research.

Number of Clients on Antiretroviral Therapy (ART)

The number of clients ever commenced on ART increased from **156,299** in 2007 **to 219,576** in 2008, representing an increase of over 28%. The following are the main reasons for the increase in the number of clients on ART:

✓ Increased awareness on the availability of drugs in all the health facilities**.**
✓ Political will to focus on children.
✓ Increased training of health care workers.

Staffing levels by province

Data from the 2008 Annual Health Bulletin indicate that, out of **795 medical doctors** in the country, Lusaka province (367) has the highest number. Similarly, out of **1,161 Clinical** Officers in the country, Lusaka had the highest number (245). On the other hand, North-western province has the lowest number of medical doctors, clinical officers, nurses, midwifes, environmental health technologists (EHTs), pharmacists and lab technologists compared to the rest of the provinces.

Staffing levels against recommended establishment

The 2008 Annual Statistical Bulletin collected data from the provincial human resource registers on the staffing levels against the recommended establishment, by province for 2008. This information is presented below:

✓ Out of the total number of **1,471 medical doctors** required in the recommended establishment in 2008, only **795** were currently available, leaving a shortfall of **676.**

✓ Out of the total number of **2,889 Clinical Officers** required in the recommended establishment in 2008, only **1,161** were currently available, leaving a shortfall of **1,728.**

✓ Out of the total number of **5,086 Midwives** required in the recommended establishment in 2008, only **2,400** were currently available, leaving a shortfall of **2,686.**

✓ Out of the total number of **11,037 nurses** required in the recommended establishment

in 2008, only **6,691** were currently available, leaving a shortfall of **5,127**

✓ Out of the total number of **347 Pharmacists** required in the recommended establishment in 2008, only **90** were currently available leaving a shortfall of **257**

✓ Out of the total number of **1,778 Environmental Health Technologists (EHTs) r**equired in the recommended establishment in 2008, only **948** were currently available leaving a shortfall of **830.**

Health centre client contact

The national figure of health centre staff daily contacts has been fluctuating over the period 2006 to 2008. The indicator reduced from **18.2** in 2006 to **17.8** in 2007 and then increased to **18.6** in 2008. The following are the main reasons for the observed variations on health centre client contact:

✓ Rural provinces recorded high client contacts possibly due to staff opting to work in urban areas.

✓ Most districts have very few staff operating at less than half the recommended human resource capacity with most of them not manned by qualified staff.

✓ Attrition of qualified staff due HIV/AIDS and poor conditions of service is another contributing factor to high health centre client contacts.

The following are the interventions on health centre client contact that would need strengthening:

✓ There is need to continue constructing health facilities & staff houses.

✓ Drugs should be available in all health facilities at all times.

✓ There is need to increase intake at nursing colleges.

✓ There is need to extend rural retention schemes and/or rural hardship to all professionals.

✓ There is need to provide incentives to attract more staff to rural facilities.

Number of trained Traditional Birth Attendants (tTBAs) & Community health workers (CHWs)

During the period 2006 to 2008, there has been a decrease in the number of trained traditional birth attendant (tTBAs) and Community health workers (CHWs). The following are the main reasons for the reduction in the number of tTBAs & CHWs:

✓ The MoH policy on reducing the number of tTBAs has contributed in most of deliveries being missed out, especially in the communities.

The following are the main interventions for tTBAs & CHWs that would need strengthening:

✓ There is need to intensify health education for people to deliver in health institutions.

✓ There is also need to ensure that staff levels are improved, MoH should find a way of giving tTBAs and CHWs incentives.

Drugs Availability at health centres and hospitals

The percentages of months for which drugs were in stock in health centres reduced from **74%** in 2006 to **70%** in 2007 and then **69%** in 2008. Similarly, in hospitals, the percentage of drug availability reduced from **86%** in 2006 to **84%** in 2007 and **77%** in 2008.

Reasons for the reduction in the availability of drugs may be due to the following challenges:

✓ In the 2nd and 3rd quarter of 2008, there were limited drug kits due to limited funds.
✓ In 2008, there were insufficient funds, compounded by weakness in the management system in drugs and supplies which resulted in the expiry of drugs.

The following are the planned activities on drugs availability:

✓ There is need to finalize working on the framework contracts.
✓ There is need to consider conducting basic training on logistics management information system.
✓ There is to intensify on our monitoring & evaluation for the lower levels.
✓ There is need to improve on human resources particularly training more pharmacists.
✓ There is need to lobby for more co-operating partners (CPs) support towards procurement of drug supply.

Health centre utilisation

For all provinces combined, health centre utilization increased from **0.86 per capita** attendances in 2006 to **1.22 per capita** in 2007 and then reduced to **1.10** in **2008.** The following are the main reasons for the observed variations:

✓ The removal of user fees in 2007 in rural facilities contributed to increased access and utilization.
✓ People have confidence in seeking health care services, and availability of drug.

The following are the main interventions on health centre client contact that would need strengthening:

✓ There is need to put in place incentives which should attract qualified health workers to work in rural areas.
✓ There is also need to strengthen outreach activities for health services and improve funding to districts/facilities so that services can be taken to their door steps community level.

Full immunisation coverage

For all provinces combined national immunization coverage has been fluctuating during the period 2006 to 2008. The coverage reduced from **87%** in 2006 to **85%** in 2007 and then increased to **90%** in 2008. The main reasons for the observed variations:

✓ The reach every district (RED) strategy introduced by WHO had an impact on the increase in immunization coverage.
✓ Child health week has also contributed to the upward rise.
✓ Improvement in the availability of logistics, vaccines & cold chain contributed to the upward rise in immunization coverage.
✓ Improvement in transport system for all districts, provided by the MoH headquarters contributed to the rise in immunization coverage

The following are the main interventions on full immunization that would need strengthening:

✓ Although the RED strategy has an impact on the immunization coverage, there is need for more resources to follow-up defaulting children.

✓ There is need to put in place activities aimed at maintaining the cold chains in all the health centres;

✓ There is need to increase the number of motor bikes to facilitate increased outreach activities.

✓ There is need to lobby for more stakeholders so that the RED strategy can be sustained.

✓ There is need to build cold chain storage facilities at provincial health Offices (PHOs).

Underweight prevalence

The national underweight prevalence has been declining from **14%** in 2006 to **10%** in 2007 and then to **6%** in 2008 with **Luapula province** recording the **highest underweight** prevalence while **Lusaka** had the **lowest prevalence**. The main reasons for the reduction in underweight prevalence include:

✓ Data collecting tools had an impact on growth monitoring in that the demarcation of underweight was not well defined in the previous under 5 card which had children below lower line and those below dotted line. Using those below ***dotted line*** ended up with the picture reflected above.

✓ Management of severe malnutrition and IMCI are helping in sensitizing the communities.

✓ During child health week, a lot of children are being de-wormed.

✓ *Positive deviance*, where mothers with healthy babies team up to form a group that teaches other mothers on how important it is to look after a child

The following are the main interventions on full immunization that would need strengthening:

✓ The communities need to be encouraged to form *nutrition clubs* and empower them with income generating activities.

✓ There is need to improve monitoring activities where monthly weighing and counseling in cases of underweight children.

✓ There is need to intensify nutrition counseling to clients. This is important because it leads to increased turn-out of children for growth monitoring.

Institutional deliveries

Institutional deliveries increased from **43%** in 2006 to **45%** in 2007 and 2008. Supervised deliveries reduced from **62%** in 2007 to **60%** in 2008. The following are the main reasons for the observed variations:

✓ There is emphasis in using more trained health workers and less TBA, hence the reduction on the proportion of TBAs.

✓ Safe motherhood action group (SMAGs) have contributed to the increase in institutional deliveries

✓ Lack of training is incentives have contributed the drop-out rate for TBAs over the years.

The following are the main interventions on institutional deliveries that would need strengthening:

✓ There is need to improve staffing levels in health facilities

✓ Community sensitization for mothers to deliver in health facilities should be encouraged.

✓ Building mothers' waiting shelters should be encouraged especially where mothers have to cover long distances.

Antenatal coverage

Antenatal coverage at national level increased from **92%** in 2007 to **98%** in 2008. Central province had the highest antenatal coverage between 2006 and 2008, compared to rest of the provinces while Copperbelt had the lowest coverage.

The following are the main reasons for increase in antenatal coverage:

✓ There has been intensified sensitization to the community to seek ANC services. Safe motherhood action group (SMAGs) have helped in sensitizing the community.

The following are the main interventions on antenatal coverage that would need strengthening:

✓ Strengthening programmes for health education, screening, treatment and care of cervical, breast and prostate cancer.
✓ Strengthening family planning (FP) and contraceptive choice programmes, with a special focus on rural districts.
✓ There is need to accelerate midwifery training, ensuring equitable distribution and retention of midwives.

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ANC services are available in all the health facilities.

✓ Outreach services have been intensified.
✓ Strengthening family planning (FP) and contraceptive choice programmes, with a special focus on rural districts.

ANC services are available in all the health facilities.

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The following are the main interventions on antenatal coverage that would need strengthening:

✓ Strengthening programmes for health education, screening, treatment and care of cervical, breast and prostate cancer.

Performance assessment framework (PAF) Indicators on health

The overall performance against the indicators and targets included in the seven health and HIV/AIDS PAF for 2008 is about 71%. This is because only 3 out of the 4 health PAF indicators and 2 out of the 3 HIV/AIDS PAF indicators were fully met.

However, within the performance against the targets set for the overall PAF, health and HIV/AIDS indicators were amongst the indicators which showed a consistency or improvement between years even when some of the targets were not fully met. It can therefore be concluded that the Ministry of Health is making concerted efforts in improving the delivery of quality health services as close to the family as possible.

CHAPTER 1: BACKGROUND

Chipalo Kaliki

1.1   Introduction

Every year, Ministry of Health produces *Annual Health Statistical Bulletins*. So far, nine (9) statistical bulletins have been produced since 1999. This bulletin is the tenth (10th) in the series of statistical bulletins produced since 1999.

Previously, all statistical bulletins have been descriptive in nature. However, following the resolutions from the sector advisory group (SAG) meeting held in March, 2009, all the subsequent bulletins shall be more analytical and that program officers shall take an active role in providing program interventions to explain the observed variations in each indicator.

Compilation of data for this bulletin was carried out during the period June to July, 2009. The main objective of this bulletin is to provide useful information about number *of health facilities in the country*, trends in the incidence of *disease burden, child health, maternal health, human resource, availability of drugs, performance assessment framework (PAF) indicators on health and indicators on service performance*.

1.2   Data Sources

Data compiled for this bulletin came from all the public health institutions.

1.3   HMIS Data flow policy

All data that is submitted from the lower levels (i.e. from health facilities) to the national office follows an HMIS ***data flow policy***. This policy was designed to detect and minimise the errors that may be inherent at each level of the service delivery (i.e. from the health centre to the national level). This means that before data is passed on to the next level, it is verified and validated making it more reliable for policy and program implementation. In addition, the data flow policy guides data managers and program officers on where and when the data for a particular month is *"seated"*. This scenario is illustrated on the next page.

Figure 1.1   HMIS Data flow

Notes:

⬆ Data submission to the next level

⬇ Feedback to each level of health care delivery

The key steps in the flow of HMIS data from the health facility to the national level are as follows:

Step 1:   Health workers collect data during service provision at the facility;

Step 2:   At the end of the day, week, and/or month, data is validated, collated and added to the relevant HIA[1] forms and a self assessment tool;

Step 3:   The Health Centre-In-Charge sends the HIA reports to the District Health Office by the **7th day** of the following month for data capture and processing by the District Health Information Officer (DHIO).

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[1] *HIA stands for the health information aggregation form*

Step 4:   The DHIO validates the data and enters it onto the District Health Information System (DHIS) database. The DHIO must provide **feedback** *(see arrows going down)* on the data received from the health facility.

Step 5:   The DHIO sends the district dataset to the Provincial Health Office (i.e. at the province) by the end of the **second month** for further processing and assessment. At the province, the provincial data Manager receives the dataset from the district. Again, Provincial Data Manager must provide **feedback** *(See arrows going down)* on the data received from the District Health Information Officer.

Step 6:   After the dataset reaches the provincial level, it is submitted to the Ministry of Health Hq by the **5th of the third month**, for final aggregation, analysis and action related sector interventions. Again once it is received, the National Data Manager must provide **feedback** *(See arrows going down)* on the data received from the provincial data manager.

1.4   Report Completeness

Report completeness is defined as the number of reports from health institutions (i.e. health centres and hospitals) during the time period per the number of reports that should have been received during the time period. The main purpose of this indicator is to increase the quality of HMIS data. Report completeness should be as close as possible to 100%, and at least more than 90% (HMIS, 1998).

Figure 1.2 presents data on report completeness by province for the period 2006 and 2008. The figure shows that there was a slight reduction in the proportion of complete reports submitted to the national level from 92% in 2006 and 2007 to 87% in 2008. Provincial comparison shows that Copperbelt province had the highest proportion of HMIS report completeness during the period 2006 to 2008. North-Western Province on the other hand had the lowest proportion of report completeness during the period under review.

Figure 1.2:   HMIS Report Completeness, 2006- 2008

1.5   Scope of Analysis

Information included in this report is for the period 2006 to 2008 and provides details at provincial level. A descriptive analysis of the data was made to explain variations across provinces, for each indicator. Program managers at provincial, district and facility level were interviewed, using a semi-structured questionnaire, to provide information on the interventions put in place to explain the variations observed in each indicator. The following were the key aspects covered during the desk reviews and field visits:

(i)   Reasons on the observed trends of each indicator (disease burden, child health, maternal health, human resource, etc);

(ii)   Reasons for the observed variations across provinces and age groups;

(iii)   Interventions put in place to address the variations observed in part (i) and (ii) above.

1.6   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 include the following:

1.6.1   Provincial data analysis

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 included in this bulletin.

1.6.2   Exclusion of data sources from some private health facilities

Data included in this bulletin was from all public health facilities (including some 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.

1.6.3   Limited time for the field interviews

Due to the limited time, field interviews could not cover all the key program officers at national, provincial, district and facility level.

1.7   Outline of the remaining Chapters

The remaining Chapters have been arranged as follows:

Chapter Two: The section provides a general description of the different levels of health care systems in Zambia. Information about the number of government, mission and private health facilities is also provided.

Chapter Three: Discusses *disease burden* and focuses on the major causes of visitations to the health facilities. The chapter also discusses in more detail the top five (5) causes of morbidity in the health facilities, comparing them by age groups and province.

Chapter Four: Discusses key indicators on *human resource*s such as *health centre staff daily contacts, community health volunteers* and *community health workers,* number of *medical doctors, nurses* and *clinical officers, etc*.

Chapter Five: Discusses indicators on *drugs availability* such as *medical supplies in stock at health facilities*, *drug availability at health centre and hospital* and *drug kits utilisation*.

Chapter Six: This chapter presents information on key *health service performance indicators* such as *health centre (HC) utilisation, hospital OPD utilisation, inpatient admissions, bed occupancy rates, hospital average length of stay, etc.*

Chapter Seven: Presents data on key indicators of importance to *child health* and these include *underweight prevalence* and *child vaccination*.

Chapter Eight: Presents data on key indicators of importance to maternal health. These indicators include *antenatal coverage, average antenatal visits, institutional deliveries, first postnatal attendance and new family planning acceptors*.

Chapter Nine: This section presents information on the performance Assessment frameworks (PAF) indicators for health which include *percentage of institutional deliveries (HEA 1); percentage of fully immunized children*

under the age of one year in the 20 worst performing districts (HEA 2); utilization rate of primary health care facilities (HEA 3); and the percentage of Ministry of Health Releases to districts (HEA 4). The HIV/AIDS indicators include the percentage of clients in the sexually active population who have been tested for HIV and have received the results (HIV 1); the percentage of HIV positive eligible clients accessing ARVs (HIV 2); and the percent of HIV positive pregnant women receiving a complete course of ARV (HIV 3).

Chapter Ten: This section makes concluding remarks on a few health indicators.

CHAPTER 2: LEVELS OF HEALTH CARE SYSTEMS

Chipalo Kaliki, Richard Banda, Chipo Mpamba and Masauso Phiri

2.1 Introduction

The section provides a general description of the different levels of health care systems in Zambia. Information about the number of government, mission and private health facilities is also provided.

2.2 Description of the different levels of health Care System in Zambia

In Zambia, health services are provided by Government institutions, church institutions, mining and other industrial companies. The National Health Strategic Plan (NHSP) of 2006-2010 defines the framework within which both public and private service delivery is organized, based on the Zambia Basic Health Care Package (CBoH *et al* 2003). This package is delivered through a system which comprises the **five (5)** levels of health care as follows:

2.2.1 Third Level Hospitals

Third level hospitals also called *Specialist or Tertially Hospitals* are the highest referral hospitals in Zambia. These hospitals cater for a catchment population of approximately 800,000 and above, and have sub-specializations in internal medicine, surgery, paediatrics, obstetrics, gynaecology, intensive care, psychiatry, training and research. All complicated cases not attended to at second level hospitals are referred to third level hospitals. In 2008, there were **5** Third level hospitals.

2.2.2 Second level referral hospitals

Second level hospitals, also referred to as *Provincial or General Hospitals*, are found at provincial level. They are intended to cater for a catchment area of between 200,000 and 800,000 people, with services in internal medicine, general surgery, paediatrics, obstetrics and gynaecology, dental, psychiatry and intensive care services. These hospitals also act as referrals for the first level institutions, including the provision of technical back up and training functions. In 2008, there were **21** second level hospitals.

2.2.3 First level referral hospitals

First level hospitals, also referred to as *District Hospitals* are found at district level. They are the third largest levels of care after the Second and Third Level referral hospitals. These serve a population of between 80,000 and 200,000 and provide services such as medical, surgical, obstetric and diagnostic services and all clinical services in support of health centre referrals. In 2008, there were **72** first level hospitals.

2.2.4 Health Centres

There are two types of health centres in the health care delivery system in the Zambia. These include urban health centres, which serve a catchment population of between 30,000 to 50,000 people; and rural health centres, which a population of 10,000 people. In 2008, there were **1,294 health centres**. Out of this number **1,029** were rural health centres and **265** were urban health centres.

2.2.5 Health posts

These are the lowest levels of health care and are built in communities far away from health centres. They cater for a catchment population of approximately 3,500 in rural areas and 1,000 to 7,000 in the urban settings and are set up within 5km radius for sparsely populated areas. The types of health services offered at this level are basic first aid rather than curative. In 2008, there were **171** health posts.

2.3   Number of health facilities by province, facility type and ownership

Table 2.1a presents a summary analysis of the list of health facilities by province*. Table 2.1b* on the other hand presents information on the detailed list of health facilities by province, facility type and ownership.

Table 2.1a: Summary analysis of the list of health facilities by province, 2008	
Province	**Summary analysis**
Central	✓ In 2008 **154 health facilities** were recorded in Central province. Out of this number, **136** were Government owned health facilities, **8** (private) and **10** (mission). ✓ There were **2** level 2 hospitals; **7** Level 1 hospitals; **101** rural health centres; **23** urban health centres and **21** health posts. ✓ The province has no Level 3 Hospitals; ✓ Total number of beds and cots recorded is **1,898** and **195**, respectively.

Table 2.1a: Summary analysis of the list of health facilities by province, 2008, cont'd...	
Province	**Summary analysis**
Copperbelt	✓ In 2008 **229 health facilities** were recorded in Copperbelt province. Out of this number, **161** were Government owned health facilities, **58** (private) and **10** (mission). ✓ There were **3** level 3 hospitals **,** **9** level 2 hospitals; **7** Level 1 hospitals; **55** rural health centres; **135** urban health centres and **20** health posts. ✓ The province has all the levels of health care. ✓ Total number of beds and cots recorded is **4,945** and **880**, respectively.
Eastern	✓ In 2008 **195 health facilities** were recorded in Eastern province. Out of this number, **180** were Government owned health facilities and **15** (mission). ✓ There were **2** level 2 hospitals; **8** Level 1 hospitals; **153** rural health centres; **7** urban health centres and **25** health posts. ✓ The province has no Level 3 Hospital. ✓ Total number of beds and cots recorded is **2,857** and **351**, respectively;
Luapula	✓ In 2008 **136 health facilities** were recorded in Luapula province. Out of this number, **127** were Government owned health facilities, **2** (private) and **7** (mission). ✓ There were **1** level 2 hospital; **5** Level 1 hospitals; **122** rural health centres; **1** urban health centre and **7** health posts. ✓ The province has no Level 3 Hospital. ✓ Total number of beds and cots recorded in 2008 is **1,814** and **174**, respectively;
Lusaka	✓ In 2008 **105 health facilities** were recorded in Lusaka province. Out of this number, **97** were Government owned health facilities, **1** (private) and **7** (mission). ✓ There were **2** level 3 hospitals; **4** Level 1 hospitals; **46** rural health centres; **33** urban health centres and **20** health posts. ✓ The province has no Level 2 Hospital. ✓ Total number of beds and cots recorded is **2,387** and **477**, respectively.
Northern	✓ In 2008 **193 health facilities** were recorded in Northern province. Out of this number, **169** were Government owned health facilities, **11** (private) and **13** (mission). ✓ There were **2** level 2 hospitals; **6** Level 1 hospitals; **141** rural health centres; **15** urban health centres and **29** health posts. ✓ The province has no Level 3 Hospital. ✓ Total number of beds and cots recorded is **2,934** and **198**, respectively.
North-western	✓ In 2008 **154 health facilities** were recorded in North western province. Out of this number, **130** were Government owned health facilities, **3** (private) and **21** (mission). ✓ There were **2** level 2 hospitals; **9** Level 1 hospitals; **116** rural health centres; **13** urban health centres and **14** health posts. ✓ The province has no Level 3 Hospital. ✓ Total number of beds and cots recorded is **2,402** and **234**, respectively.
Southern	✓ In 2008 **236 health facilities** were recorded in Southern province. Out of this number, **205** were Government owned health facilities, **8** (private) and **23** (mission). ✓ There were **2** level 2 hospitals; **14** Level 1 hospitals; **168** rural health centres; **28** urban health centres and **24** health posts. ✓ The province has no level 3 hospital. ✓ Total number of beds and cots recorded is **2,730** and **224**, respectively.

Table 2.1a: Summary analysis of the list of health facilities by province, 2008, cont'd…	
Province	**Summary analysis**
Western	✓ In 2008 **161 health facilities** were recorded in Western province. Out of this number, **148** were Government owned health facilities, **3** (private) and **10** (mission). ✓ There was **1** level 2 hospital; **12** Level 1 hospitals; **127** rural health centres; **10** urban health centres and **11** health posts. ✓ The province has no level 3 hospital. ✓ Total number of beds and cots recorded is **2,022** and **240**, respectively.
All provinces combined	✓ In 2008 **1,563 health facilities** were recorded in the country. Out of this number, **1,354** were Government owned health facilities, **92** (private) and **117** (mission). ✓ There were **5** level 3 hospitals; **21** level 2 hospitals; **72** Level 1 hospitals; **1,029** rural health centres; **265** urban health centres and **171** health posts. ✓ Total number of beds and cots recorded in 2008 was **23,988** and **2,973**, respectively.

Table 2.1b: List of health facilities by province & levels of care, 2008						
Province	**Facility Type**	**Number of Health Facilities by Ownership**				
		GRZ	**Private**	**Mission**	**Total no. of health facilities**	
					No.	**%**
Central	Level 3 Hospitals	0	0	0	0	0.0
	Level 2 Hospitals	1	1	0	2	1.3
	Level 1 Hospitals	6	0	1	7	5.0
	Health Centres — Rural HC	88	4	9	101	66.0
	Health Centres — Urban HC	22	1	0	23	15.0
	Heath Posts	19	2	0	21	14.0
	Total Health Facilities	**136**	**8**	**10**	**154**	**100.0**
Copperbelt	Level 3 Hospitals	3	0	0	3	1.0
	Level 2 Hospitals	5	4	0	9	4.0
	Level 1 Hospitals	2	3	2	7	3.0
	Health Centres — Rural HC	46	2	7	55	24.0
	Health Centres — Urban HC	88	47	0	135	59.0
	Heath Posts	17	2	1	20	9.0
	Total Health Facilities	**161**	**58**	**10**	**229**	**100.0**
Eastern	Level 3 Hospitals	0	0	0	0	0.0
	Level 2 Hospitals	1	0	1	2	1.0
	Level 1 Hospitals	4	0	4	8	4.0
	Health Centres — Rural HC	143	0	10	153	78.0
	Health Centres — Urban HC	7	0	0	7	4.0
	Heath Posts	25	0	0	25	13.0
	Total Health Facilities	**180**	**0**	**15**	**195**	**100.0**

Province	Facility Type		Number of Health Facilities by Ownership				
			GRZ	Private	Mission	Total no. of health facilities	
						No.	%
Luapula	Level 3 Hospitals		0	0	0	0	0.0
	Level 2 Hospitals		1	0	0	1	1.0
	Level 1 Hospitals		1	0	4	5	4.0
	Health Centres	Rural HC	117	2	3	122	90.0
		Urban HC	1	0	0	1	1.0
	Heath Posts		7	0	0	7	5.0
	Total Health Facilities		**127**	**2**	**7**	**136**	**100.0**
Lusaka	Level 3 Hospitals		2	0	0	2	2.0
	Level 2 Hospitals		0	0	0	0	0.0
	Level 1 Hospitals		1	0	3	4	4.0
	Health Centres	Rural HC	43	0	3	46	44.0
		Urban HC	32	0	1	33	31.0
	Heath Posts		19	1	0	20	19.0
	Total Health Facilities		**97**	**1**	**7**	**105**	**100.0**
Northern	Level 3 Hospitals		0	0	0	0	0.0
	Level 2 Hospitals		2	0	0	2	1.0
	Level 1 Hospitals		5	0	1	6	3.0
	Health Centres	Rural HC	120	10	11	141	73.0
		Urban HC	14	0	1	15	8.0
	Heath Posts		28	1	0	29	15.0
	Total Health Facilities		**169**	**11**	**13**	**193**	**100.0**
North-western	Level 3 Hospitals		0	0	0	0	0.0
	Level 2 Hospitals		1	0	1	2	1.0
	Level 1 Hospitals		4	0	5	9	6.0
	Health Centres	Rural HC	104	0	12	116	75.0
		Urban HC	7	3	3	13	8.0
	Heath Posts		14	0	0	14	9.0
	Total Health Facilities		**130**	**3**	**21**	**154**	**100.0**
Southern	Level 3 Hospitals		0	0	0	0	0
	Level 2 Hospitals		1	0	1	2	1.0
	Level 1 Hospitals		9	1	4	14	6.0
	Health Centres	Rural HC	150	2	16	168	71.0
		Urban HC	24	3	1	28	12.0
	Heath Posts		21	2	1	24	10.0
	Total Health Facilities		**205**	**8**	**23**	**236**	**100.0**

Province	Facility Type		Number of Health Facilities by Ownership				
			GRZ	Private	Mission	Total no. of health facilities	
						No.	%
Western	Level 3 Hospitals		0	0	0	0	0.0
	Level 2 Hospitals		1	0	0	1	1.0
	Level 1 Hospitals		7	0	5	12	7.0
	Health Centres	Rural HC	119	3	5	127	79.0
		Urban HC	10	0	0	10	6.0
	Heath Posts		11	0	0	11	7.0
	Total Health Facilities		**148**	**3**	**10**	**161**	**100.0**
Zambia	Level 3 Hospitals		5	0	0	5	0.3
	Level 2 Hospitals		13	5	3	21	1.0
	Level 1 Hospitals		39	4	29	72	5.0
	Health Centres	Rural HC	930	22	77	1,029	66.0
		Urban HC	206	53	6	265	17.0
	Heath Posts		161	8	2	171	11.0
	Total Health Facilities		**1,354**	**92**	**117**	**1,563**	**100.0**

CHAPTER 3: DISEASE BURDEN

Dr. Simoonga, Pascalina Chanda, Dr. Nathan Kapata & Mr. Chipalo Kaliki

3.1   Introduction

Disease burden is measured using the incidence and case fatality rates of any given disease. Disease incidence is defined as the number of new cases of a disease in a specific population over a period of time while case fatality rate is measured as total number of deaths from a specific illness out of the total number of cases admitted in a given health facility (Katzenellebogen, 1997).

This chapter presents data on the ten (10) major causes of morbidity to health facilities, notifiable diseases and number of clients on ART. Some key interventions put in place to explain variations observed for each indicator are also included.

3.2   Major Causes of Illnesses by age group

3.2.1 Major Causes of illness for all ages combined

Table 3.1 compares information on the top ten (10) causes of visitations to health facilities for 2006, 2007 and 2008, for all age groups combined. The three tables show that malaria is the leading cause of morbidity in Zambia, with an incidence rate of 412 per 1,000 population in 2006, 359 per 1,000 population in 2007 and 252 per 1,000 population in 2008. In 2007 and 2008, respiratory infection (non-pneumonia) was the second highest cause of morbidity and diarrhoea (non-bloody) being the third highest.

Table 3.1:	Ten (10) Major Causes of Visitation to Health Facilities (for all ages combined), Zambia, 2006 to 2008

Ten Major Causes of Visitation to Health Facilities, Zambia 2006 **(All ages) - 2006**		Ten Major Causes of Visitation to Health Facilities, Zambia 2007 **(All ages) − 2007**		Ten Major Causes of Visitation to Health Facilities, Zambia 2008 **(All ages) − 2008**	
Disease Name	**Incidence per 1,000 pop.[2]**	**Disease Name**	**Incidence per 1,000 pop.**	**Disease Name**	**Incidence per 1,000 pop**
Malaria	412	Malaria	359	Malaria	252
Respiratory infection: non-pneumonia	192	Respiratory infection: non-pneumonia	219	Respiratory infection: non-pneumonia	198
Diarrhoea: non-bloody	81	Diarrhoea: non-bloody	76	Diarrhoea: non-bloody	69
Trauma[3]	48	Trauma[2]	50	Trauma[2]	47
Eye infection	41	Skin infections	38	Skin infections	38
Skin infections	41	Respiratory infections: pneumonia	37	Muscular skeletal &connective tissue	32
Respiratory Infections: pneumonia	39	Eye infection	35	Eye infection	31
Ear/Nose/throat infections	26	Muscular skeletal &connective tissue	30	Respiratory infections: pneumonia	30.8
Intestinal worms	16	Digestive system not infectious	27	Skin infections	30.5
Sexually transmitted infections	14	Ear/Nose/throat infections	26	Ear/Nose/throat infections	27

3.2.2 Major Causes of illness for under 5 and over 5 years

Tables 3.2 presents data for 2006, 2007 and 2008 on the incidence per 1,000 population for top ten (10) causes of visitations to health facilities, for under 5 years age group and 5 years and above age group. The table shows that although malaria is still the leading cause of morbidity in both the under 5 and over 5 year age groups, the incidence has been reducing overtime.

Overall, the incidence is higher in higher in under 5 years age group than the 5 years and above age group.

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[2] *This is incidence for all age groups*
[3] *This includes accidents, injuries, wounds, burns, etc*

Table 3.2:   Ten (10) Major Causes of Visitation to Health Facilities (for under 5 years and over 5 years), Zambia, 2006 to 2008

Ten Major Causes of Visitation to Health Facilities, Zambia 2006
(Under 5) - 2006

Disease Name	Incidence per 1,000 pop. (under 5)
Malaria	1,106
Respiratory infection: non-pneumonia	494
Diarrhoea: non-bloody	270
Eye infection	137
Respiratory Infections: pneumonia	115
Skin infections	104
Ear/Nose/throat infections	57
Trauma	56
Intestinal Worms	43
Anemia	37

Ten Major Causes of Visitation to Health Facilities, Zambia 2007
(Under 5) - 2007

Disease Name	Incidence per 1,000 pop. (under 5)
Malaria	940
Respiratory infection: non-pneumonia	539
Diarrhoea: non-bloody	248
Respiratory infection: pneumonia	111
Eye infection	109
Skin Infections	89
Trauma	56
Ear/Nose/Throat Infections	54
Intestinal worms	34
Anemia	29

Ten Major Causes of Visitation to Health Facilities, Zambia 2008
(Under 5) - 2008

Disease Name	Incidence per 1,000 pop. (under 5)
Malaria	641
Respiratory infection: non-pneumonia	467
Diarrhoea: non-bloody	225
Eye Infections	93
Respiratory infection: pneumonia	85
Skin infections	72
Trauma: accidents, injuries, wounds, burns	53
Ear / Nose / Throat infections	53
Skin Diseases (not infectious)	33
Intestinal Worms	28

Ten Major Causes of Visitation to Health Facilities, Zambia 2006
(Over 5) - 2006

Disease Name	Incidence per 1,000 pop (Over 5)
Malaria	246
Respiratory infection: non-pneumonia	122
Trauma	46
Diarrhoea: non-bloody	36
Skin infections	26
Respiratory infections: pneumonia	21
Ear/Nose/throat infections	19
Digestive system (not infectious)	19
Dental diseases	17
Muscular skeletal and connective tissue (not trauma)	10

Ten Major Causes of Visitation to Health Facilities, Zambia 2007
(Over 5) - 2007

Disease Name	Incidence per 1,000 pop (Over 5)
Malaria	220
Respiratory infection: non-pneumonia	143
Respiratory infections: pneumonia	39
Muscular skeletal and connective tissue (not trauma)	36
Diarrhoea: non-bloody	35
Dental diseases	30
Digestive system (not infectious)	27
Skin infections	26
Eye infections	19
Sexually transmitted diseases	15

Ten Major Causes of Visitation to Health Facilities, Zambia 2008
(Over 5) - 2008

Disease Name	Incidence per 1,000 pop (Over 5)
Malaria	158
Respiratory infection: non-pneumonia	133
Trauma: accidents, injuries, wounds, burns	45
Muscular skeletal and connective tissue (not trauma)	39
Diarrhoea: non-bloody	32
Dental diseases	28
Digestive system (not infectious)	26
Ear / Nose / Throat infections	21
Skin infections	21
Respiratory infection: pneumonia	18

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3.2.3 Malaria

Malaria is endemic in Zambia with seasonal and geographical variations. In 2008, 3.2 million cases of malaria (confirmed and unconfirmed) were reported countrywide with 3,871 deaths. The annual malaria incidence was estimated at 252 cases per 1,000 population in 2008, a drop from 358 cases per 1,000 population in 2007. Malaria accounts for up to 40 percent of all infant mortality and 20 percent of all maternal mortality in Zambia and the disease poses a severe social and economic burden on communities living in endemic areas (MoH, 2008).

The Government of the Republic of Zambia has identified the eradication of malaria and other major diseases as a priority to attain the Millennium Development Goals targets for reducing maternal child mortality rates in Zambia (MoFNP, 2006). The country is also implementing specific short- and medium-term programmes under the National Malaria Control Action Plan (NMCAP) aimed at scaling up malaria control and prevention strategies. These measures include a target to reduce malaria incidence by 75 percent by 2010 (MoH, 2007).

The primary NMCAP objectives are the following:

- To ensure that at least 80 percent of all pregnant women have access to the package of interventions to reduce the burden of malaria in pregnancy by December 2008. The package of interventions includes three courses of intermittent preventive treatment (IPT), insecticide treated net (ITN) use, and efforts to reduce anemia.

- To ensure that at least 85 percent of people in 36 malaria endemic districts sleep in housing units that have been sprayed with insecticides through the indoor residual spraying (IRS) programme by December 2008.

- To ensure that at least 80 percent of malaria patients in all malaria endemic districts receive prompt and effective treatment according to national guidelines

3.2.3.1 Malaria incidence

Figure 3.1 presents data on malaria incidence per 1,000 population, by province. The figure shows that the national incidence of malaria has been reducing during the period 2006 to 2008. The indicator reduced from 412 per 1,000 population in 2006 to 358 in 2007 and then to 252 in 2008. Although all provinces recorded a reduction of malaria incidence during the period 2006 to 2008, Eastern province recorded the highest incidence compared to the rest of the provinces.

Figure 3.1: Malaria Incidence per 1,000 Population, 2006 - 2008

In an effort to analyze variations across provinces, program officers at provincial, district and facility level were asked questions on the reasons for the observed variations on malaria incidence and interventions put in place to address it. This information is indicated in the table below:

Table 3.3:   Some interventions on malaria incidence

General observed trend:	*There has been a general reduction of malaria incidence during the period 2006 to 2008. The indicator reduced from **412 per 1,000 population** in 2006 to **358** in 2007 and then to **252** in 2008.*
(i) Reasons for the reduction in malaria incidence	▪ Use of RDTs to confirm malaria cases has helped rule out fevers not related to malaria. ▪ Distribution of ITNs has had a tremendous impact on the reduction of malaria incidence in all provinces. (E.g. *Luapula province was the pilot province in community based malaria control and prevention program with mass distribution of free ITNs*). ▪ Management protocols have contributed in reducing the reservoirs of infections among the community. ▪ Information Education & Communication (IEC) on malaria has continued, hence people are able to apply personal protection measures against mosquito bites. ▪ Intermittent Presumption Treatment (IPT), in pregnant women is an

effective malaria prevention strategy.

- Initiatives such as *MAMA SAFE NIGHT* program, which focuses on prevention of malaria in children and pregnant women has had an impact on reduction of malaria in most districts.
- In 2008, most districts conducted in-door residue spraying to high density areas, urban and peri-urban.
- Involvement of the communities in various malaria control strategies has proved to be very effective and sustainable. The community is playing a pivotal role in the distribution and also retreatment of ITNs

(ii) Interventions that would need strengthening	- The COMBOR Project covers a few facilities. Therefore, it is important to extend this activity to a lot of health centres - There is need to intensify supervision in areas using RDTs - There is need to train more staff and/or communities using RDTs. - Health education via local radio station is very vital and should be encouraged - There is need to intensify indoor – residual spraying.

3.2.3.2   Malaria Case Fatality Rate (hospitals only)

In the HMIS, malaria case fatality rate (CFR) is defined as the number of deaths in health institution due to malaria per 1,000 of cases admitted to health institution with diagnosed malaria.

Table 3.4 presents data on *Hospital Case Fatality Rate per 1,000 admissions* for malaria, by age group and province, for the period 2006 to 2008. The table shows that in 2006 and 2008, Eastern province had the highest hospital case fatality rate while in 2007 Western province had the highest case fatality rate. The Table also shows that for all provinces combined, hospital CFR remained constant at 40 per 1,000 admissions in 2006 and 2007 and reduced to 39 per 1,000 admissions in 2008.

Table 3.4   Malaria Case Fatality Rate per 1,000 admissions, by age group (Hospital Only),   Zambia, 2006 - 2008

Province	2006			2007			2008		
	Under 5	Over 5	Total	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	39	41	39	38	39	38	41	48	44
Copperbelt	26	35	31	61	22	40	38	28	32
Eastern	53	85	66	42	53	47	50	48	49
Luapula	38	60	44	38	41	39	39	41	40
Lusaka	29	34	31	36	31	34	34	48	41
Northern	29	28	29	28	27	28	23	40	31
North-Western	28	34	30	26	25	26	26	24	25
Southern	41	59	50	39	59	49	34	46	40
Western	18	51	30	34	64	50	33	55	43
Zambia	**35**	**47**	**40**	**41**	**38**	**40**	**38**	**40**	**39**

Table 3.5 provides possible reasons and interventions that the provinces, districts and health facilities could consider putting in place to address hospital malaria case fatality rate.

Table 3.5:	Some interventions on malaria CFR (Hospitals only)
General observed trend:	*For all provinces combined, hospital CFR remained constant at **40 per 1,000 admissions** in 2006 and 2007 and reduced to **39 per 1,000 admissions** in 2008*
(i) Reasons for the observed and interventions put in place to address the variations observed in part	▪ Although static in 2006 and 2007, hospital case fatality rate for malaria was relatively low because of improved treatment protocols. ▪ Improved drug availability in health facilities.
(iii) Interventions that would need strengthening	▪ There is need for improved diagnostic skills for health care providers. ▪ There is need to strengthen drug supply system to avoid shortages and expiration ▪ There is need to improve staffing levels especially for facilities manned by CDEs (e.g. Mwense & Samfya in Luapula; Chavuma in North-western)

3.2.4   Diarrhoea (non Bloody)

Dehydration caused by severe diarrhoea is a major cause of morbidity and mortality among young children. A simple and effective response to dehydration is a prompt increase in fluid intake. Exposure to diarrhoea-causing agents is frequently related to the use of contaminated water and to unhygienic practices in food preparation and disposal of excreta (DHS, 2007).

3.2.4.1   Diarrhoea (non-bloody) incidence

In the HMIS, diarrhoea (non-bloody) incidence is defined as the number of new cases of diarrhoea (non-bloody) per 1,000 catchment population (HMIS, 2008). *Figure 3.2* presents trends of diarrhoea (non-bloody) incidence by province for the period 2006 to 2008. The figure shows that the national incidence rate of diarrhoea (non-bloody) continued to reduce from 81 per 1,000 population in 2006 to 76 per 1,000 population in 2007 and then to 69 per 1,000 population in 2008.

The figure also shows that although Lusaka province had the highest incidence rate of diarrhoea in 2006, 2007 and 2008, compared to the rest of the provinces, the incidence has continued to

decrease overtime. It reduced from 104 per 1,000 population in 2006 to 83 per 1,000 population in 2007 and then to 71 per 1,000 population in 2008. During the period 2006 to 2008, Northern province has the lowest incidence of diarrhoea (non-bloody).

Figure 3.2:   Incidence of diarrhoea (non-bloody) per 1,000 population by Province, 2006-2008

Program officers at provincial, district and facility level were asked questions on reasons for the observed variations on diarrhoea (non-bloody and interventions put in place to address it. This information is included in the table below:

Table 3.6: Some interventions on Diarrhoea (non-bloody) incidence	
General observed trend: *The national incidence rate of diarrhoea (non-bloody) has continued to reduce from* ***81 per 1,000 population*** *in 2006 to* ***76 per 1,000 population*** *in 2007 and then to* ***69 per 1,000 population*** *in 2008.*	
(i) Reasons for the observed variations and interventions put in place to address the variations observed	▪ Most districts have sunk boreholes with support from **UNICEF** in 2008 and plans are still underway to sink more boreholes. ▪ The program to promote integrated pit-latrines and hand washing supported by **UNICEF** has contributed to the reduction of diarrhea incidence. ▪ Management for diarrhoea cases is generally improved and most districts have sufficient drugs and other logistics in the event of an outbreak like cholera. ▪ Improved awareness on the use of clean drinking water is an important intervention for the reduction of diarrhoea (non-bloody).

	•	On-going sensitization of communities on diarrhea prevention should be encouraged if the incidence of diarrhoea (non bloody) has to reduce.
(ii) Interventions that that would need strengthening	•	Chlorination of water sources can help reduce the incidence of diarrhea.
	•	There is need to conduct regular inspection of food and premises
	•	There is need to protect wells by fencing them
	•	Strengthening epidemic preparedness committees at zonal and facility level should be encouraged

3.2.4.2   Diarrhoea (diarrhoea- non-bloody) case fatality rate (hospitals only)

In the HMIS, diarrhoea (non-bloody) case fatality rate is defined as the number of deaths due to diarrhoea (non-bloody) per 1,000 admissions of diagnosed diarrhoea (non-bloody). *Table 3.7* presents data on *hospital case fatality rate per 1,000 admissions* by age group and province, for the period 2006 to 2008. The table shows that there was an increase of hospital CFR of diarrhoea (non-bloody) of 86 deaths per 1,000 admissions in 2006 to 89 in 2007 and then reduced to 70 in 2008. The table also shows that overall, hospital CFR was higher for the age group 5 years and above than the age group 5years and below.

Table 3.7:   Respiratory Infections: Non-Pneumonia Case Fatality Rate per 1,000 admissions, by age group (Hospital Only), Zambia, 2006 - 2008

Province	2006			2007			2008		
	Under 5	Over 5	Total	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	111	160	136	114	134	123	126	108	118
Copperbelt	51	111	82	93	98	96	43	77	58
Eastern	93	63	78	88	60	74	93	78	87
Luapula	74	56	66	64	78	70	61	64	62
Lusaka	92	47	73	156	28	127	48	80	59
Northern	22	28	25	26	32	28	42	40	41
North-Western	39	45	41	47	35	43	26	61	37
Southern	111	107	109	101	103	102	64	86	73
Western	85	138	109	71	98	84	72	164	118
Zambia	**70**	**101**	**86**	**87**	**92**	**89**	**60**	**85**	**70**

The table below provides possible reasons and interventions that the provinces, districts and health facilities could consider putting in place to address hospital malaria incidence.

Table 3.8:	Some interventions on CFR for Diarrhoea (non-bloody)- hospitals only
General observed trend: For all provinces combined, Hospital CFR for diarrhoea case fatality rate (Hospitals only) increased from **86 deaths per 1,000 admissions** in 2006 to **89** in 2007 and then reduced to **70** in 2008	
(i) Reasons for the observed variations and interventions put in place	▪ Improvement in case management has contributed to the reduction in hospital CFR.
(iii) Interventions that that would need strengthening	▪ There is need to need to strengthen referral system for management of complicated diarrhoea ▪ There is need to improve staffing levels especially for facilities manned by classified daily employees (CDEs). ▪ There is need to intensify, the on -going sensitization of communities on diarrhea prevention than having to do this when there is an out break.

3.2.5 Respiratory Infection (non pneumonia)

Acute respiratory infection (ARI) is among the leading causes of childhood morbidity and mortality throughout the world. Early diagnosis and treatment with antibiotics can prevent a large proportion of deaths caused by ARI (ZDHS, 2007).

In the HMIS, respiratory infection (non- pneumonia) incidence is defined as the number of new cases of respiratory infection (non- pneumonia) per 1,000 catchment population (HMIS, 2008).

Figure 3.3 shows trends of the incidence of respiratory infections (non-pneumonia) per 1,000 population by province. The figure shows that the national respiratory infections (non-pneumonia) incidence rate increased from *193 per 1,000 population* in 2006 to *219 per 1,000 population* in 2007 and then reduced to *198 per 1,000 population* in 2008. In 2006, 2007 and 2008, Southern province recorded the highest incidence of respiratory infections (non-pneumonia).

Figure 3.3: Respiratory Infection (non-pneumonia) Incidence per 1,000 Population, 2006 - 2008

Program officers at provincial, district and facility level were asked questions on reasons for the observed variations on respiratory infections (non-pneumonia) and interventions put in place to address it. This information is included in *table 3.9*.

Table 3.9:	Some interventions on respiratory infections (non-pneumonia) incidence
General observed trend: The national respiratory infections (non-pneumonia) incidence rate increased from **193 per 1,000 population** in 2006 to **219 per 1,000 population** in 2007 and then reduced to **198 per 1,000 population** in 2008. Southern province recorded the highest incidence of respiratory infections (non-pneumonia) during the period under review.	
(i) Reasons for the observed variations and interventions put in place to address the variations observed	▪ Although the trend of the incidence of respiratory infections (non-pneumonia) has been reducing, little education by most households to keep their children warm has been done. ▪ IMCI programs have contributed to proper diagnosis of pneumonia cases. In addition the program helps in training health workers in general diagnosis of health conditions. ▪ Improved case management and availability of drugs during the period under review contributed to the reduction of the indicator
(ii) Interventions that that would need strengthening	▪ There is need to strengthen sensitization & education to communities. ▪ More support in case management and provision of guidelines and protocols should be available.

3.2.5.1   Respiratory Infection (non- pneumonia) CFR- hospitals only

Table 3.10 presents data on *hospital case fatality rate per 1,000 admissions* for respiratory infections (non-pneumonia) by age group and province, for the period 2006 to 2008.

The table shows that in 2006, Southern province had the highest hospital case fatality rate while in 2007 Copperbelt province had the highest case fatality rate. The table also shows that for all provinces combined, hospital CFR has been increasing from 37 per 1,000 admissions in 2006 to 41 in 2007 and to 42 per 1,000 admissions in 2008.

Table 3.10: Respiratory Infections: Non-Pneumonia Case Fatality Rate per 1,000 admissions, by age group (Hospital Only), Zambia, 2006 - 2008									
Province	**2006**			**2007**			**2008**		
	Under 5	Over 5	Total	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	19	37	30	33	41	38	44	52	48
Copperbelt	13	80	42	52	61	56	24	100	55
Eastern	27	41	36	51	21	32	34	22	28
Luapula	13	10	12	30	36	33	42	73	57
Lusaka	21	30	26	9	16	13	14	28	22
Northern	8	10	9	16	15	16	10	7	9
North-Western	35	45	39	14	49	24	6	7	6
Southern	35	61	48	41	40	40	27	38	33
Western	11	29	20	46	48	47	82	59	67
Zambia	**19**	**54**	**37**	**39**	**44**	**41**	**27**	**60**	**42**

The table below provides possible reasons and interventions that the provinces, districts and health facilities could consider putting in place to address hospital respiratory infections (non-pneumonia) CFR.

Table 3.11: Some interventions on CFR for Respiratory infections (non-pneumonia) hospitals only	
General observed trend:	*For all provinces combined, hospital CFR has been increasing from **37 per 1,000 admissions** in 2006 to **41** in 2007 and to **42 per 1,000 admissions** in 2008.*
(i) Reasons for the observed and interventions put in place to address the variations observed in part	▪ Health education is a bit weak in most provinces. ▪ Logistics not readily available especially on pediatric. ▪ Most health facilities are not manned by trained health personnel.
(ii) Interventions that would need strengthening	▪ Health education should be enhanced. ▪ Drugs and medication should be made readily available. ▪ Need to build capacity in health workers. ▪ Maintain and scale-up ART services. ▪ There is need for early treatment of the disease. ▪ There is need for more qualified personnel to man facilities.

3.3   Notifiable Diseases

Notifiable diseases are disease conditions 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 (IDSR, 2002)

In the HMIS, there are ten (10) 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, neonatal tetanus and *tuberculosis (TB).*

3.3.1 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 (IDSR, 2006). The two key AFP surveillance indicators are *non-polio AFP rate* and *stool adequacy rate*. According to the WHO, a surveillance system that is able to detect at least one case of 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% (IDSR, 2002).

All detected AFP cases should be adequately investigated by having two (2) stool samples collected within 14 days post onset of paralysis, and specimen 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. 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.

Table 3.12 shows that in 2008, all provinces achieved certification level of AFP surveillance for both non-polio AFP rate and stool adequacy rate indicators. The non-polio AFP rate increased from 1.8 per 100, 000 children under 15 years of age in 2007 to 3.1 per 100,000 children under 15 years of age. All the 9 provinces achieved the operational surveillance indicator of 2.0 per 100, 000 children less than 15 years. Stool adequacy rate was sustained above the target of 80% but decreased from 95% in 2007 to 89% in 2008.

Table 3.12: AFP Surveillance Performance Indicators by Province, 2006 and 2008

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)*					
										2006		2007		2008	
	2006	2007	2008	2006	2007	2008	2006	2007	2008	No.	%	No.	%	No.	%
Central	6	12	13	13	13	16	2.0	2.1	2.5	10	77.0	11	85.0	16	100.0
Copperbelt	9	18	18	13	10	18	1.0	1.1	2.0	12	92.0	10	100.0	15	83.0
Eastern	8	16	17	12	11	22	2.0	1.4	2.7	11	92.0	11	100.0	20	91.0
Luapula	5	9	10	8	9	14	2.0	1.9	2.9	8	100.0	8	89.0	12	86.0
Lusaka	8	17	17	22	16	30	3.0	1.9	3.5	21	95.0	15	94.0	27	90.0
Northern	8	16	16	21	17	20	3.0	2.1	2.4	19	90.0	17	100.0	18	90.0
North-Western	3	7	7	8	10	12	2.0	2.8	3.3	7	88.0	9	90.0	12	100.0
Southern	7	15	15	11	10	35	2.0	2.4	4.7	10	91.0	10	100.0	31	89.0
Western	4	9	9	8	8	21	2.0	2.0	4.7	8	100.0	9	100.0	17	81.0
Zambia	**58**	**119**	**122**	**116**	**105**	**188**	**2.0**	**1.8**	**3.1**	**106**	**91.0**	**100**	**95.0**	**168**	**89.0**

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

Table 3.13: Some interventions on AFP Surveillance Performance Indicators	
General observed trend: *All provinces* **achieved certification level** *of AFP surveillance for both non-polio AFP rate and stool adequacy rate indicators*	
Reasons for the observed variations and interventions put in place to address the variations observed	▪ The surveillance officers at national level, provinces and districts supported by four (4) four WHO Surveillance Officers ensure that the active surveillance for suspected poliomyelitis cases or AFP cases is conducted. ▪ So far, the indicators show evidence that there is no wild poliovirus circulating in the country since the two core indicators are at certification level standard

3.3.2 Non- Polio AFP Rate

All the provinces attained both the certification and operational surveillance indicator for non-polio AFP rate. The highest operational non-polio AFP rate was in Western and Southern provinces at 3.7 while the lowest was Copperbelt province with 2.0 per 100,000 children under 15 years of age. Districts that do not detect and report any AFP cases are referred to as *"silent districts"* and such districts could reduce the performance indicators and hence need to be closely monitored. *Figure 3.6* shows that from the year 2000, all provinces have been recording the expected minimum non-polio AFP rate of 1 per 100,000.

To sustain the performance of the indicators, bi-monthly provincial cluster surveillance technical review meetings for the district and provincial level surveillance staff are held every quarter.

Figure 3.4: Trends of Non-AFP Rate by year, 1996 – 2008

Table 3.14:	Some interventions on Non- AFP Surveillance Performance Indicators
General observed trend:	*From 2000, all provinces have been recording the expected minimum non-polio AFP rate of 1 per 100,000*
Reasons for the observed variations and interventions put in place to address the variations observed	▪ As mentioned in table 2.6, there has been sustained AFP surveillance activities hence the indicator increased and has been sustained above 2 per 100,000 children < 15 years since the year 2000, except for the years 2006 and 2007 when it was just borderline. ▪ There need to sustain for the efforts by MOH, WHO and other partners to ensure that the indicators are sustained, as it is the sensitivity indicator in the detection of any possible wild polio virus.

3.3.3 Stool Adequacy Rate

Figure 3.5 shows that in 2007 and 2008, the country achieved stool adequacy rate of 95% and 89%, respectively.

Figure 3.5: Trends of AFP Specimen, 1996 – 2008

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

Table 3.15:	Some interventions on AFP Specimen (Stool adequacy)
General observed trend:	*In 2007 and 2008, the country achieved stool adequacy rate of 95% and 89%, respectively.*
Reasons for the observed variations and interventions put in place to address the variations observed	- Stool samples adequacy or stool adequacy is a quality indicator for the samples being tested. Target is 80% of samples that have been collected ≤14 days post onset of paralysis. - This indicator was only achieved in 2003 and has been sustained since then. Initially, the surveillance programmes focus was raise detection rate and the officers identified these cases late. Through retraining this trend was reversed.

3.3.4 Measles Surveillance

Measles case-based and laboratory-based surveillance involves confirming every suspected measles case. In instances when there is a measles outbreak, the first five suspected measles are confirmed and the subsequent cases are confirmed by epidemiological linkage. 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.

The annualized measles detection rate increased from 3.84 per 100,000 population in 2006 to 6.9 per 100,000 population in 2008. This information is presented *in Table 3.17*. The minimum target for this indicator is 2 per 100,000 population.

- The annualized measles detection rate increased from 3.84 per 100,000 population in 2006 to 6.9 per 100,000 population in 2008. The minimum target for this indicator is 2 per 100,000 population.

- The measles *IgM* rate in the year 2006 was 41% and was 29.6%. This rate decreased to 13.3% in the year 2008 following the under 5 year measles immunization campaign that was conducted in the year 2007. The minimum target following a measles immunisation campaign should be less than 10%. The next measles supplemental immunization is planned for the year 2010.

- The percentage of districts with at least 1 sample per year reduced from 83% in 2006 to 76.4% in 2007, and now there is increase to 79% in the year 2008. .

- The proportion of negative samples that were *Rubella IgM* positive increased from 18% in 2006 to 22.4% in 2007 and the rate was 29.7% in the year 2008.

Table 3.16:	**Some interventions on measles surveillance performance indicators**
General observed trend*:*	*The annualized measles detection rate increased from* **3.84 per 100,000 population** *in 2006 to* **6.9 per 100,000 population** *in 2008*
Reasons for the observed variations	▪ The detection rates by province have been at certification level standard, however the proportion of number of districts investigating, at least one measles case, requires to be above 80% in any given year.

Table 3.17: Measles surveillance performance indicators by Province, 2006 – 2008

Provinces	# total SMC with sample			Detection rate (Cases per 100,000 pop (target 2/100,000)			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%)		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
Central	39	63	62	3.18	11.8	4.9	17	16	6	44	24.6	9.5	4	7	20	18	16.7	31.7	6	4	6	100	66.7	100
Copperbelt	38	116	152	2.04	6.3	8.0	9	15	24	24	12.9	15.8	2	24	53	7	24.5	34.9	8	10	8	80	100	80
Eastern	29	19	345	1.80	1.2	2.0	13	0	0	45	0.0	0.0	5	4	0	31	26.7	0.0	7	4	4	88	50	50
Luapula	33	61	29	3.50	33.0	2.9	17	44	13	52	72.1	44.8	0	0	4	0	0.0	13.8	6	7	5	86	100	71
Lusaka	74	160	312	4.45	9.4	17.6	53	30	39	72	18.6	12.5	5	25	95	24	21.0	30.4	4	3	4	100	75.0	100
Northern	66	82	27	4.18	6.0	1.6	27	63	4	41	72.4	14.8	2	1	0	5	5.6	0.0	9	12	10	75	100	83
N/Western	15	19	109	2.13	2.6	14.7	1	2	15	7	10.5	13.8	3	4	47	21	23.5	43.1	4	3	3	57	42.9	43
Southern	69	45	100	4.71	2.0	6.5	33	4	14	48	7.4	14.0	3	10	28	8	25.6	28.0	9	7	11	82	63.6	100
Western	96	29	37	10.79	3.3	4.0	19	2	0	20	6.9	0.0	25	12	9	32	46.2	24.3	7	5	6	100	71.4	86
Zambia	**459**	**594**	**862**	**3.8**	**7.9**	**6.9**	**189**	**176**	**115**	**41**	**29.6**	**13.3**	**49**	**87**	**256**	**18**	**22.4**	**29.7**	**60**	**55**	**57**	**83**	**76.4**	**79**

3.3.5 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.

3.3.5.1   TB Notifications

Figure 3.6 presents data on the number of notifications by province. The figure shows a general decline in the number of notifications from 51,179 in 2006 to 50,415 in 2007 and then to 47,333 in 2008. The figure shows that during the period 2006 to 2008, Lusaka province had the highest number of notifications compared to the rest of the provinces. North-western province on the other hand had the lowest TB notifications

Figure 3.6: Trends of TB notifications by province, 2006 to 2008

Province	Central	Copperbelt	Eastern	Luapula	Lusaka	Northern	North-western	Southern	Western	Zambia
2006	3,622	3,210	2,972	2,694	18,068	1,988	2,216	6,128	2,542	**51,179**
2007	3,454	10,863	2,972	2,318	17,157	2,141	2,132	6,147	3,032	**50,415**
2008	3,025	9,860	2,803	1,954	16,624	2,035	1,966	6,051	3,015	**47,333**

Table 3.18:	Some interventions on TB Notifications
General observed trend:	*The was a general decline in the number of notifications from **51,179** in 2006 to **50,415** in 2007 and then to **47,333** in 2008*
Reasons for the reduction in the number of TB notifications may be due to the following challenges	- Poor record keeping in the TB data and completing the full process of treatment and lab screenings. - Diagnosis not adequate. - Community awareness not adequate to sensitize people on the need for seeking TB treatment early. - The program mainly uses the passive case finding as part of the expanded DOTS strategy, which relies on a mobilized community for bringing in new cases for TB screening. This is a challenge, besides the stigma that is a major influencing factor in the health seeking behavior of TB suspects; health facilities are faced with declining numbers of volunteers to support this type of work. This also influences the follow-up of patients that do not adhere to treatment, as this is the key function of the TB treatment supporters.
The following are the planned activities on TB:	- Improve laboratories for accurate diagnosis, especially for TB in children and TB/HIV co-infected patients. - Improving advocacy, communication and social mobilization for improved community awareness and addressing issues of stigma. - There is need to begin to implement active case finding using interventions that work such as symptom screening.

The national TB program is currently using the WHO recommended program on the stop TB strategy which addresses the following 6 components:

- Pursuing quality DOTS expansion and enhancement.
- Addressing TB/HIV, multi-drug resistance (MDR)-TB and other challenges.
- Contributing to health system strengthening.
- Engaging all case providers.
- Involving affected communities & patients
- Enabling & promoting research

3.4   Number of Clients on Antiretroviral Therapy (ART)

Figure 3.7 presents data on the number of clients ever commenced on ART. The figure shows that overall, the number of clients on ART increased from 156,299 in 2007 to 219,576 in 2008, representing an increase of over 28%.

Figure 3.7: Number of clients on Antiretroviral therapy (ART) by province, 2007 to 2008

Year	Central	Copperbelt	Eastern	Luapula	Lusaka	Northern	Northwestern	Southern	Western	Zambia
2007	11,120	36,149	14,294	5,541	46,616	7,002	4,146	19,893	11,538	**156,299**
2008	19,444	49,276	20,905	7,523	67,825	10,523	5,070	24,827	14,183	**219,576**

Table 3.19:	**Some interventions on clients on antiretroviral therapy (ART)**
General observed trend*:	Overall, the number of clients accessing ARVs increased from 156,**299** in 2007 to **219,576** in 2008, representing an increase of over 28%.*
Reasons for the observed variations and interventions put in place to address the variations observed	✓ Increased awareness on the availability of drugs in all the health facilities**.** ✓ Political will to focus on children. ✓ Increased training of health care workers.

CHAPTER 4: HUMAN RESOURCES

Ms. Kangwa, Chipalo Kaliki & Trust Mufune

4.1   Introduction

Human resource is recognized 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, midwives, environmental health technologists (EHTs), Laboratory Technologist and Pharmacists in the country by province, including a comparison of current staffing levels against the recommended establishment. The section also presents data on health centre staff contacts, community health workers and traditional birth attendants.

4.2   Staffing position by provinces

Table 4.1 presents data on the number of health personnel which include medical doctors, clinical officers, midwives, environmental health technologists (EHTs), Laboratory Technologist, Pharmacists and other personnel by province for 2008. The table shows that out of **795 medical doctors** in the country, Lusaka province has the highest number medical doctors (367). Similarly out of **1,161 Clinical** Officers in the country, Lusaka had the highest number (245). On the other hand, North-western province has the lowest number of medical doctors, clinical officers, nurses, midwifes, environmental health technologists (EHTs), pharmacists and lab technologists compared to the rest of the provinces.

Table 4.1:	Staffing Positions by districts and provinces, Zambia, as at December 2008							
	Staff Cadre							
Province	**Medical Doctors**	**Clinical Officers**	**Nurses**	**Mid-wives**	**EHO/Ts**	**Pharmacists**	**Lab Techs**	**Others**
Central	55	125	402	290	116	10	40	62
Copperbelt	170	190	2,011	550	103	13	109	100
Eastern	36	136	627	201	120	4	34	1416
Luapula	29	59	342	74	70	1	20	598
Lusaka	367	245	1,451	500	107	28	102	302
Northern	25	102	414	177	98	21	39	47
North-western	24	45	315	58	67	1	10	18
Southern	56	180	737	450	173	9	44	579
Western	33	79	392	100	94	3	14	105
Total	**795**	**1,161**	**6,691**	**2,400**	**948**	**90**	**412**	**3,227**

Source: *MoH Establishment Register, 2008*

4.3   Staffing levels Vs. recommended establishment, by province

The 2008 Annual Statistical Bulletin collected data from the provincial human resource registers on the staffing levels against the recommended establishment, by province for 2008. This information is presented in *Tables 4.2a* and *4.2b* present data on the staffing levels against the recommended establishment, by province for 2008:

Medical Doctors:

Table 4.2a shows that out of the total number of 1,471 medical doctors required in the recommended establishment in 2008, only 795 were currently available, leaving a shortfall of 676. The table also shows that Lusaka province had the highest number of medical doctors in the country (367), followed by Copperbelt (170) while Northwestern province (24) and western (33) had the lowest number in country.

Clinical officers:

Table 4.2a shows that out of the total number of 2,889 Clinical Officers required in the recommended establishment in 2008, only 1,161 were currently available, leaving a shortfall of 1,728. The table also shows that Lusaka province had the highest number of Clinical Officers in the country (245), followed by Copperbelt (190) with Northwestern (45) and Luapula (59) provinces having the lowest number in country.

Midwives:

Table 4.2a shows that out of the total number of 5,086 Midwives required in the recommended establishment in 2008, only 2,400 were currently available, leaving a shortfall of 2,686. The table also shows that Copperbelt (550) province had the highest number of midwives in the country, followed by Lusaka (500) with Northwestern (58) and Luapula province (74) having the lowest number in country.

Nurses:

Table 4.2b shows that out of the total number of 11,037 nurses required in the recommended establishment in 2008, only 6,691 were currently available, leaving a shortfall of 5,127. The table also shows that Copperbelt (2,011), province had the highest number of nurses in the country followed by Lusaka (1,451) with Northwestern (315), Western (392) and Northern province (414) having the lowest number in country.

Pharmacists:

Table 4.2b shows that out of the total number of 347 Pharmacists required in the recommended establishment in 2008, only 90 were currently available leaving a shortfall of 257. The table also shows that Lusaka (28) province had the highest number of Pharmacists in the country followed by Northern Province (21) with Northwestern (1) and Luapula (1) provinces having the lowest number in the country.

Environmental health technologists (EHTs):

Table 4.2b shows that out of the total number of 1,778 Environmental Health Technologists (EHTs) required in the recommended establishment in 2008, only 948 were currently available leaving a shortfall of 830. The table also shows that in 2008, Southern province (173) had the highest number of EHTs in the country followed by Eastern province (120) with Northwestern (67) and western (94) provinces having the lowest number in the country.

Overall analysis of all cadres:

When all provinces were compared in 2008, the highest number of medical doctors (367), clinical officers (245) and Pharmacists (28) are from Lusaka province, while the highest number of midwives (550) and nurses (2,011) are from Copperbelt province. The highest number of environmental health technologists is from Southern province (173).

When all provinces were compared in 2008, Northwestern had the lowest number of medical doctors (24), clinical officers (45), midwives (58), nurses (315), Pharmacists (1) and environmental health technologists (67).

Table 4.2a: Staffing levels Vs. recommended establishment for medical doctors, Clinical officers & midwives, by province, 2008

Province	Doctors				Clinical officers				Midwives			
	CurrSL*	Recomd Estab**	S/fall	% S/fall	CurrSL*	Recomd Estab**	S/fall	% S/fall	CurrSL*	Recomd Estab**	S/fall	% S/fall
Central	55	135	80	59%	125	172	47	27%	290	493	203	41%
Copperbelt	170	305	135	44%	190	410	220	54%	550	658	108	16%
Eastern	36	39	3	8%	136	196	60	31%	201	201	0	0%
Luapula	29	58	29	50%	59	187	128	68%	74	221	147	67%
Lusaka	367	412	45	11%	245	774	529	68%	500	635	135	21%
Northern	25	117	92	79%	102	309	207	67%	177	1,540	1,363	89%
North-western	24	60	36	60%	45	129	84	65%	58	216	158	73%
Southern	56	230	174	76%	180	429	249	58%	450	724	274	38%
Western	33	115	82	71%	79	283	204	72%	100	398	298	75%
Total	**795**	**1,471**	**676**	**46%**	**1,161**	**2,889**	**1,728**	**60%**	**2,400**	**5,086**	**2,686**	**53%**

* CurrSL = Current Staffing levels

** Recomd Estab = Recommended establishment

*** % S/fall = % shortfall

Table 4.2b: Staffing levels Vs. recommended establishment for nurses, pharmacists & EHTs, by province, 2008

Province	Nurses				Pharmacy				EHTs			
	CurrSL*	Recomd Estab**	S/fall	% S/fall	CurrSL*	Recomd Estab**	S/fall	% S/fall	CurrSL*	Recomd Estab**	S/fall	% S/fall
Central	402	876	866	54%	10	11	1	9%	116	162	46	28%
Copperbelt	2,011	2,589	578	22%	13	157	144	92.%	103	131	28	21%
Eastern	627	688	61	9%	4	5	1	20%	120	164	44	27%
Luapula	342	545	203	37%	1	15	14	93%	70	144	74	51%
Lusaka	1,451	1,524	73	5%	28	66	38	58%	107	205	98	48%
Northern	414	1,268	854	67%	21	55	34	62%	98	274	176	64%
North-western	315	465	150	32%	1	15	14	93%	67	140	73	52%
Southern	737	1,404	667	48%	9	15	6	40%	173	425	252	59%
Western	392	1,678	1,675	77%	3	8	5	63%	94	133	39	29%
Total	**6,691**	**11,037**	**5,127**	**46%**	**90**	**347**	**257**	**74%**	**948**	**1,778**	**830**	**47%**

* CurrSL = Current Staffing levels

** Recomd Estab = Recommended establishment

*** % S/fall = % shortfall

4.4   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 (HMIS, 2006).

Figure 4.1 shows that Eastern Province has the highest health centre staff daily contacts during the period 2006 to 2008. The figure also shows that rural provinces (i.e. Eastern, Luapula, Northern, North–western and Western provinces) had a higher workload compared to their counterparts in urban provinces (i.e. Central, Copperbelt, Lusaka and Southern provinces).

The national figure of health centre staff daily contacts has been fluctuating over the period 2006 to 2008. The indicator reduced from 18.2 in 2006 to 17.8 in 2007 and then increased to 18.6 in 2008.

Figure 4.1: Health Centre Staff Daily Contacts, Zambia, 2006-2008

Table 4.3:	Some interventions on health centre client contacts
General observed trend:	*The national picture of health centre staff daily contacts has been fluctuating over the period 2006 to 2008. The indicator reduced from* **18.2** *in 2006 to* **17.8** *in 2007 and then increased to* **18.6** *in 2008. Rural provinces (i.e.* **Eastern, Luapula, Northern, North–western** *and* **Western provinces**) *had a higher workload compared to their counterparts in urban provinces (i.e. Central, Copperbelt, Lusaka and Southern provinces).*
(i) Reasons for the observed variations & interventions put in place to address the variations observed.	▪ Rural provinces recorded high client contacts possibly due to staff opting to work in urban areas. ▪ Most districts have very few staff operating at less than half the recommended human resource capacity. ▪ Most health facilities are not manned by qualified staff. ▪ Restructuring process has brought about difficulties in handling human resource issues. ▪ Due to the rise in HIV/AIDS, most health facilities have seen a rise in client contact. ▪ Attrition of qualified staff due HIV/AIDS and poor conditions of service is another contributing factor to high health centre client contacts.
(ii) Interventions that would need strengthening	▪ There is need to continue constructing health facilities & staff houses. ▪ Drugs should be available in all health facilities at all times. ▪ There is need to increase intake at nursing colleges. ▪ There is need to extend rural retention schemes and/or rural hardship to all professionals. ▪ There is need to train more clinical officers so that more centres are managed by qualified staff. ▪ There is need to provide incentives to attract more staff to rural facilities.

4.5 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 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) tTBA.

4.6   Trained Traditional Birth Attendants

Table 4.4 shows the number of active tTBAs and the number of deliveries conducted, by province. The table shows that there has been a reduction in the number of active tTBAs and number of deliveries conducted by the tTBAs, over the period 2006 to 2008. Eastern and Northern provinces recorded highest numbers of deliveries conducted by tTBAs in all the three years under review.

Table 4.4:	Number of active tTBAs and deliveries conducted, 2006-2008								
	2006			**2007**			**2008**		
	Active tTBAs	**Deliveries**		**Active tTBAs**	**Deliveries**		**Active tTBAs**	**Deliveries**	
Province		**Actual**	**Average**		**Actual**	**Average**		**Actual**	**Average**
Central	532	11,380	21	529	12,575	24	796	10,835	14
Copperbelt	607	10,382	17	570	11,079	19	588	10,052	17
Eastern	694	16,367	24	879	15,850	18	729	17,573	24
Luapula	404	12,934	32	424	13,979	33	388	11,291	29
Lusaka	184	4,739	26	159	4,810	30	145	3,613	25
Northern	1,095	21,921	20	1,008	20,006	20	1,158	20,567	18
N/Western	532	7,594	14	460	7,052	15	381	5,795	15
Southern	882	16,289	18	870	15,102	17	785	11,556	15
Western	402	5,974	15	342	4,953	15	246	3,154	13
Zambia	**5,332**	**107,580**	**20**	**5,239**	**105,406**	**17**	**5,215**	**94,436**	**18**

4.7   Community Health Workers (CHWs)

Community health workers (CHWs) are members of the community chosen and trained in basic curative skills. Like Trained Traditional Birth Attendants they are chosen by community members within the communities they live and have been 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 4.5 presents data on the number of active CHWs and the number of patients attended to by CHWs by province for the period 2006 to 2008. The table shows that during the period 2006 to 2008, there has been a decrease in the number of active Community Health Workers. In both 20006 and 2007 Southern province had more active Community Health Workers while in 2008, Luapula province had the highest number.

Table 4.5: Number of active CHWs and patients attended to by CHWs, 2006-2008

Province	2006			2007			2008		
	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	579	454,650	785	471	207,201	440	380	161,134	424
Copperbelt	299	182,399	610	379	104,311	275	259	96,644	373
Eastern	644	643,330	999	510	244,569	480	582	267,279	459
Luapula	388	293,608	762	326	143,676	441	341	172,527	506
Lusaka	369	137,378	373	166	38,593	233	156	36,610	235
Northern	820	745,625	910	588	268,934	458	650	333,638	513
N/Western	324	312,404	109	207	67,759	328	328	84,718	258
Southern	804	643,111	330	713	216,565	304	705	299,355	425
Western	577	488,702	488	412	140,043	340	362	162,465	449
Zambia	**4,480**	**3,903,207**	**460**	**3,770**	**1,431,681**	**380**	**3,762**	**1,614,370**	**429**

Table 4.6: Some interventions on trained traditional birth attendant (tTBAs) and Community health workers (CHWs)

General observed trend:		*During the period 2006 to 2008, there has been a decrease in the number of trained traditional birth attendant (tTBAs) and Community health workers (CHWs).*
(i)	Reasons for the observed variations and interventions put in place to address the variations observed	▪ MoH policy on reducing the number of tTBAs has contributed in most of deliveries being missed out , especially in the communities.
(ii)	Interventions that would need strengthening	▪ There is need to intensify health education for people to deliver in health institutions. ▪ There is need to ensure that staff levels are improved, MoH should find a way of giving tTBAs and CHWs incentives. ▪ There is need to construct and furnish maternity wings. ▪ There is need for refresher courses for tTBAs need to be organized once in a while.

CHAPTER 5: AVAILABILITY OF ESSENTIAL DRUGS

Davy Nambula, *Chipalo Kaliki and Nyambe Akabilwa*

5.1 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:

- Utilization 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.

5.2 Medical Supplies in Stock at Health Facilities

This indicator measures the proportion of months during a time period that indicates that the 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.

5.3 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 5.*1.

5.3.1 Drugs Availability by health centres and hospitals

Table 5.1 shows that the percentages of months for which drugs were in stock in health centres reduced from 74% in 2006 to 70% in 2007 and then 69% in 2008. Similarly, in hospitals, the percentage of drug availability reduced from 86% in 2006 to 84% in 2007 and 77% in 2008.

A comparison of drug availability for health centres and hospitals shows that overall; hospitals had a high percentage of drug availability compared to health centres. In 2006, the proportion of drugs availability for health centres was at 74% compared to hospitals at 86%; in 2007, health centres were at 70% compared with hospitals at 84% and in 2008 health centres were at 69% compared with 77% for hospitals.

Table 5.1: Percentage of months for which drugs were in stock by province, 2006 to 2008									
Province	**Health centre months in stock (%)**			**Hospitals months in stock (%)**			**Summary of percentage of months in stock (%)**		
	2006	**2007**	**2008**	**2006**	**2007**	**2008**	**2006**	**2007**	**2008**
Central	74	70	70	90	86	83	75	71	71
Copperbelt	91	86	85	95	96	90	92	87	85
Eastern	73	67	66	82	86	75	74	68	67
Luapula	68	64	72	95	93	87	69	66	72
Lusaka	83	75	75	97	80	84	83	75	76
Northern	75	63	71	84	74	75	75	63	71
North-Western	60	54	46	81	64	65	61	55	48
Southern	70	71	62	83	79	75	71	71	62
Western	68	73	69	78	89	61	72	74	68
Zambia	**74**	**70**	**69**	**86**	**84**	**77**	**75**	**71**	**69**

5.3.2 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 kits per 1,000 patients are opened. Overuse should be investigated through a drug store and patient register review.

Figure 5.1 below presents data on drug kits opened per 1,000 patients by province. The figure shows that there is an overall fluctuating pattern of drug kits utilization for all provinces.

Figure 5.1:   Drug Kit Utilisation at Health Centres, 2006 – 2008, Zambia

Table 5.2:	Some interventions on drug availability	
General observed trend:	*The percentages of months for which drugs were in stock in health centres reduced from **74%** in 2006 to **70%** in 2007 and then **69%** in 2008. Similarly, in hospitals, the percentage of drug availability reduced from **86%** in 2006 to **84%** in 2007 and **77%** in 2008.* *Drug kits utilization for all provinces reduced from **0.98** in 2006 to **0.75** in 2007 and **0.97** in 2008.*	
(iii)	Reasons for the observed variations and interventions put in place to address the variations observed	▪ In the 2nd and 3rd quarter of 2008, there were limited drug kits due to limited funds. ▪ In 2008, there were insufficient funds, compounded by weakness in the management system in drugs and supplies which resulted in the expiry of drug
(i)	Interventions that would need strengthening	▪ There is need to finalize working on the framework contracts. ▪ There is need to consider conducting basic training on logistics management information system. ▪ There is to intensify on our monitoring & evaluation for the lower levels. ▪ There is need to improve on human resources particularly training more pharmacists. ▪ There is need to lobby for more co-operating partners (CPs) support towards procurement of drug supply.

CHAPTER 6: SERVICE DELIVERY INDICATORS

Chipalo Kaliki & Chansa Collins

6.1   Introduction

This section presents data on key *health service performance indicators* for the period 2006 to 2008. These indicators include *health centre (HC) utilisation, hospital OPD utilisation, inpatient admissions, bed occupancy rates, hospital average length of stay, etc.* The chapter has also included some key interventions put in place to explain variations observed, for each of these indicators.

6.2   Health centre utilization

The main goal of this indicator is to improve accessibility of health centres for the general 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 assist program 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. In the HMIS, health centre utilization is defined as the number of first attendances and admissions at health centre level during a given period of time per the catchment population (MoH, 2003).

Table 6.1 presents data on health centre utilisation by province and age group. The table shows that for all provinces combined, health centre utilisation increased from 0.86 per capita attendances in 2006 to 1.22 per capita in 2007 and then reduced to 1.10 in 2008. Overall, health centre

Table 6.1:	Health Centre under 5 and over 5 per capita attendances Zambia, 2006 to 2008, Zambia								
Province	**2006**			**2007**			**2008**		
	Under 5	Over 5	Total	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	2.02	0.61	0.86	2.50	0.85	1.14	2.20	0.74	1.00
Copperbelt	1.58	0.53	0.74	2.46	0.90	1.21	2.19	0.80	1.08
Eastern	2.11	0.63	0.92	3.05	1.00	1.41	2.84	1.04	1.40
Luapula	2.01	0.48	0.78	2.40	0.72	1.04	2.15	0.69	0.97
Lusaka	1.90	0.62	0.88	2.53	0.92	1.26	2.36	0.87	1.17
Northern	1.65	0.41	0.66	1.95	0.57	0.85	1.62	0.58	0.78
North-Western	2.16	0.62	0.92	3.01	0.96	1.37	2.14	0.77	1.04
Southern	2.18	0.77	1.05	2.69	1.05	1.37	2.19	0.88	1.14
Western	2.07	0.80	1.02	2.73	1.21	1.47	2.53	1.10	1.33
Zambia	**1.93**	**0.60**	**0.86**	**2.56**	**0.90**	**1.22**	**2.24**	**0.83**	**1.10**

utilisation during the period 2006 to 2008 for all provinces was higher for the age group 5 years and below than the age group 5 years and above.

Table 6.2:	**Some interventions on health centre utilization**
General observed trend:	*For all provinces combined, health centre utilization increased from **0.86 per capita attendances** in 2006 to **1.22 per capita** in 2007 and then reduced to **1.10** in 2008*
(i) Reasons for the observed variations and Interventions put in place to address the variations observed	- There were more health posts constructed in a number of districts, in 2006 and 2007. This could have contributed to the increased access and utilization to most facilities. - The removal of user fees in 2007 in rural facilities contributed to increased access and utilization. - People have confidence in seeking health care services, and availability of drugs. - Upward trend due to rural urban drift, there is population explosion.
(ii) Interventions that would need strengthening	- There is need to put in place incentives which should attract qualified health workers to work in rural areas. - Need to strengthen outreach activities for health services. - Improve funding to districts/facilities so that services can be taken to their door steps community level - Need to continue constructing health facilities and staff houses. - Need to train more staff so that capacities of health centres are enhanced.

6.3   Hospital OPD utilization

This indicator looks at the number of first attendances in the OPD during a given period of time per the catchment population of the health institution. There are two (2) 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 services at health centres and accessibility for the general public (MoH, 2003).

6.3.1 Hospital OPD Percentage By-pass First Attendances

This is the proportion of OPD first attendants who by-passed health centres and go 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.

Table 6.3 presents data on hospital OPD percentage by-pass first attendance by province for 2006 and 2008. The table shows that in 2006, hospital OPD percentage by-pass first attendance was highest in North-western province (47%) and lowest in Western province at 3%. In 2007, the indicator was highest in Eastern province (47%) and lowest in Luapula (5%. In 2008, the indicator was highest in Northern province (59%) and lowest in Luapula (3%). Overall, hospital OPD

Table 6.3:	Hospital OPD percentage by-pass first attendance of total attendance at OPD Zambia: 2006 - 2008								
Province	2006			2007			2008		
	Under 5	Over 5	Total	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	30	25	25	40	25	25	39	25	26
Copperbelt	32	20	22	32	20	20	34	19	19
Eastern	19	9	11	31	12	47	14	10	10
Luapula	11	6	7	10	5	5	6	3	3
Lusaka	11	4	5	25	10	12	15	7	7
Northern	18	11	12	7	7	7	91	18	59
North-Western	62	40	47	64	40	42	29	24	24
Southern	31	21	22	33	24	24	37	28	28
Western	9	2	3	25	4	6	13	5	6
Zambia	31	18	20	38	10	20	42	18	20

percentage by-pass first attendance during the period 2006 to 2008 for all provinces combined was higher for the age group 5 years and below than the age group 5 years and above.

6.3.2   Hospital OPD Percentage Referred First Attendance

Hospital OPD percentage referred first attendance 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 minimize 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 (MoH, 2007).

Table 6.4 shows hospital OPD percentage referred first attendance levels. The table shows that the proportion of patients referred reduced from 80% in 2006 to 67% in 2007 and that this was maintained at 67% in 2008.

Overall, hospital OPD percentage referred first attendance during the period 2006 to 2008 for all provinces combined was higher for the age group 5 years and above than the age group 5 years and below.

6.4   Bed occupancy rate

Bed occupancy rate is defined as *the percentage of available beds occupied during a given period of time*. In other words,

Table 6.4:	Hospital OPD percentage Referred First Attendance, Zambia 2006 & 2008								
Province	2006			2007			2008		
	Under 5	Over 5	Total	Under 5	Over 5	Total	Under 5	Over 5	Total
Central	70	75	75	60	59	59	61	64	64
Copperbelt	68	80	78	68	62	63	66	65	65
Eastern	81	91	89	69	79	76	86	83	83
Luapula	89	94	93	90	91	91	94	95	94
Lusaka	89	96	95	75	81	79	85	87	87
Northern	82	89	88	93	89	91	9	77	33
North-Western	38	60	53	36	42	40	71	68	68
Southern	69	79	78	67	66	66	63	62	62
Western	91	98	97	75	93	89	87	92	92
Zambia	69	82	80	67	67	67	58	70	67

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 6.1 shows data on the trends of hospital bed occupancy rate by province from 2006 to 2008. The figure shows that the national bed occupancy rate for all hospitals reduced from 56% in 2006 to 50% in 2006 and then to 31% in 2008. The figure also shows that there was a reduction in bed occupancy rate for Luapula, Lusaka during the period 2006 to 2008.

Figure 6.1: Hospital Bed Occupancy Rate by province 2006-2008, Zambia

6.5 Hospital average length of stay (ALoS)

Hospital average length of Stay measures the average number of days a patient stays in an inpatient health facility. The purpose of this indicator is to optimize 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 6.2 presents trends of hospital average length of stay by province for the years 2006, 2007 and 2008. The figure shows that the national average length of stay remained constant at from 4.9 in 2006 and 2007 and then reduced to 4.8 in 2008. North-western province had the highest average length of stay during the period under review compared to the rest of the provinces.

Figure 6.2: Hospital Average Length of Stay, by province, 2006-2008, Zambia

CHAPTER 7: CHILD HEALTH

Chipalo Kaliki & Dr. Penelope Kalesha

7.1 Introduction

This chapter presents data on key indicators of importance to child survival. Information is presented on underweight prevalence and child vaccination. The chapter has also included some key interventions put in place to explain variations observed across provinces, district and facilities during the period 2006 to 2008.

7.2 Immunization Coverage

Many early childhood deaths can be prevented by immunizing children against preventable diseases and by ensuring that children receive prompt and appropriate treatment when they become ill.

Universal immunization against vaccine-preventable diseases is crucial to reducing infant and child mortality. The Government of Zambia has adapted the WHO guidelines for vaccinating children through the Expanded Programme on Immunization (EPI). Children are considered fully immunized when they have received a vaccination against tuberculosis (BCG), three doses each of the *diphtheria, pertussis*, tetanus/hepatitis B/*Haemophilis influenza* type b(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 (DHS, 2007).

The *DPT-HepB-Hib* and polio immunizations 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 *(ibid, 2007)*.

In the HMIS, full immunization coverage is defined as the number of children under 1 year of age who have completed the recommended series of immunisations per the number of children under 1 year[4].

Figure 7.1 shows data on the trends of immunization coverage by province. The figure shows that national immunization coverage has been fluctuating during the period 2006 to 2008. The coverage reduced from 87% in 2006 to 85% in 2007 and then increased to 90% in 2008.

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[4] HMIS Indicators Manual, 2008

When all provinces are compared, Central, Copperbelt and Lusaka showed an increase in immunization coverage. Southern province on the other hand showed a reduction during the period 2006 to 2008.

Figure 7.1:   Full Immunization Coverage by province 2006- 2008, Zambia

Table 7.1:   Some interventions on immunization coverage

General observed trend:	*National immunization coverage has been fluctuating during the period 2006 to 2008. The coverage reduced from **87%** in 2006 to **85%** in 2007 and then increased to **90%** in 2008.*
(i) Reasons for the observed variations and Interventions put in place to address the variations observed	▪ The reach every district (RED) strategy introduced by WHO had an impact on the increase in immunization coverage. ▪ Child health week has also contributed to the upward rise. ▪ Improvement in the availability of logistics, vaccines & cold chain contributed to the upward rise in immunization coverage. ▪ Improvement in transport system for all districts, provided by the MoH headquarters contributed to the rise in immunization coverage.
(ii) Interventions that would need strengthening	▪ Although the RED strategy has an impact on the immunization coverage, there is need for more resources to follow-up defaulting children. ▪ There is need to put in place activities aimed at maintaining the cold chains in all the health centres; ▪ There is need to increase the number of motor bikes to facilitate increased outreach activities. ▪ There is need to lobby for more stakeholders so that the RED

	strategy can be sustained.
	▪ There is need to encourage more data audit programmes at district facility level to validate and verify the data before it is passed on to the next level.
	▪ Quarterly review meetings at all levels with particular focus on data are very much encouraged.
	▪ The ministry of health headquarters need to find ways of stocking out and distributing all essential vaccines to the facilities
	▪ There is need to build cold chain storage facilities at provincial health Offices (PHOs).

7.3   Underweight prevalence

Anthropometric data on height and weight are important elements in the measurement and evaluation of the nutritional status of young children in Zambia. This information is important to evaluate and identify sub-groups of the child population that are at increased risk of faltered growth, disease, impaired mental development and death (DHS, 2007).

In the HMIS, underweight prevalence measures the proportion of children under the age of 5 years whose weight is below the lower line out of the total weighed[5]

Figure 7.2 presents data on underweight prevalence by province and year for the period 2006 to 2008. The figure shows that the national underweight prevalence has been declining from 14% in 2006 to 10% in 2007 and then to 6% in 2008.

The figure also shows that Luapula province recorded the highest underweight prevalence in 2006 (21%), 2007 (14%) and in 2008 (8%) while Lusaka had the lowest prevalence. The figure also shows that the trend for underweight prevalence has been declining in all the provinces.

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[5] HMIS Indicators Manual, 2008

Figure 7.2: Proportion of Children Underweight by province, 2006-2008

Table 7.2:	Some interventions on underweight prevalence
General observed trend:	*The national underweight prevalence has been declining from **14%** in 2006 to **10%** in 2007 and then to **6%** in 2008 with **Luapula province** recording the **highest underweight** prevalence while **Lusaka** had the **lowest prevalence***.
(i) Reasons for the observed variations and Interventions put in place to address the variations	▪ There has been improvement in food security, where most people shifted from fishing to agriculture activities. ▪ Management of severe malnutrition and IMCI are helping in sensitizing the communities. ▪ During child health week, a lot of children are being de-wormed. ▪ *Positive deviance*, where mothers with healthy babies team up to form a group that teaches other mothers on how important it is to look after a child ▪ Sensitization in food security under a number of organizations such as PAM has contributed to the reduction in underweight prevalence. ▪ Data collecting tools had an impact on growth monitoring in that the demarcation of underweight was not well defined in the previous under 5 card which had children below lower line and those below dotted line. Using those below **dotted line** ended up with the picture reflected above.
(ii) Interventions that would need strengthening	▪ The communities need to be encouraged to form *nutrition clubs* and empower them with income generating activities. ▪ There is need to improve monitoring activities where monthly weighing and counseling in cases of underweight children. ▪ There is need to intensify nutrition counseling to clients. This is important because it leads to increased turn-out of children for growth monitoring.

CHAPTER 8: MATERNAL HEALTH

Chipalo Kaliki & Dr. Kamoto Mbewe

8.1   Introduction

This chapter presents information on key indicators of importance to maternal health and these include *antenatal coverage*, *average antenatal visits*, *institutional deliveries*, *first postnatal attendance* and *new family planning acceptors*. The health care that a mother receives during pregnancy, at the time of delivery, and soon after delivery is important for the survival and well-being of both the mother and her child. These indicators are important to policymakers and programme implementers in designing appropriate strategies and interventions to improve maternal and child health care services.

The chapter has also included some key interventions put in place to explain variations observed across provinces, districts and facilities on maternal healthy indicators, during the period 2006 to 2008.

8.2   Antenatal care

The major objective of antenatal care is to achieve the optimal health outcome for the mother and the baby. Specifically, the following should be accomplished by a skilled health worker:

- Early detection of complications and prompt treatment (i.e., detection and treatment of sexually transmitted infections).
- Prevention of diseases through immunization and micronutrient supplementation.
- Birth preparedness and complication readiness and
- Health promotion and disease prevention by providing health messages and counseling to pregnant women.

8.2.1 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 a given pregnancy. The target in Zambia is 90% and if the figure falls below 80% the delivery system should be investigated.

Figure 8.1 shows that antenatal coverage at national level increased from 92% in 2007 to 98% in 2008. Central province had the highest antenatal coverage in between 2006 and 2008, compared to rest of the provinces while Copperbelt had the lowest coverage.

Figure 8.1: First Antenatal Coverage, Zambia, 2006-2008, Zambia

Table 8.1:	Some interventions on antenatal coverage
General observed trend:	*Antenatal coverage at national level increased from* **92%** *in 2007 to* **98%** *in 2008.* **Central province** *had the highest antenatal coverage between 2006 and 2008, compared to rest of the provinces while* **Copperbelt** *had the lowest coverage.*
(i) Reasons for the observed variations and interventions put in place to address the variations observed	▪ There has been intensified sensitization to the community to seek ANC services. Safe motherhood action group (SMAGs) has helped in sensitizing the community. ▪ ANC services are available in all the health facilities. ▪ Outreach services have been intensified ▪ TBA services at lower levels have been good ▪ Outreach services have improved, received motor bikes for outreach activities. In addition safe motherhood action groups (SMAGS) are very important in ensuring that mothers deliver safely. ▪ There is a likelihood that data errors could contribute to the variations in some provinces specially Copperbelt where most of the facilities are urban.
(ii) Interventions that would need strengthening	▪ Strengthening programmes for health education, screening, treatment and care of cervical, breast and prostate cancer. ▪ Strengthening family planning (FP) and contraceptive choice programmes, with

	a special focus on rural districts.
	▪ There is need to accelerate midwifery training, ensuring equitable distribution and retention of midwives.
	▪ Promotion of continuum of care from traditional birth attendants to referral centres, through provision of appropriate training, tools, logistical support and incentives.
	▪ There is need for refresher training for traditional birth attendants at community level.

8.2.2 Average antenatal visits

In Zambia, the traditional approach to the provision of antenatal care recommends at least 12 ANC visits. The first visit should take place during the first trimester, and visits should continue on a monthly basis through the 28th week of pregnancy, and every two weeks thereafter up to the 36th week, and then every week until delivery (DHS, 2007).

The assumption is that more visits result in better care for the pregnant woman. However, the newest WHO approach to promoting safe pregnancies recommends that a woman without complications have at least four ANC visits (instead of 12). This is an updated approach called *Focused Antenatal Care (FANC)*, which emphasizes quality of care during the visits over the quantity of visits. Another key FANC strategy is for each visit to be conducted by a skilled health provider *(Villar et al., 2001).*

Early detection of problems in pregnancy leads to more timely treatment and referrals in the case of complications. This is of particular importance in Zambia, which is a large and sparsely populated country where physical barriers are a challenge to the health care delivery system. Women who do not receive antenatal care during pregnancy are at higher risk for obstetric emergencies and adverse outcomes.

In the HMIS, average antenatal visits measure the average number of visits to the facility per expectant mother before delivery. *Figure 8.2* shows an overall downward trend of the average antenatal visits from 2.9 in 2006 to 2.8 in 2007 and then to 2.6 in 2008. Overall, all the provinces showed a downward trend in the average antenatal visits, during the period under review.

Figure 8.2: Average Visits by province, Zambia, 2006-2008

Table 8.2:	Some interventions on antenatal visits
General observed trend:	*Overall, there was a downward trend of the average antenatal visits from **2.9** in 2006 to **2.8** in 2007 and then to **2.6** in 2008. All provinces showed a downward trend in the average antenatal visits, during the period under review.*
(i) Reasons for the observed variations and interventions put in place to address the variations	▪ Focused ANC care is one of the reason for the observed reduction. Previously women used to come monthly, at 8 months they would come every 2 weeks and at 9 months they would come every week. ▪ Late booking have contributed to the downward trend, most pregnant women seek medical services when the pregnancy has already advanced; ▪ Some mothers book once and they stop. ▪ Data collection problem, the data is not entered in the register but tally sheets as such there is a chance of undercounting. ▪ Focused antenatal care has contributed to low coverage as pregnant women attend antenatal only when need arises. ▪ Introduction of *Focused Antenatal Care*, mother register and will only seek antenatal checks only when there is need, otherwise they will stay home until the pregnancy has advanced.
(ii) Interventions that would need strengthening	▪ There is need for continuous training and refresher courses for every cadre that attends to ANC. ▪ There is need to sensitize pregnant women on the importance of seeking early ANC bookings. ▪ There is need to scale up safe motherhood action groups (SMAGs) programme to all the districts.

8.2.3   Deliveries attended to by trained health personnel

In addition to place of birth, assistance during childbirth is an important variable that influences the birth outcome and the health of the mother and infant. The skills and performance of the birth attendant determines whether or not he or she can manage complications and observe hygienic practice. 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.

According to the 2007 ZDHS, almost half (47 percent) of the births are assisted by a skilled health worker (doctor, clinical officer, nurse, or midwife); 3 percent by a doctor; 1 percent by a clinical officer; and 42 percent by a nurse or midwife. The percentage of deliveries assisted by a skilled health worker has increased from 43 percent in the 2001-2002 ZDHS to the current level of 47 percent. In the absence of a nurse or midwife, a relative is the next most common person assisting a delivery (25 percent). Twenty three percent of births are assisted by traditional birth attendants and 5 percent of births were assisted by no one (ZDHS, 2007).

In the HMIS, deliveries attended by health personnel is defined as the number of deliveries attended by trained health personnel per the number of estimated deliveries in catchment population.

Table 8.3 shows that the proportion of trained birth attendants has been declining during the period 2006 to 2008. It dropped from 18% in 2006 to 17% in 2007 and latter to 15% in 2008. Both institutional and supervised deliveries have been increasing over the period under review. Institutional deliveries increased from 43% in 2006 to 45% in 2007 and 2008. Supervised deliveries reduced from 62% in 2007 to 60% in 2008.

Table 8.3:	Supervised Deliveries by Place of Delivery and Province, 2006-2008								
Province	Institutional deliveries (%)			Trained traditional birth attendants (tTBA) -%			Supervised deliveries (%)		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
Central	37	36	38	23	23	20	60	59	58
Copperbelt	52	56	56	10	11	10	62	67	66
Eastern	35	39	42	20	18	20	55	57	62
Luapula	35	39	42	27	28	22	63	67	64
Lusaka	63	61	64	6	5	4	68	66	68
Northern	32	32	33	27	24	24	59	56	56
North-Western	50	51	43	22	19	15	72	71	58
Southern	36	37	35	21	19	14	57	56	49
Western	42	49	49	16	13	8	58	62	57
Zambia	**43**	**45**	**45**	**18**	**17**	**15**	**61**	**62**	**60**

Table 8.4:   Some interventions on deliveries attended by health personnel

General observed trend:	*Institutional deliveries increased from **43%** in 2006 to **45%** in 2007 and 2008. Supervised deliveries reduced from **62%** in 2007 to **60%** in 2008.*	
(i)	Reasons for the observed variations and Interventions put in place to address the variations	- There is emphasis in using more trained health workers and less TBA, hence the reduction on the proportion of TBAs. - Increased trainings in midwifery. - SMAGs and MDR have contributed to the increase in institutional deliveries - PMTCT programmes have helped in the increase in supervised deliveries. - Lack of training is incentives have contributed the drop-out rate for TBAs over the years.
(ii)	Interventions that would need strengthening	- There is need to improve staffing levels in health facilities[6]; - There is need to bond students to remain in the province upon graduating; - There is need to build more health facilities; - Community sensitization for mothers to deliver in health facilities should be encouraged. - Building mothers' waiting shelters should be encouraged especially where mothers have to cover long distances. - Give incentives to mothers e.g. Give nappies and pads to mothers. Some mothers fear to come to institutions because they do not have baby lathe.

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6   One of the most striking differentials in assistance during childbirth is by urban-rural residence. About eight in ten births to urban women are attended by a skilled provider, compared with three in ten births to women in rural areas. Women in urban areas are more likely (75 percent) to be assisted by a nurse or midwife, while a traditional birth attendant is more likely (31 percent) to assist women in rural areas (2007 ZDHS).

8.2.4 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%.

In the HMIS, first postnatal attendance is defined as the number of new attendances at postnatal clinic (x 100) per the number of estimated deliveries in catchment population.

Figure 8.3 shows that Lusaka province recorded the highest coverage of first postnatal attendances in 2006, 2007 and 2008 compared to the rest of the provinces. Western and North-western provinces had the lowest coverage during the same period under review. Overall, for all provinces combined, the first postnatal attendance indicator showed an improvement between 2006 and 2007 and then recorded a decline in 2008.

Figure 8.3:   First Postnatal Attendance by province, 2006-2008, Zambia

Table 8.5:	Some interventions on first postnatal attendance
General observed trend:	*Overall, for all provinces combined, the first postnatal attendance indicator showed* **an improvement** *between 2006 and 2007 and then recorded a decline in 2008.*
(i) Reasons for the observed variations and Interventions put in place to address the variations	- Outreach services have been intensified. Mothers are encouraged to avail themselves of postnatal cares services. - Safe motherhood action groups (SMAGs) has helped in sensitizing the community. - Outreach services have improved, received motor bikes for out outreach activities. In addition SMAGs are playing a key role in ensuring that mothers deliver safely.
(ii) Interventions that **need** to be put in place to address the variations observed in part(i)	- There is need to strengthen the quality and expand coverage of essential obstetric, including ANC, delivery and postnatal services. - Provision of emergency obstetric care (EmONC) as per national guidelines for different levels of care should be encouraged.

8.2.5 Pregnancies protected against tetanus

Neonatal tetanus is a leading cause of neonatal death in developing countries where a high proportion of deliveries are conducted at home or in places where hygienic conditions may be poor. Tetanus toxoid (TT) injections are

Figure 8.4: Proportion of pregnancies protected against tetanus by province, Zambia, 2006-2008

given to women during pregnancy to prevent deaths from maternal and neonatal tetanus, which can result when sterile procedures are not followed in cutting the umbilical cord after delivery.

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

Figure 8.4 shows trends of proportion of pregnancies protected against tetanus during the period 2006 to 2008. The figure shows that Northern, North-western, Southern and Western provinces showed reduction in pregnancies protected against tetanus during the period 2006 and 2008. Overall, the national picture shows that the proportion of pregnancies protected against tetanus increased from 83% in 2006 to 86% 2007 and then reduced to 80% in 2008.

CHAPTER 9: PERFORMANCE ASSESSMENT FRAMEWORK (PAF) INDICATORS ON HEALTH AND HIV

Dr. Christopher Simoonga, Chipalo Kaliki & Collins Chansa

9.1   Introduction

This chapter provides an overview of health sector performance during the year 2008 as measured by the Performance Assessment Framework (PAF) for Poverty Reduction Budget Support (PRBS) which comes as General Budget Support at the Ministry of Finance and National Planning. The Cooperating Partners who provide financial assistance through General Budget Support at the Ministry of Finance and National Planning are DFID; European Commission, Finland, Germany, Netherlands, Norway, Sweden, Africa Development Bank, and the World Bank. The release of funds to the Ministry of Finance and National Planning greatly depends on the performance against four broad areas in the national economy including (i) the overall Reform Process, (ii) Wealth Creation, (iii) Social Equity, and (iv) Cross Cutting Issues like HIV/AIDS and Environment. Health and HIV/AIDS indicators are some of the key indicators that the Cooperating Partners look at in evaluating progress in social equity.

Under the PAF, the MoH is responsible for monitoring seven key performance indicators on health and HIV/AIDS. There are four indicators on health namely: *Percentage of Institutional Deliveries (HEA 1)*; *Percentage of fully immunized children under the age of one year in the 20 worst performing districts (HEA 2)*; *Utilization rate of Primary Health Care facilities (HEA 3)*; and the *Percentage of Ministry of Health Releases to Districts (HEA 4)*. The HIV/AIDS indicators include the *percentage of clients in the sexually active population who have been tested for HIV and have received the results (HIV 1); the percentage of HIV positive eligible clients accessing ARVs (HIV 2);* and the *percent of HIV positive pregnant women receiving a complete course of ARV (HIV 3).*

Table 9.1 and *9.2,* respectively, presents data on PAF indicators for health and HIV/AIDS for 2008. The detailed analysis on the factors that could have contributed to the attainment and non-attainment of the indicators are outlined the following sub-sections.

9.1.1   Institutional Deliveries

Table 9.1 shows that the indicator on the *percentage of institutional deliveries* improved slightly by 0.3% from 45% in 2007 to 45.3% in 2008. Although this may be considered a minor improvement in percentage terms, the change can be attributed to the Ministry of Health's efforts to improve the status of health infrastructure and equipment country wide in order to deliver quality health services

to the Zambian people. The target for the year 2008 was 45% and having achieved 45.3% in 2008, the implication is that the Ministry of Health <u>fully met</u> the target. A review of the performance trends for the period 2006 to 2008 actually reveals a positive trend in improvements over the years. This is because the percentage of institutional deliveries increased from 43% in 2006 to 45% in 2007 and then 45.3% in 2008. This is reflected in *Figure 9.1.*

The following interventions could have contributed to the slight improvement in the indicator.

(i)   Increased recruitment, re-deployment and retention of core health workers in many health facilities, including rural health centres. This includes:

    a. Authorised staff establishment increased from 30,883 in 2007 to 31,048 in 2008, representing 60% of the total needs of 51,414. Total of 1,646 new health workers recruited, increasing staff in post from 26,910 in 2007 to 28,556, or 56% of the needs;

    b. Staff retention scheme expanded and scaled up to include other health cadres. Total of 690, or 45% of the 2008 target of 1,550, were enrolled on the scheme; and

    c. Expansion of capacities of training institutions continued. Kalene, Roan and Nchanga schools of nursing re-opened and direct entry mid-wifely training introduced. Total student enrolments for 2009 increased by approximately 75%.

(ii)   The expansion of the programme on essential obstetric including antenatal, delivery and post-natal services.

    a. Emergency Obstetrics and Newborn Care (EmONC) was scaled up and training conducted in 7 provinces, covering health workers from 22 districts;

    b. Focused Antenatal Care (FANC) strengthened: 1,120 frontline health workers and 60 district managers oriented to FANC. Working on integrating Prevention of Mother to Child Transmission of HIV (PMTCT) into FANC;

(iii)   The strengthening and scaling up of the community component of Maternal Death Reviews (MDR): Committees formed in all the 72 districts;

(iv)   Safe Motherhood Action Groups (SMAGs) operationalised in 33 districts in 2008 as compared to 24 districts in 2007;

(v)   The scaling up of PMTCT activities which encourage women to deliver in health facilities. HIV testing among pregnant women rose from 60% in 2007 to 70% in 2008 while ARVs uptake by pregnant women increased from 39% to 50%.

Notwithstanding the above achievement, it should be understood that most of the interventions that the Ministry of Health is currently implementing to increase institutional deliveries are medium-to-long term, especially the training, re-distribution, and retention of health workers. As such, a huge improvement in the performance cannot be guaranteed on an annual basis at this stage. However, the Ministry of Health should further look into the long distances and inaccessibility of health facilities, particularly in rural areas; severe shortages and sub-optimal distribution of Midwives; and the low institution deliveries due to inadequate supplies of maternal delivery kits. The issue of inadequate infrastructure for maternal health services; e.g. labour rooms, waiting shelters, incubators and baby cots should also be addressed.

9.1.2   Immunization Coverage in the 20 worst performing districts

Table 9.1 shows that the indicator on the *percentage of fully immunized children* under one year of age for the 20 worst performing districts, stood at 68% in 2008. This means that the target for the year that was set at 73% *was not fully met.* As a matter of fact, the indicator was also not fully met in 2007, but there was an upward increment in 2008 as compared to 2007 (See *Figure 9.1*). The *percentage of fully immunized children* under one year of age in the 20 worst performing districts increased from 62% in 2007 to 68% in 2008.

The following are some of the reasons that could have contributed to the non-attainment of the indicator in 2007 and 2008.

  (i)   The interruptions in the supply of vaccines and other materials for conducting immunization campaigns.
  (ii)   Weak cold chain management system, poor and inadequate infrastructure, especially in the rural and worst performing districts.
  (iii) Inadequate skilled personnel to conduct mass immunization campaigns to supplement the routine immunization activities and poor communication (road and water transport) infrastructure.

Apart from the above interventions that the Ministry of Health is directly in charge of, there are also a number of problems impeding coverage in the 20 worst performing districts that are outside command of the Ministry of Health. In some districts, such as Chama, over half of the health centres are not accessible for six months every year because roads are impassable and bridges are washed away. This underlines the need for a comprehensive strategy for addressing issues of access to services in rural areas.

Despite the poor performance on this indicator, the government through the Ministry of Health continued to prioritize the Expanded Programme on Immunization (EPI) through the provision of cold chain equipment, and strengthening the procurement of vaccines. Outreach services were also strengthened through the procurement of motorbikes and motor vehicles.   These interventions could explain why the *percentage of fully immunized children* under one year of age in the 20 worst performing districts increased from 62% in 2007 to 68% in 2008 even though the target of 73% in 2008 was not fully met.

On the other hand, the national coverage for fully immunized children under the age of one year increased from 86% in 2007 to 90% in 2008. The national figure is above the WHO recommendation of 85%.

9.1.3   Utilization of Primary health Care facilities

Table 9.1 below shows that there was an increase in the per capita annual utilization of primary health care facilities from 1.3 in 2007 to 1.6 in 2008. This means that the target for the year 2008 which was set at 1.3 was *fully met.* The Ministry of Health has been consistently meeting the target for this indicator since 2006 and a gradual increase has also been recorded over the years i.e. from 1.2 in 2006 to 1.3 in 2007 and 1.6 in 2008. The following interventions could have contributed to the increased utilization of primary health care facilities in Zambia.

(i)   The abolition of user fees in rural and peri-urban areas in 2006 and 2007, respectively.
(ii)   Scaling up of health interventions on HIV/AIDS such as ART, PMTCT and male circumcision etc*.*

It is also worth mentioning that the increase in the rate of PHC utilization is viewed as an indication of confidence in the public health services by the population through improved quality of services.

9.1.4 MoH releases of funds to districts

Table 9.1 shows that the indicator on the percentage of Ministry of Health releases of non-personal emolument funds to the districts recorded an increase from 14% to 16% in 2008. In absolute figures, this implies that in the fiscal year 2008, out of the total Ministry of Health (domestic, Non-PE) budget of K 531.2 billion, K 85.1 billion was released to districts as operational grants. This represents 16% of the total Ministry of Health (domestic, Non-PE) budget.

As documented in the Performance Assessment Framework submission, the target for 2008 for the indicator measuring the percentage of Ministry of Health releases to district level (domestic, Non-PE) was 13%. This achievement of 16% exceeds the target of 13%. It was also observed that disbursement of operational grants to the districts has been increasing between the period 2006 and 2008. The percentage of Ministry of Health releases to districts increased from 8% in 2006 to 14% in 2007 and 16% in 2008. This is highlighted in *Figure 9.1*.

Part of the reasons why there has been a steady increase in the disbursement of funds to districts is that the Ministry of Health is cognizance of the fact that increasing funding to the districts could help in improving equity of access to health care, especially for the poor. The Ministry of Health is also addressing the Rural-Urban disparities in access to health care through the implementation of a needs based Resource Allocation Formula for the districts.
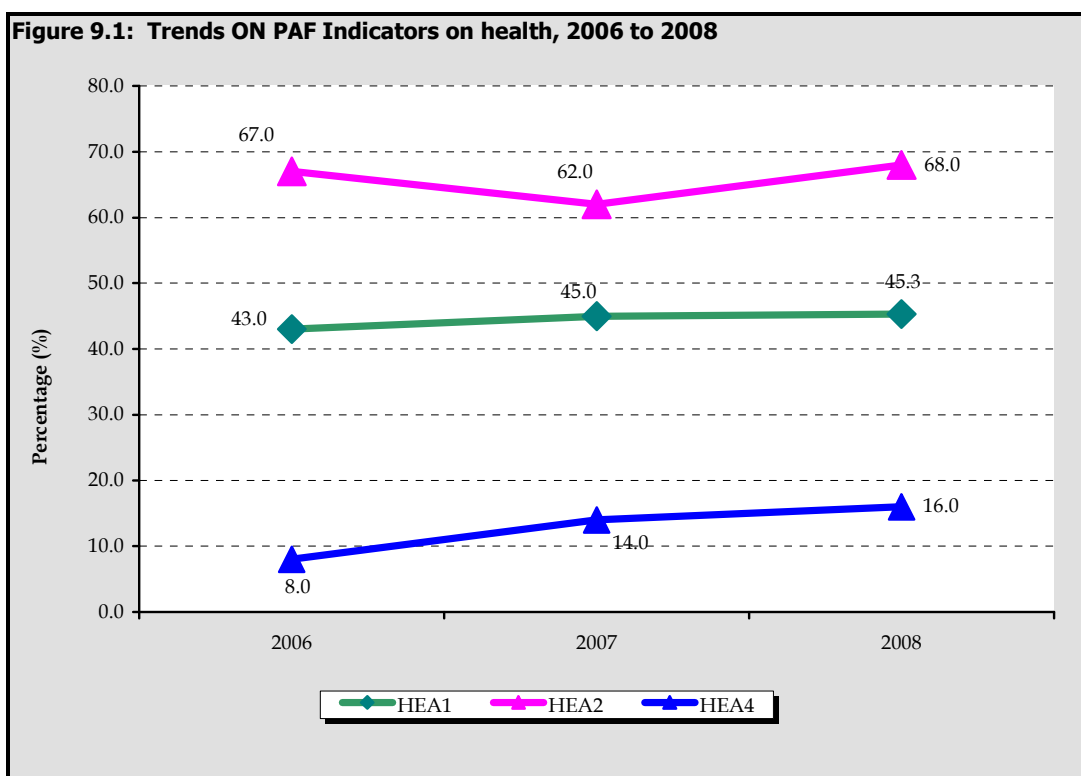
The resource allocation criteria for district level services which was developed in 2004 was derived using the Material Deprivation Indices (MDI). The MDI is applied to district populations on the basis of giving more weighting in resource allocation to the most deprived districts. The MDI uses four quintiles with districts in quintile 1 being the least deprived and therefore given less weighting in resources allocation as compared to districts in quintile 4 which are the most deprived and given more weighting in resource allocation. The table below will illustrate this.

Table 9.1		Distribution of materials deprivation (Quintile 1 –least deprived, quintile 5 most deprived)*							
Quintile 1		**Quintile 2**		**Quintile 3**		**Quintile 4**		**Quintile 5**	
Livingstone	-3.09	Monze	-0.18	Luangwa	0.33	Mporokoso	0.53	Zambezi	0.72
Lusaka	-2.85	Kasama	-0.04	Mpika	0.38	Isoka	0.57	Mungwi	0.73
Kitwe	-2.79	Kalomo	0.03	Mambwe	0.42	Kaoma	0.61	Kabompo	0.74
Mufulira	-2.74	Mumbwa	0.05	Kawambwa	0.42	Chinsali	0.62	Mwinilunga	0.74
Chililabombwe	-2.69	Sinazongwe	0.06	Solwezi	0.43	Nyimba	0.63	Senanga	0.74
Chingola	-2.64	Siavonga	0.07	Sesheke	0.44	Petauke	0.64	Kaputa	0.75
Luanshya	-2.51	Chipata	0.09	Mbala	0.47	Lufwanyama	0.65	Lundazi	0.78
Ndola	-2.5	Mongu	0.1	Itezhi-tezhi	0.47	Katete	0.65	Chilubi	0.8
Kabwe	-2.17	Mansa	0.16	Gwembe	0.47	Nchelenge	0.65	Kalabo	0.8
Kalulushi	-2.08	Chibombo	0.17	Masaiti	0.48	Mufumbwe	0.65	Lukulu	0.83
Kafue	-1.81	Mkushi	0.24	Serenje	0.49	Samfya	0.66	Chiengi	0.9
Mazabuka	-0.6	Namwala	0.27	Mwense	0.5	Milenge	0.7	Chama	0.91
Chongwe	-0.46	Kapiri-mposhi	0.29	Luwingu	0.52	Chadiza	0.71	Chavuma	0.92
Choma	-0.39	Nakonde	0.31	Kasempa	0.52	Mpulungu	0.72	Shangombo	1.09
		Mpongwe	0.33	Kazungula	0.52				

The indices are written next to each other (mean 0 and range from -3.09 to 1.09)

Notwithstanding the above, and after five years of implementing the resource allocation criteria, the Ministry of Health has realized that it is important that the overall resource allocation criteria is revised to factor in the changes in the poverty and population parameters as informed by the 2004 completed Living Conditions and Monitoring Survey, the 2007 Zambia Demographic and Health Survey and other recent poverty mapping surveys. It has also been acknowledged by the Ministry of Health that the smaller districts are disadvantaged and are faced with other challenges beyond the poverty parameters such as high administrative costs, poorly developed, and inadequate infrastructure. This puts pressure on the total district grants on referrals to other districts. In addition, most of the disadvantaged districts are smaller and have a smaller population but however have the greatest health needs. It is therefore necessary to assign additional weights to each variable in the MDI to address the added health needs. The Ministry of Health is in fact in the midst of assigning additional weights to each weighting factors and variable in the index to address the added health needs for smaller disadvantaged districts.

Figure 9.1: Trends ON PAF Indicators on health, 2006 to 2008

Notes:

HEA 1: Percentage of Institutional Deliveries

HEA 2: Percentage of fully immunized children under the age of one year in the 20 worst performing districts

HEA 4: Percentage of Ministry of Health Releases to Districts

9.1.5 HIV/AIDS

The three PAF indicators identified for HIV/AIDS for the period 2008 to 2010 deals with testing and acceptance of results, the number of HIV-infected people accessing ARVs and proportion of pregnant women receiving a complete course of ARVs.

Table 9.2: Numbers Receiving ARTs, by Province, 2008

Province	Number of ART Centres[7]	Pediatrics Receiving ARVs	Adults Receiving ARVs	Number Receiving ARVs
Central	54	982	18,462	19,444
Copperbelt	98	4,014	45,262	49,276
Eastern	24	1,104	19,801	20,905
Luapula	30	478	7,045	7,523
Lusaka	92	7,288	60,537	67,825
Northern	29	610	9,913	10,523
N/western	20	357	4,713	5,070
Southern	48	2,341	22,486	24,827
Western	24	873	13,310	14,183
TOTALS	**419**	**18,047**	**201,529**	**219,576**

Source: Ministry of Health (2008)

Indicator HIV 1, the proportion of clients tested and receiving their results in 2008, rose to 23% up from the 2007 figure of 15.4%, and *exceeding the target* of 17.8%. See the performance trends in Figure 9.2 below. This is can be attributed to increase knowledge about HIV/AIDS, which has encouraged more persons to get tested. The number of Counselling and Testing (CT) sites increased from 1,102 in 2007 to 1,563 in 2008 out of which 1,471 were publicly owned and 92 privately owned, respectively. Mobile CT services were also intensified in rural districts and this was aimed at improving access to CT services especially in the rural and hard to reach areas.

Indicator HIV 2 looks at the number of adults and children with advanced HIV infection receiving ARTs. This has increased from 80,030 clients in 2006 to 156,229 in 2007 and subsequently to 219,576 in 2008. The percentage coverage was 66.8% in 2008 against the target of 60% set for 2008. This means that the target for 2008 was *fully met*. The percentage coverage has actually been improving over the years from 32.9% in 2006, to 52.9% in 2007 and 66.8% in 2008. See the performance trends in Figure 9.2 below.

This success against the targets could be attributed to the increased number of ART sites; in both the private and public sector which increased from about 305 sites in 2007 to 419 sites by the end of
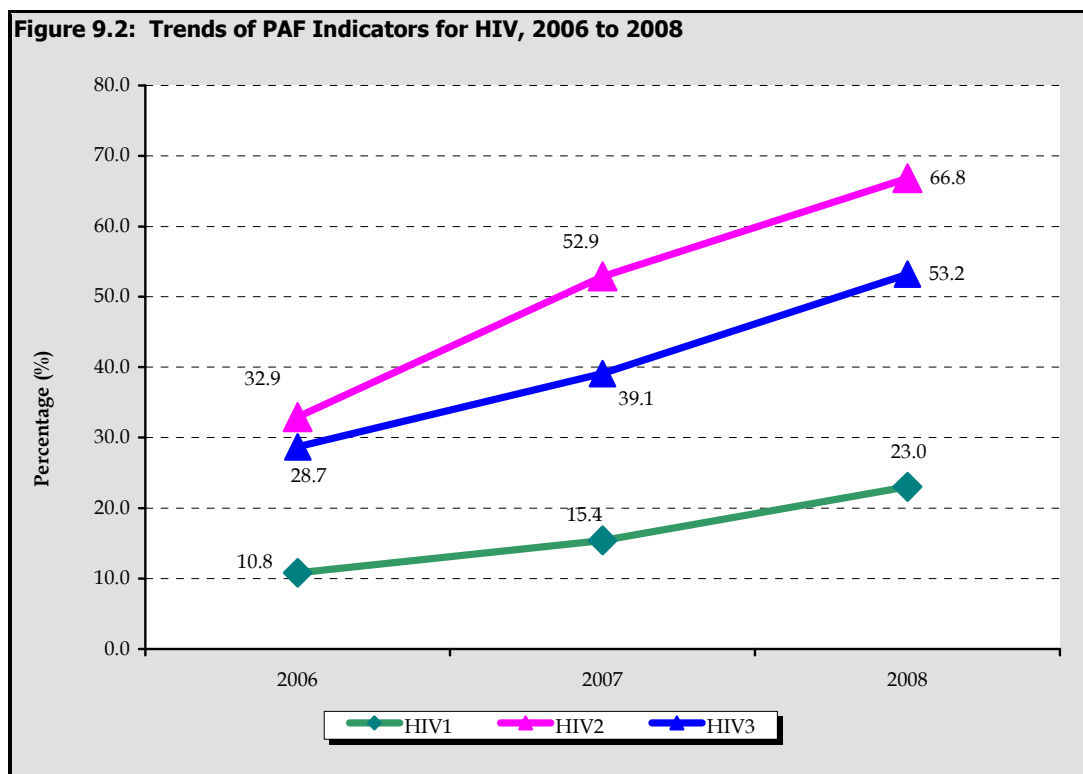
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[7] These are number of both private and public health facilities providing ART and the data was derive from the NAC activity reporting system (NARS)

2008. However, the achievement on the scale-up of ART sites is below the overall target of 1,500 ART sites countrywide. All the 72 districts continued to provide ART services and the number of trained professional and lay ART service providers continued to increase in 2008. Mobile ART services were also provided in 2008 to improve access to treatment services leading to some remarkable improvements in ART uptake in provinces which reported low ART update in 2007. Mobile ART services were provided mainly in Central, Lusaka, Northern, Luapula, North-Western, Copperbelt, and Southern (where we had the award winning ART Clinic in Itezhi-tezhi) provinces.

The third target (HIV 3) tracks progress on the percentage of HIV positive pregnant women receiving a complete course of ARV. The target for 2008 was to have 60% of HIV positive pregnant women on ARV prophylaxis to prevent mother to child transmission (PMTCT). At the end of 2008, however, the *target had been missed* as only 53.2% of the targeted number (45,000/84,568) of the pregnant women were recorded as having received ARV treatment. However, there was an increase in the number of eligible mothers on PMTCT from 28.7% in 2006 to 39.1% in 2007 and then 53.2% in 2008. Thus, even though the target for 2008 was not met, an increment of 14.1% in the coverage was recorded in 2007. See the performance trends in Figure 9.2 below.

PMTCT care is now available in all districts in Zambia, and is being provide in 936 sites (up from 251 in 2005). PMTCT data flow had been a challenge in 2008 with most private and rural public sites not submitting data through the national system. The number of eligible pregnant mothers receiving ARV prophylaxis from such health facilities was probably not captured especially before the rollout of the HMIS. With the rollout of the HMIS, great improvement in PMTCT data flow from rural sites has been observed. Data validation from provinces has also revealed that most of the facilities had not reported adequately on PMTCT services. On the contrary to the observed results, greater achievements in the provision of PMTCT were expected following the initiation of mobile services and couple counselling. Therefore, the inability to meet the target could be due to poor reporting on PMTCT services.

Figure 9.2: Trends of PAF Indicators for HIV, 2006 to 2008

Notes:
HIV 1: Percentage of clients in the sexually active population who have been tested for HIV and have received the results
HIV 2: Percentage of HIV positive eligible clients accessing ARVs
HIV 3: Percentage of HIV positive pregnant women receiving a complete course of ARV

9.2 Summary of Performance under the Health and HIV/AIDS PAF indicators, 2008

The overall performance against the indicators and targets included in the seven Health and HIV/AIDS PAF for 2008 is about 71%. This is because only 3 out of the 4 health PAF indicators and 2 out of the 3 HIV/AIDS PAF indicators were fully met. However, within the performance against the targets set for the overall PAF, Health and HIV/AIDS indicators were amongst the indicators which showed a consistency or improvement between years even when some of the targets were not fully met. It can therefore be concluded that the Ministry of Health is making concerted efforts in improving the delivery of quality health services as close to the family as possible.

Table 9.3   Health PAF Indicators for 2008

Indicator/Issue	Definition/Calculation/ required action		2005 (Baseline Value)	2006	2007	2008	2009	Relationship to NDP	Data Source (Responsible Institutions or Departments)	Assessment, including comments (reasons for Variance)
Indicator One Percentage of institutional deliveries	No. of deliveries assisted by midwives, nurses, doctors, clinical, officers or trained TBAs ÷ No. of expected deliveries	Target	43%	43%	43%	45%	47%	This is the same indicator as that suggested for the NDP. Difference is in the fact that the NDP has targets to 2010 – set at 55% (the target for 2011 is 60%)	Report from the revised HMIS	**Target met** The proportion of institutional deliveries was fully met did in fact exceed the baseline target of **43% in 2005**, established in the PAF. The target for this indicator in 2008 was at **45%** and the actual figure for the same year was **45.3%** indicating a **0.3% increase.** The reason is due to: ▪ Improvement in delivery infrastructure ▪ Improved in the provision of emergency obstetric care for different levels of care; ▪ Improvement midwifery training, ensuring equitable distribution & retention of midwives.
		Actual		43%	45%	45.3%				
Indicator Two Percentage of fully immunized children under one year of age in 20 worst performing districts	Children under one year of age who are fully immunized ÷ Total children under one year of age	Target	63%	65%	70%	73%	75%	This is the same indicator as that suggested for the NDP. Difference is in the fact that the NDP has targets to 2010 – set at 70% (the target for 2011 is 70%)	HMIS	**Target not met** Although the proportion of fully Immunised children in the 20 worst performing districts exceeded the baseline target of **63% in 2005**, established in the PAF, the target in 2008 was at **73%** and the actual figure for the same year was **68%** indicating that the target was missed by **5%.** This is due to: ▪ Erratic supply of vaccines; ▪ Poor management of cold chain equipment; ▪ The target may have been too ambitious
		Actual		67%	62%	68%				
Indicator Four *Utilisation rate of PHC facilities*	Total attendances at PHC facilities ÷ Total population per year	Target	1.3	1.2	1.3	1.3	1.3		HMIS	**Target met** Firstly this indicator is aimed at improving accessibility of health centres for the general population. Utilisation rate for PHC facilities was fully met and it did in fact exceed the baseline target of **1.3 in 2005**, established in the PAF. The target for this indicator in **2008** was at **1.3** and the actual figure for the same year was **1.6** indicating a **0.3 increase** The target for *utilisation rate of PHC facilities* was met due to the general improvement in the quality of services and increased accessibility to most health facilities especially the period after removal of user fees.
		Actual		1.2	1.3	1.6				
Indicator Five *Percentage of Ministry of Health release to districts*	Releases of grants to district boards ÷ Total non-PES MoH domestic budget	Target	8% (2006 Baseline Value)	-	13%	13%	13%		MoH/HMIS	**Target met** Note: Computation only includes operational grants to district level. It does not include, salaries and other personal emoluments, capital developments and drugs bought by the MoH HQ for districts.
		Actual		8%	14%	16%				

Table 9.4   HIV/AIDS PAF Indicators for 2008

Indicators / Issue	Required Action Definition / Calculation		2007 (Baseline Value)	2008	2009	2010	Relationship to NDP	Data Source (Responsible Institutions or Departments)	Assessment, including Comments (Reasons for Variance)
Indicator HIV 1. Percentage of clients in the sexually active population who have been tested for HIV and have received the results	**Numerator:** Number of people tested for HIV and receiving results (aged 15 to 49) **Denominator:** Number of people in the sexually active population (aged 15 to 49) Receiving implies having gone through the full cycle of (a) going to centre (b) counseling (c) specimen taken (d) coming back to receive result The targets are cumulative targets, based on an annual increase of 250,000. The Baseline of numbers having received results of 800,000 was set in 2007, based on the ZDHS 2001/2 results on HIV testing, which show 8 percent of the population aged 15 – 49 – the equivalent of 400,000 people in this age group had been tested.	Target	2006 = 10.8% 2007 = 15.4%	17.8% (1,050,000 / 5,899,648)	21.3% (1,300,000 / 6,087,304)	25.4 (1,550,000 / 6,107,195)	This is the same indicator as that suggested for the NDP. Difference is in the fact that the NDP has targets to 2010 and 2011 – set at 250,000	NAC / revised HMIS (National VCT unit). Denominator from CSO Population Projections, medium variant.	**Target Met**
		Actual		**23.0%** (1,354,988 / 5,899,648)					
Indicator HIV 2. Percentage of HIV positive eligible clients accessing ARVs	**Numerator:** Number of people with advanced HIV/Aids who receive anti retro viral drugs. (This number is an agreed proportion of those in need of ART – not everyone needs) **Denominator:** Number of people with advance HIV in need of anti retroviral drugs. This is in line with the ART eligibility criterion for WHO	Target	2006 = 32.9% 80,030 / 243,542 2007 = (52.9%) 156,229 / 295,540	60% (197,129 / 328,548)	70% (250,068 / 357,240)	80% (308,364 / 385,455)	This is the same indicator as that suggested for the NDP. Difference is in the fact that the NDP has targets to 2010 – set at 160,000 and to 2011, set at 200,000	NAC / revised HMIS	**Target Met**
		Actual		**66.8%** (219,576 / 328,548)					
Indicator HIV 3. Percent of HIV positive pregnant women receiving a complete course of ARV	Prevention of Mother to Child Transmission **Numerator:** Number of HIV positive pregnant women receiving a complete course of ARV to reduce PMTCT **Denominator:** Number of expected HIV positive women delivering	Target	2006 = 28.7% (25,578 / 89,000) 2007 = 39.1% (35,314 / 90,252)	60% (50,741 / 84,568)	70% (60,230 / 86,042)	80% (70,159 / 87,698)	This is the same indicator as that suggested for the NDP. Difference is in the fact that the NDP has targets to 2010 – set at 160,000 and to 2011, set at 200,000	NAC / revised HMIS Denominator from Draft 2008 HIV/Aid epidemiological projections	**Target not Met** Big increase in performance, though below the target
		Actual		**53.2%** (45,000 / 84,568)					

CHAPTER 10: CONCLUSION

Chipalo Kaliki

The report has provided a descriptive analysis of key health sector indicators on disease burden, human resource, availability of drugs, child health, maternal health and performance assessment framework indicators. In an effort to explain the trends of the indicators and interventions put in place to address the variations, program officers at all levels of the health care delivery system were asked questions using a semi-structured questionnaire. This information is important because it helps both policy makers and program managers to begin to plan more effective and better targeted health sector interventions.

Information contained in this report has shown that there has been an improvement in key health indicators such as malaria incidence, diarrhoea incidence, proportion of institutional deliveries, fully vaccinated children, antenatal coverage, number of clients accessing ART services, measles surveillance, performance assessment framework (PAF) indicators, to mention only a few. These marked improvements are an indication of Ministry of Health's concerted efforts aimed at improving the delivery of quality health services as close to the family as possible.

However, more efforts need to be done if the quality of data has to be used for effective health sector interventions. There is need to strengthen the country's routine information system (i.e the HMIS), through a wide range of statistical capacity interventions such as enhanced training activities, technical supportive visits, data audit exercises, performance assessment visits, etc.

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APPENDIX A: PERSONS INTERVIEWED FOR THE 2008 ANNUAL HEALTH BULLETIN DESK REVIEWS

No.	Name	Designation
National level program Officers		
1	Davy Nambula	Deputy Director- Pharmaceutical Services
2	Dr. Kamoto Mbewe	Maternal & child Health Specialist
3	Dr. Canisius Banda	Director Technical support Services
4	Pascalina Chanda	Principal Surveillance & research Officer
5	Dr. Nalubamba Mutinta	National Co-ordinator of Pediatric HIV
6	Dr. Nathan Kapata	TB/Leprosy Specialist
7	Belem Matapo	Surveillance Officer - WHO
8	Wamunyima Lubinda	Surveillance Officer - MoH

No.	Name	Designation
Central Province Program Officers		
1	Dr. C. Simoonga	Acting Director – Policy & Planning
2	Dr D. Suya	Provincial Medical Officer
3	Mr. Chipalo Kaliki	Acting Deputy Director – M & E
4	Mr. Chansa Collins	Chief Planner – Donor Co-ordination
5	Dr. Beatrice C.K Kafulubiti	Acting District Director of Health- Kabwe DHMT
6	Gloria Silondwa	Data Management Specialist
7	M.S. Yuyi	Manager Planning & Development - Kabwe DHMT
8	M. M. Mwangala	MCH Co-ordinator

No.	Name	Designation
Copperbelt Province Program Officers		
1	Dr Ng'ambi	Provincial Medical Officer
2	Chipalo Kaliki	Acting Deputy Director – M & E
3	Dr. Kakungu Simpungwe	District Director of Health- Ndola DHMT
4	Mr. Edwin Gwayi	Data Management Specialist
5	Chungu Chama	Clinical Care Expert _Ndola PHO
6	Chumary Munyinya	District Health Information Officer – Ndola DHMT

Eastern Province Program Officers		
No.	**Name**	**Designation**
1	Beron Nsonga	Data Management Specialist
2	Ng'ambi Mackson	District Health Information Officer
3	Mbewe Patrick	Manager Planning & Development
4	Mrs. R. Banda	Health centre in-charge
5	Masauso Phiri	Data Management Officer

Luapula Province Program Officers		
No.	**Name**	**Designation**
1	Dr Bwalya	Provincial Medical Officer
2	Whiteson Mvula	Data Management Specialist
3	Steven Ngoi	Manager Planning & Development
4	Hendrix Mulenga	Health centre in-charge
5	Charlotte Simukali	Registered nurse
6	Chipo Mpamba	Data Management Officer

Lusaka Province Program Officers		
No.	**Name**	**Designation**
1	Dr Dean Phiri	Monitoring & Evaluation Specialist
2	Dr. Penelope Kalesha	Child Health Specialist
3	Mr. Paul Mumba	Deputy Director - Policy
4	Lewis Mwila	Data Management Specialist
5	Dr. Masumba Masaninga	Manager Planning & Development
6	Pauline Mwioba	MCH – Co-ordinator
7	Daniel K. Bwalya	Health centre in-charge

Northern Province Program Officers		
No.	**Name**	**Designation**
1	Charles Kachaka	Data Management Specialist
2	Trust Mufune	Senior M & E Officer
3	Richard Banda	Principal M & E Officer
4	Mr. Webby Milimo	District Health Information Officer
5	Florence Ngulube	Manager Planning & Development
6	Lisa Susiku	MCH Co-ordinator

North-western Province Program Officers

No.	Name	Designation
1	Dr. George Liabwa	Provincial Medical Officer
2	Chipalo Kaliki	Acting Deputy Director – M & E
3	Dr. Mukwangule Chikama	Disease Control Specialist
4	Ndonji Kaleji	Data Management Specialist
5	Dawson Kabwita	Acting Manager Planning & Development –Solwezi DHMT

Southern province

No.	Name	Designation
1	Dr S. Mutembo	Clinical Care Expert
2	Mr. Chanda Mukuka	Data Management Specialist
3	Mr. Emanuel Sakala	Data Associate
4	Mrs. H. C. Mwiinga	Nurse
5	Mr. Patrick Amanzi	M & E Officer
6	Mr. Clifford Munyandi	Clinical Care Expert
7	Likando C.M. Alisheke	Clinical Care Expert
8	F.M. Chibinga	TB Focal person
9	Dr. F. Handenta	District Director of Health
10	Lillian Bwalyalila	Nurse

Western province

No.	Name	Designation
1	Dr Albert Sitali	Provincial Medical Officer
2	Chipalo Kaliki	Acting Deputy Director – M & E
3	Dr. S. Choonga	Clinical Care Expert
4	Francis Sibeso	Data Management Specialist
5	Mukololo M	Acting Manager Planning & Development -Shangombo
6	Kaingu F.	District Health Information Officer- Senanga

APPENDIX B: SAMPLE FIELD QUESTIONNAIRE

Republic of Zambia
MINISTRY OF HEALTH

THE 2008 ANNUAL HEALTH STATISTICAL BULLETIN
(Interviews with key program managers)

Name of the interviewer:		**Date of the interview:**		
Designation of the interviewer				

Name of the interviewee:		**Date of the interview**		
Designation of the interviewee:				

Sample questionnaire administered to program officers at province, district and facility level

INSTRUCTIONS FOR THE INTERVIEWWER

i.   READ OUT THE OBSERVED TRENDS OF EACH **INDICATOR** TO THE PROGRAM OFFICER;

ii.   FIND OUT FROM THE PROGRAM MANAGER THE MAIN REASON(S) ATTRIBUTABLE TO THE **OBSERVED TRENDS INDICATED** IN PART (I);

iii.   TRY TO PROBE FOR FURTHER **RELEVANT COMMENTS** FROM THE PROGRAM MANAGER;

iv.   WHEN ALL COMMENTS ARE EXHAUSTED AND INCLUDED IN THIS QUESTIONNAIRE, PLEASE RETURN THE FILLED OUT COMMENTS TO THE **CHIEF M & E OFFICER** AT THE MINISTRY OF HEALTH HQ FOR ANALYSIS.

APPENDIX C: EDITORIAL TEAM

Name	Designation	Institution
Dr. Christopher Simoonga	Acting Director of Policy & Planning	Ministry of Health
Mr. Chipalo Kaliki	Acting Deputy Director – M & E	Ministry of Health
Mr. Richard Banda	Principal M & E Officer	Ministry of Health
Mr. Patrick M.Chewe	Monitoring & Evaluation Advisor	Health Services & Systems Program
Mr. Trust Mufune	Senior M & E Officer	Ministry of Health
Mr. Patrick Amanzi	M & E Specialist - ART	Ministry of Health
Mr. Chipo Mpamba	Data Management Officer	Ministry of Health
Mr. Masauso Phiri	Data Management Officer	Ministry of Health

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