

# **ZAMBIA PUBLIC EXPENDITURE TRACKING AND QUALITY OF SERVICE DELIVERY SURVEY IN THE HEALTH SECTOR**

## **Findings and Implications**

Ministry of Health  
University of Zambia  
The World Bank  
Swedish International Development Agency

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## **ABBREVIATIONS AND ACRONYMS**

AfDB	-	African Development Bank
AIDS	-	Acquired Immune Deficiency Syndrome
Capex	-	Capital Expenditures
CBoH	-	Central Board of Health
CHAZ	-	Christian Health Association of Zambia
CSO	-	Central Statistical Office
CT	-	Counseling and Testing
DANIDA	-	Danish International Development Agency
DfID	-	the U.K's Department for International Development
DHB	-	District Health Board
DHMT	-	District Health Management Team
EmOC	-	Emergency Obstetric Care
FP	-	Family Planning
GAVI	-	Global Alliance on Vaccines Initiative
GDP	-	Gross Domestic Product
GRZ	-	Government of the Republic of Zambia
HE	-	Health Expenditures
HI	-	Health Insurance
HIV	-	Human Immunodeficiency Virus
HMB	-	Hospital Management Board
HQ	-	Headquarters
HR	-	Human Resources
IGF	-	Internally Generated Fund
IMCI	-	Integrated Management of Childhood Illnesses
IMF	-	International Monetary Fund
MDG	-	Millennium Development Goal
MFNP	-	Ministry of Finance and National Planning
MSL	-	Medical Stores, Limited
MOH	-	Ministry of Health
n.a.	-	Not Available
NAC	-	National AIDS Council
Negl.	-	Negligible
NGO	-	Nongovernmental Organization
NHA	-	National Health Accounts
OPD	-	Out-Patient Department
PE	-	Personal Emoluments
PET	-	Public Expenditure Tracking
PHO	-	Provincial Health Office
QSDS	-	Quality of Service Delivery Survey
RH	-	Reproductive Health

RHC	-	Rural Health Center
SIDA	-	Swedish International Development Agency
STI	-	Sexually Transmitted Infection
UHC	-	Urban Health Center
UNICEF	-	United Nations Children's Fund
WB	-	World Bank
WHP	-	World Health Organization
ZK	-	Zambia Kwacha

## TABLE OF CONTENTS

ACKNOWLEDGEMENT .....	II
ABBREVIATIONS AND ACRONYMS.....	IV
TABLE OF CONTENTS .....	VI
LIST OF TABLES.....	VII
LIST OF FIGURES.....	IX
CHAPTER 1: CONTEXT, RATIONALE, AND SCOPE OF THE STUDY .....	1
CHAPTER 2. OVERVIEW OF THE HEALTH SYSTEM.....	6
CHAPTER 3. BUDGET ALLOCATION, RELEASE, AND SPENDING .....	9
CHAPTER 4. MANAGEMENT OF INFRASTRUCTURE, UTILITIES, AND EQUIPMENT.....	31
CHAPTER 5. MANAGEMENT OF HEALTH PERSONNEL.....	39
CHAPTER 6. MANAGEMENT OF DRUGS AND OTHER MEDICAL CONSUMABLES .....	53
CHAPTER 7. CLINIC AND PATIENT MANAGEMENT.....	60
CHAPTER 8. SUMMARY OF FINDINGS AND IMPLICATIONS.....	70
REFERENCES .....	78

## LIST OF TABLES

Table 1. Sampling Framework for Health Facilities.....	4
Table 2. Health Facilities in Zambia, 2000s .....	7
Table 3. Selected Health Service Delivery Indicators, 2000 - 2004 .....	8
Table 4. Summary Statistics on the Major Diseases, 2000-05 .....	8
Table 5. Health Sector Resource Envelop (ZK Billion), FY05 and FY06 .....	11
Table 6. Range of Cost Estimates to Meet the Health MDGs in Zambia.....	12
Table 7. Resources at the Disposal of a Typical DHMT, FY05 .....	19
Table 8. Amount of GRZ Budget Provided by DHMTs to Their Health Facilities (ZK Million), FY05 .....	20
Table 9. Health Centers' Responses on Whether They Received an Amount More Than, Equal to, or Less Than Their Annual Allocations, 2006 .....	20
Table 10. Uses of GRZ Budget and Basket Funds by Health Facilities (%), FY05 .....	23
Table 11. Composition of Debts of Health Facilities (ZK Thousands), FY05 .....	23
Table 12. Donors' Vertical Funds Received by Health Facilities (ZK Million), FY05 ...	24
Table 13. Uses of Vertical Funds by Health Facilities (%), FY05 .....	25
Table 14. Internally Generated Funds of Health Facilities (ZK Million), 2005 .....	26
Table 15. User Fee Practices, 2005.....	27
Table 16. Percent of Health Facilities' Rate of Retained Fee Revenues (%), FY05.....	28
Table 17. Uses of User Fee Revenues by Health Facilities (%), FY05 .....	28
Table 18. Expected Versus Actual User Fee Revenues for OPD (ZK Million), FY05 ...	29
Table 19. Level of Annual Resources at the Facility Level, by Major Sources (ZK Million), FY05 .....	29
Table 20. Health Facilities with Clean, Average, or Dirty Floors or Walls (%), 2006 ...	32
Table 21. Health Facilities Reporting Inadequate Medical Equipment, Instruments, and Lab Test Supplies (%), 2006.....	37
Table 22. Established Posts and Average Number of Actual Staff by Major Occupational Groups, 2006.....	40
Table 23. Vacancy Rates (%) in Health Facilities, by Cadre, 2006.....	41
Table 24. Total Staff Who Joined or Who Left This Year, 2006 .....	43
Table 25. Established, Vacant, Filled, and Absent Posts, 2006.....	43
Table 26. Types of Income-Augmenting Activities Undertaken by Staff (%), 2006 .....	48
Table 27. Staff Cash Allowances and In-Kind Benefits Received, 2006 .....	50
Table 28. Salary Management, 2006 .....	51
Table 29. Number of Health Facilities Relying or Not Relying on the Different Drug Distribution Systems, 2006.....	54
Table 30. Comparison of Drug Kits Distributed by DHMTs and Received by Health Facilities, 2006.....	55
Table 31. Health Facilities Reporting Essential and Life-Saving Drugs are Not Available at the Time of the Survey (%), 2006.....	56
Table 32. Health Facilities Reporting Vaccines, Contraceptives, and Medical Consumables are Not Available at the Time of the Survey (%), 2006.....	58
Table 33. Health Facilities Reporting Various Shortcomings in Inventory and Storage Management (%), 2006.....	59
Table 34. Health Facilities with Self-Reported Capacity of to Deliver Specific Health Services (%), 2006.....	60

Table 35. Self-Reported Versus Actual Capacity to Deliver Selected Health Services in Rural Health Centers, 2006.....	61
Table 36. Self-Reported Versus Actual Capacity to Deliver Selected Health Services in Urban Health Centers, 2006.....	62
Table 37. Self-Reported Versus Actual Capacity of Health Centers to Deliver Services (%), 2006.....	63
Table 38. Health Facilities Reporting Patient Record and Registry System (%), 2006 ..	63
Table 39. Rural and Urban Health Centers Reporting the Specific Supervisory Tasks Were Performed (%), 2006 .....	64
Table 40. Waiting Time of Patients, 2006 .....	65
Table 41. Patients Reporting Means and Cost of Transport to Health Facility (%), 2006 .....	66
Table 42. Patients Reporting Various Aspects of Quality (%), 2006 .....	68
Table 43. Patients Reporting Concern About Being Treated by a Provider of the Opposite Sex (%), 2006 .....	69



## LIST OF FIGURES

Figure 1. Per Capita MOH Released + Supplementary Funding, by Province (ZK), FY05 .....	14
Figure 2. Cumulative Budgeted Versus Released Amounts of Total MOH Budget, by Month (ZK Million), FY05 .....	15
Figure 3. Cumulative Budgeted Versus Released Amounts for Personal Emoluments, by Month (ZK Million), FY05 .....	15
Figure 4. Cumulative Budgeted Versus Released Amounts for District Grants, by Month (ZK Million), FY05 .....	16
Figure 5. Cumulative Budgeted Versus Released Amounts for RDCs, by Month (ZK Million), 2005 .....	16
Figure 6. Cumulative Budgeted Versus Released Amounts for Essential Drugs, by Month (ZK Million), FY05 .....	16
Figure 7. Cumulative Budgeted Versus Released Amounts for Capital Expenditures, by Month (ZK Million), FY05 .....	17
Figure 8. MOH Allocation Versus Releases to DHMTs Included in the Survey (ZK Million), FY05 .....	18
Figure 9. MOH Allocation Versus Releases to Provinces Included in the Survey, (ZK Million), FY05 .....	18
Figure 10. Allocated Versus Received Budgets of Selected Health Centers (ZK Million), FY05 .....	21
Figure 11. Allocated Versus Received Budgets of Selected District Hospitals (ZK Million), FY05 .....	21
Figure 12. Cumulative Planned Versus Actual Facility Grants by DHMTs to RHCs, by Month (ZK Million), FY05 .....	22
Figure 13. Cumulative Planned Versus Actual Hospital Grants, by Month (ZK Million), FY05 .....	22
Figure 14. Health Facilities Reporting Good or Average Condition of Floor or Wall (%), 2006.....	32
Figure 15. Health Facilities with Patient Amenities (%), 2006 .....	32
Figure 16. Health Facilities with Power Connection by Type of Power (%), 2006 .....	33
Figure 17. Health Facilities with Basic Communications Facilities (%), 2006.....	34
Figure 18. Health Facilities with Water Source (%) by Type of Source, 2006 .....	34
Figure 19. Health Facilities with Transport Vehicles (%) by Type of Vehicle, 2006 .....	35
Figure 20. Health Facilities With Functional and Nonfunctional Utilities and Transport Equipment (%), 2006 .....	36
Figure 21. Health Facilities with Imaging Equipment (%), 2006.....	37
Figure 22. Health Facilities with Functional and Nonfunctional Medical Equipment (%), 2006.....	37
Figure 23. Health Facilities with Medical Waste Disposal (%), 2006.....	38
Figure 24. Personnel Expenditures in MOH Budget (ZK Billion) and Share of Personnel Expenditures to Total MOH Expenditures (%), 2000-2007 .....	39

Figure 25. Vacancy Rates (%) in Health Facilities by District and Type of Cadre, 2006	42
Figure 26. Composition of Absentees (%), 2006.....	44
Figure 27. Staff Perception of Number of Hours Worked, 2006.....	45
Figure 28. Average Number of Hours Worked in a Week by Type of Task, 2006.....	46
Figure 29. Level of Staff Satisfaction, 2006.....	47
Figure 30. Health Staff Who are Dissatisfied (%), by Reasons for Dissatisfaction, 2006 .....	48
Figure 31. Composite Monthly Salaries and Allowances (ZK Million) of Clinical/Professional Health Workers, 2005.....	49
Figure 32. Reasons Cited by Health Staff for Delay or Nonpayment of Salaries, 2006 .	51
Figure 33. Drug Expenditures (ZK Billion) and Drug Kits Opened Per 1,000 Patients, 1999-2005 .....	53
Figure 34. Health Facilities Reporting Existence of Expired or Inappropriate Drugs (%), 2006 {Recheck data on this table.} .....	57
Figure 35. Health Facilities Reporting Unavailable Medical Consumables (%), 2006...	59
Figure 36. Health Facilities' Frequency of Reporting Problems to Higher Levels (%), 2006.....	64
Figure 37. Patients Reporting the Time Taken to a Health Facility (%), 2006 .....	65
Figure 38. Average Amount (ZK) Spent to Sleep and Eat in Town to Access Health Services, 2006 .....	66
Figure 39. Patients Who Preferred Alternative Clinic Opening Times (%), 2006 .....	67
Figure 40. Patients' Main Reason for Choosing a Health Facility (%), 2006.....	67
Figure 41. Per Capita Health Expenditures (US\$) and Share of Personal Emoluments to Health Expenditures (%), 2006.....	74
Figure 42. Summary Rates (%) of Staff Vacancy, Absenteeism, Tardiness, Involvement in Income-Augmenting Activities, and Dissatisfaction, 2006.....	75

# CHAPTER 1: CONTEXT, RATIONALE, AND SCOPE OF THE STUDY

## A. IMPELLING FACTORS FOR THE STUDY

1. *The government's accelerated health reform program that began in 1992 has yielded increasing resources for health, but outcomes are yet to improve significantly.* The district health system was defined as the basic unit of management for health service delivery where "bottom-up" planning and implementation would meet the thrust of national health priorities. The reforms have resulted in increased resource flows to the sector from both GRZ and donor funding. However, Zambia continues to face enormous performance challenges in the health sector. The health interventions in place have fallen short of the required scale for them to be effective. The quality of health services remains poor. It is unclear whether health resources are being targeted towards the most vulnerable groups, and whether the involvement of the communities in resource planning and allocation at the district level has resulted in better health service provision.
2. *There is a clamor for more transparent tracking and reporting of health expenditures, and it is occurring at a time when the sector itself is undergoing institutional change.* The Ministry of Health (MOH) as overseer, regulator, and purchaser of health services, and the Central Board of Health (CBOH) as provider of health services, were reunited in 2006 after they were split up from the early 1990s up to the mid-2000s. Under the old dispensation, the CBOH included all the hospital boards, all the district health boards, and all statutory boards and health facilities while MOH was mandated as the policymaking body with only about 97 staff. Secondly, GRZ is also considering decentralization of health services under which all primary health services that are under the district health boards will be transferred to Local Authorities. The existing management support systems (finance, procurement, and monitoring and evaluation) will be more closely integrated into the new decentralized structures.
3. *The GRZ health budget and "basket funds" by cooperating donor partners is being "overrun" by large global disease initiatives.* Zambia pioneered "basket funding" with its cooperating partners in the 1990s under a sector-wide approach (SWAp) where partners pooled their resources into specific "baskets" which are programmed side-by-side with GRZ budgetary allocations. This system worked with increasing effectiveness until the advent of large global, bilateral, and private philanthropic disease-specific initiatives, such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GF); Roll Back Malaria (RBM); Stop TB; the Global Alliance for Vaccine Initiative (GAVI); and the U.S. Government's Presidential Expanded Program for AIDS Response (PEPFAR); and the Gates' Foundation's MACEPA. These initiatives have made the financing of district health services ever more fragmented, necessitating the tracking of resource flows to the districts.

## **B. OBJECTIVES AND ANALYTICAL FOCI**

4. *Objectives.* The exercise is formally known in Zambia as public expenditure tracking (PET) survey. However, the content of the survey did include extensive questions on the delivery of health services, and thus this work combines a PET with a quality of service delivery survey (QSDS). Thus, the dual objective of the PET/QSDS are to assess and track the flow of financial and other resources going to health facilities, and to assess the quantity and quality of inputs and outputs of service delivery in these facilities.

5. *Relevance to sectoral strategic thrusts.* It is generally agreed that the increased resources coming into the health sector warrants more detailed and robust accounting. There is a special need to track the levels and items on which resources are expended. This process is critical to dispel concerns that resources may not all be going to their intended areas and beneficiaries.

6. *The Zambia PET/QSDS focused on the following technical aspects, and the findings are reported in the chapters that follow.*

- Budget allocation, release, and spending, from the MOH down to the health facility level. The analysis tried to capture all resource flows including the GRZ budget and basket funds, funds from vertical projects, and internally generated funds. These are discussed in Chapter 3.
- Management of infrastructure, utilities, and equipment, including the physical state and functionality of health facilities; basic utilities, transport, and patient amenities; and medical equipment and instruments. These are discussed in Chapter 4.
- Management of health personnel, including staff availability, vacancy, absenteeism, and tardiness; staff turnover; staff workload, use of time, and morale; and staff salary and benefits. These are discussed in Chapter 5.
- Management of drugs and other medical consumables, including the system for distribution; availability of drugs, vaccines, contraceptives, and other medical consumables; and problems associated with these inputs. These are discussed in Chapter 6.
- Clinic and patient management, including capacity of health facilities to deliver services; management and supervision of health facilities; travel and waiting time of patients; and patients' perceptions of quality. These are discussed in Chapter 7.

## **C. SAMPLING DESIGN AND SURVEY INSTRUMENTS**

7. *The PETS survey adopted a multistage sampling frame involving provinces, districts, and health facilities, and within them, health workers and patients.* It is neither feasible nor desirable, for reasons of cost, time, convenience of travel, and analytical disposition, to implement a purely random sampling design in order to select the sample

sites. The underlying sampling strategy aimed at maximizing representativeness in terms of variability subject to time and resource constraints. Given these principles, out of Zambia's total of nine provinces, five were sampled as a starting point in the clustering framework. In terms of the objectives of the PETS, this is sufficient to facilitate comparative analysis of differences in terms of the functioning and resource endowments of provinces across the country, and the districts within them.

8. *Stage 1, selection of provinces.* Obviously, the cluster should reflect a mix of rural and urban provinces. Thus, the sample size of 5 provinces was purposively selected. Given the number of urban and rural provinces in Zambia, this suggested choosing the two urban provinces - Lusaka Province, Urban and Copperbelt Province, Urban - and the rest from rural provinces. Southern Province was deliberately included in the sample on the advice of the MOH as it was the most highly resourced rural province in terms of the number of health facilities, i.e., it takes a disproportionately larger share of GRZ funding allocations. The selection of the remaining two provinces was done using simple random sampling from the remaining six rural provinces, without weighting for any variables. The two randomly selected provinces were determined as Northern Province and Western Province. In summary, the mix of purposive and random sampling procedures produced the following clusters of provinces: (a) Lusaka Province-Urban; (b) Copperbelt Province-Urban; (c) Southern Province-Rural; (d) Northern Province -Rural; and (e) Western Province-Rural.

9. *Stage 2, selection of districts.* The selection of districts within the five sample provinces was done using random sampling, with the exception of Lusaka which had only four districts, one of which was selected as the pilot (questionnaire pre-testing) district. Initially, to save on costs and time, a fixed number of four districts were selected for each province. For Lusaka, it is important to note that of the three districts selected by default in the province, Lusaka Urban is the provincial headquarters and is the most urbanized district in the country; Kafue represents a mix of urban and rural areas; and Luangwa is typically a rural district. In the rest of provinces, it was intended that the provincial capital be purposively selected, plus three other districts selected randomly. Another exception was that Northern and Southern Provinces were granted five districts given their size and given that Lusaka was granted three instead of four. This resulted in a total of 21 districts, accounting for 29 percent of all districts in the country. Ultimately, this procedure yielded the following sample of districts:

- Lusaka Province with three districts namely: Lusaka Urban, Kafue, and Luangwa;
- Copperbelt Province with four districts namely: Ndola, Mpongwe, Mufulira, and Chililabombwe;
- Southern Province with five districts namely: Livingstone, Siavonga, Namwala, Sinazongwe, and Kalomo;
- Western Province with four districts namely: Mongu, Shangombo, Sesheke, and Kaoma;

- Northern Province with five districts namely: Kasama, Mpika, Nakonde, Chinsali, and Chilubi Island.

10. *Stage 3, selection of health facilities.* Facilities were selected using the simple random sampling procedure (i.e., a lottery procedure using random numbers, without replacement). The complete list of health facilities was drawn from the inventory made by CBOH in 2002 and published as "Health Institutions in Zambia: A Listing of Health Facilities According to Levels and Locations". The survey aimed to capture a number of facilities in each district commensurate with the district population, with 50 percent lying within 10 kilometers of the central business district and the other 50 percent outside the 10 kilometers radius. Given the distribution of hospital facilities, it was expected (and later observed) that the sampling frame would include the district hospital or a higher-level hospital, whichever existed in the respective districts. The total number of facilities selected represented 13 percent of all health facilities in Zambia.

- *Sampling of hospitals (1<sup>st</sup> and 2<sup>nd</sup> level, 18 in total):* The distribution of hospitals in Zambia is such that there is typically one hospital in each district. Provincial centers, which tend to host a second level (regional) hospital do not have a level one (district) hospital. A few districts like Shangombo and Nakonde may not have any hospital at all. Thus, the following 19 hospitals (across all three levels of care) were selected by default through the random selection of the districts, as discussed above. The final sample of hospitals consisted of 18 facilities.
- *Sampling of health centers (132 in total):* With the respective district serving as the sampling cluster for health centers, health centers were selected randomly within each district. The sample size of health centers per district within each province was weighted by the total number of public (government and mission) health centers in the district relative to centers in the other districts. In summary, Table 1 shows the sample distribution of facilities.

Table 1. Sampling Framework for Health Facilities

Province (No. of Districts)	DHMTs	Hospitals	UHC and RHC	Total Facilities
Lusaka <sup>1</sup> Province (3)	3	3	17	23
Copperbelt Province (4)	4	4	30	38
Southern Province (5)	5	5	25	35
Western Province (4)	4	3	28	35
Northern Province (5)	5	3	32	40
Total	21	18	132	171

11. *Selection of patients.* Patient exit interviews will be conducted on a sample of patients visiting the sample facility during the survey. The sampling procedure will involve picking every 4<sup>th</sup>-7<sup>th</sup> patient on the queue, depending on the utilization level at

<sup>1</sup> Note: Two additional facilities were arbitrarily (and randomly) added to Luangwa district in Lusaka province to increase representativeness of rural Lusaka to the sample and to increase the overall sample size.

each facility. Prior appointment and consent will be sought while the patient is on the queue. Five patients will be chosen per facility as the budget could not accommodate interviewing a larger sample. Thus, a total of 750 patients will be interviewed.

12. *Selection of health workers.* At least two health workers from each health facility will also be interviewed. Where possible, a simple random sampling procedure will be used in selecting the sample of staff from the authorized establishment data obtainable at MOH HQ. However, data about staff establishment available centrally are often hampered by transfers, resignations, long leave, long term illnesses, and deaths. Thus, only staff present at the time of the survey will be potential interviewees. The in-charge of the health facility will also be interviewed.

13. *The following survey instruments were used:* (a) a health facility questionnaire, (b) a patient questionnaire, and (c) a DHMT questionnaire. Other sources of information were also tapped, including the MOH Headquarters, the Ministry of Finance, Provincial Health Offices, and District Health Offices, and Medical Stores, Ltd.

## CHAPTER 2. OVERVIEW OF THE HEALTH SYSTEM

1. *While the goal of the GRZ health system has been constant, the structure has been subject to dramatic changes in over a decade.* The overarching goal of the Zambian health sector is “equity of access to assured quality, cost-effective and affordable health services as close to the family as possible”, and to provide cost effective quality health services as close to the family as possible in order to ensure equity of access in health service delivery and contribute to the human and socio-economic development of the nation.” To achieve this goal, the government started decentralizing health services under a health sector reform program in the early 1990s. The intention was to transfer key management responsibilities and resources from the central MOH to the district level. In this respect, two parallel but complementary structures were introduced, namely:

- The popular structures for public involvement and participation in the decision-making process, including the Central Board of Health (CBOH), Hospital Management Boards (HMBs), District Health Boards (DHBs), and the Neighborhood Health Committees and Health Center Committees.
- The technical and management structures designed to ensure that services are implemented in a sound manner, including the management teams at MOH and CBOH, the Hospital Management Teams (HMTs), and District Health Management Teams (DHMTs). The Provincial Medical Offices were reconstituted into Provincial Health Offices (PHOs).
- After years of operating under a "split purchaser/provider model" - i.e., MOH being the purchaser and CBOH the provider - the government decided to reunite the two functions under one agency. In 2006, the Government abolished CBOH and put its functions, assets, and staff back under the MOH. This comprehensive restructuring process will effectively merge the two bodies. Thus, management and control of all public health facilities and services will again directly fall under MOH, through the PHOs.

2. *Diverse providers of health services include:* public health facilities under MOH, facilities under the Ministry of Defense including clinics and one hospital in Lusaka, clinics under the Ministry of Home Affairs, mining hospitals and clinics, mission hospitals and clinics which are coordinated by the Churches Health Association of Zambia (CHAZ), non-government organizations (NGOs), private for profit hospitals, clinics, pharmacies/drug shops, labs and investigation centers, and traditional healers. The private for -profit sector is growing, but mostly concentrated in urban Zambia. Table 2 summarizes the total number of health facilities.



Table 2. Health Facilities in Zambia, 2000s

Type/Level	GRZ	Mission	Private	Total
Hospitals	53	27	17	97
Health Centers	1,052	61	97	1,210
Health Posts	19	0	1	20
Total	1,124	88	115	1,327

Source: CBOH, Health Institutions in Zambia: A Listing of Health Facilities According to Levels and Locations, 2002

- *Health Posts:* Intended to cater for populations of 500 households (3,500 people) in the rural areas and 1,000 households (7,000 people) in the urban areas, or to be established within 5-km. radius for sparsely populated areas. The target is to have 3,000 health posts but currently there are 20 that exist.
- *Health Centers:* These facilities include urban health centers (UHC) which are intended to serve a catchment population of 30,000 to 50,000 people, and rural health centers (RHC) which service a catchment area of 29-km. radius or population of 10,000. The target is 1,385 compared to a current total of 1,210 health centers (973 RHCs and 237 UHCs).
- *1<sup>st</sup> Level Hospitals:* These are found in most of the 72 districts and are intended to serve a population of between 80,000 and 200,000 with medical, surgical, obstetric and diagnostic services, including all clinical services to support referrals from health centers. There are 74 1<sup>st</sup> level referral hospitals.
- *2<sup>nd</sup> Level Hospitals:* These are general hospitals at provincial level and are intended to cater to a catchment area of 200,000 to 800,000 people, with services in internal medicine, general surgery, pediatrics, obstetrics and gynecology, dental, psychiatry and intensive care services. These hospitals are also intended to act as referral facilities for the 1<sup>st</sup> level institutions, including the provision of technical back-up and training functions. There are 19 2<sup>nd</sup> level hospitals. Two provinces, namely Southern and Copperbelt, have five and three 2<sup>nd</sup> level hospitals, respectively.
- *3<sup>rd</sup> Level Hospitals:* These are central hospitals for catchment populations of 800,000 and above, and have sub-specializations in internal medicine, surgery, pediatrics, obstetrics and gynecology, intensive care, psychiatry, training and research. They act as referral facilities for 2<sup>nd</sup> level hospitals. There are five such facilities in the country, of which three are in the Copperbelt Province.

3. *Some improvements in service coverage have been gained, but progress has been slow in reducing the burden of disease.* The Zambian population is currently estimated at 11.3 million, with an annual average growth rate of 3 percent and life expectancy at birth of 50 years (CSO, 2004). Over the past five years, the overall performance of the health sector has shown some improvement as reflected in the trends of basic health delivery indicators, such as health center outpatient per capita attendance, first antenatal coverage, and fully immunized children under 5 years. Table 3 presents the trends for selected health service delivery. Despite these service improvements, overall health status has

stagnated and the disease burden has continued to increase. The disease burden is over-run by the high prevalence of HIV/AIDS, and compounded by high poverty levels and the poor macroeconomic situation in most of the early 2000s. Table 4 summarizes the statistics on the recent trends for the major diseases.

Table 3. Selected Health Service Delivery Indicators, 2000 - 2004

Indicator	2000	2001	2002	2003	2004
Health center outpatient per capita attendance	0.42	0.77	0.73	0.86	0.76
First antenatal coverage (%)	81	88	89	95	97
Average antenatal visits (Times)	3.6	3.6	3.4	3.3	3.1
Supervised deliveries (%)	39	44	49	55	61
Fully immunised children under 1 year (%)	76	86	76	74	80
New family planning acceptors rate per 1000	85	101	111	123	127
Health center staff load (Patients/Staff)	17	14	16	17	17
Drug kits opened per 1,000 patients	0.73	0.75	0.69	0.73	0.93

Source: Central Board of Health

Table 4. Summary Statistics on the Major Diseases, 2000-05

Disease	Indicator	2000	2002	2004	2005
Malaria	Incidence/1,000	316	388	383	373
	Cases	3,591,621	4,101,169	4,328,485	
	Deaths	8,952	9,021	8,289	
Respiratory infection, non-pneumonia	Incidence/1,000	119	148	153	161
	Cases	1,340,283	1,565,430	1,726,597	
	Deaths	1,269	1,057	1,436	
Respiratory infection, pneumonia	Incidence/1,000	35	45	44	42
	Cases	402,643	475,389	494,040	
	Deaths	4,254	4,484	4,186	
Diarrhea, non-blood	Incidence/1,000	65	80	75	75
	Cases	739,055	846,336	843,423	
	Deaths	2,795	2,996	2,725	
Eye infections	Incidence/1,000	47	43	40	40
	Cases	471,743	451,346	448,280	
	Deaths	72	8	5	
Trauma	Incidence/1,000	34	42	46	46
	Cases	390,869	447,278	525,039	
	Deaths	646	787	833	
Skin infections	Incidence/1,000	28	37	42	42
	Cases	309,758	393,384	472,746	
	Deaths	135	126	125	
Ear, nose, throat infections	Incidence/1,000	21	25	23	24
	Cases	238,403	260,058	259,877	
	Deaths	49	31	34	

Source: MOH

## **CHAPTER 3. BUDGET ALLOCATION, RELEASE, AND SPENDING**

1. *This chapter presents the findings of the public expenditure tracking in the health sector that was undertaken using FY05 financial data.* The endeavor covered all major resource flows to the health facility including the GRZ budget, basket funds, vertical project funds, and internally generated funds. The analysis focused on amounts allocated, predictability of releases, differences in allocation and released or received amounts, and uses of received resources. The study proceeded optimistically at the central and facility levels, but it soon became obvious an information "black box" exists around the District Health Management Team (DHMT), which is the weak link in the fiscal information chain. Thus, while it is easy to track resources from MOH to districts, and finally how the resources are used in health facilities, what happens to these resources while they are received and allocated by the DHMT to the different health centers and district hospitals is quite opaque, and the "information fog" is hard to clear up because of lack of information, lack of standardized terminology, and related issues.

2. *This chapter is organized as follows.* Section A describes the flow of funds in the health sector and the resource envelop for FY05 and FY06. Section B discusses the GRZ budget process and allocation principles. Section C analyzes MOH allocations vs. actual releases by various types of expenditure items. Section D focuses on the role of district health management boards (DHBs) and DHMTs that are mandated to allocate the district grants (non-wage/non-drug resources) to lower-level facilities under them, i.e., health centers and district hospitals. Section E focuses on donors' vertical funds that reach the facilities. Section F focuses on the facilities' own internally generated funds. Section G builds a comprehensive picture of resource availability at the level of typical health facilities (RHC, UHC, and hospital).

### **A. FUNDS FLOW AND RESOURCE ENVELOP**

3. *The flow of funds in Zambia's health sector is a complicated and fragmented system, where salaries, drugs, and other recurrent expenditures are disbursed separately by different agencies.*

- MOFNP provides salaries directly to the Provincial Health Offices, which then remit these to their health centers, first-level district hospitals, and second- and third-level hospitals.
- MOFNP provides the budget for other recurrent expenditures directly to MOH. Cooperating partners (as donors are called in Zambia) also provide the budget for other recurrent expenditures through their basket funds to MOH. These basket

funds are allocated in tandem with GRZ funds, and are managed and monitored closely within the MOH framework.

- For drugs, MOH allocates specific funding for the Medical Stores Ltd. (MSL), the parastatal in charge of drug procurement and distribution. MSL distributes drugs to DHMTs largely through a supply-driven ("drug-kit" system), and to second- and third-level hospitals through a combination of "drug-kit" and demand-driven requisition system.
- MOH then provides running costs (using GRZ and basket funds) to DHMTs and second- and third-level hospitals.
- The DHMTs, in turn, provide running costs and drugs (which they obtain from MSL) to the health centers and district hospitals under them.

4. *Additional resources come from the following:*

- Separate projects implemented by MOH, and following GRZ procurement and fiduciary systems or donor-determined systems. If implemented using GRZ systems, these flows follow the usual channels as described above.
- Vertical projects implemented by donors or their financing agents or contractors which, for the most part, lie outside the MOH procurement and fiduciary systems, but which may be implemented by MOH facilities. For the most part, these provide in-kind support, but as will be shown in the survey, they are increasingly providing cash support directly to facilities in ways that are still not well-understood or documented.
- The internally-generated funds (IGFs) of health facilities, including user fee revenues, training revenues, community donations, revenues from income-generating projects, and the like. These are not well understood or documented, but they are quite significant, as will be shown in the survey results.

5. *The resource envelop in Zambia's health sector was about ZK899.8 billion for FY05 and about ZK1,080.8 billion for FY06.* The details are shown in Table 5. Note that these amounts only include monies where the GRZ/MOH is the financing agent; it excludes vertical projects. It also excludes IGFs, although formally, the MOH health facility is the financing agent for them.

6. *The FY05 and FY06 resource envelops show the following patterns<sup>2</sup>:* (a) There has been an 11 percent increase in flexible health funding from ZK612 billion in FY05 to ZK681 billion in FY06. (b) The gainers in FY06 were MOH nonwage expenditures (up by 31 percent), 3rd level and 2nd level hospitals (up 8 percent for wage component and 55-59 percent for nonwage component), and grants and other payments (up by 41 percent). (c) The losers were expenditures on district nonwage expenditures (down by 13 percent) and district drug expenditures (down by 34 percent). Indeed, drug allocations

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<sup>2</sup> This section draws on the analysis done by Yates (2006).

declined all levels of care, but particularly in districts. (d) Changes by types of inputs shows a massive increase in capital expenditures (39 percent), a modest increase for wage and non-wage expenditures (8 and 9 percent respectively), and a 15 percent decline in drug expenditures.

Table 5. Health Sector Resource Envelop (ZK Billion), FY05 and FY06

Headings	GRZ + Basket Funds				Subtotal GRZ+ Basket	Donor Projects	Total
	Wage	Non- wage	Drugs	Capital			
FY05 (US\$ 1 = ZK 4,500)							
MOH HQ	4.4	51.6	29.7	0.1	85.8	288.1	373.9
3rd-level hospitals	57.5	13.2	4.2	-	74.9	-	74.9
2nd-level hospitals	41.2	13.5	4.2	-	58.9	-	58.9
Districts	164.4	142.7	12.7	24.1	343.9	--	343.9
Training institutions	3.8	15.8	-	2.0	21.6	-	21.6
Grants & other payments	-	26.6	-	-	26.6	-	26.6
Total	271.3	263.4	50.8	26.2	611.7	288.1	899.8
FY06 (US\$ 1 = ZK 3,500)							
MOH HQ	4.8	67.4	29.1	0.3	101.6	399.8	501.4
3rd-level hospitals	62.2	20.4	2.8	17.5	102.9	-	102.9
2nd-level hospitals	44.7	21.5	2.8	-	69.0	-	69.0
Districts	178.1	123.8	8.4	36.9	347.2	-	347.2
Training institutions	4.1	16.0	-	2.8	22.9	-	22.9
Grants & other payments	-	37.4	-	-	37.4	-	37.4
Total	293.9	286.5	43.1	57.5	681.0	399.8	1,080.8

7. *The resource envelop is still less than the financing required to meet the health MDGs.* Several costing studies were recalculated in the IMF "Country Case Study Zambia" (2006) to present all projections in terms of the same baseline GDP and GDP growth used in the FNDP. The results, shown in Table 6, indicate that the annual costs of providing basic care and reaching the health MDGs is in the range of US\$30-32 per capita, or around 3 percent of GDP<sup>3</sup>. If the NAC costing on HIV/AIDS interventions are used, the figures rise to US\$37.50 per capita health expenditure, and 3.5 percent of GDP.

<sup>3</sup> The FY06 resource envelop of ZK1,080.8 billion translates to per capita health expenditures of about US\$26.85, using an exchange rate of ZK3,500 per US\$1. However, if the "pre-appreciation" 2005 exchange rate of ZK4,500 is used, this figure goes down to US\$20.90.

Recent experience shows that GRZ allocates only about 2 percent of GDP to health, and even projections in the Medium-Term Expenditure Framework do not see the per capita health expenditure and health/GDP ratios rising dramatically anytime. What these indicate are: (a) the need for closer dialogue between the MOFNP and MOH on what the former allocates to the sector and what the latter sees as the level of resources needed in the sector; and (b) the need for stronger priority setting if the ideal levels of spending and health/GDP ratios cannot be achieved.

Table 6. Range of Cost Estimates to Meet the Health MDGs in Zambia

Basis	Total Cost 2005-2015 in US\$ Million	Average annual Cost in US\$ Million	Per Capita Annual Cost in US\$	% of GDP (FDNP Projections)
CBOH (2004)+ Kombe & Smith (2003) costing	4,444.9	404.0	31.1	2.9
Mphuka (2005) costing	4,403.6	400.3	30.8	2.9
CBOH (2004)+ NAC (2006) costing	5,369.1	488.0	37.5	3.5
FNDP Core Costs	4,578.8	416.2	32.0	3.0

8. *Important caveats must be kept in mind in interpreting the above resource requirements.* The costing models do not take full account of the likely costs of addressing the human resource crisis, including needed actions on adding posts, filling posts, increasing wages and/or consolidating benefits, and training. Also, the costing models deal mainly with recurrent cost requirements, but as will be shown in the PET/QSDS survey, there are severe deficits in infrastructure, utilities, equipment, and systems as well.

## B. BUDGET PROCESS AND ALLOCATION FORMULA

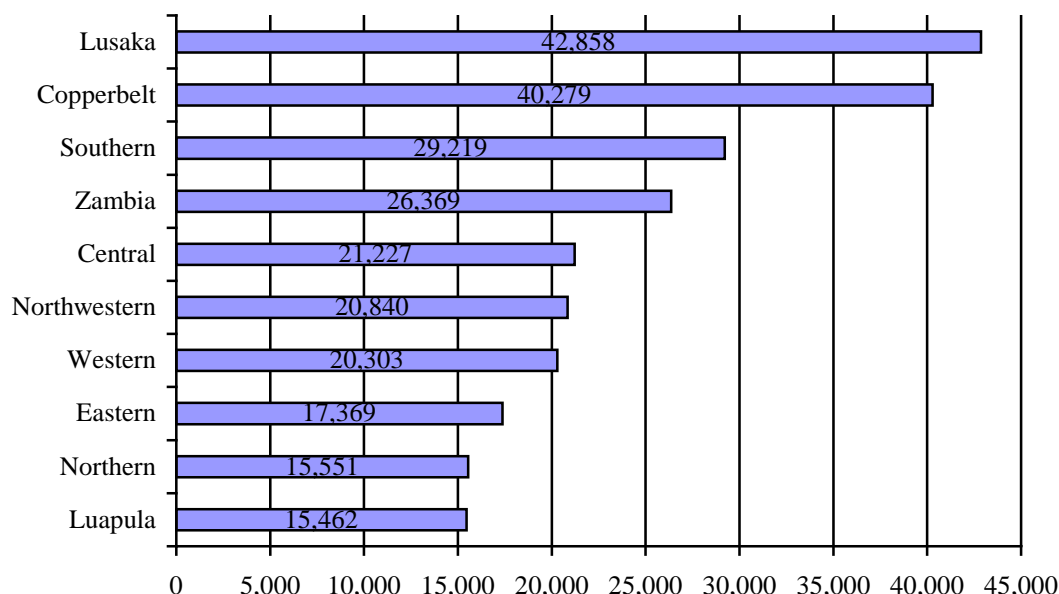
9. *The planning and budgeting process was formalized by then-CBOH in 2005, and calls for bottom-up approach in priority setting.* According to this formal process, the budget preparation and schedule within the MOH are as follows. Around July, MOFNP issues the overall budget guidelines to MOH, which then transmits them to Provincial Health Offices (PHOs) and District Health Boards (DHBs) and District Health Management Teams (DHMTs). In late July, the DHMTs schedule a briefing meeting with their respective community representatives. The communities discuss their health priorities up until early August, when they collect their proposals and present these draft requests in a meeting at their Health Centers. In early September, all the Health Center requests are aggregated and presented in a meeting with the DHMT. Feedback is obtained, and incorporated into the draft, which gets finalized by the DHMT into an action plan by early October. In late October/early November, DHMTs present their Action Plans to the DHBs. In early November, DHBs submit their Action Plans to the PHO, which reviews it and provides feedback. Any revisions are incorporated in late November. In early December, the Final Plan is submitted back to the PHO. In December, the PHO submits the Final Plan to the MOH.

10. *The budget allocation formulae for health combine equity-enhancing and status-quo-maintaining elements whose overall effects may prevent achievement of greater geographic equity.*

- Districts - DHBs/DHMTs receive a direct grant from MOH for non-wage and non-drug recurrent spending. The MOH abandoned incremental budgeting for this component of its budget in the mid-1990s when it adopted per-capita allocations to improve equity. In January 2004, further refinement was introduced in the formula by the inclusion of a material-deprivation index (Kabaso and Tembo, 2004). Thus, the formula for district grants now consist of four variables: population weighted for price of fuel (to reflect the large distances that primary health care workers need to cover), population weighted for epidemics, population weighted against population density (it is cheaper to move around in urban areas), and presence of a bank. Note that the district grant formula only affected 23 percent of the total GRZ+Basket Budget in FY05 and only 18 percent in FY06. So only a rather small percentage of the budget is subject to this equity-enhancing feature.
- 2nd and 3rd level hospitals - Allocations to this level of care continue to be based on the health facilities' number of beds, i.e., historical budgeting. If the hospitals were constructed not based on some equity considerations to start with - and some of them weren't, especially the mine hospitals which are now under MOH - then the continued use of historical budgeting ignores contemporary equity considerations. Indeed, there are quite a few instances where mine and government hospitals co-exist in the same neighborhood (e.g., Kabwe).
- There have been discussions about hospital allocation especially in light of the MOH's continuing burden of maintaining the mine hospitals, but in practice, formal criteria for 2nd and 3rd level allocations that reflect equity and efficiency aspects have not been developed. The planned introduction of a social health insurance program for civil servants should make this an urgent concern. Note also that this "status-quo-maintaining" part of the budget (wage and nonwage allocation for 2nd and 3rd level hospitals) ate up 21 percent of the GRZ+Basket Budget in FY05 and 24 percent in FY06.

11. *The persistence of historical budgeting in hospital allocation means that Zambia has not been able to reduce provincial inequities.* Figure 1 shows the per capita values of MOH releases and supplemental funding to provinces in FY05. Three provinces - Lusaka, Copperbelt, and Southern - have per capita releases twice or more than the poorest provinces of Luapula, Northern, and Eastern provinces. Indeed, Lusaka and Copperbelt provinces have almost thrice the values of Luapula and Northern provinces. Note also that the best-resourced provinces in health also happen to be the richest provinces in terms of household income, and the most urbanized, so the MOH allocation merely perpetuates and exacerbates the underlying socioeconomic inequity instead of redressing it. The three least resourced provinces have a combined 2005 population of 3.9 million, representing 35 percent of Zambians.

Figure 1. Per Capita MOH Released + Supplementary Funding, by Province (ZK), FY05



12. *Resource planning is not universally undertaken by DHMTs to inform their resource requests.* While MOH has long emphasized district planning, a cursory examination of the 21 districts included in the survey showed that at least three DHMTs - Kaoma and Shangomo in Western Province and Lusaka Urban - did not undertake resource planning of the type that would inform accurate resource needs. These districts merely plugged in the same amounts for different health sub-programs into their budgets. Nor is this practice uncommon.

### C. MOH ALLOCATIONS VS. RELEASE OF RESOURCES

13. *The "cash budgeting" system in place since 1993 to control government spending and inflation has had a checkered record, but seems to have worked well in 2005, the focus year of the PET/QSDS survey.* The system was intended to keep actual spending in line with revenues, and this seemed to have worked well in the early years. However, problems occurred in the first half of 2000s as the government was prone to take on additional expenditure commitments during the year, resulting in large budget overruns and payments arrears. This macro problem manifested in line ministries such as MOH through expenditure squeezes and unpredictability of monthly cash releases, especially on non-wage and capital spending. An IMF assessment (2006) indicates that the cash budget system was in effective operation since 2005, but that adverse shocks occurred again in 2006 due, among others, to the shortfalls in kwacha-denominated donor support because of the large exchange rate appreciation (ZK4,500 to ZK3,500) and election-related spending not included in the budget, both of which adversely affected the MOH.



14. Overall, MOH budget releases were made in a predictable and timely fashion in FY05<sup>4</sup>. This is shown in Figure 2. However, there were significant differences in the pattern of releases across types of budget items (see Figures 3 to 7). Personal emoluments were released very predictably. RDCs were released quite predictably until May, and then they dramatically slackened. Releases for grants began to exceed budgeted amounts starting May, and it continued on this trajectory for the rest of the year. Budget releases for essential drugs were also relatively reliable until May, when they also slowed down. Budget releases for capital expenditures were the most erratic; these budgets were not released until well into the year. Capital budget releases picked up in May but then slackened through the rest of the year. Subsequent analysis for the early part of 2006 also showed similar trends (DfID, 2006).

Figure 2. Cumulative Budgeted Versus Released Amounts of Total MOH Budget, by Month (ZK Million), FY05

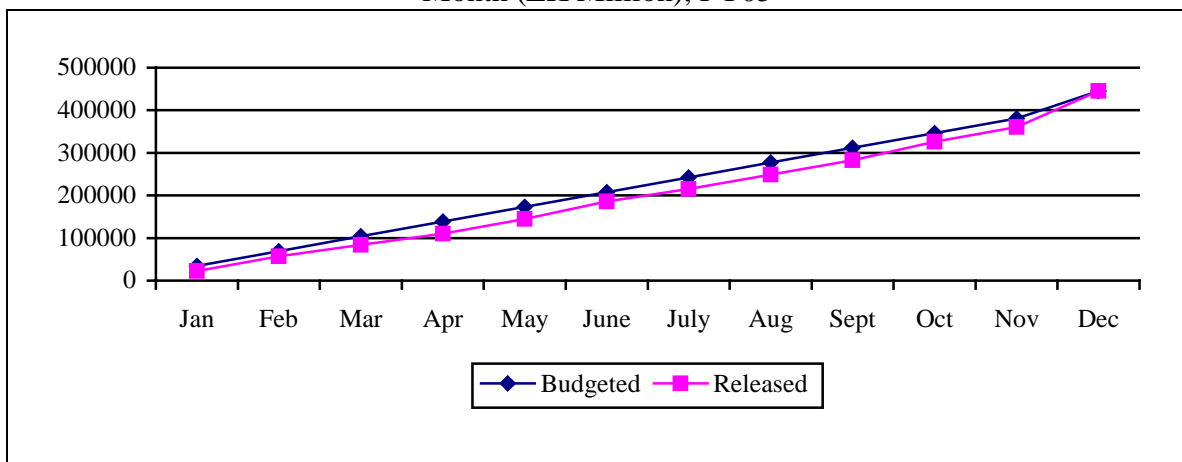
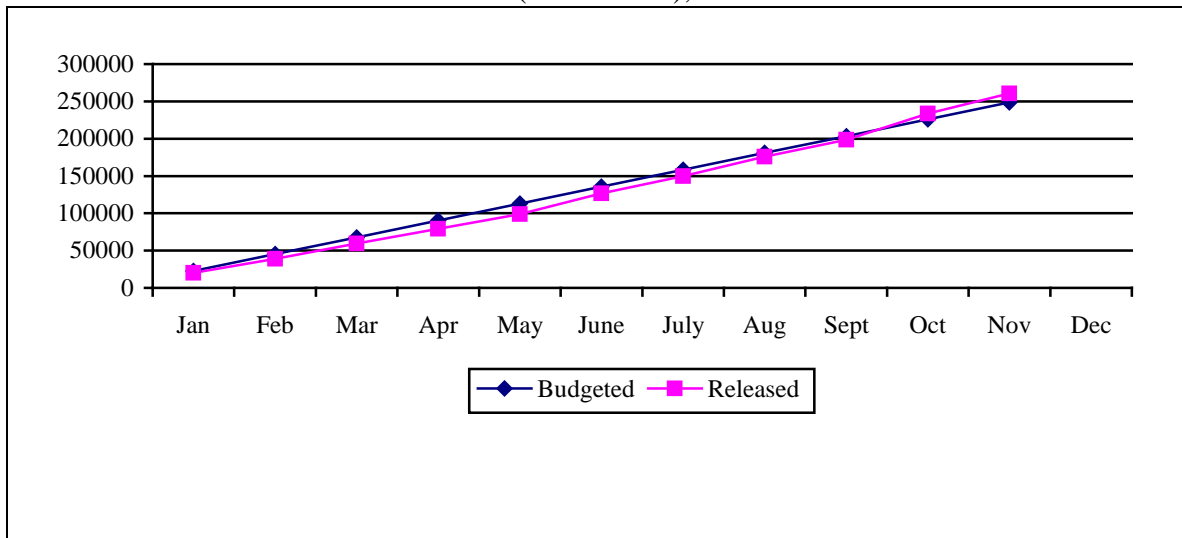


Figure 3. Cumulative Budgeted Versus Released Amounts for Personal Emoluments, by Month (ZK Million), FY05



<sup>4</sup> The budget release data for this section drew from the work of Mumbwali (2006).

Figure 4. Cumulative Budgeted Versus Released Amounts for District Grants, by Month (ZK Million), FY05

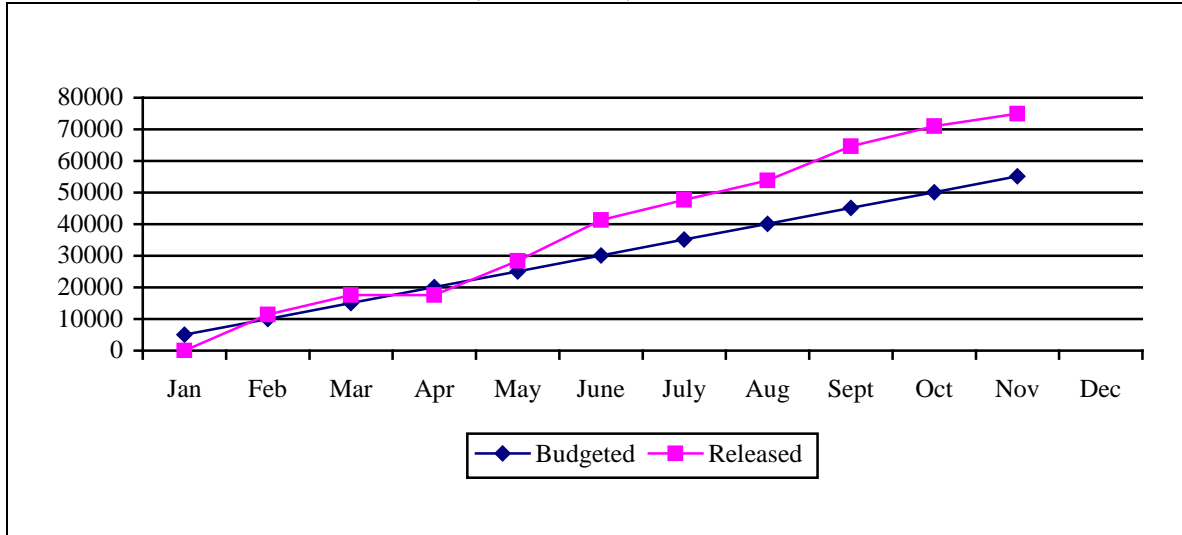


Figure 5. Cumulative Budgeted Versus Released Amounts for RDCs, by Month (ZK Million), 2005

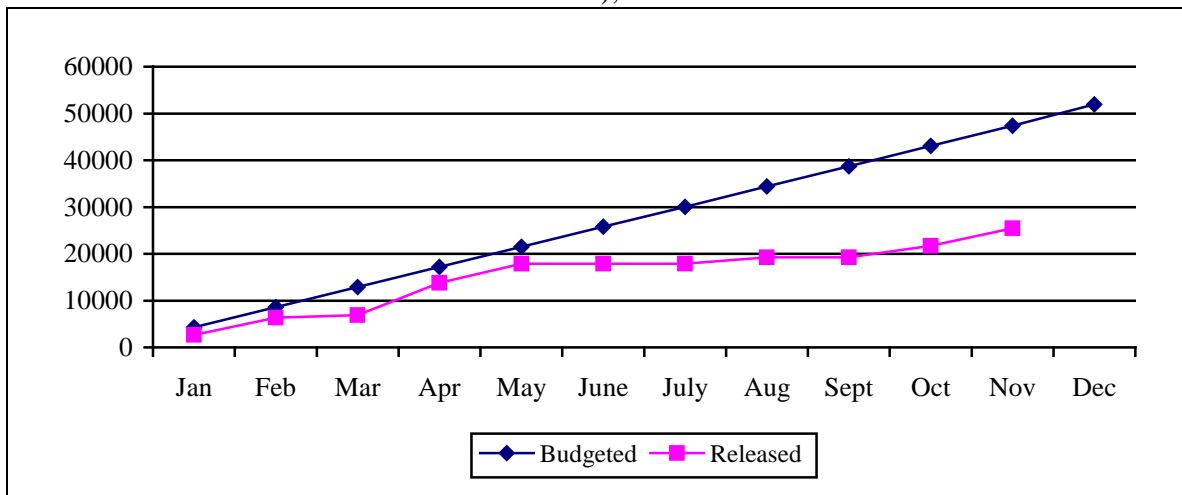


Figure 6. Cumulative Budgeted Versus Released Amounts for Essential Drugs, by Month (ZK Million), FY05

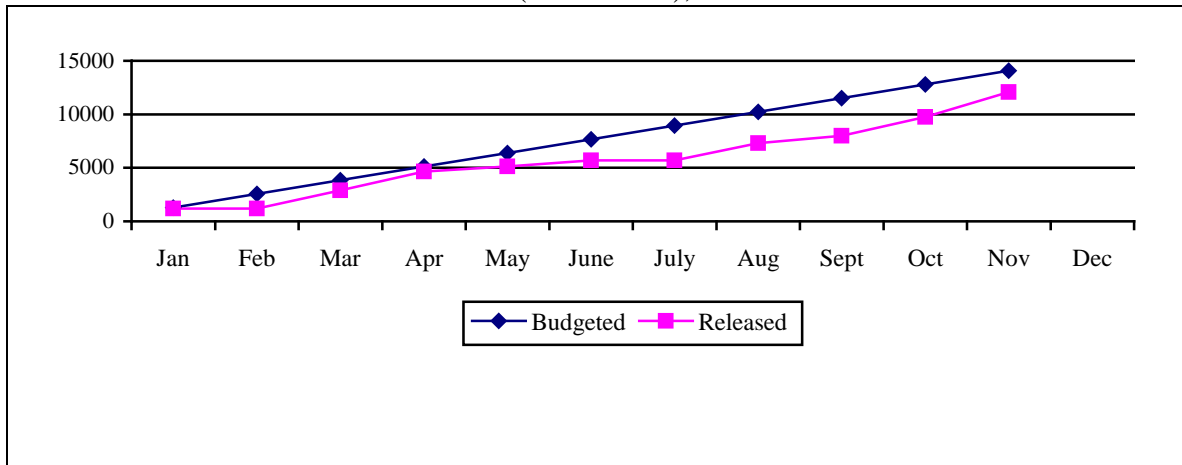
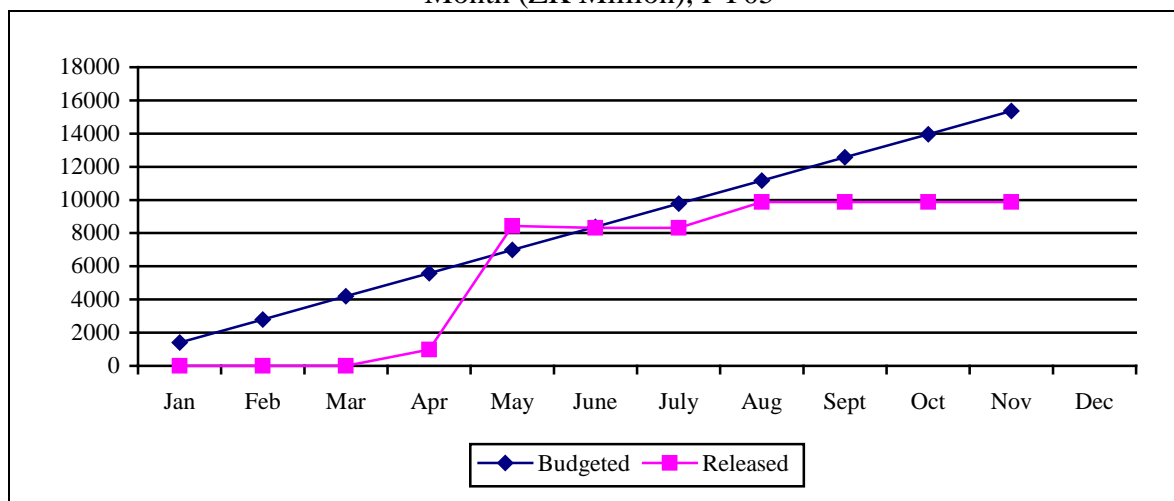


Figure 7. Cumulative Budgeted Versus Released Amounts for Capital Expenditures, by Month (ZK Million), FY05



15. *DHMTs received their allocations in full.* MOH budget releases exceeded budget allocations in FY05 for all districts and provinces included in the survey, as shown in Figure 8 and Figure 9.

#### D. ALLOCATION AND RELEASES OF DISTRICT GRANTS

16. *Among the different segments of the PET/QSDS exercise, this section provided the least reliable data.* Survey response rates were uniformly low across the different types of health facilities. Facility in-charges often did not have solid information, and many did not have a good grasp of the financial figures' orders of magnitude. Even with pretesting, it is clear that the terminologies used were interpreted variously (planned, allocated, released, etc.) Moreover, there is no clear financial reporting especially at the lower levels. When tallied, survey responses revealed wide variances. Confirming and triangulating the survey results with other existing sources of information showed major discrepancies, and in many cases, there were no corroborating data to begin with. In any case, we report what is "salvageable" with the caveat that caution must be exercised in interpreting the information.

17. *To understand district health financing, it is important to know how a typical DHMT "enterprise" looks like.* Based on the amount of actual GRZ budget releases, one can construct a profile of a typical DHMT, as shown in Table 7.

18. *Not all DHMTs in the survey provide the full complement of necessary public health services.* Those with "missing" health services (i.e., no budget was allocated to them, nor were there any amounts received) are as follows.

19. *The timing of MOH releases on district grants is predictable.* At least for FY05 and early FY06, district grants were provided on time. Indeed, by about the middle of the year in 2005 (May), the released amounts already exceeded the budgeted amounts, as shown in an earlier chart.

Figure 8. MOH Allocation Versus Releases to DHMTs Included in the Survey (ZK Million), FY05

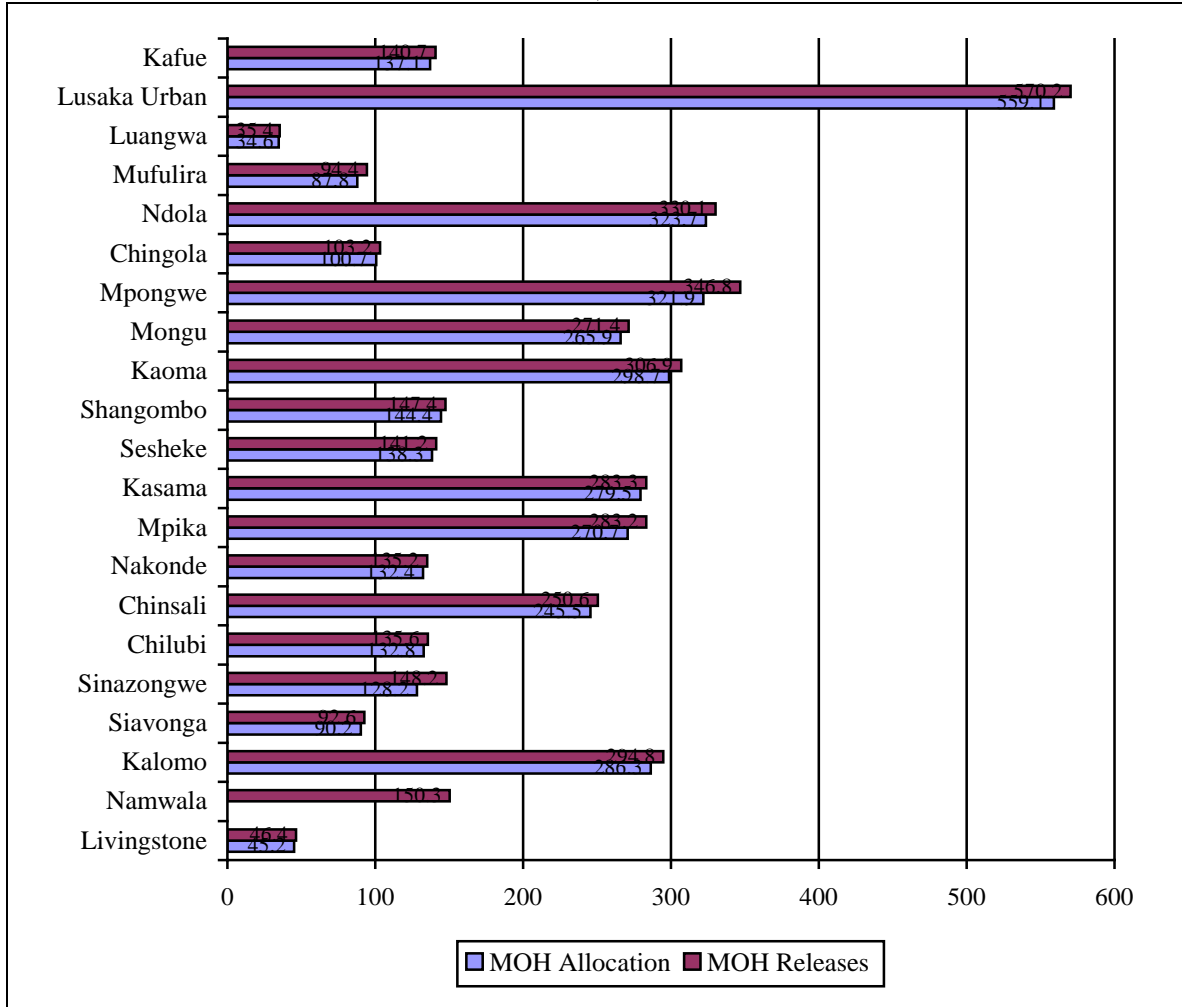
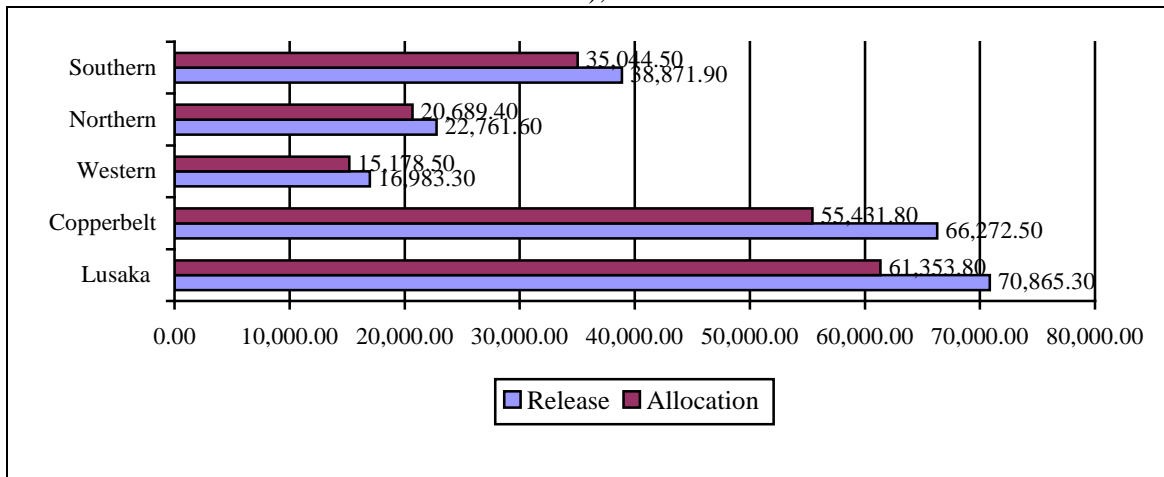


Figure 9. MOH Allocation Versus Releases to Provinces Included in the Survey, (ZK Million), FY05



- First referral services - Mufulira;
- Child health - Mufulira;
- HIV/AIDS - Lusaka Urban;
- Malaria - Mufulira;
- Maternal health - Chingola and Mufulira;
- Water and sanitation - Chingola;
- Mental health - Lusaka Urban, Chingola, Luangwa, Kasama, Chinsali, Chilubi, Mpika, Nakonde, Livingstone, Kalomo, Namwala, Siavonga, Sinazongwe, Mongu, and Sesheke; and
- Oral health - Ndola, Chingola, Mufulira, Luangwa, Chilubi, and Sesheke.

Table 7. Resources at the Disposal of a Typical DHMT, FY05

Items	ZK Million	US\$ (at 4,2000 per 1 USD)	% Share of Health Services
Personal emoluments	32,540.2	7,747,667	-
Administration	12.6	3,000	-
Health services	165.0	39,285	100.0
▪ First referral	41.6	9,904	25.2
▪ Child health	22.9	5,452	13.9
▪ HIV/AIDS	17.6	4,190	10.7
▪ Malaria	18.7	4,452	11.3
▪ Maternal health	20.7	4,929	12.5
▪ Tuberculosis	15.5	3,690	9.4
▪ Water & sanitation	17.3	4,119	10.5
▪ Mental health	4.4	1,048	2.7
▪ Oral health	6.3	1,500	3.8

20. *How much do DHMTs provide the health centers under their responsibility?*

Table 8 shows the amount of GRZ budget provided by DHMTs to their health centers, as gathered from the survey. The sizes of health centers, as inferred from the resources they provided, vary greatly. Leaving out the clear outlier districts, a typical health center would receive about ZK35 million to ZK90 million (about US\$ 8,000 - 20,000).

21. *Four out of five health centers receive the planned amount of resources that were allocated to them by their respective DHMTs.* This issue was explored using two questions, the first requiring a simple yes/no answer from the in-charge, and the second asking specific financial figures. Recall that in general, 2005 was a year when the health sector and most of the health programs and facilities received releases more than their original budgetary allocations, as discussed earlier. This is borne out in this survey (Table 9), where 56 percent of health centers received equal to, and another 22 percent received more than, their annual budget allocation (a total of 78 percent for both categories). Thus, only 22 percent of health centers received amounts less than their allocations.

Table 8. Amount of GRZ Budget Provided by DHMTs to Their Health Facilities (ZK Million), FY05

Province	DHMT	No. of Health Centers under DHMT	Total Amount of GRZ Budget Provided to Health Centers (ZK Million)	Average Amount per Health Center (ZK Million)
Lusaka	Kafue	6	211.9	35.3
	Luangwa	4	37.6	9.4
Copperbelt	Ndola	10	1,016.1	101.6
	Chingola	6	463.3	77.2
Southern	Livingstone	4	665.5	166.4
	Namwala	4	392.9	98.2
	Siavonga	5	31.9	6.4
	Sinazongwe	4	8.8	2.2
Northern	Kasama	7	211.6	30.2
	Chinsali	6	430.4	71.7
	Nakonde	4	857.2	214.3
	Chilubi	4	366.2	91.6
	Mpika	3	217.6	72.5
Western	Sesheke	6	277.7	46.3
	Shangombo	5	446.9	89.4
	Mongu	11	510.8	46.4
	Kaoma	5	210.4	42.1
Total		94	6,356.8	1,201.2
Average		6/district	373.9/district	70.7/HC

Table 9. Health Centers' Responses on Whether They Received an Amount More Than, Equal to, or Less Than Their Annual Allocations, 2006

Allocated vs. Received Amount	RHCs (n=76)	UHCs (n=43)	All HCs (n=119)
Allocated > Received	22%	21%	22%
Allocated = Received	57%	56%	56%
Allocated < Received	21%	23%	22%

22. *The survey responses on the specific figures for allocations and receipts of health centers were less confident.* About 84 percent of health centers reported receiving amounts of releases that were less than a quarter of what their respective DHMTs having paid them. Only 9 percent of the health centers reported having received amounts of releases within 5 percentage points (+ or -) of what their respective DHMTs indicated as having released to them. Finally, about 7 percent of health centers reported receiving amounts more than what the DHMTs indicated releasing, but these may be outliers (caused by data reporting or entry errors) since the observed variations are too large (greater than 200 percent). Figure 10 recovers data that are "cleaner" than most for health centers, while Figure 11 does the same for district hospitals. It would seem from this

small sample that indeed, health facilities received amounts more than their allocated budgets.

Figure 10. Allocated Versus Received Budgets of Selected Health Centers (ZK Million), FY05

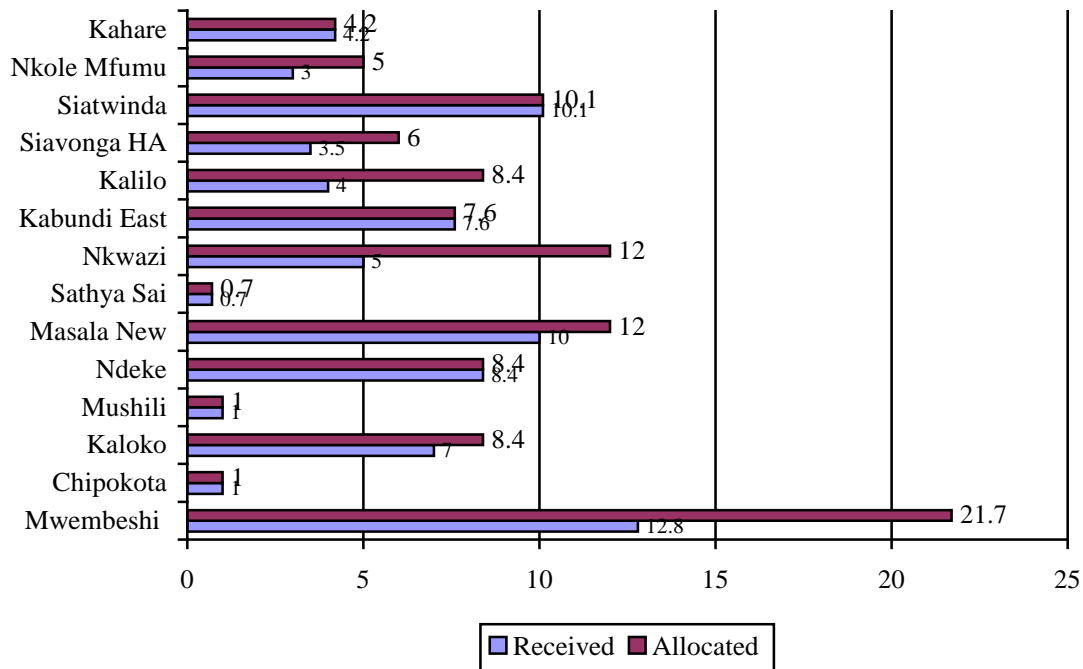
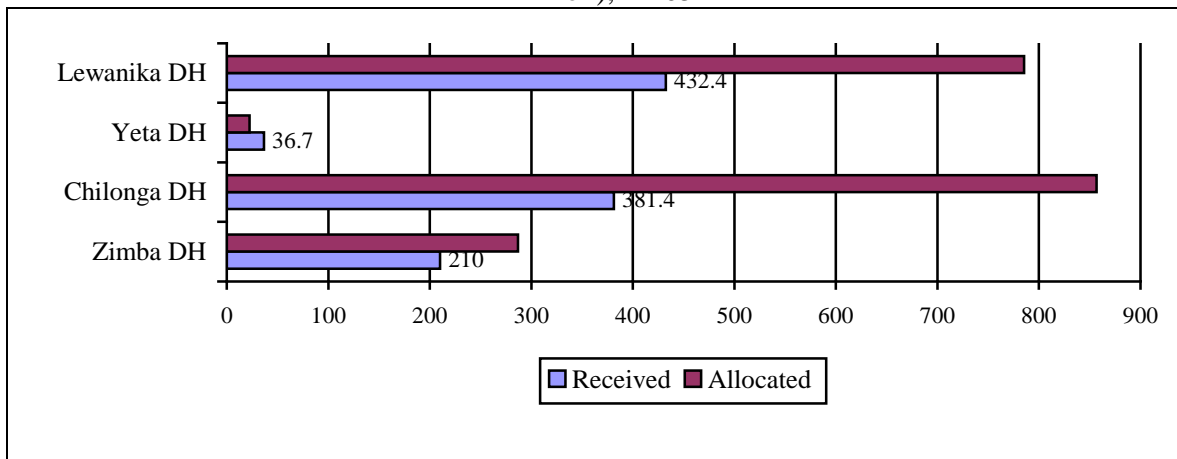


Figure 11. Allocated Versus Received Budgets of Selected District Hospitals (ZK Million), FY05



23. *More than a third of DHMTs reported delays in the release of district grants to health facilities.* Funds are released on a monthly basis from DHMTs to the health facilities. However, sometimes delays occur. Out of the 20 DHMTs queried, seven (or 35 percent) reported delays in releasing funds to the health centers and district hospitals under them, 50 percent did not, and 15 percent provided no categorical answer. However, if the monthly receipts of health centers were cumulated and charted as in Figure 12, the DHMT releases seemed to be predictable (assuming, of course, that health facilities got

their district grants in full, which seems to be supported by less-than-robust data). To be sure, the response rate to this question is low. Also, the "actual" figures seem suspiciously in line with the "planned" figures that it is likely the difference between planned and actual receipts were misunderstood, or that some of the enumerators simply divided the annual figures by 12, instead of obtaining the actual monthly figures from facilities. A similar exercise was performed for hospitals and shown in Figure 13, and the same pattern was obtained.

Figure 12. Cumulative Planned Versus Actual Facility Grants by DHMTs to RHCs, by Month (ZK Million), FY05

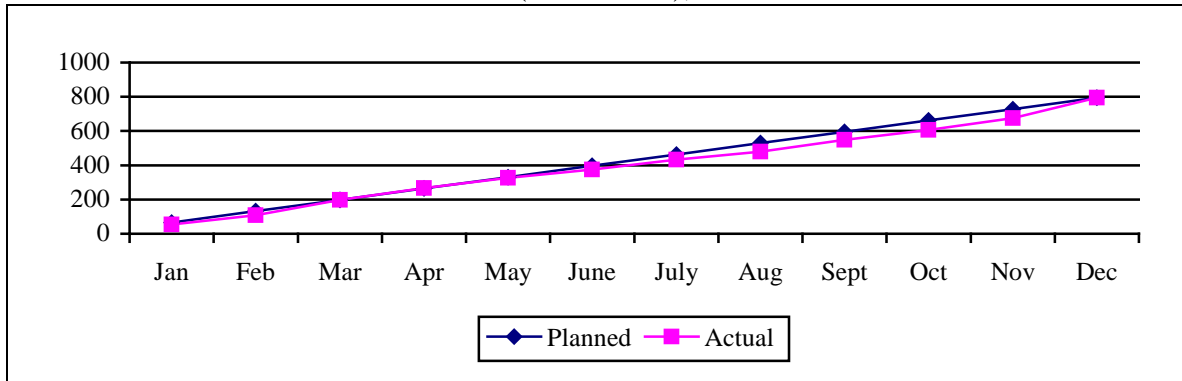
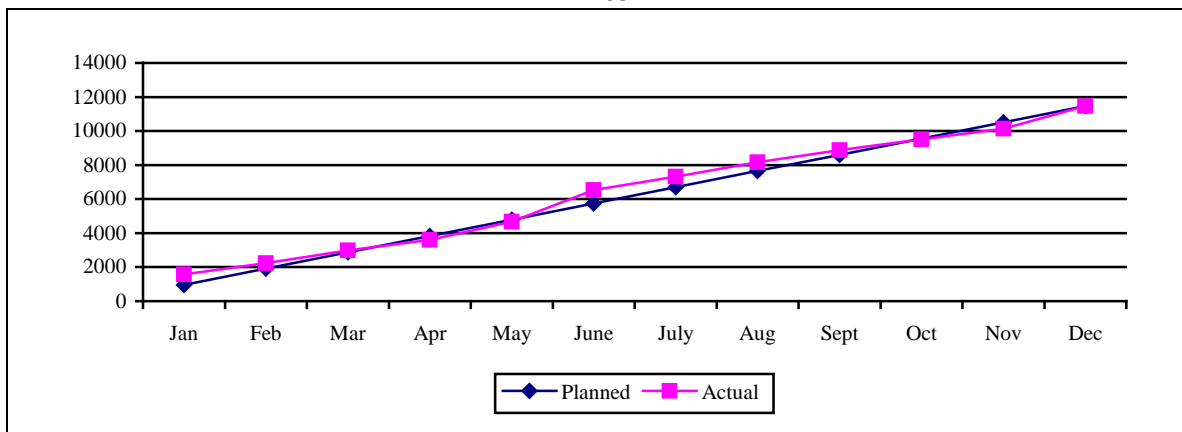


Figure 13. Cumulative Planned Versus Actual Hospital Grants, by Month (ZK Million), FY05



24. *How did health facilities actually spend the GRZ resources and basket funds they received?* Table 10 shows the expenditure patterns of surveyed health facilities, by type of expenditures.

25. *A quarter of the health facilities are indebted.* Thirty-two health facilities (or 25 percent of those surveyed) reported having debts of various kinds in FY05 (Table 11). Most of the debts are for transport fuel and electricity and other utilities. More than half of the hospitals and more than a third of the UHCs had debts. Many of these health facilities, including 10 percent of district hospitals and 3-4 percent of health centers borrow from the DHMT to pay off part or the full amount of their debts.



Table 10. Uses of GRZ Budget and Basket Funds by Health Facilities (%), FY05

Expenditures	RHC	UHC	Hospital	All
Personal emoluments	28.4	-	38.0	29.7
Drugs & medical supplies	7.3	10.3	8.4	8.8
Non-medical supplies	4.1	-	5.7	4.4
Workshops, conferences, etc.	7.5	24.1	16.0	17.2
Repairs & maintenance	8.8	21.7	0.3	5.1
Food & catering	6.6	18.0	2.3	5.7
Utilities	2.7	-	4.1	3.2
Fuel & transport	11.6	-	7.6	6.2
Payments for TA, consultancies	1.8	-	-	0.1
General charges	2.7	16.7	8.9	10.1
Payments of debt	-	-	-	-
Capital purchases	0.6	7.1	2.5	3.3
Total	100.0	100.0	100.2	100.0

Table 11. Composition of Debts of Health Facilities (ZK Thousands), FY05

Items	RHC	UHC	Hospital	All
<i>Composition of debts</i>				
Electricity	52.2	2,205.1	11,813.1	4,301.8
Other utilities	-	14.3	2,264.7	643.2
Transport fuel	440.7	22,535.9	10,033.1	12,805.2
Drugs & medical supplies	-	1,799.4	1,924.8	1,313.4
Food supplies	287.2	26.8	4,202.1	1,274.4
Staff-related debts	55.6	3,767.5	143,597.6	42,050.7
Others	281.1	6,481.8	80,450.4	25,541.5
Total	1,116.8	36,830.7	254,285.8	87,930.3
<i>Health facility borrowings from DHMT to pay off debts</i>				
Median amount	281.1	2,205.1	10,033.1	4,301.8
Maximum amount	440.7	22,535.9	143,597.6	42,050.7

26. *The absence of banks in many districts necessitates an imprest system where delays sometimes occur.* Only 16.2 of the health facilities surveyed had bank accounts: 11.4 percent among RHCs, 8.3 percent among UHCs, and 47.6 percent among hospitals. These low rates of bank-account ownership, even among hospitals almost all of which are located in urban areas, explains the need for an imprest system. Some 86 percent of RHCs, 89 percent of UHCs, and 88 percent of hospitals operate such a system (or 87 percent of all surveyed facilities). Of these facilities having an imprest, only 32 percent of RHCs, 30 percent of UHCs, and 40 percent of hospitals said they received their monthly imprest in a timely manner. This means that about two-thirds of health facilities operating on an imprest face delays in financing their operations.

#### E. HEALTH FACILITIES' MANAGEMENT OF VERTICAL FUNDS

27. *Despite the high visibility of vertical disease funding in the global and national scenes, their presence is not felt strongly by many peripheral GRZ health facilities.* Only

a tiny minority of health centers reported having received cash or in-kind receipts from these donors/projects. Only 4 percent of health centers have received resources from the Global Fund, and only 1 percent have received support from GAVI, UNICEF, WHO, DANIDA, and AfDB. Strangely, although many of these projects have a public-health orientation, they are far more palpable in hospitals. For instance, 20 percent of hospitals report having obtained support from the Global Fund; 10 percent, from the World Bank; and 5 percent, from the UNICEF. Collectively, only 35 health facilities in the survey - 19 RHCs, 11 UHCs, and 5 hospitals - have actually received support from these vertical projects; 110 health facilities have not.

28. *Vertical resources as a proportion of overall resources of the few health facilities that do receive them is significant.* For the very few health facilities (i.e., 35 in the survey) that do receive support from vertical funding, the proportion of such support to total resources available for the health facility is about 15 percent, a not insignificant share. As Table 12 shows, of the 19 RHCs that received vertical support, each received an average of ZK5.8 million. The average amount received per facility rises to ZK50.5 for UHCs, and to a whopping ZK266.2 million for hospitals.

Table 12. Donors' Vertical Funds Received by Health Facilities (ZK Million), FY05

Items	RHC	UHC	Hospital	All
Total amount of vertical financing received	110.215	555.425	1,330.863	1,996.503
No. of facilities that received	19	11	5	35
Average amount for each recipient facility	5.800	50.493	266.173	57.042
All health facilities in the survey sample	90	40	18	171
Average amount if total vertical financing was spread to all facilities in each category of sample	1.225	13.885	73.937	11.675

29. *Vertical resources as a proportion of total health facilities' resources are modest.* If the same amount of available vertical financing were shared across all health facilities, the average amount going to each type of health facility would be quite low, as shown in the above table. Thus, the dilemma of vertical funding is that by its nature, it needs to focus on a few favored health facilities. This limitation is dictated by two factors: the lumpiness of health investments requires focusing on a few sites, rather than such investments being dissipated in many sites; and the need to show impact requires restricting the interventions and the population coverage. But in the process of this focusing, vertical funding leaves a trail of system-wide inequity, with many health facilities being unable to benefit from the large funding. In this study, as much as 80 percent of health facilities (136 out of 171) did not benefit from any vertical support. In this light, basket funding and budget support programs have potentially far more equitable impact.

30. *Surprisingly, health facilities have used vertical resources in a broad variety of expenditure categories, although much is still hidden under "general charges".* The results shown in Table 13 somehow casts doubt on the conventional wisdom that vertical resources are inflexible and could only be used for specific and narrow line items. To be sure, each donor imposes its own specific rules on the use of project funds, but it is clear that health facilities have used these resources in more creative ways than originally thought, even for the payment of debts, for instance.

Table 13. Uses of Vertical Funds by Health Facilities (%), FY05

Expenditures	RHC	UHC	Hospital	All
Personal emoluments	0.6	7.3	2.4	3.1
Drugs & medical supplies	6.4	10.2	8.3	8.5
Non-medical supplies	5.8	18.7	2.2	4.7
Workshops, conferences, etc.	10.2	Negl.	7.4	6.4
Repairs & maintenance	2.3	16.4	8.7	9.7
Food & catering	3.5	Negl.	5.5	4.7
Utilities	28.4	2.5	8.4	7.9
Fuel & transport	1.6	Negl.	Negl.	Negl.
Payments for TA, consultancies	Negl.	Negl.	Negl.	Negl.
General charges	24.5	Negl.	37.2	31.6
Payments of debt	7.6	21.3	0.3	3.5
Capital purchases	2.4	Negl.	4.0	3.3
Others	6.6	23.6	15.6	16.6
Total	100.0	100.0	100.0	100.0

31. *The above discussions dealt only with cash support provided by vertical projects.* It did not include in-kind support (drugs, commodities, technical assistance, training, information and management systems, research, monitoring and evaluation, etc.) that donors support under their vertical projects. It is well-recognized, though not quantified, that these in-kind assistance far outweigh the financial support provided by vertical projects. In this survey, only 9 facilities reported having received in-kind support from donors, mostly in the form of medical and non-medical supplies and workshops.

## F. HEALTH FACILITIES' MANAGEMENT OF INTERNALLY GENERATED FUNDS

32. *Internally-generated funds (IGFs) are often ignored in public expenditure reviews, but they are an important source of revenue for the health facilities.* IGFs include revenues from user fees, prepayment schemes and health insurance (HI) reimbursements, referral and medical fees, revenues from hospital-affiliated training institutions, income-generating projects (IGPs) of health facilities, and various forms of community donations, including those coming from churches, mosques, and other faith-based organizations, businesses, community-based organizations, and philanthropies. Table 14 shows different types of IGFs generated by each type of health facility.

Table 14. Internally Generated Funds of Health Facilities (ZK Million), 2005

IGFs	RHC		UHC		Hospital		All	
	Total	Ave.	Total	Ave.	Total	Ave.	Total	Ave.
User fees (low-cost & high-cost)	239.7	4.4	1,574.1	47.9	2,676.6	104.1	4,490.5	51.9
Prepayments and health insurance	2.0	Negl.	144.5	4.7	153.9	5.2	300.4	0.5
Referral & medical fees	Negl.	Negl.	341.2	11.0	459.6	18.4	800.8	7.4
Rev. from hospital- affiliated training inst.	Negl.	Negl.	3.4	0.1	3.4	0.1	6.8	Negl.
Income generating projects	19.6	0.4	Negl.	Negl.	37.3	1.5	56.8	1.1
Community donations	Negl.	Negl.	27.4	0.9	579.0	35.3	606.4	Negl.
Others	1.0	Negl.	3.0	0.1	287.2	20.4	291.2	20.2
Total	262.3	4.8	2,093.7	64.6	4,197.0	185.0	6,553.0	81.1

33. *User fee revenues are the largest source of IGFs of health facilities.* User fees account for 91 percent of RHC, 75 percent of UHC, and 64 percent of hospital IGFs. The declining importance of fees in hospitals has to do with their broader base of other IGFs. Thus, prepayments and health insurance, and referral and medical fees, become more significant as one goes up the level of care. Moreover, community donations and a broad category of "others" rise dramatically in hospitals. Aside from fee-based revenues which are governed by official policy, it is unclear how these other significant amounts of IGFs are managed at the facility level, given that these hospitals do not have autonomy.

34. *Zambia abandoned user fees for lower-level facilities (health centers) and for services deemed of a public health nature in 2006.* Even before fees were abolished for health centers and for public health services in hospitals, the fee program was already stumbling along. As the survey showed, only 4 percent of RHCs and barely a fourth of the hospitals charged fees. Fee programs were strongest in UHCs where 58 percent of them had formal fee programs generating considerable revenues. In most cases (60-80 percent), fees were set by the district health boards or DHMTs, with informal approval of neighborhood health committees where they exist. Only a fifth of the facilities admitted that "fee rates have always been like this". Most facilities have copies of the official fee guidelines, although this is not universal. Most facilities also display the applicable fee schedules. However, only very few health facility staff explained to the patients what the fees were for.

35. *Before fees were abolished, a small proportion of rural patients and a large proportion of urban patients paid fees.* Table 15 summarizes several features of the fee

program in health. Fees for outpatient department (OPD) services is about ZK2,500 for RHCs, ZK3,500 for UHCs, and about ZK4,000 to 4,500 for hospitals. There is a very close correspondence between what the patients and the health facilities reported on the fees charged. Even before it was abolished, only a small proportion of patients (less than 10 percent) paid OPD fees in RHCs; this proportion shoots up in UHCs where as much as 40-50 percent of the patients pay. Strangely, the proportion of paying patients drops in hospitals, where only about 8-25 percent of patients pay, depending on whether the information is obtained from the patients themselves or the hospital. In addition to the fees themselves, some patients are asked to pay the registration card (presumably for first-time patients). In even rarer cases (1-3 percent), patients pay separately for supplies not available in the health facility. Drugs and other supplies are in shortage in many health facilities, and patients often buy these outside the clinics. The low percentage of this phenomenon in the survey can only be explained by the fact that the patients are still in the health facility when they were interviewed, and have not actually bought the missing drugs and supplies, if ever.

Table 15. User Fee Practices, 2005

Items	RHC	UHC	Hospital	All
% of facilities where copy of official fee guidelines exist	71	73	65	71
% of facilities that displayed applicable user fees	69	71	90	72
% of facilities that charge fees to some categories of patients	4	58	25	23
% of patients who reported staff explained what fees are for	2	12	8	7
% of OPD patients who paid (per Facility Questionnaire)	16	49	8	-
% of OPD patients who paid (per Patient Questionnaire)	6	40	25	-
Ave. amount of OPD fees paid (per Facility Questionnaire)	ZK2,718	ZK3,675	ZK7,886	ZK3,960
Ave. amount of OPD fees paid (per Patient Questionnaire)	ZK2,484	ZK3,791	ZK8,041	ZK4,607
% of patients who paid registration card	8	27	9	15
Ave. amount paid for registration card	ZK403	ZK2,084	ZK2,863	ZK1,807
% of patients who paid separately for supplies not available in facility	1	3	1	2
Ave. amount paid for unavailable supplies	ZK3,346	ZK3,420	ZK3,125	ZK3,328

36. *Revenue retention was not universal.* Full fee retention at the point of service and collection is still not universal in Zambia, even in hospitals. Only 39 percent of facilities surveyed retained 100 percent of their fee revenues (Table 16).

Table 16. Percent of Health Facilities' Rate of Retained Fee Revenues (%), FY05

Rate of Fee Retention	RHC	UHC	Hospital	All
100 percent	41	29	50	39
75 percent	6	13	-	8
50 percent	1	9	5	4
25 percent	4	13	-	6
0 percent	29	20	5	23
No response or D.K.	19	16	40	20

37. *Fee revenues are mostly used for staff enhancements.* As Table 17 shows, (a) Almost 47 percent of user fees and other internally generated funds were spent on personal emoluments and capacity-building activities (workshops, etc.) that have a "salary-augmenting" effect on health workers. RHCs are less prone to resort to these two activities (36 percent), compared to hospitals, which use up more than half (54 percent) of their revenues on "salary-augmenting" items. UHCs do not directly use their fees for PE, but still use up nearly a quarter of these revenues on workshops, etc. (b) None of the fee revenues was ever spent on the payment of facility debts, although a modest portion was used for utilities (3 percent) and fuel and transport (6 percent). (c) About a tenth of these revenues were used to purchase drugs and medical supplies, and another 4 percent for non-medical supplies.

Table 17. Uses of User Fee Revenues by Health Facilities (%), FY05

Expenditures	RHC	UHC	Hospital	All
Personal emoluments	28	-	38	30
Drugs & medical supplies	7	10	8	9
Non-medical supplies	4	-	6	4
Workshops, conferences, etc.	8	24	16	17
Repairs & maintenance	9	22	0	5
Food & catering	7	18	2	6
Utilities	3	-	4	3
Fuel & transport	12	-	8	6
Payments for TA, consultancies	2	-	-	Negl.
General charges	3	17	9	10
Payments of debt	-	-	-	-
Capital purchases	1	7	3	3
Total share	100	100	100	100

38. *The measurement of leakage in user fee program is highly reliant on "self-reported" assumptions that are tenuous and prone to variability.* Table 18 puts together various assumptions derived from the survey in order to compare actual versus expected fee revenues. One presumes that if actual revenues are less than expected revenues, then there must be leakage. In this case, however, expected revenues are well within the actual revenues reported by health facilities, by a significant factor. It is clear that this arithmetic method, though useful, is not strongly reliable. A careful study and audit would be necessary to conclude whether or not the fee program leaks resources.

Table 18. Expected Versus Actual User Fee Revenues for OPD (ZK Million), FY05

Items	RHC	UHC	Hospital
Ave. no. of OPD patients per month	368	663	317
Proportion of patients paying user fees	.16	.49	.08
No. of patients paying user fees per month	59	325	25
No. of patients paying user fees per year	707	3,898	304
User fees (ZK)	2,718	3,675	7,886
Expected user fee revenues per year, ZK Million (a)	1.922	14.327	2.400
Proportion of patients paying registration card	.08	.27	.09
No. of patients paying card per month	29	179	29
No. of patients paying card per year	353	2,148	342
Registration card (ZK)	403	2,084	2,863
Expected revenues from regist. Card per year (b)	0.142	4.477	0.980
Expected total fee revenues per year, ZK Million (a+b)	2.064	18.804	3.380
Actual low-cost user fee revenues, average, FY05	4.332	29.612	76.316

### G. OVERALL RESOURCE AVAILABILITY AT THE FACILITY LEVEL

39. *Zambia's fragmented health financing system requires an effort to put together a comprehensive picture of each typical facility's sources of funds.* Table 19 summarizes the findings of the expenditure tracking in terms of the various sources of financing and how they end up at the service delivery level. Still, the table is full of caveats, including: (a) For GRZ, PE is not always included in the DHMT grant, but lies outside it for a number of facilities and districts. (b) Drugs often come in-kind as drug kits, and weren't monetized and included in the table. (c) The imprest system is the purview of the DHMT/DHO, and it is hard to track how much of the resources go specifically to the facility requesting such imprest. (d) Vertical projects often provide in-kind resources, which cannot be monetized. Thus, although the table below is comprehensive, it still not comprehensive enough.

Table 19. Level of Annual Resources at the Facility Level, by Major Sources (ZK Million), FY05

Sources	One Typical RHC		One Typical UHC		One Typical Hospital		One Typical Facility	
	Amt	%	Amt	%	Amt	%	Amt	%
GRZ allocation	27.145	72.4	19.427	19.9	575.110	52.5	113.366	44.7
Basket funds	4.358	11.6	2.625	2.7	261.189	23.8	47.464	18.7
Internally-generated funds	4.783	12.8	64.649	66.2	184.968	16.9	81.101	32.0
Vertical projects	1.224	3.3	11.000	11.3	73.937	6.8	11.675	4.6
Total	37.510	100.0	97.701	100.0	1,095.204	100.0	253.606	100.0

40. *Striking observations from the table include the following.* (a) UHCs rely heavily on internally-generated funds, specifically user fees. This may be a response to the surprisingly low financial support they obtain from GRZ and basket funds allocation. Alternatively, it could also be hypothesized that such allocations are small because of the anticipated large expected fee revenues every year. (b) Vertical projects are a minor factor in a typical RHC. These projects tend to provide greater support, in relative terms, to UHCs and hospitals, in contrast to their often-banded public-health and rural orientation.



## **CHAPTER 4. MANAGEMENT OF INFRASTRUCTURE, UTILITIES, AND EQUIPMENT**

1. *The Zambian National Health Accounts show that over the past years, MOH has devoted low level of spending to capital.* While for-profit health facilities spend as much as 5 percent of their resources on capital expenditures (capex), MOH facilities only spend 2-4 percent. Primary MOH facilities have witnessed increasing allocation to capex, where its share consistently rose from 2 percent in 1999 to 5 percent in 2004. However, for both secondary and tertiary facilities, this share has been irregular and has tended to decline, from 5 percent in the early 2000s to 1-2 percent in the mid-2000s. For FY05, the data on MOH releases show that capex was squeezed midway through the year. In contrast to these trends, MOH dramatically increased capital spending in the 2006 budget, perhaps in an effort to arrest further erosion of its capital estate. This chapter reports on the various aspects of estate management observed during the PET/QSDS, including building infrastructure and patient amenities (Section A), utilities and transport (Section B), medical equipment and instruments (Section C), and waste disposal (Section D).

### **A. BUILDING INFRASTRUCTURE AND PATIENT AMENITIES**

2. *The health facilities surveyed are in generally good physical state, although many of them are quite old.* Some 17 percent of in-charges didn't know the year of their facility's construction and 5 percent didn't know of the last year of renovation. In facilities where these were available, it is clear that the health infrastructure estate is quite old: 51 percent of RHCs, 41 percent of UHCs, and 64 percent of hospitals were more than 15 years old, although 73 percent of them were renovated in the past 5 years, and an additional 18 percent over the past 6-10 years. Despite the aging condition, only 6 percent of facilities were deemed by in-charges to be in poor state of repair; 53 percent were deemed in "average" shape while 39 percent were deemed in "good" shape. Ocular inspection of the condition of floors and walls showed that 92 percent were in "good" or "average" condition, i.e., that only 8 percent of facilities were in poor condition (Figure 14). Enumerators' observations of hygiene in the health facility show that only about 40 percent of facilities have clean floors and walls and exhibit disinfected smell (Table 20). Another 50 percent rated average on these indicators, while the rest had either dirty floors, dirty walls, or smelled unclean.

3. *Health facilities have major shortcomings in patient amenities.* The lack of a cooking area for patients and mothers' waiting area are two most common shortcomings of MOH health facilities. Only a third of health facilities have a cooking area, and only half have a mothers' waiting area (Figure 15). A private counseling area and a private examination area, while both universal or near-universal in hospitals, is less so for RHCs and UHCs.

Figure 14. Health Facilities Reporting Good or Average Condition of Floor or Wall (%), 2006

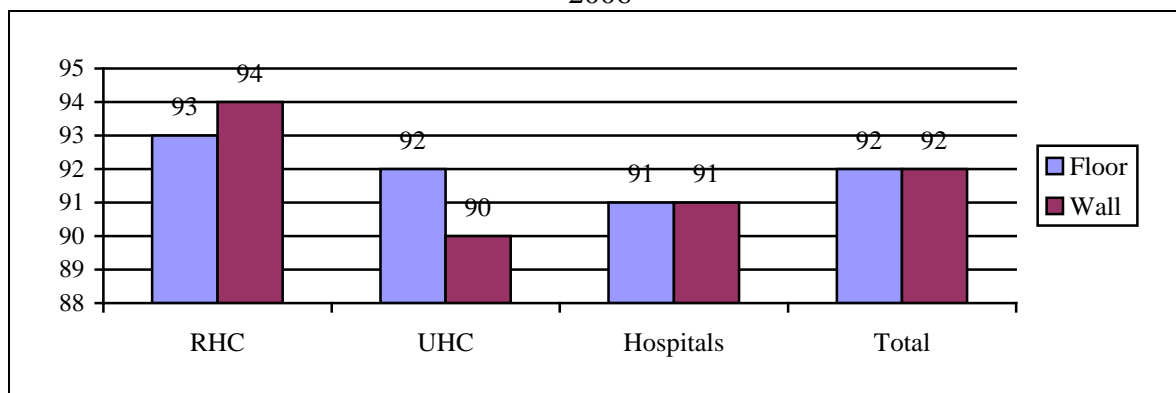
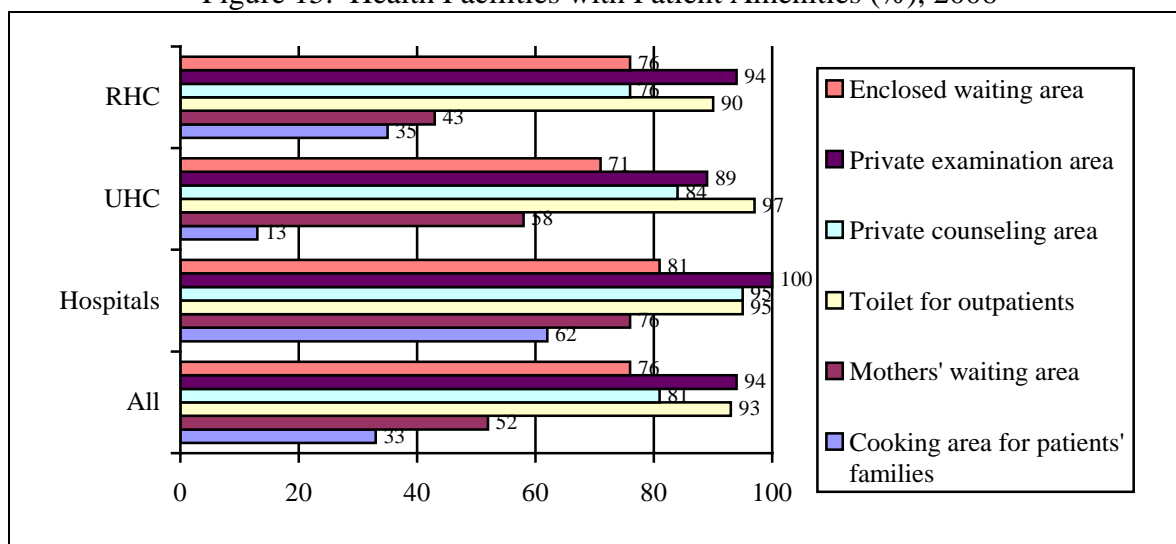


Table 20. Health Facilities with Clean, Average, or Dirty Floors or Walls (%), 2006

Hygiene Indicators	RHC	UHC	Hospital	All
Condition of Floors				
% clean floors	40	31	59	40
% average floors	48	59	27	48
% dirty floors	11	8	5	9
Condition of Walls				
% clean walls	43	38	50	43
% average walls	50	56	36	50
% dirty walls	8	3	5	6
Smell of Facility				
% clean, disinfected smell	39	46	45	42
% average smell	56	46	32	50
% unclean, musty, dirty smell	3	8	5	4

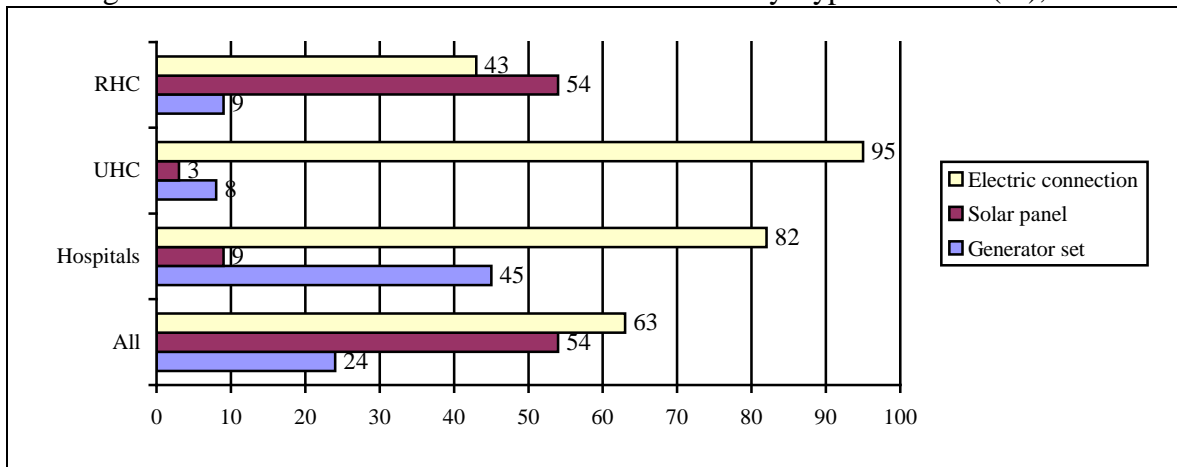
Figure 15. Health Facilities with Patient Amenities (%), 2006



## B. UTILITIES AND TRANSPORT

4. *The rate of power connection is woeful, especially among rural health facilities.* (See Figure 16). Less than half (43 percent) of RHCs have electric connection (i.e., 57 percent continue to have no connection to the grid). While 54 percent of these RHCs had solar panels, a third of them (30 percent) were not in working condition. Among hospitals, 82 percent have electric connection (i.e., 18 percent have no connection) and 45 percent have generators. Among UHCs, almost all (95 percent) have electric connection, and generators were available to 8 percent of them. While alternative sources of power were often available, high rates of non-working equipment were reported. Among RHCs, 54 percent had solar panels, but 30 percent of these were not working. The rate of nonfunctioning generators is also high: 43 percent among RHCs, 33 percent among UHCs, and 10 percent among hospitals.

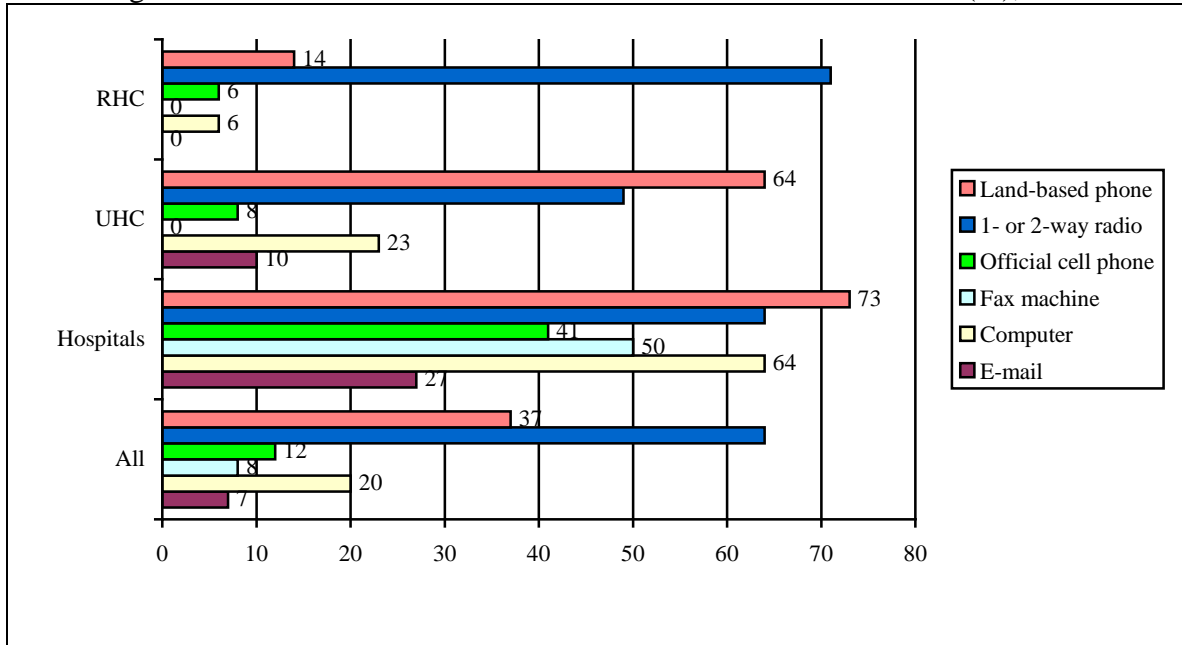
Figure 16. Health Facilities with Power Connection by Type of Power (%), 2006



5. *Hospitals and health centers have extremely poor communication facilities and electronic connectivity.* As Figure 17 shows: (a) Among RHCs, only 14 percent have land-based phone; only 6 percent have official cell phone; none has a fax machine; only 6 percent have computer; none has an e-mail. Some 71 percent have 1- or 2-way radio, but 40 percent of those who had them were in non-working condition. (b) Among UHCs, 64 percent have land-based phone but only 8 percent have official cell phones (though most of them, being in urban areas, should be within the coverage of telecommunications companies). None has a fax machine; 23 percent have office computers but only 10 percent have e-mail access. About half (51 percent) have 1- or 2-way radio, most of which were working. (c) Hospitals have better communications facilities, but significant deficits remain. About 27 percent of hospitals have no land-based phone, more than half (59 percent) have no cell phone access.

6. *Most (89 percent) health facilities rely on piped water or borehole.* However, 4 percent of RHCs continue to depend on water from river, stream, or other open source (Figure 18).

Figure 17. Health Facilities with Basic Communications Facilities (%), 2006



7. *Serious transport handicaps exist, especially in health centers.* Figure 18 shows that: (a) Only about 5 percent of health centers have a car, 4-wheel drive vehicle, ambulance, or animal-drawn vehicle. Most of them do have a motorcycle (44 percent of RHCs) or bicycle (70 percent of RHCs and 58 percent of UHCs). But a significant proportion of bicycles in RHCs are not working. (b) Roughly 30-40 percent of hospitals have a car, a truck, an ambulance, or a minibus or van, and 62 percent of them have a 4-wheel drive. However, hospitals have high rates of nonfunctional transport. For instance, 1 out of 3 ambulances, 1 out of 3 four-wheel drives, 1 out of 7 trucks, and 1 out of 5 motorcycles are out of commission in hospitals.

Figure 18. Health Facilities with Water Source (%) by Type of Source, 2006

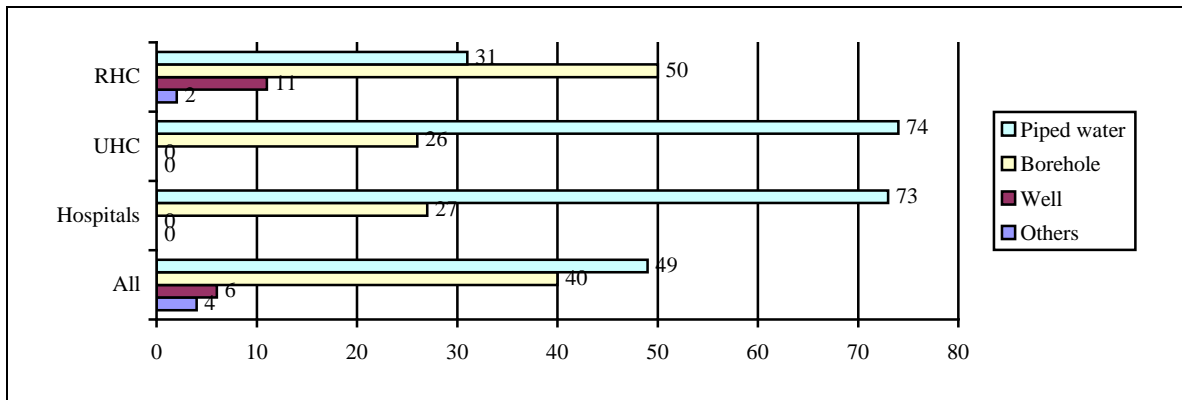
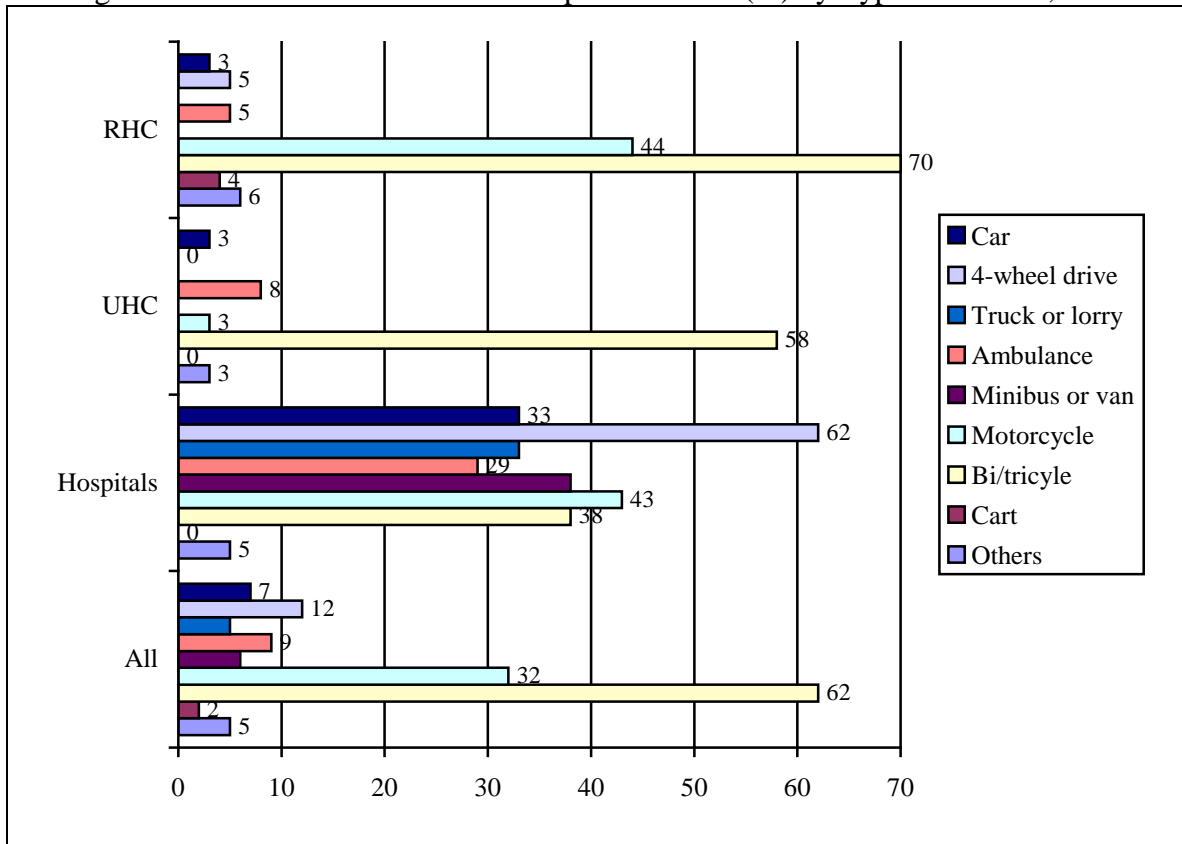
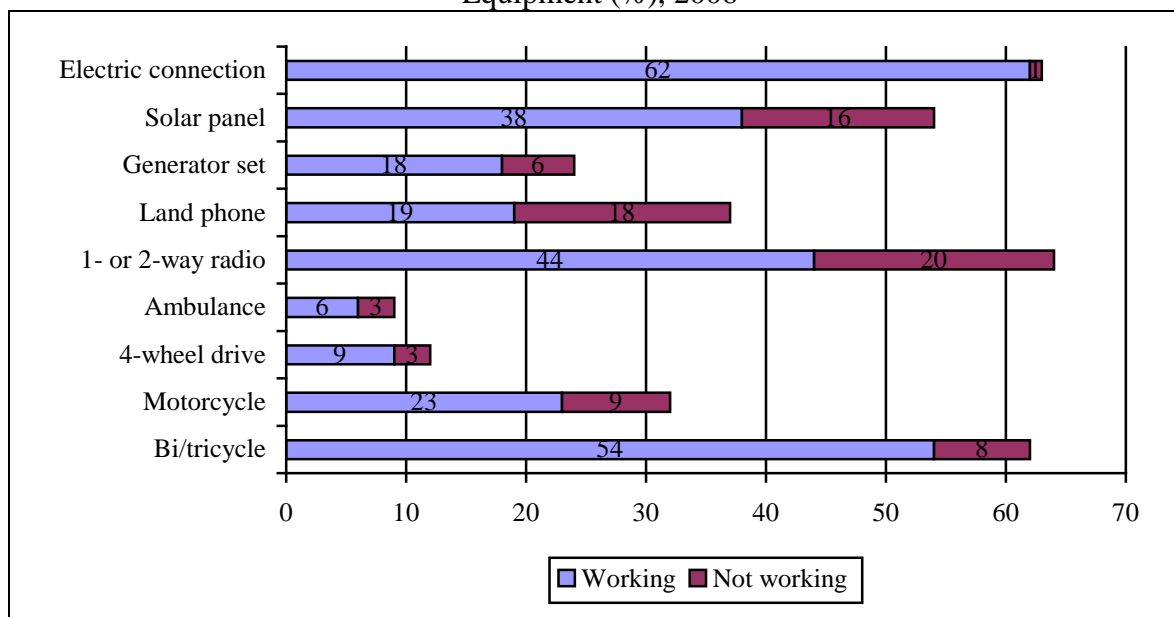


Figure 19. Health Facilities with Transport Vehicles (%) by Type of Vehicle, 2006



8. *The high rates of nonfunctional utilities and transport equipment erode actual access to them, given that they already in place.* This non-functionality requires a more accurate measure of availability of these critical inputs. (This is similar to taking account of absenteeism and tardiness, in the case of human-resource inputs.) Figure 20 shows the most common utilities and equipment in health facilities, and the percentage of facilities with working utilities and equipment.

Figure 20. Health Facilities With Functional and Nonfunctional Utilities and Transport Equipment (%), 2006



### C. MEDICAL EQUIPMENT AND INSTRUMENTS

9. *Many hospitals continue not to have the complete complement of medical equipment.* Thus, only 71 percent of hospitals have anesthetic equipment, only 76 percent have laboratory equipment, only 67 percent have a blood bank, and only 67 percent have oxygen supply. More seriously, only 71 percent of hospitals have x-ray, and only 62 percent have sonogram, i.e., x-ray is unavailable to 29 percent and sonogram to 38 percent of them (Figure 21). Other pieces of medical equipment are highly available at the level they are expected to be. For instance, 94 percent of all health facilities have refrigeration equipment, 90 percent have examination beds, and 70 percent have sterilization equipment.

10. *Medical equipment and instruments have a far higher rate of functionality than transport equipment and utilities.* As shown in Figure 22, in most cases only 1-4 percent of health facilities with medical equipment experienced downtime. The exception is sterilization equipment, where 8 percent of facilities had nonworking equipment. Part of the high reliability of medical equipment may be the high rates of regular servicing. Health facilities reported that, depending on the type, 53-79 percent of medical equipment are serviced regularly.

11. *RHCs and UHCs registered an acute need for medical instruments and lab test supplies.* Among the many medical instruments and consumables needed by health facilities, the ones in greatest need are summarized in Table 21, as measured by "percent inadequate to meet facility's need".

Figure 21. Health Facilities with Imaging Equipment (%), 2006

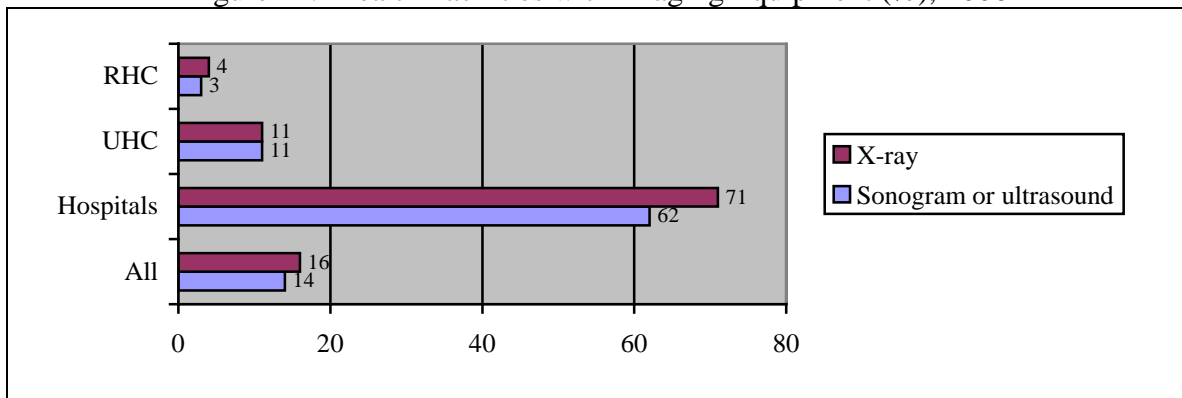


Figure 22. Health Facilities with Functional and Nonfunctional Medical Equipment (%), 2006

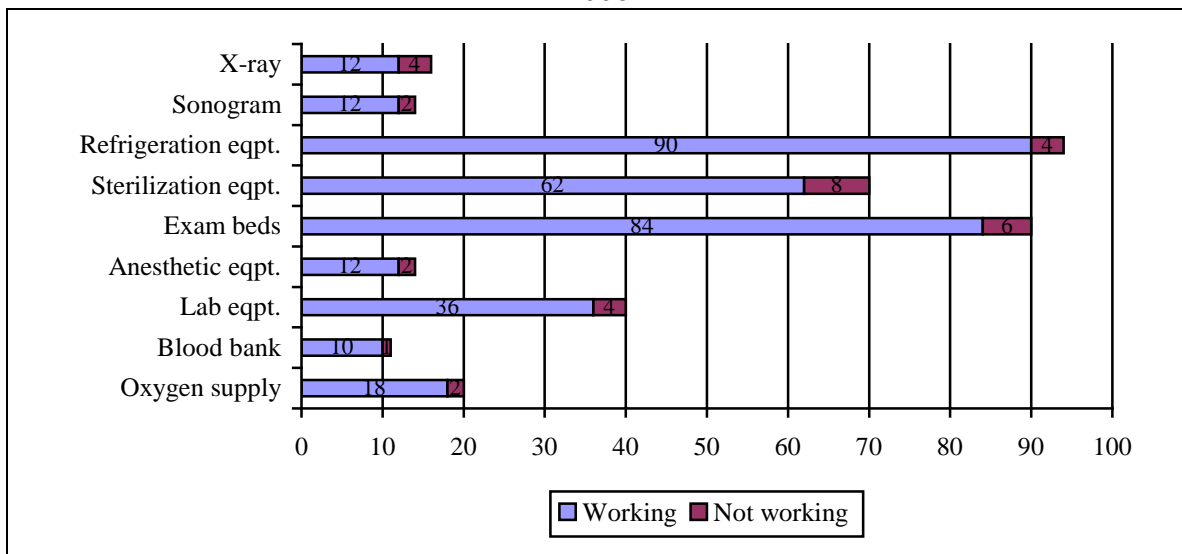


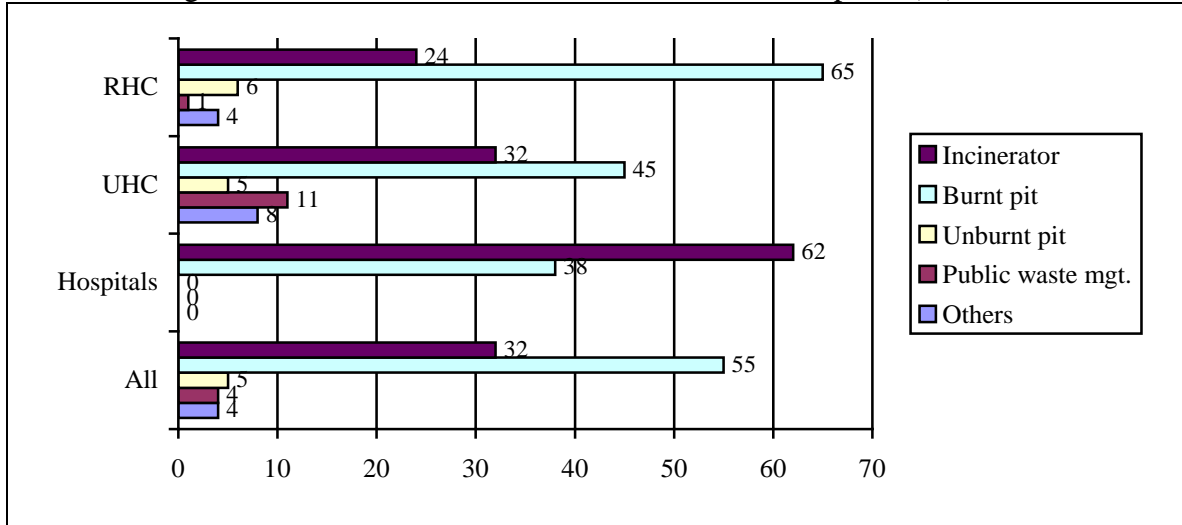
Table 21. Health Facilities Reporting Inadequate Medical Equipment, Instruments, and Lab Test Supplies (%), 2006

Items	RHC	UHC	Hospital
X-ray	33	75	33
Sonogram	50	50	23
Lab equipment	54	56	50
Anesthetic equipment	-	-	53
Blood bank	-	-	43
Oxygen supply	-	-	64
Height measuring device	54	45	19
Microscope	74	55	10
Audioscope	87	68	33
Surgical instruments for ob-gyne	57	66	19
Gowns and protective clothing	54	50	14
Malaria smear	76	58	14
Urine test strip	81	74	19

#### D. WASTE DISPOSAL AND MORTUARY

12. *Medical waste disposal leaves much to be desired.* Only 62 percent of hospitals, less than a third of UHCs, and less than a quarter of RHCs have incinerators (Figure 23). More than half (55 percent) of health facilities use a pit where waste is burnt, and the rest of the health centers merely dump their waste in a pit without burning.

Figure 23. Health Facilities with Medical Waste Disposal (%), 2006



13. *Not all hospitals have mortuaries.* Almost all RHCs and 4 out of 5 UHCs (79 percent) have no mortuaries. Among hospitals, 29 percent do not have a mortuary. In many health facilities without mortuaries, corpses are kept in attendance rooms until claimed by relatives.

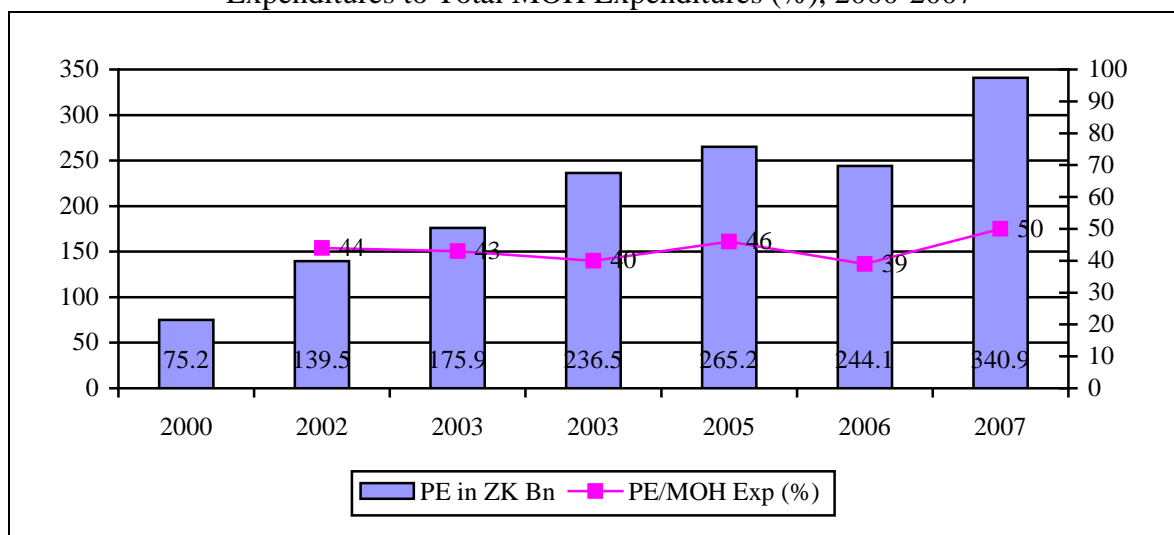


## CHAPTER 5. MANAGEMENT OF HEALTH PERSONNEL

1. *MOH personnel expenditures steadily increased in nominal levels until 2005; it dipped in 2006 but is expected to rise dramatically to ZK340.9 billion in 2007.*

Reflecting these trends in absolute levels, PE as a share of MOH expenditures peaked at 46 percent in 2005, and fell to 39 percent the following year (Figure 24), although it is estimated to garner 50 percent of the MOH's budget in 2007, the highest-ever share. MOH PE/GDP is about 1 percent of GDP.

Figure 24. Personnel Expenditures in MOH Budget (ZK Billion) and Share of Personnel Expenditures to Total MOH Expenditures (%), 2000-2007



2. *Human resource issues have become central in recent years and will continue to be topical in the near future.* On the one hand, the MOH is wracked by a human resource crisis as will be documented by PETS/QSDS survey findings in this chapter. Expanding services to meet the MDGs would require filling the large vacancies that exist today. Indeed, the new Human Resources for Health (HRH) Strategic Plan, 2006-2010 calls for an eventual increase in staffing levels from about 23,000 at present to 51,000. On the other hand, sustaining the increasing amount of resources devoted to PE would be a daunting challenge, given GRZ's patchy record of managing its overall wage bill. (IMF Country Case Study, 2006). In between these "expansionist" and "sustainability" concerns are a range of factors that need to be addressed:

- The facts, as shown in the NHA analysis, that (a) an increasing proportion of MOH resources (and also donor resources, for that matter) are going to administration rather than service provision; and (b) that MOH facilities at all levels are far more labor-intensive than their mission and for-profit facility counterparts.

- The facts, to be discussed in this chapter, that (a) staffing patterns continue to be perverse, as reflected in the composition of established posts; (b) absenteeism, tardiness, and morale reduce the actual availability of staff already at post, and these problems do not necessarily disappear with increases in salaries; and (c) multiple cash allowances and in-kind benefits are highly fragmented and only cover a minor percentage of MOH staff.

3. *This chapter reports the findings of the PET/QSDS pertaining to human resources.* It is hoped that quantitative data from the survey could provide critical information that GRZ and other stakeholders could use in deliberating manpower policy options. Section A discusses staffing patterns and availability. Section B reports on staff absenteeism and tardiness. Section C describes the various staff cash allowances and in-kind benefits. Section D discusses selected issues in salary management.

#### A. STAFFING PATTERNS AND AVAILABILITY

4. *Skewed staffing patterns persist as reflected in the composition of established posts.* UHCs have the heaviest staffing for administrative posts: 14.0 percent of all available UHC posts are administrative, compared to only 10.2 percent for hospitals (Table 22). RHCs have the heaviest staffing for low-skill, non-clinical, non-administrative posts at 31.4 percent, compared to about 24-28 percent for UHCs and hospitals. RHCs also have the highest proportion of established clinical posts (63.4 percent), compared to 61.5 percent of hospitals, which should have a higher proportion of them. The table also shows the average number of staff per health facility. Note that UHCs have a higher preponderance of administrative staff, compared to hospitals.

Table 22. Established Posts and Average Number of Actual Staff by Major Occupational Groups, 2006

Staff	RHC		UHC		Hospitals		All	
	No.	%	No.	%	No.	%	No.	%
Established Posts								
Prof'l/clinical staff	590	63.4	1,240	61.8	1,291	61.5	3,124	62.0
Administrative staff	48	5.2	280	14.0	215	10.2	543	10.8
Non-clinical, non-administrative staff	292	31.4	485	24.2	594	28.3	1,371	27.2
Total	930	100.0	2,005	100.0	2,100	100.0	5,038	100.0
Average Number of Staff								
Prof'l/clinical staff	5	57	25	60	52	58	16	57
Administrative staff	0	0	6	14	8	9	3	11
Other staff	4	44	11	26	30	33	9	32
Total	9	100	42	100	90	100	28	100

5. *Health facilities have very high rates of staff vacancy.* The percentage of vacant posts is 42 percent in RHCs, 22 percent in UHCs, and 41 percent in hospitals (or 33.5 percent overall). Key posts left vacant all involve professional staff (Table 23). Districts with high rates of vacancy (>50 percent) among professional staff: Chilubi, 79 percent; Chinsali, 58 percent; Kalomo, 59 percent; Kasama, 66 percent; Mpika, 57 percent;

Mpongwe, 53 percent; Mufulira, 66 percent; Nakonde, 60 percent; Namwala, 54 percent; Sesheka, 74 percent; Shangombo, 56 percent (Figure 25).

Table 23. Vacancy Rates (%) in Health Facilities, by Cadre, 2006

Cadre	RHC			UHC			Hospital		
	No. of estab posts	No. of vacant posts	% of posts vacant	No. of estab posts	No. of vacant posts	% of posts vacant	No. of estab posts	No. of vacant posts	% of posts vacant
Doctors	11	10	91	58	22	38	85	50	59
Clin officers	110	64	58	136	59	43	111	59	53
Medical licentiates	15	13	87	12	5	42	24	18	75
Midwives	109	55	50	282	90	32	179	63	35
Nurses	215	92	43	577	131	23	695	344	49
Env health officers	76	30	39	37	9	24	14	6	43
Pharma, etc.	18	12	67	34	7	21	37	17	46
Dentists, etc.	13	13	100	44	9	20	23	9	39
Lab, x-ray tech, etc.	15	12	80	48	13	27	76	37	49
Physio, etc.	8	8	100	15	3	20	47	34	72
Administrative staff	48	24	50	280	24	9	215	79	37
Other staff	292	55	19	485	62	13	594	152	26
Total	930	388	42	2,008	434	22	2,100	868	41

6. *The rate of staff turnover is worrisome, especially in rural health clinics.* In RHCs, out of 688 staff, 69 were "incoming" (10.0 percent) while 148 were "outgoing" (21.5 percent) (see Table 24). It would seem that the stock of RHC workers is not being replenished quickly enough. In UHCs, out of 1,756 staff, 166 were "incoming" (9.4 percent) while 172 were "outgoing" (9.8 percent). In hospitals, out of 1,442 staff, 133 were "incoming" (9.2 percent) while 60 were "outgoing" (4.2 percent), i.e., hospitals are retaining their staff better than RHCs. These rates of staff movement in and out of health facilities raise concerns not only about staff availability, but also about new staff's ability to adjust to the new workplace, and the old staff's "institutional memory" that s/he takes with her/him, and is lost from the facility.

7. *Health facilities are increasingly relying on expatriate and volunteer staff.* Hospitals have become highly dependent on expatriate staff: as much as 50 percent of them have an expatriate doctor, 25 percent have an expatriate nurse, and 14 percent have other expatriate staff. Some 3 percent of RHCs and 10 percent of UHCs also report having expatriate personnel. Volunteer staff are less common in hospitals, but the predominate in health centers: 32 percent of RHCs and 48 percent of UHCs rely on volunteers, half of whom work full-time and half, part-time.

Figure 25. Vacancy Rates (%) in Health Facilities by District and Type of Cadre, 2006

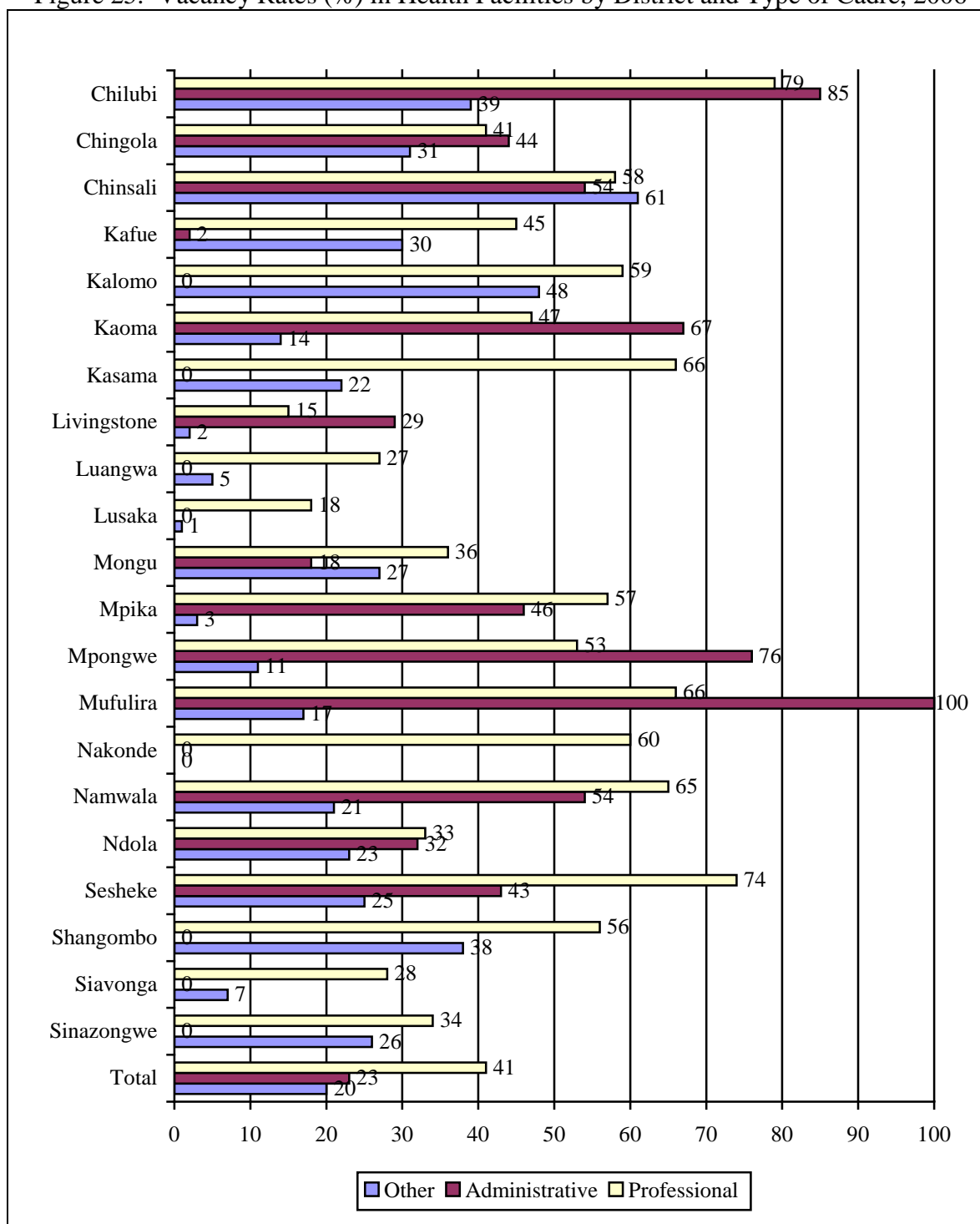


Table 24. Total Staff Who Joined or Who Left This Year, 2006

Staff Turnover	RHC	UHC	Hospitals	All
Total staff	688	1,756	1,442	3,886
No. of staff who joined the facility	69	166	133	368
No. of staff who left the facility	148	172	60	380
▪ Retired	15	20	7	42
▪ Transferred	116	120	24	260
▪ Resigned	10	22	14	46
▪ Dismissed or suspended	7	10	15	32

### B. "UNACCOUNTED" WORKERS, STAFF ABSENTEEISM, AND TARDINESS

8. *The survey revealed inconsistency in the number of posts actually filled.* The total established posts for the health facilities included in the survey is 5,038 (See Table 25). Of this number, the vacant posts are 1,690, as reported in the discussion on vacancy rates above. Hence, the filled posts must be 3,348 (5,038 less 1,690). However, in the staff count made to assess staff absenteeism (see below), health facilities reckoned a total of 3,885 filled posts. The difference between the two figures (i.e., 3,885 and 3,438) is 537 posts, representing about 11 percent of the established posts (column "a"), or 10 percent of "vacant + filled posts" (column "b+c").

Table 25. Established, Vacant, Filled, and Absent Posts, 2006

Cadres	Estab'd Posts (a)	Vacant Posts (b)	% Vacancy Rate (b/a)*100	Filled Posts (c)	Vacant + Filled Posts (b+c)	Absent from Posts (d)	% Absent (d/c)*100
Doctors	154	82	53.2	84	166	26	31.0
Clin. officers & med. lic.	408	218	53.4	219	437	44	20.1
Midwives & nurses	2,057	775	37.7	1,604	2,379	222	13.8
Other clinical staff	505	219	43.4	341	560	48	14.1
Administrative staff	543	127	23.4	410	537	17	4.2
Other staff	1,371	269	19.6	1,227	1,496	16	1.4
Total staff	5,038	1,690	33.6	3,885	5,575	373	9.6

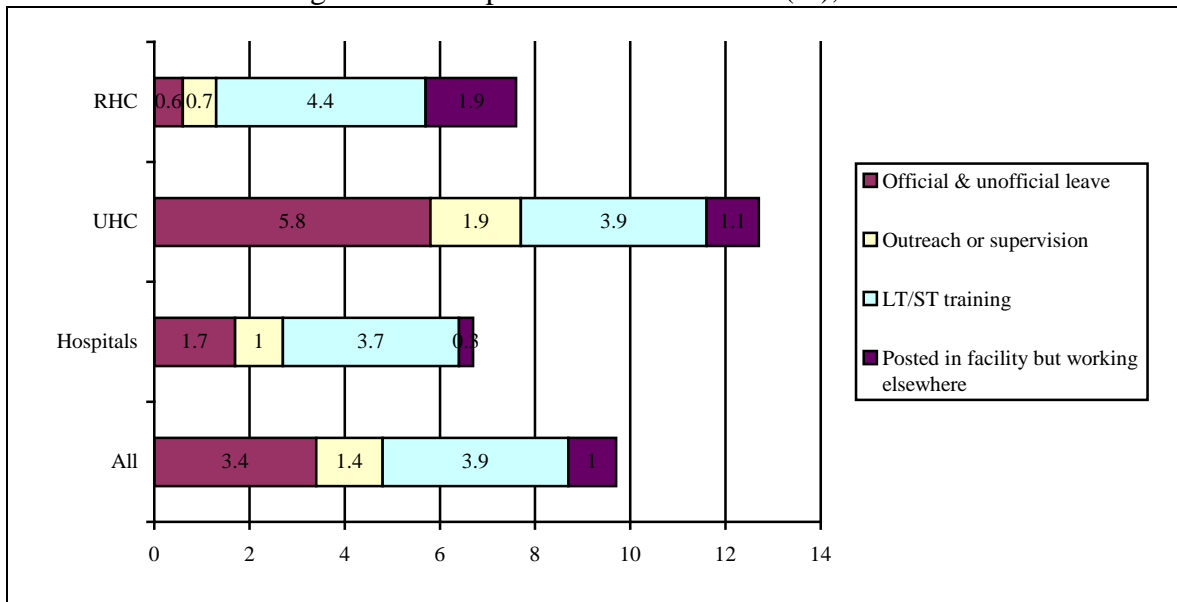
Note: "Absent" is defined broadly in this table to mean any staff not physically in the health facility during the survey.

9. *A significant number of staff are posted in one facility but working elsewhere:* 13 in RHCs, 20 in UHCs, and 4 in hospitals (or 1.0 percent of all posted staff). Because

these could not be physically accounted for in the facility where the survey was conducted, there is uncertainty about their actual existence.

10. *Staff absenteeism is considerable.* Some 9.6 percent of staff were not in the health facility during the survey: 7.5 percent in RHCs, 12.8 percent in UHCs, and 6.7 percent in hospitals. The composition of absentee staff include 1.0 percent who were posted in the facility but working elsewhere; 3.9 percent who were on long- or short-term training; 1.4 percent who were on outreach or supervision; and 3.4 percent who were on sick, annual, or vacation leave, or who were absent without leave, or who cannot be accounted for (Figure 26).

Figure 26. Composition of Absentees<sup>5</sup> (%), 2006



11. *Clinical staff have the highest rates of absenteeism.* On the day of the survey, 31.0 percent of the doctors were not on site, as were 20.1 percent of clinical officers and medical licentiates, 13.8 percent of midwives and nurses, and 14.1 percent of other clinical staff. Administrative and other staff have much lower rates of absenteeism.

12. *Staff self-reported rate of absenteeism is much higher than the rate found in the facility survey.* For the previous month of the survey, 30 percent among RHC staff, 16 percent among UHC staff, 16 percent among hospital staff (or 21 percent overall) reported being absent from work at least once. The average number of days absent the previous month was 6 for RHC staff, 8 for UHC staff, 3 for hospital staff (or 5 days overall). The main reasons for being absent were sick self (40 percent of all responses), sick relatives (18 percent), and another extra job to attend to (9 percent).

13. *Tardiness is a much bigger problem than absenteeism.* Staff self-reported tardiness last month was 37 percent among RHC staff, 47 percent among UHC staff, and 47 percent among hospital staff (or 43 percent overall). The average number of days late

<sup>5</sup> "Absentees" are defined broadly as total number of posted staff not in the health facility during the survey.

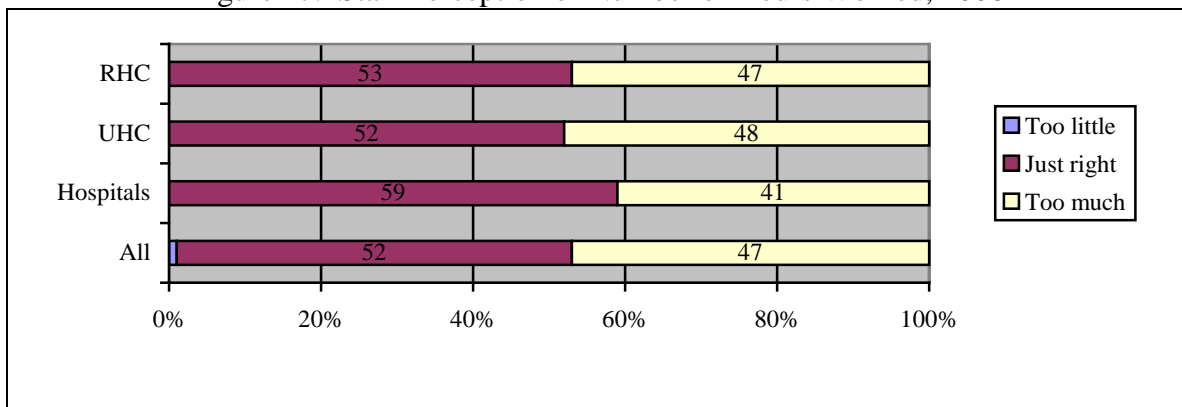
the previous month was 3 days for RHC staff, 4 days for UHC staff, and 3 days for hospital staff (or 4 days overall). Workers reported that their tardiness was caused by long travel to work (35 percent of staff), sick relatives (17 percent), they were "on-call" the previous day (17 percent).

14. *Absenteeism and tardiness erode in a major way the actual availability of staff who are already in post.* The self-reported absenteeism of 21 percent (pertaining to 704 staff), at an average of 5 days absent/month, translates to 3,250 working days/month. Similarly, the self-reported tardiness of 43 percent (pertaining to 1,176 staff), at an average of 4 days tardy/month, at 1 hour tardiness each time, translates into 588 working days/month. Together, these add up to 4,108 working days per month that are lost. Conversely, if absenteeism and tardiness were fully eliminated, these losses would translate to a gain of 187 full-time equivalent staff, a sizeable number in Zambia's health system. That number is enough to staff 2 hospitals (at 90 staff/hospital), 4 urban health centers (at 42 staff/UHC), or 21 rural health centers (at 9 staff/RHC).

### C. STAFF WORKLOAD AND MORALE

15. *Half of the staff surveyed complained of the long hours, because of the workload and their need to augment their meager incomes.* While most staff (91 percent) reported having a fixed work schedule, 47 percent of the staff reported long hours worked (Figure 27). The problem of long working hours afflicts workers in health centers more than hospitals. The long working hours, however, is an effect of both heavy workloads in the facility, as well as some staff's need to augment their incomes. Thus, on ordinary workdays:

Figure 27. Staff Perception of Number of Hours Worked, 2006



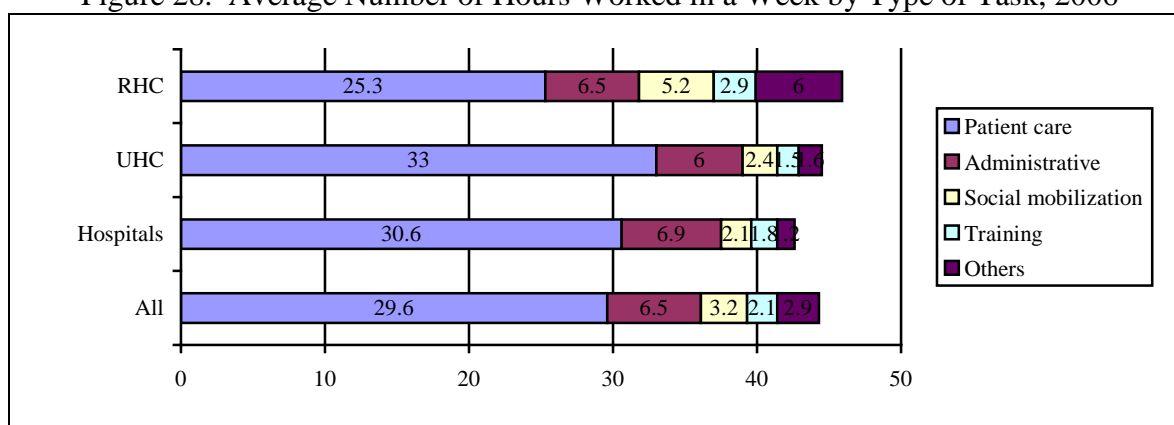
- UHC staff reported working 12 hours per day. Further probing reveals that 32 percent of staff engage in income-augmenting activities. Of these staff, 7 percent engage in dual practice inside the health facility, devoting as much as 5 hours outside official hours (off-duty) each day. In addition, 25 percent of staff engage in non-health enterprises within the health facility, devoting 7 hours on average each day to such enterprise.
- RHC staff reported working an average of 18 hours per day. Further examination shows that 9 percent of staff engage in income-augmenting activities. For these

staff, 3 percent engage in dual practice inside the health facility, spending 1 hour outside official hours (off-duty) each day. Moreover, 6 percent of staff have non-health enterprises within the health facility, spending 6 hours on average each day to such enterprise.

- A lower percentage of hospital staff complained of long working hours. A lower percentage of them (5 percent) also engage in any form of enterprise within the health facility, and among those who do, the amount of time devoted to these enterprises is lower (2 hours on average). However, there is a far greater percentage (24 percent) of hospital staff engaging in dual practice outside the health facility.

16. *Despite the reported long hours worked, the amount of time being spent on direct patient care is being squeezed by other tasks.* (Figure 28).

Figure 28. Average Number of Hours Worked in a Week by Type of Task, 2006



17. *About half of the staff surveyed have low morale.* Staff are split in half, with 44 percent reporting satisfaction, 43 percent reporting dissatisfaction, and 12 percent indifferent. Rate of satisfaction appears highest among RHC staff (49 percent satisfied and 7 percent highly satisfied) while rate of dissatisfaction appears highest among hospital staff (45 percent dissatisfied and 9 percent highly dissatisfied). Staff dissatisfaction arises mainly from stressful workloads (42 percent of staff) and low salaries (34 percent); only 7 percent reported bad facility management while 17 percent cited "other reasons".

18. *Health staff are engaged in various income-augmenting economic activities.* Health facilities have become the loci of different forms of income opportunities, and the health system is ill-equipped to track the time devoted by staff to official and unofficial duties. More to the point, health staff's coping strategies in the face of perceived low salaries engenders behaviors that require closer study and policy response.

- In-facility dual practice - About 5 percent of staff engage in medical or health practice inside the health facility (Table 26). While this percentage is certainly not disturbing, the amount of time devoted to these "unofficial" activities within the facility premises raises concerns about crowding out the remaining time to do



official duties. This problem is particularly acute in urban health centers where health professionals devote as much as 5 hours on average for private practice, presumably outside official hours. The equivalent length of time for private medical/health practice within the facility is 1 hour in rural health centers and 2 hours in hospitals.

- Out-facility dual practice - Dual practice is also undertaken outside the facility by about 18 percent of health staff. This outside dual practice takes up a significant amount of time across the different facility types: on average, an RHC staff engaging in this practice devotes 7 hours; a UHC staff, 12 hours; and hospital staff, 7 hours.
- Non-medical/non-health enterprise inside the facility - Some 11 percent of staff engage in this type of activity, mostly in UHCs (where 25 percent of staff report doing it) and RHCs (6 percent). None of the hospital staff reported engaging in this type of activity. Staff resorting to these income-augmenting activities devote, on average, 6 hours to them.
- Other income-augmenting activities - The most popular income-augmenting activities are agricultural work (reported by 39 percent of staff) and trade (reported by 29 percent). Ten percent resort to teaching.

Figure 29. Level of Staff Satisfaction, 2006

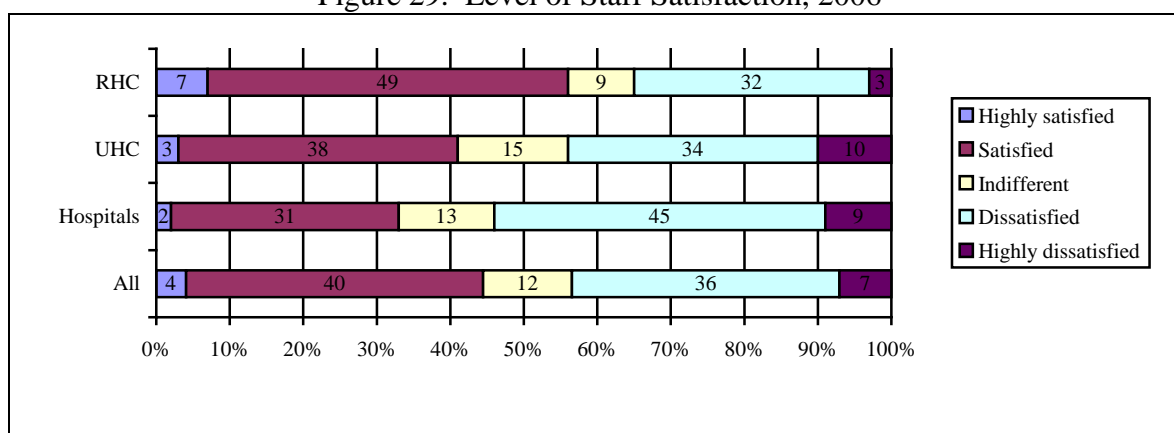


Figure 30. Health Staff Who are Dissatisfied (%), by Reasons for Dissatisfaction, 2006

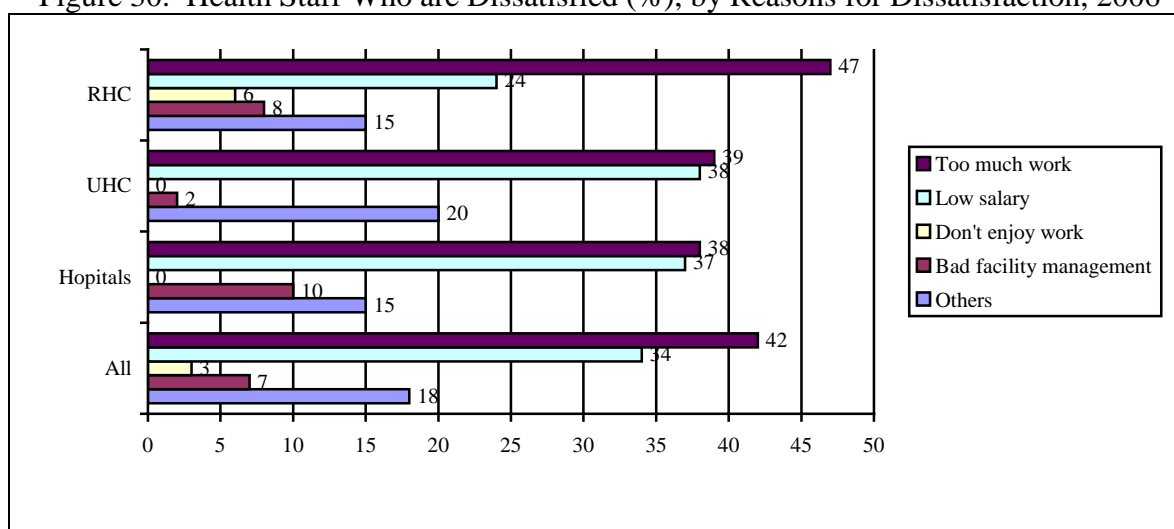


Table 26. Types of Income-Augmenting Activities Undertaken by Staff (%), 2006

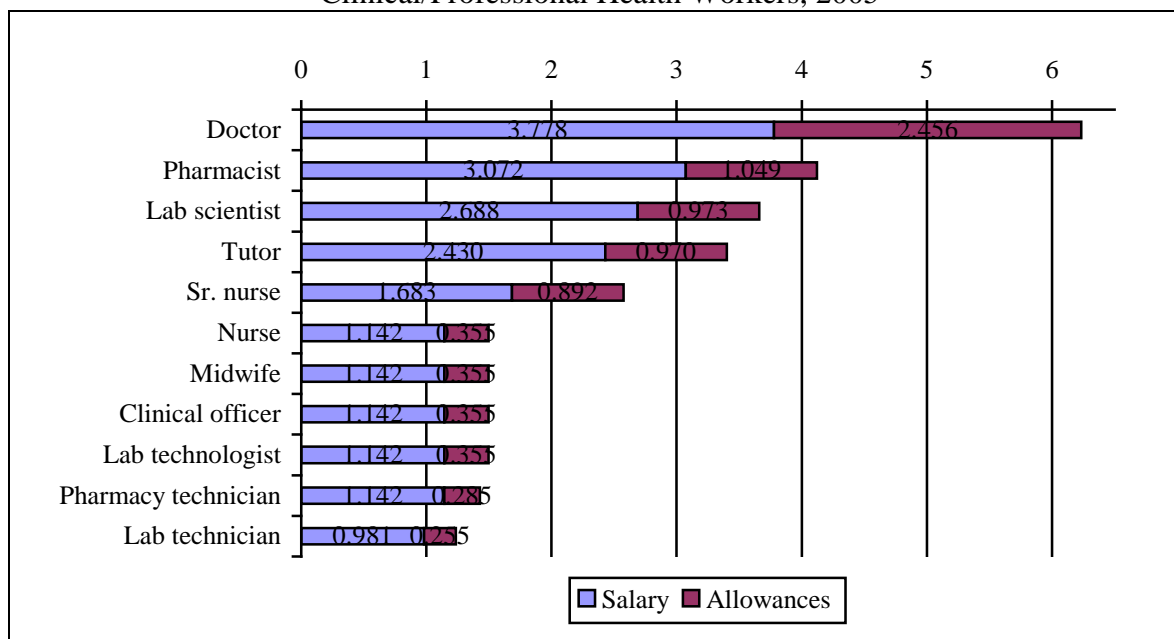
Income-Augmenting Activities	RHC	UHC	Hospital	All
Medical or health practice inside the health facility but outside official hours	3 (1)	7 (5)	5 (2)	5 (3)
Medical or health practice outside the health facility	12 (7)	21 (12)	24 (7)	18 (9)
Non-medical, non-health activity inside the health facility	6 (6)	25 (7)	0 (0)	11 (6)
Agricultural work	41	32	45	39
Commercial or small-scale trade	18	37	35	29
Teaching	9	15	6	10
Other activities	7	4	19	9

Note: Numbers in parentheses refer to the average amount of time, in hours, devoted to the activity.

#### D. STAFF SALARY AND BENEFITS

19. *Salary levels of professional and clinical workers are highly compressed, and a variety of allowances are being used to decompress overall payroll.* The salary structure of professional and clinical health workers are highly compressed at the upper and middle levels. At the middle level, salaries are uniform across four different cadres (nurse to pharmacy technician). At the senior level, a nurse-tutor and a doctor's salary differs by a factor less than 1. To decompress the salary structure, a wide range of allowances has evolved, including housing, "on-call", recruitment and retention, commuted overtime, commuted night duty, and uniform upkeep. As shown in Figure 31, allowances already account for 39 percent of a doctor's and 35 percent of a senior nurse's monthly package. The number of these allowances tends to decline with the level of the health worker, although each type of allowance tends to be applied uniformly across levels, except for housing and recruitment & retention allowances.

Figure 31. Composite Monthly Salaries and Allowances (ZK Million) of Clinical/Professional Health Workers, 2005



20. *The cash allowances and in-kind benefits are varied but highly fragmented, and cater only to a small proportion of staff.* While cash allowances are of wide variety, these are nowhere near universally provided. Indeed, only a selected few, i.e., senior-level staff, receive the plum benefits (Table 27). Thus, only 3 percent of all staff surveyed receive salary top-ups; only 3 percent are eligible for the retention scheme; only 2 percent have educational allowances for their children; only 4 percent are provided transport allowance; and only 7 percent obtain food allowance. In effect, 93-97 percent of staff do not get these cash benefits, and deem them to be discriminatory. Even the more liberally-provided cash benefits are not for everybody. Housing allowance is received by less than half (44 percent) of staff; clothing allowance, by only 27 percent; "on-call" allowance, by 33 percent; and rural hardship allowance, by only 16 percent. Non-cash benefits such as schooling of children, food, and transport benefit at most 1-3 percent of staff. Among the wide array of benefits, only health services at the facility can be accessed by 85 percent of staff surveyed. And up to this time, GRZ employees, including health workers, still do not have medical insurance cover.

21. *Managing the complicated cash and in-kind benefit system must be onerous.* The numerous benefits must be given individually to each eligible staff. Except for three allowances, namely housing, "on-call", and recruitment and retention, the other allowances and in-kind benefits are small in value. For instance, the commuted overtime is ZK40,000 (about US\$9), the commuted night duty is ZK30,000 (about US\$7), and the uniform upkeep is ZK35,000 (about US\$8). The administrative costs of providing these benefits are unknown, though they must be significant. More importantly, forecasting the budgetary requirements of this complicated staff benefit system would be extremely difficult as it would require checking each eligibility criterion for each type of benefit. The effect of this system on staff morale and on team camaraderie is also not known,

although it appears rather inequitable. Finally, it is doubtful whether this is the best method of "decompressing" the overall salary and benefit structure.

Table 27. Staff Cash Allowances and In-Kind Benefits Received, 2006

Staff Allowances	RHC		UHC		Hospital		All	
	% of staff who rec'd	Ave. amt. rec'd ZK1,000	% of staff who rec'd	Ave. amt. rec'd ZK1,000	% of staff who rec'd	Ave. amt. rec'd ZK1,000	% of staff who rec'd	Ave. amt. rec'd ZK1,000
Cash Allowances								
Top-ups	1	256.7	2	159.6	1	424.0	4	255.9
Food	5	123.4	1	76.7	2	38.6	7	97.2
Clothing	11	38.9	9	59.6	7	79.5	27	56.9
Housing	9	142.6	20	162.1	15	199.9	44	171.2
Educational	0	-	1	307.6	1	125.0	2	246.8
Transport	2	152.6	1	148.7	1	358.7	4	212.5
Rural hard-ship	13	235.4	1	169.0	3	186.4	16	225.2
Retention scheme	1	25.0	1	20.0	1	155.0	3	89.0
MD on-call	11	48.4	9	49.9	13	229.1	33	120.8
Others	10	104.9	5	64.8	7	367.3	22	182.4
In-Kind Benefits								
Health service	31	-	30	-	24	-	85	-
Schooling	0	-	0	-	1	-	1	-
Housing & utilities	2	-	4	-	2	-	8	-
Food	1	-	0	-	0	-	1	-
Transport	1	-	1	-	1	-	3	-

#### D. SALARY MANAGEMENT

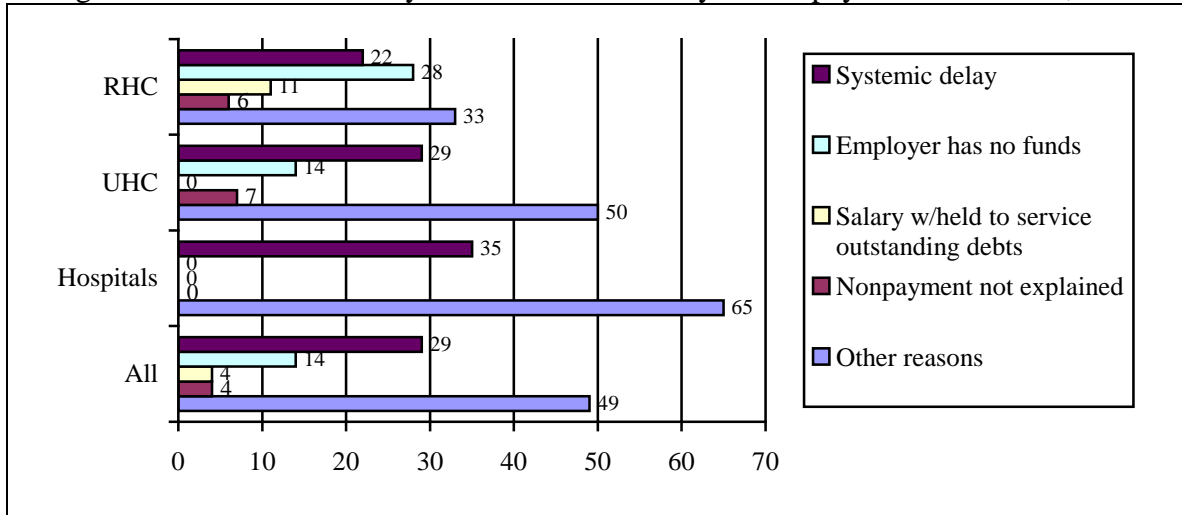
22. *Some staff experience delays in salaries, nonpayment of salaries, or less-than-full salaries. (See Table 28.)*

- Some 85 percent of staff received all their salaries due for the past 12 months. However, about 15 percent did not get all their salaries, a higher percentage of them from hospitals. The unpaid salaries for these staff can be as high as 3-5 months.
- A wider problem is delay in the receipt of salaries. Only a little more than a fifth (21.9 percent) of staff received their salaries on time; most staff (78.1 percent) experienced delay of about 1 month. Among the reasons staff cited for nonpayment or delay of salaries are "systemic delays" (cited by 29 percent of staff who experienced delays) and "other reasons" (cited by 49 percent). (See Figure 32).

Table 28. Salary Management, 2006

Percent of Staff	RHC	UHC	Hospital	All
% who received all salaries due the past 12 months	85.4	87.7	82.3	85.4
% who did not receive all salaries due the past 12 months	14.6	12.3	17.8	14.6
Ave. no. of months not paid	4	3	5	4
% who received all salaries on time	28.7	16.7	19.8	21.9
% who experienced delays in receipt of salaries	71.3	83.1	80.2	78.1
Ave. no. of months delay	1	1	1	1
% who received salaries in cash	11	10	10	10
% who had salaries automatically deposited in the bank	88	90	90	90
% who received salaries by other method	1	0	0	0
% who received all salaries net payable	90.9	86.0	75.0	84.5
% who received less than net payable salary, without consent or understanding	9.1	14.0	25.0	15.5
Ave. amt. of salary missing (ZK)	72,444	239,133	244,278	189,015
% who recovered missing portion of salary	18	0	25	21
% who paid "expediter's fee" to obtain salary	6	8	13	10

Figure 32. Reasons Cited by Health Staff for Delay or Nonpayment of Salaries, 2006



- Still other staff (15.5 percent) received an amount less than their net payable salary without their consent or understanding. This is highly prevalent in hospitals where 25 percent of staff who responded to the survey experienced this problem. The missing portion of salaries is not an insignificant amount: it averaged ZK189,015 among the staff in the different facilities, the missing amount rising with the level of the facility. Thus, although the missing salary amount is rather small in an RHC (average of ZK72,444), it reaches an average of

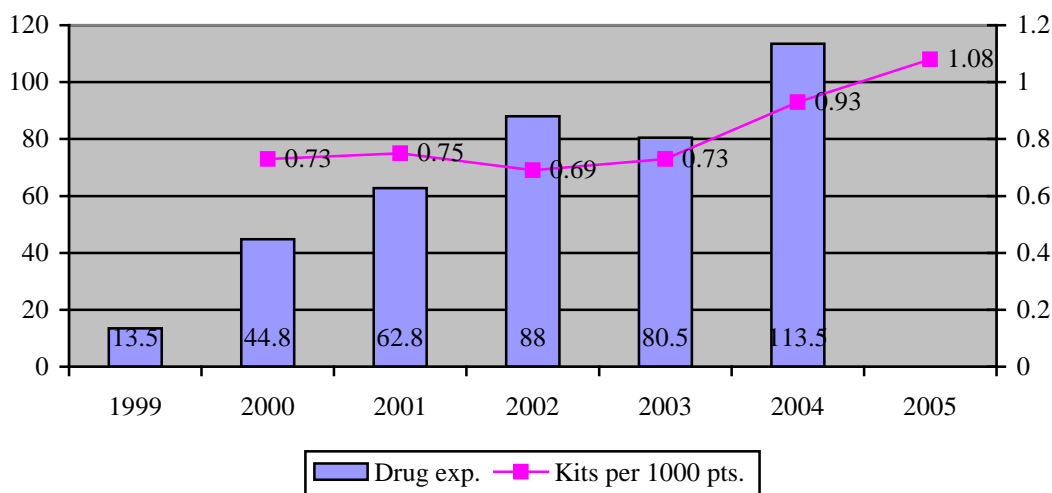
ZK244,278 in hospitals. About 21 percent of staff who experienced this problem reported that they eventually recovered the missing portion of their salary.

23. *A tenth of the staff reported paying "expediter's fee" to obtain their salaries.* While paying a facilitation fee to get one's salary is not common, it was reported by about a tenth of staff. Surprisingly, a greater percentage of those staff experiencing this problem comes from hospitals. One can surmise that this problem occurs among those staff who continue to receive salaries in cash (10 percent of staff) or other method, since the salaries of most staff (90 percent) are automatically deposited into their bank accounts.

## CHAPTER 6. MANAGEMENT OF DRUGS AND OTHER MEDICAL CONSUMABLES

1. *There has been a visible improvement in drug availability especially since 2002.* (See Figure 33). Drug kits opened per 1,000 patients rose remarkably from 0.69 in 2002 to 1.08 in 2005, associated mainly with a large increase in drug expenditures from ZK88 billion in 2002 to ZK113.5 billion in 2004. Thus, it is surprising that for FY06, the MOH + Basket Fund Budget slashed drug allocations by as much as 15 percent, with the districts bearing the brunt of the reduced allocations by as much as 34 percent. These budget reductions come at a time when health facilities are still smarting from very visible drug shortages as will be documented in this chapter. Section A of this chapter describes the drug distribution system in Zambia. Section B assesses the availability of drugs and medical consumables. Section C presents the survey findings on inventory management and storage.

Figure 33. Drug Expenditures<sup>6</sup> (ZK Billion) and Drug Kits Opened Per 1,000 Patients, 1999-2005



### A. TIMELINESS, AND ACCURACY OF DRUG SUPPLIES

2. *Zambia's drug distribution system represents four "subsystems" reflecting a patchy combination of "push"/supply-driven and "pull"/demand-driven elements.* The

<sup>6</sup> The drug expenditure data were taken from the NHA series, as broken down into primary, secondary, and tertiary facilities. It is likely that this series also included expenditures from vertical projects, which are not included in the GRZ + Basket Funds budget.

system is still largely supply-driven, as the large proportion of health facilities rely heavily on drug kits and commodity donations, rather than requisitions or purchases. Table 29 shows the numbers of health facilities relying on these different distribution systems. (a) The MSL drug kits system operates as a "push" supply arrangement where MSL forwards the drug kits to DHMTs, which then distributes them to health facilities and community health workers. (b) Under the MSL's drug requisition system, health facilities use a part of their own budgets to purchase drugs not available under the kit system. It therefore operates as a "pull" or demand-driven system. (c) In some cases, health facilities may make drug purchases outside the MSL system, based on their own demand requirements and using their own funds. (d) Finally, health facilities may also receive free drugs from other sources, e.g., from vertical projects, or once-off donations from abroad. This subsystem is basically "supply"-driven, although vertical projects may ask from health facilities the drugs they need on an annual basis.

Table 29. Number of Health Facilities Relying or Not Relying on the Different Drug Distribution Systems, 2006

System	No. of Facilities Relying				No. of Facilities Not Relying			
	RHC	UHC	Hospital	Total	RHC	UHC	Hospital	Total
MSL drug kit	76	33	11	120	1	5	8	14
MSL requisition	15	10	13	38	57	32	2	91
Outside purchase	17	10	13	40	37	22	3	62
Donation	25	17	8	50	51	26	9	86

### 3. *Timeliness of MSL drug kit system.*

- For the 16 districts that provided information on timeliness (3 districts did not), the average waiting time it took between request and receipt of drugs from MSL is 20 days. Seven of the districts received their drug kits within 2 weeks, four within 3-4 weeks, and five within 5 weeks. Eleven out of 16 districts (69 percent) said the MSL drug kits arrived according to a predetermined schedule. However, there were instances when drugs were delayed in arriving. At least five districts (or 36 percent), namely Chingola, Kalomo, Siavonga, Sinazongwe, and Mongo, admitted delayed receipts of drug kits, as frequently as seven times a year.
- For the 17 districts that provided information on accuracy (2 districts did not), 14 (or 82 percent) noted that MSL does not deliver drugs as requisitioned. Erroneous supplies occurred as frequently as 10 times a year on average, or almost every month.
- The timeliness of drug kits received by health facilities from the districts is also checkered. About 71 percent of health facilities relying on the drug kit system receive these supplies according to a predetermined schedule. They arrive relatively on-schedule in hospitals, but are delayed in UHCs and RHCs with nearly a third of them experiencing delays.



4. *From the survey data, there is evidence of drug diversion.* Comparing the number of drug kits distributed by DHMTs and the number received by health facilities provides an indication of maldistribution, diversion<sup>7</sup> or possible leakage of these kits. The matching of DHMT and health facility survey responses (Table 30) shows that 36 percent of health facilities (n=32) received exactly the number of drugs intended for them. However, 39 percent of the facilities (n=34) received more than they were entitled to, and 25 percent of them (n=22) received fewer than they were entitled to. These data show that there was significant drug diversion that occurred, whether advertently or inadvertently.

Table 30. Comparison of Drug Kits Distributed by DHMTs and Received by Health Facilities, 2006

	Number of Drug Kits Involved	No. of Facilities	% of Facilities
Distributed by DHMT > Received by Facility (n=34)	16 or more	5	39
	11-15	4	
	6-10	8	
	1-5	17	
Distributed by DHMT = Received by Facility	0 (i.e., balance)	32	36
Distributed by DHMT < Received by Facility (n=22)	1-5	14	25
	6-10	3	
	11-15	2	
	16 or more	3	
Total		88	100

## B. AVAILABILITY OF DRUGS AND OTHER MEDICAL CONSUMABLES

5. *Essential drugs are widely unavailable.* Among ten essential drugs included in the survey, the following four drugs figure prominently as widely unavailable (Table 31): Coartem for malaria (unavailable in 42 percent of RHCs, 30 percent of UHCs, and 25 percent of hospitals); cotrimoxazole for pneumonia, and key drug for IMCI (unavailable in 22 percent of RHCs, 16 percent of UHCs, and 14 percent of hospitals); ampicillin for infections (unavailable in 86 percent of RHCs, 86 percent of UHCs, and 73 percent of hospitals); and vitamin A, a key intervention for maternal and child health (reported unavailable in 17 percent of RHCs and 12 percent of UHCs).

6. *Life-saving drugs are also widely unavailable.* Six of the seven life-saving drugs included in the survey are widely unavailable: insulin (unavailable in 95 percent of RHCs and 80 percent of UHCs); dextrose and IV fluids (unavailable in 13 percent of RHCs, 21 percent of UHCs, and 13 percent of hospitals); phenigan (unavailable in 65 percent of RHCs, 43 percent of UHCs, and 25 percent of hospitals); hydrocortizone (unavailable in 31 percent of RHCs, 48 percent of UHCs, and 25 percent of hospitals); lignocaine

<sup>7</sup> Diversion of drugs to their unintended destinations can happen, as it does frequently during elections or similar events when these commodities are used for political purposes. To be sure, unplanned diversion could also happen in response to epidemics or other health emergencies.

(unavailable in 25 percent of hospitals); and adrenaline (unavailable in 22 percent of RHCs, 26 percent of UHCs, and 13 percent of hospitals).

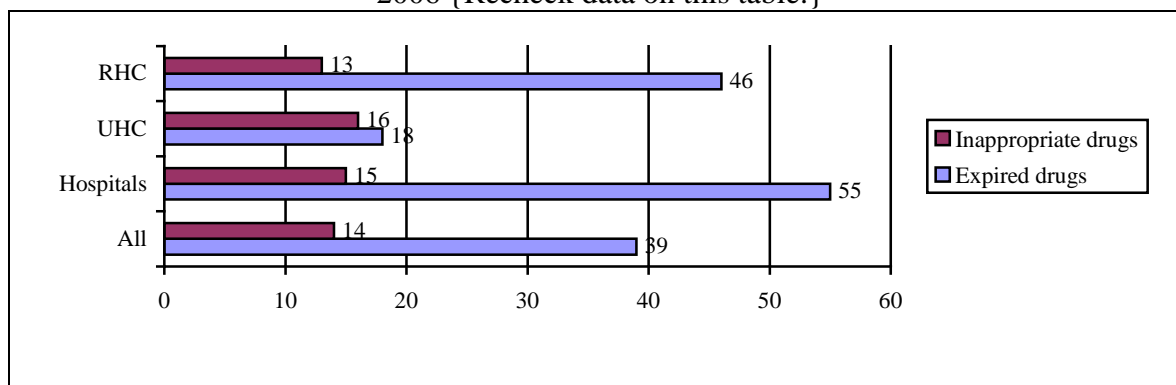
Table 31. Health Facilities Reporting Essential and Life-Saving Drugs are Not Available at the Time of the Survey (%), 2006

Drugs	RHC		UHC		Hospitals	
	% reporting drug not available today	Ave. time of stock-outs (weeks)	% reporting drug not available today	Ave. time of stock-outs (weeks)	% reporting drug not available today	Ave. time of stock-outs (weeks)
Essential Drugs						
Coartem	29	9.5	44	6.0	15	8.0
Paracetamol	7	0.4	10	0.1	-	0.1
Cotrimoxazole	13	2.0	20	1.1	10	0.3
Septin	22	2.1	23	0.6	10	0.4
Ampicillin	84	3.5	81	7.4	65	4.2
Penicillin	-	0.2	5	0.1	10	0.4
ORS	2	0.4	13	0.1	0	4.0
Ergometrine	13	1.2	10	0.7	15	-
Vitamin A	13	1.6	15	0.4	5	1.5
Iron folate	7	0.5	8	-	5	2.4
Life-Saving Drugs						
Insulin	5	0.4	18	0.1	75	1.6
Dextrose and IV fluids	85	1.0	78	1.9	80	1.4
Phenigan	34	0.2	56	0.5	65	0.9
Diazepam/Valium	93	0.5	87	0.4	90	0.6
Hydrocortisone	69	0.7	58	1.1	50	0.6
Lignocaine	94	1.0	89	0.1	70	0.5
Adrenaline	75	179.1	73	0.1	75	0.6

7. *Prolonged drug stock-outs are common across health facilities.* For essential drugs, stock-outs (> 2 weeks) were experienced for: Coartem (average of 9.5 weeks in RHCs, 6 weeks in UHCs, and 8 weeks in hospitals), cotrimoxazole (2 weeks in RHCs), ampicillin (7.4 weeks in UHCs, 4.2 weeks in hospitals, and 3.5 weeks in RHCs), septin (> 2 weeks in RHCs), oral rehydration salts (4 weeks in hospitals), and iron folate (2.4 weeks in hospitals). Among life-saving drugs, stock-outs are particularly acute for dextrose and IV drugs (average of 1.7 weeks in hospitals).

8. *Many health facilities have expired drugs and inappropriate drugs.* Expired drugs are a major problem in hospitals (where as much as 65 percent of them report having them) and RHCs (Figure 34). Inappropriate drugs - those drugs received but not requisitioned from MSL - are much less of a problem, but they also afflict all types of health facilities.

Figure 34. Health Facilities Reporting Existence of Expired or Inappropriate Drugs<sup>8</sup> (%), 2006 {Recheck data on this table.}



9. *Health facilities experience unavailable vaccines, contraceptives, and medical consumables.* (a) Anywhere from 10-30 percent of health facilities reported not having any vaccine during the survey ([Table 32](#)). (b) Most contraceptives are available, except IUD and Norplant. Even in hospitals where the procedures are supposed to be performed, 40 percent reported that IUD is not available, and 60 percent reported that Norplant is not available. (b) Reagents, slides, prescription stationery, spirits, and specimen bottles are the most widely unavailable supplies. Unavailability is strongly associated with the level and proximity of the facility so that RHCs are consistently the least provided for, UHCs come in next, and hospitals are the most provided for ([Figure 35](#)).

10. *The patient interviews revealed the following:* (a) More than 90 percent of patients received drugs on the visit to the facility; about 10 percent did not. (b) Only 2-4 percent of the patients paid for the drugs they received; the vast majority did not. The average amount paid for drugs is ZK2,500 for RHCs; ZK10,085 for UHCs; and ZK3,600 for hospitals. The higher amounts paid at UHCs is in keeping with the fee-intensity in those facilities.

#### D. INVENTORY MANAGEMENT AND STORAGE

11. *Facility-reported inventory management and storage for drugs, vaccines, and contraceptives show relatively good rates of compliance to good practices.*

- In general, drug management has better rates of compliance than either vaccine or contraceptive management. Thus, while about 95 percent of health facilities report having inventory systems that are up-to-date, legible and complete, only about 90 percent could say the same for vaccine and contraceptive systems ([Table 33](#)).
- About 7-8 percent of the health facilities have storage systems that do not protect these sensitive commodities from the elements.

<sup>8</sup> Inappropriate drugs are defined in the survey as drugs not included in the MSL kit system, or not requisitioned by the health facility from the MSL, or otherwise not appropriate to the level of care provided by the health facility.

Table 32. Health Facilities Reporting Vaccines, Contraceptives, and Medical Consumables are Not Available at the Time of the Survey (%), 2006

Vaccines	RHC		UHC		Hospital	
	% reporting not available today	Ave. time of stockouts (weeks)	% reporting not available today	Ave. time of stockouts (weeks)	% reporting not available today	Ave. time of stockouts (weeks)
Vaccines						
BCG	21	6.4	11	5.0	15	2.8
Polio	10	5.6	9	8.0	15	4.3
Pentavalent	24	4.0	31	6.5	30	208.0
Measles	10	8.6	9	d.k.	15	8.0
Tetanus toxoid	10	5.8	13	d.k.	10	d.k.
Contraceptives						
Condoms	1	3.4	4	2.7	5	7.5
Pills	13	7.4	2	5.7	10	d.k.
Injectables	9	3.7	9	3.6	5	12.0
IUD	95	11.8	78	18.3	40	d.k.
Norplant	93	2.7	80	17.6	60	d.k.
Medical Consumables						
Bandages	8	n.a.	8	n.a.	-	n.a.
Cotton wool	14	n.a.	16	n.a.	16	n.a.
Needles	0	n.a.	0	n.a.	0	n.a.
Syringes	2	n.a.	2	n.a.	0	n.a.
Gloves	4	n.a.	8	n.a.	8	n.a.
Reagents	78	n.a.	24	n.a.	4	n.a.
Slides	92	n.a.	32	n.a.	6	n.a.
Paper for prescriptions	84	n.a.	32	n.a.	4	n.a.
Lancet	100	n.a.	36	n.a.	6	n.a.
Spirits	58	n.a.	28	n.a.	28	n.a.
Specimen bottles	64	n.a.	12	n.a.	0	n.a.

Figure 35. Health Facilities Reporting Unavailable Medical Consumables (%), 2006

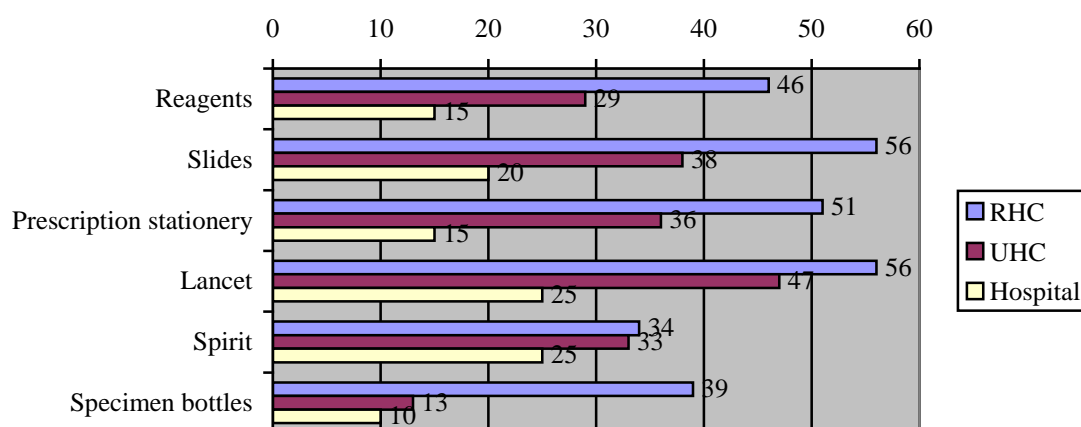


Table 33. Health Facilities Reporting Various Shortcomings in Inventory and Storage Management (%), 2006

Management Aspects	RHC	UHC	Hosp.	All
<i>Drug Management and Storage</i>				
% reporting written inventory does not exist	3	7	5	4
% reporting inventory is not up-to-date, legible and complete	9	0	0	5
% reporting drugs are not stored by expiry data	4	2	0	3
% reporting storage facilities are not protected from the elements	10	4	0	7
<i>Vaccine Management and Storage</i>				
% reporting written inventory does not exist	9	11	10	10
% reporting inventory is not up-to-date, legible and complete	11	8	0	9
% reporting vaccines are not stored by expiry data	5	7	0	5
% reporting storage facilities are not protected from the elements	10	7	0	8
<i>Contraceptive Management and Storage</i>				
% reporting written inventory does not exist	11	4	15	10
% reporting inventory is not up-to-date, legible and complete	16	0	0	9
% reporting contraceptives are not stored by expiry data	6	4	0	5
% reporting storage facilities are not protected from the elements	11	2	0	7

## CHAPTER 7. CLINIC AND PATIENT MANAGEMENT

1. This chapter brings together several strands of health service delivery not yet covered in other inputs discussed in previous chapters, i.e., the physical estate, human resources, drugs and other consumables, and financing. Section A assesses the capacity of health facilities to deliver health services. Section B discusses aspects related to the management and supervision of health facilities. Section C discusses how patients access health services, and how the health workers manage their care when they reach the facilities.

### A. CAPACITY OF HEALTH FACILITIES TO DELIVER HEALTH SERVICES

2. *The self-reported capacity to deliver health services among health facilities is high, except for the following (see Table 34):*

- For RHCs, ARV treatment (only 23 percent are able to provide it), emergency obstetric care (66 percent), and TB diagnosis and treatment (76 percent);
- For UHCs, ARV treatment (only 50 percent are able to provide it), emergency obstetric care (42 percent), and maternity care/normal delivery (61 percent);
- For hospitals, emergency obstetric care (only 76 percent are able to provide it).

Table 34. Health Facilities with Self-Reported Capacity of to Deliver Specific Health Services (%), 2006

Health Services	RHC	UHC	Hospitals	All
Family planning	98	100	76	96
Antenatal and postnatal care	99	95	81	95
Maternity care/normal delivery	90	61	86	81
Emergency obstetric care (EmOC)	66	42	76	61
HIV/AIDS VCT	84	92	100	88
STI counselling	80	100	100	88
STI treatment	94	97	100	96
Child immunization	94	95	81	92
Child growth monitoring, IMCI, and other child health consultations	93	97	90	94
Adult malaria diagnosis and treatment	94	100	95	96
Other adult consultations	88	87	100	89
Inpatient admissions	69	29	95	62

3. *Health centers' actual capacity to deliver services is lower than their self-reported capacity.* Using PET/QSDS data on the availability of drugs, consumables, medical equipment, and instruments and matching these against the relevant health services where they are used critical inputs, one could construct a rough assessment of actual capacity of health facilities against their self-reported capacity. The analysis assumes away the availability and skill level of health personnel to deliver these services since the PET/QSDS questionnaire does not permit this kind of detailed inquiry. Table 35 shows the results for RHCs while Table 36 shows the same for UHCs.

Table 35. Self-Reported Versus Actual Capacity to Deliver Selected Health Services in Rural Health Centers, 2006

Health Services	Self-Reported Capacity	Assessment of Actual Capacity of RHCs Based on PET/QSDS Indicators	
		Availability of Drugs and Other Consumables	Availability of Capital Assets
Family planning	98%	1% reported condoms not available today; 13% reported pills not available today; 9% reported injectables not available today	24% reported not having private counselling area; 6% reported not having private examination area
Antenatal and postnatal care	99%	13% reported Vitamin A not available today; 7% reported iron folate for anemia not available today	43% reported not having mothers' waiting area
Child immunization	94%	RHCs reported the following vaccines were not available today: 21% for BCG; 10% for polio; 24% for pentavalent; 10% percent for measles; 10% for tetanus toxoid	7% reported refrigeration for cold chain not available
Child health/IMCI	93%	13% reported cotrimoxazole for pneumonia not available today; 2% reported ORS for diarrhea not available today; 13% reported Vitamin A not available today	7% reported not having weighing scale 54% reported not having height measuring device
Adult malaria diagnosis and treatment	94%	56% reported malaria slides not available today 76% reported not having malaria smears 29% reported Coartem not available today	70% reported not having lab equipment 74% reported not having microscopes

Table 36. Self-Reported Versus Actual Capacity to Deliver Selected Health Services in Urban Health Centers, 2006

Health Services	Self-Reported Capacity	Assessment of Actual Capacity of RHCs Based on PET/QSDS Indicators	
		Availability of Drugs and Other Consumables	Availability of Capital Assets
Family planning	100%	4% reported condoms not available today; 2% reported pills not available today; 9% reported injectables not available today	16% reported not having private counselling area; 11% reported not having private examination area
Antenatal and postnatal care	95%	15% reported Vitamin A not available today; 8% reported iron folate for anemia not available today	42% reported not having mothers' waiting area
Child immunization	95%	UHCs reported the following vaccines were not available today: 11% for BCG; 9% for polio; 31% for pentavalent; 9% percent for measles; 13% for tetanus toxoid	5% reported refrigeration for cold chain not available
Child health/IMCI	97	20% reported cotrimoxazole for pneumonia not available today; 13% reported ORS for diarrhea not available today; 15% reported Vitamin A not available today	3% reported not having weighing scale 45% reported not having height measuring device
Adult malaria diagnosis and treatment	100	38% reported malaria slides not available today 58% reported not having malaria smears 40% reported Coartem not available today	58% reported not having lab equipment 55% reported not having microscopes

4. *It is clear health centers are overly optimistic about their capacity.* In all the health services assessed, RHCs and UHCs had significant deficits in drugs, consumables, and in some cases equipment and instruments, that significantly limit their potential to provide health services according to their own self-assessment. If these deficits on drugs and vaccines are factored in, then actual capacity is reduced roughly as shown in Table 37.



Table 37. Self-Reported Versus Actual Capacity of Health Centers to Deliver Services (%), 2006

Services	RHC		UHC	
	Self-Reported	Actual	Self-Reported	Actual
Family planning	98%	85-89%	100%	91-98%
Antenatal and postnatal care	99%	86-92%	95%	80-87%
Child immunization	94%	84-70%	95%	82-86%
Child health/IMCI	93%	80-91%	97%	77-84%
Adult malaria diagnosis and treatment	94%	18-65%	100%	42-62%

### C. MANAGEMENT AND SUPERVISION OF HEALTH FACILITIES

5. *The PET/QSDS yielded the following information on health facility management:* (see Tables 38 and 39 and Figure 36). (a) While 80-90 percent of health facilities have a patient registry system, a smaller percentage (about 68-73 percent) of them has accurate data. (b) Supervision of health facilities appear to occur regularly. At least 30 percent of them were supervised by a team from a higher office in the last 6 months. An additional 39.3 percent were visited twice during the same period. (c) More than half (56 percent) of health facilities report their problems only as they arise. This absence of pro-activeness in reporting problems is particularly challenging in RHCs, where only a third (34 percent) regularly report their problems, either monthly or quarterly. (d) Supervisory teams appear to do the necessary tasks in visiting health centers. A high percentage of RHCs and UHCs observed different tasks being performed by the supervision team, and noted the high feedback or follow-up.

Table 38. Health Facilities Reporting Patient Record and Registry System (%), 2006

Record Indicators	RHC	UHC	Hospitals	All
% with system for keeping patient record cards	94	87	86	91
% that follow system of patient record cards	88	84	81	86
% with available patient register	89	79	81	85
% with registers that accurately states the number of actual patients	73	68	71	71
% that provided truthful data	76	61	76	72

Figure 36. Health Facilities' Frequency of Reporting Problems to Higher Levels (%), 2006

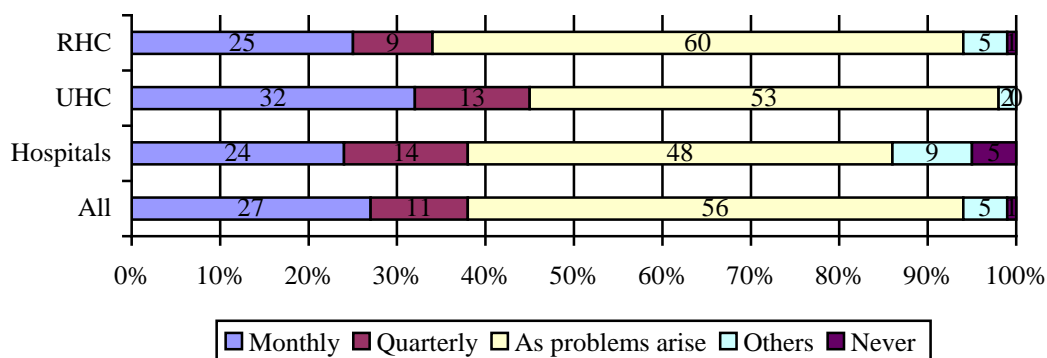


Table 39. Rural and Urban Health Centers Reporting the Specific Supervisory Tasks Were Performed (%), 2006

Supervisory Tasks	RHC/UHC Observing These Tasks of Supervisors	RHC/UHC Saying There is Follow-up or Feedback
Observed delivery of health services	87	83
Observed only the service they are responsible for (malaria or HMIS)	56	88
Inquired about service problems	87	81
Examined health facility records	82	85
Made suggestions for improvement	82	85
Offered praise for good work	75	81
Others	8	89

#### D. MANAGEMENT OF PATIENTS

6. *Facilities are quite close to patients, but waiting times are very long.* Sixty percent of all patients are within 30 minutes to a health facility; 98 percent are there within one hour (Figure 37). This is true in all three types of health facilities, whether in urban or rural areas. However, patient waiting times are long. The average waiting time exceeds one hour in all types of health facilities, and it gets longer as one goes up the level of care, where the average waiting time for hospitals reaches 1-1/2 hours (Table 40). Indeed, the maximum reported waiting time is 5 hours in a RHCs, 6 hours in an UHC, and 8 hours in a hospital. Thus, while most patients (61 percent) say that waiting time is reasonable, close to half of the hospital patients say it is too long.

Figure 37. Patients Reporting the Time Taken to a Health Facility (%), 2006

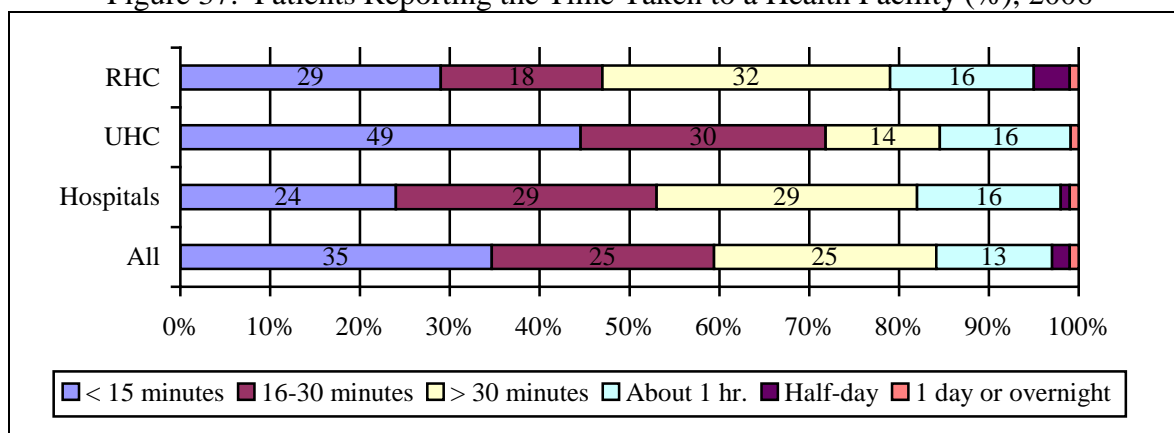


Table 40. Waiting Time of Patients, 2006

Waiting Time	RHC	UHC	Hospitals	All
Ave. waiting time (minutes) of patients	54	62	92	65
Maximum waiting time (minutes) reported	300	360	480	480
% who said waiting time is reasonable	66	63	49	61
% who said waiting time is too long	32	34	48	36

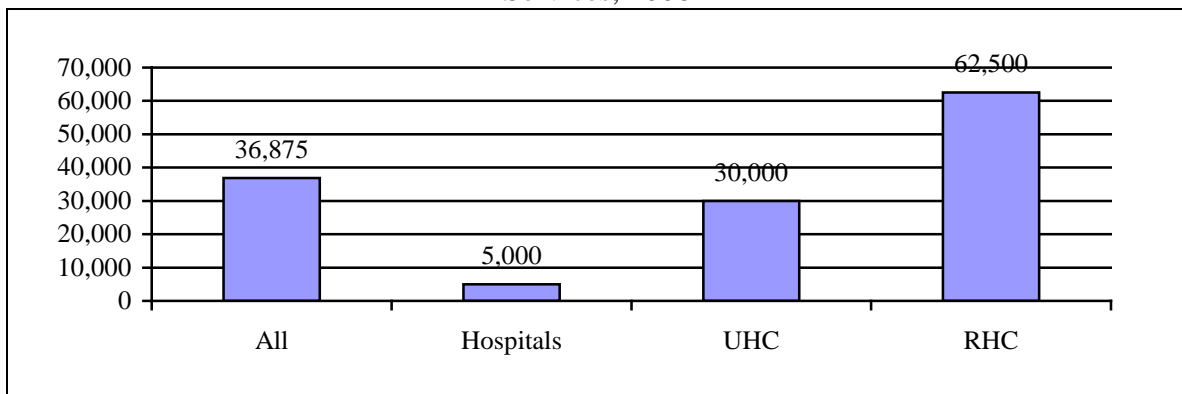
7. *Most patients (75 percent) simply walk to a health facility and this entails no cost.* However, a quarter of the patients use various forms of transport to get to a health facility (Table 41), and the costs for these vehicle-using patients can be considerable. For instance, about 12 percent use a bus, truck, or private car, for which they spend anywhere from ZK 5,000 to 6,800. Another 10 percent of patients use either an animal-drawn vehicle or bicycle/tricycle, for which they spend from ZK 500 to 900. In all, 22 percent of RHC patients, 17 percent of UHC patients, and 43 percent of hospital patients incur transport costs in accessing health services.

Table 41. Patients Reporting Means and Cost of Transport to Health Facility (%), 2006

Means of Transport	RHC		UHC		Hospitals		All	
	% of Patients	Ave. cost (ZK)	% of patients	Ave. cost (ZK)	% of patients	Ave. cost (ZK)	% of patients	Ave. cost (ZK)
Walk	77.9	0	83.3	0	56.5	0	75.1	0
Use animal-drawn cart	2.9	909	0.3	Negl.	1.6	Negl.	1.7	909
Use bicycle or tricycle	14.1	104	4.7	Negl.	4.7	4,000	8.7	539
Use motorcycle	1.1	Negl	0.0	Negl.	0.5	2,600	0.6	???
Use bus or truck	1.9	1,167	7.3	4,348	24.4	6,516	8.7	5,393
Use private car	0.5	5,000	3.5	6,554	7.3	7,250	3.1	6,800
Use facility ambulance	0.3	0	0.0	0	1.0	0	0.3	0
Use others	1.3	200	1.0	1,667	4.2	6,938	1.5	4,685
Total	100.0	-	100.1	-	100.2	-	99.7	-

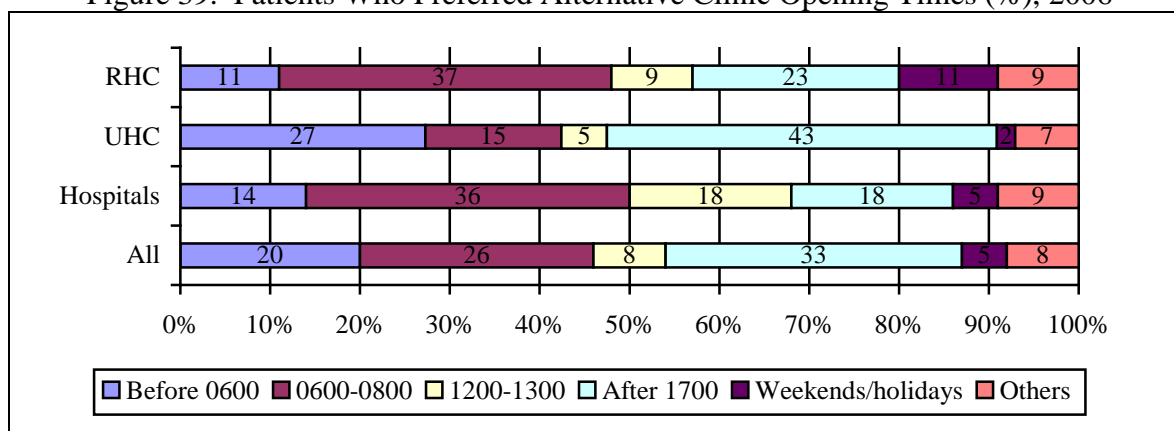
8. *Only about 1 percent of patients and their families report sleeping over in town to be able to access health services.* However, these few patients who do sleep over - 1 percent among RHC, 0.3 percent among UHC, and 1.5 percent among hospital patients - do spend a significant amount of money to sleep and eat in town, about ZK36,875 on average (Figure 38).

Figure 38. Average Amount (ZK) Spent to Sleep and Eat in Town to Access Health Services, 2006



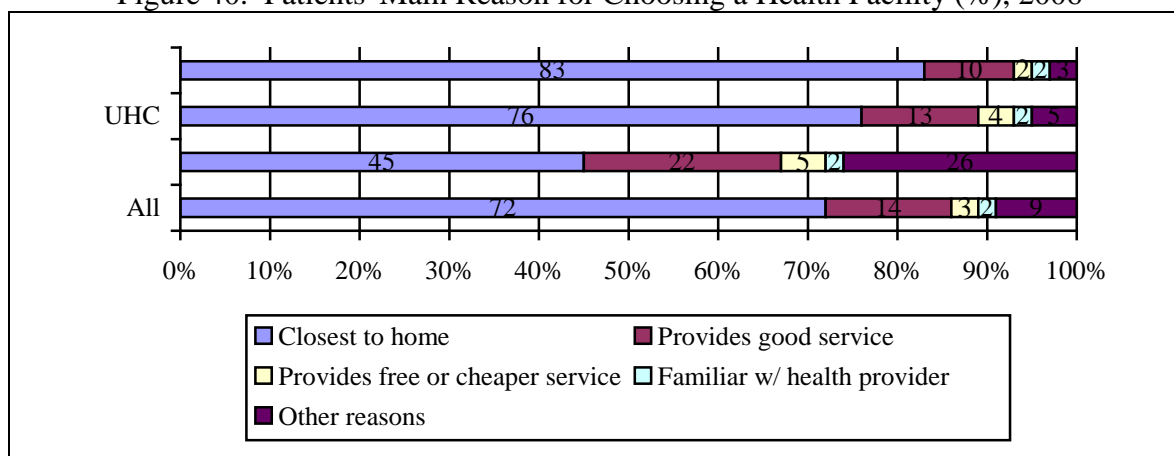
9. *While most patients (76 percent) thought that the opening hours of health facilities are convenient, some 20 percent thought they were not.* For patients that found the clinic opening hours inconvenient, about half (46 percent) recommended that clinics be open early morning before 0800 (Figure 39). An additional third (33 percent) recommended opening clinics after 1700.

Figure 39. Patients Who Preferred Alternative Clinic Opening Times (%), 2006



10. *The proximity of rural and urban health facilities is the main reason for patients' choice of going there, but not as much for hospitals.* Some 83 percent of RHC and 76 percent of UHC patients acknowledged that the health facility they went to is "closest to home" (Figure 40). However, closeness is a less important factor for hospital patients, with only 43 percent of them acknowledging that proximity is the main reason for choosing a hospital. Indeed, as much as 48 percent of hospital patients cited "provision of good service" and "other reasons" as key factors for choosing the hospital.

Figure 40. Patients' Main Reason for Choosing a Health Facility (%), 2006



11. *Patients expressed moderate rates of overall satisfaction (85 percent), but specific details of quality yielded checkered scores.* In general, patients rated health workers high on the "hospitality" aspects of care, but the ratings slide sharply on the "technical" aspects of service delivery (Table 42).

- Health workers were rated 89-95 percent on aspects related to friendliness and provision of needed information to patients. However, patient ratings fall down on aspects related to the actual conduct of an exam or procedure (61 percent), and tumble even lower for the explanation of the exam or procedure before or after it takes place (40-42 percent). Thus, one can infer from these data that more than

half of patients (58-60 percent) are left in the void on what is being done to them. These patterns are consistent across the types of health facilities.

- Drug dispensing is a little better, but the same pattern of poor provision of information from health workers persists. Thus, 92 percent of patients reported receiving medication, and 91 percent admitted being told on how to take the medication. But only 74 percent of health workers explained to patients what the medication is for.

Table 42. Patients Reporting Various Aspects of Quality (%), 2006

Aspects of Quality	RHC	UHC	Hospital	All
% of patients satisfied with the visit to the health facility	88	83	81	85
% reporting health staff provided friendly service	97	93	93	95
% reporting health staff provided needed information	91	89	87	89
% reporting health staff are easy to understand when providing information	90	90	89	90
% reporting health staff conducted health exam or procedure	58	56	73	61
% reporting health staff explained exam or procedure	40	36	47	40
% reporting health staff explained results of health exam or procedure	42	39	49	42
% reporting they had privacy during consultation or treatment	89	84	87	87
% reporting they received medicines for this visit	92	94	89	92
% reporting health staff explained how to take the medication	91	95	86	91
% reporting health staff explained purpose of medication	76	82	54	74

12. *Patients who consult or are treated on delicate conditions involving sexuality expressed concern about being dealt with by a provider of the opposite sex.* About 13 percent of patients reported receiving services involving intimate details of their sexuality (Table 43). Among these patients, more than half (58 percent) had a health worker of the opposite sex, of whom more than a third (34 percent) expressed concern about the provider's sex.

Table 43. Patients Reporting Concern About Being Treated by a Provider of the Opposite Sex (%), 2006

Issues on the Sex of the Provider	RHC	UHC	Hospital	All
% reporting receiving services on delivery, HIV/AIDS VCT, STI CT, FP, and other RH services	15	11	14	13
% reporting provider was of the opposite sex	56	63	56	58
% concerned about telling details of ailments to provider of opposite sex	20	37	59	34

## CHAPTER 8. SUMMARY OF FINDINGS AND IMPLICATIONS

1. This concluding chapter of the PET/QSDS study pulls together the key findings of the survey and the implications of those findings on program management and policy.

### A. BUDGET ALLOCATION, RELEASE, AND SPENDING

2. *In general, FY05 was a good year for health, though probably not typical.* The cash budgeting system worked well, as the national government was more disciplined than in the past and did not make large unplanned expenditures that squeezed the budget. This fiscal discipline translated into predictable releases from the Treasury to MOH, and from MOH to the provinces and districts. Releases also exceeded budgeted amounts in all provinces and districts included in the PET/QSDS. The key implication here is the importance of fiscal discipline on the part of the National Government. Loss of such discipline translates directly into a budgetary squeeze that harms social-sector ministries, health facilities, and the patients they serve.

3. *While MOH-to-DHMT releases were not a problem in FY05, DHMT releases to health facilities were checkered.* Indeed, the PET/QSDS exercise found the DHMTs quite opaque. As these DHMTs occupy a critical link between MOH and the health facilities - and it is expected to increase with decentralization - their capacity to plan and produce required data must be strengthened to reduce fiduciary risk at this level.

- The grants to health facilities faced problems. More than a third of the DHMTs themselves admitted delays in releasing district grants to facilities, although this is difficult to understand given that they received these resources from MOH on time. A fifth of the health facilities received resources less than their intended allocations.
- The imprest system, upon which 87 percent of health facilities depend, is prone to delays in releasing resources.
- A quarter of the health facilities are indebted (mostly for utilities and transport fuel), and often rely on the DHMT for the relief of these debts. The persistence of debts is a problem. It is possible that the resource requirements for these are not properly accounted for.
- Careful resource planning to inform resource requests is not universally undertaken by DHMTs, even in large units such as Lusaka Urban.



4. *If looked at from the perspective of all health facilities, vertical projects have a minor presence at the peripheral level.* But if looked at from the perspective of specific facilities where they focus resources, their share to the individual facility's resource envelop can be significant (7-11 percent), especially at UHCs and hospitals that receive their support. The wide variety that vertical projects' cash support can be used, including for incentives on human resources, attests to the changing role of this particular support in Zambia.
5. *The abolition of fees in Zambia leaves the question of how health facilities will find alternative sources of income to replace these resources that they depended on for their operations.* UHCs are particularly highly reliant on this kind of financing. The fact that fee revenues are used in direct and indirect incentives for health workers in all types of facilities also raises the issue of what fee abolition does to worker morale.
6. *Given the weakness of the financial information coming from DHMTs, it was difficult to assess fiduciary risk at this level and below, short of conducting an actual audit.* However, there are other forms of "resource depletion" that were graphically recorded in the PET/QSDS including "unaccounted" workers, high rate of absenteeism and tardiness, high rates of nonfunctioning equipment, incidence of drug diversion, and incidence of expired and inappropriate drugs. These should be managed pro-actively, because by the time the audit is done, the harm would already be done.
7. *The current and forecasted resource envelop is inadequate to deliver the health MDGs.* The FY06 resource envelop translates to either US\$20.90 or US\$26.85 per capita health spending, depending on the exchange rate used (ZK3,500 per US\$1.00 or the pre-appreciation ZK4,500). Both are a far cry from the US\$30.00 to US\$32.00 per capita spending estimated by recent Zambian models as necessary to meet the health MDGs. In light of the continuing lack of consensus within GRZ on the appropriate level of health spending, greater dialogue is needed between the MOFDP and MOH to settle this issue. But medium-term growth and financing forecasts (including the MTEF and the FDNP) are not too optimistic on a large spurt in health spending. Besides, Zambia's per capita health spending is already higher than its IDA neighbors, and is indeed closer to the IBRD countries of Southern Africa. This only underscores the need for stronger priority-setting in health and to address "leaks" in the system, as will be presented in the ensuing chapters of the PET/QSDS.
8. *The district health financing grant, which has been a key achievement of MOH since the 1990s, suffered a setback in FY06.* Funding for district nonwage expenditures dropped by 13 percent; district drug expenditures dropped by a hefty 34 percent; and instead, 2nd and 3rd level hospitals and capital expenditures gained. This reversal came at a time after user fees have been abolished, so peripheral facilities will suffer a "double damage". What would have been expected is for these facilities to get a larger share to cushion the impact of fee abolition. MOH needs to closely monitor the performance of district health facilities, and to provide ameliorative measures if necessary.
9. *Geographic equity considerations have taken a back seat in Zambia, and this needs to be raised in the policy agenda.* Provincial inequities in the allocation of government resources are stark: the most urbanized and richest provinces have per capita

government health spending thrice as much as the most rural and poorest provinces. Thus, GRZ health spending merely exacerbates the existing inequities in socioeconomic development, instead of addressing them. While MOH has taken pains in refining the district grant system for primary care, it continues to ignore the highly inequitable hospital allocation system that relies on existing infrastructure (including the burden of financing the mine hospitals) and historical budgeting.

## **B. MANAGEMENT OF INFRASTRUCTURE, UTILITIES AND EQUIPMENT**

10. *The PET/QSDS provided a graphic picture of the gravity of problems with the health sector's capital assets.* Despite their age, most of the health facility buildings appear to be in good shape, and most are maintained in hygienic condition by the staff. However, significant deficits exist in other areas.

- Less than half (43 percent) of RHCs and only 82 percent of hospitals have electric connection. Only UHCs have almost universal access to electric power (95 percent).
- Serious transport handicaps exist, especially in RHCs, where only 5 percent of them have a car, ambulance, or animal-drawn vehicle. Roughly 30-40 percent of hospitals do have these, and 62 percent have a 4-wheel drive.
- For communications, most facilities rely on land-based phone and/or 1- or 2-way radios that often conk out. Electronic connectivity is extremely low (only 7 percent of health facilities have e-mail); but even in hospitals, it is low (27 percent).
- Only 62 percent of hospitals have incinerators, and only 32 percent of UHCs and 24 percent of RHCs have them.
- Only half of the facilities have a mothers' waiting area.

11. *The high rates of nonfunctional utilities and transport equipment erode actual access to them.* Capital assets with high rates of non-functionality include solar panels, generator sets, land-based phones, 1- or 2-way radios, and bicycles and motorcycles. Hospitals have high rates of nonfunctional transport: 1 out of 3 hospitals have nonworking ambulance; 1 out of 3 hospitals have nonworking four-wheel drives; 1 out of 7 hospitals have nonworking trucks; and 1 out of 5 hospitals have nonworking motorcycles. Clearly, asset maintenance needs to be given greater budget allocation and management attention.

12. *Many hospitals continue not to have the complete complement of medical equipment.* Only 71 percent of hospitals have an x-ray and only 62 percent have a sonogram machine. In general, a little more a two-thirds (67-76 percent) of hospitals have anesthetic equipment, blood bank, oxygen supply, and laboratory equipment. Thus, around a third of the hospitals continue to operate without these basic imaging and other medical equipment.

13. *Medical equipment and instruments are better maintained than non-medical equipment.* Health facilities had surprisingly low rates of nonfunctional medical equipment. Only 2-4 percent of health facilities reported non-functioning medical equipment in their possession, such as x-ray, sonogram, refrigeration equipment, anesthetic equipment, laboratory equipment, blood bank, and oxygen supply.

14. *Large demand exists for medical instruments by RHCs.* Rural health centers are clearly the least provided among the three types of health facilities included in the survey. Because of the large inadequacies at this level, they expressed the highest demand for such items as height measuring devices, microscopes, audioscopes, surgical instruments for ob-gyne, gowns for protective clothing, malaria smears, and urine test strips.

### **C. MANAGEMENT OF HEALTH PERSONNEL**

15. *The vacancy rates are undeniably high at 33.5 percent (professional staff: \_\_\_ percent), and the rapid staff turnover especially at RHCs has become untenable.* For this reason, the HRH Strategic Plan suggests a substantial increase in recruitment and in staffing establishments. As shown in this chapter, however, skewed patterns continue to persist in existing established posts (e.g., the burden of having "in the books" so many low-skill posts in RHCs, and so many administrative posts in UHCs). The staffing pattern as reflected in these established posts need to be carefully reviewed before any large-scale recruitment. This is all the more important because as shown in the NHA analysis, MOH facilities are far more labor-intensive than either mission or for-profit facilities, even with the large shortage of MOH workers. Alternatively, MOH should set explicit criteria on the types of posts/cadres that should be filled or created as urgent, i.e., professional staff and critical administrative staff in rural areas. Failing to do so would result in bloated administrative and low-skill cadres (because they are easier to fill) even as professional staff may continue to be in short supply. It would also seem reasonable that, given the increasing share of health expenditures going to administration (as shown in the NHA analysis), central MOH HQ should receive less priority in recruitment.

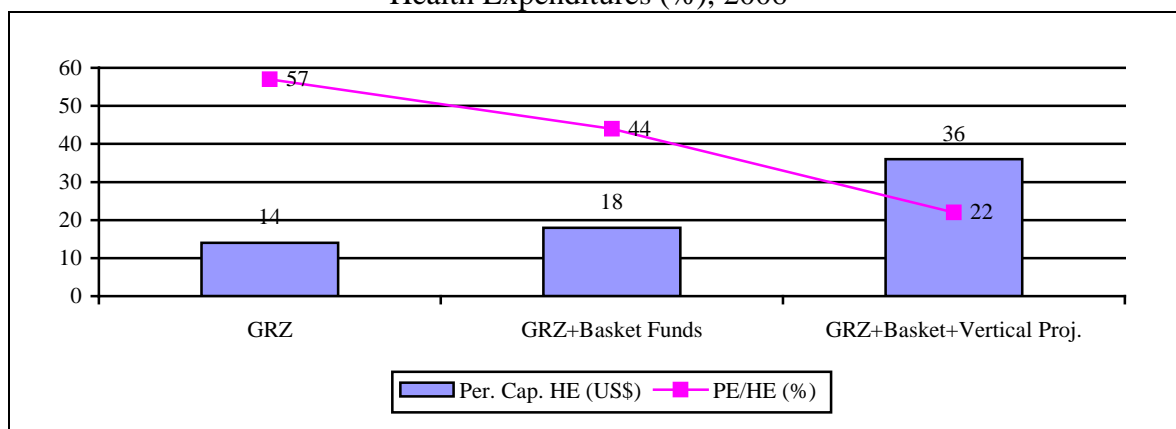
16. *Paradoxically, the HR shortage is worsening at a time when the health sector is being flooded with donor resources.* The causes are well-understood in Zambia.

- First, vertical projects rarely, if ever, provide direct salary support. Belatedly, the Global Fund through Round IV has allowed the funding of health systems strengthening including human resource development. (Curiously, the Global Fund has funded NGO project staff from the very beginning, but not government staff.) Indeed, most of the other large vertical initiatives (e.g., PEPFAR) lie outside the purview of government, even though they involve the MOH service delivery system and rely on MOH health workers.
- Second, the basket-funding cooperating partners still haven't created a fund to support personal emoluments directly.
- Third, MOH has been unable to adjust to the emerging era of budget support that could have increased the funding for human resources overall, preferring instead health-sector-specific support that it can control (IMF, 2006). Moreover, efforts

in the 1990s to de-link health workers from the civil service so that they can be provided higher salaries failed.

- The combined result of these trends is depicted starkly for the year 2006 in Figure 41. As total per capita health expenditures increase with the addition of more funding into the health system, the proportion of PE to total health expenditures declines (even as the proportion of PE to MOH expenditures increases, as mentioned above). In short, it is the inability of the basket funds and vertical financing to formally<sup>9</sup> finance PE that causes "so much money chasing so few workers". The imbalance in this factor ratio has not been properly analyzed.

Figure 41. Per Capita Health Expenditures (US\$) and Share of Personal Emoluments to Health Expenditures (%), 2006<sup>10</sup>

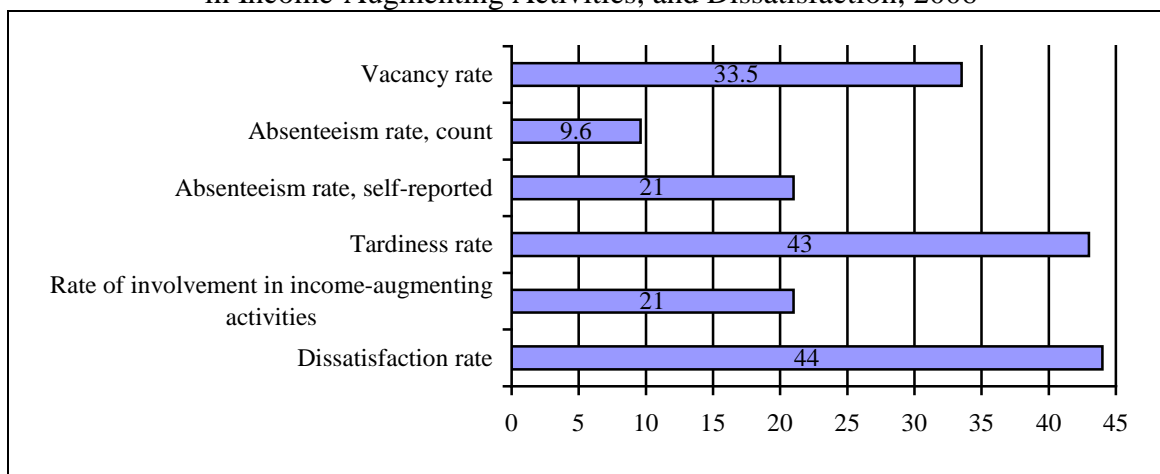


17. *Absenteeism and tardiness severely restrict the actual number of full-time equivalent ("real") workers, and these twin problems must be tackled head-on.* (See Figure 42). Human resource discussions in Zambia have overly focused on the need to fill vacancies, and have relegated the issue of staff absenteeism and tardiness to the background. The rates of absenteeism and tardiness derived from the PET/QSDS imply a total loss of 4,108 working days per month. Thus, if absenteeism and tardiness were fully eliminated, Zambia would gain virtually 187 full-time equivalent staff, enough to staff 2 hospitals, or 4 UHCs, or 21 RHCs. HR systems need to have a better handle on the problem, and how to deal with it.

<sup>9</sup> The word "formally" is important, because as was shown in the chapter on "Budget Allocation, Release and Spending," vertical funds are being used by health facilities to incentivize health workers through one form or another.

<sup>10</sup> The data and table are borrowed from Par Eriksson of SIDA who presented these data during the HR Roundtable in Zambia in 2006, held at the Swedish Embassy.

Figure 42. Summary Rates (%) of Staff Vacancy, Absenteeism, Tardiness, Involvement in Income-Augmenting Activities, and Dissatisfaction, 2006



18. *An overall wage strategy is needed.* The salary structure is highly compressed and although the allowance system has given a reprieve in decompressing such structure, it is not the best way of dealing with the problem. While the retention scheme was a right stop-gap measure at the beginning of the human resource crisis, it involved only a tiny minority of staff. The fragmented cash allowance and in-kind benefit system need to be consolidated. The wide variety of allowances and benefits only caters to a small segment of the health workforce, and it is difficult to forecast the budget implications of such a wide range of benefits.

19. *GRZ salary management needs to be strengthened.* The discrepancy in the number of filled posts, workers' payment of facilitation fees to receive salaries especially the 10 percent who continue to receive them in cash, delays in the receipt of salaries, and unexplained salary deductions in some workers call for a thorough review of the salary payment, and to plug the holes cited in this study.

20. *Due to time limitations, staff productivity was not assessed in this study.* However, it is critical that this be done - the raw data already exists from the PET/QSDS - to understand better the input-mix of service provision, and to provide better evidence on how health workers should be incentivized.

#### **D. MANAGEMENT OF DRUGS AND OTHER MEDICAL SUPPLIES**

21. *The visible improvement in drug availability could be reversed with the surprisingly sharp decline in the drug budget for FY06.* Since the early 2000s, the drug budget has been increasing, and this has resulted in a positive impact on drug availability as drug kits opened per 1,000 population rose steadily since 2002. However, the recent drop in drug allocations (15 percent overall and 34 percent on districts) is very worrisome, and could reverse these gains.

22. *The PET/QSDS data revealed the following drug distribution problems:*

- Although MSL drugs are supposed to arrive on a predetermined schedule, more than a third of the districts reported delays in receiving drug kits, some as frequently as seven times a year. The drug kits arrive relatively on-schedule in hospitals, but a third of the UHCs and RHCs experience delays.
- Evidence of drug diversion can be inferred in 25 percent of the facilities receiving drug kits in excess of what DHMTs claimed they distributed, and 39 percent of facilities receiving drug kits fewer than what DHMTs claimed they distributed. Only 36 percent of facilities reported exactly the same amount that DHMTs reported they distributed.
- Essential and life-saving drugs are widely unavailable. Coartem, a malaria drug, was out of stock on average for as long as 9.5 weeks in RHCs while ampicillin, an antibiotic, was out of stock on average for 7.4 weeks in UHCs. Life-saving drugs such as insulin and dextrose were also unavailable in many hospitals during the survey, although their lengths of stock-out were shorter.
- More than half (55 percent) of hospitals and about half (46 percent) of RHCs reported having expired drugs. Inappropriate drugs were less of a problem; still, 14 percent of all health facilities reported having them.

## **E. CLINIC AND PATIENT MANAGEMENT**

23. *Actual capacity of facilities to deliver health services falls short of their self-reported capacity.* Health facilities tend to be over-optimistic about their capacity to provide care. For instance, health centers consistently pride themselves in being able to deliver basic services such as family planning, antenatal and postnatal care, child immunization, child health/IMCI, and adult malaria treatment and diagnosis. Some 93-100 percent of RHCs and UHCs reported their ability to dispense these. However, using availability data on drugs, consumables, equipment, and instruments from the survey, it is clear that actual capacity is several percentage points lower than claimed capacity. Using indicators on the availability of drugs, vaccines, and key consumables, one could show that:

- Only ~87 percent of RHCs and ~95 percent of UHCs could provide family planning services (rather than the self-reported 98 and 100 percent, respectively);
- Only ~89 percent of RHCs and ~84 of UHCs could provide antenatal and postnatal care (rather than the self-reported 99 and 95 percent, respectively);
- Only ~77 percent of RHCs and ~84 percent of UHCs could provide child immunization services (rather than the self-reported 94 and 95 percent, respectively);
- Only ~86 percent of RHCs and ~81 percent of UHCs could provide child health/IMCI services (rather than the self-reported 93 and 97 percent, respectively).

24. *Aspects on facility management and supervision reveal the following:*

- Data accuracy of patient registers is still an issue. While having such system is high among health facilities, only two-thirds of them have accurate data.
- There is a functional system and regular timing of facility supervision where the supervisory team does a variety of tasks and provide feedback and follow-up.

25. *Aspects on patient management reveal the following.*

- Facilities are quite close to patients (60 percent of them are within 30 minutes walking distance to a health facility), but waiting times are long (average of 65 minutes). Indeed a few patients wait hours to obtain service.
- Most patients simply walk to a health facility incurring no transport costs, but a quarter of them do entail sizeable transport costs. Although a very small percentage of patients (1 percent) incur hotel and food costs as they sleep over in town to access care, their average costs are high (average of ZK36,875).
- Some 89-95 percent of patients rated health workers highly on the "hospitality" aspects of care (friendliness, provision of information), but a far lower proportion of patients (40-42 percent) rated health workers well on the "technical" aspects of service delivery (e.g., explaining what the procedure or exam was for).
- Despite the drug shortages found in the survey, only about 8 percent reported not receiving any medication after the clinic visit. Of the 92 percent of patients who did receive medication, only 74 percent said health workers explained what the medication is for.

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