

**Determination of Actual Human Resources for Health
Staffing Requirements Using Workload Indictors for
Staffing Needs Methodology**

A Case Study

**A Post Graduate Research Dissertation presented to
the Institute of Health Policy and Management in
Partial Fulfillment of the Requirements for the Award
of a Masters Degree in Business Administration-
Health Management**

of

International Health Sciences University

**Patrick, Nalere
2010-MBA-PT-012**

December, 2012

DECLARATION

I Patrick Nalere, declare that the work presented in this study is my own, that all sources used or quoted have been indicated and acknowledged by names of complete references and that it has never been presented anywhere for award of any degree.

Candidate:

Signed

Patrick Nalere,

Date:

Supervisors:

Signed

Okiria John Charles

Date:

DEDICATION

To my wife and children that endured my absence while concentrating on the study program.

DEDICATION.....	3
6.2.1 IMPROVING DISTRIBUTION OF HEALTH WORKERS IN PUBLIC HEALTH FACILITIES.....55.....	11
ABSTRACT.....	20
CHAPTER ONE.....	21
INTRODUCTION.....	21
1.0 INTRODUCTION.....	21
1.1 BACKGROUND TO THE STUDY.....	21
1.3 STATEMENT OF THE PROBLEM	25
1.5 OVERALL OBJECTIVE	26
1.5.2 Specific Objectives	26
1.5.3 Research Questions	26
1.10 OPERATIONAL DEFINITIONS	31
LITERATURE REVIEW.....	34
2.1 HEALTH WORKERS’ STAFFING NORMS AND STAFFING REQUIREMENTS	34
2.2 HUMAN RESOURCE FOR HEALTH WORKLOAD.....	35
2.5 TASK SHIFTING AMONG HEALTH WORKERS	40
CHAPTER THREE.....	42
RESEARCH METHODOLOGY.....	42

3.0 INTRODUCTION.....	42
3.1 RESEARCH DESIGN.....	42
3.2.3 Data Analysis and Interpretation	46
DATA PRESENTATION, ANALYSIS AND INTERPRETATION.....	49
4.0 INTRODUCTION.....	49
4.1.1 The Actual Number and WISN Staffing Recommended for Mityana District. 50	
Actual number and WISN Recommended health workers that are required to cope with current workload in public health facilities are calculated below in Table 4.1. Indeed table 4.1 revealed that the district of Mityan in the year 2011 (January - December) had an actual total number of 252 health workers. This comprised of 10 doctors, 26 Clinical Officers, 105 nurses, 83 midwives and 30 Nursing Assistants. Of the 252 health workers in the district, 112 were working at the General Hospital, 37 at Health Centre IVs, 57 at Health Centre IIIs, and 48 at Health Centre IIs. The details of the number of each category of workers are presented in table 4.1 below.....	50
4.1.3 The Actual Number and WISN Staffing Recommended for Health Centre IIIs	55
4.1.4 The Actual Number and WISN Staffing Recommended for Health Centre IVs	58
CHAPTER FIVE.....	62
5.1 SUMMARY OF IMPORTANT FINDINGS	62
5.2.1 Current Staff Status - Over or Understaffing	63
5.2.2 Current Staff and Workload Pressure	64
5.4 IMPLICATIONS OF UNDERSTAFFING AND OVERSTAFFING IN HEALTH FACILITIES	71
CONCLUSION AND RECOMMENDATIONS.....	75
6.0 INTRODUCTION.....	75
6.1 CONCLUSIONS	75

1.3 STATEMENT OF THE PROBLEM	25
1.5 OVERALL OBJECTIVE	26
1.5.2 Specific Objectives	26
1.5.3 Research Questions	26
1.10 OPERATIONAL DEFINITIONS	31
LITERATURE REVIEW.....	34
2.1 HEALTH WORKERS' STAFFING NORMS AND STAFFING REQUIREMENTS	34
2.2 HUMAN RESOURCE FOR HEALTH WORKLOAD.....	35
2.5 TASK SHIFTING AMONG HEALTH WORKERS	40
CHAPTER THREE.....	42
RESEARCH METHODOLOGY.....	42
3.0 INTRODUCTION.....	42
3.1 RESEARCH DESIGN.....	42
3.2.3 Data Analysis and Interpretation	46
DATA PRESENTATION, ANALYSIS AND INTERPRETATION.....	49
4.0 INTRODUCTION.....	49
4.1.1 The Actual Number and WISN Staffing Recommended for Mityana District. 50	

Actual number and WISN Recommended health workers that are required to cope with current workload in public health facilities are calculated below in Table 4.1. Indeed table 4.1 revealed that the district of Mityan in the year 2011 (January - December) had an actual total number of 252 health workers. This comprised of 10 doctors, 26 Clinical Officers, 105 nurses, 83 midwives and 30 Nursing Assistants. Of the 252 health workers in the district, 112 were working at the General Hospital, 37 at Health Centre IVs, 57 at Health Centre IIIs, and 48 at

Health Centre IIs. The details of the number of each category of workers are presented in table 4.1 below.....	50
4.1.3 The Actual Number and WISN Staffing Recommended for Health Centre IIIs	55
4.1.4 The Actual Number and WISN Staffing Recommended for Health Centre IVs	58
CHAPTER FIVE.....	62
5.1 SUMMARY OF IMPORTANT FINDINGS	62
5.2.1 Current Staff Status - Over or Understaffing	63
5.2.2 Current Staff and Workload Pressure	64
5.4 IMPLICATIONS OF UNDERSTAFFING AND OVERSTAFFING IN HEALTH FACILITIES	71
CONCLUSION AND RECOMMENDATIONS.....	75
6.0 INTRODUCTION.....	75
6.1 CONCLUSIONS	75
6.2.4 General and Policy Recommendations.....	81
6.2.5 Recommendations for Further Research.....	82
This study research on determining the appropriate number of actual staffing gap, cadre mix and work pressures in all public health facilities in Mityana District focused essentially on numbers of the selected health workers per se for the Public Health Centres to cope with its workload. This only emphasizes effective management of the valuable Health Human Resources, without looking at its quality, motivations, and remunerations among others things.	83
REFERENCES.....	84
APPENDICES.....	89
APPENDIX 1: LETTER OF INTRODUCTION.....	89
APPENDIX 3: HMIS 105: HEALTH UNIT MONTHLY REPORT	92
APPENDIX 4: HMIS 108: HEALTH UNIT INPATIENT MONTHLY REPORT.....	95

4.1.1 The Actual Number and WISN Staffing Recommended for Mityana District.....	29
4.1.2 The Actual Number and WISN Staffing Recommended for Health Centre IIs.....	30
4.1.3 The Actual Number and WISN Staffing Recommended for Health Centre IIIs.....	35
4.1.4 The Actual Number and WISN Staffing Recommended for Health Centre IVs.....	38
4.1.5 The Actual Number and WISN Staffing Recommended for The General Hospital.....	40
DEDICATION.....	3
6.2.1 IMPROVING DISTRIBUTION OF HEALTH WORKERS IN PUBLIC HEALTH FACILITIES.....	55..... 11
ABSTRACT.....	20
CHAPTER ONE.....	21
INTRODUCTION.....	21
1.0 INTRODUCTION.....	21
1.1 BACKGROUND TO THE STUDY.....	21
1.3 STATEMENT OF THE PROBLEM	25
1.5 OVERALL OBJECTIVE	26
1.5.2 Specific Objectives	26
1.5.3 Research Questions	26
1.10 OPERATIONAL DEFINITIONS	31
LITERATURE REVIEW.....	34

2.1 HEALTH WORKERS' STAFFING NORMS AND STAFFING REQUIREMENTS	34
2.2 HUMAN RESOURCE FOR HEALTH WORKLOAD.....	35
2.5 TASK SHIFTING AMONG HEALTH WORKERS	40
CHAPTER THREE.....	42
RESEARCH METHODOLOGY.....	42
3.0 INTRODUCTION.....	42
3.1 RESEARCH DESIGN.....	42
3.2.3 Data Analysis and Interpretation	46
DATA PRESENTATION, ANALYSIS AND INTERPRETATION.....	49
4.0 INTRODUCTION.....	49
4.1.1 The Actual Number and WISN Staffing Recommended for Mityana District. 50	
Actual number and WISN Recommended health workers that are required to cope with current workload in public health facilities are calculated below in Table 4.1. Indeed table 4.1 revealed that the district of Mityan in the year 2011 (January - December) had an actual total number of 252 health workers. This comprised of 10 doctors, 26 Clinical Officers, 105 nurses, 83 midwives and 30 Nursing Assistants. Of the 252 health workers in the district, 112 were working at the General Hospital, 37 at Health Centre IVs, 57 at Health Centre IIIs, and 48 at Health Centre IIs. The details of the number of each category of workers are presented in table 4.1 below.....	50
4.1.3 The Actual Number and WISN Staffing Recommended for Health Centre IIIs	55
4.1.4 The Actual Number and WISN Staffing Recommended for Health Centre IVs	58
CHAPTER FIVE.....	62
5.1 SUMMARY OF IMPORTANT FINDINGS	62
5.2.1 Current Staff Status - Over or Understaffing	63

5.2.2 Current Staff and Workload Pressure	64
5.4 IMPLICATIONS OF UNDERSTAFFING AND OVERSTAFFING IN HEALTH FACILITIES	71
CONCLUSION AND RECOMMENDATIONS.....	75
6.0 INTRODUCTION.....	75
6.1 CONCLUSIONS	75
6.2.4 General and Policy Recommendations.....	81
6.2.5 Recommendations for Further Research.....	82
This study research on determining the appropriate number of actual staffing gap, cadre mix and work pressures in all public health facilities in Mityana District focused essentially on numbers of the selected health workers per se for the Public Health Centres to cope with its workload. This only emphasizes effective management of the valuable Health Human Resources, without looking at its quality, motivations, and remunerations among others things.	83
REFERENCES.....	84
APPENDICES.....	89
APPENDIX 1: LETTER OF INTRODUCTION.....	89
APPENDIX 3: HMIS 105: HEALTH UNIT MONTHLY REPORT	92
APPENDIX 4: HMIS 108: HEALTH UNIT INPATIENT MONTHLY REPORT.....	95
6.2 RECOMMENDATIONS.....	55
6.2.1 Improving Distribution of Health Workers in Public Health Facilities.....	55
DEDICATION.....	3
6.2.1 IMPROVING DISTRIBUTION OF HEALTH WORKERS IN PUBLIC HEALTH FACILITIES.....	11

ABSTRACT.....	20
CHAPTER ONE.....	21
INTRODUCTION.....	21
1.0 INTRODUCTION.....	21
1.1 BACKGROUND TO THE STUDY.....	21
1.3 STATEMENT OF THE PROBLEM	25
1.5 OVERALL OBJECTIVE	26
1.5.2 Specific Objectives	26
1.5.3 Research Questions	26
1.10 OPERATIONAL DEFINITIONS	31
LITERATURE REVIEW.....	34
2.1 HEALTH WORKERS’ STAFFING NORMS AND STAFFING REQUIREMENTS	34
2.2 HUMAN RESOURCE FOR HEALTH WORKLOAD.....	35
2.5 TASK SHIFTING AMONG HEALTH WORKERS	40
CHAPTER THREE.....	42
RESEARCH METHODOLOGY.....	42
3.0 INTRODUCTION.....	42
3.1 RESEARCH DESIGN.....	42
3.2.3 Data Analysis and Interpretation	46
DATA PRESENTATION, ANALYSIS AND INTERPRETATION.....	49

4.0 INTRODUCTION.....	49
4.1.1 The Actual Number and WISN Staffing Recommended for Mityana District. 50	
Actual number and WISN Recommended health workers that are required to cope with current workload in public health facilities are calculated below in Table 4.1. Indeed table 4.1 revealed that the district of Mityana in the year 2011 (January - December) had an actual total number of 252 health workers. This comprised of 10 doctors, 26 Clinical Officers, 105 nurses, 83 midwives and 30 Nursing Assistants. Of the 252 health workers in the district, 112 were working at the General Hospital, 37 at Health Centre IVs, 57 at Health Centre IIIs, and 48 at Health Centre IIs. The details of the number of each category of workers are presented in table 4.1 below.....	50
4.1.3 The Actual Number and WISN Staffing Recommended for Health Centre IIIs	55
4.1.4 The Actual Number and WISN Staffing Recommended for Health Centre IVs	58
CHAPTER FIVE.....	62
5.1 SUMMARY OF IMPORTANT FINDINGS	62
5.2.1 Current Staff Status - Over or Understaffing	63
5.2.2 Current Staff and Workload Pressure	64
5.4 IMPLICATIONS OF UNDERSTAFFING AND OVERSTAFFING IN HEALTH FACILITIES	71
CONCLUSION AND RECOMMENDATIONS.....	75
6.0 INTRODUCTION.....	75
6.1 CONCLUSIONS	75
6.2.4 General and Policy Recommendations.....	81
6.2.5 Recommendations for Further Research.....	82

This study research on determining the appropriate number of actual staffing gap, cadre mix and work pressures in all public health facilities in Mityana District focused essentially on numbers of the selected health workers per se for the Public Health Centres to cope with its workload. This only emphasizes effective

management of the valuable Health Human Resources, without looking at its quality, motivations, and remunerations among others things.83

REFERENCES..... 84

APPENDICES..... 89

APPENDIX 1: LETTER OF INTRODUCTION.....89

APPENDIX 3: HMIS 105: HEALTH UNIT MONTHLY REPORT92

APPENDIX 4: HMIS 108: HEALTH UNIT INPATIENT MONTHLY REPORT.....95

DEDICATION.....	3
6.2.1 IMPROVING DISTRIBUTION OF HEALTH WORKERS IN PUBLIC HEALTH FACILITIES.....55.....	11
ABSTRACT.....	20
CHAPTER ONE.....	21
INTRODUCTION.....	21
1.0 INTRODUCTION.....	21
1.1 BACKGROUND TO THE STUDY.....	21
1.3 STATEMENT OF THE PROBLEM	25
1.5 OVERALL OBJECTIVE	26
1.5.2 Specific Objectives	26
1.5.3 Research Questions	26
1.10 OPERATIONAL DEFINITIONS	31
LITERATURE REVIEW.....	34
2.1 HEALTH WORKERS’ STAFFING NORMS AND STAFFING REQUIREMENTS	34
2.2 HUMAN RESOURCE FOR HEALTH WORKLOAD.....	35
2.5 TASK SHIFTING AMONG HEALTH WORKERS	40
CHAPTER THREE.....	42
RESEARCH METHODOLOGY.....	42

3.0 INTRODUCTION.....	42
3.1 RESEARCH DESIGN.....	42
3.2.3 Data Analysis and Interpretation	46
DATA PRESENTATION, ANALYSIS AND INTERPRETATION.....	49
4.0 INTRODUCTION.....	49
4.1.1 The Actual Number and WISN Staffing Recommended for Mityana District. 50	
Actual number and WISN Recommended health workers that are required to cope with current workload in public health facilities are calculated below in Table 4.1. Indeed table 4.1 revealed that the district of Mityan in the year 2011 (January - December) had an actual total number of 252 health workers. This comprised of 10 doctors, 26 Clinical Officers, 105 nurses, 83 midwives and 30 Nursing Assistants. Of the 252 health workers in the district, 112 were working at the General Hospital, 37 at Health Centre IVs, 57 at Health Centre IIIs, and 48 at Health Centre IIs. The details of the number of each category of workers are presented in table 4.1 below.....	50
4.1.3 The Actual Number and WISN Staffing Recommended for Health Centre IIIs	55
4.1.4 The Actual Number and WISN Staffing Recommended for Health Centre IVs	58
CHAPTER FIVE.....	62
5.1 SUMMARY OF IMPORTANT FINDINGS	62
5.2.1 Current Staff Status - Over or Understaffing	63
5.2.2 Current Staff and Workload Pressure	64
5.4 IMPLICATIONS OF UNDERSTAFFING AND OVERSTAFFING IN HEALTH FACILITIES	71
CONCLUSION AND RECOMMENDATIONS.....	75
6.0 INTRODUCTION.....	75
6.1 CONCLUSIONS	75

6.2.4 General and Policy Recommendations.....	81
6.2.5 Recommendations for Further Research.....	82
This study research on determining the appropriate number of actual staffing gap, cadre mix and work pressures in all public health facilities in Mityana District focused essentially on numbers of the selected health workers per se for the Public Health Centres to cope with its workload. This only emphasizes effective management of the valuable Health Human Resources, without looking at its quality, motivations, and remunerations among others things.	83
REFERENCES.....	84
APPENDICES.....	89
APPENDIX 1: LETTER OF INTRODUCTION.....	89
APPENDIX 3: HMIS 105: HEALTH UNIT MONTHLY REPORT	92
APPENDIX 4: HMIS 108: HEALTH UNIT INPATIENT MONTHLY REPORT.....	95

LIST OF ABBREVIATIONS

AWT	Available Working Time
CAF	Category Allowance Factor
CAS	Category allowance standards
GoU	Government of Uganda
HIV/AIDS	Human Immunodeficiency Virus /Acquired Immunodeficiency Syndrome
HDPs	Health Development Partners
HMIS	Health Management Information System
HR	Human Resources
HRH	Human Resource for Health
HSD	Health Sub Districts
HSSP	Health Sector Strategic Plan
IAS	Individual Allowance Standards
IHK	International Hospital Kampala
IHSU	International Health Science University
LG	Local Government
MCH	interventions
MoH	Ministry of Health
NDP	National Development Plan
NGO	Non Governmental Organizations
NMHCP	National Minimum Health Care package
SSA	Sub Saharan African
UBOS	Uganda Bureau of Statistics
USAID	United States of America International development
WISN	Workload Indictors for Staffing Needs Methodology
WHO	World Health Organization

ACKNOWLEDGEMENTS

Producing this dissertation was challenging and enlightening. I wish to express my sincere gratitude and appreciation to the following people, who were there for me through this bumpy journey.

The greatest debt is owed to my supervisor, Mr. Okiria John Charles for his invaluable and professional guidance, expert advice and untiring support and inspiration displayed throughout the duration of the study. His thoughtful and constructive criticism, and his interest and contributions made the completion of this study a reality. Thank you.

Special thanks go to Justine Nampojja Ssekanjako the Mityana bio-statistician for her support in data collection and continued help.

Considerable gratitude also belongs to my family for their constant support and encouragement.

Above all, I thank God Almighty for granting health, strengths and wisdom to complete this study.

Without the contribution of all these people, this study would never have been possible.

ABSTRACT

Uganda has chronically had inadequate numbers of trained health personnel, poor equitable distribution of the human resources, poor skills mix and ineffective use of available human resources with non-professional task shifting in place. The study determined the appropriate number, cadre mix and the work-related pressures experienced at different level of health Centres in Mityana District in order to enhance effective and efficient use of human resources for health (HRH).

The study adopted the Workload Indictors for Staffing Needs Methodology (WISN) process and data analysis package as developed by Shipp, (1988) which is currently being piloted and rolled out in Uganda. Health Unit monthly reports summarized in the HMIS 105 and HMIS 108 for a period from January 2011 to December 2011 in all the 32 public health facilities was used for data collection.

The findings reveal that the district in 2011 had 254 health workers consisting of 10 Doctors, 26 Clinical Officers, 83 Midwives, 105 Nurses and 30 Nursing Assistants. Yet, according to the WISN staffing requirements, the district is supposed to have 16 Doctors, 29 Clinical Officers, 55 Midwives, 92 Nurses and 57 Nursing Assistants, giving a deficit of 5 health workers in total.

To meet the district WISN staffing requirements there is need to: recruit more health worker per facility deficit, improve the equitable distribution by cadre, reduce un-professional tasking shifting, budget for human resources for health as well as implement incentive scheme for hard to reach and to stay areas.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This first chapter presents the background to the study. Uganda's decentralization, health systems and overview of the study area are also briefly articulated. The chapter further presents the statement of the problem, objectives and research questions. It concludes with the study significance, scope and a conceptual framework.

1.1 Background to the Study

Uganda is one of the landlocked countries in East Africa. Uganda's total area is 241,038 sq. Kms. Of 241,038 sq. Kms, 43 942 square Kms is covered by swamps and land occupies 197 096 sq. Kms. By the end of 2011, the population estimate for Uganda was 32.9 million growing at an average rate of 3.4% per annum (Uganda Bureau of Statistics (UBOS), 2011). By July 2012, Uganda had been divided into 132 districts which are decentralized across four administrative regions.

Uganda has chronically had inadequate numbers of trained health personnel, poor equitable distribution of human resources, poor skills mix and ineffective use of available human resources, worsened by the practice of non-professional task-shifting. Determining the actual capacity of Human Resources needed to facilitate health staffing requirements and tackle work-related pressures in different health facilities, remains a great concern in Uganda as a country. It is under the pressure of globalization, overpopulation and need for adequate and quality

healthcare. Like elsewhere in the developing world, different health facilities in Uganda are coping with workload and pressure on different categories of health personnel.

The health system of Uganda comprises of public and private provision and financing of health service deliveries. The main health providers consist of the public, NGOs, private health practitioners, traditional practitioners and the informal sector actors (Ministry of Health, 2010). Most healthcare services in the formal sector system are provided at Health Centers and at hospitals at district, regional and national levels.

One on the means of achieving efficiency gains and enhanced health services delivery is through appropriate determination and use of Human Resources for Health (HRH). To date, the HRH predicament has taken numerous dimensions in terms of numbers which are projected to reach only 50% of the required resource by 2025 (Lacet, 2008). These numbers are aggravated more by the inequitable distribution of health workers globally. There is emigration of qualified health workers from developing countries to the developed countries.

Cadre mix is another very critical dimension to quality healthcare service delivery. The ratio of nurses to doctors, for example determines the capacity of workload that a facility can handle per given time. This scenario is worse in Sub-Saharan African countries where there is a lot of brain drain, with disease burden being the highest. As a result, health workers are experiencing heavy workload and hence burn-out (Mungherera 2005).

In Uganda, the human resource for health is being determined by the doctor population ratio which currently stands at about 1:20,000 on average with some districts having a ratio as high as 1:80,000. These ratios are definitely unacceptable by any standard. The staffing for health

workers in public facilities currently is based on bed capacity of the hospital and the level of health service delivery. Whereas this criterion may guide the staffing of facilities, this basis however is not scientific at all since it does not reflect the actual workload that is reflected in various regions and locations of the facilities (MoH Human Resource for Health 2009).

1.2 Human Resource Planning and Management Tools

In order to address the challenges of improve human resource planning and management, several human resources for health tools have been applied. The tools among others include:

a) Human Resources Management Rapid Assessment (HRMRA)

A HRMRA tool is a self-evaluation instrument designed to enable quick identification of the strengths and weakness of human resources systems in an organization, whether in health or not. The results inform the appropriate strategy development to improve the systems and maximize the effectiveness of the HRH.

The advantage of HRMRA is that little training is require and can be easily applied by both small or big governmental or non-governmental organizations. It facilitates clear identification of the critical issues of human resources systems that require strengthening. However, the tool doesn't measure human resources productivity and requires approval by the Board which may not always be the case.

b) Human Resources Audit

A Human resource audit is viewed as a broader approach to reviewing existing human resources systems, policies and procedures. It helps to make clear the anticipated practice of human resource work and function within an organization for the purpose of detecting strengths and needs for enhancements and improvement of the HR function. In doing so, HR audit attempts to create the standard for the future improvement, appraise the effectiveness and knowledge and skills as well as improve performance levels.

A Human resource audit is applied using a checklist of key human resources parameters which are reviewed.

c) WPRO Workforce Projection Tool

WPRO workforce projection is a tool that is designed for projecting human resource needs. It is used to facilitate the production of comparative, cadre specific and summary reports for health workers' projection and cost parameters. The outcome of the tool application serves to guidepost for the basis of HRH plans and strategies in determining and meeting the optimal number of health workers required to cater for the need.

d) Workload Indictors for Staffing Needs (WISN).

WISN provides a systematic way of decision making on staffing in order to manage the valuable human Recourses for health properly. It is based on a health worker's workload, with activity standards applied for each workload. Therefore the approach is used to:

- 1) Determine the number of health workers of a particular type required to cope with the workload of a given health facility,
- 2) Assess the workload pressure of the health workers in a given health facility.

It was developed and published as an approach to adjusting staffing levels to effect affair and optimal distribution of staff at health facilities at all levels

This study was intended to demonstrate a practical application of an alternative approach to staffing requirement determination that are based on health workforce utilization and the workload they face in different level facility. The approach applied is known as the Workload Indicators of Staffing Needs (WISN). This study presents evidence established by the use of WISN in public health facilities for defined health cadres in Mitayana district as a case study.

1.3 Statement of the Problem

The health system of Uganda has chronically had inadequate numbers of trained health personnel (Ministry of Health, 2007). This phenomenon is aggravated by poor equitable distribution of human resources, poor skills mix and ineffective use of available human resources with the practice of non-professional task-shifting (ibid). Uganda is lively to severe health challenges as a result of poor human resource planning and management (Carayon and Gurses, 2007).

The emerging and re-emerging diseases, increasing young and aging population and chronic conditions are likely increase the effective demand for quality service delivery and yet threaten the credibility of the health facilities (Carayon and Gurses, 2007). In order to address the challenges of improving human resource planning and management, several human resources for

health tools have been applied. The tools among others include human resources audit, Workforce Project tool, HR management rapid assessment tool and Health human resources modeling- challenging the past, creating the future.

These tools however have not sufficiently informed how to ensure an adequate supply of well-trained health workers, high levels of team work and staff performance, cost saving, a more motivated workforce and a healthier population. This necessitated the determination of actual human resources for health staffing requirements using alternative tools, thus Workload Indicators for Staffing Needs (WISN) Methodology adopted by this study.

1.5 Overall Objective

The study set out to determine the actual number of health workers, actual staffing gap, cadre mix and work-related workload and pressures in public health facilities in Mityana District.

1.5.2 Specific Objectives

1. To determine the actual number of health workers that are required to cope with actual workload in public health facilities;
2. To compare the actual staffing levels and staffing norms with the WISN requirement in public health facilities;
3. To assess the workload pressure experienced by respective staffs/cadres in public health facilities in the district;

1.5.3 Research Questions

The general research question was: What is the actual Human Resources capacity of the selected cadres (Doctors, clinical officers, Nurses, mid-wives, Nursing Assistants) is needed to meet health staffing requirements and remedy workload pressures using Workload Indicators of Staffing Needs Methodology in public health facilities in Mityana District?

While the specific questions were:

- What are the actual numbers of the selected cadres required per health facility basing on the workload?
- What are the actual deficits/surpluses of staff per public health facility?
- What are the actual workload pressures experienced by the selected cadres in the selected facilities?

1.6 Significance of the Study

This study was viewed significant on theoretical, social policy and/or practical fronts as advanced by Marshall and Rossman (1999).

From the theoretical view, this study results provides researchers and academicians with an alternative perspective to the studies on workload for health personnel in health facilities and the use of WISN for human resource management. This contributes to the growing body of knowledge and understanding of the theory on workload, WISN and informs practice in Uganda's health sector and health facilities in Mityana district, in particular.

From the social policy front, the study results provide new insights and help policy makers at local government (Mityana District) to foster informed reforms in the district health sector directed towards ensuring optimal resource deployment in different health facilities. The study was timely, since severe workload challenges faced by health facilities in Mityana District was directly impacting on patients and generally compromising on the quality of health service delivery. The study informs an establishment of clear mechanisms for ensuring balanced allocation of doctors, Clinical Officers, midwives, nurses, and Nursing Assistants at the district health facilities.

Practically, the study results contribute to the improvement on health staffing in Mityana District by providing managers at different levels of health facilities with a systematic way to make staffing decisions based on workload, in order to manage their valuable human resources without compromising on the quality of services they offer. This help in the distribution of health personnel in Mityana District to reduce workload pressure; reviewing and aligning task allocation between health workers; and planning for balanced future deployments.

1.7 Scope of the Study

Due to limited time, the study was limited to all levels of health facilities in only one district of Mityana. It covered the 32 public health facilities (1 General Hospital, 3 Health Centre IVs, 9 Health Centre IIIs and 19 Health Centre IIs) in the district. The study limited itself to data from January 2011 to December 2011 calendar year. This was because WISN uses previous year statistic to ensure results validity.

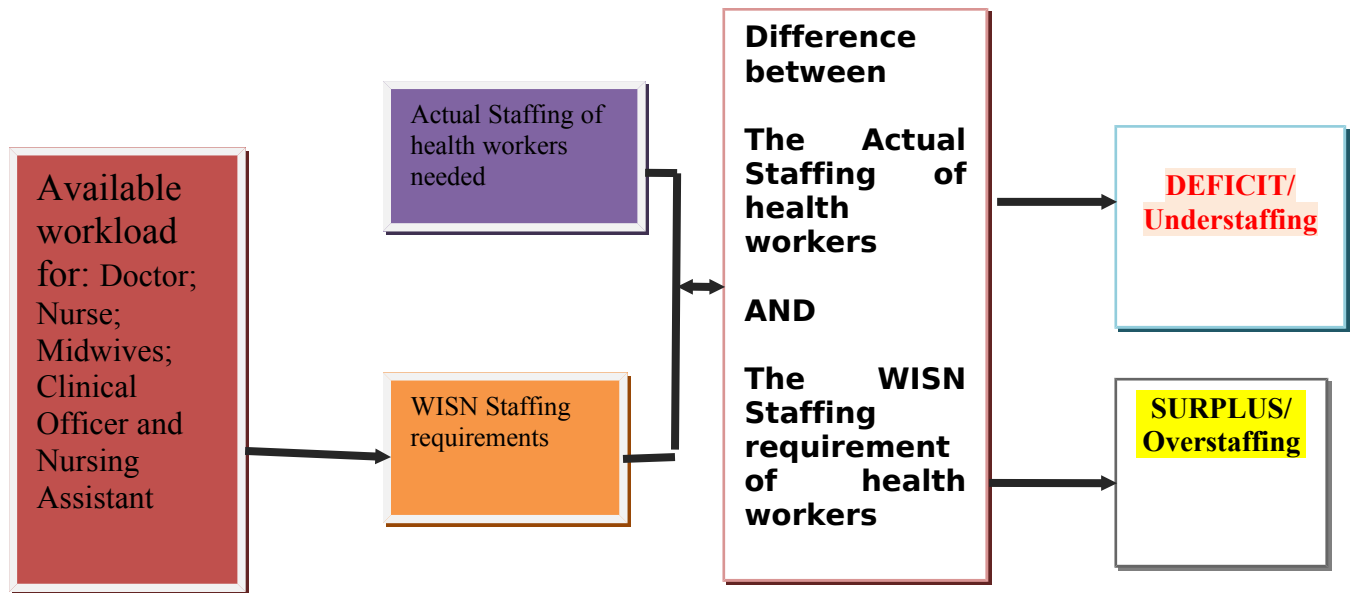
Whereas there are many important categories of workforce in the selected facilities, the study covered only five key cadres namely; doctors, Clinical Officers, midwives, nurses, and Nursing Assistants. This was basically because the activity standards and the workloads of these cadres had already been estimated by WHO and adjusted to the developing countries' health system services.

1.8 Conceptual Framework

The conceptual framework in figure 1.1 was based on the available workload of the different categories of health cadres. The framework served as a simple model that displayed the link between available workload of health workers (Doctors, Clinical Officers, Midwives, Nurses and Nursing Assistants) and the actual number of health workers needed in a given health facility or a geographical location say district, or even a country.

Equally, Hornby (2006:1242) defines Workload as the amount of work or of working time expected to be done by someone on something. Therefore, the available workload of the different categories of health personnel was viewed in terms of the available amount of work or of working time expected to be done by the different categories of health workers in a given health facility as in figure 1.1 below.

Figure 1.1 Shows the linkage between Available workload and actual number of health cadres needed.



Source: Conceptual framework developed by the researcher

For the sake of this study, the different selected health cadres included: Doctors, Clinical Officers, Midwives, Nurses, and Nursing Assistants. This meant that the WISN staffing requirement of health personnel in a given health facility was treated as a function of the available workload of the different health cadres in the facility or defined geographical areas. However to determine whether there existed an overstaffing or and understaffing then the differences between The Actual Staffing of health workers and the WISN Staffing requirement were established.

The linkages are shown by the arrows pointing from the available workloads of the different selected cadre category to the actual number of workers needed at the center.

1.10 Operational Definitions

The operational/conceptual definitions are derived WISN user's manual developed by World Health Organization (WHO, 1998). The concepts that were conceptually imperative to the context of this study were: activity standard, available working time, standards workload, and workload components as defined by Rasmussen, (2010). Their definitions are:

a) Workload Indicators of Staffing Needs (WISN)

WISN method is a human resource management tool that; determines how many health personnel of a particular type are required to cope with the workload of a given health facility and assesses the workload pressure of the health personnel in a given health facility. The WISN is the ratio of present staffing numbers to the calculated staff requirements (Rasmussen, 2010). According to Rasmussen, this ratio is used to demonstrate the varying workload pressure among the departments and among staff of the same cadre in any health facility.

b) Activity Standard:

Activity standard was defined as the time necessary to any of the selected health cadres to perform an activity to professional standards in the local circumstances (Shipp 1988). There are two kinds of activity standards: *Service standard*: activity standard for health service activity; and *Allowance standard*: activity standard for support and additional activities.

c) Available Working Time

Available working time was defined as the time available to any of the selected health cadres in one year to his/her work taking into account authorized and unauthorized absences (Shipp 1988).

d) Standard Workload:

Standard workload was the amount of work within a health service workload component that one health personnel can do in a year (Shipp 1988).

e) Workload Components

Workload components was defined as one of the main work activities that take up most of any of the selected health cadres' daily working time, such as health service activity, support activity and additional activity (Shipp 1988).

f) Actual number of workers needed

The Oxford Advanced Learners dictionary of current English Hornby (2006:1242) 7th Edition defines a worker as a person who contributes labor and expertise to an endeavor of an employer and is usually hired to perform specific duties which are packaged into a job. In this case and for the study, *Actual number of workers needed can be viewed in terms of exact number of health personnel* (doctors, Clinical Officers, midwives, nurses, and Nursing Assistants) who are hired to contribute their labor and expertise to an endeavor of a given health facility.

h) Human Resource for Health (HRH)

HRH was defined by Diarra-Nama, (2007) as “all persons who work directly or indirectly to support and create health and well-being and embodies not only the technical expertise directly responsible for creating and sustaining health, but also the skills needed by support systems and the linkages that facilitate the application of the technical skills”.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of the literature on the study. It attempts to explore some of the theoretical and policy issues regarding human resource, efficient utilization, task-shifting, patient-worker ratios; and human resource workload. More insights into staffing norms and staffing requirements; workload pressure and the burn-out effect; and the benefits and limitations for using WISN are explored.

2.1 Health Workers' Staffing Norms and Staffing Requirements

Scott, (2008) argues that 'top-down' formulae can help in setting standards for health personnel in National Health Service by health authorities. Scott further asserts that where staffing norms are developed judiciously, using expert professional judgment and research evidence, they complement cost-cutting exercises by employing organizations. The Commission of Macroeconomic and Health (2001) also noted that many of the healthcare interventions provided by certain health Cadres at community level can be carried out by those of lower training. For instance, in the absence of doctors, Clinical officers can be entrusted to perform tasks meant for doctors (ibid).

Kurowski and Mills, (2006) argues there is no accepted 'gold standard' measure of health workforce workload. To Kurowski and Mills, this is because health worker workload has been measured in a number of ways including techniques such as time-motion, self-reporting

(timesheets), worker sampling, worker recall involving provider interviews, and patient-flow analysis (ibid).

Daviauda and Chopraa (2007) argue that each of the health facility has a minimum staff requirement. For instance a clinic requires one professional nurse, one enrolled Nurse Assistant and a half-time general assistant. For a community Health Centre, a doctor and a clerk need to be added as staff expected on duty at any time during the working hours. Daviauda and Chopraa contends that staff shortages increases workload of existing staff and pose a potential threat to the quality of service delivery, and safety of patients.

According to Hongoro and Normand (2006), staffing norms do not play a critical role if funds for salaries required to fill the staffing gaps is not available. Hongoro and Normand further assert that decisions about how many health cadres to employ and in what capacities need to be based on the contributions such employees are expected to make, not underscoring the costs of employing them. Therefore, to Hongoro and Normand staffing norms help in planning, but also require careful analysis of affordability of care, the skills needed, and the way to provide those skills most efficiently. Because of this and out of necessity, several countries have turned to alternative models of health service provision such as using staff skilled in the delivery of key elements of high-priority services, including as immunization and emergency obstetric care (ibid).

2.2 Human Resource for Health Workload

According to (Carayon & Gurses, 2005), the most commonly used workload measure is the health worker - patient ratio. The health personnel - patient ratio can be used to provide a strong

evidence that high health workers' workload negative impact on patient outcomes Lang, Hodge, Olson, et al. (2004). On the other hand the type of health personnel job determines the level of workload (Schaufeli & Le Blanc, 1998). On this, Oates & Oates (1996), argues that workload measures at the job level are suitable to use when comparing workload levels of health personnel with different specialties.

According to Carayon & Gurses (2005), the number of patients allocated to given health workers and the patient's clinical condition, describe the workload experienced at a given health facility. Hughes et al., (2002) supports the WHO finding that poor performance of health workers arrive from shortage of staff, or from staff not providing care according to standards and not being responsive to the needs of the community and patients. Joint Learning Initiative, (2004) support the argument in that poor performance of health cadres results into inaccessibility of health services and inappropriate care to patients. This then contributes to the reduction of health outcomes as people are not using health services or are ill-treated due to harmful practices (ibid).

2.3 Health Workers Efficient Utilization of Time

Ruwoldt & Hassett (2007) in their study reveal that on average, health workers spend three-fifths (61%) of their on-the-job time doing productive activities, which primarily involves providing direct care for patients. However, they spent more than one-fourth (27%) of their time doing unproductive activities such as waiting for patients. Several studies expose the necessity to encourage the use of health human resources (Romanow, 2002). Besner et al. (2005) argues that guaranteeing that health workers are able to work at their full scope of practice is a significant retention approach that is crucial in fixing health workforce shortages

Whereas no all-inclusive indication has yet been known on the degree of absenteeism by health workers, Chaudhury et al. (2004) in a study from Uganda discovered absenteeism rates of 37% in health facilities. McKinsey (2004) adds that circumstantial evidence from Tanzania recommends that widespread moonlighting occurs, both among doctors (who moonlight in private health facilities) and nurses (who moonlights in agriculture). Kurowski et al. (2004) noted that a large share of working hours is spent on unproductive activities in their study in Tanzania. They argue that if misused hours were fully used the productivity of the health workers would increase by 45%.

Hedberg and Larsson (2004) found that the availability of time or lack of it influences health workers decision making abilities. Wieck et al. (2004) adds that conflicts, poor communication and lack of clarity of boundaries and roles among health workers (Pearson 2003) also serve as barriers to full scope practice. Jackson (2005); Wieck et al. (2004); Pearson (2003), all argued that teamwork among health workers helps in providing desirable healthcare for patients.

Mæstad, (2006) argues that besides increasing the number of health workers, another way of strengthening health workforce is the use of the existing workforce more effectively. To Maestand, this can be achieved through increased productivity, improved performance and through more effective (and equitable) deployment of personnel. Maestand further contends that to use the present workforce more effectively is not necessarily as disconnected from the issue of the size of the workforce. For instance, heavy workload, caused by shortage of personnel, may be one major reason why health workers lose their motivation, which in turn may lead to low productivity and performance.

2.4 Work Pressure and Quality Services Delivery

According to Kane, (2007) a shortage of health personnel of a specific category, increases workload and threatens quality of care. Kane further argues that increasing the health worker to patient ratio is a mean to improve health service delivery, thereby improving patient safety. Further studies indicate that a heavy workload adversely affects patient safety (Lang et al, 2004). Lang et al, goes ahead to argue that increased workload negatively affects job satisfaction and contributes to high health workforce turnover.

Duffield et al (2003) argues that health workers are expected to perform non-professional tasks in addition to professional responsibilities. The non-professional tasks such as delivering and retrieving food trays; housekeeping duties; transporting patients; and coordinating, or performing ancillary services, increases workload pressures and burn-out (ibid).

Health workers in Uganda face workload pressure, which health experts contend is getting worse with more health workers to quitting their professional jobs (Baguma, 2010). Baguma, further notes that in Uganda, hospitals at regional level are having less by 30% of the workforce they should have. This displays gross disparities across different districts in Uganda, because of the poor distribution of health cadres (Oketcho *et al*, 2009). On the other hand (Matsiko, 2010) reveals that almost half (48%) of approved posts at Health Centers and hospitals in Uganda are vacant, with a worse situation in the lower-level Health Centers.

Delva MD, et al (2002) argues that increased workload pressure makes health workers to become unhappy with their work, which manifest as stress or burn-out, may result into emotional

exhaustion; depersonalisation; and reduced personal accomplishment. Delanyo (2005) reveals that in Ghana the average of 2.4 days are spent on sick leave by health workers due to high workload.

Work environments that support professional health workers' practice leads to a more positive outcome for patients (Tourangeau, Gioavannetti, Tu, & Wood, 2002). However, current public health facility work environments with their workload pressure are stressful for even the most seasoned health personnel who report high levels of burn-out and absenteeism (Greco, Laschinger, & Wong, 2006; Laschinger, Almost, Purdy, & Kim, 2004).

Many studies indicate that a lower health workers' - to - patient ratio results into more hitches and poorer patient outcomes (Aiken in Duffield & O'Brien-Pallas, 2003). In addition, shortage of health workers negatively affect the motivation of the remaining staff as it causes increased workload, causing extra stress and the risk of more staff leaving or being absent from work.

According to the Ministry of Health, (2010), a major challenge for the Ugandan healthcare system is the rapidly growing population. This has resulted into Uganda having only one doctor per 10,000 people, and only 14 Health Workers (doctors, nurses and midwives) per 10,000 people. This is significantly below the level of 23 health workers per 10,000 recommended by the World Health Organization (WHO) (MoH, 2010), thus leads to reduced quality healthcare delivery to the patients.

2.5 Task Shifting Among Health Workers

To enhance health worker functions in delivering health interventions that can be more accessible to patients some role have to be delegated to less specialized health workers (Nabudere, Asiimwe, & Mijumbi, 2010). Task-shifting is a way of solving this challenge. Therefore, task-shifting is being used as a process of delegation whereby tasks are moved, where appropriate, to less specialized health workers. According to McPake, B. & Kwadwo Mensah, K (2008) task-shifting improves the efficient provision of health services by health cadres in different health facilities.

Marchal, B., De Brouwere. V. and Kegels G (2005) asserts that successful task-shifting necessitates an all-inclusive and cohesive reconfiguration of health teams, especially at community and primary care levels. In the absence of a health team approach, the delegation of tasks will perpetually remain a disjointed and untenable (Macinko J, et al. (2006). In the contrary, Fawcett, B. and South, J. (2005), notes that any thoughtful commitment to task shifting necessitates direction from national governments. Furthermore, McPake, B. and Mensah, K. (2008), argues that where the national government fails to harness the support of the multiple stakeholders, task-shifting occur on the political and organizational boundary of the formal health system.

Samb B, et al (2007) argues that the intense shortage of health workers creates traditional models of healthcare delivery (e.g, physician-centered) fail to serve as an option in many settings. In response to such a challenge, task-shifting is increasingly being promoted and studied as one approach for fixing this major global health problem. In fact Samb B, et al contends that

achievable, healthcare tasks are often shifted from higher-trained health cadres to less highly trained health cadres in order to maximize the efficient utilization of human resources for health.

According to Nabudere, H, Delius Asiimwe, D, & Mijumbi, R (2010), those in promotion of task-shifting view it as a potential solution to Uganda's dual problem of lack of skilled personnel and high demand for services. However, those in opposed to task-shifting perceive it as a quick fix and an approach that could dilute the quality of care and compromise the health system in the long term.

According to Gilson, L. et al (1989); Cohen, J. and Uphoff, N. (1977), community involvement as an important element of task-shifting, mainly with respect to community health personnel. Larry W. & Chang, M.D, (2009) argue that the need to guarantee quality of healthcare and patient safety, task-shifting is being accepted, and for contributing to motivation, retention, and performance health workers to whom tasks are shifted. Larry & Chang goes ahead to strongly emphasize that task-shifting has succeeded in medical and maternal health applications. However, the persistent surgical workforce crisis requires immediate and sustained action (ibid).

Samb, et al. (2007) argues that any long-term success of task-shifting centres on political will and financial availability for health. Samb et al. argues, for instance in the context of HIV/AIDS services that task-shifting need be part of the broader health system strengthening if it is to be sustainable. They argue that governments and international and bilateral agencies need to support in the preparation of health systems to implement successful task-shifting by ensuring the creation of applicable regulatory frameworks and the building of training and management capacity (ibid).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the qualitative case study of WISN methodology used in this study. It explicitly provides a step by step approach to WISN as proposed by WHO. It further looks at the choice of study health facilities and priority category of health workers. It ends by discussing the data management and quality assurance mechanisms and ethical compliance means.

3.1 Research Design

The study adopted the Workload Indicators of Staffing Needs (WISN) process and methods as developed by WHO (1988). According to Schurink (1998:252) a quantitative research such as WISN provide a step by step ways of calculating staff requirements based on workload. The calculation of the required staff size is based on the same medical standards in all similar health facilities. Differences and ratios are used in interpretations. The difference between the actual and calculated number of health personnel shows the level of staffing shortage or surplus for a particular category in a given public health facility. The ratio of the actual to the required number of staff is used to measures the workload pressure with which the staff is coping.

The WISN method is based on the health personnel's workload, with activity (time) standards applied to each workload component. The choice for WISN was based on the fact that it takes into account the diverse complexities of healthcare services provided in different health facilities.

The study used available service statistics collected from the different public health facilities in Mityana District for the calendar year 2011.

WISN is one of the Human Resource management tools that provide systematic ways to make staffing decisions especially on health, in order to enhance proper and productive management of valuable human resources.

The WISN methodology determines the number of health cadres of a particular type that are required to cope with the workload of a given health facility. It also makes an assessment of the workload pressure of the health personnel in the same health facility. In so doing, it helps in balancing the workforce within and between health facilities by advocating for a more just distribution of workload and better productivity.

3.2 Sample Size for Study Implementation

3.2.1 Sampling Procedures

The key consideration in deciding and selecting an appropriate unit of analysis was to establish a sample for study that would deduce a meaningful finding at the end of the research; and consequently add to existing knowledge. Appropriate data collection methods and the resultant information were attained by clearly defining the sample as a unit of inquiry. This was informed by the research objectives and interview questions.

Based on this argument, two units of inquiry and analysis were sampled:

a) The Health Facility Type Sampling

The focus of this study was all public health facilities within the district's approved health system and structure. The study used the whole as the sample. The study therefore, involved 32 public health facilities in Mityana District. These included; General Hospital (1), Health Centre IVs (3), Health Centre IIIs (9) and Health Centre IIs (19).

b) The Health Cadre Category Sampling

The study sampled the following health cadres: doctors, nurses, midwives, Clinical Officers and Nursing Assistants to form a representative sample from all the 32 public health facilities in Mityana District. The purposive choice of the health workers to consider for the study was informed by the following criteria:

- A staff category in short supply in relation to the demand;
- A staff category whose distribution was likely to be most inequitable;
- A staff category with problems that affect the quality of the health care; and
- A staff category whose shortage was likely to affected the quality of health care.

c) The Sample district

The case study described here come from Mityana district of Uganda. Mityana district was selected for ease of data collection. This was because it was among those that were in the process of rolling out the WSIN method for HRH.

3.2.2 Data Source, Tools and Collection Process

Both qualitative and quantitative primary and secondary data collection approaches were used. The use of different methods and techniques of data collection and use of various sources (triangulation) ensured rigor and reliability of the findings of the study as is suggested by Green et al. (1989).

Determining the workload pressure by staff category – was an important step in calculating staffing requirements based on WISN. A bio-statistician and one Research Assistants were identified and assignment to collect using the Health Unit monthly reports summarized in the HMIS 105 and HMIS 108 for all the 32 health facilities in Mityana district (see appendix 1 & 2). A desk review approach was used to collected raw data from the Mityana District Management Information System records. The records were generally available at the district health office. At times it was necessary to visit the individual health Centres when some data was missing.

Collected data was entered into an excel data collection sheet, monthly for the Period January 2011 to December 2011. The annual excel output - workload statistics was then exported into a WISN data analysis package that has in-built standard activity loads that have been determined by WHO for each cadre for each activity, but modified by the Ministry of Health to reflect the standard workloads and activities in Uganda health setting. This was done to determine staffing

requirements that was as close to the present workload situation as possible in the selected health facilities in Mityana district.

3.2.3 Data Analysis and Interpretation

To facilitate easy data analysis adjustment of the WISN numbers that were in fractions was done.

Therefore, the WISN results were analyzed and interpreted in two ways:

a) Comparison of the difference between actual number of health cadres and the WISN staffing recommended levels, provided information on whether the facility in question was relatively understaffed or overstaffed.

b) Use of the WISN ratio as a proxy measure, provided an assessment of the work pressure that health workers in a given health facility experienced in their day to day work. Therefore, when WISN ratio results was equal to 1(= 1), it indicates that actual staffing was in balance with the staffing demands of a health facility's workload. On the other hand, when WISN ratio results was more than one (>1), it evidenced a situation of overstaffing in relation to the workload in the given health facility. Conversely, when WISN ratio results was less than one (<1) it indicated that the actual number of staff is insufficient to cope with the workload in a given health facility. It should be noted however, that the smaller the WISN ratio results, the greater the workload pressure.

To determine workload pressure, the surplus/deficit staffs was expressed as a percentage of the WISN values. The higher the deficit the higher the workload pressure experienced and hence the

higher the additional number of the cadre required. Workload pressures were further analyzed for probable equitable redistribution. The findings are presented in Chapter Four.

3.3 Data Management and Quality Assurance

In order to minimize errors or bias, standard measures for data control were employed. These included: objectivity, credibility, and dependability/consistency (Miles and Huberman 1994) as below:

a) **Credibility/Internal Validity:** since qualitative study was essentially subjective, monthly reports of all public health facilities were cross-checked at source to ascertain their accuracy and gap filling. Follow-up inquiries were made where required.

b) **Reliability:** Research Assistants were identified and debriefed/ trained into not only the research problem, but also the use of the Health Unit monthly reports HMIS 105 and HMIS 108. This helped in collection of reliable raw data. Research Assistants also worked in constant consultation with me (the author) to ensure all relevant information was collected.

c) **Objectivity:** since qualitative study is essentially subjective, records such as written notes and memos were used during the study process to document verbal responses. Files (folders) for raw data including notes and other study documents were created and kept separately for easy referral and for safety purposes.

d) Dependability: flexibility was exercised especially where some respondents were not familiar with certain aspects of HMIS. Opportunities were given to focus on questions with which they were more familiar.

3.5 Ethical Considerations of the Study

Every effort was made to ensure that study ethics were exercised. First, the objectives and purpose of the study results were clearly explained to the Mityana District Health Director, from whom permission was sought to access monthly health reports: HMIS 105 and 108 for all the 32 public health facilities in the district.

Confidentiality was ensured by not sharing any raw data without the consent of Mityana District Health Director. Any section or information that was not original to the study was acknowledged by their authors in this study.

The researcher exercised moral responsibility in securing internal health information from the different facilities visited. In this regard full disclosure of the purpose of the study to the health officials in the district was done.

The study report presents accurate results as were observed and captured, without taking responses out of context. Considerations were made to safeguard against any personal biases and opinions interfering with the study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents an analysis of the empirical data for this study, which sets out to determine the number of staffing levels based on the Actual staffing; and the WISN staffing requirement levels in public health facilities in Mityana District. The chapter further explores the comparison between the three staffing levels.

4.1 Staffing by Cadre per Health Facility in the entire District

This section addresses study objective 1 and 2. Therefore it presents a comparison between the actual staffing and the required staffing based on the WISN staffing requirements. It also presents the required number of health workers that were expected to cope with the workload in public health facilities in Mityana District by cadre and per health facility and. The required number of health workers was determined using the calculated WISN staffing requirements.

4.1.1 The Actual Number and WISN Staffing Recommended for Mityana District.

Actual number and WISN Recommended health workers that are required to cope with current workload in public health facilities are calculated below in Table 4.1. Indeed table 4.1 revealed that the district of Mityan in the year 2011 (January – December) had an actual total number of 252 health workers. This comprised of 10 doctors, 26 Clinical Officers, 105 nurses, 83 midwives and 30 Nursing Assistants. Of the 252 health workers in the district, 112 were working at the General Hospital, 37 at Health Centre IVs, 57 at Health Centre IIIs, and 48 at Health Centre IIs. The details of the number of each category of workers are presented in table 4.1 below.

Table 4.1 Actual and WISN Staffing Requirement by Cadre and Facility Category

Health Cadre	Current and WISN staffing Requirements by cadres in different health Centre level								Total Staff by Cadre	
	Gen. Hospital		HCIVs		HCIIIs		HC IIs			
	Current	WISN	Current	WISN	Current	WISN	Current	WISN	Current	WISN
Doctors	9	13	1	3	0	0	0	0	10	16
Nurses	42	49	13	15	23	9	27	19	105	92
Clinical Off.	9	17	0	3	8	9	9	0	26	29
Midwives	40	24	14	3	20	9	9	19	83	55
Nursing Ass.	12	25	9	9	6	9	3	14	30	57
Total staff by Facility	112	128	37	33	57	36	48	52	254	249

Source: Primary data

On the contrary, Table 4.1 revealed that according to WISN staffing requirement the district of Mityan in the year 2011 (January – December) had an actual total number of 249 health workers. This comprised of 16 Doctors, 29 Clinical Officers, 92 Nurses, 55 midwives and 57 Nursing Assistants. Of the 249 health workers in the district, 128 are expected to be working at the General Hospital, 33 at Health Centre IVs, 36 at Health Centre IIIs, and 52 at Health Centre IIs.

4.1.2 The Actual Number and WISN Staffing Recommended for Health Centre IIs

According to the Ugandan government's health policy, every parish is supposed to have a Health Centre II. It is expected to serve a few thousand people and should provide preventive, supportive and outpatient curative health services, and outreach care. It runs an out-patient clinic, treating common diseases and offering antenatal care.

In 2011 the district of Mityana had 19 Health Centre IIs. According to the Local Government staffing norms, Health Centre IIs are supposed have four (4) health workers whereas, Health Centre IIs are expected to be led by an enrolled nurse, working with a Midwife, two Nursing Assistants and a Health Assistant.

The calculated WISN staffing requirements in table 4.2 below shows a balance between actual staffing and the WISN staffing requirements in all the Health Centre IIs of: Busunju, Kabuwambo, Katiiko, and Kanyanya,. In fact, the Centres each had two health workers comprising of one (1) midwife and one (1) nurse, but did not require Nursing Assistants. With a WISN ratio of one (1) means there is no body to exert pressure, thus no pressure.

Table 4.2 Comparison of Actual Staffing and WISN Staffing Requirement

Cadre	LG Norm	Actual Staff	WISN Req.	Difference	WISN Ratio	Pressure
Midwives	1	1	1	0	1	0%
Nurses	1	1	1	0	1	0%
Nursing Ass.	2	1	1	0	0	0%

Source: Primary data.

Data analysis in table 4.3 shows that the actual staffing of Bekina Health Centre II was three (3) health workers, which comprises of two (2) nurses and one (1) Nursing Assistant. This is contrary to the WSN staffing requirement which recommends three (3) health workers consisting

of one (1) midwife, one (1) nurse and one (1) Nursing Assistant for Bekina Health Centre II. Table 4.3 also shows that according to the WISN requirements, Kibaale Health Centre II was required to have three (3) health workers (one midwife, one (1) nurse and one (1) Nursing Assistant. However in reality, Kibaale Health Centre II had only two (2) health workers – one midwife and a nurse.

Equally, the WISN staffing requirements in table 4.3 shows that Kiteredde Health Centre II should have three (3) health workers – one (1) midwife, one (1) nurse and one (1) Nursing Assistant. In contrast however, the reality indicates that Kiteredde Health Centre II in the year 2011 had five health workers – ninety two (92) midwives and three (3) nurses.

Table 4.3 Actual Staffing and WISN Staffing Requirements per Facility per Cadre

Cadre	LG Norm	Actual Staff	WISN Req.	Difference	WISN Ratio	Pressure
Bekina Health Centre II						
Midwives	1	0	1	-1	0	-
Nurses	1	2	1	1	2	-100%
Nursing Ass.	2	1	1	0	1	0%
Kibaale Health Centre II						
Midwives	1	1	1	0	1	0%
Nurses	1	1	1	0	1	0%
Nursing Ass.	2	0	1	-1	0	100%
Kiteredde Health Centre II						
Midwives	1	2	1	1	2	-100%
Nurses	1	3	1	2	3	-200%
Nursing Ass.	2	0	1	-1	0	100%
Miseebe Health Centre II						
Midwives	1	0	1	-1	0	-
Nurses	1	2	1	1	2	-100%
Nursing Ass.	2	0	1	-1	0	100%
Namigavu Health Centre II						
Midwives	1	0	1	-1	0	100%
Nurses	1	1	1	0	1	0%
Nursing Ass.	2	0	1	-1	0	-
Kalama Health Centre II						
Midwives	1	0	1	-1	0	100%
Nurses	1	2	1	1	2	-100%
Nursing Ass.	2	1	1	0	1	0%

Source: Primary Data

Further analysis of the data in table 4.3 indicates that Miseebe Health Centre II was expected to have three (3) health workers according to the WISN staffing requirements. This was supposed to consist of one (1) midwife, one nurse and one Nursing Assistant. However, facts reveal that the Centre had only two (2) health workers who are both nurses. Like others, Namigavu health center II was required to have three (3) health workers (nurse, midwife, Nursing Assistant) meet the WISN staffing requirement. However, Namigavu Health Centre III had only one (1) health worker who was a Nurse.

Table 4.3 further indicates that Kalama Health Centre II based on the calculated WISN staffing requirements was expected to have three (3) staff (nurse, midwife, Nursing Assistant). The facts indicate that the Centre had three (3) health workers, which were, two (2) nurses and one (1) Nursing Assistant.

Data analysis shown in table 4.4 indicate that WISN staffing requirement for Kasiikombe Health Centre II was three (3) health workers, one of each of the selected category below. In contrast, there were three (3) health workers of which two (2) were midwives and one (1) Nurse. Lusalira Health Centre II as shown in table 4.4, according to the WISN staffing requirement, was required to have three (3) health workers one of each category below.

Nonetheless, there were only two (2) health workers comprising of only two (2) Nurses. Further analysis of data in table 4.4 reveals that Nakaseeta Health Centre II should have had two (2) health workers – a midwife and a nurse only. However, findings show that the Centre had three (3) health workers – one (1) midwife and two (2) Nurses.

The calculated WISN staffing requirements in table 4.4 show that Nakazibwe Health Centre II was required to employ three (3) health workers – one of each category (nurse, midwife and Nursing Assistant). The findings, however, revealed that the Centre only had two (2) staff – one Nurse and one Nursing Assistant. Namungo Health Centre II in table 4.4, according to WISN staffing requirement was expected to employ three (3) health workers. These were supposed to comprise of one Midwife, one Nurse and one Nursing assistant. Nonetheless, in actual terms, Namungo Health Centre II had five health workers comprised of two (2) Midwives, two (2) Nurses and one (1) Nursing Assistant.

Table 4.4 Comparison of Actual Staffing and WISN Staffing Requirement

Cadre	LG Norm	Actual Staff	WISN Req.	Difference	WISN Ratio	Pressure
Kasiikombe Health Centre II						
Midwives	1	2	1	-1	0	100%
Nurses	1	1	1	1	2	-100%
Nursing Ass.	2	0	1	0	1	-%
Lusalira Health Centre II						
Midwives	1	0	1	-1	0	-
Nurses	1	2	1	1	2	-100%
Nursing Ass.	2	0	1	-1	0	-
Nakaseeta Health Centre II						
Midwives	1	1	1	0	1	0%
Nurses	1	2	1	1	2	-100%
Nursing Ass.	2	0	0	0	0	-
Nakazibwe Health Centre II						
Midwives	1	0	1	-1	0	100%
Nurses	1	1	1	0	1	0%
Nursing Ass.	2	1	1	0	1	0%
Namungo Health Centre II						
Midwives	1	2	1	1	2	-100%
Nurses	1	2	1	1	2	-100%
Nursing Ass.	2	1	1	0	1	0%
Mpongo Health Centre II,						
Midwives	1	0	1	-1		-
Nurses	1	1	1	0	2	0%
Nursing Ass	2	1	1	0	1	0%

Source: Primary data.

Data for Mpongo Health Centre II in table 4.4 indicate that based on the WISN staffing requirements, the Centre should have had three (3) health workers, one of each of selected

category. However, reality indicated that Mpongo Health Centre II had only two (2) health workers – one Nurse and one Nursing Assistant.

4.1.3 The Actual Number and WISN Staffing Recommended for Health Centre IIIs

Health Centre IIIs are found at every sub-county, so was in Mityana District. I Health Centre IIIs are supposed to serve about 20,000 people for preventive, outpatient, curative, maternity, inpatient services and laboratory services. There are nine (9) Health Centre IIIs in the district supposed to be headed by Senior Clinical Officers. Each Centre IIIs according to Local Government staffing norms is expected to have two (2) Clinical Officers, four (4) midwives, four (4) nurses and three (3) Nursing Assistants.

The results in table 4.5 show that the WSIN staffing requirement for Maanyi Health Centre III was supposed to be four (4) health workers. These were to consist of one (1) Clinical Officer, one (1) midwife and one (1) nurse, and one (1) Nursing Assistant. However, the actual staffing for Maanyi Health Centre III was instead ten (10) health workers which comprised of two (2) Clinical Officers, two (2) Midwives, five (5) Nurses, and one Nursing Assistant.

The WISN staffing requirement for Kiyongo Health Centre III in table 4.6 show that the center was expected to have four (4) health workers comprising of one (1) Clinical Officer, one (1) midwife, one (1) nurse and one (1) Nursing Assistant. In the contrary, the center actual had six (6) health workers consisting of one (1) Clinical Officer, one (1) midwife, two (2) nurses and two (2) Nursing Assistants.

Looking at table 4.5, findings show that Naama Health Centre III, was supposed to have four (4) health workers according to WISN staffing requirement. These were to comprise of One (1) Clinical Officer, one (1) Midwife, one (1) Nurse and one (1) Nursing Assistant. However, the reality of the ground shows that Naama Health Centre III had only three (3) health workers including one (1) Clinical Offer, one (1) Midwife and one (1) Nurse.

Table 4.5 Health Centre IIIs

Maanyi Health Centre III						
Cadre	LG Norm	Actual Staff	WISN Req.	Difference	WISN Ratio	Pressure
Clinical Off.	2	2	1	1	2	-100%
Midwives	4	2	1	1	2	-100%
Nurses	4	5	1	4	5	-400%
Nursing Ass.	3	1	1	0	1	0%
Kitongo Health Centre III						
Clinical Off.	2	1	1	0	1	0%
Midwives	4	1	1	0	1	0%
Nurses	4	2	1	1	2	-100%
Nursing Ass.	3	2	1	1	2	-100%
Naama Health Centre III						
Clinical Off.	2	1	1	0	1	0%
Midwives	4	1	1	0	1	0%
Nurses	4	1	1	0	1	0%
Nursing Ass.	3	0	1	-1	0	-
Bulera Health Centre III						
Clinical Off.	2	0	1	-1	0	100%
Midwives	4	2	1	1	2	-100%
Nurses	4	1	1	0	1	0%
Nursing Ass.	3	1	1	0	1	0%

Source: Primary data.

Table 4.5 further shows that according to the WISN staffing requirement , the Bulera Health Centre III, was required to have four (4) health workers of which, one (1) Clinical Officer, one (1) Midwife, one (1) nurse and one (1) Nursing Assistant. However, facts from the Centre indicate that there were four (4) health workers consisting of two (2) midwives, one (1) Nurse and one (1) Nursing Assistant.

According to WISN staffing requirements, table 4.7 show that the Malangal Health Centre III was required to have four (4) health workers consisting of one (1) Clinical Officer, One (1) Midwife, one (1) Nurse and one (1) Nursing Assistant. However, reality at the Centre shows that the Centre had six (6) health workers that consist of three (3) midwives and three (3) Nurses.

Analyzing the data in Table 4.6 the WISN calculated staffing requirement show that Magala Health Centre III, was required to have four (4) health worker consisting of one (1) Clinical Officer, one (1) Midwife, one (1) Nurse and one (1) Nursing Assistant. However, facts at the Centre indicate that the actual staffing was six (6) health workers comprising of two (2) Clinical Officers, two (2) midwives, and two (2) Nurses.

The calculated WISN staffing requirements in table 4.6 also shows that of Kabuule Health Centre III, was required to have four (4) health workers comprising of one (1) Clinical Officer, One (1) Midwife, one (1) Nurse and one (1) Nursing Assistant. In contrast, the Centre actually had four (4) health workers consisting of one (1) Clinical officer, two (2) midwives and one (1) Nurse.

The calculated WISN staffing requirements indicated in table 4.6 shows that Kikandwa Health Centre III was required to have four (4) health workers. These are supposed to consist of one (1) Clinical Officer, One (1) Midwife, one (1) Nurse and one (1) Nursing Assistant. The contrary, show that the Kikandwa Health Centre III actually had a staffing of ten (10) health workers consisting of four (4) midwives, four (4) Nurses and two (2) Nursing Assistant. The Centre however, lacks a Clinical Officer to cope with its work.

Analyzing data the calculated WISN staffing requirement in Table 4.6 shows that the Kyamusisi Health Centre III was required to have four (4) health works. Of the four, there should be one (1) Clinical officer, One (1) Midwife, One (1) Nurse and one (1) Nursing Assistant. However, fact at the Centre instead indicate that there were eight (8) health workers consisting of one (1) Clinical officer, three (3) midwives and four (4) Nurses.

Table 4.6 More Health Centre IIIs

Malanga Health Centre III						
Cadre	LG Norm	Actual Staff	WISN Req.	Difference	WISN Ratio	Pressure
Clinical Off.	2	0	1	-1	0	-
Midwives	4	3	1	2	3	-200%
Nurses	4	3	1	2	3	-200%
Nursing Ass.	3	0	1	-1	0	-
Magala Health Centre III						
Clinical Off.	2	2	1	1	2	-100%
Midwives	4	2	1	1	2	-100%
Nurses	4	2	1	1	2	-100%
Nursing Ass.	3	0	1	-1	0	-
Kabuule Health Centre III						
Clinical Off.	2	1	1	0	1	0%
Midwives	4	2	1	1	2	-100%
Nurses	4	1	1	0	1	0%
Nursing Ass.	3	0	1	-1	0	-
Kikandwa Health Centre III						
Clinical Off.	2	0	1	-1	0	
Midwives	4	4	1	3	4	-300%
Nurses	4	4	1	3	4	-300%
Nursing Ass.	3	2	1	1	2	-100%
Kyamusisi Health Centre III						
Clinical Off.	2	1	1	0	1	0%
Midwives	4	3	1	2	3	-200%
Nurses	4	4	1	3	4	-300%
Nursing Ass.	3	0	1	-1	0	

Source: Primary data

4.1.4 The Actual Number and WISN Staffing Recommended for Health Centre IVs

According to the decentralization of Uganda’s health structure, this level of health facility is expected to serves 100,000 people at county or a parliamentary constituency level. A health Centre IV (shown in Table 4.7) is a mini hospital. It should have the kind of services found at health Centre III, for preventive, outpatient, curative, maternity, inpatient services emergency surgery and blood transfusion and laboratory services, but it should have wards for men, women, and children and should be able to admit patients as well as a theatre for carrying out emergency operations.

In Mityana district there are three (3) Health Centre IVs and all according to Local Government staffing norms are supposed to have twenty two (22) health workers. These are expected to include two (2) Doctors, three (3) Clinical officers, eight (8) Nurses, four (4) Midwives, and five (5) Nursing Assistants.

Table 4.7: Health Centre IVs in Mityana District

Cadre	LG Norm	Actual Staff	WISN Req	Difference	WISN Ratio	Pressure
Mwera Health Centre IV						
Doctor	2	0	1	-1	0	-
Clinical Off.	3	5	1	4	5	-400%
Midwives	4	2	1	1	2	-100%
Nurses	8	4	5	-1	0.8	20%
Nursing Ass.	5	1	4	-3	0.2	80%
Kyantungo Health Centre IV						
Doctors	2	1	1	0	1	0%
Clinical off.	3	2	1	1	2	-100%
Midwives	4	5	1	4	5	-400%
Nurses	8	5	5	0	1	0%
Nursing Ass.	5	0	4	-4	0	-
Ssekanyonyi Health Centre IV						
Doctors	2	0	1	-1	0	-
Clinical Off.	3	2	1	1	2	-100%
Midwives	4	2	1	1	2	-100%
Nurses	8	4	5	-1	0.8	20%
Nursing Ass.	5	1	1	0	1	0%

Source: Primary data.

The calculated WISN staffing requirements for Mwera Health Centre IV in table 4.7 indicate that Mitynana District was recommended to have twelve (12) health workers. Of these the Centre should have had one (1) doctor, one (1) Clinical Officer, one (1) midwife, five (5) nurses and four (4) Nursing Assistants. On the contrary, however Mwera Health Centre IV twelve (12) health workers. However, the Centre didn't have any doctor, but had only five (5) Clinical Officers, two (2) midwives, four (4) nurses and one (1) Nursing Assistant.

The calculated WISN results in table 4.7 indicate Kyantungo Health Centre IV was expected to have a total of twelve (12) health workers. These would include one (1) doctor, one (1) Clinical Officer, One (1) midwife, Five (5) nurses, and four (4) Nursing Assistants. In contrast, the results in table 4.7 show that actual staffing of Kyantungo Health Centre IV was thirteen (13) health workers. Of these, there were one (1) doctor, two (2) Clinical Officers, five (5) Midwives, five (5) Nurses and zero Nursing Assistant.

The WISN staffing requirement in table 4.7 indicate that Ssekanyonyi Health Centre IV, was expected to have nine (9) Health workers. Of these the center should have had one (1) Doctor, one (1) Clinical Officer, one (1) Midwife, five (5) Nurses and one (1) Nursing Assistant. These results were opposed to the actual staffing of Ssekanyonyi Health Centre IV, which indicate nine (9) health workers present employed of which zero (0) doctors, two (2) Clinical Officers, two (2) midwives, four (4) nurses and one (1) Nursing Assistant.

4.1.5 The Actual Number and WISN Staffing Recommended for the General Hospital

Findings reveal that Mityanna District has only one general Hospital. It provides in-service training, consultation and research to community based health care programs. It is ideally expected to have all the services offered at a Health Centre IV, plus specialized clinics – such as those for mental health and dentistry – and consultant physicians. It is supposed to serve 500,000.

According to the local government staffing norms as in table 4.8, the general Hospital of Mityana District is expected to have one hundred and forty (140) health workers. On these the hospital is supposed to have twelve (12) doctors, seven (7) Clinical Officer, 28 Midwives, Seventy eight (78) Nurses and Fifteen (15) Nursing Assistants.

Table 4.8: Mityana District General Hospital

Cadre	LG Norm	Actual Staff	WISN Req.	Difference	WISN Ratio	Work Pressure
Doctors	12	9	13	-4	0.7	30%
Clinical Off.	7	9	17	-8	0.5	50%
Midwives	28	40	24	16	1.7	-70%
Nurses	78	42	49	-7	0.9	10%
Nursing Ass.	15	12	25	-13	0.5	50%

Source: Primary data.

In terms of the calculated WISN staffing, the general hospital was expected to have one hundred and twenty eight (128) health workers. These were to include thirteen (13) doctors, seventeen (17) Clinical Officers, twenty four (24) midwives, forty nine (49) Nurses, and twenty five (25) Nursing Assistants. As opposed to the above Local Government staffing norms and WISN staffing requirements, the general hospital actually had one hundred twelve (112). Of these there were nine (9) doctors, nine (9) Clinical Officers, forty (40) Midwives, forty two (42) nurses, and twelve (12) Nursing Assistants.

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter presents a discussion of the main findings which is aimed at giving a general overview of the investigation in order to show that the purpose and objectives originally expressed in section 1.4 have been addressed and achieved.

5.1 Summary of Important Findings

There are several important findings regarding the number of selected categories of health workers in the study based on the WISN calculated staffing that are required to cope with the workloads of the specific health facilities in Mityana District. The summary of the findings are:

- In the year 2011, the district of Mityana had only ten (10) doctors, one hundred five (105) Nurses, twenty six Clinical Officers, eighty-three (83) Midwives and thirty (30) Nursing Assistants. This is as opposed to the required sixteen (16) doctors, ninety-two (92) Nurses, twenty nine (29) Clinical Officers, fifty five (55) Midwives and fifty seven (57) Nursing Assistants.

- In terms of health facilities, the general hospital of Mityana had a deficit of sixteen (16) health workers in the category of four (4) doctors, seven (7) Nurses, eight (8) Clinical Officers and thirteen (13) Nursing Assistant, but with an excess of sixteen (16) Midwives.
- HCIV, had a deficit of health workers of four (4), with a shortage of three (3) doctors, two (2) Nurses, and three (3) Clinical officers. The Nursing Assistants in HCVI were in balance, while the Midwives were in excess of nine (9).
- HCII were overstaffed by fourteen (14) Nurses, eleven (11) Midwives, but had a shortage of one (1) Clinical Officer and three (3) Nursing Assistants.
- Finally, for HCII, had an excess of eight (8) Nurses and nine (9) Clinical Officers. However, they are in shortage of eleven (11) Midwives and nine (9) Nursing Assistants.

5.2.1 Current Staff Status – Over or Understaffing

Table 5.1 below shows the summarized staffing status by cadre and facility for the entire district of Mityana.

Table 5.1 Summary of Staffing Status by Cadre and Facility

Health Cadre	Cadre status at different Health level facility				Deficit/ Surplus
	General Hospital (1)	HC IVs (3)	HC IIIs (9)	HC IIs (19)	
Doctors	-4	-2	0	0	-6
Nurses	-7	-2	13	9	13
Clinical Officers	-8	6	-1	0	-3

Midwives	16	6	11	-4	29
Nursing Assistants	-13	-7	-3	-6	-29

Source: Primary data.

From table 5.1 the entire district of Mityana lacked six (6) doctors; three (3) Clinical Officers and twenty nine (29) Nursing Assistants to cope with its workload match with the WISN staffing requirement. According to Kane (2007), shortage of health workers implies understaffing of the existing staff, which in turn threatens the quality of health care and patient safety. This means the existing doctors; Clinical Officers and Nursing Assistant in the district are facing workload pressure, which needs to be addressed.

The shortage of some of the key health workers in the district may imply that the work environments their workload pressure were stressful for even the most seasoned health personnel such as clinical officer and Nursing Assistants, which is likely to cause high levels of burn-out and absenteeism (Greco, Laschinger, & Wong, 2006), thus resulting into a more negative outcomes for patients in Mityana district.

In the contrary, the district had had a surplus of thirteen (13) Nurses and twenty nine (29) midwives. This according to Nabudere, Asiimwe and Mijumbi, (2010) means over staffing of the existing Nurses and Midwives in some health facilities. This highlights the unbalanced staffing situation in the district, requiring urgent attention. From a positive note, such surplus can be used to improve services in health facilities, if transferring staff is difficult and the staffing gap is.

5.2.2 Current Staff and Workload Pressure

This section addresses objective three (3) of the study. It presented the difference between the actual and WISN requirements per health worker.

Using the WISN ratio as a proxy measure in assessing the workload pressure experienced by health workers in their daily work, table 4.9 reveals that:

The WISN ratio of 0.6 with a 40% work pressure for doctors – means the actual number of doctors is insufficient to cope with its workload. The WISN ratio of 0.5 with a 50% work pressure means the Nursing Assistants are insufficient to cope with its workload in the district. According to Maestad (2006), shortage of staff of this nature lowers the motivation of the existing one, which results into low productivity.

Table 5.2 Mityana District Overall Staffing Pressure

CADRE	LG Norm	Actual Staff	WISN Req	Difference	WISN Ratio	Pressure
Doctors	18	10	16	-6	0.6	40%
Clinical Off.	36	26	29	-3	0.9	10%
Midwives	95	83	55	28	1.5	-50%
Nurses	152	105	92	13	1.1	-10%
Nursing Ass.	95	30	57	-29	0.5	50%
Total Staff	396	254	249			

Source: Primary data.

The WISN ratio of 0.9 with a 10% work pressure for Clinical Officers – indicates a normal work pressure, which is a normal pressure, hence, Clinical Officers are able to cope with its workload in the district. Equally, the WISN ratio of 1.1 with a -10% shows a normal workload pressure for nurses in the district. The WISN ratio of 1.5 with a -50% work pressure reveals that the midwives were more than required, thus not under workload pressure. They have excess time to attend to other things;

5.3 Distribution of Actual Staff and Workload Pressure on Health Facilities

Comparing the difference between actual staffing with WISN results of various health workers in the different facilities as presented in Chapter 4, the following are recommended:

5.3.1 Distribution of Doctors in Public Health Facilities in Mityana District

There were only ten (10) doctors in the entire Mityana district compared to the WISN staffing requirement of sixteen (16) doctors as in table 5.2 below. This indicated a shortage of doctors by four (4) at the General Hospital, one (1) at Mwera Health Centre IV and another one (1) at Ssekanyonyi Health Centre IV. The one (1) doctor at Kyantungo Health Centre was however in balance with the WISN staffing requirements. The shortage of doctors in the district may explain the poor quality of current health services provided.

Table 5.3 Summary of Doctors in the district

Health Centre Name	Facility Level	LG Norms	Actual Staff	WISN Req.	Staffing Status
General Hospital	Hospital	12	9	13	-4
Mwera Health Centre	IV	2	0	1	-1
Kyantungo Health Centre	IV	2	1	1	0
Ssekanyonyi Health Centre	IV	2	0	1	-1
Total		18	10	16	0

Source: Primary data.

5.3.2 Distribution of Clinical Officers

In comparing the actual and WISN staffing requirements as shown in table 5.3, the entire Mityana District was supposed to have twenty nine (29) Clinical Officers as opposed to the

actual staffing level of twenty six (26). This shows that the number of Clinical officers in Mityana District had a shortage of only three (3) staff. This was however, an insignificant number that the district can operate without significant negative impact on patients. It indicated a normal workload pressure.

Table 5.4 Summary for Clinical Officers staffing in the district

Health Centre Name	Facility Level	LG Norm	Actual Staff	WISN Req.	Staffing Status
General Hospital	Hospital	7	9	17	-8
Mwera Health Centre	IV	3	5	1	4
Kyantungo Health Centre	IV	3	2	1	1
Ssekanyonyi H Centre	IV	3	2	1	1
Maanyi Health Centre	III	2	2	1	1
Kitongo Health Centre	III	2	1	1	0
Naam Health Centre	III	2	1	1	0
Bulera Health Centre	III	2	0	1	-1
Malangala Health Centre	III	2	0	1	-1
Magala Health Centre	III	2	2	1	1
Kabuule Health Centre	III	2	1	1	0
Kikandwa Health Centre	III	2	0	1	-1
Kyamusisi Health Centre	III	2	1	1	0
Total		34	26	29	-3

Source: Primary data.

5.3.3 Distribution of Midwives in Public Health Facilities in Mityana District

According to Table 5.4, there were eighty four (84) midwives in the whole of Mityana District. This compared with the WISN staffing requirement of fifty five (55), indicates an overstaffing by twenty nine (29) midwives. In fact, seven (7) health Centre IIs including: Katiiko, Miseebe, Namigavu, Nalama, Lusalira, Nakaziba and Mpongo lacks midwives.

Conversely, the number of midwives in Health Centre IIIs of Kitongo and Naama included: nine (9) health Centre IIs of Bekina, Bussunju, Kabywambo, Kalangalo, Kibale, Kiyoganyi, Kanyanya, Nakseeta and Ttanda were in balance with their workload. The rest of the fourteen

(14) health Centers were overstaffed with midwives. These were led by the General Hospital which had an excess of sixteen (16) midwives.

Table 5.5 Summary of Midwives in District

Health Centre Name	Facility Level	LG Norms	Actual Staff	WISN Req.	Staffing status
General Hospital	Hospital	28	40	24	16
Mwera Health Centre	IV	4	2	1	1
Kyantungo Health Centre	IV	4	5	1	4
Ssekanyonyi Health Centre	IV	4	2	1	1
Maanyi Health Centre	III	4	2	1	1
Kitongo Health Centre	III	4	1	1	0
Naama Health Centre	III	4	1	1	0
Bulera Health Centre	III	4	2	1	1
Malangala Health Centre	III	4	3	1	2
Magala Health Centre	III	4	2	1	1
Kabuule Health Centre	III	4	2	1	1
Kikandwa Health Centre	III	4	4	1	3
Kyamusisi Health Centre	III	4	3	1	2
Bekina Health Centre	II	1	1	1	0
Bussunju Health Centre	II	1	1	1	0
Kabywambo Health Centre	II	1	1	1	0
Kalangalo Health Centre	II	1	1	1	0
Katiiko Health Centre	II	1	0	1	-1
Kibale Health Centre	II	1	1	1	0
Kiteredde Health Centre	II	1	2	1	1
Kiyoganyi Health Centre	II	1	1	1	0
Miseebe Health Centre	II	1	0	1	-1
Namigavu Health Centre	II	1	0	1	-1
Nalama Health Centre	II	1	0	1	-1
Kanyanya Health Centre	II	1	1	1	0
Lusalira Health Centre	II	1	0	1	-1
Nasiikombe Health Centre	II	1	2	1	1
Nakseeta Health Centre	II	1	1	1	0
Ttanda Health Centre	II	1	1	1	0
Nakaziba Health Centre	II	1	0	1	-1
Namungo Health Centre	II	1	2	1	1
Mpongo Health Centre	II	1	0	1	-1
Total		95	84	55	

Source: Primary data.

5.3.4 Distribution of Nurses in Public Health Facilities

Analyzing the actual staff verses WISN recommended staffing in table 5.5 shows that the entire district of Mityana had a total of one hundred and seven (107) nurses. This number of nurses compared to WISN requirement of ninety three (93) gave an excess of fourteen (14) Nurses in the district.

It should be noted, however, that the number of nurses in the sixteen (16) Health Centre IVs of: Naama, kyatungo, Bulera and Kabuule; as well as Health Centre IIs of: Bussunju, Kabywambo, Kalangalo, Katiiko, Kibale, Kiyoganyi, Namigavu, Kanyanya, Nasiikombe, Ttanda, Nakaziba, and Mpongo were in balance with their workload, thus no work pressure.

Table 5.6 Summary of the number of Nurses in the district

Health Centre Name	Facility Level	LG Norms	Actual Staff	WISN Req.	Staffing Status
General Hospital	Hospital	78	42	49	-7
Mwera Health Centre	IV	8	4	5	-1
Kyantungo Health Centre	IV	8	5	5	0
Ssekanyonyi Health Centre	IV	8	4	5	-1
Maanyi Health Centre	III	4	5	1	4
Kitongo Health Centre	III	4	2	1	1
Naama Health Centre	III	4	1	1	0
Bulera Health Centre	III	4	1	1	0
Malangala Health Centre	III	4	3	1	2
Magala Health Centre	III	4	2	1	1
Kabuule Health Centre	III	4	1	1	0
Kikandwa Health Centre	III	4	4	1	3
Kyamusisi Health Centre	III	4	4	1	3
Bekina Health Centre	II	1	2	1	1
Bussunju Health Centre	II	1	1	1	0
Kabywambo Health Centre	II	1	1	1	0
Kalangalo Health Centre	II	1	1	1	0
Katiiko Health Centre	II	1	1	1	0
Kibale Health Centre	II	1	1	1	0
Kiteredde Health Centre	II	1	3	1	2
Kiyoganyi Health Centre	II	1	1	1	0
Miseebe Health Centre	II	1	2	1	2
Namigavu Health Centre	II	1	1	1	0
Nalama Health Centre	II	1	2	1	1
Kanyanya Health Centre	II	1	1	1	0
Lusalira Health Centre	II	1	2	1	1
Nasiikombe Health Centre	II	1	1	1	0
Nakseeta Health Centre	II	1	2	1	1
Ttanda Health Centre	II	1	1	1	0
Nakaziba Health Centre	II	1	1	1	0
Namungo Health Centre	II	1	2	1	1

Mpongo Health Centre	II	1	1	1	0
Total		159	107	93	14

Source: Primary data.

On the other hand, thirteen (13) health centers were overstaffed. These included: six (6) Centre IVs of Maanyi; four (4), Kitongo; one (1), Malangala; two (2), Magala; one (1), Kikandwa; and three (3), Kyamusisi (3). Also Health Centre IIs of: Bekina with one (1); two (2), Kiteredde; two (2), Miseebe; one (1), Nalama; one (1), Lusalira; one (1), Namungo; and one (1) Nakseeta. The implication was lack of alignment of task among the nurses in the different health facilities.

Only three health facilities were understaffed of nurses led by the General Hospital with a shortage of seven (7), one (1) for Mwera and another one (1) for Ssekanyonyi Health Centre IVs. These were facing varying workload pressure.

5.3.5 Distribution of Nursing Assistants in Public Health Facilities

Looking at table 5.7 below and comparing the difference between the actual and the WISN required staffing, evidence shows that there were twenty eight (28) Nursing Assistants in the entire district of Mityana. This indicated a shortage of twenty nine (29) Nursing Assistants which was slightly more than half of the required staffing level.

The implication portrayed in table 5.7 therefore shows an understaffing of Nursing Assistants in the entire district of Mityana. Only two (2) of the thirty two (32) health Centers were overstaffed,

with one (1) in Health Centre III of Kitongo and Kikandwa. This however, indicated poor distribution of Nursing Assistant within the different health centres.

Table 5.7: Summary of number of Nursing Assistants in the district

Health Centre Name	Facility Level	LG Norms	Actual Staff	WISN Req.	Staffing Status
General Hospital	Hospital	15	12	25	-13
Mwera Health Centre	IV	5	1	4	-3
Kyantungo Health Centre	IV	5	0	4	-4
Ssekanyonyi Health Centre	IV	5	1	1	0
Maanyi Health Centre	III	3	1	1	0
Kitongo Health Centre	III	3	2	1	1
Naama Health Centre	III	3	0	1	-1
Bulera Health Centre	III	3	1	1	0
Malangala Health Centre	III	3	0	1	-1
Magala Health Centre	III	3	0	1	-1
Kabuule Health Centre	III	3	0	1	-1
Kikandwa Health Centre	III	3	2	1	1
Kyamusisi Health Centre	III	3	0	1	-1
Bekina Health Centre	II	2	1	1	0
Bussunju Health Centre	II	2	0	0	0
Kabywambo Health Centre	II	2	0	0	0
Kalangalo Health Centre	II	2	1	1	0
Katiiko Health Centre	II	2	0	0	0
Kibale Health Centre	II	2	0	1	-1
Kiteredde Health Centre	II	2	0	1	-1
Kiyoganyi Health Centre	II	2	1	1	0
Miseebe Health Centre	II	2	0	1	-1
Namigavu Health Centre	II	2	0	1	-1
Nalama Health Centre	II	2	1	1	0
Kanyanya Health Centre	II	2	0	0	0
Lusalira Health Centre	II	2	0	1	-1
Nasiikombe Health Centre	II	2	0	1	-1
Nakseeta Health Centre	II	2	0	0	0
Ttanda Health Centre	II	2	1	1	0
Nakaziba Health Centre	II	2	1	1	0
Namungo Health Centre	II	2	1	1	0
Mpongo Health Centre	II	2	1	1	0
Total		95	28	57	-30

Source: Primary data

5.4 Implications of Understaffing and Overstaffing in Health Facilities

The major causes of understaffing in the health facilities were the increases in voluntary termination, frozen hiring, and budget take-backs. The implications of understaffing and overstaffing in health facilities are articulated below.

Some of the health facilities that were found understaffed, health workers complained of exhaustion because they must often perform the work of two or more employees. When health workers are exhausted, productivity goes down. Health workers in understaffed health facilities lacked a sense of control over their rapidly increasing workload. This hectic environment lead to poor work performance and can be detrimental to the facilities. Their creativity and ingenuity decreased, because they were more concerned with catching up with work than thinking outside the box. The patients did not receive timely assistance and attention from health workers, so overall customer service delivery suffered greatly.

The health workers reported low morale of overworked health workers as there seemed no hope of getting relief from extra workload. Low morale often cause health workers to take more days off duty, fail to meet deadlines and show little interest in their jobs, thus resulting into low productivity which manifests in poor quality of health services, thus a risk to patients.

It was discovered that there were high turnover of viable health workers who left for greener pastures. The demanding work environments accompanied by low pay impelled many new health workers to leave the health system. A high turnover rate is an expensive undertaking for any health facility in terms costs to be incurred in recruiting and training of new employees. This exacerbated the already existing understaffing problem.

5.5 Limitations of the Study

As a phenomenological study based on more of quantitative methodology of WISN, for the case of selected health cadres in Mityana District Health Facilities for a Period of January to December 2011, the research demonstrated both the strengths and the limitations intrinsic to such a study. According to Mashall and Rosseman (1999) a discussion of limitations of any study, demonstrates the researcher's understanding, that reality is such that findings of one study cannot be conclusive or generalized to other settings but can in the least be transferable. Some of the limitations to note include:

The WISN method largely depends on the accuracy of the workload records which affects the validity of the results. Some of the recorded data was inaccurate, incomplete in some health facilities especially in rural / or remote areas e.g the record officers failed to capture for example in-patient days and hence unable to calculate the average length of stay (ALOS).

The WISN methodology also uses workload data of the previous year to calculate staffing requirements for the present year. To avoid this creating a potential source of error since the staffing requirements change every year depending on the decisions of district and hospital management, the available data for January 2011 to December 2011 were used.

Another limitation was the inadequacy of data and analysis to allow segregation of certain health workers by specialties. An example in point was the generalization of all nurses (enrolled, registered, etc) into one category. Doctors were also put into one category without considering their different specialties. Therefore, the WISN calculated numbers for such health workers may lack accuracy.

WISN method ignores the varying level of functionality of different health facilities even those at the same level. For instance, not all Health Centre IVs have functional operating theatres, which in one way or another affects the WISN calculated staffing requirements.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the conclusion and main recommendations resulting from the study that can provide guidance to health managers and decision makers on how well to manage the allocation and use of health workers. The Chapter also provides recommendations for further research and some limitations of the study. The Chapter ends with a brief conclusion on the study summary and recommendations.

6.1 Conclusions

The study has found out that:

The existing health worker distribution patterns are not conducive to meet the needs of the patients in the district. There was poor health worker distribution especially of Nurses, Midwives and Nursing Assistants within different health level facilities in the district, as was evidenced by shortages and overstaffing. This problem is two faced: first, disparities in the health cadres in the district. For instance, health facilities in remote/ far areas from Mityana town council (the district capital city) are very under resourced. Secondly, some health cadres such as Nurses and midwives are easier to come by in the district as compared to the other categories of health workers.

The research findings revealed that there was understaffing of health workers such as doctors and Nursing Assistants and some health facilities were not having enough health workers in the right combination to cover the regular workload and complete job tasks efficiently. The burden of understaffing fell on the shoulders of the few existing health workers, who had to take up the various responsibilities for lack of adequate staff.

There were many more Nurses and Midwives in different health facilities than required. In such facilities, shortages of health workers had created substitute – some health workers were taking on some of the functions and roles normally beyond their specialisations. This was evidenced by health centre that did not have Midwives but rather only Nurses and Nursing Assistants, yet are providing care and support to women during pregnancy, labour and birth, and for up to six weeks following the birth.

Some health facilities had a low WISN ratio, implying they were facing challenges to cope with their workload.

6.2 Recommendations

On the basis of the findings in this report, the following recommendations are made:

6.2.1 Improving Distribution of Health Workers in Public Health Facilities

Given the revealed imbalances (over and understaffing) of health workers in the district, the solution is to consider improving management and better distribution of Human Resource in

health care systems. The distribution of Health Human Resources should be seen as not merely the availability of numbers but rather the geographical location (rural vs. urban), skills mix, professionals mix and numbers of approved post for the different categories of professionals needed at different levels of health facilities.

Therefore, below are the suggestions for improving distribution of selected health workers in the different public health facilities in Mityana District.

i) Improving Distribution of Doctors

The district of Mityana had only ten (10) doctors against the sixteen (16) WISN recommended. This means internal alignment is not possible. Referring to Table 5.2 in Chapter Five, in order for the district to cope with its workload for doctors, it is recommended that the deficit of six doctors be recruited from outside the district. If not, then the alternative is to shift tasks to either Clinical Officers and or/ Nurses where there graduates. This then could be followed by ensuring that such staff receiving appropriate training for these tasks. When they are successfully sourced from outside the district: Four (4) of the doctors should be allocated to the General Hospital; and Two (2) doctors, should be allocated - one to Mwera and another to Ssekanyonyi Health Centre IVs.

ii) Improving Distribution of Clinical Officers

In order for Mityana district to cope with its workload for Clinical Officers of twenty nine (29) according to WISN staffing requirements, the district should: consider recruitment of the three

(3) more Clinical Officers to cover the district shortage. This should be external (from outside the district) transfers - possibly post them to Health Centre III of Bulera, Malangala and Kikandwa that have none.

The second option could be for district health authorities together district public service to consider internal (within the district) transfers for the eight (8) Clinical Officers from the overstaffed facilities to those that are under staffed as shown in Table 5.2. For instance, the four (4) from Mwere Health IV and four (4) from the excess of one (1) from each of the Health Centre IV of Kyantungo and Ssekanyonyi as well as from Centre III of Maayi and Magala should be posted to the General Hospital for it to cope with its workload. The district should maintain the actual staffing levels for Clinical Officers in Health Centre III of Naama, Kabuule, Katungo and Kyamusisi. Another feasible alternative would be delegation of tasks to less-highly trained health workers would be with an appropriate orientation into these duties.

iii) Improving Distribution of Midwives

Given the scenario portrayed in Table 5.4, it is important to improve the unbalanced staffing situation of midwives in Mityana district. The following are recommended to be done: Transfer some seven (7) midwives from the general hospital to each of the seven (7) Health Centre IIs of: Katiiko, Miseebe, Namigavu, Nalama, Lusalira, Nakaziba and Mpongo get one (1) midwife as per WISN staffing requirement. The excess of seven (7) midwives at the general hospital and excess from Health Centre IVs, one (1) Mwera, four (4) from Kyantungo, one (1) from Ssekanyonyi, and one (1) from Maanyi should be transferred to those Health Centres that are in shortage of other types of health workers especially nurses and Nursing Assistants.

iv) Improving Distribution of Nurses

In order for the nurses in the district to cope with the workload at their respective health facilities, the following are recommended: The district should increase the number of nurses by thirteen (13) for them to have sufficient time to perform all their tasks well. In case such staff increase is not possible, an option would be to shift tasks to less-highly trained persons such as the midwives and Nursing Assistants as the case may be. It should be noted, however, that such a shift has a disadvantage of lowering the quality of health services provided, unless it is appropriately addressed. Therefore, task-shift if taken on as an option should be approached very carefully.

The status quo in the Health Centres with the number of nurses which is in balance with their workload should be maintained, since there is no work pressure. For the second category of Health Centres that are overstaffed, nine (9) of the thirteen (13) Nurses should be transferred to facilities with shortages – General Hospital, Mwera and Ssekanyinyi Health Centre IVs. The district then needs to redeploy the balance of four (4) nurses elsewhere.

v) Improving Distribution of Nursing Assistant

Given the huge shortage of Nursing Assistants, the district of Mityana is recommended to: Increase the number of Nursing Assistants by twenty nine (29) for them to have sufficient time to perform all their tasks. If such an increase is not possible, an alternative also is to shift tasks to a less-highly trained health worker. In fact for Nursing Assistants the best option should be taking

on staff members with less training that are likely to continue performing the tasks in the future. In this case, the district must ensure that these receive the appropriate training for these tasks. To do this, the district will need to work together with those in charge of decisions regarding pre-service training and continuing education.

Transfer the two (2) Nursing Assistants from over-staffed facilities such as Kitongo and Kikandwa Health Centre IIIs to those that are understaffed as showed in Table 5.5. This however, should be done carefully as in many cases it disrupts the life and work of such health workers in the facilities with excess.

Explore the possibility of hiring the twenty nine (29) Nursing Assistants. In the event of little scope to recruit within and get transfers from outside, the district could possibly resort to training. However, if it is a question of a stagnant or diminishing salary budget, other avenue should be explored to increase the budget, because failure to consider this matter means not prioritizing better health for the people of Mityana.

In general the district can improve distribution by 1) posting staff to the understaffed health facilities; 2) alternatives, the existing staff in overstaffed facilities can be transferred to the understaffed. This can help provide a rapid relief to the understaff health facility; 3) allocate new staff to health facilities with shortages. This has advantage of not disrupting the work of health workers in those health facilities with a surplus.

6.2.2 Review and Align Tasks Allocation between Health Workers

To avoid overlapping roles and in order to improve efficiency, there was need to review and align task allocation between the different health workers in the district. The tasks that are meant for say Midwives and can be done say by Nurses, can inform a review and realignments.

Alternatively, the district health authorities can hire more / new health workers of the category in shortage, to provide sufficient time to perform all their tasks. If recruitment of new health workers is not possible, the professional task shifting should be exercised by utilizing less-highly trained health workers as long as such staff are provided with appropriate induction and training for the new tasks.

6.2.3 Improving the quality of current health Services in Public Health Facilities

Some health facilities had a low WISN ratio, implying they were facing challenges to cope with their workload, which jeopardize quality of health services. In order for health workers to cope with their workload, the district needs to use adequate staffing to improve the quality of current health services in Mityana district.

6.2.4 General and Policy Recommendations

To address the problem of overstaffing and understaffing which had critical implications as indicated in section 5.4 this study recommends:

Forecasting with accuracy should help the district to take into account all the historic and future HRH dynamics. This requires employing forecasting tools such as WISN on a regular basis, say

after every two to three years. It should, however, be noted that no single methodology is optimal for all circumstances, thus a mixture of approaches need to be employed.

The district should increase allocations to human resources for health, education, improving salaries and working conditions. Also the district is urged to review its policies and prioritize spending and make the best use of the available resource. Investing in staff accommodation, equipment, supplies and drugs, especially for rural area facilities and staff, should be part of the district development assistance programs.

The district should improve the information management at the district and health facility levels with regular updates by every health facility. Development of an improved and expanded Human Resource information system provides information for human resource for health planning and management decisions.

Finally, the district should establish a system that provides visible incentives for health workers working in rural and/or remote location. This shall attract and retain health workers in hard to reach and hard to stay locations. The incentive scheme may comprise of availing training opportunities including scholarships, promotions for health workers willing to stay for an agreed period in hard-to-reach areas, among others.

6.2.5 Recommendations for Further Research

From a methodological point of view, it is recommended that the potential use of quantitative research methodology adopted from the use of the WISN methods, as the only Human Resource

management tool, particularly to achieve a more just distribution and better productivity should be further explored. This method approaches the Human Resource issues from one angle of quantitative rather than a combination with the qualitative.

This study research on determining the appropriate number of actual staffing gap, cadre mix and work pressures in all public health facilities in Mityana District focused essentially on numbers of the selected health workers per se for the Public Health Centres to cope with its workload. This only emphasizes effective management of the valuable Health Human Resources, without looking at its quality, motivations, and remunerations among others things.

REFERENCES

- Adams, J., Bakalar, R., Borocho, MD., Knecht, K., Mounib, E. L., & Stuart, N., 2008. Healthcare 2015 And Care Delivery. Delivery Models Refined, Competencies Defined. IBM Global Business Services.
- AHMO, 2009. Human Resources for Health Country Profile Uganda. African Health Workforce Observatory.
- Amaravadi RK, Dimick JB, Pronovost PJ, et al., 2000. ICU nurse-to-patient ratio is associated with complications and resource use after esophagectomy. *Intensive Care Med* ;26(12):1857-62.
- American Hospital Association, Commission, 2002. Commission on Workforce for Hospitals and Health Systems. *In our hands: how hospital leaders can build a thriving workforce*.
- Awases, M., A. Gbary, J., Nyoni, and Chatora. R., 2004. *Migration of Health Professionals in six countries: A Synthesis Report*. WHO Regional Office for Africa. Brazzaville.
- Awases, M., 2007. Migration of Skilled Health Professionals in the African Region: An Overview. *African Health Monitor* January-June
- Buchan, J and Dovlo, D., 2004. *International recruitment of health workers to the UK: A report for DIFD*. http://www.difdhealthrc.org/shared/publications/reports/int_rec/int-rec-main.pdf
- Chaudhury, N., Hammer, J. Kremer, M., Muralidharan, K. and Rogers F. H., 2004. *Provider Absence in Schools and Health Clinics*. Paper presented at Northeast Universities Development Consortium Conference, Montreal
- Campbell C, et al., 2008. Hearing community voices: grassroots perceptions of an intervention to support health volunteers in South Africa. *Sahara J* 2008, 5(4):162-177.
- Carayon P, Gurses AP, Hundt AS, et al., 2005. Performance obstacles and facilitators of Healthcare providers. In: Korunka C, Hoffmann P, eds. *Change and quality in human service work*. Vol. 4. Munchen, Germany: Hampp Publishers; 2005. p. 257-76
- Cohen, J. and Uphoff, N., 1977. *Rural development. Participation: concepts and measures for project design, implementation and evaluation*. New York: Rural Development Committee; 1977.
- Coovadia, H, Jewkes R, Barron p, Sanders D, and Mc Intyre D., 2009. The health and the health system of South Africa: historical roots of current public health challenges. *The Lancet* 374: 835–846
- Couper, I., 2002. *The Ethics of International Recruitment*. Department of Family Medicine and Primary Health Care, MEDUNSA, South Africa. Paper prepared for the ARRWAG Conference in Adelaide, Australia.
- Crickmore, R., 1987. A review of stress in the intensive care unit. *Intensive Care Nurs* 1987;3:19-27

Delva MD, et al., 2002. Postal survey of approaches to learning among Ontario physicians: implications for continuing medical education. *Brit Med J* 2002, 325:1218.

Daviauda, E, Chopra, M., 2008. “How much is not enough? Human resources requirements for primary health care: a case study from South Africa.” *Bulletin of the World Health Organization* 86:46–51

Delanyo, D., 2005. Wastage in the health workforce: some perspectives from African countries. <http://www.human-resources-health.com/content/3/1/6> [viewed 4/6/07]

Diarra-Nama, J. A., 2007. Human Resources for Health Development in the African Region: The Journey so Far. *African Health Monitor* January-June.

Dieleman, M and Harnmeijer, J. W., 2006. Improving health Worker performance: *in search of promising practices*. Evidence and Information for Policy, Department of Human Resources for Health, Geneva.

Egger, D., Lipson, D. & Adams, O., 2000. *Achieving the Right Balance – The Role of Policymaking Processes in Managing Human Resources for Health Problems: Issues in Health Services Delivery*. Discussion Paper No. 2. Geneva: WHO, Human Resources for Health Department

Fawcett, B. and South, J., 2005. Community involvement and Primary Care Trusts: The case for social entrepreneurship. *Critical Public Health* 2005, 15(2):191-204.

Gilson, L. et al., 1989. National community health worker programs: how can they be strengthened? *J Public Health Policy* 1989, 10(4):518-532.

GoU, 2007. Annual Health Sector Performance Report. Financial Year 2006/2007
Global Health Initiative Kenya Strategy, 2011. In Partnership with the Government of Kenya. Revision: Kenya Strategy 2011/14

Gurses, A. P., 2005. ICU nursing workload: causes and consequences—final report Rockville, MD: Agency for Healthcare Research and Quality; 2005. Available at: http://hfrp.umaryland.edu/People/gurses_AHRQ_final_report-06-15-05.pdf.

Hickam, D. H., et al., 2003. *The Effect of Health Care Working Conditions on Patient Safety*. Evidence Report/Technology Assessment Number 74. (Prepared by Oregon Health & Science University under Contract No. 290-97-0018.) AHRQ Publication No. 03-E031. Rockville, MD: Agency for Healthcare Research and Quality.

Hedberg, B. and Larsson, U. S., 2004. “Environmental Elements Affecting Decision-Making Process in Nursing Practice.” *Journal of Clinical Nursing* 13(3) 316-24.

Hongoro, C. and Normand, C., 2006. Health Workers: Building and Motivating the Workforce. Disease Control Priorities in Developing Countries

Hossain B, and Khaleda B., 2001. *Likely Benefit of Using Workload Indicators of Staffing Need (WISN) for Human Resources Management and Planning in the Health Sector of Bangladesh*.

- Jamison, D. T. et al. (ed.), 2006. Improving the Quality of Care in Developing Countries. Disease Control Priorities in Developing Countries. 2nd edition.
- Joint Learning Initiative, 2004. *Human resources for health: overcoming the crisis*. Cambridge, Global Equity
- Kadowa, I. and Nuwaha, F., 2009. Factors influencing disclosure of HIV positive status in Mityana district of Uganda. *Afr Health Sci*. 2009 March; 9(1): 26–33. PMID: PMC2932514
- Kane, R. L., 2007. Nurse Staffing and Quality of Patient Care. *Evidence Report/Technology Assessment*. Number 151
- Kurowski, C., and Mills, A., 2006. Estimating human resource requirements for scaling up priority health interventions in Low income countries of Sub-Saharan Africa: A methodology based on service quantity, tasks and productivity (THE QTP METHODOLOGY)
- Kurowski, C., Wyss, K., Abdulla, S., Yémadji, N. and Mills, A., 2004 *Human Resources for Health: Requirements and Availability in the Context of Scaling-up Priority Interventions in Low-income Countries. Case Studies from Tanzania and Chad*. HEFP Working paper 01/04. London School of Hygiene and Tropical Medicine.
- Larry, W., and Chang, M.D., 2009. Task Shifting: A Solution for the Health Worker Human Resource Crisis?
- Leonard, K. L., Masatu, M. C., and Vialou, A., 2005. *Getting doctors to do their best: Ability, altruism and incentives*. Working paper. University of Maryland.
- Levin, A, Dmytraczenko, T, and Ssengooba, F., 1999. *Costs of Maternal Health care Services in Masaka District, Uganda*. Partnership for Health Reform Special Initiative Report 16.
- Lynch, E. and Diallo. I., 2002. *Donor Mapping*. Study commissioned by USAID/Mali
- Lwasampijja, 2009. Mityan Sistrict PMTCT Program : Achievements, Challenges And Lessons Learnt
- Mæstad, O., 2006. Human Resources for Health in Tanzania: Challenges, Policy Options and Knowledge Gaps. CMI Reports.
- Macinko J, et al., 2006. Evaluation of the impact of the Family Health Program on infant mortality in Brazil, 1990–2002. *J Epidemiol Community Health* 2006, 60(1):13-19.
- Marchal, B., De Brouwere. V. and Kegels, G., 2005. Viewpoint: HIV/AIDS and the health workforce crisis: what are the next steps? *Trop Med Int Health* 2005, 10(4):300-304.
- Mashall, C. and Rossman G. B., 1999. *Designing Qualitative Research*. Thousands Oaks, CA: Sage
- McManus, I. C., Winder, B. C., and Gordon, D., 2002. The causal links between stress and burnout in a longitudinal study of UK doctors. *The Lancet* 2002; 359: 2089-2090. Crane M. Why burned-out.

McPake, B. and Mensah, K., 2008. Task shifting in health care in resource-poor countries. *Lancet* 2008, 372(9642):870-871 Federation and World Confederation for Physical Therapy

Matsiko C.W., 2001. Motivating health workers: Will it improve health care indicators? *Uganda Health Bulletin* 2001 7 (4); 38–9.

Mbonye, A., 2001. The Structure of The Ministry of Health: Is there room for democracy and motivation? *Uganda Health Bulletin* 2001 7 (1); 21–23.

Meisinger, S. R., 2005. ‘The four Cs of the HR profession: being competent, curious, courageous and caring about people’, *Human Resource Management*, 44:2, pp 189–94. <http://doc.mbalib.com/view/1ffe753e3f02f6705fc463cb0dabd427.html>

McPake, B. and Kwadwo-Mensah, K., 2008. Task Shifting in Health care in Resource poor Countries. *The Lancet*; 372, 9642; Platinum Periodicals pg. 870

MoH, 2004. Draft Manual for management of Health Services in the Health sub-sector

2007. Uganda Human Resources for Health Strategic Plan 2005-2020

2009. Human Resources for Health Audit Report, Kampala

2010. *Health Sector Strategic and Investment Plan: Promoting people’s health to enhance socio-economic development 2010/11–2014/15*, Kampala: Ministry of Health.

Mojoyinola, J. K., 2008. Effects of Job Stress on Health, Personal and Work Behaviour of Nurses in Public Hospitals in Ibadan Metropolis, Nigeria

Mugisha, J. F., and Namaganda, G., 2008. Using the Workload Indicator Of Staffing Needs (WISN) Methodology To Assess Work Pressure Among The Nursing Staff Of Lacor Hospital. 1 Faculty of Health Sciences, Uganda Martyrs University

Nabudere, H., Asiimwe, D., & Mijumbi, R., 2010. An Evidence-Based Policy Brief Task Shifting to optimize the roles of health workers to improve the delivery of maternal and child Healthcare. Prepared by the Uganda country node of the Regional East African Community Health (REACH) Policy Initiative.

Oelke, et al., 2008. *Nursing Workforce Utilization: An Examination of Facilitators and Barriers on Scope of Practice*. Nursing Research.

Oketcho, V., Namaganda, G., and Matsiko, C., 2009. *Human Resources for Health Planning In Uganda: Practice and lessons*, Uganda Capacity Program, IntraHealth International, Uganda

Samb, B., et al., 2007. Rapid expansion of the health workforce in response to the HIV epidemic. *N Engl J Med*. 2007;357:2510-2514.

Romanow, R. J., 2002. *Building on Values: The Future of Health Care in Canada*. Ottawa: Commission on the Future of Health Care in Canada.

Rasmussen, A., 2010. WISN Workload Indicators of staffing needs. User’s manual

Ruwoldt, P., and Hasset, P., 2007. Zanzibar Health Care Worker Productivity Study: Preliminary Study Findings. Training Resources Group, Inc.

Shipp, P., 1988. Workload Indicators of staffing needs (WISN). A Manual for Implementation. Geneva, World Health Organization, (WHO/HRB/98.2)

Ssengooba, F, et al., 2003. Health Systems Development Programme Maternal Health Review Uganda. Makerere University Institute of Public Health. HSD/WP/04/03

UCC, 2011. Rural Communications Development Fund (RCDF). RCDF projects in Mityana District, Uganda. UCC Support through the RCDF Programme.

USAID Support for Analysis and Research in Africa, 2003. The Health Sector Human Resource Crisis in Africa: An Issues Paper. Washington, D.C.: Bureau for Africa Office of Sustainable Development

Wiskow, C., 2010. How to create an attractive and supportive working environment for health professionals. Health Systems and Policy Analysis. Policy Brief 15

WHO, 2003. The people who work for our health: placing health workers at the heart of health service delivery in Africa. Brazzaville, page 4.

WHO, 2009. Towards Universal Access: Scaling up priority HIV/AIDS interventions in the health sector: progress report 2009. WHO Press.

WHO/AFRO Brazzaville, 2004. Report on Human Resources for Health status in the African Region.

Wood R. et al., 1996. Models of job-related stress and personal achievement among consultant doctors. *British Journal of Psychology* 1996, 87:3-29.

APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION



making a difference to Health Care in Uganda
Office of the Dean Institute of Health Policy and Management

Kampala, On the 26th Day of June, 2012.

TO WHOM IT MAY CONCERN

Re: Assistance for Research

Greetings from International Health Sciences University.

This is to introduce to you **Mr. Nalere Patrick, Reg. No. 2010-MBA-PT-012**, who is a student of this University. As part of the requirements for the award of a Masters Degree of Business Administration-Health Management of this University, the student is required to carry out field research for the submission of a Research Dissertation.

Mr. Nalere would like to carry out research on issues related to:
Determination of Actual Human Resources for Health Staffing Requirements and Work Pressures using Workload Indicators for Staffing Needs Methodology: A Case of Selected Health Facilities for a period of 2010/2011

I therefore request you to render this student such assistance as may be necessary for his research.

I, and indeed the entire University are thanking you in anticipation for the assistance you will render to the student.

Sincerely Yours,


**INSTITUTE OF HEALTH
POLICY AND MANAGEMENT**
Prof. David M. NDUNGUTSE
Dean, Institute of Health Policy and Management
International Health Sciences University

International Health Sciences University
P.O. Box 7782 Kampala – Uganda – East Africa
Tel (+256) 0312 307400 email:directorihpm@ihsu.ac.ug
web: www.ihsu.ac.ug
The Teaching College of International Hospital Kampala



APPENDIX 2: Health Facilities in Mityana District

	NAME OF FACILITY	LEVEL	HMIS 105	HMIS 108	NO.DOCTORS	C.O	MW	NO	N.A
1	KALANGALO	HC	12	NA	0	0	1	1	1
2	KIBAALE	HC II	9	NA					
3	TTANDA	HC II	11	NA	0	0	1	1	1
4	KASIIKOMBE	HC II	12	NA	0	0	2	1	0
5	LUSALIRA	HC II	12	NA	0	0	0	1	0
6	NAMIGAVU	HC II	12	NA	0	0	0	1	0
7	KITEREDDE	HC II	12	NA	0	0	2	3	0
8	KABUWAMBO	HC II	12	NA	0	0	1	1	0
9	BUSUNJU	HC II	12	NA	0	0	1	1	0
10	MAANYI	HC III	7	5	0	2	1	5	1
11	MALANGALA	HC III	12	0	0	0	3	3	1
12	KABULE	HC III	12	0	0	1	2	1	0
13	MAGALA	HC III	12	0	0	2	2	2	0
14	NAAMA	HC III	12	0	0	1	1	1	0
15	Mityana Hospital	HOSPITAL	12	12	9	9	40	42	12
16	Bekiina	II	7	NA	0	0	0	2	1
17	Miseebe	II	12	NA	0	0	0	2	0
18	Kiyoganyi	II	12	NA	0	0	1	1	1
19	Katiiko	II	12	NA	0	0	0	1	0
20	Nakaseeta	II	12	NA	0	0	1	2	0
21	Namungo	II	11	NA	0	0	2	1	1
22	Kalama	II	12	NA	0	0	1	1	1
23	Mpongo	II	12	NA	0	0	1	1	0
24	Nakaziba	II	12	NA	0	0	0	1	1
25	Kanyanya	II	12	NA	0	0	1	1	0
26	Bulera	III	12	0	0	0	2	1	1
27	Kitongo	III	12	1	0	1	1	2	2
28	Kikandwa	III	12	0	0	0	4	4	2
29	Kyamusisi	III	12	9	0	0	3	4	0

30	Mwera	IV	12	11	0	5	2	4	1
31	Kyantungo	IV	12	12	1	2	5	5	0
32	Ssekanyonyi	IV	12	12	0	2	2	4	1

APPENDIX 3: HMIS 105: HEALTH UNIT MONTHLY REPORT

Health unit name	MALANGALA														
Level	HC III														
Health sub district	MWERA-BUSUJU														
District	MITYANA														
Ownership	GOVERNMENT														
Number of wards															
OUT PATIENT UTILIZATION DATA	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average	Annual total	
Total New Attendance	735	558	826	661	129 8	111 8	146 9	624	982	143 6	102 4	131 9	1,004	12,050	
Total Re-attendance	118	70	56	93	130	125	247	41	104	72	131	73	105	1,260	
Total Referrals from unit (all ages)	2	1	4	2	1	1	4	5	6	6	5	5	4	42	
ANTENATAL/POSTNATAL CLINIC														-	
Total New ANC Attendance	69	59	53	37	68	51	66	56	40	44	57	42	54	642	
Total ANC re-attendance 4th visit	8	12	12	15	10	15	7	13	11	10	4	6	10	123	
Total Referrals from unit	7	1	3	4	8	7	2	3	1	0	2	4	4	42	
Total Postnatal visits	-	3	2	4	5	7	2	4	5	9	1	3	4	45	
MATERNITY														-	
Total Admissions	26	23	19	32	36	26	23	24	21	21	20	21	24	292	
Total Referrals from unit	1	3	2	6	3	3	1	3	4	3	3	4	3	36	
Total Deliveries in unit	20	19	15	25	30	22	20	21	15	18	16	18	20	239	
Total Still births in unit	-	0	0	0	1	0	1	0	0	0	2	0	0	4	
Total Birth Asphyxia	-	0	0	0	0	0	0	1	0	1	0	1	0	3	
Total Maternal deaths	-	0	0	0	0	0	0	0	0	0	0	0	-	-	
TETANUS IMMUNISATION														-	
Dose 1	38	55	49	35	65	22	58	48	32	48	54	30	45	534	

Dose 2	19	22	44	39	20	18	19	40	44	19	25	12	27	321
Dose 3	-	0	0	0	0	0	0	0	0	0	0	0	-	-
Dose 4	-	0	0	0	0	0	0	0	0	0	0	0	-	-
Dose 5	-	0	0	0	0	0	0	0	0	0	0	0	-	-
Total Pregnant women TT vaccine	57	77	93	74	85	40	77	88	76	67	79	42	71	855
Dose 1	-	0	0	0	0	0	0	0	0	0	0	0	-	-
Dose 2	-	0	0	0	0	0	0	0	0	0	0	0	-	-
Dose 3	-	0	0	0	0	0	0	0	0	0	0	0	-	-
Dose 4	-	0	0	0	0	0	0	0	0	0	0	0	-	-
Dose 5	-	0	0	0	0	0	3	0	0	0	0	0	0	3
Total Non-pregnant women TT vaccine	-	-	-	-	-	-	3	-	-	-	-	-	0	3
CHILD IMMUNISATION														-
Total BCG	31	45	23	62	32	56	53	45	43	27	30	57	42	504
Total Polio 0	14	19	11	24	20	17	13	33	23	9	19	28	19	230
Total Polio 1	30	47	35	52	47	61	62	36	49	29	30	61	45	539
Total Polio 2	30	42	46	37	43	50	50	44	44	23	36	51	41	496
Total Polio 3	33	32	30	32	27	33	35	47	37	27	26	40	33	399
Total DPT-HepB+Hib 1	31	47	32	45	46	60	53	39	48	13	40	66	43	520
Total DPT-HepB+Hib 2	30	42	46	37	42	45	58	52	45	14	38	47	41	496
Total DPT-HepB+Hib 3	29	32	29	30	27	33	40	43	43	13	30	52	33	401
Total Measles	29	32	33	26	24	32	23	18	32	14	17	31	26	311
Total Immunizations	257	338	285	345	308	387	387	357	364	169	266	433	325	3,896
OUT PATIENT UTILIZATION DATA	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average	Annual total
FROM THE OPERATING THEATRE														-

Total Female Sterilisation (tubal ligation)	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Total Male Sterilisation (vasectomy)	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Total Implant new users	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Total Implant revisits	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Total Implant removals	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
PMTCT SERVICES														#DIV/0!	#DIV/0!
Total Pregnant women tested for HIV	65	63	53	36	60	43	59	52	36	40	56	42	50	605	
HCT SERVICES														#DIV/0!	#DIV/0!
Total HIV counseled	41	52	16	65	24	31	17	9	42	35	47	68	37	447	
Total Received HIV results	42	52	16	65	24	31	17	9	42	25	54	79	38	456	
Total HIV positive	42	4	1	7	1	2	2	2	4	1	5	10	7	81	
INPATIENT ACTIVITIES															-
Admission all wards minus maternity	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Deaths all wards minus maternity	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Inpatient days maternity	78	69	57	96	108	78	69	72	63	63	60	63	73	876	
In patient days other wards minus maternity	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
2. Referrals															-
Number Inpatients referred from this health unit	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
3. MAJOR SURGICAL PROCEDURES															-
Caesarian sections	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Other major operations minus caesarian sections	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
Total Number Major Operations including CS	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-
4. MINOR SURGICAL PROCEDURES															-
Total Number Minor Operations minus dental extractions	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-

APPENDIX 4: HMIS 108: HEALTH UNIT INPATIENT MONTHLY REPORT

Health unit name	MITYANA HOSPITAL													
Level	HOSPITAL													
Health sub district	MITYANA HOSPITAL													
District	MITYANA													
Ownership	GOVERNMENT													
Number of wards	4													
OUT PATIENT UTILIZATION DATA														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average	Annual total
Total New Attendance	9,735	9196	6282	9500	2986282	9747	8640	9194	10209	10221	10485	10078	257,464	3,089,569
Total Re-attendance	2,303	2223	2323	2381	2348	2371	2307	2243	2395	2451	2321	2335	2,333	28,001
Total Referrals from unit (all ages)	-	0	0	0	0	0	0	0	0	0	0	0	-	-
ANTENATAL/POSTNATAL CLINIC														
Total New ANC Attendance	510	311	361	265	385	423	391	359	355	331	329	302	360	4,322
Total ANC re-attendance 4th visit	9	13	11	11	10	48	22	31	31	93	68	77	35	424
Total Referrals from unit	-	46	0	0	0	0	0	0	0	0	0	0	4	46
Total Postnatal visits	-	75	7	11	0	33	61	55	99	92	89	88	51	610
MATERNITY														
Total Admissions	553	503	585	572	555	505	538	498	519	533	567	451	532	6,379
Total Referrals from unit	2	2	2	3	2	6	1	3	2	2	0	2	2	27
Total Deliveries in unit		408	440	376	429	327	409	373	420	422	425	335		

	379												395	4,743
Total Still births in unit	24	21	28	24	19	13	21	16	24	29	18	15	21	252
Total Birth Asphyxia	15	17	19	17	13	15	19	17	19	21	27	19	18	218
Total Maternal deaths	4	3	1	2	1	1	1	0	0	5	1	1	2	20
TETANUS IMMUNISATION														-
														-
Dose 1	346	303	371	288	399	394	37	308	314	297	326	359	312	3,742
Dose 2	191	253	243	198	151	269	183	244	260	141	171	189	208	2,493
Dose 3	12	9	10	6	6	8	9	7	4	3	10	8	8	92
Dose 4	1	3	8	6	3	8	2	8	4	7	9	7	6	66
Dose 5	1	0	2	0	1	1	3	4	2	3	2	2	2	21
Total Pregnant women TT vaccine	551	568	634	498	1	680	234	571	584	451	518	565	488	5,855
														-
Dose 1	48	33	46	55	68	76	56	70	64	84	39	57	58	696
Dose 2	2	3	0	4	4	4	9	2	2	1	2	0	3	33
Dose 3	1	6	5	6	3	4	6	3	4	3	2	1	4	44
Dose 4	1	0	1	1	1	3	3	0	2	3	1	0	1	16
Dose 5	-	0	0	0	1	0	1	3	1	1	0	1	1	8
Total Non-pregnant women TT vaccine	52	42	52	66	77	87	75	78	73	92	44	59	66	797
														-
CHILD IMMUNISATION														-

Total BCG	258	260	281	260	272	196	246	288	292	282	292	261	266	3,188
Total Polio 0	226	161	181	198	243	168	216	242	261	248	289	220	221	2,653
Total Polio 1	147	96	113	146	156	149	138	107	155	139	151	144	137	1,641
Total Polio 2	154	72	96	112	158	143	155	110	116	113	129	135	124	1,493
Total Polio 3	154	113	76	75	116	117	126	125	86	124	133	121	114	1,366
Total DPT-HepB+Hib 1	147	115	143	145	153	149	138	107	155	139	151	144	141	1,686
Total DPT-HepB+Hib 2	154	102	130	103	152	134	137	110	116	113	129	135	126	1,515
Total DPT-HepB+Hib 3	154	126	98	103	115	98	125	125	86	124	123	121	117	1,398
Total Measles	95	72	88	71	98	74	87	83	145	102	89	124	94	1,128
Total Immunizations	1,489	1,117	1,206	1,213	1,463	1,228	1,368	1,297	1,412	1,384	1,486	1,405	1,339	16,068
OUT PATIENT UTILIZATION DATA	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average	Annual total
FROM THE OPERATING THEATRE														-
Total Female Sterilisation (tubal ligation)	6	4	3	4	5	6	6	3	400	5	4	8	38	454
Total Male Sterilisation (vasectomy)	-	0	0	0	0	0	0	0	0	0	0	0	-	-
Total Implant new users	-	0	0	0	0	0	0	0	0	25	8	0	3	33
Total Implant revisits	-	0	0	0	0	0	0	0	0	17	9	0	2	26
Total Implant removals	-	0	1	0	0	0	0	0	4	2	2	0	1	9
														-
PMTCT SERVICES													#DIV/0!	#DIV/0!
Total Pregnant women tested for HIV	187	127	89	43	380	310	402	362	440	366	367	314	282	3,387
													#DIV/0!	#DIV/0!
HCT SERVICES													#DIV/0!	#DIV/0!

Total HIV counseled	419	129	0	0	670	370	246	593	592	627	273	565	374	4,484
Total Received HIV results	431	125	0	0	699	370	253	593	623	653	285	598	386	4,630
Total HIV positive	107	32	0	0	138	57	46	77	135	131	55	84	72	862
INPATIENT ACTIVITIES														-
Admission all wards minus maternity	553	383	382	932	660	715	642	479	435	589	572	602	579	6,944
Deaths all wards minus maternity	27	25	20	26	27	34	29	30	24	30	35	33	28	340
Inpatient days maternity	1,342	1175	1610	1252	1188	1405	1411	1392	1365	1403	1361	1241	1,345	16,145
In patient days other wards minus maternity	2,808	2481	1694	1957	2706	3116	3413	2220	2132	2121	2692	2668	2,501	30,008
2. Referrals														-
Number Inpatients referred from this health unit	20	24	19	19	17	16	38	42	23	25	20	29	24	292
3. MAJOR SURGICAL PROCEDURES														-
Caesarian sections	97	88	106	104	117	79	103	84	114	109	75	72	96	1,148
Other major operations minus caesarian sections	60	32	33	40	30	39	32	40	39	34	35	41	38	455
Total Number Major Operations including CS	157	120	139	144	147	118	135	124	153	143	110	113	134	1,603
4. MINOR SURGICAL PROCEDURES														-
Total Number Minor Operations minus dental extractions	69	68	64	90	82	86	75	63	69	103	90	78	78	937