THE CHALLENGES FACING THE MEDICAL UNIVERSITIES IN ADDRESSING THE CRISIS OF HUMAN RESOURCE FOR HEALTH IN TANZANIA

Anna J. Sanyiwa

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Award of Master of Public Health Degree of the Muhimbili University of Health and Allied Sciences

November, 2008

CERTIFICATION

The Undersigned certifies that he has read and hereby recommends for acceptance by the Muhimbili University of Health and Allied Sciences a dissertation entitled: "***The challenges facing the Medical Universities in addressing the crisis of Human Resource for Health in Tanzania***" in partial fulfillment of degree of Master of Public Health(MPH).

Prof. M.T.Leshabari

(Supervisor)

Date NOV 21st 2008

DECLARATION AND COPYRIGHT

I **Anna John Sanyiwa** do solemnly declare that the work presented in this dissertation is my own original work, and that it has never been submitted for any degree in any other University.

Signature 

Date 21/11/08

"This dissertation is copyright material protected under the Berne Convention, the Copyright Act 1999 and other international and national enactments, in that behalf, on intellectual property. It may not be produced by any means, in full or in part, except for short extracts in fair dealing; for research or private study, critical scholarly review or discourse with acknowledgement, without written permission of the Directorate of Postgraduate Studies, on behalf of both the author and the Muhimbili University of Health and Allied Sciences".

ACKNOWLEDGEMENT

Foremost I would like to thank my supervisor Prof. M.T. Leshabari, who willingly read numerous drafts of this dissertation. His constructive criticism and feedback is highly appreciated. His encouragement and advice helped to shape the proposal and this final version of the dissertation.

Grateful acknowledgements are given to the key informants for the respectful treatment they gave me during data collection. Despite their busy schedules of day to day activities, they spared an hour for me. Thank you very much!

Special thanks to the Vice chancellor of Muhimbili University of Health Allied Sciences and the Head of Department of Ophthalmology for releasing me from work despite the busy schedule of the Ophthalmology Department.

I would like to thank any relative, academic staff, colleague and friend who supported me in one way or another to make this work possible.

If I were to mention everyone who contributed to this piece of work, the list will be endless. I would like to acknowledge Dr David Simba of the School of Public Health and Social Sciences for inspiring me to pursue the course of Master of Public Health.

Lastly with most love I thank my family, especially my husband Dr Ngaiza and my sons Austin and Andy, for appreciating the little I could do as a wife and mother during the process of conducting this research.

DEDICATION

To my sons Austin and Andy.

ABSTRACT

When this study was conducted, Tanzania was facing an acute shortage of human resource in the health sector. The combined output of graduates from the Medical Universities per year did not meet the national demands of HRH. Little was known about the extent to which the Medical Universities collaborate among themselves in addressing the human resource crisis in Tanzania. The criteria used for determining the number of undergraduate and postgraduate student's enrollment into the medical schools were not known. The universities were facing various challenges, however, little was known about these challenges. The major aim of this study was to identify the challenges facing the Medical Universities in addressing the human resource for health crisis in Tanzania. This cross sectional study was conducted between July and August, 2008. Qualitative methods were used for generating data from selected key informants from the registered Medical Universities and Colleges in Tanzania. Data collected were coded and analyzed manually. Increased enrollment which did not correspond with available resources, severe under funding and inadequate involvement in the process of formulation of the HRH policies and plans were among the challenges the universities faced. The challenges facing Medical Universities in the country if not addressed, would compromise the quality of the graduates and in the long run, the number of enrollment would decrease instead of increasing making, the situation worse than was the case during this study.

TABLE OF CONTENT

CERTIFICATION ii

DECLARATION AND COPYRIGHT iii

ACKNOWLEDGEMENT iv

DEDICATION vi

ABSTRACT vii

ACRONYMS xii

CHAPTER ONE 1

1.0 INTRODUCTION 1

1.2 Statement of the Problem 9

CHAPTER TWO 14

2.0 LITERATURE REVIEW 14

2.1 Human Resource for Health as a Global Problem 14

2.2 Tanzania's Situation of HRH 15

2.3 Training of HRH in Medical Schools in Tanzania 17

2.4 The Need of Collaborative Effort in Medical Schools Training 19

2.5 The Role of HRH Policy and Training 22

2.6 Challenges Facing Medical Universities in Africa 25

CHAPTER THREE 27

3.0 METHODOLOGY 27

3.1 Study Area 27

3.2 Study Design....31

3.3 Study Population....31

3.4 Study Sample....32

3.5 Sampling Procedure....32

3.6 Data Collection Procedures....33

3.7 Data Collection Instruments....34

3.8 Data Processing and Analysis....35

3.9 Ethical Consideration....35

4.0 RESULTS....36

CHAPTER FIVE....72

5. 0 DISCUSSION....72

6.0 REFERENCES....81

APPENDIX I- KEY INFORMANT GUIDE....i

APPENDIX: II INFORMED CONSENT FORM....iv

LIST OF TABLES

Table 1: Summary of the Key Features of the Universities Studied 37

LIST OF FIGURES

Figure 1 Output of graduates from both Public and Private Universities (1997-2007) 38

Figure 2: Combined enrollment of both Private and Public Medical Universities. 39

ACRONYMS

AIDS	Acquired Immuno – Deficiency Syndrome
AKU	Aga Khan University
DDS	Doctor of Dental Surgery
DVC	Deputy Vice Chancellor
HKMU	Hubert Kairuki Memorial University
HRH	Human Resource for Health
HIV	Human Immuno Deficiency Virus
HESLB	Higher Education Students Loans Board
ICT	Information Communication Technology
IMR	Infant Mortality Rate
IMTU	University and International Medical Technology University
ILO	International Labour Organization
KCMC	Kilimanjaro Christian Medical College
MDG	Millennium Development Goals
MD	Medical Doctor
MMR	Maternal Mortality Rates
MoHSW	Ministry of Health and Social Welfare
MoEVT	Ministry of Education and Vocational Training
MUHAS	Muhimbili University College of Health Allied Science
PMTC	Prevention of Material to Child Transmission of HIV Virus
PHSDP	Primary Health Services Development Programme

RCH	Reproductive and Child Health
TCU	Tanzania Commission for Universities
WBUCHS	Weil Bugando University College of Health Sciences
WHO	World Heath Organization

CHAPTER ONE

1.0 INTRODUCTION

Sub Saharan Africa has the lowest human resource for health to population ratio in the world (WHO, 2006). The ratio of human resource for health is 0.8 per 1000 population, compared to a world average of 4.2 (World bank, 1994). This estimated workforce of doctors, nurses, and other allied workers constituted 1.3% of the world's health workforce while Africa carries 25% of the world's diseases (WHO, 2006).

The human resources for health to population ratio in Africa have been high and have always lagged behind the rest of the world (SARA, 2003). For example, in 1980s the doctor to population ratio was 1:10,800 in sub-Saharan Africa, compared to 1:1,400 in all developing countries and 1:300 in industrialized countries (Huddart et al, 2003). During the same period, one nurse catered for 2,100 persons in Africa compared to 1,700 persons in developing countries and 170 in industrial countries (World bank, 1994). Even during the 1990s the situation continued to deteriorate (SARA, 2003). Most of the countries had one doctor per 10,000 populations or more. About ten countries in sub-Saharan including Tanzania, the doctor to population ratio was between 1:20,000 and 1: 30,000 or more (World bank, 1994).

Human resources for health (HRH) are the integral part of health systems engaged in promotion, protection, or improvement of population (PAHO, 1998). Africa needs immediately at least 1 million more health workers for their health systems to function well and see noticeable improvement of the health indices (Kurowski, 2004). For example, in order to achieve the health related Millennium Development Goals a human resource density of 2.5 health workers per 1000 people is required, obviously very little progress will be achieved if the work force of 0.8 per 1000 population in Africa remains unchanged (WHO, 2006;World Bank, 1994)

Tanzania is one of the 57 countries in the world with critical shortage of skilled health workers (WHO, 2006). Information and data on the status of human resource for health in the country are scarce and inconsistent. A few available reports on the status of workforce in Tanzania show significant discrepancy (Mtabaji, 2002; Kireria et al, 2007; SAM, 2005). Health workers providing services in facilities in the country were counted in 2005/2006 (SAM, 2005). The study reported that the country has doctor to population ratio of 1:25,000 (SAM, 2005). Given that there were 1339 doctors in the country and the projected population in 2006 was 38,523,907 (Census, 2002), then the doctor to population ratio was 1:29,000. This is far below WHO recommended requirement ratio of 1:10,000 (WHO, 2006). Currently reports show that the HRH is at crisis level of 32% of the requirements (Kurowski, 2004). Most of these reports describe mainly the availability and distribution of the doctors and nurses (Mtabaji, 2002; Kurowski, 2004). The status of other cadres which are part of the health team is not well known. The

paucity and inconsistence of information on HRH is a serious constraint on understanding and resolving the existing HRH crisis in the health systems.

Another report published in 2002 show that the health workforce has been at crisis level since independence (Mtabaji 2002; SARA, 2003; Kurowski, 2004). In 1990 the doctor to population ratio was 1:30,000 (SARA, 2003). A study done by Kireria reported that the human resource for health declined from 67,000 in 1994/95 to 54,245 in 2002, representing a shortfall of 20 percent of heath workers within ten years (Kireria et al, 2007). Furthermore it is projected that the workforce will decline to 48,800 by the year 2015 if stringent measures to solve the crisis are not taken (Kireria et al, 2007).

The health systems needs to have a human resource mix to work as a team in which each worker contributes different skills and perform different functions for optimal output from each health facility (PAHO, 1998; Buchan & Dal Poz , 2002; Murray & Dimick, 1978). They need to be in adequate number, appropriate skill mix and competences for the health system to function well (PAHO, 1998; Buchan & Dal Poz, 2002; Murray & Dimick, 1978). The burden of diseases facing the country requires skilled health workers in sufficient number and skill mix for both preventive and curative measures against communicable and non-communicable heath challenges (MoHSW, 2007). The pool of available skilled HRH was severely inadequate relative to the need, and in most cases the skills required are far beyond those available from existing sources (Kurowski et al., 2003; SARA, 2003).

Although there has been progressive decline in infant and under -five mortality rates, the overall Maternal Mortality Rate (MMR) has been persistently high (RCH, 2007). The MMR is 578/100000 live births as majority of deliveries in rural areas are attended by unskilled health workers. Furthermore the reports revealed that prevalence of HIV/AIDS to be 8% (MoHSW, 2006) and new interventions such as Prevention of Mother to Child Transmission (PMTCT), Counseling and Testing require enormous skilled health workers (MoHSW, 2004). They are needed to administer the tests necessary in order to diagnose, counsel the patients and convince them to be treated and administer the necessary drug regimen.

Malaria continues to be the major cause of morbidity and mortality while Tuberculosis infection has increased far beyond what was anticipated without the AIDS pandemic (MoHSW, 2007). The country also faces high incidence of non-communicable conditions such as diabetes mellitus, cancers, malnutrition and hypertensive cardio-vascular diseases (MoHSW, 2004). Without increasing training of health teams in Medical Universities it will be difficult to effectively address the future health needs in our society

The Ministry of Health and Social Welfare in 2004 proposed a human resource mix for districts, regional and consultant hospital in the country. With an example of medical doctors, a district hospital was supposed to have at least 5 medical officers. The regional hospital requires 16 specialists and about 12 medical officers (MoHSW, 2004).

However, in recent years several districts were found to have only one doctor or none (SAM, 2005). In addition local and international governmental and non-governmental agencies and programs involved in research and implementation of health interventions take skilled health workers from the few available (Kurowski et al., 2003).

In the case of staffing level in Medical Universities, for academic excellence to be maintained, adequate and qualified human resource mix should be in place. Acquiring the human resources for universities is not simply a question of increasing the number of academicians with the necessary qualifications. Those academicians must also be experienced teachers and researchers and imbued with academic culture (Francis, 2002; WHO, 1997). The recruitment of academics has not kept up with the dramatic increase in enrollment in the universities (WHO, 1997). Currently there is a gap of about 10 years between the senior and the newly recruited academic staff due to freeze of employment for about a decade (ILO, 2002).

The underlying factors for HRH crisis in Africa as well as Tanzania are several. Like other African countries, Tanzania had weak planning and forecasting of human resource requirements (ILO, 2002; Liese and Dussault, 2004). Proper projection and forecasting for HRH was still lacking.

The Retrenchment Policy coupled by budget ceiling and an employment Freeze implemented from 1993 up to 2005 led to a sharp decline of the health workforce (Liese

and Dussault, 2004; Dovlo, 1996). The budget ceiling led to severe under funding of the training institutions. It resulted to shortages of academic and supporting staff (Liese and Dussault, 2004; MUHAS 2007). Other problems related to the budget ceiling may include inadequate physical space and financial constraints, shortage of lecture theatres, hostels and houses for staff (Sawyerr, 2006; Dovlo, 1996). The environment for learning was also compromised by shortage of laboratories, equipment and other supplies required for effective teaching and learning.

University training of health workers started within the country way back in 1963 as part of the post-colonial national development strategy to help the new nation build up its own human resource for health (Sawyerr, 2006). The institution started as a faculty of medicine under the University of Dares Salaam. It has undergone several stages of development and of recent it became a fully flagged national medical university with five schools, two institutes offering 13 undergraduate and 42 postgraduate programs. It started by enrolling 10 students in bachelor of medicine. The enrollment progressively increased to about 50 by the year 1972 (MUHAS, 2007). Programmes of dental surgery and pharmacy were introduced later with intake of about 10 students each. The output remained relatively constant at about 100 graduates per year until 1997 when the implementation of students expansion programme started (MUHAS, 2007).

The country did not have private medical schools until a decade ago when private universities started training degree level cadres. Currently there are seven Medical

Universities in Tanzania. Tumaini University which is a private institution under the Good Samaritan Foundation in Moshi started training of degree student in 1994.The Hubert Kairuki Memorial University (HKMU), a private medical university established in 1997 in Dar es Salaam. International Medical Technology University (IMTU) a private university established in 2001 and Weil Bugando University College of Health Sciences (WBUCHS) under Catholic Church in Mwanza established in 2003. However their combined output of graduating students per year is less than that of MUHAS, which is the only public university responsible for training different cadres of health personnel in the country.

Although the Medical Universities are the main stakeholders in training skilled health workers at degree level in Tanzania, the Ministry of Health and Social Welfare and Ministry of Education and Vocational Training have important roles to play in order to meet the national human resource requirement.

The Ministry of Health and Social Welfare formulate policies and oversee the implementation of Human Resources for Health Strategic Plan including deployment of university outputs into the health systems. Human Resource Strategic Plan guides the Health and Social Welfare sector in proper planning, development, management, and utilization of the human resource. It is projected that in order to meet the health HRH mix in Tanzania for the next 10 years, training institutions in the country should enroll nearly 18,000 students annually (MoHSW, 2008). It is assumed that Medical

Universities were aware of the proportion of this requirement that should be trained at university level. The Plan also would contribute to the improvement of human resource financing by providing comprehensive budgets and identifying ways of mobilizing adequate resources from different stakeholders (MoHSW, 2008).

Increase production of HRH has been identified as among the cost effective means to be given high priority in addressing the HRH challenge in poor countries (McKinsey, 2004). It costs far less to educate health workers in developing nations than in developed countries. For example, the cost of training a doctor in Sub-Saharan Africa is reasonably low (McKinsey, 2004). It costs about 50,000 USD, which is ten times less than the cost of training a doctor in US (McKinsey, 2004).

In order to accomplish the task of producing adequate HRH with appropriate skill mix to meet the health challenges in the society, the universities, MoHSW and MOEVT need to have a sustainable mechanism for collaboration and partnerships.

1.2 Statement of the Problem

Tanzania is facing an acute shortage of human resource in the health sector. In recent years, the government of Tanzania declared shortage of HRH to be a crisis, which needs immediate and sustainable response among various stakeholders. Available reports show that the HRH in the country is at crisis level of 32% of the requirements in its health systems. The national HRH policies and plans with projection of HRH were formulated to guide the health sector in planning, development, management and effective utilization of human resource as an effort to solve the crisis.

In order for the national HRH goals to be met it is assumed that Medical Universities use national projections in developing their strategic plans for undergraduate and postgraduate inputs. The policies and plans from the MoHSW should be important inputs into training institutional plans and projections. This assumes the Medical Universities were directly or indirectly involved in developing national human resource policies and strategic plans.

These policies and plans from the government are expected to aim at taking the country to the situation of being self sufficient in his human resources. The funding to the universities was expected to reflect projections and requirement of the human resource for health. The use of the national projected HRH requirements as input for enrollment into the universities could facilitate a stronger negotiation for required funds for staff

development, infrastructure improvement, and improvement of teaching facilities including required equipments reagents and student's welfare facilities.

It has been pointed out that training in Medical Universities is a pipeline problem and this pipeline take years and require sustained funding over time to fill before the results can be seen (McKinsey, 2004). Moreover it takes time for a new university to be built and be staffed with teachers and takes even longer to become functional (McKinsey 2004). It is a reality therefore, that expanding the HRH workforce in Tanzania through training will necessarily require planned long-term efforts.

Given the severe shortage of HRH mix in the health sector, it was expected that the existing medical universities in Tanzania should be aware of the challenges. Universities were expected would team up as a group and assist the government in developing strategies to address the challenge of shortages of HRH in the health system. These universities have different strengths and weakness in terms of academic staff, laboratories, lecture theatres and teaching materials that influence both the number and quality of students. One way of increasing the number and quality of undergraduate and postgraduates students in the medical school was to encourage collaboration in order to facilitate the potential for getting required materials and financial resources from development partners and the government.

The efforts to collaborate were expected to enable them to share resources and avoid duplication of programmes, investments and activities. Their combined effort in facing HRH crisis in the society could produce a better quality of the required HRH mix compared to when each university faces the challenge alone.

Through collaboration it might be easy to reach the HRH projections developed by MoHSW for districts, regional hospitals as well as consultant hospital after specified time period. Collaboration among existing universities was expected to explore the potential and innovative solution to solve the challenges of HRH crisis in Tanzania.

Little was known about the extent to which the Medical Universities collaborated among themselves in addressing the human resource crisis in Tanzania. The criteria used for determining the number of undergraduate and postgraduate student's enrollment into the medical schools was also not known. The universities were also facing various challenges, which affect the quality of teaching and learning. However, little was known about these challenges and strategies used in addressing them. Unless some of these unknown challenges are addressed, it would be difficult to get the required human resource mix for addressing health challenges in the society. It was for this reason this study was designed and conducted.

COLLEGE LIBRARY
MUHIMBILI UNIVERSITY
COLLEGE OF HEALTH SIENCIES

1.3 Rationale

This study was expected contribute knowledge to the pool of information required on HRH in Tanzania. The information is expected to help improve partnership/collaboration among universities in order to address the HRH crisis in the country. The results of this study were expected to contribute towards the required background information for developing and implementing HRH policy in the health sector.

1.4 Broad Objective

The major aim of this study was to identify the challenges facing Medical Universities in addressing the human resource for health crisis in Tanzania.

1.5 Specific Objectives

1. To determine the extent to which national HRH policies/plans influenced university undergraduate and postgraduate inputs.
2. To determine the extent to which universities were involved in developing HRH policies and projections in the country.
3. To identify strategies that the Medical Universities employed to collaborate among themselves in addressing human resource challenges in Tanzania
4. To determine the problems which faced the Medical Universities as they addressed the shortage of health human resource in the country.

1.6 Research Questions

1. To what extent did the existing HRH policy/plan influenced undergraduate and postgraduate enrollment in different programmes?
2. What challenges faced the Medical Universities as they enrolled students in terms of numbers and mix?
3. Was there any form of collaboration among the medical universities in Tanzania? Which mechanisms were used to help enhance the collaboration in the context of increased enrollment in numbers and mix in the Medical Universities?
4. Were Medical Universities in Tanzania aware of the existing HRH policy/plan? Were the universities involved in developing HRH policy and plan? In what ways?

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Human Resource for Health as a Global Problem

For several years now human resource for health have been a problem globally as such have been identified and declared as a crisis that needs an urgent solution (WHO, 2006, WB, 1994). The crisis of human resource for health is more severe in Sub Saharan Africa than in any other continent in the world. Africa has the lowest health worker to population ratio in the world. Almost all countries confront a common set of challenges of severe shortages, maldistribution of workers, inappropriate skill-mix, poor working conditions, and huge knowledge gaps (Franco et al, 2002).The human resources shortage has not only caused a health crisis, but also a development crisis, a security crisis, and a moral crisis (Franco et al, 2002).

Currently there are 57 countries with critical shortages of skilled health workers equivalent to a global deficit of 2.4 million doctors, nurses and midwives, thirty six countries are located in Africa (WHO, 2006). The health workers population ratio in Africa is currently 0.8 health workers per 1000 inhabitants compared to a world average of 4.2 (WHO, 2006; World bank, 1994). Africa has only 1.3% of the world's doctors, nurses, and allied health workers but it carries 25% of the world's disease burden. America with 10% of the global burden of disease has 37% of the world's health more than 50% of the world's health financing (WHO, 2006).

The rate of progress towards achievement of internationally agreed development goals, including the heath related Millennium Development Goals (MDG) is constrained by this severe deficit of HRH in the African region. The achievement of the health Millennium Development Goals (MDG) to a large extent will depend on the availability of skilled workers. It is estimated that 2.5 health workers per 1000 inhabitants are needed to achieve the Millennium Development Goals; Africa has only 0.8 per 1000 on the average (Huddart et al, 2003).

Many of the sub-Saharan African countries have few medical schools and some countries have no medical schools at all (Franco et al, 2002). Due to years of neglect and under investment in the Africa's health workforce, the current HRH available does not match with population growth and epidemiological trends of health challenges. Not only is urgent action necessary but also at least a decade of sustained investments will be necessary to build a robust human resource for health for most national health systems of Africa (Franco et al, 2002).

2.2 Tanzania's Situation of HRH

Despite the undoubted importance of human resource to the functioning of health systems, human resource for health in Tanzania has been a problem since independence (Mtabaji, 2002). The health indices of the inhabitants of Tanzania are among the worst

in the world (SARA, 2003). Maternal mortality rates and various communicable diseases specific mortality and morbidity are high (MoHSW, 2007).

The shortage is related to the poor health and developmental indices. Available literature has shown a positive association between health worker density and various health indices, notably infant mortality rate and maternal mortality rate (Khan et al. 2004). It has been noted that low number of skilled health workers is associated with high maternal mortality (Khan et al, 2004) Furthermore evidence shows that shortage of health workers impedes development goals in many poor countries (Nullis-Kapp, 2005).

The little available information on HRH in Tanzania cannot be relied on. There is a huge discrepancy between reports. These reports describe mainly doctors and nurses; the other cadres are not well documented (Mtabaji, 2002; MoHSW, 2004; SAM, 2005; Kireria et a,.2007).

In recent years shortage of human resource for health has been declared to be a crisis, which needs immediate and sustainable response among various stakeholders. For the moment the HRH is at crisis level of 32% of the requirement, despite the specific efforts for recruitment done from 2005 (Kurowski, 2004). Forty three percent of this health workforce is occupied by unskilled staff (SAM, 2005).

The shortage of HRH in Tanzania is also significantly below that of comparable low income neighboring countries. Kenya, Tanzania's neighbor to the north, has substantially more skilled health workers despite having a relatively smaller population. Kenya's skilled HRH density is more than three times that of Tanzania (KIPPRA, 2004). Furthermore the available skilled HRH inTanzania is ten times less compared to South Africa whose own health care problem generate significant international attention and donor support (McKinsey, 2004).

Evidence shows that, the country has only 25,000 of skilled HRH and it requires 58,000 HRH to provide necessary interventions to meet Tanzania's burden of diseases (Kurowski et al, 2003; MoHSW, 2004).

2.3 Training of HRH in Medical Schools in Tanzania

Development of the health sector workforce in low-income countries has suffered from years of national and international neglect (SARA, 2003; McKinsey, 2007). The rate of production of health workers has not risen to meet the demand.

The only public medical school (MUHAS) started to train health workers in 1963. MUHAS started by enrolling 10 students in bachelor of medicine. Dental surgery and pharmacy programmes were introduced later with intake of about 10 students each. The

enrollment progressively increased to about 50 until 1972 (MUHAS, 2007). From 1972 the output increased slowly to 100 graduates per year and remained relatively constant until 1997 when the implementation of students expansion programme started (MUHAS, 2007). MUHAS is now a fully flagged national medical university with five schools, 2 institutes offering 13 undergraduate and 42 postgraduate programs (MUHAS, 2007).

Private Universities came into training from 1994. For the moment there are six Medical Universities. However, their combined output of graduating students per year is less than that of MUHAS. With this Tanzania's current training output and the time horizon necessary to expand training capacity, Tanzania's future HRH supply will fall far short of meeting future needs. Currently across all cadres, there is an aggregate training capacity for 8,700 students in health related programmes in Tanzania. Of this capacity, only 1,100 are for degree level skilled workers in Medical Universities with an annual output of three hundred graduates (McKinsey, 2004).

Reports suggest that other critical HRH issues such as retention of health worker and prevention of brain drain should be addressed in parallel with production of HRH (McKinsey, 2004). The universities, MoEVT and MoHSW need to work in collaboration to increase production of killed health workers. Efforts to increase the capacity of the existing universities require combined initiatives.

The cost of training health workers in developing nations like Tanzania is comparatively low than the cost of training heath workers in developed countries. The cost of training a doctor in Sub-Saharan Africa is about 50,000 USD while the cost to training a doctor in United States is about 500,000 USD (McKinsey 2004). There is a need to negotiate with development partners to invest in training HRH in Tanzania. This will need special effort from the existing universities.

The challenge of training in Medical Universities, require sustained funding over time. For example, a decision to change medical student intakes by 10% will only change the doctor supply by about 2% in the first 10 years (Hall, 1998). Thus doubling of medical student intakes would increase the doctor supply by only 20% in 10 years, but during the subsequent decade the effect could be far greater (McKinsey, 2004). It is encouraged to alleviate the challenges facing Medical Universities by providing adequate funding reflecting the projected HRH requirement.

2.4 The Need of Collaborative Effort in Medical Schools Training

Issues impacting on training of the health workforce are multifactorial in scope; they straddle across several sectors of government, including health, education and the Medical Universities (WHO, 2006).

Organizations in all sectors of society including health are increasingly becoming involved in a variety of collaborative rearrangements alliances, partnerships and networks (Gray&Barbara, 1989). By collaborating, organizations hope to leverage the differences among them in terms of knowledge, skills, and resources so as to develop innovative, synergistic solutions to complex problems they cannot solve on their own (Gray & Barbara 1989; Dyer & Singh, 1998). They can share or reduce the risk of implementing new initiatives that individual partners might not undertake on their own. Partners leverage resources and avoid duplication of investments and activities. Accelerate momentum and mobilize funding and resources by building a common "brand" that gains credibility and supported (Gray & Barbara, 1989; Dyer & Singh, 1998). Joint effort to improve output of the existing universities is critical in dealing with health problems in the society.

World Health Report (2006) advises nations to develop plans of action to address critical health workforce issues (WHO, 2006). Implementing these plans necessitates that stakeholders work together through collaboration that cut across priority areas of health care, professions, disciplines, ministries, sectors and countries. The report advocates for cooperative structures to pool limited expertise and scarce resources and promote mutual learning (WHO, 2006).

There is evidence that large resources are being allocated to the health sector by African government and donor agencies (WHO, 2004; WHO, 2006). At global and country

levels about 80% of partnerships, alliances and affiliations have been formed to tackle health problems. Many of these partnerships and alliances have been formed to address specific diseases or health problems like HIV/AIDS, Malaria and Tuberculosis (WHO, 2004). Not much attention has been given to what universities need in order to be more effective in producing the required human resource mix.

There was weak mechanism for collaboration and coordination in the production of the HRH (Nutt, 1984; JLI, 2004; Narasimhan et al. 2004). Despite that the private universities are increasingly involved in training of health workers in Tanzania. The mechanisms for collaboration and coordination between the public and private university is not well known. The Rapid growth of the private universities calls for innovative strategy to maximize the benefits of private investments while strengthening the state's role in regulating the quality of education (Nutt, 1984; JLI, 2004; Narasimhan et al. 2004). The existing universities are expected to have partnerships aiming at improving the quality of the graduates for the benefit of the society. The challenge is to develop an acceptable forum, in which all the universities can participate.

Although collaboration has the potential to produce powerful results, not all collaborations realize this potential. Some alliances have been highly successful, but many others have not lived up to expectations (Merrill-Sands & Sheridan, 1996). Effective collaboration among organizations is a difficult task because not only must cooperation and innovation be achieved, but the interests of those organizations

COLLEGE LIBRARY
MUHIMBILI UNIVERSITY
COLLEGE OF HEALTH SIENCES

represented in the collaboration must also be met (Merrill-Sands & Sheridan, 1996; Lawrence et al, 2002). Much collaboration fails to produce innovative solutions or balance stakeholder concerns, and some even fail to generate any collective action whatsoever (Merrill-Sands & Sheridan, 1996; Lawrence et al, 2002). Effective collaboration therefore depends on the relationships among participating members, which are negotiated on an ongoing basis throughout the life of the collaboration (Merrill-Sands & Sheridan, 1996; Lawrence et al, 2002). Having a common focus such as, improving HRH in the society could maximize available skills and improve outcome of the collaboration venture among the existing universities.

2.5 The Role of HRH Policy and Training

Studies reveal that well-formulated national HRH policies and strategies are required for giving direction on HRH development (Nutt, 1984, JLI, 200; Narasimhan et al. 2004). Most African countries have developed human resource policies and plans in one form or another. For comprehensiveness and consistency, WHO regional office has developed policies and plan guidelines for Africa (WHO, 2004). These guidelines are intended for use by Ministry of Health officials responsible for human resources development as well as others in relevant ministries and agencies.

Presence of National human resources for health Policy which describes the priorities that a country wants to achieve in the area of HRH has been reported to be a sign of political commitment (Nutt, 1984; JLI, 2004; Narasimhan et al. 2004; WHO, 2000). Evidence show that HRH plan in Tanzania was formulated in 1993 HRH policy and strategic plan as part of heath sector reform and it was revised in 1999(MoHSW, 1999). The extent to which it was implemented is not known.

The Ministry of Health and Social Welfare have recently developed another Human Resource for Health Strategic Plan for the period from 2008 to 2013. The purpose of this Human Resource Strategic Plan is to guide the health sector in proper planning, development, management and effective utilization of human resource (MoHSW, 2007).

With respect to training, increasing training output through building new training institutions, expansion of students' intake and involvement of the private sector in training health workers are among the strategies to be used by the plan (MoHSW 2007). The extent to which existing universities who train HRH were involved is not known.

Many of HRH policies, strategies and plans in Africa have not been implemented due to lack of financial support and commitment from the available resources. Sporadic and piecemeal support mostly to training activities has been noted to be the common trend (WHO 2006 Nutt, 1984; JLI, 2004; Narasimhan et al, 2004).

Wide dissemination of the policy to all relevant stakeholders has been documented to be necessary. Dissemination of policies and plans forms the basis upon which all strategies and plans formulated by the training institutions, health facilities and health related institutions and organizations are implemented as planned (WHO, 2006; Nutt, 1984; JLI, 2004; Narasimhan et al, 2004). The extent to which universities and their training schools or facilities have accessed the existing HRH policies in Tanzania is unknown.

The past two decades of structural adjustment and health sector reform paid little or minimal attention to health workers. Health workers were often seen as fiscal liabilities rather than core assets of health systems (Liese & Dussault, 2004). The structural adjustment and health sector reform implemented Retrenchment Policy coupled by an Employment Freeze, which negatively affected the size of health workers (Liese & Dussault, 2004). The Retrenchment Policy coupled by an employment Freeze implemented from 1993 until 2005 led to a sharp decline in human resource in the country.

HRH crisis has been reported to be in existence since independence, it is obvious that the retrenchment policy implemented in the 1980's-90's worsened the crisis. At the time of the implementation of the policy the data and information on HRH was scarce and did not take into account the number of available health workers in the health systems.

2.6 Challenges Facing Medical Universities in Africa

Several challenges have been documented to face Medical Universities in Africa. The first challenge is that many schools are isolated from decision making in health delivery or at least not sufficiently involved in policy dialogue and planning (Franco et al, 2002). Ministries responsible for training, policy development and employment in universities are different. The coordination between these ministries and universities is not well organized.

Second, the quality of training has shown a trend of steady deterioration over the past few decades due to decline of teachers in the face of increased intake of students (Demissie Habte et al., 2004). It has also been noted that there is the decline in the quality of students, many of whom are not adequately prepared for university education from secondary schools (Franco et al, 2002). The standards for entrance into the universities are not comparable (Habte et al., 2004; Franco et al, 2002).

Thirdly the training content is not consistent with the requirement in the society. It has been noted that the training of health workers is not sufficiently oriented to the health needs of the population they are serving. Most medical and nursing training takes place in hospital located in urban area even though the graduates are expected to work both in urban and rural areas (Franco et al., 2002). Rural areas are severely disadvantaged with respect to availability of skilled health care workers.

The severe shortage of academic staff in some disciplines as result of frozen employment policies is also a contributing factor in poor quality of graduates. There is a gap of about 10 years between the senior academics and the newly recruited employees in various departments (MUHAS, 2007).

Another challenge is how best to promote the team approach to health care and health development. Traditionally, human resources have been organized in a hierarchical fashion and function in compartments. This needs to be recognized as a barrier before team training can become a reality. Among other things, this requires a change of attitudes and a reorientation of the staff, the students and the policy-makers of health personnel training institutions (Habte et al., 2004). Unless existing challenges are addressed, collaboration among universities to improved, production of human resource mix to match population growth and changing epidemiological pattern of communicable and non communicable diseases would continue to be elusive for generations to come.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Area

This study involved six registered Medical Universities and University Colleges in Tanzania. These included: The Weil Bugando University College of Health Sciences (WBUCHS), in the north western zone of Tanzania. The Muhimbili University of Health Allied Sciences (MUHAS), The Hubert Kairuki Memorial University (HKMU), The Aga Khan University (AKU) and The International Medical Technology University (IMTU) all based in Dar es Salaam city and Kilimanjaro Christian Medical College (KCMC) located in Northern part of Tanzania. These institutions trained different cadres of human resource for health at undergraduate and postgraduate level. They were all registered by the Tanzania Commission for Universities. Officials in the directorate of human resource of the Ministry of Health and Social Welfare were also interviewed to complement information such as involvement of Universities in HRH policy and strategic plan. The officials in the directorate Higher Leaning institutions of the MoEVT were interviewed to get criteria for allocating financial resources to private and public universities.

Weil Bugando University College of Health Sciences (WBUCHS)

BUCHS is a constituent college of the Saint Augustine University in Tanzania (SAUT) located about 5km from Mwanza town. BUCHS is a private university under the

Catholic Church of Tanzania. It began offering a five-year medical training leading to Doctor of medicine in 2003/4 with intake of 10 medical students. Apart from the Doctor of Medicine program the College train postgraduate students in Medicine, Surgery, Obstetrics & Gynaecology, Paediatrics and Anaesthesiology. During the academic year 2006/2007 three Allied Health Sciences schools were incorporated into WBUCHS to form the Institute of Allied Health Sciences.

Muhimbili University of Health and Allied Sciences (MUHAS)

MUHAS is the oldest medical university responsible for training HRH in Tanzania. MUHAS is a successor to the Muhimbili University College of Health Sciences, which was a constituent College of the University of Dar es Salaam. MUCHS was established in 1991, when the then Faculty of Medicine was up-graded to a College. The Faculty of Medicine originated from the Dar es Salaam School of Medicine, which was established in 1963. In 1968, the Dar es Salaam School of Medicine was upgraded to a Faculty of Medicine of the University of Dar es Salaam

MUHAS became a fully fledged national medical university in 2007 with five schools, two institutes offering six degree level undergraduate programs and 42 postgraduate programs. This university was the only medical university until 1994 when the private medical schools were allowed to operate.

The Kilimanjaro Christian Medical College (KCMC College)

Kilimanjaro Christian Medical College (KCMC) based in Moshi is a constituent College of the Tuimaini University under the auspices of the Evangelical Lutheran Church of Tanzania (ELECT). The KCM College is a private university established in 1997 and is situated within the Kilimanjaro Christian Medical Centre (KCMC), about 6 Kilometres from Moshi Town. The College started with the faculty of Medicine and soon afterwards expanded to incorporate the faculties of Nursing, Rehabilitative Medicine, Institute of Allied Health Sciences and Directorate of Postgraduate Studies and Research. At the time of the study the College was offering five degree level undergraduate programs and 18 postgraduate programs.

The Aga Khan University (AKU)

It is a not-for profit institution under the Aga Khan Development Network (AKDN). It is located about a kilometer from the city centre of Dar es Salaam. It was established in 2002 with a two-and-a-half-year Bachelor of Science degree in nursing programme. In July, 2003 Postgraduate Medical Education Programmes in Family Medicine started. It was fully accredited by Higher Education Accreditation Council of Tanzania in December, 2005.

The Hubert Kairuki Memorial University (HKMU)

HKMU is a private medical university located about 7 km from the city centre of Dar es Salaam. It was established in August, 1997 and in June, 2000 it was fully accredited by the Higher Education Accreditation Council of the then Ministry of Science, Technology and higher Education of the United Republic of Tanzania. The University is under a Non government Organization known as Mission Mikocheni Health and Education Network (MMHEN). Academic degree programmes offered by HKMU at the time of conducting this study included Doctor of Medicine, Bachelor of Nursing and Master of Medicine.

The International Medical Technology University (IMTU)

It is a private institution based in Dar es Salaam about 20 km from the city centre. It was established in 1997. Academic degree programmes currently offered by IMTU at the time of conducting this study included Bachelor of Medicine, Nursing and Dental Surgery. IMTU was fully accredited by the Tanzania University Council in 2001.

3.1.1 Inclusion Criteria

Medical Universities which were registered and were operational for more than three years were all included in this study.

3.1.2Exclusion Criteria

Medical Universities which were registered but were not operational for more than three years were excluded. St. John University of Tanzania (SJUT) located in central Tanzania

(Dodoma) was excluded from this study. It has been operational for a year at the time of this study.

3.2 Study Design

This was a cross sectional study which used qualitative methods for generating data. The study was done between July and August, 2008.

3.3 Study Population

The study population included Universities and Colleges responsible for training medical doctors and other health personnel in Tanzania. For the fully-fledged universities, apart from the Chancellors, the organizational structure include the Vice Chancellors, two deputy Vice Chancellors one for Academic, Research and Consultancy and the other one for Planning, Finance and Administration. Deans of Schools and Directors worked under these two Deputy Vice Chancellors. Under the Deans and Directors were the head of different departments. For the Colleges, the Principals/ Provost were the top in the administration of the Colleges below them were Deputy Provosts/Principals, Directors and Deans of faculties. The heads of departments worked under the deans and directors. Vice Chancellors academics and Deputy Principals/Deputy Provosts were responsible with academic issues at the institutional level. The Directors of Postgraduate Studies and Deans of Schools and faculties directly managed and supervised the training programmes through the heads of departments.

3.4 Study Sample

All officials responsible for management of academic activities were involved in the study. They included: Deputy Vice Chancellors and deputy principals/ provosts who were responsible with academic issues at institutional level were the first source of data for this study. This category of key informants was identified as DVCs. The Deans of Schools and faculties and Directors of Postgraduate were also involved in generating the required data. This group was categorized as Deans.

Three key informants from the directorate of training and planning of human resource of the Ministry of Health and Social Welfare and three from the Directorate of Higher Learning of the Ministry of Education and Vocational Training were interviewed to complement some information obtained from the studied institutions.

3.5 Sampling Procedure

All eligible officials responsible for academic and administration activities depending on organizational structure of the studied institutions were interviewed. The key informants were included so that their in-depth information would provide optimal insight of the challenges which faced medical institutions at the time of this study. The inclusion of the officials was based on the reason that they were in a position to provide the information relevant to the study problem. For the fully-fledged universities, Deputy Vice Chancellor for academics, Deans of the Schools, and Director for Postgraduate Studies were interviewed. For the Colleges, principals/Deputy Provost, Deans of the Schools, and Director of Postgraduate were the major source of data.

Three key informants from the Directorate of Training and Planning of Human Resource of the Ministry of Health and Social Welfare and three from the Directorate of Higher Learning of the Ministry of Education and Vocational Training were interviewed to complement some information obtained from the studied institutions.

3.6 Data Collection Procedures

A key informant guide was developed and used to guide interviews and the discussion with the officials who were involved in this study.

Appointments to interview the officials were made through email, telephone and face to face communication. For those who could not be interviewed on the agreed date and time, another interview time was scheduled.

The interviews were all conducted by the researcher in the offices of the study participants and the information was recorded in short notes and expanded soon after the interview. The interviews took about one hour. Each interview was followed by expansion of the notes and preliminary analysis before the next one.

3.7 Data Collection Instruments

Key informant guide (Appendix I) was used to collect information required for the study. Section one of the guide focused on the background information about the institution and programme for undergraduate and postgraduates studies. Section two focused on the criteria used for determining the number of students to be enrolled in different undergraduate and post graduate programmes.

Section three of the guide covered issues of the extent to which universities were involved in developing HRH policies in the country while section four generated information on the extent the Medical Universities collaborated among themselves in addressing human resource for health challenges in Tanzania.

Section five covered issues related to other challenges facing the Medical Universities in addressing the health human resource shortage in the country and last section generated the information which was required to complement and clarify issues emerged which from interviews with university officials.

Review of documents relevant to the study problem such as strategic plans and reports relevant to this study were also collected from the institutions whenever they were available.

3.8 Data Processing and Analysis

Data collected was coded and manually analyzed according to emerging themes from the study. The researcher re-read the expanded notes several times to become familiar with the content as presented by the key informants. The researcher worked back and forth moving pieces of detailed notes with relevant meanings to the themes that had emerged. Then the piles of notes addressing a certain theme were printed out to get overview of the notes collected. Then the piles of notes of the same theme were ready for a writing process. The originals of all the interviews were kept safely for reference whenever need arose.

3.9 Ethical Consideration

Ethical clearance and approval for this study was sought from the Directorate of Research and Publications of MUHAS. The need and purpose of the study was explained to all the responsible persons interviewed. Permission and consent were obtained from the relevant authorities and officials of the institutions involved in this study. Key informants were assured of the confidential treatment of their responses and were assured that the information was to be used for the purpose of the study without any identification for the specific individual or institution.

Informed consent was obtained before the interview began. Consent form was read to all key informants before the interviews. See Appendix II

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This study involved six institutions responsible for training degree level health personnel in Tanzania. Training of HRH at degree level in the country can be traced way back to1963 when the University of Dar es Salaam started to train medical doctors. For many years this university was the only institution training HRH at degree level. The other seven Medical Universities are private institutions and were established less than 10 years ago.

Weil Bugando University College of Health Sciences (WBUCHS) is under the Catholic Church of Tanzania. Kilimanjaro Christian Medical College (KCM College) is under the Evangelical Lutheran Church of Tanzania (ELECT). The Hubert Kairuki Memorial University (HKMU) operates under the umbrella of the Mission Mikocheni Health and Education Network (MMHEN). International Medical Technological University (IMTU) owned by an investor from India. The Aga Khan University (AKU) is under the Aga Khan Development Network (AKDN) and is connected to Karachi Universities. Key features of these universities were summarized in Table 1.

Table 1: Summary of the Key Features of the Universities

Key features	University					
	WBUCHS	IMTU	MUHAS	HKMU	KCMC	AKU
When established	2003	1997	1963	1997	1997	2002
Owner	Catholic Church	Indian investor	Tanzania government	Tanzanian investor	Evangelical Lutheran Church	The Aga Khan Foundation
Number of Undergraduate programmes	1	3	13	2	5	1
Number of Postgraduate programmes	5	0	42	3	21	1
Location in Tanzania	Mwanza (North west)	Dar (East coast)	Dar (East coast)	Dar (East coast)	Kilimanjaro (North East)	Dar (East coast)
Undergraduate fees range/yr	5million	5 to7million	1.5 to 2.5million	6 to7million	6 to 9million	1.5million
Postgraduate fees range/yr	8 to 9million	-	8 to 13million	8 to 10million	6 to 15million	8 to 12millin

Source-Prospectus, website (MUHAS, IMTU, HKMU, AKU, WBUCHS, KCMC)

Student output for both undergraduate and postgraduate level has been increasing at a pace which does not match with the population growth and increasing burden of disease in the country. The combined output of degree level graduates has never even reached one thousands since the beginning of the students expansion programme which started in 1997. See Figure 1.

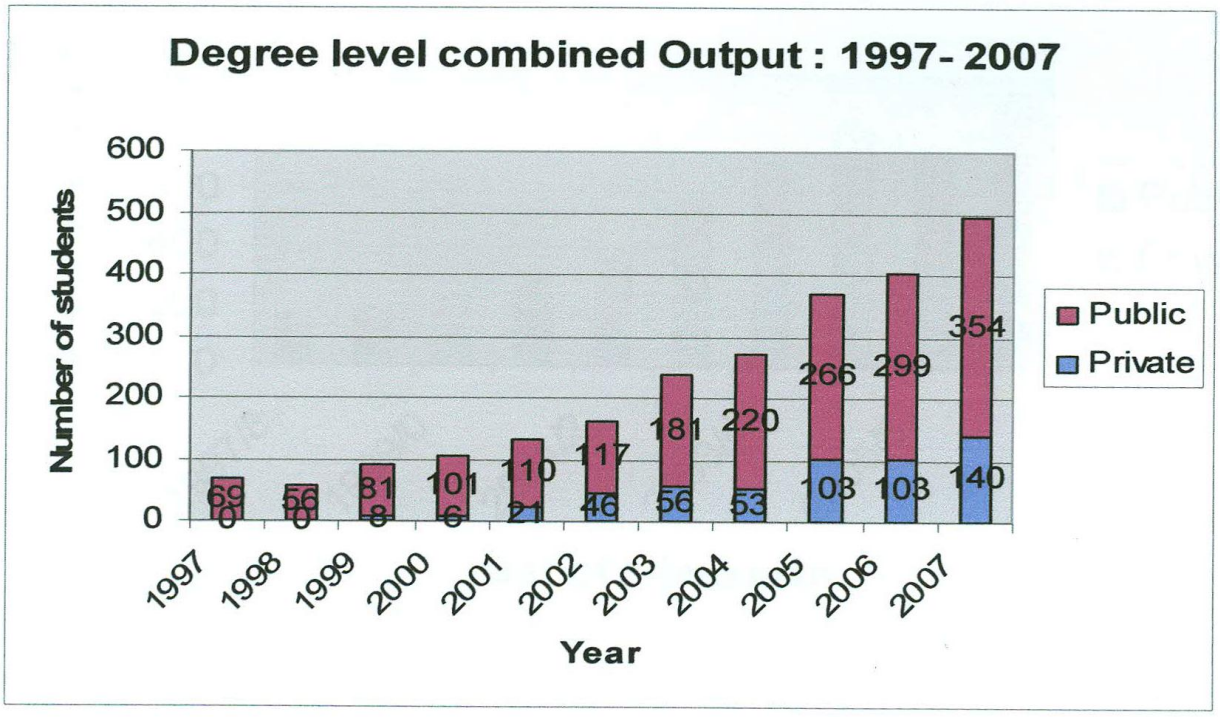


Figure1. Output of Undergraduates and Postgraduate Graduates from both Public and Private Universities (1997-2007)

Source-Admission office, graduation data and facts and figures (MUHAS, IMTU, KCMC, HKMU, WBUCHS, AKU)

Enrollment of students at degree level for both public and private universities has been progressively growing in terms of number of undergraduate and postgraduate students despite the challenges facing the universities. In 1997 the combined enrollment for both undergraduate and postgraduate level was 170 and by year 2007 the enrollment reached 980. See Figure 2.

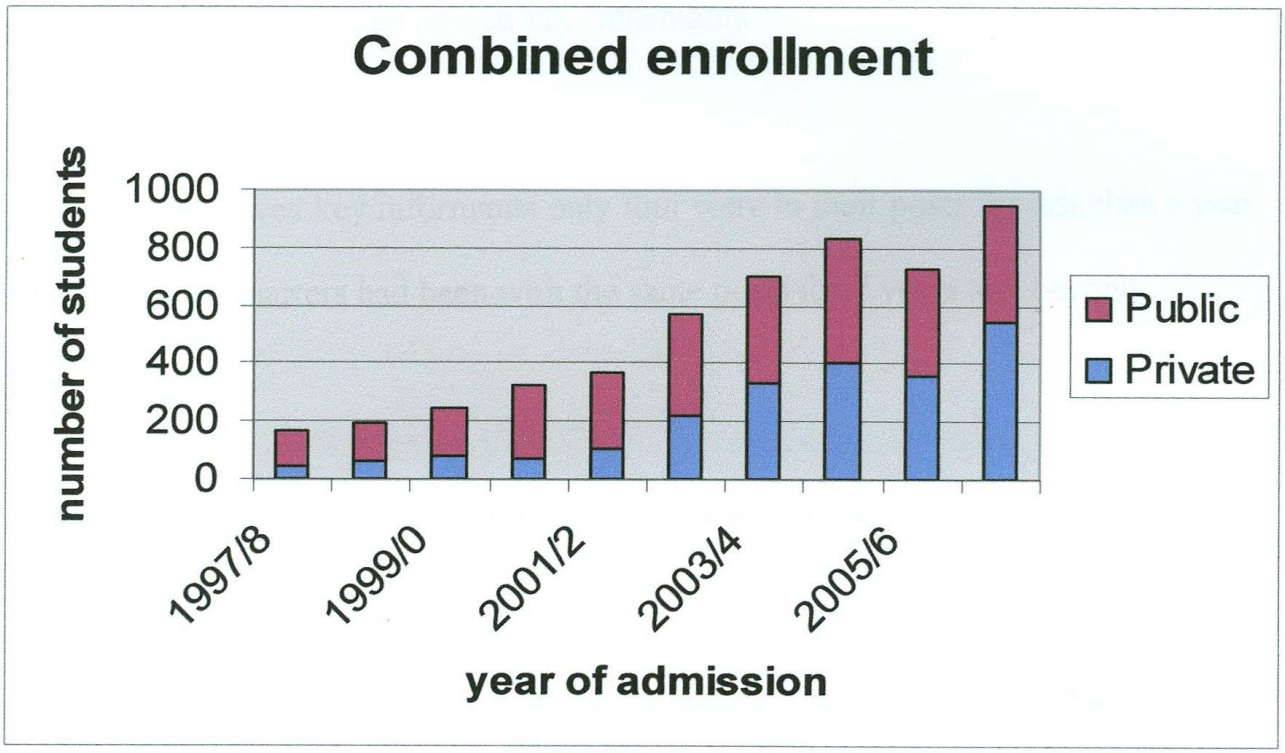


Figure 2: Total Number of First year Intakes for both Undergraduate and Postgraduate in of both Private and Public Medical Universities

Source-Admission offices, facts and figures (MUHAS, IMTU, KCMC, HKMU, WBUCHS, AKU)

A total of 32 key informants were interviewed. A total of 26 key informants were interviewed from the six Medical Universities. Three key informants were from the Directorate of Training and Planning of Human Resource of the Ministry of Health and Social Welfare and three from the Directorate of Higher Learning of the Ministry of Education and Vocational Training. The officials from these two ministries were interviewed to complement some information obtained from the studied universities. See Table 2 for summary of interviewed key informants.

Of the 32 interviewed key informants only four were in their posts for less than a year. More than three quarters had been with the same posts for 2 years and beyond.

4.2 Influence of HRH Policies on University Admissions

4.2.1 Undergraduate Training

Tanzania is facing an acute HRH shortage. In order for the National HRH goals to be met it is assumed that the national Human Resource for Health policies and plans would influence enrollment and projections for undergraduate students into different programmes in Medical Universities. However, findings from this study suggest that such policies and plans had little, if any, influence on the enrollment into different programmes in the universities. All the key informants pointed out that the numbers of undergraduate students enrolled were determined by criteria which were determined and had virtually little to do with the existing government HR policies and plans.

"*The factors which are considered are number of teachers and available infrastructure. Existing health human resource policies from the government have no direct influence to universities undergraduate or even postgraduate inputs,*" pointed out by one of the DVCs.

Medical universities in the country decide the number of undergraduates to enroll depending on the resources available. Study participants pointed out that, major factors considered by universities include availability of teaching facilities, capacity of lecture theatre, laboratories, teaching hospital and clinics and number of teachers.

"Little national projection is paid to human resource requirements in the health sector, it is actually the facilities that we have and for sure we know the shortage of the cadre", pointed out one of the DVCs.

The Tanzania Commission for Universities (TCU) recommends the number of students universities can admit. More than half of the institutions involved in this study had enrolled undergraduate students whose total number is lower than that recommended by the TCU. About a half of the key informants reported that they had been allowed to take more students than those actually enrolled because of limited resources.

"TCU have allowed us to enroll 200 students, we have decided to take 140-160 only because of the capacity of teachers and teaching facilities," pointed out one of the Deans.

All the universities trained Medical Doctors and soon two more institutions were to start training Dentists. Little attention was somehow paid to other cadres required in the health system including nurses, Pharmacist, laboratory technician and public health experts.

Government sponsorship into various programmes appeared to reinforce existed pattern in the universities. It was reported by the key informants that the government had been providing sponsorship in the form of grants to MD students since 2004/5 and for DDS from 2007/8. It was reported that the other health related progammes access competitive sponsorship from Higher Education Students Loans Board (HESLB) this to a large extent affected students in other health disciplines.

"One of the government efforts to increase health workers in the country is through sponsoring MD and DDS students and the other health related progammes access competitive sponsorship", narrated by one of the DVCs.

It was reported that the criteria for grants for MD and DDS students were subject to change from time to time. When this study was conducted, the academic year (2008/9)

the criteria included only those who got first and second division in their higher learning examinations. The rest, even those who were to be selected for MD or DDS had to apply for a loan from the Loan Board.

"The criteria for grant change sometimes, this year we only took those who got first and second division", pointed out by one of the DVCs.

It was pointed out by several key informants that the government for quite sometime was giving full sponsorship for students registered for medical doctor and dental surgery degrees. However this was limited to only 25 students in private universities as illustrated by the following statement from one of the DVCs:

"For the public institution, all MD and DDS students are sponsored but for private institutions, we have limited the number to only 25 MD students, their tuition fee is high"

The sponsorship from the Loan Board was open with high competition among all students in other higher learning institutions. It was pointed out that the loan was also granted upon classification of the student according to socioeconomic status of the applicants. For example if you are granted a loan of 60% for required expenses, then the board would only pay 60% of the tuition fee to the institutions and the rest had to be paid by the student or her/his parents. This was identified as a challenge to most of the students.

"The challenge is competition and the classification of loan according to the socioeconomic status of the student/parents," pointed out one of the DVCs.

It was noted that the criterion of classifying students according to socioeconomic status was not clear.

"There is a lot to do for Loan Board; the criterion for classification of students was difficult, not clear and not specific," pointed out one of the DVCs.

Three quarters of study participants noted that the criteria for classification seem to be one of the barriers for the efforts to increase health workers in the country. Some parents are not capable to pay the remaining cost.

"It is not possible for some parents to raise 4million each year for four/ five years to pay for their children", pointed out by one of the DVCs.

However, there was no specific information about students who dropped out because of inability to pay required fees.

About a quarter of schools/ faculties of the universities were able to take more students than the number assigned by the HESLB. The number of students who received loans was limited. In this case it was assumed by some of the universities that if all students pay fees, then they would be able to recruit the number they planned. However, with existing challenges probably the assumption might not be quite correct.

The following statement was pointed out by one of the Deans:

"The programme of undergraduate students under our school is limited to 30, we would like to take more but the Loan Board limit the number to 30 only, and this is a challenge to us"

5.2.2 Postgraduate Training

Postgraduate training is a key input for producing health workers for referral and regional hospital and teaching medical institutions. According to the staffing level of the MoHSW the level of deficit at referral, regional hospital and teaching medical institutions range between 40- 67% of the requirement (MoHSW, 2007). It is expected that postgraduate inputs in different departments in existing universities should reflect the demand required in the health systems especially the regional and consultant hospitals as well as staff requirements in the universities.

Information gathered from the universities generally revealed that the criteria used to determine the number of postgraduate students to be enrolled into different programmes also had little bearing on planned demand for such output by the government. The main factors used were related to the resources available in the respective departments such as, number of teachers, space for clinics, theatres and teaching facilities.

"For postgraduate it's the institutions and department which decide the number of postgraduates to be enrolled depending on available resources," Pointed out one of the Deans.

Limited number of eligible applicants for postgraduate studies was pointed out to be another limiting factor. It appeared undergraduate output from the existing universities which constituted the pool for postgraduate training has historically been small.

"The slots available for postgraduate students have never been filled; there is no enough pool actually," pointed out one of the Deans.

There was also a problem of preference and popularity of some courses over others. It was reported that some clinical and basic science postgraduate programmes did not get enough applicants. Giving example of basic sciences subjects like Anatomy and Biochemistry which rarely had applicants. Other programme like the Master of Public Health (MPH) degree was oversubscribed and this has been a trend for over 10 years. Over 100 students apply for (MPH) while the number required was between 25-30 students per intake. Market forces appear to have influenced these preferences and the universities are required to develop marketing strategies for their training programmes.

"We usually don't get candidates in some programmes though some like MPH are oversubscribed," Pointed out one of the Deans.

However, this programme did not have the same quantity restrictions for medical doctors and it was open for several other types of health workers including Social Scientists

The findings reveal that the postgraduate programmes which were oversubscribed the main limiting factor were sponsorship and infrastructure. The following statements account for the findings:

"For some of the postgraduate programmes which are oversubscribed, we usually sponsor according to the available funds," pointed out by one of the DVCs.

From the findings there was little influence of the national HRH policies and strategic plans on enrollment into degree level undergraduates and postgraduate training in the country. Resources were the major limiting factor for enrollment and this has been a challenge for the universities for which little was done to reverse old mental model on this issue. If the universities enrolled students according to the national needs probably they would have had a justification for more funds from the government and developmental partners.

4.3 Involvement in HRH Policy Formulation

One of the goals of this study was to determine the extent to which universities were involved in the formulation of existing HRH policies and development of related strategic plans in the country.

The Ministry of Health and Social Welfare formulates policies and oversee the implementation of Human Resources for Health Strategic Plan including deployment of university outputs into the health systems. However, this requires strong collaboration between the universities and the ministry so that required human resource mix can be included in the training strategic plans of the universities and when they graduate they would be deployed according to the activities in the HRH strategic plans of the Ministry of Health and Social Welfare.

Findings from the study revealed inadequate involvement of the Medical Universities in the process of formulation of the HRH policies and plans. Nearly four fifth of the key informants (27/32) from the universities reported that they were not involved in the formulation of the existing HRH strategic plans and some were not even aware of it. As one of the DVC pointed out:

"To the best of my knowledge we are not involved in developing the policies. There is a missing link between MOHSW with us despite the fact that we train people mainly for the health sector."

According to the information from different key informants even where there was some involvement, it was at individual and not at institutional level. This was expressed by a statement of one of the Deans:

"Unfortunately the involvement was at individual level, and consequently there was no feedback to the institutions."

It was pointed out that the people who were involved in health policies development at individual level were not obliged to bring any feedback to the institutions and schools.

"Probably people were involved at individual level and they could not share with the rest," narrated one of the DVCs.

They would have done so if the invitation was through the university where the academic staff responsible for teaching human resource modules to undergraduate and postgraduate students would have been appointed to attend the policies formulation team.

Dissemination of the HRH strategic plans was also found to be a problem. No single institution had a copy of the previous or current HRH policies and plans at the time of the study. Some universities assumed were probably because they were no longer in the list of potential institutions for such circulars.

"Of recent, we realized we were not in the list for circulation of the policies and document from the MoHSW," pointed out by one of the Deans.

Results of this study generally revealed that involvement in policy formulation for human resource in the health sector was weak and none of the institutions had existing HRH policy and plans document.

4.4 Collaboration among the Medical Universities

Given the severe shortage of HRH in terms of numbers and mix in the health sector, it was expected that universities in Tanzania would collaboration to produce a better quality and quantity of the required HRH mix. Indeed, given the alarming shortage of required manpower, it is expected that the institutions would share curriculum, teachers and work as a team in order to produce graduates of the same standards regardless of the institution which trained them.

Responses to this aspect of the study revealed that there was very little collaboration among Universities training human resource in Tanzania. They appeared to compete instead of helping each other to grow. This is probably one of the factors contributing to the little collaboration among the institutions. The following is one the responses from one of the Deputy Vice Chancellors:

"There is very little effort to collaborate at institutional level; instead of working together we fight each other."

COLLEGE LIBRARY
MUHIMBILI UNIVERSITY
COLLEGE OF HEALTH SIENCIES

More than three quarters of the key informants (20/26) were of the opinion that competition among institution was good for improving quality and standards. However it was pointed out that the young universities practiced competition without realizing that they produce health workers for the country and not for the institutions. The universities were expected to work together for the sake of producing enough skilled health workers particularly for serving the poor in rural areas. As was expressed by one of the DVCs:

"It is not easy to have full interuniversity cooperation unless we all realize that we are here for the public."

Use of common harmonized curriculum is among one of ways of ensuring that the universities produce graduates with same competences for the benefit of the society. Almost all of the key informants in this study pointed out that each university had its own curriculum which was rarely shared with other institution.

"I don't think the graduates from the different institutions are of the same quality, the curriculae are not the same."

A fifth of key informants (5/26) said that the competition that existed among the universities prevented sharing of curriculae.

"Competition is a problem, for example there was a resistance when we wanted to borrow curriculum from one institution we had to formulate our own," pointed out one of the Deans

Four key informants reported to have contributed to formulation of curriculum of other institutions. They were requested to ensure that the formulated curriculum meet the standards of the programme. However, even where curriculum was about the same, failure to share the few available teaching staff tarnished the quality of outputs. *"Our school helped them in the formulation of their curriculum,"* pointed out by one of Deans.

Given that the existing universities have different strengths and weakness in terms of academic staff and teaching resources it was expected that they would have a well coordinated and formal exchange of teachers. The exchange of teachers would have ensured that graduates from these different universities had knowledge and skills of the same quality. With the severe shortage of the academic staff coordinated sharing of teaching would strengthen the capacity of newly formed private universities. However, this study revealed minimal informal exchange of teachers among the Medical Universities in the country. Three quarters of the study participants reported that academic staffs were invited in their personal capacities by the interested department without involving the employer. This was expressed in the following statement from one of the Deans:

"We share teachers though the collaboration is not official and formal, there is no MOU per se, and it is at individual level."

The exchange of teachers was noted to be mainly towards the private institutions and without Memorandum of Understandings. Half of the key informants (13/26) reported that most of the time visiting lecturers use their annual holidays or had to find their own private time. Well coordinated exchange of these scarce academic staff would somehow strengthen the institutions which had severe shortages. The key informants noted as a challenge the problem covering required teaching content by visiting lectures due to time constraints. Sometimes the topics were not arranged in a logical manner for students to grasp the concepts. The exchange was usually of very short time for students to grasp the material taught. This was alleged to somehow interfere with the competences of the graduates. The following was a statement from one of the DVCs:

"Teachers come in a very short period by the time students understands the subjects and are ready to ask questions the teacher had left."

The only collaboration which existed among the universities was exchange of external examiners. Most of key informants (20/26) pointed out that the exchange of external examiners was also done at personal level. They pointed out that most of the time it was through personal relationship between a person in a department and the external examiner that arrangement were made. It was narrated by most of the key informants

that the exchange of external examiners was one way to maintaining standards and to ensuring quality of graduates produced.

"The exchange of external examiners helps in the quality assurance somehow; their comments are worked on to improve the standards," pointed out one of the Deans.

Exchange of students among these universities was rare. It was pointed out that this was done through private individual arrangements. Many key informants (19/26) reported that the students were exchanged for the fields/specialties which were not available at a certain institution to the institution which had the specialties. They pointed out this was done as one of the ways of making sure that the students get what was required for specific programmme.

"We send our students for specialties like psychiatry and orthopedics and trauma. Without that then we would have incomplete and inappropriate training," pointed out by one of the Deans.

One of the barriers inhibiting exchange of academic staff, external examiners and students was said to be running costs.

"The cost implication of the exchange programme sometimes affects efficiency of the collaboration", pointed out by one of the Deans.

Research is one of the important elements for any university. Collaboration and coordination of research among universities was expected to facilitate little resources

available in order to increase research output in the country. Research collaboration especially on health related issues would have identified various challenges and potential solutions to these institutions. Little collaboration in terms of research was found to exist among the Medical Universities. Almost all key informants reported that there was no or little inter-university research collaboration. It was alleged to partly due to lack of inventory of the equipment available in the institutions and little effort was made to share the little resources available.

"*We don't have much collaboration in research, we don't have inventory of what is available, who is doing what, where and when,*" pointed out one of the DVCs.

Some limited collaboration however existed among private universities. Tanzania Association of Private Universities (TAPU) was reported to be active and functional with regular meetings and even had a newsletter. All the private universities were members of the association.

"We private institutions meet through TAPU, which is very strong live, and well functional, we meet twice a year," narrated by one of the DVCs.

The key informants from the private universities reported that the aim of the association was to discuss issues of common interest regarding fees, sponsorships, unit costs and recognition of the role private universities in development of the health sector. Study

participants from the private institutions reported that the association was one of the efforts to push the government to recognize the role and contribution of the private institutions with regard to training HRH. As expressed by one of the interviewed Deans: *"We wanted to be recognized as we are doing something for the society."*

At the time of this study the role of TAPU was to oversee that the private universities abide to produce graduates of required standards. However, not much appeared to exist in terms of sharing teachers and research. The following response illustrates the findings:

"We succeeded and now with the new act to recognize the private universities now our main focus is quality assurance of the graduates we produce," pointed out one of the DVCs.

The findings of the study demonstrate that almost all institutions would like to collaborate with each other. All key informants agreed that collaboration among the universities was very important. They pointed out that each institution has different strengths and weakness. They also felt that these institutions had common goal of training HRH for the country that need to have same standards. The majority of the study participants suggested that collaboration will help to improve the quality and standards of the graduates. They proposed the need of working memorandum of understanding (MOU) among the Medical Universities.

"We need to have working MOU document, which will bind parties to adhere to, set prospects and if they operate in the right way each side will benefit," as pointed out by one of the DVCs.

Several areas of collaboration were pointed out. The proposed area of collaboration included using standardized curriculum in order to produce the same quality of graduates.

"We need curriculum which is transparent, training be harmonized in that way we can have an assurance of the people we produce to have the same competences for the country", said one of the Deans.

The benefit of collaboration in research was expressed by one of the deans:

"We believe we will benefit from collaborative research, we might seek grant together in long run," pointed out one of the Deans.

More than a half of the key informants proposed coordinated exchange of teachers in order to improve quality of the graduates as expressed by one of the Deans:

"We need exchange programme of teachers in accordance to the strength and weakness of the institutions."

Uniform criteria for selection of students was pointed out that would ensure that the graduates were of the same quality. They would like to have students enrolled in different universities to have the same standards.

"*We need also to have uniform criteria to enroll so that we can produce the graduates of the same quality," expressed* one of the Deans.

However, collaboration among the universities faced several challenges. The challenges mentioned include huge difference in experience and capacity of the institutions.

"Some are young, others are experienced then it becomes difficult for each part to realize the benefit especially the well established ones," pointed out by one of the Deans.

The aim was to determine the extent to which the Medical Universities collaborated among themselves in addressing human resource challenges in Tanzania. The study revealed that there was little collaboration among the existing universities. They practiced minimal informal exchange of teachers and students. The universities did not have common curriculums which was a sign that their graduates had different competences to serve the same society. Universities had little or no effort to collaborate in terms of research which is one of their functions. A need to collaborate was expressed by almost all the universities. Areas proposed by universities as key for collaboration are to share common curriculum for specific programmes, collaborate in research and well coordinated exchange programme of teachers and students according to strengths and weaknesses of the institutions.

4.5 Challenges Facing Medical Universities in Tanzania

Medical universities in Tanzania were expected to produce degree level health workers in sufficient numbers, appropriate skill mix and competences to support requirements of such resources in the health sector. Despite the pressure to increase enrollment into these institutions their combined output does not meet the population growth and the patterns of morbidity and mortality in the country. The country is among the countries in Sub Saharan Africa with the lowest health worker to population ratio. However, existing Medical Universities face serious challenges in addressing the human resource shortage in the health sector.

First, as pointed out by all universities, the increase on student enrollment did not match with resources. The key informants reported that the number of students was huge compared to the available resources. The pressure to increase enrollment was reported to have worsened challenges the institutions were facing. They said the resources in terms of teachers, lecture theatres, space in the wards and clinics did not match with the number of students. These factors were reported to be not only potential to compromise the quality of output but also limit the number of output. Teaching especially at the bed side teaching was reported to be very difficult.

"It is difficult to teach them at bed side, they don't see the patient, some stay behind the teacher and you can not identify who is lagging behind," said one of the Deans.

The lecture halls and space for clinics were reported to be smaller compared to number of students.

"Our classes can only accommodate 50-60 students, but this year we want to take about 100 students, it's a challenge," pointed out one of Deans.

With the same resources or less most of the institutions were taking two to three times more students they had planned at the time of their establishment. The number of teachers was much less in relation to enrolled students. About three quarters of the institution reported to have only about 40-60% of the required academic staff.

"*There were more teachers during my training twenty years ago as compared to now with such big number of students,"* pointed out one of the Deans.

More than half of the key informants reported that the laboratories did not function at the required capacity.

"Our *laboratories operate at 50-60 % of the ability which affects the quality of education,*" said one of the DVCs.

Limited library facilities were another challenge which did not match with the number of students in almost all the studied institutions. The space for almost all the universities was pointed as a challenge to expanded enrollment. For example in one of the

universities the existing library had capacity of 50 seats while the student capacity of the institution was 450.

"The current library space and services can not adequately serve the growing student population", pointed out by one of the Deans.

In almost all the libraries of these universities, the Information Communication Technology (ICT) was reported to be limited. They pointed out that the students fail to access information easily because of limited number of computers. For example, one institution had a computer room which had 10 computers for more than 50 students. Vandalism of computers by students was another challenge faced. In one university, for example out of 60 computers in one the student's laboratory lasted only six months because important parts were stolen.

"We need e- learning, the facilities are not enough and not readily accessible we are towards e- learning and students scramble for the few facility available," one of the Deans pointed out.

Severe shortage of academic staff was pointed out to be the second challenge facing almost all the Medical Universities in the country. The shortage is characterized by aging of academic staff related to poor recruitment. About forty five percent of academic staff and more than a half of those with leadership position in these

universities were above 50 years old. It was reported that there was a big age gap between the senior and junior academic staffs.

"We have more aged teachers than the young ones due the ten years of freeze of employment, replacement will be difficult," pointed out one of the DVCs.

With the existing inadequate pace of staff development programme both public and private Medical Universities, more than three quarters of key informants could foresee a severe crisis of shortage of academics in the near future which might interfere with the quantity and quality of graduates from these universities.

"Soon we will have a disastrous crisis of shortage of academic staff which will interfere with enrollment," said one of the Deans.

The shortage of staff is more serious in the private universities than the public institution. Most of private universities reported to depend more on part time/ visiting teachers who were mainly from the public institution but were teaching on private basis. *"We are very young, we depend more on visiting lectures from a well established institution and sometimes outside the country which is not good,"* as expressed by one of the Deans.

Some academic staff members from the public university were also shown as part of staff in some of the private institutions. This was one of the sign of dependence and severe shortage of academic staff in these institutions. It was also a sign that the main source of teachers for more than a half of the private medical institutions in the country was the public university. This was one of the responses from one of the Deans to illustrate the single main source of teachers for the country:

"We are competing with other institutions for the same source of teachers."

About a half of the medical institutions in the country were reported to have started without enough academic staff and did not have any strategic plans to recruit them. They pointed out that they had to recruit senior clinicians to become academic staff. *"When the institution started, we had no teachers and we had to recruit some of senior clinicians to teach*", pointed out one of the DVCs.

It was reported that the recruited senior clinicians were not conversant with teaching activities. It was pointed that in some of the young universities, few of the recruited clinicians were interested in teaching. This is illustrated by one of statement from one of the Deans:

"We have very few clinicians who are interested to teach."

One of the important qualities of an academic staff is experience in research and publications. It was found that in some of the institutions, the recruited senior academics

lack this important background. This was identified to be a challenge for both the institutions and the academic staff members. The academic staffs were given a status that did not correspond to their clinical experience.

"Some teachers are very senior consultants but they don't have a single publication, it's a challenge," pointed out one of the DVCs.

Poor remunerations and motivation were the challenges mentioned to be related to poor retention of both academic and non academic staff in universities. For example, all the key informant of both private and public institution said that the current salaries were not competitive compared with those in the business sector or flourishing NGO in the country:

"People employed do not stay, they are taken by other NGO or organizations which offer good salaries," said one of the Deans.

It was reported out by more than half of the key informants that poor remunerations compounded retention of a staff in these institutions.

"Remuneration is very low. We have lost several potential candidates because of this," said one of the Deans.

Almost all of key informants from the private institution reported that the remunerations in private universities were much lower than those of public institutions.

"The salaries for private institution are even less as compared with public institution," said one of the DVCs.

Unfavourable promotion criteria were identified as a challenge to most of the employee of all the universities. Stringent promotion criteria for academic staff demoralized the majority of academic staff especially the young. Promotion takes 5-8 years for an active member of faculty who publishes at least one paper per year and for inactive member may go beyond ten years. The young junior staff most of the time opt for other alternatives jobs given the available high demand of skilled health workers at national and the international market. The following is a response from one of the Deans:

"Why are the promotion criteria becoming tough every time? Many people are unhappy, several publications are required for promotion with a lot of teaching and clinical work, and it is a challenge."

Another challenge facing the Medical Universities was inadequate pool of applicants for academic posts. Almost all universities had tried to advertise several academic posts locally but received on a few applicants. It was also narrated that the referral, consultant and region hospital compete for the same pool of qualified health professionals. As pointed out by one of the Deans:

"If you don't produce the postgraduates you also don't have enough to recruit for the post of teachers, it's real a challenge; there are no people with the qualification we want."

Another issue is a problem of lack of carrier path for some of the graduates from these universities. It was reported that some of the established programmes fail to get adequate number of applicants. The Ministry of Health and Social Welfare at the time of this study was yet to define roles and incentives of some of the universities graduates. Such hardly got employment and this was said to have indirectly affected the enrollment into these programmes. As pointed out by one of the Deans:

"We have problems with some of our graduates, there is no carrier path/ no establishment for them, and we know they are needed, we would like to see the carrier path for nurses at degree level."

The key informants from institutions which had introduced new programmes were concerned with the future of the expected graduates. The programmes were introduced because they form important part of health teams.

"We *are not sure of how the carrier pathway will be created. There is no established carrier path in the MOH yet,"* said one of the Deans.

This again reflects poor interaction between the MoHSW and the universities leading to development of degree programmes whose graduates did not have a defined carrier path in the health systems.

Another constraint which was reported to indirectly compound enrollment into of some programmes was the existing health system. They pointed out that the working environment did not support the graduates to practice and perform at the level they were trained. It was reported that this led to some of the graduates to go outside the country where the working environments was better. For example, it was pointed out that the majority of Dentists in Tanzania opt to work outside the country because the health system did not support them with appropriate working environments. The existing health facilities at district level did not have equipments and instruments for the dentists to practice to standards.

"Given the situation for the moment there are a lot of frustrations for dental surgeons in the country. They end up pulling out teeth for years. Is the training for five years worth only puling out teeth?" said one of the Deans.

Inadequate funding was noted to be another big challenge for both private and public universities and it is beyond their control. The funding was not provided at the rate that commensurate with enrollment. The sources of funds to these universities were reported mainly to be from school fees and government support. Some institutions received small funds from different donors but this was not sustainable and reliable. School fees for undergraduate programmes and postgraduate varied widely in both for private and public institutions.

School fees for undergraduate programmes were higher in private institutions than for the public institution. The fees were about two to three times as much compared to the public institution. This was noted to be the main factor for the government to limit the grant to only 25 medical students.

"For private institutions the grant for MD/DDS is limited to 25 students only, their tuition fees are high", expressed one of the Deans.

High school fees in private institutions were reported to be not unaffordable to majority of Tanzanians. This was one of the noted barriers to the efforts to increase enrollment into these universities.

"We depend on fees and yet we get few students who can afford to pay," pointed out one of the Deans.

The study reveled that funds for other charges to the public institution are not given as required or budgeted by the institution. The funds were not given as per unit cost; it depends on the budget allocated for MOEVT for that financial year. From that the plans of the universities are compounded by the limited funds released. They fail to expand to match with the pressure to increase enrollment. The funding does not reflect the policy to increase enrollment. For example in the financial year 2004/5, 2005/6 and 2006/7 the public university received about 40- 59% of the requested budget(MUCHS,2005) and in 2006/7 the university was allocated 0.7% of the other charges requested for projects and

development of the institution(MUHAS,2007). Funding to the private institutions is limited to tuition fee of the limited number of students under grants.

"The funding is limited to what is available from the main government budget and not to their needs; we don't have enough stakeholders who are ready to invest in medical education," as per one of the DVCs.

More than half of the existing Medical Universities in the country had received grants/loan from the Tanzania Education Authority for infrastructure development. It was reported that funds were not enough to complete the initiated projects. The universities were still struggling to raise funds from different stakeholders to support the projects which might lead to increase enrollment in the next few years.
"We borrowed money from TEA to build administration and lecture hall but the fund is not enough to complete the project, we can't move if we are not funded adequately," expressed one of the DVCs.

Generally almost all the universities had long plans to expand enrollment. Several respondents pointed out that they had land but were limited with funds to build the infrastructures which would have enabled them to increase enrollment.
"We have land and all drawing ready but no funds to develop the place," pointed out one of the Deans.

Inadequate link between the universities and MOHSW was another constraint mentioned by almost all key informants. The fact that the Medical Universities train health workers which were mainly absorbed by the Ministry of Health and Social Welfare, assumed a strong link existed between the universities and the Ministry. However, the collaboration was fairly weak. There was a concern that the Ministry should also influence training of undergraduate degree programmes as well.

The key informants suggested that the efforts of the MOHSW to increase the number of lower cadres should go hand in hand with support to the higher level training. They narrated that the burden of disease facing the country requires both lower cadres and skilled health workers.

Indeed given the crisis, one assumes a projected plan for degree level personnel should be there and ways of increasing say the number of doctors as we decrease that of Medical Assistants over time should be in place. However, such projected plans in the last twenty years to fifty years were not in place. Little is known about the time period when Tanzania would stop on relying on task shifting of staff. Unfortunately the time when there would be a medical officer in health centers is unknown.

"Why there no funds to support Medical Universities but there are funds for lower cadre training?" pointed out one of the Deans.

Another challenge identified by a quarter of key informants related to the quality of the enrolled students. They noted that most of the students are not well prepared for university training. The basic education, from secondary school seems not to prepare the students for the challenges of university education compared to the past students. *"In the past people were coming with division 3 but they were performing well but now days, people with division one are failing*", said one of the Deans.

Despite the palpable HR crisis in the health sector, there was no joint effort by the universities to address this challenge. A number of special innovations had been introduced in individual universities. At a more general level, several universities had introduced more programmes for teachers in basic sciences like anatomy and physiology (MUCHS, 2005). Several universities had started Master programmes to train basic sciences whose graduates would be absorbed as teachers (KCMC, 2005; HKMU, 2003). Other institutions intended to use the information communication technology; where by the public institution will be connected to these institutions during lectures.

CHAPTER FIVE

5. 0 DISCUSSION

Tanzania is facing an acute shortage of human resource in the health sector. Available reports show that the country has a shortage of about 68% of required human resource for health in its health systems. Since the government has developed a plan for human resource from the dispensary all the way to the consultant hospitals, it was assumed that the existing Medical Universities would use such projections as a guide for their undergraduate and postgraduate inputs. This assumes the universities were directly or indirectly involved in developing the national human resource policies and plans.

However, this study has shown inadequate involvement of the Medical Universities in the process of formulation of the HRH policies and plans in the country. This finding is consistent with findings in other reports (Nutt, 1984; Narasimhan et al., 2004). Insufficient involvement in the process of policy formulation has been documented by other studies as one of the challenge to African Universities (Franco et al, 2002; Narasimhan et al., 2004). From the results, the same challenge seems to face the Medical Universities in Tanzania. Lack of involvement of key stakeholders such as universities in policy formulation leads to a situation where universities not only fail to take into account such requirements when determining undergraduate and postgraduate inputs but also when relevant topics are taught in health management courses references can not easily be made about the situation of human resource in the country.

Indeed none of the universities were directly involved in developing existing HRH policies and plans and the few members from universities who participated were appointed on their capacity without involving the institutions. Consequently in some cases the invitees were not people conversant with human resource for health issues topic in their respective universities making their contribution in policy formulation fairly weak at best.

If the universities were involved it would had given them an opportunity for using research results for improving HRH policies and plans. Probably inadequate involvement of these institutions is one of the factors hindering the efforts to address HRH crisis and its related problems in the country.

Previous reports have revealed that wide dissemination of the policies and plans to relevant stakeholders was a basis for stakeholders to use them for formulating their own plans and work towards implementation of the national policies and plans (Nutt, 1984; JLI, 2004; Narasimhan et al. 2004). Results of this study revealed a problem in dissemination of the national HRH policies and plans. No single university had a copy of the previous or current HRH policies and plans from the government at the time of the study. This was a challenge to the universities, since even if they intended to implant to implement national HRH policies and plans; the most local relevant documents were not readily accessible to them.

The deficit of skilled heath workers at the level of referral/specialized hospitals, regional and district hospitals have been document to be 48-67% of the requirements ((MoH, 1999; MoH, 2005; MoHSW, 2007). However, little is known about the deficit in terms of degree level personnel because data was not disintegrated by educational background of the workers.

Findings from this study suggest that the HRH policies, plans and projection had little influence on the enrollment into different programmes in existing Medical Universities. The existing Medical Universities enrolled undergraduates and postgraduates depending on the resources available.

By extracting from the HRH projections the staff required to fill the existing gap including PHSDP in the referral/specialized hospitals, regional and district hospitals facilities require the universities to enroll about 6,000 students per year for ten years (MoHSW, 2007). Given the criteria used by the universities to enroll undergraduate and postgraduate students, national HRH goals will hardly be met for several decades to come. The combined enrollment at degree level programmes for both the private and public universities per year was less than 1000 since the student expansion programme started ten years ago and the situation was worse before.

Probably inadequate involvement of these institutions in the formulation of the HRH policies and plan is one of the factors hindering influence of the policies on enrollment into these universities. Reports of previous studies also show that lack of involvement of different stakeholder in Policy formulation and strategic plans lead to substantial gaps between the policies and their implementation (WHO, 2006). In Tanzania human resource policy document have been developed since 1999 (MoH, 1999) but there is hardly any evidence it was implemented before another similar policy was developed in 2004 (MoH, 2004).

Given the severe shortage of HRH mix in the health sector, it was expected that the existing Medical Universities in Tanzania would share curriculum, teachers and work as a team in order to produce graduates of the same standards. Use of common curriculums, exchange of teachers and students are ways of ensuring that the universities produce graduates with same competences to serve Tanzanians. Since these Medical Universities are confronted with several challenges that affect the number, skill mix and competences of their graduates, it was expected the universities would collaborate and look for solutions that go beyond their own limited vision of what is possible for individual institutions. However, this study revealed little collaboration among the existing universities. There was minimal collaboration in terms of sharing curriculums, research, exchange of teachers and students.These challenges of inadequate collaboration and coordination in the production of HRH have been reported by other studies to face most African health systems as well (Nutt, 1984; JLI, 2004).Therefore

results of this study agree with previous studies and unless this challenge is addressed, Tanzania and indeed Africa, will continue to suffer insurmountable health problems partly due to poor human resource planning.

Increase production of HRH has been reported by previous studies to be one of the cost effective means to be given high priority in addressing the HRH challenge in developing countries like Tanzania (McKinsey, 2004). It was expected that the existing universities would have a forum in order to have sustainable effort for collaboration and coordination to increase intakes and outputs for different cadres to meet the projected national requirements. The results of previous studies noted that linkages among universities in other African universities provided legitimacy as well as programme and staff support for young institutions. It has been also used in principle to ensure that proper standards are maintained (Sawyerr, 2002).Why not try this in Tanzania for the sake of solving the crisis? It can be done.

If Tanzanian's Medical Universities are to increase production of skilled heath workers then sustained programme which require partnerships among the universities, businesses and the government is important. Without such programme the existing universities will fail to implement several regional and global resolutions that have been made regarding human resources for health situation in Africa.

Despite the pressure to increase enrollment of students into these institutions their combined output does not meet the given patterns of morbidity and mortality in the country. However, existing Medical Universities face serious challenges in addressing the human resource shortage in the health sector.

The first noted challenge facing the universities was increased enrollment which did not match with resources. The pressure to increase enrolment in the medical schools reflects the need to fill the substantial unmet health demand, high rate of population growth and sustained increases in the pool of secondary school graduates. However the expanded enrolment was implemented without commensurate resources increase. Resources in terms of teachers, lecture halls, space in the wards and clinics did not match with the number of students. If the problem of increased enrollment which does not match with resources is not addressed, then resulting decline in standards pose a serious potential challenge to the universities.

This challenge has also been noted to be common in many other African Universities. Some reports surprisingly noted that students were taking lessons while standing because of lack of seats and space (Sawyerr, 2002). Some other African universities report deficit of teachers at about 40-70% of the requirements of those institutions (Sawyerr; 2002).The results comparably agree with the challenges facing the other African universities.

If enrollment into the universities were expected to reflect projections and requirement of human resource for health then funding into these universities should have also reflected the projections and requirement of the human resource as well. Results of this study revealed that severe under funding of these universities. For example, Muhimbili University was reported to have serious problem (MUCHS, 2004; MUCHS, 2005; MUCHS, 2006). In the financial year 2004/5, 2005/6 and 2006/7 the public university received about 40- 59% of the requested budget and in the year 2006/7 the university received only 0.7% of funds requested for projects and development of the institution (MUHAS, 2007). Funding was short of the requirements for sustaining the quality of teaching and learning for its much-expanded student population. The situation in the private universities is even worse. The meager funds from the tuition fees were inadequate for running the institutions.

This could be one of the explanations as to why the universities enroll according to the resources and not national demands. The challenge of severe under funding of the universities has been documented to affect several institutions in Africa, example being Makerere University in Uganda (Sawyerr, 2002).

On the other hand, if the universities were enrolling according to the national plans and projections then this could have facilitated a stronger negotiation for the required funds. It is also speculated that if these national plans were disseminated to the universities and

were included in the universities plans, they would have used the plans as a tool for resource mobilization from government, partners and other stakeholders.

Conclusion

From the finding of this study the universities face several serious challenges. There was little collaboration in terms of sharing curriculum, exchange of teachers and students. The challenges facing the universities if not addressed, will compromise the quality of the graduates and in long run the number of enrollment will decrease instead of increasing making the situation worse than was the case during this study.

The study revealed weak involvement of the universities in the formulation of the HRH policies. From that the universities have not been able to use the policies in determining the inputs into different programmes.

The results revealed little influence of the national HRH projections on enrollment into undergraduate and postgraduate enrollment. If the criteria for enrollment for undergraduate and postgraduate students continue to be unrelated to national projections of human resource for health requirements, then the required human resource in the health sector would not be achieved for decades to come. The country will continue practicing task shifting programme a practice which has been going on for more than four decades ago after independence. Specific efforts are needed to solve the challenges

if the universities are expected to play part in the effort to address the HRH crisis in Tanzania. Sustainable programmes which require partnerships among the universities, businesses, developmental partners and the government are important prerequisites for solving the HRH crisis in this country. Without such programme the national HRH goals will hardly be met and this will have serious implication on the health status of Tanzania society in the future generations.

Recommendations

Medical Universities in Tanzania should share and harmonize their curriculum, coordinate teaching, exchange of teachers and students in order to harmonize the quality of graduates as well as increase their quantity for the benefit of the society. Medical Universities should work together with the government to address the crisis HRH, assist the government in developing health human resources projections for the future. Such projections can then be used as important inputs in developing student enrollment for various degree courses in the universities. On the other hand the government should assist the Medical Universities to develop capacities for handling expanded intakes.

6.0 REFERENCES

Akilagpa Sawyerr, (2002), Challenges facing African universities: Association of African Universities (available http://www.aau.org/english/documents/asa-challengesfigs.pdf Accessed on 25/05/ 2008

Buchan J, Dal Poz M, (2002), Skills mix in the health care workforce: reviewing the evidence,Bulletin of the World Health Organization. 80:575-580.

Buse K, (2004), Global health partnerships: increasing their impact by improved governance, GHP Study Paper 5. London, UK: DFID Health Resource Centre, 2004.Available: http://www.dfidhealthrc.org/shared/publications/GHP/Governance%20FINAL1.pdf

Dovlo D: Ghana, (1996), HRD policy reform issues. In Workshop on human resources and health sector reforms (Edited by: Martinez J, Martineau T). Liverpool: Liverpool School of Tropical Medicine

Dyer, J., & Singh, H, (1998), the relational view: Cooperative strategies and sources of interorganizational competitive advantage Academy of Management Review January Review, 23:660–679.

Egger D, Lipson D, Adams O, (2000), Achieving the right balance: The role of policy-making processes in managing human resources for health problem. Geneva: World Health Organization.

Evans RG, (1984), strained mercy: the economics of Canadian health care. Toronto: Butterworth & Co.

Francis Loh Aliran, (2005), Balancing the pursuit of academic excellence and the massification of tertiary education Monthly Vol 25 (10)

Franco L M, Bennet S, Kanfer R, (2002), Health sector reform and public sector health worker motivation: a Conceptual frame. Social Science and Medicine 2002, 54:1255-66

Franco, AM., Bennett, S., Kanfer, R, (2002), Health sector reform and public sector health worker motivation: a conceptual framework. *Social Science and Medicine* 54 1255-1266.

Fulop T, (1987), A pre-requisite for health for all: Paper presented at the regional Conference on Medical Education. 27-30 October 1987, WHO Regional Office for Africa, Brazzaville.

Gray, Barbara, (1989), collaborating, Finding common ground for multiparty problem (Jossey-Bass,San Fransisco CA) 38(19): 914–936

Hall T, (1998), Why plan human resources for health? Human Resource Devel J 2(2): 77-86.

Huddart,J.O.A Picazo et al,(2003), The Health Sector Resource Crisis in Africa An Issue Paper. United States Agency for International Development, Bureau for Africa, Office of sustained Development Washington, DC

ILO.UNIDO, UNDP, (2002), Roadmap Study of the Information Sector in Tanzania. Dar es salaam, April 2002

Joint Learning Initiative, (2004), *Human Resources for Health*: Overcoming the Challenge. Cambridge, Massachusett

Khan MM, Hotchkiss, DR, Berruti AA,HutchinsonPL,(2003), Geographical aspect of poverty and Health in Tanzania: Does living in a poor Area Matter? Partners for Health reform plus, Tulane University

Kireria.A.M and Ngowi Daniel, (2007), assessment of the Human and Financial Resources for the revised HIV/AIDS National Multi-sectoral Strategic Framework. Final report

Kurowski C, (2004), The state of the health workforce in Tanzania – supporting solutions to burning issues. The World Bank

Kurowski C et al., (2003), 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. London School of Hygiene & Tropical Medicine

Lawrence, T. B., Hardy, C., & Phillips, N,(2002), Institutional effects of interorganizational collaboration: The emergence of proto-institutions. Academy of Management Journal, 45: 281–290.

Liese B. and Dussault G, (2004), the state of the health workforce in sub Saharan Africa: Evidence of crisis and analysis of contributing factors. World Bank 2004.

Linder SH, Peters BG, (1984), from social theory to policy design. J Public Policy 4(3): 237-259.

Martinez J and Martineau T, (2001), Introducing PM in National Health Systems: Issues on policy and implementation.

Martinez J, Martineau T, (1998), Rethinking human resources: an agenda for the millennium, Health Policy Plan. 13: 345-358.

McKinsey, (2004), Tanzania HR Report

Merrill-Sands D, Sheridan B, (1996), Developing and managing collaborative alliances: lessons from a review of the literature. Boston, MA: Support Program in Organizational Change for the CGIAR Centers, Simmons Institute for Leadership and Change, Simmons College, Available: http://www.trginc.com/orgchange/DevManagingPartnership.pdf

Michael RM Rod and Stanley J Paliwoda ,(2003), Multi-sectoral collaboration: a Stakeholder's perspective on government, industry and university collaborative venture. Science and policy, vol 30,(4) :273-284

Ministry of Health and Social Welfare, Tanzania Mainland, (SAM 2005), WHO and Zanzibar: Tanzania Service Availability Mapping 2005–2006

Mtabaji, JP, (2002), The past, present and future Training of Doctors in Tanzania. Tanzania Medical Journal; 17(3):5-9

Muhimbili University of Health Sciences (MUCHS), (2004), Hotuba ya mahafali 2004

Muhimbili University of Health Sciences (MUCHS), (2005), Hotuba ya mahafali 2005

Muhimbili University of Health Sciences (MUCHS), (2006), Hotuba ya mahafali 2006

Muhimbili University of Health of Allied Sciences (MUHAS),(2007), Hotuba ya mahafali

Muhimbili University of Health of Allied Sciences (MUHAS), (2007), MUHAS: Annual Report 2008/2007

Muhimbili University of Health of Allied Sciences (MUHAS), (2007), MUHAS: Annual Report 2008/2007

Murray VV, Dimick DE, (1978), Contextual influences on personnel policies and programs: an explanatory model. Acad Manage: 750-761. PubMed

Narasimhan V, Brown H, Pablos-Mendez A, Adams O, Dussault G, Elzinga G, et al (2004), Responding to the global human resources crisis. Lancet, 363: 1469-72. [PubMed].

Nullis-Kapp,clare,(2005), Health workers Shortage Could derail Development goals. Bulletin of World Health organization;83(1):5-6

Nutt PC, (1984), Planning methods: for health and related organizations. Toronto: Wiley

Pan American Health Organization (PAHO), (1998), Human Resources: a critical factor in health sector reform. Report of a meeting in San José. Costa Rica, 3–5 December 1997. Washington DC 1998.

Siddiqui J, Kleiner BH, (1998),Human resource management in the health care industry. Health Manpow Manage, 24(4): 143-147

Support for Analysis and Research in Africa (SARA), (2003), The Health Sector Human Resource Crisis in Africa: An Issue Paper

The World Bank, (1994), The World Development Report. 1994-Investing in Health. Oxford University Press. The World Bank.

Tumaini University, Kilimanjaro Christian Medical College. Stratergic plan 2006-2015

United Republic of Tanzania, (2006), Ministry of Health and social Welfare: Annual Report on HIV/AIDS.

United Republic of Tanzania, (2007), Ministry of Health and Social Welfare: Annual Report on Malaria

United Republic of Tanzania, (2007), Ministry of Health and Social Welfare: Annual report on Reproductive and Child Health Service

United Republic of Tanzania, (2007), Ministry of Health and social Welfare: Annual Report on Tuberculosis and Leprosy

United Republic of Tanzania, (2008), Ministry of Health and Social Welfare: Human Resource Strategic plan 2008 – 2013

United Republic of Tanzania,(2005), Ministry of Health and Social Welfare: Proposed Staffing Levels for Health facilities and Training Institutions.

United Republic of Tanzania, (2007), Ministry of Health and Social Welfare: Strategic Plan for The Control of HIV & AIDS for Health Workers at the work place (2006-2011)

United Republic of Tanzania,(2004), Ministry of Health of Tanzania. Human Resources for Health Country Experiences: Tanzania.

United Republic of Tanzania,(1998), Ministry of Health, Tanzania National Health Policy, Revised 1998.

United Republic of Tanzania, (2003), MoH Report of the 3 by 5 Mission to Tanzania: On Scaling up Antiretroviral Treatment as part of the Global Emergency Response to HIV/AIDS

United Republic of Tanzania,(2002),Tanzania Census 2002 National projections: Vol III National bureaural of Statistics, Ministry of Planning, Economy and Empowerment Tanzania. October 2004.

WHO Regional Office, (2004), Guidelines for Human Resource for Health Policy and Plan Development at Country Level, Brazzaville:

WHO, (2000), the World Health Report 2000-Health Systems: Improving Performance.Geneva.

Willium Burdik, (2007), Challenges and issues in health profession education in Africa:Vol 29,(9&10): 882-886

Working Paper Number 11: *A Review of the Health Sector in Kenya*. March 2004

World Health Organization (2000) Achieving the right balance: The role of policy-making processes in managing human resources for health problems

World Health Organization, (2006), Policies and Plans for Human Resources for Health Guidelines for Countries in the WHO African Region

World Health Organization, (2006), working together for health. World Health Report

World Health Organization, (2004), High-level forum on the health MDGs. Addressing Africa's health workforce crisis: an avenue for action. www.hlfhealthmdgs.org/Documents/AfricasWorkforce-Final.pdf (accessed 22 May 2008).

Wyss, K (2004), Scaling-up Anti-retroviral Treatment and Human Resources for Health: What are the challenges in Sub-Saharan Africa" Swiss Tropical Institute