TASK SHIFTING IN MALAWI: THE ROLE OF EXPERT PATIENTS

by

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ABSTRACT

The human resources shortage in sub-Saharan Africa is having a devastating impact on a region of the world already struggling under the pressure of HIV/AIDS. The number of people requiring medical attention greatly outweighs the number of skilled health workers. As a result of health professionals working under stress and without adequate support, patients are not getting adequate attention. To fill gaps in care, some countries have adopted task shifting techniques to utilize lower cadres of health for basic health duties. As an example of task shifting, Dignitas International has developed an Expert Patient Program Tisungane clinic in Malawi to alleviate the workload of nurses and clinicians. The Tisungane model has been successful in its goals, but not without challenges. For task shifting initiatives to be a sustainable solution to the health worker shortage, lower cadres of health must be made a part of the formal health care sector, have clear objectives and good training.

Keywords: Task shifting; human resources for health; HIV/AIDS; Expert Patients; Malawi; sub-Saharan Africa

Subject Terms: Malawi -- Economic conditions; Malawi -- Social conditions; AIDS (Disease) -- Economic aspects -- Malawi; AIDS (Disease) -- Social aspects -- Malawi

DEDICATION

I would like to dedicate this paper to the hardworking and dedicated staff at Dignitas International in Zomba, Malawi. Thank you for all your help and guidance and for showing me how Malawi really is the warm heart of Africa. Zikomo Kwambiri.

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GLOSSARY

AIDS Acquired Immunodeficiency Syndrome

ARV Antiretroviral (usually referring to medications)

ART Antiretroviral therapy

CHW Community health worker

DI Dignitas International

HAART Highly active antiretroviral therapy

HIV Human immunodeficiency virus

HAS Health surveillance assistant

IGA Income-generating activities

NPC Non-physician clinician

MDG Millennium development goal

OGAC Office of the U.S. Global AIDS Coordinator

PEPFAR Presidents Emergency Plan for AIDS Relief

PLWHA People living with HIV/AIDS

WHO World Health Organization

UNAIDS Joint United Nations Programme on HIV/AIDS

HRH Human resources for health

INTRODUCTION

A concurrent health crisis exists in Sub-Saharan Africa. Over 22 million people in the region are infected with HIV/AIDS (UNAIDS, 2007), and the deaths accrued by this pandemic continue to rob the region of the health care professionals needed to provide care to ailing populations (WHR, 2006). Of the 57 countries worldwide that are experiencing an extreme shortage of health care workers, 37 are in Africa (Lancet, 2007). The health care professionals working in these countries do so under intense pressure and in under-resourced clinics and hospitals (MSF, 2008). Although there have been significant declines in HIV-related morbidity and mortality in the industrialized world since the introduction of highly active antiretroviral therapy (HAART) (Hogg, 1999), HIV remains a death sentence for many people in Southern Africa, in large part because they cannot access these life-saving drugs. Many African physicians are grossly overburdened and unable to meet patient demand, while clinics are chronically under-staffed and have wait times that can be hours long (MSF, 2008).

Due to health clinic understaffing, patients are not receiving adequate care and attention. Nurses feel the pressure most acutely, as they are the primary health care providers for people living with HIV/AIDS (Mills, 2008) in the absence of qualified physicians. Globally, there are more nurses than doctors and this disparity is most intense in southern Africa (Table 1). Although clinicians (physicians and medical officers) write prescriptions and deal with any serious

health complications, it is the nurses who do check-ups, monitor health status, tend to uncomplicated medical issues and perform administrative duties (Muula, 2007). They also hold education and information sessions about HIV prevention, HAART, adherence issues, and often run group and individual counseling sessions at ARV clinics. The demand on nurses is great and the numbers are few and as a result, the nurses are overworked and exhausted.

This predicament of less-than-adequate health workforces has led to a few innovative African nations exploring alternative health management techniques such as task shifting and developing new cadres of health. The intention is to ease the burden on physicians and nurses and to improve access to treatment for all people living with HIV/AIDS by spreading out the responsibility of health care to other, less specialized cadres (UNAIDS, 2008). Increased health care workers mean an increase in ART coverage (Barnighausen, 2007) so attempts are being made to substantially boost the workforce, not necessarily relying on highly skilled workers though. Clinical officers, health officers, medical assistants, and health surveillance assistants are all examples of cadres developed in the past to increase the capacity of the health systems. These non-physician clinicians are already practicing in 25 of 47 sub-Saharan African countries (Mullen, 2007). Less-skilled cadres of health have existed globally for centuries, however the HIV/AIDS pandemic and the increased need for health services have highlighted the necessity of them more then ever.

Although many countries are dealing with human resource shortages, Malawi is experiencing the greatest deficit (Table 1). In Malawi there are only 2 physicians for every 100,000 persons and 32 nurses per 100,000 persons. In contrast, Canada has 214 physicians per 100,000 persons and 995 nurses per 100,000 persons.

Table 1: Density of skilled health care workers

Country	HIV rate % Adults (UNAIDS, 2005)	Physicians* Density/100,000	Nurses* Density/100,000	Pharmacists* Density/100,000
Angola	3.7	8	115	<1
Botswana	24.1	40	265	19
Lesotho	23.2	5	62	3
Malawi	14.1	2	32	-
Mozambique	16.1	3	59	3
Namibia	19.6	30	306	14
South Africa	18.8	77	408	28
Swaziland	33.4	16	630	6
Zambia	17.0	12	174	1
Zimbabwe	20.1	16	72	7
Canada	0.3	214	995	67
USA	0.6	256	937	88
UK	0.2	230	1212	51

Source: World Health Report 2006

With vacancy rates of 64% among nursing positions; 53% among clinical officers; and 85%-100% among specialists (Schouten, 2006), Malawi has been forced to rethink their human resource strategies for the health sector. One solution being used is task shifting: the promotion of new cadres of health professionals to fill gaps.

Emergency Human Resources Programme

Addressing the severe health resource shortage, the government of Malawi launched the Emergency Human Resources Programme in 2004 as part of the Essential Health Package to improve health outcomes (Palmer, 2006). The Ministry of Health recognized that improving the number of staff is the biggest obstacle to successful implementation of health initiatives. The three objectives of the plan are:

- To re-employ trained Malawian nurses and clinical officers as well as retaining staff already in the service by supplementing salaries by up to 50%.
- To increase training capacity for all cadres of staff by over 50% on average, and more in key cadres: tripling the numbers in physician training and doubling nurse training.
- To recruit overseas physicians and nurse tutors through volunteer organizations on two-year contracts as a stop-gap measure (SEID, 2004)

This is one way that the government of Malawi is being active in dealing with the human resource crisis, however it will take a while for the effects of the programme to be felt. This approach is very professional-based and the number of skilled health workers may not be enough.

The purpose of this Capstone project is to describe task shifting programs in Malawi and an Expert Patient program currently being used by Dignitas International at Tisungane clinic in Zomba, Malawi. Using the case study of Tisungane clinic, recommendations will be made for task-shifting programs in similar clinical environments.

BACKGROUND/RATIONALE

Task shifting: Treat, Train, Retain

In 2007, the World Health Organization, in collaboration with the United States Global AIDS Coordinator (OGAC), launched their three pillared "Treat, Train, Retain" project to respond to the severe shortage of health workers worldwide (WHO Task Shifting booklet, 2007). Treat refers to HIV treatment, care and support for HIV-infected and affected health workers; retain refers to the need for health workers to stay in the public health system and not emigrate or move to the private health system; and train is the main pillar of this campaign, referring to the initiatives and methods being introduced to expand the health workforce from within the nations' human resources (WHO/UNAIDS/PEPFAR, 2007). The WHO guidelines consist of 22 recommendations on how to introduce task shifting into resource poor communities, with an emphasis on tailoring ART-delivery towards each specific region and the capacity of their health professionals (Annex A).

It is argued that while the current systems of HIV/AIDS care works well in developed countries, it is unattainable in the developing world (Kober & Van Damme, 2006). The current ART-delivery model is professional-based, with little room for other cadres of health to be involved. In developing countries where both the public and the private sectors are feeling the absence of professionals, it

is necessary to change the model of delivery so that less-skilled health-care workers are able to manage uncomplicated cases (Kober & Van Damme, 2006). Countries need to rework their health plans so that the human resources are maximized to their fullest potential and the greatest number of people possible are getting some level of medical care. In order to do this, appropriate programs for training health workers should be integrated into health plans (Crisp, 2008).

The resources, skills and time needed to train physicians, nurses and midwives is much greater than what is required to train non-professional cadres of health workers such as health surveillance assistants (HSAs), community health workers (CHWs), and expert patients (Figure 2). In order to more rapidly meet the needs of communities lacking human resources for health (HRH), investing in lower cadres of health workers is a concept that is spreading throughout sub-Saharan Africa. Doctor poaching and migration of skilled labourers to developed countries have intensified the gaps in the health care systems (Mills, 2008). One of the advantages of training lower cadres of health workers in clinics is that they are more likely to stay in-country since the jobs they are trained to do are country-specific and not necessarily transferable to other regions.

The migration of skilled health workers is a problem, exacerbated by political turmoil that continues to rob African nations of vital professionals. For instance, only 360 out of 1200 physicians trained in Zimbabwe in the 1990s were still practicing in Zimbabwe in 2000 (Schneider, 2006). Internal migration of health care workers also causes a loss of public sector health professionals.

Many choose to take more lucrative positions in the private sector or with NGOs (Schneider, 2006). Schneider discusses the importance of universal HAART distribution and how it is unlikely to happen without significant attention towards increasing human resource capacity. She calls for a mixture of bureaucratic, top-down approaches partnered with grassroots community involvement to build the capacity of medical personnel (Schneider, 2006).

Since the rise of the HIV/AIDS pandemic, clinicians and nurses have spent a large amount of their time concerned with teaching patients about HIV and ART, initiating ART, monitoring and recording side effects of HIV-positive patients as well as dealing with clinic tasks like cleaning and managing patient flow. However, the overwhelming volume of HIV-positive patients seen each day in the clinics makes this an unsustainable technique. This is where task shifting could prove to be a solution with lower cadres of health workers taking over basic administrative tasks, ART education, and counseling (WHO, 2007).

Table 2: Training among health care workers

Cadre of Health	Length of Training	
Physician	6 years	
Nurse	3-4 years	
Midwife	4 years	
Clinical officer	3 years	
Community Health Worker	Varies	
Health Surveillance Assistant	10 weeks	
Counsellors	Varies	
Expert Patients	3 days	

Sources: Mullen, WHO, Dignitas International

Task shifting is defined by the World Health Organization as, "a process of delegation whereby tasks are moved, where appropriate, to less specialized

health workers." (WHO, 2007). With the less-specialized health workers responsible for uncomplicated patient cases and basic duties, the specialized health workers are available to deal with patients needing urgent, expert attention. This could help to alleviate the human resources burden in health care systems attempting to deal with an overwhelming number of HIV/AIDS cases.

Global recommendations

Although it has unofficially been happening for years (Samb et al, 2007), the concept of task shifting is one that has just recently been adopted by the international health and development communities. The first ever UN conference dedicated to task shifting was held in Addis Ababa, Ethiopia in January 2008 to launch the WHO Guidelines Regarding Task Shifting (WHO, 2008).

The WHO document outlines 22 recommendations put forth by a panel of health resource experts and stakeholders (WHO TTR, 2007). The five major themes addressed by the recommendations are:

- A. Recommendations on adopting task shifting as a public health initiative:
- B. Recommendations on creating an enabling regulatory environment for implementation;
- C. Recommendations on ensuring quality of care;
- D. Recommendations on ensuring sustainability and;
- E. Recommendations on the organization of clinical care services

These recommendations are accompanied by guidelines suggesting ways to develop task shifting programs and integrate task shifting into current health programming.

Barriers to task shifting programs

In its recent document, "Help Wanted. Confronting the health care worker crisis to expand access to HIV/AIDS treatment: MSF experiences in southern Africa," Medecins Sans Frontieres (MSF) outlines barriers to scaling up human resources (MSF, 2007). These are identified as:

- Inadequate salaries and poor working conditions that lead to "brain drain,"
 lack of motivation, and fewer people entering the health care workforce
- National policy barriers that block the possibility to shift tasks to lower level health staff
- Lack of resources to address the crisis
- Lack of donor funding towards human resources for health programs
- Restrictions on spending from national and international financial institutions, which can affect governments' ability to invest in the health workforce.

Lack of standardisation with NPC programs means that they cannot be recorded and replicated in other areas where communities are lacking physicians (Mullen, 2007). Financial compensation is a concern for the cadres (Mullen, 2007) with many people reportedly being paid below the expected salary if paid

at all. Sub-Saharan Africa, in general, has poor economic activity resulting in devaluation of currency that is in turn felt by the workforce through poor salaries (Schneider et al, 2006).

Fitzhugh Mullen expands on the idea that physicians in some countries are against the development of non-physicians clinicians (NPCs) because of concerns that this new cadre will increase competition, have less-than-adequate supervision, and result in possible job loss. There has also been resistance from nursing organisations that worry about how the introduction of NPCs might impact their jobs (Mullen, 2007).

In addition to the lack of professionals, there are few training facilities and trainers. Trainers would have to be people already involved in the health care system, requiring the valuable time of already burdened workers. Some countries, such as Botswana (Dreesch, et al, 2007) do not have medical schools and others with medical schools, such as Malawi, are limited in their capacity to teach and train new cadres of health workers (Palmer, 2006).

PLWHA/Expert patients as supportive health workers

Recommendation 21 of the WHO Task Shifting report states:

"People living with HIV/AIDS who are not trained health workers can be empowered to take responsibility for certain aspects of their own care. People living with HIV/AIDS can also provide specific services that make a distinct contribution to the care and support of others, particularly in relation to self-care and overcoming stigma and discrimination."

In the article "Expert Patients and AIDS Care," Kober and Van Damme explore the role of people living with HIV/AIDS (PLWHA) as part of the health care system. PLWHA who are successfully receiving ART have the ability to play important roles in the delivery of care and treatment for those beginning treatment or having difficulties being on treatment. Currently there are support groups in many sub-Saharan African countries where PLWHA act as peer educators in supportive and counselling roles, health promotion and prevention (MANET+, 2008). Although these are important aspects of HIV care, there are other gaps in treatment that could potentially be filled by PLWHA. There have not been any documented instances of PLWHA involved in the provision of ART although they could be in the future (Kober and Van Damme).

As part if it's six-year Emergency Human Resource Plan, the Government of Malawi has recommended further involvement of people living with HIV/AIDS in order to staff community-level primary health care systems. It is a strategy to empower PLWHA to end stigma and discrimination within the health care sector (Tawfik and Kinoti, 2006), as well as use the knowledge of people who are experienced in receiving HIV-care. The Expert Patient program at Tisungane clinic is an example of integrating PLWHA in new health cadres and new forms of patient care. There have been several successes in the program and it could form a model for how to better incorporate PLWHA in providing patient care in the health system. However, the program also faces several challenges to its long-term viability.

Potential Limitations

Most of the Expert Patients are from poor areas of Zomba and have not had the chance to progress in school past a primary education making literacy a potential limitation. Training for the Expert Patients who provide counseling and adherence information to patients is brief at only three days. This may jeopardize the merit of the information provided and result in patients receiving faulty information.

The training and supervision of the Expert Patient program require the time and attention of Dignitas International staff that are already busy with daily activities at the clinic and at the office. In order to create a well-functioning cadre of health workers, there must be investment into the program, which is not always easy to get.

There is a fear that once the Expert Patients who are currently working fall ill there will be nobody to keep the program and the clinic running smoothly. It cannot be ignored that the Expert Patients, while successful on treatment at the moment, are living with an incurable disease. In order for the program to be truly sustainable, capacity building, such as a training-of-the-trainer program, need to be developed. This way, the Expert Patients have the chance to move up in the program as well as learn valuable skills and further their personal development. As it stands now, the Expert Patients may leave the program for better employment elsewhere as there do not seem to be future opportunities within the program.

METHODS

Two months were spent with the Dignitas International staff in Zomba, Malawi. Much of the time was spent at Zomba Central Hospital where the Dignitas-supported ARV clinic, Tisungane, is located. The original reason for being at the Dignitas site was as part of a research project concerning adherence data recording among Dignitas staff. There is widespread concern regarding the quality of adherence data therefore the project examined reliability issues pertaining to the quality of data gathered from client self-reporting and those relating to the transcription and flow of this and other adherence data. The project findings were meant to inform a future study aimed at assessing the impact of innovations aimed at improving adherence to HAART.

As part of an internal adherence data project, Expert Patients were interviewed in order to learn their role in advising patients about adherence. From the initial interaction with the Expert Patients, it was clear that this cadre of health plays an important role in the delivery of HIV/AIDS care and should be described in greater details for others so that others can learn from their experiences.

With the help of Dignitas staff at Tisungane, interviews were arranged with three of the Expert Patient. A former student researcher with Dignitas, Matthew Chan, had collected some information about the program in the spring of 2007.

These transcripts were made available by Dignitas staff as part of this project.

As English-speaking levels vary among the Expert Patients, a Dignitas staff member acted as a translator from Chichewa to English for two of the interviews. A third interviewee had strong English skills and did not require a translator. Interviews took place in an empty consultation room at the clinic and took an average of 45 minutes. Interview questions were developed with assistance from Dignitas clinic staff and pre-tested for appropriate content. An interview with the Dignitas Medical Coordinator, Dr. Marion Kambanji, was also carried out. It was not recorded, but notes were taken and later typed up for reference [Chan interviews].

The clinic staff were very accommodating about having a researcher in their midst, taking notes and recording observations. Visits to decentralized clinics in the region and at Zomba Central Prison were also organized in order to get a complete picture of ART delivery. These visits were invaluable in gaining an understanding of the scope of the AIDS crisis in Malawi. Personal communication with Dignitas staff has also helped to gain a solid understanding of the human resources shortage in Malawi and the challenges involved in developing an Expert Patient program.

All interviews were recorded and later transcribed so that coding of similar themes could be carried out. Coding was done by hand, highlighting common themes and bringing to attention important points. A narrative was written about daily routines of Tisungane clinic based on observations taken while sitting with the nurses and clinicians during their work routines. The narrative was later scoured for relevant information regarding Expert Patients.

To support personal experiences and observations, a literature review was performed on relevant material available. PubMed and Medline databases were searched for peer-reviewed articles. Key words used in the searches were, "task shifting," "HAART," "Expert Patients," "HIV/AIDS AND sub-Saharan Africa," "Malawi," and "human resources AND Africa." "Grey" literature, such as government reports, NGO reports and internal documents were also searched for relevance.

RESULTS

Case Study: Dignitas International, Zomba, Malawi

Table 3: Malawi country overview

Capital	Lilongwe	
Population	12.6 million	(2004)
Language(s)	Chichewa, English and regional dialects	
GDI per capita (USD)	170	(2004)
Government expenditure on health (%)	9.7	(2002)
Population living on less than \$1/day (%)	42	(2003)
Literacy (%)	64	(2004)
Urban population (%)	17.1	(2005)
Life expectancy (years)	40	(2004)
Infant Mortality Rate (per 100 000 live births)	110	(2004)
Maternal Mortality Ratio (per 100 000)	1800	(2005)
HIV prevalence, adults (15-49)	14.1	(2005)
Number of people receiving HAART	28 110	(2005)
Number of people in need of HAART	169 000	(2005)
HIV testing and counseling sites	184	(2005)
Major Exports	Tobacco 53%, tea, sugar, cotton, coffee, peanuts, wood products, apparel	

Sources: WHO Summary country profile for HIV/AIDS treatment, December 2005; UNICEF, State of the world's children, 2006, CIA Factbook, 2008.

Dignitas International

Dignitas International is a HIV/AIDS-focused medical humanitarian organization based in Canada and currently hosted by the community of Zomba in southern Malawi. Dignitas works with community and national branches of the health care system to:

[I]ncrease access to effective HIV/AIDS-related prevention, treatment

and care in resource-poor settings by developing and disseminating solutions that harness the power of community. (Dignitas International)

As of August 16, 2008, Dignitas was serving a population of 3660 patients on ARV treatment through their central clinic at the Zomba Central Hospital and through nine decentralized clinics in isolated and rural areas in the Zomba region. Zomba is located in southern Malawi and is the third largest city in Malawi with a population of 700,000 people. It is the former capital of Malawi and is home to government offices, the University of Malawi, Chancellor College, military and police barracks and the Zomba Central Prison. The main highway in Malawi runs through Zomba making it a popular rest stop for people travelling from the political capital of Liliongwe to the commercial capital of Blantyre. Zomba also has one of the highest HIV rates in the country at 17.8% (Dignitas International).

One of the biggest struggles for Dignitas in increasing access to HIV treatment has been securing trained health care workers. Due to pressured and overworked staff, patients have limited consultations with clinicians without the personal attention that patients dealing with severe medical conditions require. Typical of busy health centres, the average amount of time with nurses at Tisungane clinic is limited to about four minutes per patient during the research period [personal observations]. This results in less attention being given to the patient and more to filing out the required documentation such as the master cards and the ARV review forms.

Table 4: Human Resources at Tisungane Clinic

Job Title	Employed by	Duties / Responsibilities	Reports To
Medical Coordinator	DI (1)		DI Head of Mission
Clinic Coordinator	DI (1)	Manages the Tisungane Clinic	Medical Coordinator
ART Provider - Clinical Officer	DI (3)	Initiates patients and handles more complex cases	Clinic Coordinator, Medical Coordinator
ART Provider - Nurse	MoH (3)	Conducts ART follow-up sessions, dispenses ARVs	Clinic Coordinator. Medical Coordinator, head nurse
ART Counsellor	Unknown	Conducts group counselling sessions and adherence counselling	Unknown
ART Clerks	MoH (2)	Fills out register and takes care of files	Clinic Coordinator, Medical Coordinator, head nurse
Lab Technician	DI (1)	Processes CD4 counts and other lab specimens	Lab manager, Clinic Coordinator
ART Provider for staff clinic (nurse)	DI (1)	Conducts ART follow-up sessions, dispenses ARVs	Clinic Coordinator, Medical Coordinator
HIV/AIDS Nurse and Counsellor	DI (1)	ART provision, counselling and training for counselling	Clinic Coordinator, head nurse
Patient Care Attendant	MoH (3)	2 of 3 do nutrition, nutrition counselling	Clinic Coordinator, head nurse
Expert Patient	DI volunteers (7)	Act as ARV Clerks, translators, file runners, patient transporters, nursing assistants, counselling	Clinic Coordinator, head nurse

Source: Dignitas International, 2008

Nurses perform many duties in the ARV clinics that are time-consuming but uncomplicated such as taking heights and weights, managing crowds, organizing patient files, and giving basic clinic information to patients. In order to free up nurses' time with patients, clinic staff have developed new cadres of health workers to perform the more basic duties and free up nurses' time.

The Expert Patient Program

At Zomba Central Hospital's Tisungane Clinic, where the human resource shortage is sharply felt, a new cadre of health assistants called Expert Patients is playing an important role. An Expert Patient as explained to me by a member of the Expert Patient group, is:

"... someone who was once a patient and has undergone all the processes from diagnosis and treatment and know what he or she is suffering from and uses this experience to teach other people what he has gone through." (Expert Patient #2, August 24 2007)

Dignitas International initiated the Expert Patient program in conjunction with the Malawian Ministry of Health in late August 2006 as part of their community-based approach to care and to lessen the pressure on the nurses and clinicians at Tisungane clinic. Dignitas' Medical Coordinator, Dr. Marion Kambanji, approached thirteen patients who had been successful with their HAART regimes, were healthy, were motivated and had been treated at Tisungane clinic for more than six months.

"It was a certain day- I remember it, because of the lack of staff here, I remember Dr. Marion asked that if any patients, if you knew that you are able to do some of the things you can be coming and assisting us here at the hospital because we don't have enough staff maybe you can be helping us." (Expert Patient #1, August 24 2007)

"...initially because of work overload for the nurses, what they from dispensing drugs to counselling so they thought of using these expert patients to be assisting them in the office work and also the counselling processes to use as examples of the process." (Expert Patient #2, August 24 2007)

The initial training for the current Expert Patients was three days long and focused on tasks such as filing, taking vital signs and counselling patients about how to take ARV medications. Each person in Malawi is given a Health Passport to record health activities so the Expert Patients were taught how to record health indicators in the passports. They were also taught about adherence messages and the importance of patient confidentiality. They are unpaid volunteers who work as clerks and counsellors and take responsibility for smaller tasks usually performed by nurses. This helps the clinic run smoothly. Dr. Kambanji continued as the supervisor of the Expert Patient program along with some of the Dignitas clinicians

"Cleaning the clinic and we weigh other patients on the scale, we do some weighing, some temperatures and height we do that...we organize some patients to stay in order because we give them numbers as they come so we try to organize them so that there must not be any quarrelling whatsoever because you see, there are so many patients each and every day... before we start work each and every morning we do give a health talk as well to encourage them some other patients that they should keep on taking ARVs because it is good." (Expert Patient #1, August 2007)

One of the key roles of Expert Patients is counseling and mentoring people starting ARV treatment or those having trouble with treatment. As positive role models they show other patients how to properly take ARVs and what to expect when starting the drugs. This is invaluable as they can relate more easily to the new patients and shed some light on their experiences. During initial ARV education and training for new patients, Expert Patients often give testimonies of their own struggles in order to illustrate how barriers can be overcome and hope restored.

"The success of the program is that, some of the patients, when they come in for the first time haven't been explained the situation. They don't understand the situation that they are in, but after being given counseling advice, most of them do improve."

(Expert Patient #2, August 34 2007)

Being actively involved in care delivery also helps the Expert Patients deal with their own illnesses by giving them purpose and a role in helping others maintain their health. Being part of the fight against AIDS is an empowering experience for people who may be suffering depression and discrimination. It also helps to encourage adherence among themselves, since they know they are expected to be strong role models.

"Like myself, what can I say is since I started coming here I have seen that all my troubles went away. I am now courageous because I do see some other patients and say 'how is this one? No. I am better than this one." (Expert Patient #1, August 2007)

The clinic benefits from the presence of expert patients by gaining the equivalent of one nurse or 8 hours of clinic work [interview with Dr. Kambanji]. The patient flow has improved under the auspices of the Expert Patients giving more structure to an otherwise hectic scene. While the Expert Patients enjoy what they do, it cannot be overlooked that they are working on a volunteer basis without wages. Many of them stopped working in their regular jobs when they became ill, due to either poor health or discrimination. The Expert Patient program has given them something to do, but there is a need for them to earn wages again. One group member has a small business of selling beaded AIDS pins for 200 MK each (1.42 USD), but it is not enough for him and his family to survive.

Originally, there were thirteen Expert Patients, but in August 2007 there were only seven remaining at Tisungane. More than half of the expert patients have left citing lack of wages as the biggest obstacle to them continuing their work.

"She says that the biggest challenge is that she's a patient. She comes here and assists in the work at the hospital almost five days a week and after she doesn't have money. She has to walk a long distance to go back home. Upon going back home, there is nothing at home. She has to fend for her children and her family."

(Expert Patient #3, August 24 2008)

In an attempt to create a sustainable livelihood for those involved in the expert patient program, and keep the program alive, Dignitas proposed the

creation of an independent income generating activity (IGA). The start-up money of 100,000 Malawian Kwachas (700 USD) was supplied by Dignitas for an egg-selling initiative. Unfortunately, the IGA run by the expert patients was not successful and had to be stopped. The demands of running a business meant the Expert Patients were not able to keep up with their duties at Tisungane, resulting in backlogs of patients. Dignitas has committed to providing further support to the expert patient program to ensure that other means of income generation will be developed, but has yet come to a solution [Chan interview with Dr. Kambanji).

DISCUSSION

The number of patients seeking health care is overwhelming clinics across sub-Saharan Africa. There are not enough skilled health workers to tend to the large number of people in need of care. In the wake of the HIV/AIDS pandemic, the gap in health care is being felt greater than ever before. Many countries have adopted the idea of task shifting in order to ease the pressure on skilled health care workers by giving non-professional health workers responsibility for basic duties and uncomplicated jobs.

This development of non-professional cadres of health, such as Expert Patients, has the potential to give responsibility to those with high motivation but without high levels of education. The Dignitas model of using Expert Patients to compensate for the health workers shortage has been effective in lessening the pressure on clinic staff at Tisungane, but it has also experienced significant challenges. The nurses and clinic staff benefit by more having more time to see patients, but the Expert Patients need more support or else risk being taken advantage of. Their work at Tisungane is voluntary and although they see the value of their positions, they are in need of livelihoods. They all have families that need to be supported. They work long hours, five days a week in a chaotic atmosphere, but aside from lunch, they are not compensated for their time. The commute is long and many of the expert patients walk to work as the cost of

public transport is high. All of the Expert Patients interviewed acknowledged the limitations of their poverty and requested small funds for transportation.

Although it is a viable option for relieving the pressure on health workers, it should be cautioned that task shifting is not a cure-all solution. There are potential drawbacks as well. As previously illustrated, the training for lower cadres of health such as Expert Patients in minimal and therefore it is of concern what types of information is being given to patients.

The question of remuneration among emerging health cadres is one that has been addressed in other contexts. As Recommendation 14 of the WHO's task shifting document states:

Countries should recognize that essential health services cannot be provided by people working on a voluntary basis if they are to be sustainable. While volunteers can make a valuable contribution on a short term part time basis, trained health workers who are providing essential health services, including community health workers, should receive adequate wages and/or other appropriate and commensurate incentives.

While income-generating projects may seem like a viable option, they are not pragmatic options for Expert Patient programs. IGAs are external to the roles at the clinic and require time and resources that are not available. It is not realistic to create a cadre of health workers to alleviate the pressure on the formal health care professionals, only to put added pressure on the new cadre.

Involving people living with HIV/AIDS in more medical-related roles is a way to integrate capacity building with valuable perspective and personal experiences. They intimately know the pros and cons of taking ARVs and the apprehension of disclosing positive diagnoses. They are walking success stories and act as positive role models. The Expert Patients interviewed spoke about how working in the clinic has allowed them to turn something negative into something positive. Being recognized not only for their status, but also for their positions as role models and clinic staff has given them hope for their futures.

There are potential limitations of the program as well. While the Expert Patients are familiar with the treatment given to most patients at the clinic, it is important to acknowledge the limits of their education. Their lack of education and training among the Expert Patient may result in poor quality of care for patients, especially when talking about adherence to medications. Patients may have more complicated cases and require more in-depth information than the Expert Patient can provide so it is imperative that the Expert Patients realize their boundaries and do not overstep them. The Expert Patients should be conscious of their roles and when to refer patients to more skilled health professionals.

The growth of non-professional cadres may be threatening to health care workers in the formal system. The less-skilled workers may be seen as preferable to the more skilled workers as they cost less and require less training. For this reason, communication in the clinic settings must take place so that all workers are clear about roles and tasks. Physicians and nurses are still necessary, however they should be strategically utilized for their medical skills.

The less-skilled cadres of health are able to deal with basic tasks so that the physicians, clinicians and nurses are free to see patients for medical reasons. The Expert Patient program is meant to compliment the medical staff, not to replace them.

Formal designation of the Expert Patient cadre would help secure them as an essential part of HIV/AIDS care and would allow Expert Patients to be added into budgets and potentially paid as valued health care workers. Just as Health Surveillance Assistants are now being recognized (MSF, 2007b), so too can Expert Patients be recognized. Coordination with the Ministry of Health may result in donor funds allocated towards Expert Patient programs. Formal designation with stricter definitions and roles surrounding the cadres would help to monitor and evaluate the effect of the expert patient program. As the program functions right now, there is a lack of understanding about what the goals and expectations of Expert Patients are. Formal recognition would help to boost the motivation of the expert patients and with certification they will experience increased self-esteem and self-worth.

To be certified, the training would have to be more extensive. The amount of training for current expert patients was only 3 days. They have been identified as patients who have been adherent to ARVs and are in good health, so they are knowledgeable about medication and adherence issues, but further training is necessary. If ARV-naïve patients are getting their messages from the expert patients, it is important that the messages are correct and comprehensive.

Extended training in counseling techniques should be part of the expert patients'

training since their clinic work involves counseling patients. An ongoing training and mentoring program run by Dignitas would ensure that the Expert Patients are current in their knowledge of HIV/AIDS care.

Along with improved training, there are certain checks and balances that need to be in place for programs to be validated. For successful program replication in other clinical settings, guidelines and specific objectives need to be constructed. With the rise of new cadres of health, it is important that each cadre is clear of its goals, objectives, responsibilities and tasks. As Recommendation 12 of the WHO document states, "countries should ensure that the performance of all health workers can be assessed against clearly defined roles, competency levels and standards." As nations look to task shifting in the future, the development of best practices and training guidelines will be necessary to initiate efficient and effective programming.

Documentation of best practices and experiences is important to add to the growing pool of research regarding similar programs in resource-poor settings, specifically sub-Saharan Africa. There are many community health workers and lower cadres of health currently working in the region, but many of them work outside of formal systems. A review of articles and case studies, followed by an on-ground research project would provide much needed information on whom these health workers are, what their training is and what they are responsible for. Timely dissemination of information regarding task shifting across sub-Saharan Africa is extremely important as communities are looking for new strategies to deal with the lack of health workers.

This issue of addressing health care worker shortages and resulting gaps of care is extremely important, but has been left off of the agenda in the past years. Only once the HIV/AIDS pandemic hit and the appropriate care could not be delivered, did people take notice. For instance, the Millennium Development Goals (MDGs) address HIV/AIDS and international partnerships, but say nothing about the health care worker crisis (United Nations, 2008) (ANNEX B). Every one of the MDGs depends on increased capacity in human resources for health. The shortage of health workers should not have come as a surprise in light of a disease that has affected every aspect of life in sub-Saharan Africa. The slow response of individual countries as well as the international donor community has resulted in major gaps that will take time to fill. It is not possible to rapidly expand the formal health care system with physicians and nurses. In order to respond to the current health care worker crisis, all levels of skilled and non-skilled health workers must work side-by-side to provide the best possible level of care to those in need.

The task shifting models being introduced should not be quick fixes or Band-aid solutions. They have the potential to be part of a sustainable, long-term solution to the human resources for health crisis. With the necessary support, sub- Saharan African nations are in the position to be world leaders in pioneering alternative health delivery.

SUMMARY AND RECOMMENDATIONS

The current model of mobilising Expert Patients used by Dignitas

International to perform basic tasks and straightforward administrative jobs is a

potential solution for easing the pressure on nurses at Tisungane clinic. The

dedication and personal experiences of the Expert Patients are invaluable when

discussing the potentially confusing issues of antiretroviral therapy and

adherence.

Adding to the value of Expert Patients is that they require less training than other cadres of health. They are responsible for specific, uncomplicated tasks and by definition they understand and have been successful in following their treatment. They fill an important gap by acting as role models and peer educators for patients who need extra attention not available from nurses and clinicians. There is, however, a need for close supervision of the program to ensure that the Expert Patients are supplying quality care to the patients. The lack of training, while a bonus because of time constraints, is also a hindrance because it means that the Expert Patients lack extensive education. In order to ensure that the Expert Patients disseminate proper information, training should be continuous and supervisors should be attentive.

The task shifting of Expert Patients has had some successes, but in order for other similar programs to be developed suitably, there have to be some changes. Task shifting has the potential to provide necessary care to currently

neglected areas of health care, but the programs must be carried out in a systematic and thoughtful manner. Based on my exploration of the topic, my recommendations are as follow:

- Task shifting to less-skilled health workers. Done correctly, task shifting has the potential to alleviate much of the pressure on skilled health care workers in sub-Saharan Africa.
- 2. A greater integration of the WHO's Guidelines and Recommendations on Task Shifting into health programming. The 22 recommendations are comprehensive and practice oriented. Where appropriate, health delivery models should be altered to facilitate space for the guidelines and recommendation to be incorporated into.
- 3. Salaried positions for Expert Patients. In order for a program such as the Expert Patient program to be sustainable, some form of remuneration must exist. It cannot be expected that people will work on a volunteer basis for an extended period of time. There must be some financial backing to ensure people are not taken advantage of. Without pay, programs such as the Expert Patient program will disappear.
- 4. Greater involvement of people living with HIV/AIDS in the health care sector. It is the purpose of development organizations to build the capacity of communities so that they can thrive and have ownership over their work. The involvement of people living with HIV has been limited in the struggle to increase access to HAART. There are opportunities for PLWHA to be a part of the delivery of care and to use

their personal experiences to help others. Not accessing the knowledge and wisdom of people who are really at the front lines of the pandemic is a mistake. There is much talk about involving PLWHA, but rarely is it acted upon. Empowerment and leadership can only happen once people are given responsibility and power over their lives.

- 5. Official recognition of the Expert Patient cadre. Certification would provide Expert Patients a place in the formal health care system. This recognition would lend to the sustainability of the cadre of health as well as create jobs in a region of the world where unemployment is widespread. Giving legitimacy to this cadre of health would work towards gaining funding from donors and the Ministry of Health as well.
- 6. Extended training for Expert Patients. More training is needed. The current training period of three days is not long enough for Expert Patients to learn all that they need to know in order to teach others about adherence to ARVs and other issues. An initial training of three days is a good start, but they should also be expected to take part in monthly workshops concentrating on certain themes. This will help to build their individual and group capacity.
- 7. Development of an Expert Patient framework and guidelines. The
 Expert Patient program has the potential to work as a model for other
 communities and therefore must have a detailed framework. There
 must be documented goals and expectations, as the quality of the

- program will depend on the goals being reached in a timely and professional manner.
- 8. Further research into task shifting models being used in resource poor settings. There is a void in the information available regarding task shifting programs. Further research and case studies are needed to increase the knowledge base on the subject. Best Practices can then be constructed for future reference.
- 9. Regional conferences to present projects and models to address the human resource crisis in the health sector and to disseminate best practices and lessons learned. The task shifting conference in Addis Ababa in 2008 was the first of its kind and appropriately it was held on the African continent, but there is a need for smaller, more focused conferences to be held in smaller regions throughout Africa. This will allow health delivery practitioners to learn more in greater detail which programs are working successfully in areas with similar geography, culture and rates of HIV infection.

APPENDICES

Appendix A

WHO Global Recommendations and Guidelines on Task Shifting

Recommendation 1:

Countries, in collaboration with relevant stakeholders, should consider implementing and/or extending and strengthening a task shifting approach where access to HIV services, and to other health services, is constrained by health workforce shortages. Task shifting should be implemented alongside other efforts to increase the number of skilled health workers.

Recommendations 2:

In all aspects concerning the adoption of task shifting, relevant parties should endeavour to identify the appropriate stakeholders, including people living with HIV/AIDS, who will need to be involved and/or consulted from the beginning.

Recommendation 3:

Countries deciding to adopt the task shifting approach should define a nationally endorsed framework that can ensure harmonization and provide stability for the HIV services that are provided throughout the public and non-state sectors. Countries should also explore a framework for the exploration of task shifting to meet other critical public health needs.

Recommendation 4:

Countries should undertake or update a human resource analysis that will provide information on the demography of current human resources for health in both the public and non-state sectors; the need for HIV services; the gaps in service provision; the extent to which task shifting is already taking place; and the existing human resource quality assurance mechanisms.

Recommendation 5:

Countries should assess and then consider using existing regulatory approaches (laws and proclamations, rules and regulations, policies and guidelines) where possible, or undertake revisions as necessary, to enable cadres of health workers to practise according to an extended scope of practice an to allow the creation of new cadres within the health workforce.

Recommendation 6:

Countries should consider adopting a fast-track strategy to produce essential revisions to their regulatory approaches (laws and proclamations, rules and regulations, policies and guidelines) where necessary. Countries could also simultaneously pursue long-term reform that can support task shifting on a sustainable basis within a comprehensive and nationally endorsed regulatory framework.

Recommendation 7:

Countries should either adapt existing or create new human resource quality assurance mechanisms to support the task shifting approach. These should include processes and activities that define, monitor and improve the quality of services provided by all cadres of health workers.

Recommendation 8:

Countries should define the roles and the associated competency levels required both for existing cadres that are extending their scope of practice, and for those cadres that are being newly created under the task shifting approach. These standards should be the basis for establishing recruitment, training and evaluation criteria.

Recommendation 9:

Countries should adopt a systematic approach to harmonized, standardized and competency-based training that is needs-driven and accredited so that all health workers are equipped with the appropriate competencies to undertake the tasks they are to perform.

Recommendation 10:

Training programmes and continuing educational support for health workers should be tied to certification, registration and career progression mechanisms that are standardized and nationally endorsed.

Recommendation 11: Supportive supervision and clinical mentoring should be regularly provided to all health workers within the structure and functions of health teams. Individuals who are tasked with providing supportive supervision or clinical mentoring to health workers to whom tasks are being shifted should themselves be competent and have appropriate skills.

Recommendation 12:

Countries should ensure that the performance of all cadres of health workers can be assessed against clearly defined roles, competency levels and standards.

Recommendation 13: Countries should consider measure such as financial/or non-financial incentives, performance-based incentives or other methods as means by which to retain and enhance the performance of health workers with new or increased responsibilities, commensurate with available resources in a sustainable manner.

Recommendation 14:

Countries should recognize that essential health services cannot be provided by people working on a voluntary basis of they are to be sustainable. While volunteers can make a valuable contribution on a short term or part time basis, trained health workers who are providing essential health services, including community health workers, should receive adequate wages and/or other appropriate and commensurate incentives.

Recommendation 15:

Countries and donors should ensure that task shifting plans are appropriately costed and adequately financed so that the services are sustainable.

Recommendation 16:

Countries should consider the different types of task shifting practice and elect to adopt, adapt, or to extend, those models that are best suited to the specific country situation (taking into account health workforce demography, disease burden, and analysis of existing gaps in service delivery).

Recommendation 17:

Countries should ensure that efficient referral systems are in place to support the decentralization of service delivery in the context of a task shifting approach. Health workers should be knowledgeable about available referral systems and trained to use them.

Recommendation 18:

Non-physician clinicians can safely and effectively undertake a majority of clinical tasks in the context of service delivery according to a task shifting approach.

Recommendation 19:

Nurses and midwives can safely and effectively undertake a majority of clinical tasks in the context of service delivery according to the task shifting approach.

Recommendation 20:

Community health workers, including people living with HIV/AIDS, can safely and effectively provide specific HIV services, both in a health facility and in the community in the context of service delivery according to the task shifting approach.

Recommendation 21:

People living with HIV/AIDS who are not trained health workers can be empowered to take responsibility for certain aspects of their own care. People living with HIV/AIDS can also provide specific services that make a distinct contribution to the care and support of others, particularly in relation to self-care and to overcoming stigma and discrimination.

Recommendation 22:

Cadres, such as pharmacists, pharmacy technicians or technologists, laboratory technicians, records managers and administrators, could be included in a task shifting approach that involves the full spectrum of health services.

APPENDIX B

United Nations Millennium Development Goals

Goal 1: Eradicate extreme poverty and hunger

Goal 2: Achieve universal primary education

Goal 3: Promote gender equality and empower women

Goal 4: Reduce child mortality

Goal 5: Improve maternal health

Goal 6: Combat HIV/AIDS, malaria and other diseases

Goal 7: Ensure environmental sustainability

Goal 8: Develop a global partnership for development

REFERENCE LIST

- Barnighausen T, Bloom DE, Humair S (2007). Human resources for treating HIV/AIDS: Needs, capacities and gaps. AIDS Patient Care and STDs, 21 (11): 799-812.
- CIA (2008) The Central Intelligence Agency. The World Fact Book: Malawi. Retrieved on March 17, 2008 from https://www.cia.gov/library/publications/the-world-factbook/geos/mi.html.
- Crisp N, Gawanas B, Sharp I, (2008). Task Force for Scaling Up Education and Training for Health Workers. Training the health workforce: scaling up, saving lives. The Lancet, 371: 689-691.
- Dreesch N, Nyoni J, Mokopakgosi O, Seipone K, Alfazema Kalilani J, Kaluwa O, & Musowe V. (2007). Public-private options for expanding access to human resources for HIV/AIDS in Botswana. Human Resource for Health, 5(25).
- Harries AD, Zachariah R, Bergstrom K, Blanc L, Salaniponi FM, Elzinga G. (2005). Human resources for control of tuberculosis and HIV-associated tuberculosis. International Journal of Tuberculosis and Lung Disease, 9 (2): 128-137.
- Hogg RS, Yip B, Kully C, Craib KJP, O'Shaunessy MV, Schechter MT, Montaner JSG (1999). Improved survival among HIV-infected patients after initiation of tripledrug antiretroviral regimes. Canadian Medical Association Journal, 160 (5).
- Kober K, Van Damme W. (2006). Expert patients and AIDS care. Department of Public Health, Institute of Tropical Medicine, Antwerp. Retrieved on February 20, 2008 from http://www.hrhresourcecenter.org/node/389
- Lancet (2008). Task shifting may prove key to tackling infectious diseases. Leading Edge. The Lancet Infectious Diseases, 8:81.
- Malawi MoH (2006). Malawi Ministry of Health. Treatment of AIDS: Guidelines for the use of antitretroviral therapy in Malawi, 2nd ed. Retrieved on January 20, 2008 from www.aidsmalawi.org.mw/
- MANET+ (2008). Malawi network of people living with HIV/AIDS. Accessed on March 10, 2008 from http://www.manetplus.com/Activities/Activities.htm
- Mills EJ et al (2008). Should active recruitment of health workers from sub-Saharan Africa be viewed as a crime? The Lancet, 371:685-688.
- Mullen F, Frehywot S. (2007). Non-physician clinicians in 47 sub-Saharan African countries. The Lancet, 370: 2158 2163.
- Muula AS, Chipeta J, Siziya S, Rudatsikira A, Mataya RH, Kataika E. (2007). Human

- resources requirements for highly active antiretroviral therapy scale-up in Malawi. BMC Health Services Research, 7: 208.
- MSF (2007). Medicins Sans Frontieres. Help Wanted, Confronting the health worker crisis to expand access to HIV/AIDS treatment: MSF experience in southern Africa. Retrieved on Feb 5, 2008 from www.doctorswithoutborders.org/publications/reports/2007/healthcare_worker_report_05-2007.pdf.
- MSF (2007b) Medecins Sans Frontieres, Malawi: Despite new types of health workers, demand still outstrips supply. Retrieved on March 5, 2008 from http://www.msf.org/msfinternational/invoke.cfm?objectid=BCF8F4FF-15C5-F00A-2591E98AB6D51845&component=toolkit.article&method=full html
- Palmer D. (2006). Tackling Malawi's human resources crisis. Reproductive Health Matters, 14 (27) 27-39.
- Samb B (2008). World Health Organization. Task Shifting: rational redistribution of tasks among health workforce teams. Office of the Assistant Director-General, Health Systems and Services. Retrieved on March 11 2008 from http://www.hrhresourcecenter.org/taxonomy/term/67
- Samb B, Celletti F, Holloway J, Van Damme W, De Cock KM, Dybul M. (2007). Rapid expansion of the health workforce in response to the HIV epidemic. The New England Journal of Medicine, 357; 24, 2510 2514.
- Schneider H, Blaauw D, Gilson L, Chabikuli N, Goudge J. (2006). Health systems and access to antiretroviral drugs for HIV in southern Africa: service delivery and human resources challenges. Reproductive Health Matters, 14 (27): 12-23.
- Schouten E, (2006) The Malawian government's Emergency Human Resources Plan.
 The Ministry of Health, Malawi. Accessed on March 26, 2008 from
 www.aids2006.org/Web/WEBS0203.ppt
- SEID (2004). The Scottish Executive International Development: Report of health sector visit to Malawi 18th-22nd April 2005. Retrieved on April 7, 2008 from http://www.scotland.gov.uk/Publications/2005/06/15105055/50577
- Tawfik L, and Kinoti SN (2006). The impact of HIV/AIDS on the health workforce in developing countries: A background paper prepared for the world health report 2006 working together. World Health Organization.
- UNAIDS /PEPFAR (2007) Joint United Nations Programme on HIV/AIDS with the U.S. President's emergency plan for AIDS relief. Task Shifting: Global Recommendations and Guidelines. Retrieved February 10, 2008 from http://www.who.int/healthsystems/task shifting/en/
- UNAIDS (2008). Joint United Nations Programme on HIV/AIDS. Country Responses: Malawi. Accessed February 29, 2008 from http://www.unaids.org/en/CountryResponses/Countries/malawi.asp
- UNAIDS/WHO (2007). Joint United Nations Programme on HIV/AIDS. AIDS epidemic

- update:December 2007. Retrieved February 22, 2008 from http://data.unaids.org/pub/EPISlides/2007/2007 epiupdate en.pdf
- UNDP (2007). United Nations Development Programme. 2007/2008 Human Development Reports: Gini Index. Accessed March 14, 2008 from http://hdrstats.undp.org/indicators/147.html
- United Nations (2008). UN Millennium Development Goals. Accessed February 15, 2008 from http://www.un.org/millenniumgoals/index.html
- WHO (2006). World Health Organization. Fact sheet N. 302. The global shortage of health workers and its impact. Retrieved on March 2, 2008 from http://www.who.int/mediacentre/factsheets/fs302/en/print.html.
- WHO (2007). World Health Organization. Task Shifting to Tackle the Health Worker Shortage. Retrieved February 21, 2008 from http://www.who.int/healthsystems/task_shifting_booklet.pdf
- WHO/UNAIDS/UNICEF (2007). Joint United Nations Programme on HIV/AIDS with UNICEF. Towards Universal Access: Scaling up priority HIV/AIDS interventions in the health sector (Progress Report, April 2007). Retrieved February 15, 2008 from http://www.who.int/hiv/mediacentre/univeral access_progress_report_en.pdf
- WHO (2008). World Health Organization. Media Centre: First global conference on task shifting. Retrieved on March 5, 2008 from ttp://www.who.int/mediacentre/events/meetings/task_shifting/en/index.html