

Tackling Shortages of Health Care Workers in Rural Nepal: “*Train to Retain*”



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I. Introduction

One of the most enduring characteristics of the rural health landscape is the uneven distribution and relative shortage of health care professionals (Hart, 2002). The shortages of health care workers in rural areas is a global burden and has been a growing concern for public health experts around the world. This is even more worrisome when viewed against the background that majority of the world's population live in rural areas. The WHO estimates that 51.7 percent of the world population lives in areas considered rural or non-metropolitan by various definitions (UN, 2004). The shortages of health care workers in rural areas is a universal problem and affects both developing countries and developed countries equally although its impact on the developing and poorer countries are more devastating. Majority of dwellers in the rural areas tends to be the elderly and children, poor and unemployed and the ones more needy of the services of health care workers. However, problems unique to rural areas, like poor infrastructural development, absent or rudimentary healthcare delivery systems, difficult terrains and low population densities, combine to make rural areas unattractive to healthcare workers resulting in an overwhelming disparity in doctor/patient ratio in urban areas compared to rural areas.

As mentioned above, these peculiarities make the retention of health care workers in those areas difficult. Added to this is the interplay of factors like health workers migration, professional/specialty inequities, institutional inequities, humanitarian crisis like war and civil repression and outbreak of epidemics like HIV/AIDS. By far the most significant of all these, especially in the last two decades, is the migration of health workers. This has continued to receive the attention of health care planners around the world and was described by the South African NGO Equinet, as the flow of health personnel that "follow[s] a hierarchy of 'wealth' resulting in a global conveyor belt of health personnel moving from the bottom to the top, and resulting in a vicious cycle of increasing inequity."(EQUINET, 2003) This "conveyor belt" takes health professionals in rural areas to urban areas; from primary health facilities to secondary and tertiary facilities; from public practice to private practice; from public sector to vertical programs; from poorer developing countries to wealthier developing countries and; from developing countries to developed countries. Figure (1) is a schematic representation of the different factors that affect migration and movement of health workers within a country.

Factors affecting Migration

The factors contributing to migration and movement of health workers both within and outside a country have been broadly classified into four main groups (OECD, 2003): 1) Push Factors, 2) Pull Factors, 3) Stick Factors and 4) Stay Factors. Figure (2) is a schematic of dynamics of the factors affecting migration.

Push factors towards the cities have to do with the environment and conditions in the rural areas that contribute to the health workers' decision to leave. This could be endogenous (within the health system) factors, like poor remuneration and salaries, lack of job satisfaction, work-associated risks, lack of further education and career development. This could also be exogenous (outside the health system) factors, like poor quality of life and high crime rate,

outbreak of war, conflict and political repression and lack of educational opportunities for children.

Pull factors towards the cities, are usually associated with recipient community or country as the case may be as a result of endogenous factors such as higher rates of remuneration, more satisfying work conditions, safer work environment and better educational and career advancement. Active and aggressive recruitment have been a steadily growing influence on migration of health workers (Hagopian, 2003). Most exogenous pull factors are the opposite of the exogenous push factors described above. Urban centers that are able to offer a higher quality of life, freedom from political persecution, access to amenities and good educational opportunities for children will naturally be attractive to health personnel from many rural communities.

Stay factors in the cities, are those factors that prevent health workers from returning to the rural areas once they have moved to urban centers. There is usually a reluctance to disrupt their new lifestyle or risk the disruption of their children's education or break newly formed cultural and social bonds.

In order for the push and pull factors to lead to movement of health workers, they have to overcome various stick factors. These include levels of morale among health workers, rewards and incentives, training/continuing education, social values and cultural ties. In order to counter the effect of the pull and push factors and achieve our aim of reducing shortages of health workers as well as reduce attrition rates in Nepal, we plan to focus our attention on increasing the impact of these stick factors especially by training and providing continuing education to health workers.

II. Shortages of health care workers in rural areas in the context of Nepal

Introduction to Nepal

Nepal is a small, highly mountainous, landlocked country in South Asia, sandwiched between China and India. The total population is approximately 27 million people, more than 80% of whom live in very rural, inaccessible areas. It is among the poorest and least developed countries in the world, with 40% of the population living below the poverty line and 80% surviving on subsistence agriculture.

Health situation in Nepal

The dismal health status of the Nepalese can be seen from basic health indicators. Male life expectancy is longer (60.09 years) compared to females (59.5 years)—a telling sign of the low status of women. Nepal's newborn mortality is the *third highest* in the world. Of every 1000 newborns, 39 die within the first month of life (NPC, 2005). The maternal mortality ratio (MMR) in Nepal is a grim figure (415 per 100,000), higher than the average for South Asia. The high MMR can be attributed to the low percentage of deliveries that occur in a health facility (10%) or that are attended by a health professional (only 13%) (DHS, 2001).

Rural-urban disparities

Considerable disparities in the availability and access to quality health care exist in rural versus urban areas. For example, 81% of urban women but only 49% of their rural counterparts receive antenatal care (DHS, 2001). 51% of urban women but only 10% of rural women receive assistance from a trained health care professional during delivery (DHS, 2001). In addition, infants in rural areas are exposed to a risk of death 1.4 times those in urban areas. The mid and Far-Western regions, the birthplace of the Maoist insurgency, have much higher infant mortality

rates (103 and 84 per 100,000 live births) than the Eastern region (61 per 100,000) (NPC, 2005). More than 20 districts do not have road access. The Far Western Development Region has 1.68 million people, one-third of whom live in four districts which do not yet have an earthen road connection to district headquarters and thus to district hospitals.

Organization of the public health care system and health care workers

The National Health System is organized into four levels: central, regional, district and community/primary health care. Please refer to Fig. 4. At the central level is the Ministry of Health and at the District level, there are 59 District Hospitals, 61 District Health Offices headed by medical doctors and 14 District Public Health Offices headed by public health officers (whosea.org). The 1991 Health Policy established one sub-health post in each Village Development Committee (VDC) and one primary health care centre in each electoral constituency (NDF, 2004). Each VDC includes nine wards; there are 35,217 wards nationwide and a population ranging from 450 to 28,000 (Feilden, 2000). Thus at the community level, there are 190 Primary Health Care Centers/Health Centers, 705 Health Posts and 3132 Sub-Health Posts along with primary health care outreach services (NDF 2004).

Each health post has a sanctioned staff of five while primary health centers have a larger complement of staff. Each sub-health post is staffed by a female maternal and child health (MCH) worker, an auxiliary field worker and a village health worker (VHW) (Acharya et al.)” Outreach services are delivered by VHWs and female community health volunteers (FCHV), described as “the most significant component of health infrastructure operating at the community level across Nepal” (Feilden, 2000). The model is to have one FCHV per ward. The FCHV are mainly involved in motivational aspects of health provision, delivery of first aid services, and resupply of contraceptive pills and condoms within their ward of residence.

Lack of trained health care workers in rural areas

One of the major problems in rural areas has been the lack of trained health care workers. Although the retention of health care workers in remote locations is a problem throughout the world, Nepal’s extreme geography and sparse physical infrastructure, coupled with the ongoing Maoist insurgency, exacerbate the difficulties (NSI, 2004). The Executive Summary of the Ministry of Health’s *Strategic Plan for Human Resources for Health (2003-17)* stated, “The Ministry provides a wide coverage in its primary and secondary health care services. However, there is a general problem of under-staffing in all those institutions, particularly in rural areas.”

The shortage of health care workers in Nepal is reflected in the population per doctor at 18,439 and per nurse at 4,987. The number of public sector hospital beds for a population of 24 million is very low at 1 bed to 5,435 population; the situation is made more difficult by the reported under-staffing and hence under-utilization of district beds (MOH, 2003). Furthermore, the rural to urban disparity is reflected in the physician to population ratio of 1:850 in Kathmandu and 1:30,000 outside of the capital (NSI, 2004). The overall distribution of staff in terms of the mix of skills shows a deficiency in the middle technical grades, particularly managerial staff. Staff vacancies and absenteeism are common with only 85% of sanctioned posts filled and only 70% manned (MOH, 2003).

Causes of shortages of health care workers

Some of the push factors leading to poor retention of health care workers in rural areas include poor infrastructure, lack of opportunities (e.g. further training, career mobility, good schools for children, and jobs for spouses) for themselves, their children and family, low salary and lack of support, lower social recognition compared to urban areas, and lack of security. Frequent

changes in government and thus, leadership also lead to a cascade of staff changes down to the level of division chiefs and lower (Agarwal, 1997). This can lead to instability in management and unfilled posts for months. Health care workers are especially dissatisfied and demoralized with the irregular nature of transfers that do not appear to follow any specified human resource policies (Feilden 2000). The poor security situation in rural areas given the ongoing Maoist insurgency has also resulted in widespread absenteeism as poignantly reflected in the following human resource assessment of Rolpa district:

There is only one doctor in the district, who arrived in early 2005 after a gap of 1½ years. Staff retention in rural areas is a chronic problem as staff remain on the payroll but do not attend for work claiming sickness or training commitments as they are reported to be scared to go into more remote and rural areas dominated by the Maoists (reliefweb.int).

Lack of manpower leads to poor utilization of services

A report on health service utilization in rural Nepal has found that poor utilization of services was attributable in part to the attitude of health workers and the lack of outreach and home visits by village health workers (Karki et al., 1994). Furthermore, a study of the western and middle-western Hill region of Nepal showed that in the quality of health posts, as defined in structural terms: physical infrastructure, *number of staff*, availability of drugs and holding of special maternal and child health clinics, is more important than further increases in their number and that a further expansion of outreach services is a priority.

Responses to the Problem

A Strategic Plan for Human Resources for Health has been prepared by the Ministry of Health (MoH) which introduces new policies and operational mechanisms to improve the ability of the Ministry to manage the deployment, utilization, development and careers of its staff (MOH, 2003). The MoH has recently started to think about raising the skill level of its human resources and to increase efficiency. One of the steps forward in this direction have been the recent upgrading of maternal child health workers (MCHWs) by providing auxiliary-nurse mid-wife (ANM) scholarship in 500 VDCs. The plan is to place ANMs in all VDCs, which will lead to a decrease in support staff from 70% to 45% and an increase in the mid-level from 18% to 38% (MOH, 2004). The total of new recruits, throughout the health sector at all levels, required to meet expansion requirements and replace leavers is projected to be 42,283 (MOH, 2003). Please refer to Fig. 3.

Significant outside investment is necessary to undertake the range and scale of development initiatives necessary to achieve significant changes in human resource development (MOH, 2003). External development partners like DFID, UNICEF and the World Bank have invested significant in the training of Nepal's health workforce in the past. Recently, HMGN signed a 5-year contract with DFID and the World Bank for substantial funding support of health services in Nepal, part of which will be expended on human resource development (NSI, 2004).

The MoH has designated that the private /NGO sector will be involved in training and capacity building (HSS, 2004). The recently formed Nick Simons Institute of Rural Health Care Training will thus "fill a role in Nepal that is both timely and unique (NSI, 2004)." The Institute plans to facilitate and coordinate training, support the staffing and infrastructure of a network of hospitals and provide scholarships and for future health care leaders (NSI, 2004).

III. Interventions

We are a non-profit, public health consulting company, working closely with the Ministry of Health and the Nick Simons Institute to carry out a program to tackle health care shortages in rural Nepal. There are four major areas in which interventions aimed at increasing and maintaining health care workers in rural areas can take place. These areas must all be dealt with in order to increase the chance of success of any one intervention. These four areas include the improvement of rural infrastructure and health facilities, improvement of financial incentives for health care workers in rural areas, better education and training of health care workers and greater social support for health workers in rural areas (Wibulpolprasert, 2003). Tackling rural health care worker shortage requires interventions in all of these areas but in this report we will focus on the need for education, training and social support. These interventions will be more successful if the government intervenes to improve the first two areas. We focus here on education, training and the building of social support because we believe this is a cost effective way to improve health conditions in the foreseeable future.

Intervention #1: Increasing the number of rural family practitioners

We want to increase the number of rural family practitioners. Increasing the total number of doctors is not our primary goal. According to the Ministry of Health, the number of doctors in Nepal is sufficient and is expected to rise (MOH, 2003). The main problem is that most of these doctors are based in urban areas and not serving the rural communities that need them most. Furthermore, oversupply of doctors did not result in equal distribution between urban and rural areas in other countries such as Mexico (Frenk, 1991). Thus, we are focusing on the family practice residency as a means increasing the numbers of rural doctors as outlined below.

Intensive Awareness Campaign

The rural family practice residency was established in 1982 in order to “enable doctors to provide comprehensive and effective management of common health programs encountered in rural areas (Hayes, 2003).” However, the residency has not been very popular among medical students and has only produced 46 graduates since its initiation (Hayes, 2003). Thus, the first step is to increase awareness about the importance of the family practice residency and rural healthcare among Nepalese medical students. Staff from the NSI will conduct talks in all medical schools highlighting the important features of the family practice residency. The visits to the medical schools will be a great opportunity for NSI members to meet with students who are actually from rural areas and conduct personal interviews. Studies from around the world, including Nepal, have shown that physicians who grew up in rural areas are more likely to return and practice in their hometowns (Hayes, 2003; Rabinovitz, 1999; Fryer, 1997; Wibulpolprasert, 2003). At the same time, a survey of these rural students will be conducted to find out what sorts of incentives might make them return to their rural districts after graduation and practice medicine there. Before the start of the recruitment we will work on accommodating the suggestions made by these students.

Recruitment

Rural origin as prerequisite: In order to recruit the most suitable candidates for the rural family practice program we need to establish specific selection criteria. Currently, admission into the residency program is contingent upon passing a general exam after graduating from medical school (Hayes, 2003). No specific selection factors exist beyond this exam. Since it has been shown that rural origin is one of the most important factors in determining the retention of physicians in rural areas, our main selection criteria will be rural origin (Hayes, 2003; Rabinovitz, 1999; Fryer, 1997). Preference will also be given to physicians who have already worked in rural areas as mid-level workers (e.g. health assistant) and to physicians whose families are residing in rural areas.

Bonds: Medical students who are admitted to the family practice residency through the Nick Simons Institute will have to sign bonds agreeing to work in rural areas for at least 3 years after graduation. They will not receive their MD degree before the mandatory rural service period is finished. This bonding procedure was effectively applied in Thailand (Wilbulpolprasert, 2003).

Benefits: Other than the financial incentives and the infrastructure improvements that were mentioned earlier, we will offer an array of non-monetary benefits. The primary care physicians will be guaranteed placement in the districts of their origin upon completion of the program and will not be haphazardly transferred. It has been shown that the benefits of having a doctor in rural areas increases the longer the doctor stays in the same area (JLI, 2004). Career mobility options like promotions to the level of District Health Officers or teaching positions will also be offered.

Long-term approach: In the long term, the focus will be also on providing medical school scholarships to rural high school students, provided that they will study towards a family practice residency and return to their districts of origin. In some cases it might be helpful to relax entry requirements (JLI, 2004). This can be done in conjunction with the introduction of catch up courses to fill in gaps left by poor secondary education. This approach made it possible to increase medical school intake from 20 to 60 per year in Malawi (JLI, 2004). Furthermore, it would be best if medical schools graduates (MBBS graduates) were equipped with the skills to face rural health problems without having to undergo a 3 year family practice residency (MD program). The development of such a curriculum should be an area of future research. Thailand provides an effective model of this nature with their six-year rural medical school curriculum (Wilbulpolprasert, 2003).

Training

Expanding the curriculum: The current curriculum of the family practice residency consists of 3 years of training in a wide variety of medical and surgical disciplines. Most of the rural, Nepali physicians felt that it was adequate to prepare them for the medical problems they faced (Hayes, 2003). We suggest the incorporation of 3 months of Public Health and management courses per year for the first 2 years of training and expansion of the district hospital rotation from 3 to 6 months.

Thesis requirement: During the district hospital rotation in their 3rd year, the resident will be placed in the district hospital where they plan to work after graduation. During the rotation, the resident will conduct a health-related study of the district population and will be required to submit a thesis for graduation. With this approach, we will amass detailed information on the major health problems of each district. At the same time, the young physician will become familiar with the health needs of the population he will soon be serving.

Train to train: Residents will also be taught to and required to train low and mid-level health workers and volunteers in their districts. Our goal is to gradually decentralize training of health workers to the rural districts themselves.

Expansion in rural locations: Currently the family practice residency training centers in Nepal include four hospitals in Kathmandu and four others in different rural districts. The residency training should initially expand to the five hospitals in the NSI network and then to other districts as more family practitioners are trained.

Conference: NSI will organize a Rural Medicine Conference every year where each resident will have to present their thesis. This will not only improve scientific knowledge but will also develop a social network among the residents.

Currently, there are only twelve spots for the family practice residency. With the gradual development of the rural family practice program and the expansion of the training sites, this number will increase. We have a huge gap to meet in the number of physicians who practice in remote areas but this will happen gradually. In a similar situation in Thailand, the number of rural doctors quadrupled within 10 years (Wilbulpolprasert, 2003).

Postgraduate Education and Social Support

Continuing medical education will be offered to family practitioners even after graduation from the residency program as such education was mentioned as a factor that would encourage Nepalese doctors to stay in rural family practice (Hayes, 2003). NSI will also offer scholarships to interested Nepalese rural doctors to visit another country's rural system for a short period of time. Furthermore, rural doctors from abroad will be given the opportunity to work in district hospitals through an exchange program with the local physicians. NSI will provide continuous support to rural physicians that it trains, helping them to function in the most effective way in order to improve the health of people in rural areas.

A Rural Medical Society will be established as a means to provide social support for rural doctors. In Thailand, the Rural Doctor Society became widely accepted in the health arena by the medical profession and by the public (Wilbulpolprasert, 2003). Since social appreciation and job satisfaction are two very important factors in retaining physicians in rural areas, an annual "Hardship Award" could be instituted which would recognize hardworking physicians in remote areas of the country (Wilbulpolprasert, 2003).

Intervention #2: Recruitment and training of low and mid-level health workers

Awareness campaign

Awareness campaigns to promote health worker appreciation, promote the health worker careers and increase health post usage by informing villagers of the services provided there, will take place along with the campaigns described above for physicians.

Active recruitment phase

Recruitment for the training of health workers, nurses and physicians from rural areas has been observed to be a principal factor in the practice and retention of these workers in rural areas. (Fryer et al., 1997) At the same time, active community participation is essential for the creation of social networks, support, motivation, appreciation and retention of health workers in rural areas. Nigeria provides a very interesting example of community participation for the strengthening of primary health care in rural areas. They have established a system of village and district health committees that provide an area for discussion and working group for

communities to decide and participate on health activities, supervision of health workers, improvement of health-post infrastructure and decision making on expenditure of drug revenue. The work of these committees has been seen to increase provision of drugs, renovation of health post, provision of equipment and health education. One major problem identified though, was the difficulty in communication with the community health worker as they tended to not be from the area. (Uzochukwu et al 2004)

One way to overcome this is to use these rural committees, in the case of Nepal, the VDCs, to nominate a candidate for a scholarship for training at NSI. This person can already be a health worker or midwife or someone who has shown health leadership potential. This system of recruitment will be important for several reasons. One reason is that the person chosen is regarded highly by the community and will be trusted on his/her return. The second reason is that there will be high community expectations for this person to return in order to provide for his/her community. The third reason is that with the organization of these committees there is a job in the community for this trained person to go back to once training has finished. The fourth reason is that the person being chosen will already know of issues being faced by his/her community and therefore can focus their training to be more adaptable to their community's particular needs. The fifth possible reason is that if these committees work as they did in Nigeria, there can be improvement of the health post infrastructure provided by the community that can add an incentive for the health worker to remain in his/her village or town.

Once nominations have been made, a short interview/test will be administered in order to ensure interest and preparedness for the training. This can include a simple literacy and arithmetic check. Those that are determined to be eligible will have to sign a contract with their village committee for three years of work in that community.

Actual training

Training will first take place in the capital city of Katmandu where the NSI is headquartered but will eventually take place in the associated district hospitals in order to reduce need of transportation and increase access to these services. The NSI currently has enough space to train 50 students at a time. This space will be divided among the training of village health workers, village health volunteers, midwives/birth attendants, nurses and physicians. With time and spread of services to other districts this number of students served can increase. The existing model of training of village health workers and community health volunteers will be used with training in complimentary skills that will improve their ability to reach more people, their ability to manage the services they provide and their ability to train others in their community.

Community health volunteers can be trained at NSI but will also be trained by health workers in the future. They will continue to be trained in health education and motivation, first aid services, and resupply of contraceptive pills and condoms. (Acharya, 2000) They will also be trained in the supply of vitamins such as vitamin A that has proven to significantly decrease infant mortality in Nepal. (Thapa, 2005) They will be trained to be able to supply family planning encouragement and information, and will work to provide referrals to encourage the use of the health services. Their training will last 3 weeks.

Midwives and birth attendants will be recruited with existing training and will be provided with skills to improve their provision of antenatal and postnatal care as well as skills to improve the chances of survival of the mother and child during childbirth. (NSI, 2004) They will be trained in the provision of vitamins for deficient mothers as well as for the provision of tetanus toxoid injections. They will be trained in aseptic techniques during delivery which has

been proven to have extensive positive consequences in maternal and child mortality. (Cronin, 1993). This training will last 4 weeks.

Village health workers will continue to be trained in the provision of basic treatment and medicines, recordkeeping, vaccinations, referrals and health education. (Acharya et al, 2000) To their curriculum we will include managerial training and training for the training of volunteers. Special emphasis will be placed on their provision of malaria and TB basic treatment, diarrheal diseases and respiratory infections treatment, complicated child deliveries and referral. This training will take 3 months.

Follow-up training of students or of those already trained will also be offered by NSI. Specific skill areas can be developed in family planning, antenatal and postnatal care, management, immunizations, health education, and aseptic techniques. These will be the same courses offered to degree candidates but specialization and refresher certificates will be available to those who are already trained. This follow up training will not only allow students to stay up to date on techniques for provision of health care but can also allow for career mobility as advanced courses can lead to advanced degrees. Career mobility has been shown to be very important to health worker retention in rural areas. (Wibulprasert, 2003)

Throughout the course, social events and group work will be encouraged for students to meet each other and create social and professional networks.

Monitoring and Evaluation

The key to an efficient and successful intervention is adequate monitoring and evaluation of the program. Realistic interventions require plasticity; they need to evolve in the face of experienced successes and failures and with changing situational challenges. Intervention approaches will adapt with experience based on defined outcome measures. These outcomes are not unique to our program; most correspond to Nepal's MDGs and therefore are integral to the development of Nepal.

Projected Outcomes

- 1.) Double overall number of trained healthcare workers in Nepal
- 2.) Double number of trained healthcare workers who remain in rural areas after 1-2 years and decreased overall attrition rates for Nepal
- 3.) Increase number of patients seen at rural health post to reflect increased access to healthcare for rural Nepali people
- 4.) Improved quality of healthcare in rural areas as a reflection of increased unified training of healthcare workers, increased number of EHC services delivered to Nepali patients in rural areas.
- 5.) Improved perception of healthcare workers and healthcare system
- 6.) Long term improved health outcome measures and healthcare indicators based on WHO annual reports and the Nepal's Department of Health Services Annual Report.

A Plan for Monitoring and Evaluation of the Program

A M & E team will be compiled to work on monitoring and evaluation of this project specifically of the outcomes related to training. They will supervise the data collection and record organization by the newly trained healthcare workers dedicated to these tasks and by NSI students as a part of their thesis project. Healthcare workers will keep records of staff, especially of those workers trained at the NSI, and of number of patients seen and services delivered. See

table 1, and table 2 for example indicators for improved human resources and for patient numbers and EHCS as stated by the NHSP-IP.

Healthcare workers and NSI students will also conduct random exit interviews of patients that will assess level of service satisfaction. These standardized interviews will touch on points listed in table 3.

Periodic interviews will also be conducted to evaluate perceptions of health workers and managers on existing and potential intervention strategies to promote work motivation and retention. See table 4 for the content of these interviews.

Long term improved health outcome measures and healthcare indicators will be based on WHO annual reports and the Nepal's Department of Health Services Annual Report. Additional data will be drawn from health-related professional registries, national accounts gathered by agencies of the United Nations system, and records of medical schools and faculties.

See table 5 for specific goals for NHSP-IP (2004-2009) indicators as stated by the NSI include:

Baseline levels for all projected outcome will be established prior to the onset of the intervention to the best of our ability. Interviews will be conducted of current healthcare workers and health post patients by the NSI team and during the first phase of the project. A review of existing formats, integration and design of essential database will also be conducted. Baseline data will be evaluated and integrated into the intervention.

Outcome data will be taken throughout the intervention and NSI staff will produce annual reports that will be used to streamline the program for following years. In order to increase motivation and ownership of the data by communities and healthcare workers, reports will be submitted for each community monthly, these will be produced as part of the student healthcare worker thesis projects. We will also work in conjunction with an existing World Bank supported project for community based monitoring using a "Community Data Board." (Feilden, 2000) Monthly reports will be reported to the community and will help focus intervention and training strategies to each community.

Challenges

Challenges in the face of this and other programs to improve the state of Nepali healthcare are overwhelming. Nepal remains an extremely poor country and resources for healthcare are disproportionately low. Even with an increased healthcare labor force, significant barriers to access to health services remain. Only 65 percent of the population in rural communities are within one hour of a public health centre and only one in ten within an hour of a hospital. This is due not only to a lack of resources but also to the difficult nature of the terrain and poor infrastructure of the country. Based on these factors, the Nepali population is much dispersed and fragmented which has produced a dispersed and fragmented healthcare services, especially in rural areas. The government has also faced major problems in providing basic services to rural areas due to the state of political unrest caused by the Maoist insurgency. There have been reports of Maoist destroying village health post and torture of healthcare workers who do not comply with their demands (NEPAL: Focus on the impact of the conflict on rural health). Many healthcare workers flee their post in rural areas with fear of potential violence. Perhaps one of the largest challenges facing this particular program is that of the draw of Nepali trained healthcare workers to the city and other countries. Several factors such as extreme wage differentials, increase excess to further education, poor work environments, lack of supervision, lack of resources, and an aggressive recruitment strategy by international countries all combine to form a "brain drain" in Nepal.

Feasibility of Proposed Program

In light of the recent prioritization of Human Resource Development by the government of Nepal, and external development partners such as the Department for International Development, as well as generous resource donations by UNICEF, the World Bank and the Nick Simons family we are in a unique position to develop a successful program to promote Human Resource development. Because our emphasis is education, the strategies proposed by this program are cost effective, use a low percentage of expense on physical infrastructure and promote self-sustenance. Training produced on a small scale in the past by the NSI has proven successful in training staff that stay in remote locations (NSI—table). The proposed program strives to expand upon the strong foundation of education laid by the NSI to produce accessible and quality healthcare services for rural Nepal.

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Figures

Fig. 1: Schematic of the factors affecting migration and movement of health workers.

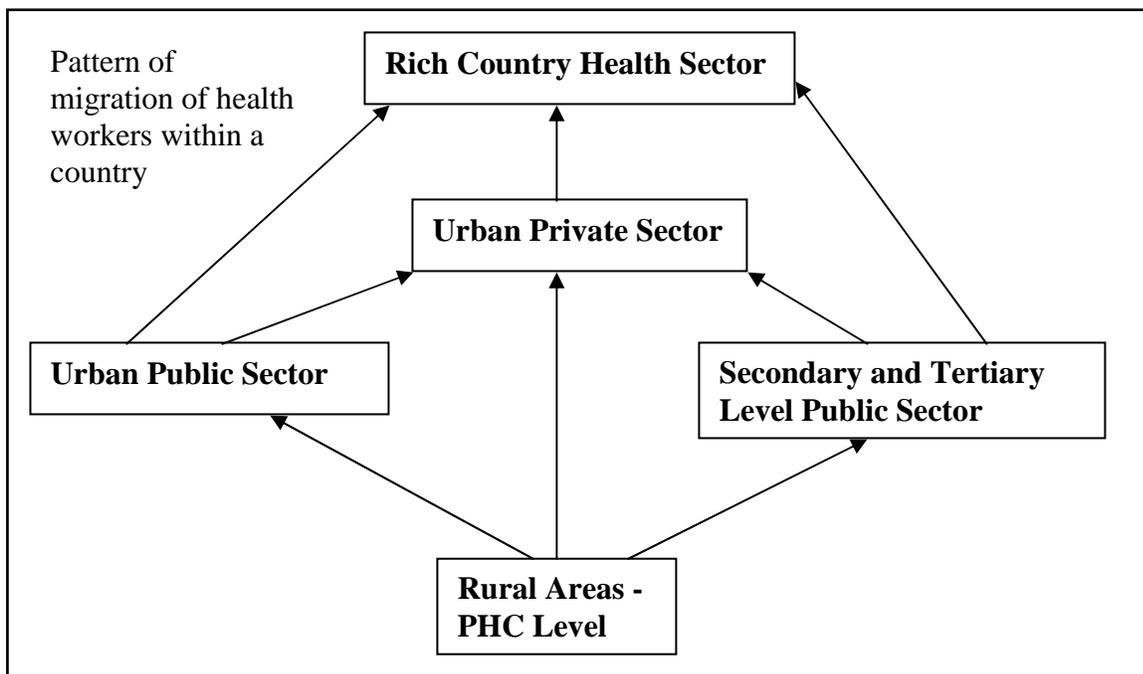


Fig. 2: Schematic of the factors affecting migration.

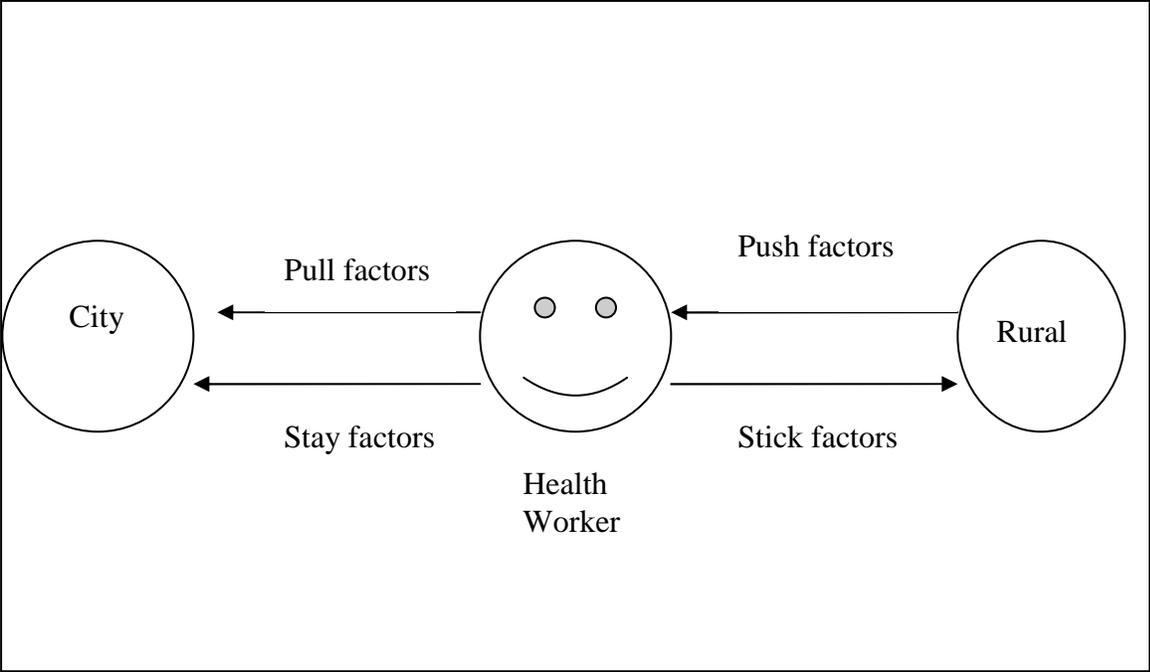
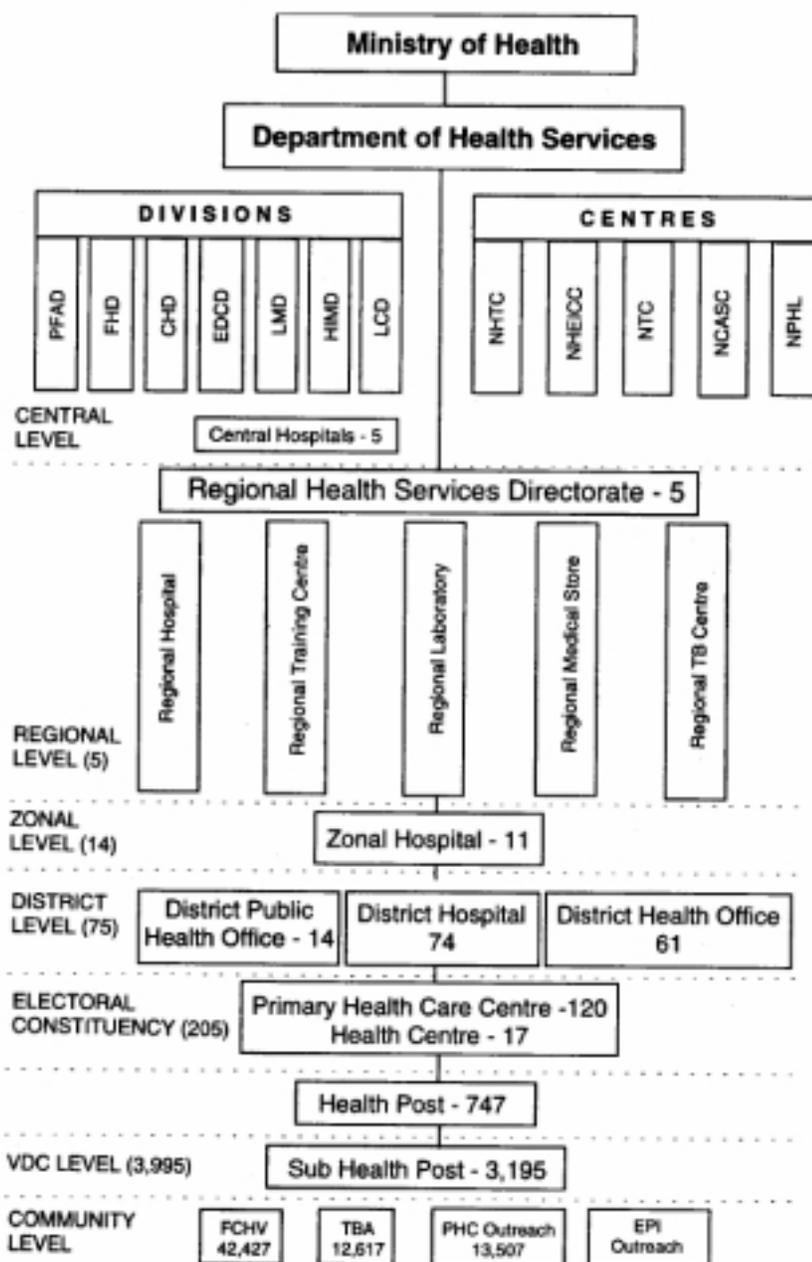


Fig. 3 Categories of Health Workers and Projected Changes in Staffing Requirements
 From MOH Strategic Report for Human Resources for Health, 2003.

Cadre	Category
Medical specialist Medical officer Integrated Med. Officer Dental surgeon Pharmacist Graduate nurse Radiographer Allied non-med. prof. Manager	High Level
Asst. Pharmacist Nurse(certif./staff) Medical Technologist Health Asst./Kaviraj/Hakim Lab technician/Assist. Asst. radiographer ANM Allied health occup.	Mid Level
AAW/AHW VHW/MCHW Skilled support staff Other support staff	Support Level

Occupations	Total Health Sector			% Change
	Supply in 2003	Requirement 2017	New Posts needed	
Medical specialist	1544	2337	793	51%
Medical officer	1186	3459	2273	192%
Pharmacist	236	2191	1955	828%
Nurse (cert/staff)	1585	7432	5847	369%
ANM	1820	15611	13791	758%
Lab tech/asst	543	1147	604	111%
Other support staff	12462	20049	7587	61%

Figure 4 Organisation chart of DoHS



Acronyms

PFAD	<i>Planning and Foreign Aid Division</i>	NHEICC	<i>National Health Education, Information and Communication Centre</i>
FHD	<i>Family Health Division</i>	NTC	<i>National Tuberculosis Centre</i>
CHD	<i>Child Health Division</i>	NCASC	<i>National Centre for AIDS and STD Control</i>
EDCC	<i>Epidemiology and Disease Control Division</i>	NPHL	<i>National Public Health Laboratory</i>
LMD	<i>Logistics Management Division</i>	FCHV	<i>Female Community Health Volunteer</i>
HIMDD	<i>Health Institution & Manpower Development Division</i>	TBA	<i>Traditional Birth Attendants</i>
LCD	<i>Leprosy Control Division</i>	PHC	<i>Primary Health Care</i>
NHTC	<i>National Health Training Centre</i>	EPI	<i>Expanded Programme on Immunization</i>

Source: [C1]

Tables

Table 1.

Example Indicators for Improved Human Resources as Stated by the NHSP-IP
<ul style="list-style-type: none">-50% of the public health facilities targeted will have appropriate mix of health workers by 2006/7-Staff available to provide services in 35% at any given time

Table 2.

Example Indicators for Improved Patient numbers and EHCS as stated by the NHSP-IP
<ul style="list-style-type: none">-50% of health facilities provide prioritized EHCS according to Nation Standards by 2006/7-50% of population will be utilizing the prioritized services by 2006/7-Increased utilization of the prioritized EHCS by the vulnerable groups/population-60% of health facilities provide minimum level of acceptable standards of quality EHCS-Increased access for poor utilizing EHCS with prepaid CHI with subsidized premium

Table 3.

Content of Patient Exit Interviews
<ul style="list-style-type: none">-treatment and advice received-staff attitude during consultations-criteria for a “good health worker”-overall performance of health workers and ways for improvement-current methods used by the community to show appreciation-suggestions for community methods to influence staff performance and staff motivation-transportation means and time to health post

Table 4.

Content of Healthcare Worker Interviews
<ul style="list-style-type: none">-continuing education and career development-communication and relationship among colleagues-salaries and allowances-performance management: supervision and staff appraisal-transfer-working conditions, such as equipment and transportation-other activities to retain staff (e.g. provision of land at a subsidized cost)

Table 5.

Specific Health Outcome Measure and Healthcare Indicator Goals as stated by NHSP-IP (2004-2009)
<ul style="list-style-type: none">-Maternal Mortality Ratio decreased from 539/100,000 live births (DHS 1996) to 325 in 2006 and 300 in 2009-Infant Mortality Rate decreased from 64/1000 live births (DHS 2001) to 50 in 2006 and 45 in 2009-Under-Five Mortality rate decreased from 91/1000 children living to 12 months (DHS 2001) to 70 in 2006 and 65 in 2009-Total Fertility Rate reduced from 4.1 (DHS 2001) to 3.8 in 2006 and 3.5 in 2009.-Contraceptive Prevalence Rate increased from 39% (DHS 2001) to 43% in 2006 and 35% by 2009-Skilled attendance at birth increased from 13% (DHS 2001) to 22% in 2006 and 35% by 2009-Percentage of children immunized against measles and DPT3 increase from 71% (DHS 2001) to 78% in 2006 and 85% by 2009Knowledge of that least one programmatic method of preventing HIV transmission increased from 37.6% (DHS 2001) to 75% for women and 50.8% (DHS 2001) to 85% for men.-Proportion of HMGN budget allocated to health increases from 5% at present to 6.5% in 2006 and 7% in 2009.