

Transformation of a leprosy hospital in Nepal into a rehabilitation centre: the Green Pastures Hospital experience

J. W. BRANDSMA*, R. J. SCHWARZ*,
A. M. ANDERSON** & F. B. HERM*

**Rehabilitation Consultant, Green Pastures Hospital and Rehabilitation Centre, International Nepal Fellowship, PO Box 28, Pokhara, Nepal*

***INF Kaski Programme, PO Box 5, Pokhara, Nepal*

Accepted for publication 10 October 2005

Summary Green Pastures Hospital for leprosy patients in Pokhara Nepal, was established in 1957 by the International Nepal Fellowship (INF) in a decade which saw the establishment of many similar hospitals in other leprosy endemic countries. In recent years, mainly due to significant improvements in leprosy control services and the wide implementation of multiple drug therapy (MDT) for all patients, many of these specialist hospitals have encountered 1) a decline in prevalence rate, 2) a large decline in the percentage of patients presenting with WHO grade 2 disability, 3) a decline in the previous indications for hospital admission, e.g. immunologically mediated reactions, and 4) a need to develop financial independence making them less dependent on donor agencies. In addition, the decision to change from specialist to general services opened up the possibility of using facilities and expertise for the rehabilitation of non-leprosy affected persons, whilst also moving towards the reduction of stigma and prejudice against patients with leprosy. This paper describes the process of 'transformation' of an established and well known leprosy hospital in Western Nepal from 1997 onwards into a general rehabilitation hospital. Careful preparation, with full involvement of existing staff and co-operation with other agencies in the hospital catchment area were key factors in what has now become a successful venture. Surgical procedures and orthopaedic appliance services for non-leprosy affected persons have increased in recent years and the introduction of a dermatology service has resulted in out-patient attendance rising from about 1000 in 1999 to 4500 in 2003. No evidence of reluctance to attend and use the facilities offered by this hospital because of stigma against leprosy has been encountered. Many of the changes described have been made in order to reduce financial dependence on donor sources of support, but the underlying reason for transformation is still based on the vision of the INF mission to work for and improve the condition of the marginalized in society.

Introduction

The Green Pastures Hospital for leprosy was established in 1957 by the International Nepal Fellowship (INF). That decade, and the following, saw the establishment of many leprosy hospitals throughout leprosy endemic countries. Even in the latter half of the twentieth century, leprosy patients and leprosy services were not readily integrated into existing health services.

In the last decade, four main factors have been responsible for the transformation of leprosy hospitals into general hospitals, rehabilitation centres, or in some instances even closing down. Firstly, a decline in leprosy prevalence in the whole, or parts, of many countries in which leprosy was highly endemic, or more importantly a large decline in the percentage of patients presenting with WHO grade 2 disability (Figure 1). Secondly, a decrease in indications for hospital admission with conditions for which patients used to be hospitalized, e.g. treatment for reactions. Thirdly, in case of 'transformation', the facilities and expertise for general rehabilitation often are already present when the decision is made to start rehabilitation for non-leprosy affected persons. The fourth main factor concerns the financing of many hospitals. This is an important incentive for many leprosy hospitals to start seeing and admitting non-leprosy affected persons trying to become financially less dependent on donors. In addition, reduction of stigma and social acceptance has resulted in increased readiness for non-leprosy patients to attend, or be admitted to a hospital in which leprosy affected individuals are admitted.

This paper presents a case study of the transformation of a leprosy hospital in Nepal into a general rehabilitation centre. The paper will illustrate the changes which have been made, and those that are intended, to continue to improve the financial independence of the hospital.

'Reverse integration'

The reverse integration of Green Pastures, namely opening the facilities to people disabled by causes other than leprosy, was the vision of the 1995 management team. Prior to that year, non-leprosy patients had been treated occasionally, but not in an organized way with the structure required for comprehensive rehabilitation.

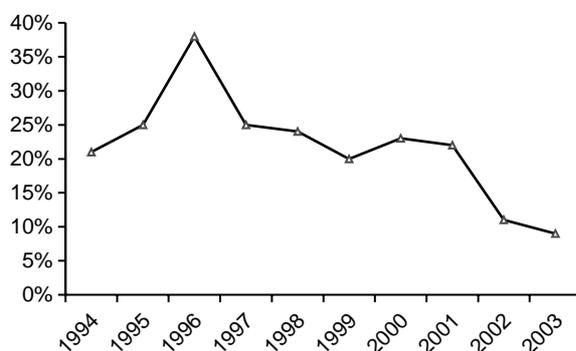


Figure 1. Decrease in percentage of disability (grade 2) in newly diagnosed leprosy patients.

Although early case detection through awareness programmes and elimination campaigns led to a decrease in the number of people with existing impairment who present for diagnosis, reactions during and after treatment still give rise to primary and secondary impairments (Table 1). At that time, there were an estimated 3400 people in the catchment area of the hospital who had completed chemotherapy but had lifelong impairment. Until the last person with leprosy related disability dies, there will be need for facilities for clinical treatment and rehabilitation. It is important to note that the case detection rate of leprosy has not changed substantially in the catchment area in the past 15 years, so that a loss of focus on early detection and treatment could lead to an increased disability rate.

However, the need for these facilities will become less with the passage of time and a clear choice has to be made at some point: close down and provide treatment some other way, or broaden the target groups so that available and needed services can be extended to these groups. Many leprosy hospitals have extended their out patient work, encompassing field programmes or TB control. In Green Pastures Hospital this approach could possibly provide financial sustainability, but would still leave specialist staff and the operating theatre under-utilized. Moreover, the government is already carrying out high quality TB work.

In Nepal, where there were no existing rehabilitation facilities outside the capital, this approach seemed to be unethical. So the vision was born to use the available specialist expertise and facilities in the service of people with any kind of disability throughout the Western half of the country.

Why this choice?

The first important factor that played a role in the decision was the fact that the hospital already had excellent facilities for rehabilitation including well established physiotherapy and occupational therapy departments and an orthopaedic appliance centre. The expertise was available to make the orthoses and prostheses often required for more severely disabled individuals. In addition, the hospital had a counselling department and a resident surgeon, whose expertise is often needed in the rehabilitation process.

The second factor was the Partnership For Rehabilitation (PFR) programme, which is administratively closely linked with the hospital and its location on the same compound. This

Table 1. Health related definitions

Impairment	Problems in body function or structure such as a significant deviation or lack
Activity	Activity is the execution of a task or action by an individual
Activity limitation	Difficulties an individual may have in executing activities
Participation	Involvement in a life situation
Participation restrictions	Problems an individual may experience in involvement in life situations
Functioning	An umbrella term encompassing all body functions, activities and participation
Disability	An umbrella term for impairments, activity limitations and participation restriction

programme is aimed at the reintegration of individuals with, activity limitations and participation restrictions due to physical impairments.¹ The infrastructure was thus present for a comprehensive holistic rehabilitation programme. Whereas in the past most PFR clients were people affected by leprosy, now nearly half of the rehabilitated individuals have non-leprosy related disabilities.

Other factors were also taken into account. Pokhara had already two large general hospitals and many private hospitals. More importantly, rehabilitation services are not well developed in either Pokhara or Nepal.² There is a great need for institution-based rehabilitation in the western regions of Nepal. While there are many community-based groups working in rehabilitation, the only significant institutional based rehabilitation facilities are located in and around the capital city.

The choice for transformation into a general rehabilitation hospital was supported by the vision of the INF mission: to work for and improve the conditions of the marginalized in the society. Severely physically challenged individuals are often marginalized mainly on account of decreased mobility.

What type of patients?

Most non-leprosy affected disabled persons admitted to our hospital fall into the category of neuro-rehabilitation. Spinal cord injury (SCI), cerebrovascular accidents (CVA), and traumatic brain injury (TBI) comprise the majority of non-leprosy admitted individuals for rehabilitation. In particular the management of neuropathic limbs in leprosy and SCI rehabilitation have much in common, especially with respect to the need for both groups of patients to learn to live with and protect insensate ulcer-prone limbs.^{3,4}

SCI individuals, depending on the level of the lesion(s), often become dependent on a wheelchair for mobility. Often individuals who have had a CVA are restricted in their mobility, but may also have speech and mental impairments which may affect communication. The rehabilitation goals for these individuals will be mainly focussed on ambulation, independence in Activities of Daily Living (ADL) and possibly communication (speech therapy). Because of the often present mental and speech impairments and advanced age it is unlikely that CVA individuals will benefit from socio-economic rehabilitation through the PFR programme.

In contrast, SCI individuals usually belong to a younger age group, were active in farming, had other jobs, or were still studying. The majority of SCI individuals presenting to our hospital have lesions of the thoracic or lumbar spine and as such will have strong upper extremities. This makes them good candidates for socio-economic rehabilitation following the hospital based rehabilitation period of treatment for pressure sores, transfer/mobility and continence training.⁵

Besides the two categories of SCI and CVA, the hospital admits individuals with a variety of other conditions that may benefit from surgery and/or other types of rehabilitation, e.g. patients with clubfoot, post-polio, burn contractures and late nerve injuries. Green Pastures has also made two beds available for the admission of people with HIV/AIDS. The changing make-up of hospital admissions, leprosy versus non-leprosy over the last few years, is shown in Figure 2.

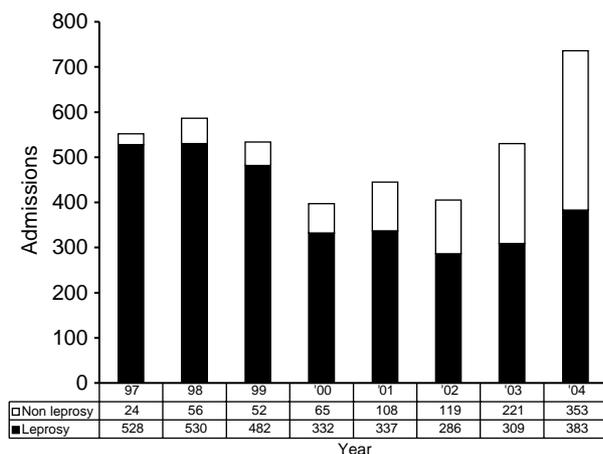


Figure 2. Leprosy versus non-leprosy admissions.

Retraining of staff

The transition from leprosy to general and rehabilitation care meant that staff needed to be reoriented and trained in different skills and needed new knowledge to have the expertise to give competent and high quality care to non-leprosy affected individuals.

The leprosy trained physiotherapy and occupational therapy technicians received additional training, especially in spinal cord and stroke rehabilitation. The in-country training was mainly conducted by expatriate physiotherapists. The department now has a qualified Nepali therapist who received his training in India on a scholarship. An exchange programme was also set up with the Nepali children’s rehabilitation hospital. Occupational therapy department staff and counselling staff also received additional training, which runs on a continuing basis.

Staff from various departments visited centres in India, Bangladesh and Nepal to become informed about the care and rehabilitation of spinal cord injured patients. Pressure sore prevention and treatment, bladder care as well as transfers and mobility were the main areas where new and recent knowledge and skills were needed.

At present, the hospital employs one consultant physiotherapist and one occupational therapist to further develop the services of these departments and initiate research projects. A consultant expatriate orthotist-prosthetist has also been employed for 3 years. At times, visiting consultants with diverse expertise in rehabilitation have an input for varied lengths of time to improve the level of care of rehabilitation of non-affected leprosy individuals.

Facilities changes

To make the facilities accessible and suitable for wheelchairs and mobile stretchers, ramps were built. A large physiotherapy hall was constructed with grant money. A hall of reasonable size is needed for the rehabilitation of spinal cord injured individuals. Other equipment necessary for the diagnosis and management of various neurological conditions is being sought.

We frequently encounter problems outside the scope of our experience. We have a good relationship with other rehabilitation organizations within the country to whom we can refer or consult. We have also established a telemedicine consulting service through the internet at no cost (SCT@coh.uq.edu.au). Online access to medical journals and expert consultations are now available to government and charity institutions in developing countries, also at no cost. The hospital can also make use of the expertise of medical specialists from the medical teaching college in Pokhara when needed.

Financial considerations

While continuing to provide treatment free of charge to all leprosy patients and all general patients who cannot pay, the hospital now funds 22% of its costs by income derived from patients (in 2000: 8.6%). We went through each department determining the real cost of each service so that realistic charges could be made, ensuring that only the truly needy received a subsidy. It is important to include hidden costs such as administration costs. It is also important to search out items that are not being charged for but cost the patient, e.g. travel expenses and lodging. Some costs cannot be recovered, such as networking and ongoing staff education, as these are our own institutional goals, and not for direct patient care. Charging systems need to be put in place and reviewed periodically to ensure that the systems are complete and easy to use.

The hospital maintains a 'Poor Fund'. The services given to non-leprosy patients who cannot pay will be paid from this fund. Donations into the fund are by 'Friends of Green Pastures', in- and outside the country, and visitors to the hospital. It is important that from the beginning of the process this facility be kept foremost in the planning process. There are many former mission hospitals who, when donors decreased, responded by increasing quality and cost of services until the poor could no longer access their services. While this creates a financially 'sustainable' hospital, it no longer sustains the principle original goal of providing service to the poor and marginalized.

New donors need to be found with goals and a vision similar to that of the hospital. Most donors prefer to give equipment or fund other capital expenses, and one has to live with and plan for this reality. Some donors will provide care for specific types of patients. These donors require considerable reporting work but are very valuable in providing care to the poor. Some donors, especially governmental ones, will give to a project for a limited time period, often 1 year only. This type of funding should be viewed with great caution, for to build up programmes that cannot be sustained can actually cause more financial strain on the organization, and lead to staff redundancies with all the dissatisfaction and social problems this entails.

Promotion of services

In order to attract a new type of patient other than leprosy patients, it is important to advertise the new services being provided. Advertising means getting information out to the appropriate people. The stigma attached to leprosy and institutions that look after these patients can be quite a barrier to patients coming to the facility, but this has not adversely affected the transformation we describe for this hospital. Doctors working in the hospital's

catchment zone should be informed of the new services. Again our relationship with other organizations working in rehabilitation has been very valuable as these are likely referral agents. A pamphlet was developed and distributed to doctors and other health care professionals. Word of mouth is important, and having good relations with potential referral doctors is necessary. Presentations at national meetings, both medical and surgical, are helpful, as are publications in national journals. These activities raise the national awareness of the hospital. We have also given interviews on local radio stations explaining our activities using the opportunity to describe the diagnosis and curability of leprosy. We have not used the newspaper or any other paid advertising. Running disability camps in remote areas is another way of identifying really needy patients in rural areas. Running a ‘camp’ runs the risk, however, of people identifying the hospital with free treatment in countries where ‘camps’ usually imply free treatment. Promoting the institution in other regions is intuitively much more difficult, as evidenced by the fact that 75% of our patients still come from districts within just a few hours of our centre.

Five years of change

BED REDUCTION AND CHANGE IN POPULATION

Figure 3 shows the change in number of beds and bed occupancy over the last 7 years. There has been a significant reduction in total number of beds and beds for leprosy affected individuals. At the same time there has been an increase in bed availability for general rehabilitation.

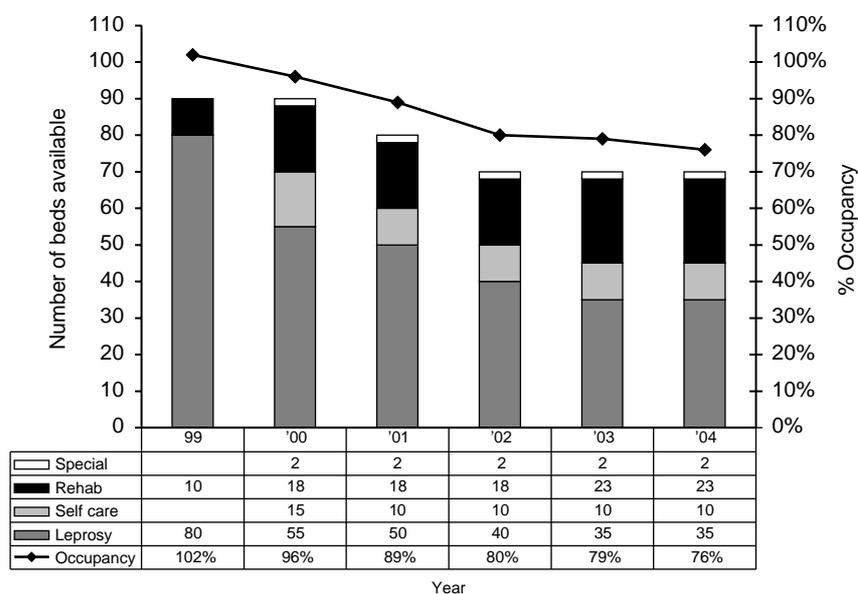


Figure 3. Changes in the hospital/bed population.

SURGERY AS A CHANGE AGENT (FIGURE 4A,B)

Until recently, the hospital benefited only from the services of a surgeon on a part-time basis. The surgeon was based at another hospital and visited the leprosy hospital as a consultant, primarily coming to operate on leprosy patients. Now the hospital has an experienced resident surgeon with more time available to take on other surgery such as burn contractures, post-polio deformity, clubfoot and other general reconstructive cases.

THE OAC AS A MIRROR OF CHANGE (TABLE 2)

The Orthopaedic Appliance Centre (OAC) has also extended its services to non-leprosy individuals. There is a general increase in the number and variety of orthotic and prosthetic devices available for non-leprosy affected persons. A decrease can be noticed in the footwear for leprosy affected persons. This is partly due to the fact that an increasing number of patients buy their own footwear or only get canvas shoes for their insensitive feet. In such instances only microcellular insoles will be provided.

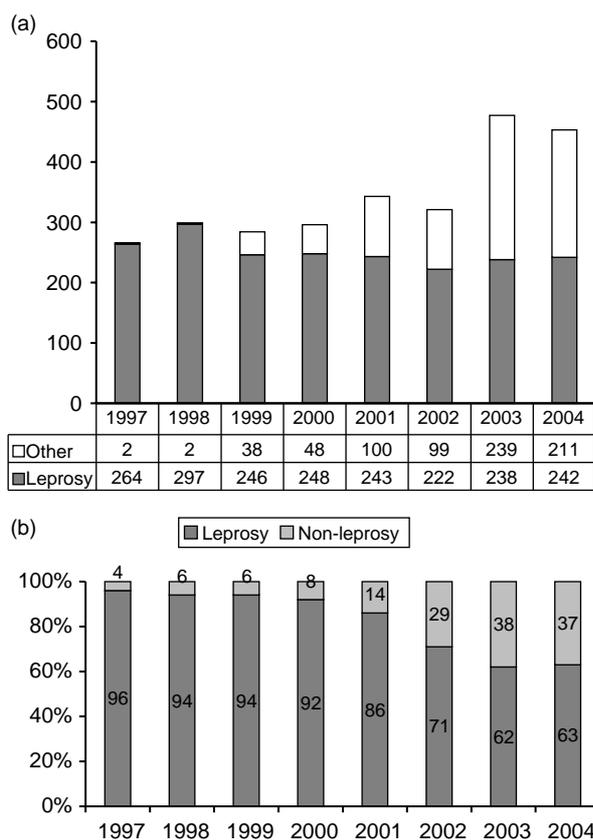


Figure 4. a Surgery in the last 8 years (absolute numbers). b Surgery in the last 8 years (percentages).

Table 2. Change in output of orthopaedic appliance centre. Absolute numbers of all the appliances (including repairs)

Year	1997	1998	1999	2000	2001	2002	2003	2004
Number of appliances	1557	1341	1271	1037	1070	1076	1195	1064

DERMATOLOGY

A senior medical officer qualified in dermatology a few years ago at a medical college in Thailand and now runs an out-patient service in our hospital four times a week. The demand for this service has increased steadily through the years from 1022 out-patient attendance in 1999 to 4509 in 2003, meeting a previously unrecognized clinical need of considerable significance, whilst at the same time providing an important source of income for the hospital.

Discussion

In the 5 years of change, the hospital has seen a significant change in the type of work done and a shift in the balance of patients away from leprosy related disability. Beds have been reduced, but the nature of patient population has changed with many of the non-leprosy patients requiring more work. The number of admissions for leprosy related disability remains high, but the ratio of leprosy to non-leprosy has dropped from 22:1 in 1997 to 1.1:1 in 2004. A large change in outpatient visits has also occurred, both due to visits from physically disabled persons and the start of a dermatology clinic (Figure 5).

All leprosy related treatment is free of charge which requires ongoing support from leprosy organizations. Some of the traditional donors are generally not supportive of funding non-leprosy related activities. Therefore, leprosy hospitals 'in transition' will have to look for other ways to support these activities. These could be other 'in-country' and international donors. More importantly, for financial sustainability in the long term it is important to look into to possibilities for generating income from the services that the hospital intends to offer. To date, there is no (local) government support for the hospital.

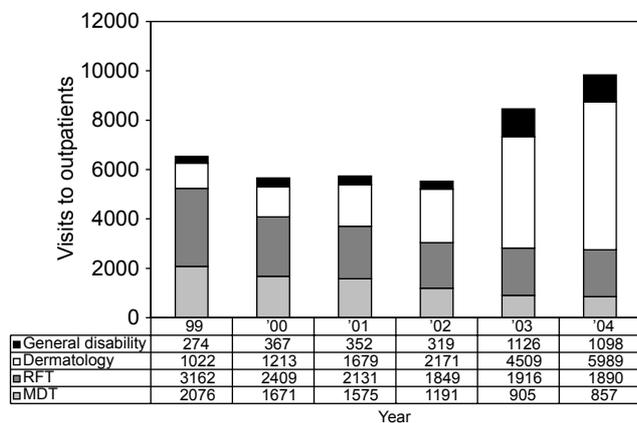


Figure 5. Outpatient visits.

The hospital has produced three general information flyers. One is in Nepali explaining the hospital services and includes a map. Another contains information for health professionals and health related organizations with information about the services that GPHRC can offer. The third has general information about GPHRC for visitors with information about how they can become financial supporters of GPHRC.

It is hospital policy that all 'care-intensive' general rehabilitation patients have a care-giver with them. This could be a spouse, son or daughter or other relative. The care-giver will be involved in the rehabilitation process from day one in such activities as transfers and mobility, exercises to prevent and overcome contractures, and feeding if necessary, and will then be able to continue essential activities once the patient is discharged. This is absolutely essential if long term care is to be sustained. Our greatest failures have occurred when this policy has not been adhered to. Home visits and an understanding of the patient's support system and environment are essential in the rehabilitation process.

There is excellent co-operation with the local Community Based Rehabilitation programmes. They may refer clients for a period of hospital-based rehabilitation or hospital-based rehabilitation maybe be followed up or facilitated by the CBR programme or our own PFR programme. Strong relationships with other health care providers and community groups/other NGOs/ INGOs are important, both as a source of clients and a place to send patients, because in rehabilitation one often must continue the rehabilitation in the community following discharge to maximize the benefits.

Whether and when a leprosy hospital should transform itself is determined by various factors: the number of leprosy affected persons needing care; the availability and diversity of other health services in the vicinity of the hospital; and the vision to embark on a change process and some indication that the process may result in a financially sustainable hospital.

Change in vision brings about a change in the scope of work and for some time uncertainties amongst the staff. Does the intended change affect activities and responsibilities of the staff? It is important that from the time of an intended change, all concerned are well informed and that co-operation and consultation is part of the process. Resistance to change is often part of a change process but can be lessened if staff concerned are informed and are generally supportive of the process. Generally, given the choice between dwindling/ closure of the hospital and transformation, the latter will be chosen! GPH&RC staff have been genuinely committed to the process from the beginning which has made the change a very positive experience. The prime motivation for change has been a desire to care for the disabled who previously had no services available, not merely job or institutional preservation.

Acknowledgement

The authors wish to thank Himalaya Sigdel for data collation and graphic work.

References

- ¹ *International Classification of Functioning, Disability and Health*. World Health Organization, Geneva, 2001.
- ² UNICEF. A situation analysis of disability in Nepal. Kathmandu, 2001.
- ³ Brandsma JW. Lessons from leprosy rehabilitation for general rehabilitation. *Eth Med J*, 2003; **41**: 77–87.
- ⁴ Herm FB, Brandsma JW, Schwarz RJ. Management of neuropathic limbs in leprosy: Innovative techniques for effective rehabilitation in developing countries. *Phys Med Rehab Kur*, 2003; **13**: 220–225.
- ⁵ Herm FB, Spackman J, Anderson AM. Experiences with family supported rehabilitation of people with spinal cord injury. *Asia Pac Disabil Rehab J*, 2000; **11**: 31–34.