

LIVING WITH LANDMINES IN CAMBODIA

Observations and Opinions

December 2000 – January 2001

Alex Hewitt

Paul Lee-Archer

Brent Studd

Address for correspondence:

c/o Clinical School, University of Tasmania,
43 Collins Street,
Hobart, 7000

TABLE OF CONTENTS

SYNOPSIS.....	3
INTRODUCTION.....	4
CAMBODIA IN 2000 – SOME BACKGROUND	5
LANDMINES – THE PROBLEM.	7
LANDMINES IN CAMBODIA	8
THE CAMBODIAN HEALTH CARE SYSTEM.....	11
NON-GOVERNMENT ORGANISATIONS.....	15
IMPRESSIONS AND CONCLUSIONS	16
ACKNOWLEDGEMENTS	17
REFERENCES.....	18
APPENDIX ONE	19

Synopsis

Landmines continue to be a significant public health issue in Cambodia. To date there are over 40,000 people who have been severely disabled by landmines. Whilst the Cambodian health system is of a low standard compared to other countries, physical rehabilitation programmes are generally well organised. With regard to the management of landmine victims, acute emergency services and social reintegration have been identified as areas requiring further attention. The need for a social rehabilitation programme, which adopts a holistic approach with considerable Khmer autonomy has been highlighted.

Introduction

This research was conducted to determine the extent to which landmines are a health problem in Cambodia, the Khmer approach to solving it and opportunities that may exist to assist them in achieving their goals.

It was inspired after spending three weeks at the National Rehabilitation Center at Kien Khleang. Veterans International and Rose Charities Canada, both based at Kien Kleang, are non-government organisations working in the rehabilitation of poor disabled Cambodian people. This time was in addition to a medical and surgical rotation at Calmette Hospital, a French-Cambodian government cooperative in Phnom Penh, and a visit to a rural provincial health clinic. Our visit to the remote health clinic was assisted by Servants a non-government organisation. Our time in Cambodia constituted a part of a medical elective undertaken prior to final year studies in Medicine and Surgery at the University of Tasmania, Australia.

This report has been prepared primarily for the Faculty of Health Sciences from the University of Tasmania. Efforts were made during meetings to emphasise that the authors' opinions did not necessarily reflect those of the University, and that we were acting in an independent capacity. It must be emphasised that this report is not intended to provide the solutions to Cambodia's health problems. It will, hopefully, identify the important issues, raise awareness of the problems and suggest some strategies that may assist in solving these problems.

Cambodia in 2000 – Some Background

To appreciate the current political environment in Cambodia, it is necessary to understand some of the recent history of the country. Such an insight will point to Cambodia's present day strengths and difficulties during this phase of rapid transition.

Coming from being the strongest empire in South-East Asia during the 11 century, around the time of the building of Angkor Wat (which is still regarded as the largest religious building in the world), Cambodia is now a relatively small country in the centre of the Indo-China peninsula. In fighting between Royal Khmer leaders, and years of warfare against the Thais and Vietnamese led to the gradual demise of Cambodian empire.

French control of Cambodia began in 1864 and developed as an adjunct to French colonial intents in Vietnam and Laos. After the Second World War Cambodia became an autonomous state within 'the French Union'. During this period various political groupings became prominent. Aided by the fact that the Franco-Viet Minh war was raging in Vietnam and Laos, King Sihanouk managed to obtain Cambodian Independence in 1953. Sihanouk then dominated Cambodian politics for 15 years, until General Lon Nol deposed him as chief of state. The Khmer Rouge, led by the French educated Pol Pot (formerly Saloth Sar), played a major role in attempting to overthrow the Lon Nol regime. Between 1970 and 1975 several hundred thousand people died during civil war.¹

Despite enormous military and economic aid from the US, Lon Nol was unsuccessful in preventing the Khmer Rouge from over taking Phnom Penh and Cambodia. The next three years, after the take over in April 1975, saw possibly the most radical of all social revolutions ever enforced. During this time at least two million people died from illness, starvation or directly at the hands of fellow Khmers. However, in late 1978, Vietnamese intervention, following a series of border clashes, led to the Khmer Rouge retreating to the Thai bordered North-West region of Cambodia. The Vietnamese installed a new government led by Hun Sen, a former Khmer Rouge officer who had defected to Vietnam in 1977.

Apart from a small number of aid organisations, Cambodia remained closed to the western world for much of the 1980's. During this time Thailand actively supported the Khmer Rouge and the other resistance factions. In 1982 Sihanouk, under pressure from China, agreed to head a military and political front opposed to the Phnom Penh government and Vietnamese control. In 1989, suffering economic afflictions from international isolation, Vietnam announced that it had removed all troops from Cambodia. However, it was not for another three years that diplomatic efforts to end the civil war began to produce results. The United Nations Transitional Authority in Cambodia (UNTAC) ran a series of "free elections". After the first of these elections Cambodia had two prime ministers: Prince Norodom Ranariddh as first prime minister and Hun Sen as second prime minister. It did not take long however for Hun Sen to regain total control, following the 1997 coup.

Political instability remains a significant problem, particularly in the heavily populated areas where few people feel entirely comfortable with the Hun Sen Government.

The 1998 national census reported that approximately 11.4 million people are living in Cambodia. Whilst most people reside in rural areas (some 84% of the population) the rates of population density vary widely between each of the 24 provinces. The heaviest populated provinces are found in the south around Phnom Penh, while the least populated area is the North-East.

Cambodia is the most homogenous country in South-East Asia, with Vietnamese probably being the largest ethnic group in Cambodia. The majority of the Cambodian population is Buddhist, however a minority known as the Cham Muslims inhabit several villages along the banks of the Mekong and Tonle Sap Rivers.

War and isolation have been major contributing factors in Cambodia becoming one of the world's poorest nations. It is unnaturally so. Its people are hard working and it has a sound agricultural industry - particularly in terms of rice production.

Cambodia is at an early and precarious stage of development. Infrastructure development is starting from an unusually low base due to the loss of a generation of educated people and the total destruction of civil society during the Pol Pot era. Poverty remains endemic in Cambodia. Some of the most pressing needs are basic: better roads; communications; and electricity.

Australia provides close to 32.9 million dollars in aid to Cambodia. This sum is subdivided with: 8% contributing towards Cambodian mine clearance; 9% towards the development of the Cambodian health system and a further 22% provides support for refugee resettlement, provision of food aid, landmine awareness and amputee rehabilitation. The remaining aid is channeled into services such as agriculture and education.²

The legacy of a past filled with war and violence still lingers in Cambodia, in the form of millions of uncleared landmines. The widespread indiscriminate use of antipersonnel mines by all sides during the Cambodian civil war from 1979 to 1991 has resulted in Cambodia now having the highest percentage of mine amputees of any country in the world. It is estimated that there are 40,000 people living in Cambodia who have had an amputation.³

Landmines – The problem.

Antipersonnel mines do not distinguish between the footfall of a soldier and that of a child. Unlike bombs or artillery shells, which are designed to explode when they approach or hit their target, mines lie dormant until a person, vehicle or animal triggers their detonation.

When stepped on, the device can cause severe trauma, often resulting in limb amputation and blindness. The International Committee of the Red Cross describes three common patterns of landmine injury. Pattern 1 relates to traumatic amputation of a part of either lower limb, with less severe injuries elsewhere. Pattern 2 injuries, multiple fragment wounds, result from the detonation of a fragment mine by trip wire. The third commonly encountered pattern of landmine injury results from the handling, attempted diffusion, or in the laying of landmines. Such injuries to the hands and face are frequently seen in children.⁴ Each pattern of injury has been shown to have different implications for surgical management, the number of blood transfusions required and patients' long-term disability. When the management of different injury patterns is compared, Pattern 1 injuries are found to require the greatest number of operations and the largest volume of blood transfusions.

Given the damage inflicted and the low-cost of these weapons, landmines have been used extensively during many conflicts throughout the world.

In many countries landmines continue to pose a public health threat of immense proportions. The enormity of this health problem has resulted in the formation of the "International Campaign to Ban Landmines". A Mine Ban Treaty⁵, which entered into force in March 1999, has seen 136 countries agree to the destruction of stock-piled mines, as well as to cease the production and use of antipersonnel mines. The Australian Government, which has signed the Mine Ban Treaty, has committed at least 100 million dollars in the decade to 2005, to the clearing of minefields, assistance of victims and to mine awareness education.

The recent conflict in Kosovo serves as a timely reminder that without a total ban, innocent people will continue to be killed or maimed by landmines. Interestingly the United States is among the list of countries which are currently refusing to sign the treaty. The Physicians for Human Rights have taken an active role worldwide in the anti-mine campaign, and have been a strong lobbying party towards the US government.⁶ Numerous other organisations have also become dedicated to ensure adequate health of landmine victims, and the clearance of landmines. Such organisations presently focus on Cambodia.

Landmines in Cambodia

Mined Areas and Clearance Operations

Landmine incident reports conducted by the Cambodian Red Cross and Handicap International predict that between 8 and 10 million landmines remain in Cambodia. The majority of these are to be found in the Krong Pailin, Battambang, Pursat, Banteay Mean Chey and the Preah Vihear provinces (all in the North and Western regions).⁷

There are several mine clearance operations currently working in Cambodia. The most prominent of these operations in Cambodia include: the Cambodian Mine Action Centre (CMAC), the Hazardous Areas Life-Support Organisation (HALO) Trust and the Mine Action Group (MAG). Landmine clearance organisations play a crucial role in the education of local communities about the danger of landmines.

The HALO Trust operations have been based in the North Western provinces of Banteay Meanchey, Oddar Meanchey and Siem Reap since 1991. HALO Cambodia now has over 850 deminers organised into 26 manual clearance teams and supported by 13 mechanical vegetation cutters. Teams are funded by the governments of Britain, Finland, Ireland, United States of America, Australia, the Netherlands, and private donations from Britain and particularly Japan.

CMAC, which facilitates the largest mine clearance operation in Cambodia, was created in 1992 with the support of the international aid community and the government of Cambodia. As it has grown, CMAC has also begun to tackle Cambodia's extensive unexploded ordinance (UXO) problem.

The landmine database, which CMAC uses, was initially prepared from information collected by the 1992-93 UNTAC military survey. This survey indicated that there were more than 1,900 separate mined regions. To date CMAC's database records confirm 1,616 mined areas. The total area of these regions mined (or suspected to be) occupies close to 3000 square kilometers of agricultural land.

Demining

Landmine and UXO clearance is an exceedingly slow process. A rice field, which took only a few hours to cover with landmines may take months to clear. The reasons for the slow progress are complex. Firstly, most demining operations use the "one man-one lane method", where a person or trained dog identifies all landmines/UXOs in a meter wide corridor. Once detected, all landmines in that corridor are cleared before an equally wide path is cleared beside it. Many mines in Cambodia were laid nearly 20 years ago and are now covered in dense undergrowth. Compounding this, is the fact that heavy demining equipment, such as armour-plated plows, are useless in forests and rice paddies. Most demining activities cease during the wet season (May to October), because the fields are flooded or too muddy to dig in. In some areas provincial corruption also impedes mine clearance.

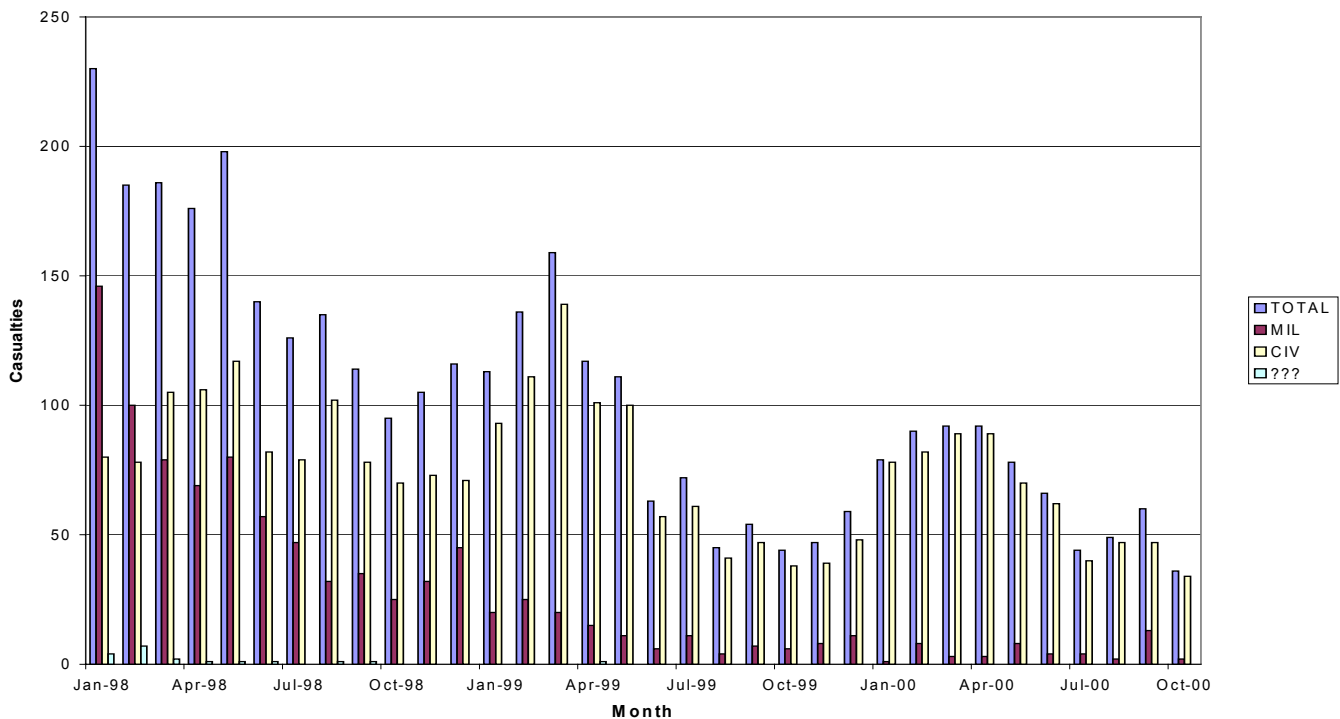
Demining is commenced in high priority areas first. Priority is determined by the local peoples' needs i.e. their need for houses, schools, clean water supplies, health facilities, religious sites and agricultural land. Priority is also determined by casualty rates. Often to their own detriment, people from local villages will carry out unaided landmine and UXO clearance.

In a survey investigating the current land use on cleared mine fields, conducted by HALO, agriculture was found to be the most widespread use (accounting for some 71% of all demined land). Roads, educational facilities, other community infrastructure and unused land each accounted for roughly equal proportions of remaining cleared land. Arguments over land use often arise once the land is demined. Anecdotally we were told that cleared land is given to the rich or is controlled by corrupt local government officials.

Landmine Casualties

The peak of landmine casualties, as determined by Handicap International, was in 1991 when landmines injured over 300 people per month. Nevertheless, the actual figure may be considerably higher than this, given that this statistic did not include those people, frequently children, who were killed outright by landmines. The number of landmine victims each year has decreased significantly. As shown in Figure One the number of civilian people injured by landmines or UXO now accounts for the majority of all victims⁷. The number of military personnel injured has dropped dramatically.

Casualty Trend 1998 - 2000: Reported Mine/UXO Casualties by Month*



The majority of landmine victims are men (64%), and close to 30 percent of cases are children under the age of 18. Landmine victims often report that their injury occurred while traveling, fishing, collecting wood/water or farming - all activities which related to their livelihood. Tampering was reported in 42 percent of cases, with military activities accounting for 3 percent of casualties.

Of the people who sustained landmine injuries during the past 22 months, traumatic amputation of a limb and death occurred in 26 and 21 percent of cases respectively. The remaining 53 percent of victims sustained “other significant injuries”.

The Cambodian Health Care System

“Cambodia is the wrong place to have a disability.”

Aside from landmine related disability Cambodia has a number of health care problems. One of the most pressing issues currently is the increasing prevalence of HIV and AIDS. In addition there has been a significant increase in the number of people infected with other sexually transmitted diseases. Infant and maternal mortality rates are significantly higher in Cambodia compared to any first world country. On the public health front more vaccinations programmes have been established. Nevertheless, infectious diseases particularly malaria and dysentery, account for Cambodians having such a low life expectancy rate. Unfortunately general health problems relating to nutrition are also becoming more common.

According to the 1998 national health statistics report⁸, the seven main health problems are:

1. AIDS and HIV
2. Landmine and road accidents
3. Tuberculosis
4. Malaria
5. Dengue fever
6. Cholera
7. Leprosy

Compounding each of these medical problems is the fact that for most Khmers there is great difficulty in accessing adequate health services. The cost borne by the patient or their family can be prohibitive. If the patient falls outside the catchment area of a Non-Government Organisation funded facility (as many do) then transport to the hospital in an ambulance may cost between US\$2 and US\$5. Further costs include hospital bed charge (US\$17/day), blood (US\$20/unit), saline (US\$2/L), x-rays (US\$5), a doctor's fee (US\$20), and the cost of drugs. With a per capita earning of less than US\$200 per annum, it is easily understood how hospital charges can force a family with meager resources into poverty.

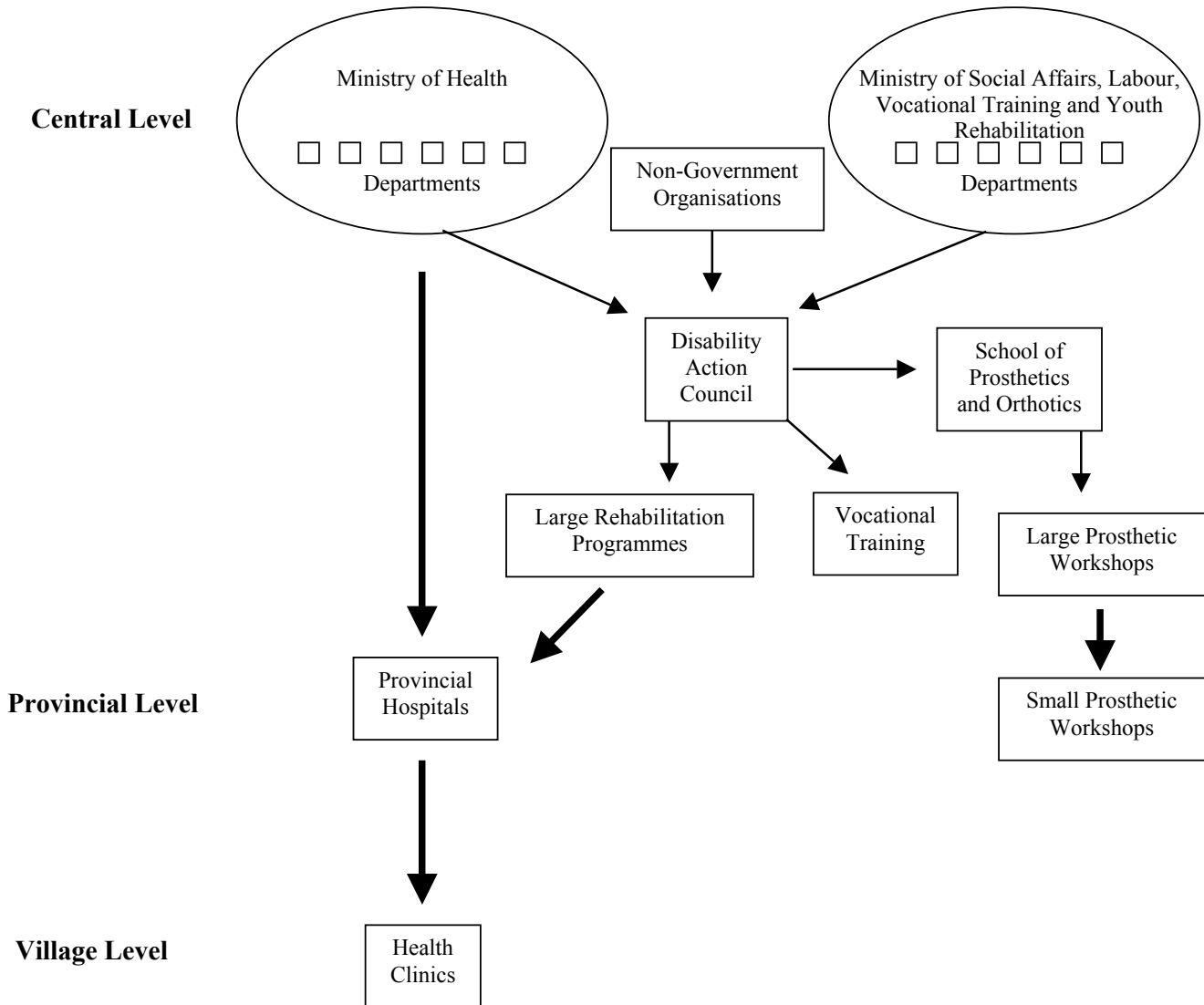
The Cambodian Health Care system has three main levels (Figure Two). In terms of landmine disability services the central level comprises the Ministry of Health and the Ministry of Social Affairs, Labour, Vocational Training and Youth Rehabilitation. Both of these ministries are based in Phnom Penh. Several non-government organisations (NGO), which operate throughout Cambodia, are also based in Phnom Penh.

The disability action council (DAC) comprises representatives of government, national and international organizations as well as organisations of disabled people. The DAC's mission is to nationally coordinate the services available to people with disabilities. It aims to ensure equal opportunities for disabled people and to provide advice for government ministries and NGOs.

Provincial Hospitals can be found in most of the provinces throughout Cambodia (see Appendix One). These hospitals are responsible for the management of severe

illnesses which cannot be managed or diagnosed in remote village health clinics. Small prosthetic workshops can be found in some provincial capitals.

Figure Two: An overview of the Cambodian Health Care System



The Khmer person who has been severely injured, but not killed by a landmine, will often have some form of contact with health services operating at village, provincial and central levels. An understanding of the steps to obtain maximum health for a landmine victim is essential. Such an overview in chronological order follows:

a) Medical and Surgical Emergency Care

Survival following a landmine injury is primarily determined by the immediate control of all life-threatening problems i.e. heamorrhage, pneumothorax. In most rural

areas specialised acute care is non-existent. Many provincial health clinics lack suitable equipment for the stabilisation of severely injured patients. Compounding this is the fact that local remote health workers often have little, if any, acute care training.

Even in the heaviest mined provinces there is no possibility of tertiary care immediately. Having no effective emergency retrieval system in place, such as the 'Flying Doctor Service' or 'MediVac', means that even if patients survive the first 'golden hour' they are still several hours from adequate care.

As highlighted earlier the cost of secondary medical aid is often very high. It is for this reason that many patients do not present for further medical care. Obviously when shrapnel and other foreign bodies are not removed victims are at an increased risk of infections and further amputations.

b) Surgical Rehabilitation

Rehabilitation surgery plays a key roll in the overall rehabilitation of some people disabled by landmines. The revision of painful or otherwise disabling amputated stumps is frequently necessary. Corrective surgery for eye or hand injuries can also be performed and often dramatically improves quality of life.

c) Rehabilitation Medicine

Rehabilitation medicine incorporates a series of services which aim at restoring people with a disability to their fullest physical, mental, social, vocational and economic usefulness. With rehabilitation medicine people with disabilities develop and strengthen their potential physical and mental capabilities. Medical rehabilitation involves the provision of therapy as well as equipment. Fundamental in this process is the initial screening and referral of landmine victims. This often takes place at the provincial level. Medical rehabilitation then utilises prosthetic and orthotic services, as well as physiotherapy therapy.

Community follow-up is also essential. Community based rehabilitation is implemented through the efforts and education of disabled people themselves, their family and the local community.

Prosthetic and Orthotic Services

Cambodia has a School of Prosthetics and Orthotics, which has produced a number of local graduates.

Kien Khleang Physical Rehabilitation Center was established in 1992 and is the largest rehabilitation center in Cambodia. This unique programme has a well-equipped workshop, which produces more than 140 prostheses and 30 orthoses each month. In addition, many of the employees are former patients. There are mobile prosthetic teams currently working in five provinces. One of these mobile units is

based at Kien Khleang and between 1994 and 1996 treated over 650 amputees living in these remote provinces.

Many prosthetic and orthotic workshops have been established in remote and rural areas. From a technical point of view there is little difficulty in upgrading a basic workshop to a full prosthetic and orthotic workshop.

Patients undergo individual assessment and measuring prior to prosthetic limb production. Following cast modification, the prosthetic limb is fitted and the patient undertakes gait training. After a final assessment the finished prosthetic limb or orthotic is given to the patient.

Physiotherapy

Several rehabilitation support services, which provide physical therapy for disabled people, operate throughout Cambodia. One such service that operates at Kien Khleang has an outreach team which visits villages within 30 to 40 kilometers of the capital city. Comprehensive physiotherapy ensures that patients use their prosthesis, orthotic, or wheelchair, and that they continue with their prescribed therapy.

Physiotherapy involves individual patient physical assessment, exercise, and gait training. Adequate therapy involves coaching family members on the use of aid devices and the importance of daily exercise.

d) Vocational Training and Social Reintegration

There are a number of steps that need to be taken to achieve complete rehabilitation in landmine victims. Understandably, after a debilitating injury, patients wish to return to their previous level of activity. If a wheel chair or prosthesis is provided then they now have the means by which to get there, but it is still impossible for the wheelchair to get up on to the higher level. The next step therefore is to put in a ramp from the bottom level to the top. This ramp represents retraining and rehabilitation. However, even with a wheelchair and a ramp there is still a barrier to cross. The people on the top level often do not want the landmine victim to join them and try to prevent him or her from coming up the ramp. This third step represents the problem of the social stigma attached to disability and highlights the need for a change in social attitudes.

The degree of social reintegration often depends on the type of injury sustained. Some patients do surprisingly well. Blinded patients are often worse off than leg victims, however arm and hand injuries are usually the most debilitating.

There is an active vocational training center in Phnom Penh. Unfortunately, the demand for the education exceeds the available resources.

In Cambodia physical disability can be a source of income. Landmine victims are often employed by NGOs which are working with handicap and disability. To some extent having a physical disability makes begging easier. Nevertheless divorce, unemployment and crime is common after a landmine injury.

Community follow-up is an important factor in a complete approach. It is important to ensure the victims' reintegration into their family, society, school etc. However, having a very high caseload often makes individual follow-up in the community difficult.

Non-Government Organisations

It is clear that non-government organisations can play an important role in the field of community development, especially when it is not provided by the public sector. Many NGOs currently operate in Cambodia and a large proportion of these have an active involvement in improving the health of people disabled by landmines.

It is essential for the various NGOs, international organisations and government ministries to be coordinated to achieve optimal provision of services. The Disability Action Council tries to ensure that NGOs are committed so that long-term sustainability is guaranteed and in addition it aims to minimise duplication of services and ensure an equal geographical distribution of these services.

Non-governmental organizations need to be accountable to a donor or client group and have a well maintained record of operational practices. Empowerment and local participation are becoming increasingly seen as important issues for NGOs to address. NGOs and government organizations should be committed to ensure long term sustainability.

Unfortunately, it is an unavoidable fact that NGOs are not capable of solving the vast range of humanitarian problems present. Nevertheless with assistance which is of high quality and effectiveness they can make a significant difference in the lives of underprivileged people.

Given the shifting times in Cambodian politics the future role of NGOs in Cambodia is unclear. Cambodia is now classified in a new context, after a few years of relative peace. Cambodia no longer needs as much support specifically aimed at emergency relief. The question whether aid money will continue flowing into a country which now requires long-term support in a developmental context must be addressed.

Impressions and Conclusions

Our findings confirm that landmines are a significant public health issue in Cambodia. To begin to address these health issues it is imperative for there to be a global treaty banning the use of landmines – this would ensure that all the positive steps being taken are not in vain.

It is essential to continue and expand the current good work relating to demining, surgical rehabilitation, physiotherapy, and prosthetic/orthotic services. Presently the majority of demining, rehabilitation and prosthetic/orthotic services are provided by foreign funded NGO's. It is important for landmine victims to be given many technical and managerial positions within these NGO's. This would provide employment for disabled people, and would eventually lead to a self-supporting, autonomous organisation.

When focusing on the future health of people injured by landmines the areas which require more attention are: acute medical care services; and social reintegration.

Acute medical care could be improved by increasing health care provider's knowledge and basic skills in emergency medicine. The establishment of an effective emergency retrieval system would also be of great benefit. When developing such a system it would be important to overcome the problem of road transportation throughout Cambodia.

A holistic approach to rehabilitation is needed. This must be conducted at a local, and provincial as well as a national level. There must be complete integration of resources and such a programme must have considerable Khmer autonomy while focusing on quality and sustainability.

It is very difficult to quickly change social attitudes. However, if Khmer people can see disabled people contributing to the country in a self-sustaining manner, then hopefully the social stigma attached to disability would be removed. Active involvement in aid organisations would promote a positive image of landmine victims in Cambodia.

Acknowledgements

We are indebted to the following people for their assistance:

Dr Noug Sarom, Plastic Surgeon Kien Kleang Rehabilitation Centre, for his support and organisation

Dr Yeav Boun Thai, Anaesthetist Calmette Hospital and Kien Kleang Rehabilitation Centre.

Dr William Grut, Director Rose Charities

Dr Janet Cornwall, Servants

Mr Laurent Chapuis, National Centre for Disabled People Programme Manager

Ms Stefania Cartti Medical Coordinator of Emergency

Associate Professor Claude Dumurgier, Technical Advisor for surgery, Calmette Hospital

Dr Heng Sambath, Director Trauma and Orthopaedic Surgery, Calmette Hospital

Mr Keo Soeun, Director of Rehabilitation Program Department (MOSALVY)

Mr Ouk Sisovann, Director of Disability Action Council.

Mr Mao Sophan P & O Supervisor Veterans International.

Ms Seng Sithan, Secretary to the Director of Handicap International

Mr Se Vophorn, for his company and translation

The people of Cambodia who made our time so rewarding.

References

1. Chandler, D. A history of Cambodia. Silkworm Books, Bangkok, 1996
2. J.C., Destroy a minefield, Save a life. In Focus. AusAid; 2000: 27-28
3. Stover, E., McGrath, R., Land Mines in Cambodia: The Coward's War. New York Physicians for Human Rights and Asia Watch; 1991: 59
4. Coupland, R.M., Korver, A., Injuries from antipersonnel mines: the experience of the International Committee of the Red Cross. British Medical Journal. 1991: 303; 1509–1512.
5. The Ottawa Treaty, Canada 1997
6. Physicians for Human Rights. Measuring incidents, injuries, and the capacity for care. US, PHR: 1999
7. Monthly Mine Incident Report. Cambodian Mine Incident Database Project, October 2000
8. Department of Planning and Health Information. 1998 National Health Statistics Report. Ministry of Health, Cambodia 1998.

Appendix One

