Survivor Assistance

Introduction

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Scope of the Problem || It is estimated that every year there are between 15,000 and 20,000 new landmine victims.[1] There are more than 300,000 landmine survivors worldwide, and to rehabilitate these survivors, it could cost more than $3 billion (U.S.) over the next 10 years.[2] This chapter examines landmine survivor assistance activities, especially prosthetic rehabilitation and social reintegration. To meet this need, the international community can undertake a range of survivor assistance activities and initiatives. This chapter also highlights several instances of landmine survivor assistance. While the authors realize that landmine survivor assistance programming differs from location to location, we believe that prosthetics and social reintegration are two important aspects for the international community to consider when helping survivors. Before discussing these aspects, we briefly highlight the background on why and how landmine survivor assistance became a focus of international attention. We then discuss prosthetic rehabilitation and reintegration.

How Does the International Community View Landmine Survivor Assistance? || In 1980, the international community officially recognized the humanitarian harm caused by landmines when the Landmine Protocol was attached to the Convention on Conventional Weapons (CCW). By adopting the protocol, States Parties intended to reduce the effects of landmines by restricting their use to certain areas and under particular conditions. Nevertheless, the death and injury toll caused by landmines in the late 1980s and 1990s continued to increase. To stop landmine proliferation and alleviate the effects of landmine use, the international community drafted the 1997 Mine Ban Treaty. Through it, States Parties are encouraged to provide survivor assistance through bilateral exchanges, non-governmental organizations (NGOs) and International Committee of the Red Cross (ICRC) survivor assistance programs, or through donations to multilateral institutions, such as the United Nations (UN), earmarked for mine survivor assistance.

States are the main multilateral donors and, by definition, the only bilateral donors. For example, in 1999, 17 states contributed more than $210 million dollars to mine action programs, while the major non-state international actor, the United Nations, spent $11.9 million.

Who is a Victim? || According to the International Campaign to Ban Landmines (ICBL), the definition of "landmine victim" is "those who, either individually or collectively, have suffered physical, emotional and psychological injury, economic loss or substantial impairment of their fundamental rights through acts or omissions related to mine utilization."

This young boy was injured by a blast mine in Kosovo while tending to his family's cattle.

An injured Cambodian deminer is given first aid in the field by his fellow deminers.

Therefore, the ICBL believes that "mine victims include directly impacted individuals, their families, and communities affected by landmines.[6] Article 6, Paragraph 3 of the Mine Ban Treaty calls for States Parties to "provide assistance for the care and rehabilitation, and social and economic reintegration, of mine victims and for mine awareness programs."

What Comprises Survivor Assistance? || Survivor assistance does not necessarily have to be delivered through programs. States, governments, charitable organizations and NGOs can assist victims through the establishment of appropriate programs and policy. The definition of survivor assistance is comprehensive and is not restricted to the provision of medical treatment for initial traumatic injuries and the provision of prosthetics. Survivor assistance also includes ongoing treatment to aid in the physical therapy, and mental and emotional rehabilitation of survivors and their families. Landmine survivors themselves have defined survivor assistance as "emergency and medical care; access to prosthetics, wheelchairs and other assisitive devices; social and economic reintegration; psychological and peer support; accident prevention programs; and legal and advisory services."[7] These activities can take the form of continued rehabilitative care, psychological and social counseling, vocational training, broader public advocacy for disability rights and judicial reform aimed at removing barriers persons with disabilities face while reintegrating into society. For example, if a state does not have the financial resources to provide direct survivor assistance, it can satisfy its obligation to assist victims through policy changes enabling survivors to become more fully integrated into society's economic and social realms.

What Happens to a Survivor? || Once someone has lost a limb to an anti-personnel mine or another form of exploding ordnance, surviving the injury and healing the wound are key accomplishments. These are followed as soon as possible by rehabilitation, which may include prosthetic fitting. Early on, good medical, rehabilitative and prosthetic care is vital.

But it doesn't and can't stop there.

For someone who has lost a limb, the amputation is a chronic problem. Barring a limb transplantation or regeneration—which appears to be a long way off—an amputee will spend the rest of his or her life missing a limb. Quality of life, social acceptance, perhaps even survival may depend upon having access to prosthetic care, indefinitely. The challenge of meeting this chronic and escalating need in an appropriate way is presenting governments, rehabilitation experts, humanitarian groups and potential donors with difficult questions and confusing answers that so far have failed to provide broad, realistic solutions.

A landmine survivor works on physical rehabilitation at a Nicaraguan landmine victim center.

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Prosthetic Rehabilitation

(Above) A young mine victim is treated for her injury at an ICRC supported hospital in Angola.

(Right) A Nicaraguan worker crafts new prosthetics for landmine survivors.

How is Prosthetic Care Given? ||

Regardless of how well-made it is, a prosthesis will need ongoing repairs and adjustments. At some point, the device will wear out and need to be replaced. Additionaly, the wearer's body will change over time, as will his vocational and recreational needs. For manual laborers or those who live in harsh environments, repairs and replacement will be more frequent.

For amputees to function effectively with a prosthesis throughout their lifetimes, they need permanent access not just to devices, but also to service. To think of prosthetic care in any other way is to do a disservice.

Prosthetic care has always suffered an identity crisis of sorts. This is because it involves both a device and the expertise necessary to make, fit and maintain it. In the U.S., a debate is still underway regarding whether to classify a prosthesis as "durable medical equipment" (i.e., a device like a walker or a crutch) or as an allied health service. But ask anyone who has lost a limb if—in addition to the expertise that went into it—they could wear their device comfortably and effectively over the long haul without knowledgeable, qualified service. Chances are, they will answer unanimously, "No."

Unfortunately, the device receives most of the attention. It is perhaps the most tangible aspect of the amputee's rehabilitation. Yet even the most technologically advanced prosthesis falls woefully short of the original it is intended to replace. Too often, the technology—the nuts and bolts, or perhaps the circuits and carbon composites making up the device—gets the headlines. Even more important is whether the amputee can tolerate wearing the prosthesis, whether or not his limb is free of abrasions, ulcers or infections, or whether the device and its components are aligned so he can walk on it smoothly. Behind the device's architecture, hopefully, lies an artist. For good functional outcomes, regardless of components and materials, there must be knowledgeable application of the technology.

It seems self-evident that the person fitting the limb requires a level of knowledge and expertise appropriate to the task at hand. However, this is often strangely overlooked. It is not uncommon to hear that hundreds of thousands of dollars have been spent training developing world "field workers" to replace missing limbs successfully with some form of kit or technique after completing a course no longer than two weeks. Such training might be appropriate for experienced orthopedic technologists, but the adequacy of such a course must be questioned if it is being provided to people who lack a basic understanding of human anatomy, let alone an understanding of prosthetic principles.

Any prosthesis must make contact with the wearer's body. More than anything else, this intimate interface, or "socket," determines the success of the device. Compare it to glasses. If the nose-rests dig or the earpieces pinch, it's difficult to tolerate wearing corrective lenses for long. How about dentures? Imagine trying to enjoy a steak with a set that makes your gums fester and bleed. Now consider laboring in a muddy rice field for days on end with a leg

that produces blisters and open sores.

Concerns with Prostheses || In the wrong hands, the best components and materials are worthless. In the right hands, even "primitive" materials can be manipulated to fit comfortably and be aligned appropriately. Good materials to work with help. But the difference is knowledge and expertise, not materials and components.

Herein lies the heart of the debate regarding what constitutes appropriate prosthetic technology, particularly for landmine victims in developing countries.[8] Each question begs another. How does one best meet an overwhelming, chronic need with limited resources? Deep pockets aren't enough. Does it make more sense to bring one hundred amputees to the U.S. and fit them with "computer legs," as opposed to fitting 10,000 people locally with simple wood and plastic? What materials and components might be manufactured or acquired locally? Are there sound, pre-fabricated, computer-aided, or "quick-fit" alternatives to traditional custom-made limbs? What happens when any kind of limb fails and there's no one around to repair or replace it (and no way to afford it if there were)? Should the focus then be on developing training institutions for prosthetists rather than on production of limbs? But what good does it do to train locals if their medical system doesn't recognize such education and their clients can't pay for services? How many war-torn nations even have a viable, interdisciplinary rehabilitation service that a trained prosthetist can "plug into?" Should the focus then be on building local infrastructure rather than importing temporary "relief"?

Service Delivery Approaches || Few of these questions have simple answers; and complicated responses are rarely good responses. In fact, the only thing that is clear is that traditional approaches from the industrialized world have failed so far to solve the overwhelming prosthetic-orthotic challenges of the developing world. Clearly, some "out-of-the-box" thinking is indicated. But as the saying goes, may the buyer beware. It is one thing to say that a decision to provide prosthetic training, components, materials or services in the developing world should respect the permanent needs of persons who have lost limbs. It is quite another thing to make good on the claim that one knows how to do this quickly or universally.

Humanitarian groups or donors are likely to discover they fall into a service "niche," rather than providing the entire prosthetic solution for any

(Above) Dural Benek, age 9, is fitted for a new prosthetic leg by American Physicans for Peace volunteer Richard Sieller at Dicle University in Turkey.

(Left) One of the many Cambodian mine victims practices walking on his new prosthetic limb.

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Prosthetic Rehabilitation

country. Thus, such groups would do well to evaluate the niche they are considering funding, and see how well it might fit into the big picture, the long haul.

Consult Others || One way of doing this is to consult with groups who, rather than making promises or posting impressive numbers, know how tough the problems are and are dedicated to developing solutions. The International Society for Prosthetics and Orthotics (ISPO) exists, among other reasons, as an impartial, nonpolitical coordinating, correlating and advisory body on prosthetics and orthotics. Such organizations can provide invaluable guidance regarding maximizing resources, and collaboration with other national and international bodies, and they can help avoid unwitting duplication of effort.

Many NGOs have extensive experience in the developing world and also should be consulted. As importantly, USAID manages the Leahy War Victims Fund, a program focused on responding to the needs of victims of conflict. In addition to providing a dedicated source of financial assistance for people living with disabilities—primarily those who suffer mobility-related injuries caused by UXO, including landmines—the Fund maintains a source of professional technical expertise that can be made available to organizations interested in starting or supporting rehabilitation programs.

Finally, local inhabitants who struggle to provide services and develop a support structure within affected countries should not be ignored. Often, well-intended foreign humanitarian assistance can "kill" or set back the local cottage industry.

If the goal of a humanitarian organization or group of donors is to provide prosthetic services (including limb production) their effort should not be undertaken in a vacuum, or from a simplistic "in-and-out" perspective. "Today" must be linked to "tomorrow," or the amputee is left limbless in the long run.

When there are thousands of amputees without access to services, short-term "relief" projects may be appropriate, but preferably only if the techniques and technology being imported can be maintained and replaced effectively, in country, over the long haul. Short-term services should "dovetail" with the rehabilitation model and whatever local prosthetic expertise is likely to remain after humanitarian organizations move on to other projects where the situation is even more desperate.

Amputees practice using their new prosthetics at a rehabilitation center in Mozambique.

Wheelchairs || In some instances the mobility of a surivior can only be increased or enhanced through the

(Left) A man relearns to walk at an ICRC orthopedic center.

(Below) A health worker helps a small child who lost both legs in a landmine explosion learn to walk with two prostheses and arm crutches at an orthopedic workshop run by the ICRC in the war-devastated city of Kabul, Afghanistan.

provision of a wheelchair. Liek the provision of a prosthesis, providing wheelchairs is not just about the chair itself. Rather, it is about increasing the quality of a survivor's life through increased mobility and opportunity. When the wheelchair itself is the the focus, there is a great temptation for an organization to take a "one size fits all" approach and mass produce, or collect donated, chairs and counduct mass deliveries. Not only are these wheelcharis generally ill-suited to the rough urban and rural environments of low-income countries, but they do not provide long-term solutions, and have in some cases, caused the collapse of local wheelchair manufacturing enterprises. More importantly, however, these types of programs neglect the need for individual assessment and prescription, basic training in safe and effective wheelchair use, and a reliable back-up repair service.

In the final analysis, though, if the device is to be appropriate, a human being has to be able to interface with it, wear it comfortably and function well.

Why Landmines

by Huntington Associates

Landmines have established themselves as one of the most widely used weapons because they are easily obtainable, easy to use and effective. They can delay or kill the enemy while the forces that laid them remain a safe distance away. When combined with additional forms of attack, landmines can shape the battlefield to increase the effectiveness of other weapons systems. They exert a psychological force and instill a fear that no other conventional weapon possesses.

Historically, mines have been used to protect ground forces, national boundaries and battle lines. Mines have also been used offensively to shape the battlefield. Soldiers will often allow themselves to be channeled into killing zones rather than go into a mined area. In short, armies throughout the world have used mines to instill terror in the enemy—to cripple opposing forces, distort their judgment and sap their willingness to fight.

A consequence of using explosive mines in warfare has been their unintended impact on civilians. "Dumb" landmines make no distinction between an enemy soldier in battle and an innocent civilian who comes along years after the conflict is over.

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Reintegration and Disability Issues: Viet Nam, A Case Study

I'm healed…now what? || When areas contaminated with landmines and unexploded bombs have been cleared or cordoned off, when the maimed survivors of an explosion, undiscriminating and inhuman carnage are saved and healed, when the provision of necessary prostheses, medical rehabilitation and psychological adjustment are completed—what then is the newly disabled person to do? What has become of his educational and vocational opportunities? Is there employment to aspire or return to? Will she be able to support herself and/or her family? Will he be able to fully participate in the social, political and economic life of his community and country? Will she be economically self-sufficient?

A bilateral amputee using a wheelchair faces stiff challenges: how to get a job if he lacks transportation to get to the job site; how to educate the employer about her capabilites even as she works from a wheelchair; how to work within national labor laws that may limit options for the disabled. The list is endless as to why people with disabilities are excluded from our economies, our politics and our social structures. They all need to be addressed in a comprehensive, coordinated continuum of programs, policy reform and serious attitude adjustment. We start with employment because it is the standard cultural measure of productivity and economic contribution.

American volunteer doctors from Limbs for Life help a young boy learn to walk with his new prosthetic limb.

It is important to keep in mind that we need comprehensive national and community-based reforms combined with a societal recognition that disability has nothing to do with the essence of our humanity and citizenship.

Employment and Economic Integration || One of the ultimate goals of a comprehensive landmine survivors assistance program has to be individual economic self-sufficiency for the disabled survivor and any dependents for whom he/she may be responsible. In order to create meaningful programs that will contribute to the achievement of this goal, there have to be comprehensive assessments of the individual with the disability; the local situation in which she/he lives; and the national cultural, political and economic situation. People with disabilities should be evaluated in terms of their age, disability, educational background, vocational skills, work experience, and personal desires and goals. These individual profiles need to then be integrated into the reality of the locality's educational system, employment support system, vocational training opportunities, area employer needs, employment opportunities, transportation infrastructure and the local economy.

In completing these assessments, the service provider (NGO or local agency) must respond to the individual desires of people with disabilities, seeking their input and honoring their personal aspirations.

Once a proper assessment has been made, the provider decides how it might be able to contribute to an environment that will support and empower people with disabilities. Service providers have many options. Some may want to concentrate on children and youth as they work with local authorities or the national government to ensure that mainstream educational opportunities for people with disabilities are accessible, relevant and available. It is obvious that the better the education an individual receives the better their job opportunities. Organizations around the world have realized and learned that people with disabilities can achieve levels of employment and economic well being comperable to that of their non-disabled peers when given equal educational opportunities from the elementary school to the university level. Where these considerations are absent, children with disabilites suffer. In Viet Nam, for example, over

75% of children with disabilities, many of them landmine survivors, receive no education whatsoever. It is a major contributing factor to the 90% plus unemployment rate of people with disabilities in Viet Nam.

Other areas where service providers may want to develop programs include vocational rehabilitation and training, development of self-employment programs and micro-loan funds to support them, and development of relationships with local employers and employment services to increase job opportunities. Another successful model for employment of people with disabilities that may warrant consideration is business enterprises for people with disabilities. Here the service provider must be aware of what they are supporting. In many places these enterprises are not run by people with disabilities themselves, but rather by government appointed or licensed able-bodied persons who have turned the business into a profitable enterprise for themselves with few benefits for the staff members who are disabled.

Employment Opportunities || In Viet Nam, a non-governmental organization, Viet Nam Assistance for the Handicapped (VNAH), recently began a comprehensive program with the Vietnamese government and funded by the U.S. Department of Labor to increase employment opportunities for people with disabilities, many of whom are landmine survivors. This comprehensive program addresses three major problems in Viet Nam: compliance with legal mandates, the shortage of skilled labor, and the unemployment of Vietnamese with disabilities.

The project will provide assistance to government at all levels to promote the effective implementation of labor law and policy on employment opportunities for persons with disabilities. The project is reforming the national system of employment services and training centers to make them both accessible to people with disabilities and capable of meeting their employment needs. These activities will be concentrated in eight provinces. The project will also include a public awareness campaign aimed at employers, local officials and people with disabilities to spread knowledge about the capabilities of well-trained disabled workers. Pilot projects will be conducted in three provinces to place over 400 disabled persons in mainstream, competitive jobs. Adequat funding is essential in order to extend this project to all of Viet Nam's provinces, especially those ravaged by war and the continuing effects of landmines and unexploded ordnance.

Service providers and donor agencies can do their part by employing people with disabilities on their staffs and encouraging the employment of people with disabilities on the staffs of organizations with which they work.

Legislation and Public Awareness || Nations and communities need to recognize their cultural biases, attitudes and prejudices against people with disabilities. In many such cases prejudice comes from benign and benevolent feelings and attitudes that reflect the ambivalence that exists in dealing with the disabled, especially victims of landmines and wars. These matters are great personal tragedies. Emotional and attitudinal trauma often far exceed the of the physical damage to the body. Victims feel helpless and vulnerable, and question their own future and abilities. Families and societies must deal with guilt, anger, doubt and self-pity. In many countries, this turns into a paternalistic, "care-and-protect" health care model that can degrade and exclude people with disabilities. The exclusion and degradation shows up at home, at church, the job, at the social services center, and in the government's paternalistic policies. All of these need to be addressed

This 16 year old monk was injured by stepping on a landmine while coming home from a wedding ceremony.

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Reintegration and Disability Issues: Viet Nam, A Case Study

This Cambodian refugee and landmine survivor lost his leg during Cambodia's civil wars.

through public awareness and education and changes in national and local laws and policies so that people with disabilities are appropriately supported and empowered to take care of themselves and determine their own futures.

There is much work to be done worldwide on the legislative and policy front. Nations need a proper legal framework to set the agenda for empowering people with disabilities to achieve equal opportunity, full participation in society, independent living and economic self-sufficiency. Careful program design and skillful political efforts in cooperation with people with disabilities and their representatives, and with the government and other sectors of society, including the business community and NGOs.

Developing Policies which Support Survivors || VNAH developed an effective policy and law program in Viet Nam, in operation since 1996. As a result of their efforts with the National Assembly and various governmental ministries, Viet Nam now has a comprehensive Ordinance on Disabled Persons, which is loosely modeled on the Americans with Disabilities Act in the United States. Recently, Viet Nam enacted its first Barrier-Free Access Design and Building Code and Standards for the construction of buildings and facilities. The National Coordinating Council on Disability, an interministry implementation and coordination agency formed to oversee, coordinate and evaluate the implementation of these and other laws pertaining to people with disabilities.

For developing countries, creating an empowering law, policy and program infrastructure is critical. As a country such as Viet Nam aggressively develops and begins to join the mainstream of the world economy, it will become decreasingly dependent on foreign assistance for programs such as landmine survivor assistance for limbs, rehabilitation, vocational training, employment, etc. If it is a priority that people with disabilities not be left behind a newly-prospering society, then empowering and solid legal and programmatic infrastructures need to be in place. Developing programs that support this infrastructure is extremely worthwhile.

A solid legal and programmatic infrastructure and a healthy economy do not in and of themselves ensure that people with disabilities will take their rightful place in their societies, politics and economies. While advocacy at the highest levels of government and business is essential, even more important is grass-roots empowerment and the organization of people with disabilities. In every country where people with disabilities are beginning to emerge from the back rooms and dark shade of a prejudice that allegedly protects and cares for them, success was achieved because people with disabilities themselves were empowered and organized, and demanded their human rights before their government, their society and their families. Often this empowerment has been supported by NGOs through the building of self-help groups and user groups, training to develop their leadership and advocacy skills.

In this situation, an empowered disability community must learn to relate its issues and problems to the broader society and economy of their communities and countries, and they may require financial and technical support to reach out to the public and policy makers. To effectively communicate their needs, the disabled community will also need to: hold meetings, workshops and conferences; explain their case in a compelling manner to the press and media; identify allies and build coalitions with diverse groups; expand their base and disseminate information to their members; and understand and communicate how disability relates to the overall economic situation of a country. People with disabilities need to be involved in deciding and controlling their destiny in every aspect of the development process, from the grass roots to the halls of parliament.

Through its informal actions, the international community can support and endorse national legislation to promote effective treatment, care and protection for all disabled citizens, including landmine survivors. Legislation should ensure that disabled populations have legal protection against discrimination and assurance of an acceptable level of care and access to services. Moreover, landmine survivors should be given access to a formal statutory complaint mechanism to address their concerns and protect their interests. Lastly, the international community can accept responsibility for raising public awareness of the needs of its disabled citizenry and to counter the stigmatization of persons with disabilities. This type of policy implementation can include community education measures, such as a campaign to publicize the abilities of the disabled and the availability of rehabilitative and social services.

Accessibility || It is difficult to be empowered and involved if you cannot go anywhere, communicate or participate. For people to have equal opportunity, full participation, live independently and be economically self-sufficient, they have to be able to get into buildings and facilities, go to the workplace, get from place to place and town to town, use a telephone, access the internet, read a newspaper, and communicate with others. This can touch on everything from public policy, building construction and software development to teaching Braille and sign language. The list of fundable projects to help disabled survivors of land-mines access their society, government and economy is almost endless.

The guiding principles that donors and program operators should always follow to ensure the involvement of people with disabilities in deciding the essential elements to improving access. Assist them in making an informed decision. Above all, set an example; be sure that your own operations are a model of accessibility for all.

The international community can also provide survivor assistance by providing increased physical access to persons with disabilities. Full and open access to the physical environment, rehabilitation and social and economic programs is a means of equalizing opportunities in all spheres of society. This chapter defines access to include: ensuring access to buildings and public places, the availability of first aid, emergency and continuing medical care, physical rehabilitation, employment opportunities, education and training, religious practice, sports and recreation, safe land and tenure of land, information and communication about available services, and the elimination of physical obstacles to mobility. The international community can also set affirmative action policies designed to encourage the education, recruitment and hiring of landmine victims and persons with disabilities. It can also encourage the inclusion of landmine survivors and landmine-infested communities in all initiatives and activities that concern them.

This young Cambodian awaits her physical therapy at an ICRC orthopedic center.

Smart Mines vs. Dumb Mines

by Huntington Associates

Today's landmines can be grouped in two categories: "dumb mines" that remain active in the ground after battles are over and "smart mines" which de-activate or self-destruct after a fixed period of time leaving no battlefield residue.

"Dumb mines" are simple explosive devices that are activated by uncomplicated mechanical means. They are cheap, are easy to obtain or make and remain active for decades after they have been laid.

In recent years, unconventional forces and some armies have used "dumb mines" indiscriminately in long-term, low-intensity civil conflicts. Some are specifically targeted to civilians and are placed around houses, water sources, schools and agricultural land with the express purpose of instilling terror and demoralizing enemy families and communities. It is these mines that are the major cause of accidents for innocent citizens around the world.

"Smart mines" are landmines that self-destruct by means of an incorporated mechanism; they also self-deactivate, rendering themselves inoperable by means of exhaustion of a component of the mine that is essential to its operation. Smart mines become inert once the battle is over. The United States has applied "smart mine" technology to both anti-personnel landmines and anti-tank mines. These are minicomputer-operated mines that "self-destruct" after a predetermined period ranging from 4 to 48 hours, or in some cases, 15 days. In the unlikely event that self-destruction does not occur, they will deactivate when their batteries run out in 120 days. Despite the advantages of "smart mines," they are costly to produce and not accessible to unconventional forces.

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Conclusion

A number of valuable lessons have been learned over the past twelve years from programs that have not produced positive results.

Who should provide survivor care? || One of these lessons is that orthopedics and physical rehabilitation rank extremely low on the scale of priorities for ministries of health in most post-conflict countries specifically, and in most developing countries in general. Where resources are limited, the epidemiological health burden of physical disabilities is extremely difficult to promote. A formidable challenge, but one that seems to promise great payoff for the investment, is to have prosthetic and orthotic workshops incorporated meaningfully into a country's health structure.

A Cambodian injured by landmines now cares for these orphans whose parents were killed during war.

The question of who should provide prosthetic and orthotic services is often an issue. Where no tradition or nongovernmental organizations (NGO) exist; a government sometimes tries to reserve this function to itself. But without dedicated resources and professional oversight, the quality of these services is usually weak.

While the transfer of financial and managerial responsibilities from international NGOs to the government health ministries may be a noble goal, the exclusion of NGO partners (commercial or not-for-profit), is often critical and can mean the degradation of services to victims.

Technical Considerations || The development of appropriate technologies in developing countries is an essential requirement of any successful, sustainable orthopedic service delivery system. Appropriate technologies can be natural or synthetic. They can be imported or produced locally. However, they must be accessible, affordable, durable, easily repairable, and functional.

An ill-fitting or poorly aligned prosthetic limb results not only in limited use, but also, in many cases, in physical harm to the patient. The measure of success in prosthetics is not how many prostheses are provided, but how many are actually used on a regular basis.

The Human Side || Another lesson learned is that traditional beliefs and attitudes can be the greatest obstacle to the social and economic well-being of people with disabilities. Programs that have not addressed the issues of the culture, mores, and belief systems of inhabitants can demonstrate little if any real success.

Recent experiences with humanitarian activities also suggests that advocacy, legislation, and policy reform which include the participation of, and focus on, people with disabilities is as essential for their social and economic reintegration as a prosthesis.

Basically the human factor is the key to sustainable, quality care and services. Appropriately trained,

These Guatemalan men were injured by landmines while fighting for their country's army.

supervised, and supported service providers are essential to a successful program. While there continues to be much stress on technical issues, it is noted that most often, weak or ineffective management (at various levels) and not technological failures, which leads to unsustainable services.

The most successful programs have integrated rehabilitation into existing social systems, employed staffs with recognized credentials, have been responsive to patient suggestions and recommendations about how to improve service, and exploited public-private sector partnerships.

Because of the efforts of the past decade we can now look forward to the following trends in landmine survivor assistance:

- Better and less expensive materials hold out the promise of better limbs becoming available.
- As more people with disabilities find their voice, they become more effective lobbyists for what is most helpful to them.
- As donor groups coordinate services, duplication of services can be avoided and more equitable availability of services can be achieved.
- As more people with disabilities are able to support themselves and their families, local interest and investment accelerating their social and economic inclusion will follow.

Angolans who live in the slums of Ludana are faced with landmines and UXO every day in their community.