

Rehabilitative services should produce devices that are safe, durable, and can be maintained and repaired locally.

An amputee's first artificial limb is transitional and may not fit properly within months, or will need eventual repair and replacement. Thus, the availability of long-term services must be ensured for necessary adjustments or replacement. Improperly fitting or poorly designed prostheses can cause problems with skin breakdown and infection, leading to further surgeries, and adversely affect the user's gait and spine. Donations of used or prefabricated prostheses cannot be adapted to fit properly, and are thus discouraged in favor of locally manufactured, fitted and serviceable prostheses. Pre and post-prosthetic care should include physiotherapy to prepare for and ensure proper use of assistive devices and prevent secondary problems or injury. Attention must be given to resources and training for physiotherapists and other rehabilitation personnel, and for the treatment of landmine injuries other than limb loss, such as loss of eyesight, deafness and paralysis.

ICBL: Guidelines for the Care and Rehabilitation of Survivors, 1999

GENERAL INFORMATION

The required work to rehabilitate landmine survivors must not be underestimated. It is a massive undertaking that must go on for decades.

There are four aspects to rehabilitation:

- Medical care
- Environmental care
- Psycho-social care
- Prosthetics & Orthotics (splints and braces)

Medical Care

The patient must first survive, and be physically and emotionally prepared to the best possible degree for the long time of rehabilitation by good primary and secondary care.

Environmental Care

This means making the mined area safe and sufficiently stable to ensure that food supplies can be maintained, and that community life can be restored and encouraged. Rehabilitation of the individual requires rehabilitation of the community that has been disrupted and displaced by war, its fields and roads made unsafe by landmines.

Mine-infested land denies the local population access to their food supply; it also inhibits education (when the area between a village and the school is mined).

Humanitarian de-mining consists of identifying, marking, fencing, and clearing mined areas.

This is an enormous and expensive task, and deciding where to begin with humanitarian de-mining (in other words, where it is most needed) is difficult.

Psycho-social Care

Amputation, blindness, and deafness all lead to social isolation, which, in turn, can lead to depression and to family and community breakdown.

Satisfactory rehabilitation can be achieved by:

- Changing how handicapped people are regarded by the community;
- Educating the society;
- Reordering the allocation of work and jobs, and what are seen as necessary characteristics and pre-requisites for particular work;
- Helping to improve the self-esteem of mine victims.

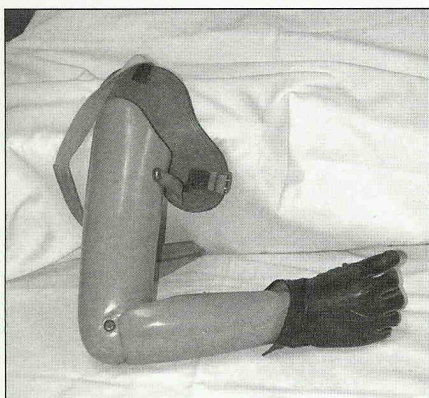


Figure 30. An arm prosthesis is rarely useful.

Prosthetics & Orthotics

Realistic planning depends upon knowing the precise numbers of amputees (for example, there are an estimated 15,000 amputees in Angola; 5,000 in Uganda).

One must recognise that:

- Money is scarce (war brings economic paralysis);
- Effective rehabilitation requires a life-long commitment by the health service providers, the family, and the patient;
- Where social infrastructure and health services are broken down, and where there are food shortages and poverty, mine victims will find it extremely dangerous to obtain prostheses; many will resort to making their own prostheses.
- There is a widespread need for educated prosthetists and orthopedics, for more workshops, for supplies of raw materials, and for appropriate technology;

There are several types of suitable prostheses available, such as the Jaipur leg and foot, the ICRC limb (polypropene material), and others. These are relatively cheap and can be manufactured at the local level, but there may be substantial costs associated with establishing and managing the facilities in which they are made..

FOLLOW-UP AT THE RURAL CLINIC AND DISTRICT HOSPITAL

The need for patient follow-up must be emphasized. It involves making sure that:

- The prosthesis fits well;
- The prosthesis is functional;
- The prosthesis is not painful;
- Its mechanics have not failed.

Follow-up caregivers must also look for signs of pressure and monitor the patient's level of comfort with the prosthesis.

Key figures can be appointed within each community (teacher, church leader, etc.) to ensure that follow-up takes place and that the patient comes for review when necessary.

The clinical officer/nurse at the rural clinic needs to educate and inform the patient about the various options (crutch, platform crutch, prosthesis, wheelchair, etc.); this means that these health workers need to be well trained and informed themselves.

Patients should be given a "problem list" to help them identify any defects in the prosthesis or any complications of using it, and what to do about it. For example, if the stump is painful, inspect it carefully for sores or tender areas and try leaving it off for a day or two. If the pain keeps returning, come in for review of the fit.

Rehabilitation

All health workers should know that in most cases a prosthesis needs to be refitted after 18 months.

REHABILITATION FOLLOWING AMPUTATION

At the District Hospital

Within each national health service, guidelines are required to determine the eligibility of patients for particular prostheses (eg. upper-limb amputations usually do not benefit from prostheses); The question should be “For which patients will the prostheses be of greatest benefit?”

Amputation Surgery

Early post-operative rehabilitation includes:

- Physiotherapy;
- Stump bandaging;
- Referral to prosthetic workshop.

Amputation

Following amputation, will a prosthesis be useful, and will it be used by the amputee?

Not all amputees will benefit from prosthesis. The chart on page 63 is a guide indicating those to whom limited funds and facilities for prostheses should be directed.

PROSTHESES AND THEIR MAINTENANCE

In situations of severe financial constraint there are alternatives, e.g. The “Peg Leg” prosthesis, “stubbies,” or the platform crutch.

A peg leg is a straight strong stick of pylon attached to a cup made to fit closely to the stump. It may be made of wood or metal. It is cheap and allows standing or walking, but is not comfortable for sitting on the floor.

Stubbies are prostheses with short pylons, which keep the body close to the ground, and for persons with bilateral above-knee amputations are easier to balance.

The platform crutch was designed for use following hip disarticulation, but it can also be used for amputations. It is a crutch with a small projecting platform that supports the buttock on the affected side. It is easily made, using cheap materials available locally. The upper part of the crutch fits into the armpit and frees the hands for other uses, taking the weight of that side of the body and relieving weight on the other leg. It is also useful in pregnancy as weight distribution alters, making use of other prostheses difficult.

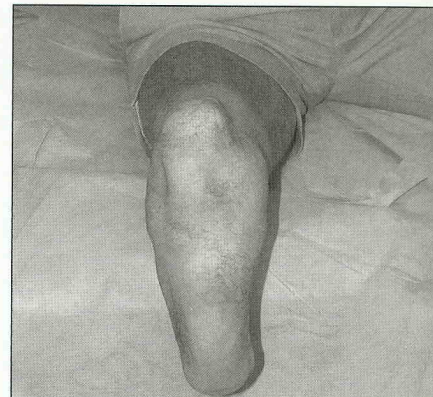


Figure 31. A smoothly tapered stump allows best fitting of a prosthesis.



Figure 32. A simple peg-leg, made from wood and held on by straps above the knee may be adequate for daily work.



Figure 33. Man using a platform crutch. Photo: Dr. Christina Maraschini.



Figure 34. A person with amputations to both legs may be able to walk on short prostheses called stubbies.

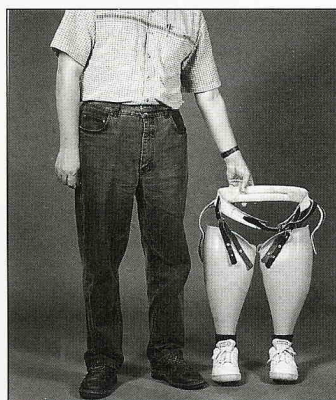


Figure 35. Another type of stubby. Photo: Dr. Christina Maraspini.

INSTRUCTIONS TO AMPUTEE

The artificial leg should be removed and the amputation stump washed and dried and both carefully inspected at the end of each day, or if painful or uncomfortable.

Stump — Look for

- Redness/discoloration of skin
- Blisters/abrasions
- Open sores/wounds
- Painful/tender areas

Artificial leg — Care and Inspection

- Always take it off at night
- Clean/wash socket daily
- Clean stump socks daily
- If the socket has separate lining, clean daily
- Inspect socket and other components of the artificial leg for cracks, loose screws, or other damage

Other Problems

Seek advice early; report to rural health centre

Will a Prosthesis Be Useful?

Patient	1 Upper Limb	Both Upper Limbs	1 Below Knee	Both Below Knee	1 Above & One Below	1 Above Knee	Both Above Knee
Children 2-15 years	YES	YES	YES	YES	YES	YES	YES – STUBBIES
Adults 15-50 years	NO	YES	YES	YES	YES	YES	STUBBIES/ WHEELCHAIR
Adults over 50*	NO	YES	YES	ATTEMPT*	ATTEMPT*	ATTEMPT*	PROBABLY WHEELCHAIR
Associated Blindness	YES	YES	YES	NO	NO	NO	NO
Blindness							

* Depending on general health, etc.

- If the artificial leg appears to get shorter, or gives a feeling of “telescoping” when walking, it is not fitting properly;
- Do not wear the artificial leg on open sores/wounds;
- Always bring the artificial leg with you when seeking advice.

Looking Ahead

- Every amputation stump will shrink in size over the first 12-18 months after the amputation. For this reason it will need to be re-fitted after this period of time.
- Once the amputation stump has matured, renewal or refitting will only be necessary every 3-5 years.
- An artificial foot may need to be replaced more often, probably every 12-18 months.
- Children, who are still growing, may need renewal or refitting of the prosthesis more often.

INSTRUCTIONS TO CLINICAL OFFICER/NURSE

If patient complains of pain or inability to use prosthesis, check:

1. Stump

Look for any area of:

- Redness;
- Discoloration;
- Blistering/abrasions;
- Open sores/wounds;
- Pain/tenderness.

NOTE: Instruct amputee to leave prosthesis off until signs/symptoms settle.

2. Socket

Inspect for:

- Obvious cracks in socket;
- Deformity of shape of socket;
- Loose screws (in joint mechanism);
- Broken suspension belts;

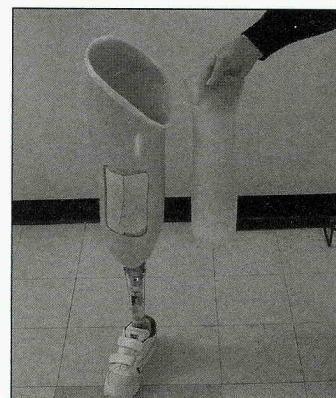


Figure 36. A silicone cover for the stump ensures a good fit into the modern prosthesis. A simple sock is also effective but must be kept clean.



Figure 37. A badly injured limb needs careful fitting of a prosthesis over the irregular stump.



Figure 38. Checking the fit of a prosthesis at the ICRC Center for Orthopaedic Rehabilitation, Kassala, Sudan.

Photo: Luc Chessex, courtesy of the International Committee of the Red Cross.

- Broken prosthetic feet;
- Loose fitting socket (telescoping).

NOTE: Refer to prosthetic centre (amputee and prosthesis)

If the prosthesis is satisfactory, and once the stump has healed (recovered), try again.
If still uncomfortable, refer to the prosthetic workshop (amputee and prosthesis).

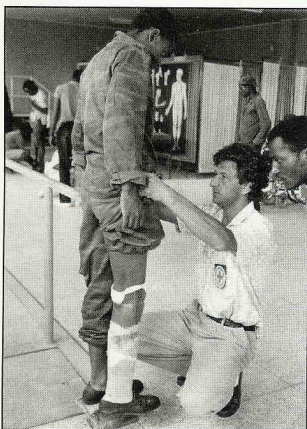


Figure 39. Fitting a prosthesis in a Bomba Alta prosthetics workshop at the Orthopaedic Center of Huambo, Angola.

Photo: Y. Muller, courtesy of the International Committee of the Red Cross.