

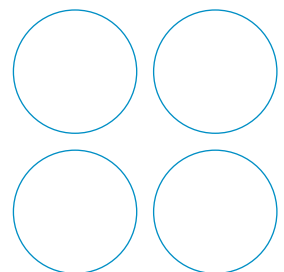
Prosthetics and Orthotics Programme Guide

Implementing P&O Services in Low-Income Settings

A guide for planners and
providers of services for
persons in need of
orthopaedic devices

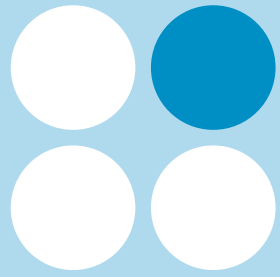
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A collaborative effort of 35 organizations and agencies



Endorsed by
The International Society for Prosthetics and Orthotics

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Providing Prosthetics and Orthotics (P&O) services is extremely challenging in low-income settings. Persons with disabilities throughout the world lack adequate access to local prosthetics and orthotics rehabilitation services, inhibiting their full inclusion in society.

Developed by 35 organizations and agencies, the Programme Guide provides a comprehensive approach for implementing P&O programmes — a summary of good practices built for the service user so that the maximum number of persons can access P&O devices.

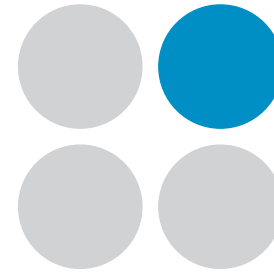


table of contents

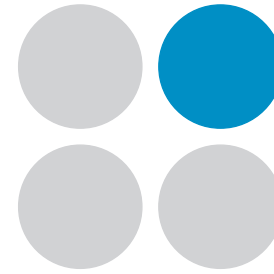
Executive Summary	1
Introduction	3
Background	3
How the Programme Guide Can Be Used	4
Programme Guide Characteristics	5
Acronyms	6
Definitions	6
Rehabilitation and P&O Services — An Introduction	7
Rehabilitation and Inclusion in Society	7
Prosthetics and Orthotics Services	9
Important Aspects of P&O Rehabilitation	10
Comprehensive and Efficient P&O Services	12
The Service User	12
Awareness-Raising	15
The Role of Government	17
National Planning for Services	17
Accessibility	19
Integration and Collaboration	22
Governance	27
Priority-Setting	28
Service Facilities	29
Technology Aspects	30
Service Provision	34
Follow-up of Service Users	40
Quality and Impact of Services	41
Planning and Reporting	43
Staff Issues	45
Management of Materials and Equipment	51
Financial Management	53
Endnotes	57
References	58
Annex	
1. The Standard Rules on the Equalization of Opportunities for Persons with Disabilities — an Introduction . . .	61
2. The Convention on the Rights of Persons with Disabilities — an Introduction	62
3. U.N. Millennium Development Goals	64
4. Summary of Paragraphs	65

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Participating Organizations and Agencies

A Community Oriented Rehabilitation Network (ACORN)	Johanniter International Assistance (JIA)
Associazione Italiana Amici di Raoul Follereau (AIFO)	Landmine Survivors Network (LSN)
Building Resources Across Communities (BRAC), Bangladesh	Mercy Ships
Cambodia Trust (CT)	Motivation
Center for International Rehabilitation (CIR)	Norwegian Red Cross (NRC)
Christoffel-Blindenmission (CBM)	Polus Center for Social and Economic Development, Inc.
Centro Integral de Rehabilitación de Colombia (CIREC)	POWER International
Disability and Development Partners (DDP)	Prosthetic Orthotic Centre (POC), Ethiopia
German Leprosy and TB Relief Association (GLRA)	Prosthetics Outreach Foundation (POF)
German Technical Cooperation (GTZ)	RI
Handicap International (HI)	Rotary Jaipur Limb Project (RJLP)
Help Handicapped International (HHI), India	Sandy Gall's Afghanistan Appeal (SGAA)
InterLife-Bangladesh (ILB)	Theranova, Romania
International Campaign to Ban Landmines (ICBL)	United Nations Children's Fund (UNICEF)
International Committee of the Red Cross (ICRC)	University Don Bosco (UDB), El Salvador
International Society for Prosthetics and Orthotics (ISPO)	USAID's Leahy War Victims Fund (LWVF)
	Vietnam Veterans of America Foundation (VVAFA)
	World Health Organization (WHO)
	World Rehabilitation Fund (WRF)



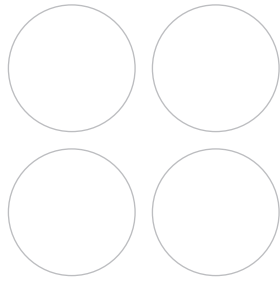
executive summary

Providing services to individuals in need of orthopaedic devices (prostheses and orthoses) is very challenging in low-income settings. This document addresses a wide range of issues that need to be considered when planning and implementing prosthetics and orthotics services (P&O programmes). The issues are relevant for **local implementing organizations and agencies** as well as for **any organization supporting P&O programmes** with funding or technical expertise.

The **Programme Guide** should be viewed as a **working document** — a summary of good practices. As the P&O field continues to develop, this guide should evolve, becoming broader, increasingly detailed and evidence-based.

Prepared as a joint effort by 35 organizations and agencies, the Programme Guide is built on the following principled points:

- The overall goal of a P&O programme is to enable the full and effective participation and inclusion in society by persons with disabilities — a basic human right.
- To achieve this, a P&O programme must work closely with other rehabilitation services in an integrated, holistic approach to disability.
- P&O programmes must be built for and around the service user, who must be consulted in the different phases of planning and running of services. The service user must also have a role in the monitoring and evaluation of these programmes.
- P&O programmes must be planned so the maximum number of persons can access P&O devices of acceptable quality.



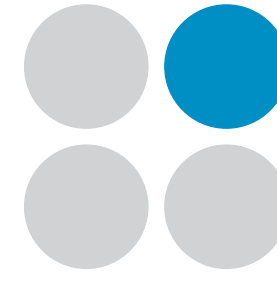
To achieve these principles, programmes should ensure that:

- services are long-term
- services are financially possible to sustain at a satisfactory level
- services are integrated in the national health care structure
- services are known, and physically and financially accessible to potential users
- non-discrimination principles are applied
- comprehensive planning is done, both at the programme and the national level
- appropriate technologies and working methods are used
- staff are well trained technically and managerially
- the quality of the services is monitored

These and several other important issues are addressed in detail, but without reference to the situation in any specific country. This document could be said to describe the “ideal” situation, but the principles and practices suggested here offer standards which P&O programmes in any country can strive to achieve.

Individual programmes are encouraged to use this Programme Guide when preparing to establish or enhance local P&O services or when developing policies and procedures for operations and evaluation.

The document may also be valuable for governments and their partners in civil society in defining national plans for the development of P&O services (separately or as part of broader strategies for the development of the physical rehabilitation and disability sectors).

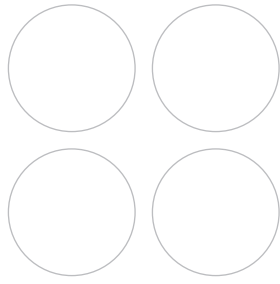


introduction

Background In early 2003, a small group of international organizations and agencies, meeting informally during the implementation process of the Mine Ban Treaty, initiated a discussion on how to address issues that have kept prosthetics and orthotics (P&O) services in a stagnant or declining state in many low-income countries. The meeting resulted in the start of a joint process to develop a common approach for supporting local P&O programmes. The group agreed that a collective approach could help reduce the negative effects of competition seen in some countries (mix of incompatible technologies, contradictory messages to counterparts, inefficient use of limited resources, etc.), and provide a common base for national planning with relevant authorities and partners.

A preliminary draft document was prepared after extensive review of the literature and studies related to the P&O field (*see list on page 59*). The document was then reviewed by a larger group of organizations, which resulted in a new draft subsequently reviewed by an even larger group. The process grew to include 35 organizations (international and national) with different P&O interests, including implementation of local programmes, technical support, funding and professional training. The process also engaged support and participation of UN agencies working on disability issues (*see list of participants on page ii*).

After a two-day meeting in June 2004 (with the presence of most of the organizations and agencies involved), the draft document was divided into two: one document dealing with issues that are of importance for any local P&O programme, irrespective of it being assisted by a supporting organization; and one dealing with supporting organizations’ projects (assisting local programmes). The first is this document, the **Programme Guide**; the latter is the **Project Guide** (*Supporting P&O Services in Low-Income Settings*).



How the Programme Guide Can Be Used

The Programme Guide aims to stimulate discussion, at country and international levels, on how to improve P&O services in low-income settings. It is hoped this effort will contribute to changes that increase access to better quality and more sustainable services for all persons in need of prostheses and orthoses.

The document may be used by local organizations and agencies implementing P&O programmes:

- as a reference for planning, implementation and evaluation work
- when setting goals and defining strategies
- in the training of staff, in particular at management level
- as a tool for discussions and planning with government and other collaborating partners
- in contacts with donors
- as a lobbying tool

The Programme Guide may be used by organizations that support local P&O programmes as a tool for planning projects jointly with the local programme and national and local authorities.

It may also be used as teaching material at P&O schools in low-income and industrialized countries to give students an introduction to P&O work in low-income settings.

Programme Guide Characteristics

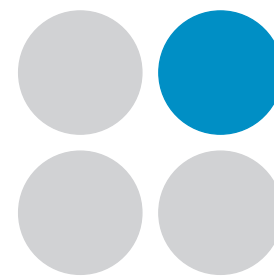
The Programme Guide presents topics on which consensus has been reached.

This document presents some fundamental and generally accepted principles for the provision of P&O services in low-income countries. It summarizes the views of many individuals and organizations with extensive experience and expertise in this field. The content has been reviewed to ensure it represents the standpoint of participating organizations and agencies (*see list on page ii*).

The Programme Guide presents *ideals* that a P&O programme can strive to achieve. The description of P&O work provided in this document is limited to a general presentation that, as such, could be said to represent the “perfect situation”. It is acknowledged that realities may be very different and make the ideals presented difficult to achieve. Nevertheless, by having the “perfect situation” as a reference, and by setting aims accordingly, programmes can make sure that a good direction can be set and that this is not lost in the midst of the many challenges that are encountered in the daily work.

The Programme Guide does not claim to be complete. Many important issues remain to be discussed, developed and documented to provide a complete picture of a P&O programme. This document does not claim to present a final guide for the provision of P&O services. The content should instead be seen as a starting point for a broader discussion on P&O (at service level as well as at the national, regional and international levels) so that the development of more detailed and programme-specific guidelines can be prepared according to individual country contexts.

The Programme Guide is a *working document* that could incorporate more evidence-based sections in time. The present document offers a summary of good practices as they are currently seen. P&O is a constantly developing area, and views about how to implement programmes may evolve. The present document should therefore be seen as a *work-in-progress* that needs to be revisited, reviewed and revised over time. It will be important to field test the principles and recommendations presented, to develop them in more detail, to broaden the areas covered, and to make sure the document becomes more evidence-based.

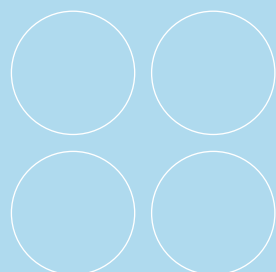


Acronyms

- CBR** Community-based rehabilitation
- ISPO** International Society for Prosthetics and Orthotics
- NGO** Non-Governmental Organization
- P&O** Prosthetics and Orthotics
- UN** United Nations
- WHO** World Health Organization

Definitions *For the purpose of the Programme Guide:*

- **Local** typically means “of the country” or a smaller geographic area of this, such as “province”, “city” or “community”. For example, *local organizations* would mean *organizations of the country* (as opposed to international organizations), while *local authorities* would normally be synonymous with the authorities of a municipality, city or province (as opposed to *national authorities*). The term *local market* may in fact apply to both the city/village market and the business environment in a country as a whole.
- **Sustainable** and **sustainability** refer to a situation where a P&O programme, possibly through assistance from a supporting organization, has gained enough technical and management skills to continue the provision of services at a satisfactory level (with regard to both quantity and quality) and is able to generate — from national and/or international sources — the funds needed to continue this work in the long-term, without being dependent on continuous technical and managerial support.



rehabilitation and P&O services — an introduction

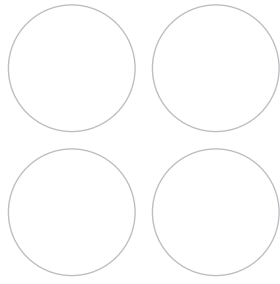
REHABILITATION AND INCLUSION IN SOCIETY

Rehabilitation¹ is the process of removing — or reducing as far as possible — the factors that limit the activity and participation of a person with a disability, so that he/she can attain and maintain the highest possible level of independence and quality of life: physically, mentally, socially and vocationally. The ultimate goal of rehabilitation is to provide the individual with the best possible opportunity for full and effective participation and inclusion in society, with possibilities to study, work, access services, etc. that are equal to those of other citizens. To achieve full inclusion, many different interventions may be needed, which, depending on the individual's type of disability, may include one or several of the following:

- medical care
- physiotherapy
- occupational therapy
- supply of assistive devices (such as hearing and vision aids, prostheses, orthoses, wheelchairs and walking aids)
- speech therapy
- psychosocial services/counseling
- social support
- education (inclusive and special)
- vocational training
- job placement
- support for economic self-reliance
- the eradication of physical, social and financial barriers

Some persons with disabilities may require only one of these interventions to resume daily activity (with a good prosthesis, for example, a clerk may be able to return to his/her old office work). Others may need to go through a combination of interventions. The successful outcome of the full process of rehabilitation and inclusion in society is dependent on the success of each single intervention, and all of them must therefore be considered equally important; medical care is as important as social support, assistance with vocational training is as important as provision of opportunities for employment, the supply of assistive devices is as important as the eradication of physical barriers, etc.

Rehabilitate:
from the Latin
“habilitas”,
meaning
“to make able”



Medical, social and rights-based models of disability.² Different models have been proposed to understand and explain disability and thereby to suggest the interventions needed to improve the situation of persons with disabilities:

The **medical model** views disability as a problem of the person, directly caused by disease, trauma or other health condition, which requires medical care provided in the form of individual treatment by professionals. Management of the disability is aimed at cure or the individual's adjustment and behaviour change. *Medical care* is viewed as the main issue, and at the political level the principal response is that of modifying or reforming health care policy.

The **social model** of disability sees the issue mainly as a consequence of society's negative attitude towards disability. Disability is not an attribute of an individual, but rather the result of a number of different conditions, many of which are barriers created by the social environment. Hence the management of the problem requires *social* action, and it is the collective responsibility of society at large to make the environmental modifications necessary for the full participation of persons with disabilities in all areas of social life. The issue requires *social change*, which at the political level becomes a question of human rights.

Over the past decades, the more narrow medical model (which sees the person with a disability as a “problem to be fixed”) has gradually given way to the social model (which acknowledges the need for social action), which in turn has been further developed into the broader, **rights-based model** that now forms the basis of a new *Convention on the Rights of Persons with Disabilities (see Annex 2 on page 62)*. This model puts the individual at the very centre of the decision making process. Though the medical model is today viewed as flawed and outdated, this does not mean that *medical rehabilitation* would not be needed. On the contrary, it is a precondition for ensuring a person's *right* to health.³ The answer to achieving meaningful rehabilitation lies in balancing social action with interventions at the individual level. To ensure the inclusion in society of all persons with disabilities, importance needs to be given to the range of interventions listed on the previous page.

PROSTHETICS AND ORTHOTICS SERVICES

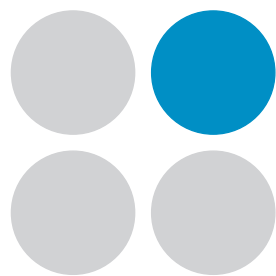
Prostheses and orthoses are important in the rehabilitation of persons with disabilities. According to the World Health Organization, 0.5 percent of a population could need an orthopaedic device⁴. Applied to the population of all low-income countries⁵, this corresponds to 24 million people. To provide good quality services, prosthetics and orthotics (P&O) programmes should ideally provide specialized interventions in three areas, namely:

Manufacturing and fitting of P&O devices. The actual fitting of an orthopaedic device, which obviously makes up the core and main part of prosthetics and orthotics services, is partly clinical work — which requires important knowledge of medical and technical subjects — and partly industrial work (with tools, machines and equipment for plastic, metal and plaster processing work and manufacturing).

Physiotherapy/Occupational therapy. Physical rehabilitation (in this context carried out by physiotherapists and, where available, occupational therapists) can make sure individuals are physically prepared for the fitting process (pre-prosthetic/orthotic training) as well as guided through exercises in the use of the device (gait-training and functional training) so that the final result and fit can be optimized.

Medical work. Medical doctors specialized in rehabilitation should be involved in assessments of persons in need of orthopaedic devices, making prescriptions, and in the monitoring and evaluation of the training and fitting process. These professionals may work at the P&O centre or be found at hospitals or in private clinics with which the P&O services collaborate.

In order to be efficient, the P&O sector must also have a broad network of collaborating partners (as further discussed in other parts of this document).



important aspects of P&O rehabilitation

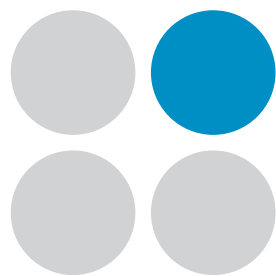
P&O rehabilitation is an important part of an integrated menu of services needed to ensure the full rehabilitation and inclusion in society of persons with disabilities. Enabling a person with a disability to gain mobility is in itself a great achievement, but the result of P&O rehabilitation is even more important than that since *mobility constitutes one of the conditions for the person's participation in social life, work and education*. To ensure that the services be fully valued, it is important that they be presented as a part of the whole process of rehabilitation and inclusion in society of persons with disabilities (*see page 7*). P&O rehabilitation is not an objective in itself but, like any other service in the rehabilitation chain, P&O is a *means* to ensure full inclusion of persons with disabilities in family, community, working life, education and society as such.

P&O is not a charity issue but one of human rights. The potential of persons with disabilities is commonly underestimated. People often assume that persons with disabilities cannot take care of themselves, live independently, or earn a living. Responding with pity and an impulse to care for those they consider weak and helpless, many believe that what persons with disabilities need is *charity*. Though a charity approach can have a positive effect in some contexts, it is negative in this one because it *disempowers* persons with disabilities and makes them dependent on fellow individuals' — often unreliable — willingness to give support. Instead, rehabilitation and the full inclusion in society are *human rights issues*. All governments are parties to at least one *U.N. human rights treaty* (and 75 % of governments are parties to at least four of them). Though not legally binding, the *Standard Rules on the Equalization of Opportunities for Persons with Disabilities* (*see Annex 1 on page 61*) were adopted by consensus by the UN General Assembly in 1993. Moreover, the 2006 *Convention on the Rights of Persons with Disabilities* (*see Annex 2 on page 62*) guarantees the rights of persons with disabilities to determine the course of their lives and to have the same possibilities as all persons to access physical, social, economic and cultural environments. Being able to move about — for example through the eradication of physical barriers or with the help of an orthopaedic device — is a right that can be claimed.

P&O rehabilitation has positive effects that go far beyond the individual beneficiary. Rehabilitation not only benefits individuals with disabilities but also their families and their local communities. A rehabilitated person, instead of regarded as a burden to society, can work and contribute to the economic development of the community. P&O rehabilitation contributes directly to reducing poverty and hunger — the first of the United Nations' Millennium Development Goals (*see Annex 3 on page 64*) — and has positive effects that directly contribute to meeting another two of these goals (*see paragraph 10 on page 16*).

The type of disability — not the cause — determines the need for P&O rehabilitation. The last two decades of the 20th century saw a significant increase of international funding for P&O services in low-income countries. Growing public awareness of the needs of victims of landmines and unexploded ordnance in conflict areas contributed to this increase in aid. However, P&O services are not only needed for war-injured amputees, but also for a range of other disabilities, which may be congenital or the result of accidents and diseases (*see paragraph 25 on page 28*). Many disabilities, not typically considered war-related, have struggled for years to gain the attention and support of international funders. It is a fact that some of these disabilities occur as an *indirect* result of a war, for example because of the breakdown of health services (that could have prevented certain disabilities), because of destroyed infrastructure (which may result in an increased number of road accidents), because of the use of chemical weapons (which may lead to an increase in disabilities at birth), or simply because the country — and thereby its health services — are not given the chance to develop to full potential. Drawing a clear line between war- and non-war related disabilities is difficult and, from the perspective of the affected individuals, irrelevant. For persons in need of P&O devices, the cause of the disability is of little importance; what really matters are their needs and the availability of services. P&O services therefore need to be available to *any* person who can benefit from them, regardless of how the disability was caused.

Users of orthopaedic devices need lifelong access to P&O services. Orthopaedic devices need frequent maintenance and repairs, and need to be replaced when they are worn out or do not fit. A ten-year old child with a lower-limb amputation, for example, is likely to need 25 prostheses in the course of his/her life. People who have been assisted with their first orthopaedic device should expect that the services will be there whenever repairs and new devices are needed. To match the need, P&O services must be *permanent*.



comprehensive and efficient P&O services

This section (paragraphs 1-54) outlines the programme features that are considered key for the provision of comprehensive and efficient services. It also presents some external factors that directly influence the success of service provision.

THE SERVICE USER

The service user merits particular attention, not only in the actual treatment process, but also in the management of the programme.

1. Service users are consulted and involved in the planning, implementation and evaluation of P&O programmes.

The role of persons with disabilities must be broadened to that of a partner in planning and running rehabilitation services. Not only should it be the right of persons with disabilities to influence the way services are provided, it is also in the interest of P&O programmes to make use of the particular knowledge this group possesses. Persons with disabilities are experts in the rehabilitation process as seen from the user's perspective. They should therefore be consulted in the planning process and in the running, monitoring and evaluation of the services. This can be done, for example, by working with associations of persons with disabilities and their appointed representatives. Their involvement will also contribute to building capacities among persons with disabilities.

2. Services apply a client-oriented approach.

Users of P&O services must not be viewed as different from customers of any other commercial services. P&O users have the right to be treated as clients who are entitled to place demands on the services. A *client-oriented approach* should be applied, which means that programme staff should have polite, punctual and professional attitudes towards service users, who should be attended to efficiently.

For individual service users to be actively involved in the treatment process,

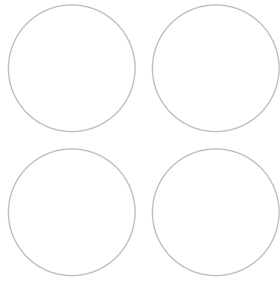
they need to be given *adequate and up-to-date information* throughout their stay at the rehabilitation centre. Upon arrival they will need to know about the centre's organization, about any accommodation and meals that may be provided, and about possible transportation options. They should be made aware of their rights and responsibilities with regard to the services they will receive. At the clinical assessment, they should be informed about the type of treatment that is proposed, possible alternatives, the function and purpose of the device, expected duration and schedule of treatment, and costs involved. They should be informed about any risks associated with the treatment and difficulties that may be encountered during the treatment or fitting process. (Certain devices — in particular corrective orthoses — may cause great pain and discomfort while the positive results of the treatment, which may not be immediate, are less apparent. If not well prepared for this, service users may become disappointed and not interested in continuing the treatment.) Before discharge, the service user should receive information about the appropriate care and safe use of the device, daily exercises, hygiene aspects, maintenance and service of the device, repair possibilities, and information about how, when and where follow-up is carried out.

Providing information is a key way to ensure service users have a say in their own treatment, but this alone is not enough. The centre must also make sure the users are given the chance to make their voices heard and *present their concerns*. It is important to listen to service users, to encourage them to offer their opinions and to make sure their opinions are channelled to the level where needed actions can be taken to improve services. Service user opinions can be collected through questionnaires or structured interviews (for example, as part of the centre's overall quality management, *see paragraph 41 on page 41*), which can address issues such as treatment, staff attitudes, service quality, etc., from the user's point of view.

A client-oriented approach also means that the specific needs of all target groups are met. This may for example imply providing separate treatment facilities for women and ensuring female technical staff is available (*see Training of Female Professionals on page 49*).

3. The service user is seen as a member of the rehabilitation team.

Like rehabilitation specialists, the person with a disability has particular knowledge that needs to be shared with the clinical team if rehabilitation is to be successful. The service user should therefore be regarded as a member of the rehabilitation team. This means interaction with the service user is done in the same way as with other team members (*see paragraph 33 on page 34*). Children with disabilities *should* (as far as possible according to their individual evolving capacities) also be part of the team, but a family member may also need to be included.⁶



4. Service users are provided opportunities to meet, interact and support each other.

Through peer interaction, individuals can be given the opportunity to discuss shared experiences and express concerns, ask questions and share feelings they may not feel comfortable addressing with others. The P&O centre may be the only opportunity for persons with disabilities to meet others in similar situations. Sometimes just the sight of other persons with disabilities walking and working can offer hope to a new service user. Peer support can be promoted in P&O settings by scheduling similar groups of users at the same time and by employing persons with disabilities in the services (*see paragraph 6 below*).

5. Service users' waiting time at the P&O centre is made useful.

The manufacturing and fitting of major orthopaedic devices require days of work, and more complicated cases may need many weeks of trials, adjustments and training. A P&O programme can take actions to ensure the time service users spend at the centre is filled with useful activities. In collaboration with other groups, the centre can provide information in such areas as HIV prevention and mine risk education — which is knowledge that the service users can pass on to family and friends in their communities — and offer alphabetization courses and short sessions of vocational training.

6. Service users and persons with disabilities are employed in the services.

Employing persons with disabilities should be encouraged for a variety of reasons. First, persons with disabilities have an understanding of P&O issues based on their own experiences. They understand how clients should be treated. Second, in communities where disability retains stigma, hiring persons with disabilities demonstrates professional ability and productivity. This can serve to change negative attitudes. Third, employment is very empowering, especially for those who have had little prior experience of steady, gainful work. Fourth, having persons with disabilities as staff in P&O centres can increase the chances of peer support taking place (*see paragraph 4 above*); they can interact easily with clients in a supportive, encouraging way.

Since persons with disabilities frequently come from disadvantaged backgrounds, P&O centres need to be ready to “even the playing field” by providing preparatory training and recruitment measures (*see Training of Persons with Disabilities on page 49*). The work place may need to be adapted to suit the particular needs of persons with disabilities (by adjusting the height of machines and work benches, for example). Work opportunities should be provided in all fields; technical, management and administration.

AWARENESS-RAISING

7. There is public awareness about persons with disabilities, their rights, their needs and their potential.

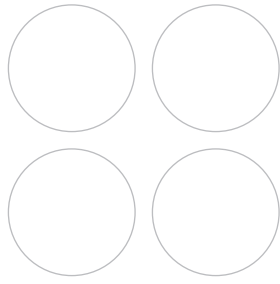
All persons with disabilities contribute to their families and communities. What often prevents them from achieving their full potential is not their disabilities but the disempowering misunderstanding of society, with barriers placed by physical and social environments, such as:

- **legal barriers** that give persons with disabilities fewer rights
- **physical barriers** that prevent access to shops, restaurants, schools, work, transportation, etc.
- **attitudinal barriers** that classify persons with disabilities as inferior
- **communication barriers** that inhibit accessing information, etc.

To ensure the full inclusion in society of persons with disabilities, all types of barriers need to be removed. This is a great challenge in all countries. Every step that can be taken to improve the situation of persons with disabilities is important, and P&O programmes can play an important role here. Not only can P&O programmes provide services that enable persons with disabilities to become mobile (which is a pre-condition for accessing other rights), they can also promote greater awareness of the rights and needs of persons with disabilities — including the right to access rehabilitation services. This may be done together with associations of persons with disabilities (which in most countries represent and protect the rights of persons with disabilities and speak, lobby and campaign for their constituency) and with human rights groups and other relevant organizations. Increased public awareness about these issues will not only directly benefit persons with disabilities, but it may also greatly contribute to making the work of a P&O programme easier and more successful.

In P&O programmes, direct and concrete steps that can be taken to promote the rights of persons with disabilities may for example include:

- ensuring service users participate in decisions concerning them
- hiring persons with disabilities to work in positions of responsibility
- coaching persons with disabilities to take leadership positions, achieve higher education, and succeed in other significant and high-profile ways
- stimulating discussions about the rights of persons with disabilities within the individual programme and in contacts with other agencies, organizations and the government



8. There is public awareness about the existence and role of P&O services.

Awareness about rehabilitation services in general, and P&O services in particular, is often limited among the general public. Even among staff responsible for programme planning in governmental and non-governmental offices there is limited awareness of rehabilitation services. Not even potential service users may be informed about the existence of rehabilitation centres, and if they do know about them, it may be beyond their comprehension that the services could actually help them or that they could afford the services, when in fact, these services are sometimes free. Information about the services in the community may therefore be critically needed. Service users and potential collaborating partners need to know where the service facilities are located and what they can do (*see examples of how this can be achieved in paragraph 13 on page 19*). Awareness in national and local governments and communities about the place and role of P&O services in the country's health and rehabilitation system is also needed.

9. There is public awareness about the economic benefits of P&O rehabilitation.

P&O devices can offer persons with disabilities the possibility to return to (or start a new) paid work instead of being dependent on family or the government. Thus, rehabilitation is an *economic advantage* for the whole society. It is important for P&O programmes to highlight the economic benefits of physical rehabilitation and to point out the fact that the proper rehabilitation of a person with a disability usually costs a government less than a person totally dependent on government support.

10. There is public awareness about the overall benefits of P&O rehabilitation.

By reducing disability, and by enabling persons with disabilities to participate in education and to have access to the job market, the issues of *poverty* can be addressed. This means that P&O rehabilitation contributes to meeting the first of the eight Millennium Development Goals set by the UN — to *eradicate extreme poverty and hunger* by the year 2015 (*see Annex 3 on page 64*). In fact, the provision of orthopaedic devices can have a direct impact on the achievement of two other goals; assisting children with needed prostheses and orthoses can help them go to school and thus achieve universal primary education, and ensuring that women are provided with P&O devices — through equal access to services as men — can *promote gender equality and empower women*. Effective support for persons with disabilities contributes to the achievement of all other goals. P&O programmes can highlight these important points when raising awareness about the wider benefits of the services.

THE ROLE OF GOVERNMENT

11. The government is actively involved in the P&O field.

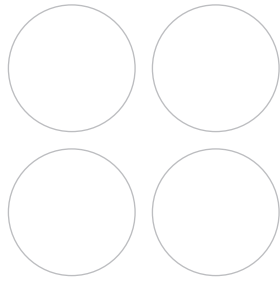
As a human right, rehabilitation is a government obligation. This means the government has the responsibility to ensure the availability of P&O services. Even if this would not imply the direct provision of services by a ministry, the government should embrace P&O services within national health care plans and develop national policies and strategies that can ensure the delivery of appropriate and adequate services. The government has an essential role in legislation, overall supervision and regulation of the rehabilitation sector, in particular where market-oriented solutions apply. This may include licensing of service providers, defining professional profiles, accrediting professionals, monitoring prices, and making sure the private sector is coordinated with other services. In addition, the government may provide financial support to services and/or service users, and it may have responsibilities for training and quality assurance. In a great number of countries, governments are *directly* involved in the provision of P&O service, for example through the ministries for health or social affairs.

NATIONAL PLANNING FOR SERVICES

12. There is a national plan for the development of P&O services.

A national plan for the development of P&O services is an important tool for any service provider and for a national government when establishing new programmes or developing existing ones. A comprehensive plan — jointly prepared by national authorities, P&O service providers (which may be governmental, non-governmental and private), the users of the services, representatives of health, medical and related rehabilitation services — may facilitate planning of individual programmes, and make sure that the efforts of all bodies contribute towards a common aim. By providing a comprehensive picture of current services and planned development, the strategy may also enable donors and supporting organizations to make decisions on how to provide potential assistance.

It is recommended that the government leads the development of a national plan, but in some circumstances, for example in post-war reconstruction, the work could also be coordinated by a national body serving as an umbrella organization. This coordination of players, including relevant ministries, can then work within the framework of government activity and interest.



The national plan may be developed separately or as part of broader strategies for the development of the whole physical rehabilitation sector or the wider disability field. It may be placed as a strategy under a governmental policy on disability and serve as a model for the development of similar strategies in other rehabilitation and reintegration fields.

Planning should be initiated also in countries or regions where services for security reasons cannot be provided (because of an ongoing armed conflict, for example). Planning will ensure that appropriate services can be started as soon as the general situation is stable enough to carry out needed work.

A national plan for the development of P&O services may address the following:

- strategies for awareness raising (*see paragraph 7 on page 15*)
- needs assessment and analysis
- geographical distribution of service facilities (*see paragraph 28 on page 29*)
- relationships and interactions among facilities, including which responsibilities and working methods should apply at different levels (*see paragraph 28 on page 29*)
- support to transport and accommodate service users
- number of staff needed⁷
- training of staff (*see paragraph 47 on page 46*), including:
 - training and employment of persons with disabilities
 - training and employment of women
- staff concerns such as:
 - recognition of qualifications (*see paragraph 48 on page 50*)
 - salary policies and scales
 - career structures
- placement of P&O services in the existing health care system (*see paragraph 18 on page 22*)
- placement of P&O services in the broader area of physical rehabilitation (*see paragraph 19 on page 23*)
- networking and collaboration (*see paragraphs 18-21 on pages 22-26*)
- establishment of a national rehabilitation board
- establishment of national associations for professionals
- establishment of national associations for persons with physical disabilities

- overall management of services
- potential licensing issues
- purchase policies
- technology (*see paragraph 30 on page 30*)
- maintenance and repairs of orthopaedic devices (*see paragraph 40 on page 40*)
- quality control (*see paragraph 41 on page 41*)
- cost calculation (*see paragraph 53 on page 56*)
- budgeting, financing and cost recovery policies/mechanisms (*see paragraph 52 on page 53*)
- pricing structures (*see paragraph 52 on page 53*)
- mandates and responsibilities of the various stakeholders i.e. governmental, non-governmental and private

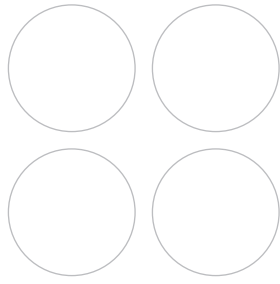
Each of these subjects requires separate discussion, but they are inter-related and will have a greater impact when linked within a comprehensive framework.

ACCESSIBILITY

13. Services are known to potential service users.

P&O centres need to promote themselves actively so that service users (and potential partners) know about their existence — where they are and what they can do. Leaflets — with information about who can be assisted, how to get to the centres, opening hours, costs, etc. — can be used for this and be spread through the collaboration network (authorities, NGOs, associations of persons with disabilities, hospitals, etc.). Service users themselves, who should be regarded as a great resource, can pass this information on to their communities and people in need of similar services. The intended target groups would need to be carefully defined as different versions of the leaflet may need to be produced for different groups (medical staff, service users, etc.), taking into account different levels of education and literacy.

Messages can also be integrated in campaigns of other organizations that promote disability issues and information can be disseminated through radio, television, newspapers, theatre plays, schools, churches and mosques.



14. Non-discrimination principles apply; services are open for any person in need.

P&O services should benefit *all* people who need assistance; whether living in the countryside or in a city, rich or poor, man or woman, child or adult, with or without education, civilian or ex-combatant, informed about the rights to be assisted or not. Every person should be given the same opportunity to be fitted with a good prosthesis or orthosis according to that person's individual need. All persons who ask for assistance and whom the programme can help should be granted access to the services. Social, religious, racial, national, and ethnic groups that may constitute minorities must be given equal opportunities to benefit from the services. Groups in particularly vulnerable situations, such as women, children, adolescents, older persons and persons with HIV/AIDS, should be given special attention.

15. Services are physically accessible for service users.

Rehabilitation services are frequently only found in major cities, which may be difficult to reach for people in rural areas. Infrequently operated rural buses or riding in the back of a truck might be options, but more commonly people must simply walk. And even if traveling would be possible, many people cannot leave their families and households for the long periods of time and the multiple visits that may be needed to ensure successful P&O results. Services must be designed in such a way that they are accessible to rural populations. Sustainable systems for transportation and accommodation of potential service users (and those persons who accompany them) may be needed. This is in fact one of the most challenging issues in the planning of comprehensive and efficient P&O services; *if potential service users cannot reach the centres, the services will never be able to assist more than a small portion of the population.*

Some measures to facilitate access that may be considered are the following:

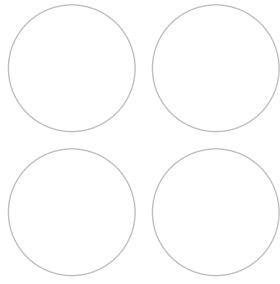
- explore if free public transportation could be introduced for persons with disabilities
- explore if existing transport means of ministries and NGOs could be used to provide reasonably regular transport service for P&O service users
- explore if, in close coordination with the P&O programme, goods transporting companies could take service users for free
- encourage NGOs and associations of persons with disabilities to organize transport as income-generating work, with subsidized (or free) services for disabled persons

- investigate if a travel fund could be established to reimburse service users for their travel on arrival at the P&O centre. Possibly created with international help, such a fund could attract long-term support from Ministries, Provincial Governments, Municipalities and the business community
- explore possibilities of collaborating with community-based rehabilitation (CBR) programmes (*see paragraph 21 on page 26 for a list of tasks that could be carried out in the community to strengthen P&O service provision*)
- consider if small and simply equipped satellite workshops could be established in strategic locations, preferably integrated into existing hospital structures. Such units may take care of some less complicated work and repairs, while more complicated cases are referred to the main centre
- consider if, as a first step towards establishing satellite workshops, regular visits (once or twice per month) could be initiated by technicians to a few locations, preferably at health facilities, where potential service users can be met
- consider if maintenance and repair units could be established (for example integrated into hospitals' maintenance workshops). This would require less equipment than a satellite workshop, but it could fill a very important role for improving the overall result of the services (*see separate section on maintenance and repairs, paragraph 40 on page 40*)
- financial and human resources permitting, consider the possibility of establishing new P&O centres that provide complete services in underserved areas

16. Services are affordable.

Few persons with disabilities in low-income countries can afford paying the full price of P&O services. To ensure that all people have real access to P&O services, financial support may be needed from a variety of sources (national as well as international — *see paragraph 52 on page 53*). The possible application of service fees (same paragraph) must consider a sliding scale of payments since equity demands that poorer households should not be disproportionately burdened with expenses as compared to richer households.⁸

To ensure affordability, it is important to minimize the costs of the service provision by using economical technologies and efficient working methods (*see section on appropriate technology, paragraph 30 on page 30*). Without compromising on quality⁹, services need to be efficient, since every visit to the centre and every day spent there can mean lost work — a cost for the service users and their families (*this is part of a client-oriented approach, see paragraph 2 on page 12*).



17. Buildings are accessible for persons with disabilities.

Many service users arrive at P&O facilities with the help of crutches, other walking devices, wheelchairs, or supported by relatives or friends. The facilities need to be planned in a way that all areas visited by service users (reception, waiting room, clinical area, toilets, etc.) are easily accessible. This may include ramps for wheelchair users and smooth floors for those walking with orthopaedic devices.¹⁰ (On the other hand, uneven surfaces and different types of hurdles must be made available in the gait-training section so that service users can practice walking on any type of ground.) As there may be persons with disabilities working at the centre, all work areas must be accessible and adapted to suit the particular needs of individual workers (*see paragraph 6 on page 14*). Accessible P&O facilities should be an example for other businesses, offices and workplaces.

INTEGRATION AND COLLABORATION

18. The P&O programme is an integrated part of the national health care structure.

P&O programmes should work in close collaboration with the Ministry of Health and other agencies providing medical and health services, including the private sector. Contacts with hospitals are essential; a P&O programme needs to link directly with doctors who prescribe orthopaedic devices and refer patients to the services. There should be access to such services as surgery, wound dressing and x-ray. Involving surgeons is a vital step in improving amputation surgery and reducing problems of prosthetic fit due to poor residual limbs. Surgery is commonly needed to improve the result of orthotic fitting. (In many cases, the fitting of orthopaedic devices may even be impossible without first having surgery done.) When providing devices to children, the involvement of paediatricians is important. At a more decentralized level, it is also essential to work closely with Primary Health Care and community health programmes, who can identify (as early as possible), refer and follow up service users.

Close collaboration with the health sector will contribute to making sure that P&O has a recognized place in the national health care programme and is seen as a partner in medical and rehabilitation work. The location of P&O services is critical; collaboration can be enhanced by making sure in programme planning that P&O services and medical services are physically close.

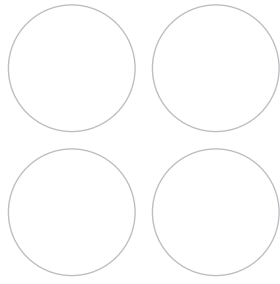
19. P&O services are an integrated part of physical rehabilitation services.

Physical rehabilitation is made up of different disciplines, of which P&O services are one. Other disciplines include general physiotherapy (not necessarily dealing with P&O-related treatments), occupational therapy, speech therapy and rehabilitation medicine (which employ medical staff specialized in rehabilitation, such as neurologists, physiatrists, orthopaedic surgeons and rehabilitation nurses). Though dealing with different specialities, these disciplines are working with much the same group of individuals and they share the immediate aims of interventions, i.e. to increase physically disabled persons' mobility, improve strength and facilitate recovery. Service users frequently need to be referred from one discipline to another, so there are advantages for all to collaborate closely. The possibility of sharing facilities and providing a wide range of services from a *general physical rehabilitation centre* should always be considered as it may have great economic and health benefits.

20. The P&O programme collaborates closely with other rehabilitation, reintegration and social services.

To reach the overall goal of rehabilitation and inclusion of persons with disabilities in society, a P&O programme must collaborate with a wide network. P&O programmes must work closely with governmental, non-governmental and private services, and also make use of resources at the community level, for example CBR programmes (*see paragraph 21 on page 26*). Such collaboration may improve outcomes for service users.

One objective of collaboration would be to create a small but essential network that focuses on the direct interests of the P&O centre. This may include identifying referral services, such as medical and surgery services at hospitals (*see paragraph 18 on page 22*), or partners who may assist in the identification of potential service users, such as social workers and CBR programmes. The centre and its staff should seek to collaborate with any relevant network operating at a regional or national level to promote the development of rehabilitation services on a larger scale. Collaboration between and among different partners should preferably be done within a national programme (where such exists). The collaboration should have clear parameters for ongoing cooperation, shared objectives, schedules and regular meetings.

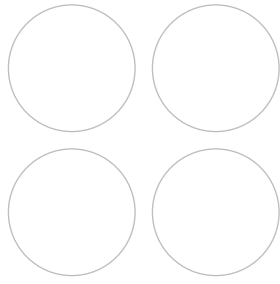


Potential partners The partners in a collaborative network may include:

- health and medical services (governmental, non-governmental and private), including Primary Health Care services (*see paragraph 18 on page 22*)
- providers of P&O services:
 - national service providers (governmental, non-governmental and private)
 - potential supporting organizations (national and international)
- providers of physical rehabilitation services (*see paragraph 19 on page 23*):
 - physiotherapy services (*see paragraph 34 on page 35*)
 - occupational therapy services
 - speech therapy services
 - services for assistive devices (wheelchairs, crutches, other mobility devices, etc., *see paragraph 35 on page 36*)
- providers of other rehabilitation and support services:
 - psychosocial services/counselling
 - CBR programmes (*see paragraph 21 on page 26*)
 - schools (and providers of special education)
 - vocational/skills training
 - job-placement services
 - services providing support to economic self-reliance and reintegration
- organizations working on disability prevention (including Mine Action Centres in countries where such are present)
- persons with disabilities and their representative organizations
- relevant ministries and governmental offices
- local authorities
- local business community
- funding agencies/organizations/individuals
- other partners at national, regional or international level

Areas of collaboration The potential areas — and potential benefits — of collaboration include:

- define a national plan for the development of P&O services (*see paragraph 12 on page 17*)
- provide support to the development of governmental policies in the disability field
- raise awareness about the rights of persons with disabilities (*see paragraph 7 on page 15*)
- secure funding for long-term services (*see paragraph 52 on page 53*)
- train health staff (including midwives and primary health care nurses) and CBR workers in P&O related work (for example, in early detection and referral of persons who may need orthopaedic devices, *see paragraph 21 on page 26*)
- carry out surveys of potential service users
- establish a referral system for service users
 - for referral within the P&O system (for example between the central and decentralized levels)
 - for referral between P&O and other health, rehabilitation and reintegration services
- share information and data on service users between P&O centres (to avoid double registration)
- in countries where mines and other explosive remnants of war (ERW) are a problem, support and complement national data collection on mine/ERW victims so that relevant programmes can identify dangerous areas and take action to prevent new accidents
- share resources for teaching/training
- share work among service providers (by distribution of mutual tasks)
- share facilities
- share logistics capacities
- exchange components and material
- purchase components and material in bulk for distribution among different service providers
- use central fabrication for components



21. Collaboration is established with existing CBR programmes.

Collaboration with existing community-based rehabilitation (CBR) programmes may be of particular interest for the P&O sector.¹¹ Awareness about the potential benefits of such collaboration needs to be increased. Staffed by community health/rehabilitation workers (“CBR workers”), who may work under the supervision of a primary health care nurse at district level, the community level can serve as a link between persons with disabilities and the P&O services. In matters related to prosthetics and orthotics, CBR workers may:

- identify persons who need P&O devices
- provide information to services providers and coordination bodies at national level on the numbers of persons who need P&O devices and the types of disabilities found
- promote awareness of the benefits of using P&O devices
- guide persons with disabilities towards sources of funding for treatment
- refer persons with disabilities to P&O service providers together with information about the needs and expectations of the person
- explain the treatment programme to persons with disabilities and their families
- assist persons with disabilities in preparations for the fitting and use of prosthetic and orthotic devices, including showing and supervising physical exercises and wrapping of residual limbs
- assist with follow-up of the person with a disability with regard to the use of the device
- provide information to the specialized level with regard to follow-up and the acceptance and use of devices
- assist with adaptation of the environment and take measures to facilitate accessibility and activities of daily living
- help to prevent secondary deformities such as contractures and bed-sores
- arrange for maintenance and repairs of prosthetic and orthotic devices, for example with the use of local craftsmen who are provided with needed training to perform such work

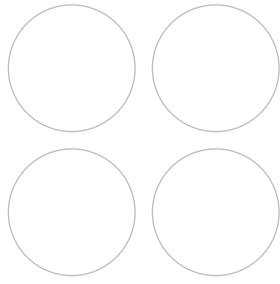
There is still a need to define the exact role of a CBR programme in P&O and to adapt the tasks that can be performed to the specific country context. CBR workers and primary health care nurses must also be given training in P&O subjects to perform these tasks. Where feasible, the training should be provided by prosthetics and orthotics professionals, who should help in preparing relevant educational material.

It is important to note that the training of community health/rehabilitation workers and primary health care staff should not be seen as a substitute for training professionals in P&O, but as an important *complement*. The P&O sector needs to have an open mind to the potential benefits of linking up with CBR activities so it can be involved in the development and implementation of these programmes.

GOVERNANCE

22. A Supervising Board is in place to oversee the development of the programme.

P&O services must develop safeguards to protect the programme mission and make sure it continues to reflect the values and interests of service users. Safeguards can include establishing a Supervising Board for the programme to oversee its work. The Board should have representation of service users and their families, the local community, local authorities, the business community, social institutions (churches/mosques, universities, etc.) and other representatives from civil society. In short, this board should include all parties who have an interest in having well functioning rehabilitation services in place, including those who may support the services financially.



PRIORITY-SETTING

To contribute to the creation of nationwide services that care for *all* people in need of orthopaedic devices, P&O programmes need to consider, among others, the following priority principles:

23. The services are planned according to the needs of the poorest.

In low-income countries, the great majority of people live with hardly enough means to survive. In the past, efforts have been made to assist this group by importing more efficient and more sophisticated technologies. Because of the high cost, this approach has benefited the well off more than those living in poverty. To serve entire populations best, P&O services need to fit the needs and means of the majority of service users, who are often among the poorest in society. If appropriate services can be provided to this group, the ones who are better off will also receive adequate services (*see also discussions on appropriate technology, paragraph 30 on page 30, and financing of services, paragraph 52 on page 53*).

24. Children are given priority.

The earlier a treatment is started, the better the result of the overall rehabilitation will be. Early detection of disabilities in children, followed by early medical and P&O interventions, may save months or even years of intervention in their adult lives (since contractures and other complications may otherwise make the fitting of orthopaedic devices very difficult or, if there is no access to surgery, even impossible). The intervention of P&O services at an early stage will also allow disabled children to go to school, which will benefit their general developments as well as the situation of their families.

25. Orthotics and Prosthetics have the same level of importance.

In many countries, in particular where there are high numbers of persons with amputations due to landmines, prosthetics services have taken precedence. Still, the needs for orthoses are great for individuals with clubfeet, scoliosis, cerebral palsy, spina bifida and other childhood disabilities in *all* countries. Before there were successful polio vaccination programmes, millions of children, now growing into adults, became disabled, and constitute a staggering backlog of people who need orthoses. Many people also need orthoses as a result of war-related injuries (such as peripheral nerve injuries from landmines, bullet wounds and other traumatic injuries) and others need orthoses because of the *secondary* effects of conflicts (new cases of

polio, for example, occur because of the breakdown of immunisation programmes). The number of people who require orthoses is, in *all* countries, greater than those in need of prostheses. This fact calls for an emphasis on the development of appropriate systems and technologies in orthotics, and for parallel efforts to strengthen capacities in the orthotics field for early detection, diagnostics, prescription, referral and follow-up.

26. Benefits are weighed against the cost before deciding which devices to produce.

Resources for P&O production are limited and it is important to plan carefully to generate optimal results. By considering the benefit that can be expected for a certain type of orthopaedic device in relation to the cost and complexity of production, *priorities* for types of prostheses and orthoses can be set. P&O programmes should consider preparing priority lists of the types of devices to be produced.¹² As the programme develops, priorities may change and more types of devices may be made available. Alternative assistance should be offered for those devices that are not prioritized for production (for example with wheelchairs or crutches).

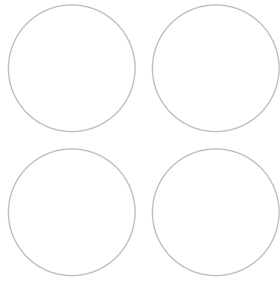
SERVICE FACILITIES

27. P&O facilities are of the appropriate size.

There is a temptation for both service providers and supporting organizations to establish large, impressive rehabilitation centres with the latest high-tech equipment. To achieve sustainability, however, a P&O centre must adapt to the economic reality of the country. Centres that are small are more viable because they are easier to manage and maintain than big ones. Resources permitting, smaller facilities can be expanded and up-graded.

28. Service facilities are adequately distributed and their tasks are differentiated.

To reach everyone in need of orthopaedic devices in a given country, P&O service provision must be adapted to the demographics of users. Larger service facilities may be called for in heavily populated areas, smaller facilities may fill the need in less populated parts of the country, and decentralized, satellite workshops (*see paragraph 15 on page 20*) may assist people in sparsely settled rural areas. To ensure cost-effectiveness, the *tasks* of facilities at different levels also need to be considered. For



example, the responsibilities of a major facility in a capital city (a “National Centre”) would be likely to include the production of the full range of orthopaedic devices, while the production of a smaller, decentralized unit may be limited to a few of the most commonly needed devices. (Persons in need of less requested and more complicated devices would then be directed to services at “higher” levels, for which a referral system needs to be in place.) The distribution of facilities and their respective tasks should be addressed in the country’s national plan (*see paragraph 12 on page 17*). Management needs at the different service levels must also be considered.

29. Equipment is adequate.

Equipment needs to be reliable and long-lasting. If sufficient funds are available to establish a P&O centre, it would be a good investment to choose higher quality equipment, even if the start-up costs are higher. This can ensure the long-term costs of maintenance and replacement of equipment (part of the running costs) will be lower, which, in turn, can lower the cost of the devices. By carefully selecting appropriate technologies (*see paragraph 30 below*), the machines and tools may be limited to the most essential ones. Work procedures that require very advanced equipment with high maintenance costs should be avoided.

Though a small centre in a rural setting may use the same technologies as a major centre at national level, the limited range of devices produced at this level may imply that a different (more limited) set of equipment is needed.

TECHNOLOGY ASPECTS

30. Technologies are appropriate.

To create a solid basis for long-term sustainable services, the prosthetics and orthotics technologies that are used need to be appropriate. *Appropriate technology* is, as defined by the International Society for Prosthetics and Orthotics (ISPO), *a system providing fit and alignment which suits the needs of the individual and can be sustained by the country at the most economical price. Proper fit and alignment should be based on sound biomechanical principles.*¹³ In simpler terms, appropriate technology can be defined as the application of the best that can be done with the equipment, staff, materials and finances available.

More than one technology might be appropriate for use in a country. In fact, any technology that is asked for, paid for, and does not impede the provision of services for other people could be said to be appropriate. This means that the

concept also applies to very sophisticated devices — as long as there are service users who are prepared to pay. There is much to be gained in creating a P&O system that responds to a variety of service users and offers a range of technologies. Such systems can increase the status of the services as well as of P&O staff. If the price level is set so more expensive technologies generate a net income to services, this profit may be used to develop less expensive technologies and make these devices cheaper and more accessible to users with fewer resources or less income (*see Socially-Oriented Service Fees under paragraph 52 on page 55*). It is still important not to have too many technologies in most lower-income countries. A degree of standardization can facilitate production and make it more cost-effective. It can also stimulate collaboration among service providers and improve repair services (since it would allow repairing devices at any centre and make it easier to set up decentralized services for maintenance and repair).

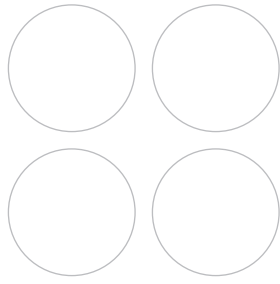
Evaluating the Appropriateness of P&O Technologies

Each service provider might have a different opinion about the best technology to use in a given country. It is essential that consensus on materials and components be reached. Consensus means that everyone included in the process, though they may not agree completely with the technology choice, does agree to live with the choice and not deviate from the group’s decision. To reach such an agreement, the technologies need to be compared objectively. Though the ISPO definition above provides general guidance, a more thorough assessment is needed to identify the most appropriate technology.

To determine appropriateness, the following criteria may be used:

Absolute criteria (keeping in mind that the needs greatly surpass the current provision of services):

- devices should be affordable (by the system and/or the individual)
- devices should be durable and have a long lifespan
- devices should be functional and comfortable
- materials and components should be easily available (on the local market or imported)

**Other criteria:**

- devices should be acceptable by, and adaptable to, the majority of users, i.e. they should:
 - suit every user’s needs
 - be culturally appropriate, i.e. be respectful of the culture and life-style of individuals (including potential minority groups in the geographical area served), which may include looking at such aspects as bare-foot walking, squatting and sitting cross-legged
 - suit the climate (not be too warm in hot climates or too cold in cold climates; be resistant to humid and wet conditions where such apply)
 - suit local terrain and road conditions
 - suit working conditions
 - be lightweight
 - have acceptable cosmetic appearance (shape, finish, colour, etc.)
 - not provoke allergic reactions
 - ensure user safety
- devices should be easily produced
- devices should allow swift production
- devices should be easily adjusted
- devices should be easily maintained and repaired (as far as possible by the service users themselves)
- technologies should ensure that the devices are biomechanically appropriate and can be given proper alignment
- technologies should promote sustainable development by enhancing local entrepreneurship and making use of the local markets, for example by the use of locally produced materials or components (*see paragraph 32 on page 33*)
- technologies should use reliable systems for manufacturing that can be easily maintained
- production should not require very advanced and expensive equipment
- the total number of machines, tools and other equipment needed in the production should be low
- the total number of materials needed in production (of all types of P&O devices) should be low

- working methods should not be hazardous to the workers
- materials should be chemically stable and possible to store without ageing or changing quality due to factors such as humidity, direct sunlight, heat, etc.

The importance of these criteria varies depending on the local context and country priorities. Their relative order needs to be decided before completing an evaluation of technologies.

The fact that a technology is considered appropriate and successful in one country does not necessarily mean it is appropriate in another. However, success in one setting certainly increases the *likelihood* of success in another. Experiences related to appropriate technologies and the use of materials should therefore be documented and made available to P&O programmes worldwide.

Additional Considerations When Introducing New P&O Technologies

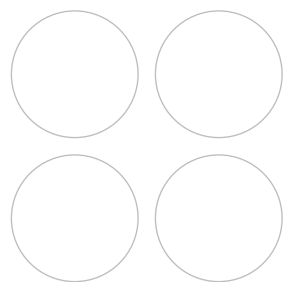
When comparing a *new technology* with one that is *already in use*, one must not only evaluate it according to criteria such as those listed above, but also consider the “starting costs” of the two alternatives. Obviously, there is no such cost for a technology that is already in use. The introduction of a new technology may be a long process requiring investments in new equipment, training of staff, new routines, double stocks for an interim period, unforeseen production problems, etc. If the evaluation above would show that the new technology is more appropriate, but just marginally so, the benefits of changing working methods may not correspond to the costs of change. The question is: How much “better” does a new technology need to be to make it worthwhile changing working methods?

31. Technical work is based on international standards.

The technical work at a P&O centre should be based on internationally recognized standards. Accordingly, professional guidelines, reference literature and manuals need to be made available to technical staff (which may require translating and adapting the material).

32. Raw materials and components are appropriate.

The decision about appropriate technologies should be based on an assessment of local raw materials, their availability and possible uses. While some countries have many materials of good quality, others must rely on imported supplies. The possibility of having certain components (prosthetic feet, side bars, joints, suspension straps, etc.) produced in country (or at regional level) — with the use of locally available or imported materials — must also be considered. If the products



are of acceptable quality and the production is manageable, locally produced components may help to reduce costs. It is clear, however, that this may be a very challenging task; the conclusion of many trials in the past has been that importing components may still be both cheaper and more reliable in the long-term. Experience has in particular shown it is difficult to combine *component production* with *service provision* in the same facility since these are completely different activities with different aims (the first one requires an industrial approach; the second needs to take into account the individual differences of human beings). Local component production tends to be more successful when carried out by a private enterprise separate from the service provider. (This may have a positive effect on the quality of the components; it puts pressure on the manufacturer to make good products since he will not otherwise be able to sell them.)

Suppliers and manufacturers of materials and components need to be identified (locally and abroad), and the prices and the quality of products should be compared. Based on cost, quality and service, decisions can be made about choice of materials. As the P&O market develops, alternative materials and components should be identified and assessed in local markets and abroad.

The possibilities of purchasing materials and components in bulk for distribution among different service providers should always be considered as a way to reduce costs.

SERVICE PROVISION

33. A clinical-team approach is applied.

Most people who require an orthopaedic device do not only need the help of the P&O professional but often require treatment from other specialists. Services should apply a *multidisciplinary approach*. This means that, where possible, examination and decisions regarding the treatment of a service user should be done jointly by the P&O professional, a medical doctor, a physiotherapist, an occupational therapist, a social worker and other relevant specialists. Though not all of these professionals always meet face to face or at the same time, they should comprise a *team*. The person with a disability and his/her family have a central role on the team and have the right to participate and influence the decision-making process (*see paragraph 3 on page 13*).

Due to limited numbers of certain professionals, the team may sometimes need to be smaller than indicated above. At a minimum it should always have the participation of a P&O professional, a physiotherapist and the service user.

Record keeping is needed; it should be done by all team members and is particularly important when the professionals do not meet face to face.

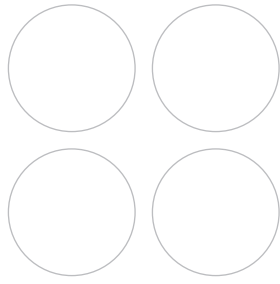
34. Physiotherapy services are an integrated part of the programme.

Physiotherapy treatment is an essential part of P&O work and should be an *integrated* element of prosthetics and orthotics services. Physiotherapy interventions (direct manipulation of muscles, joints and other parts of the body, strength training, supervised exercises, massage and, possibly, electrotherapy and heat treatments) will ensure individuals are physically prepared for the fitting process (“pre-prosthetic/orthotic training”) and guided through exercises in the use of a device (“gait-training/functional training”). This will contribute to optimizing fitting results.

In *prosthetic* work, the tasks of a physiotherapist include:

- completing an assessment (with other members of the rehabilitation team) to determine the service user's needs and to develop a treatment plan
- deciding when pre-prosthetic training/treatment is needed
- providing information about residual limb care to service users and assisting them with pre-prosthetic training, skin care and wrapping
- deciding when service users are ready for casting
- supervising gait training
- supervising training in functional activities to make sure an individual can use the device in daily life⁴
- checking dynamic alignment (with the responsible technician who will make adjustments)
- being involved in making the decision on when to finalize the prosthesis
- participating in check-out services at discharge
- being involved in the follow-up of service users

The tasks in *orthotic* work are similar and equally important. For persons with disabilities due to polio, cerebral palsy, scoliosis, clubfoot, trauma, etc., the treatment is often a combination of physiotherapy and *temporary* orthotic use aiming at reducing and/or preventing deformities. (This will enable some people to manage without an orthopaedic device in the long-term. In other cases, it is a precondition for fitting a permanent device). To be successful, close collaboration is needed between the P&O technician and the physiotherapist. (Since surgical interventions may be required to reduce deformities, links with hospitals and clinics are also essential. *See paragraph 18 on page 22*.)



In P&O services, physiotherapy treatment should be carried out by qualified physiotherapists, trained at the same level as P&O staff and with specialized training in P&O work (see paragraph 47 on page 46). Clear communication about the different roles of physiotherapy and P&O must take place within the programme.

If a P&O facility is small with only few staff members, the provision of permanent physiotherapy services may be difficult to achieve. In such cases follow-up of service users may need to be arranged in other ways. For example, links may be established with other centres where physiotherapy services can be offered or exercises may be provided on a regular basis by a visiting physiotherapist. The possibility of using the capacities of a CBR programme should also be explored (see paragraph 21 on page 26).

35. Service users have access to walking aids and wheelchairs.

Users of prostheses and orthoses frequently need other mobility devices as a complement to the orthopaedic device. Many require crutches and other aids to ensure safe walking; and wheelchairs may be needed for individuals who do not have the strength to walk longer distances. The use of walking aids and wheelchairs may be a *temporary solution* (during the treatment, until the user is strong enough) or it may be needed permanently.

Crutches and other walking aids can be provided directly by P&O services when technicians and physiotherapy staff are properly trained in how to adapt the devices to individual users. A supply of devices can be organized by having simple devices produced at the P&O facility or in collaboration with manufacturers specialized in such production. Wheelchairs are more difficult to adapt to the user, and this work should normally only be done by specially trained staff, who may only be available at major P&O centres. Wheelchair *production* requires considerable knowledge and funds, which makes this work less likely to be done at the average P&O centre. This means most P&O centres need to establish contacts with units that produce, supply and adapt wheelchairs so that service users can easily be referred.

36. Standard working procedures are defined and followed.

Clearly defined working routines need to be in place at a P&O centre to ensure that the services are well managed and carried out in a professional manner. These include the following procedures:

- intake, examination, treatment, discharge and follow-up of service users
- registration of service users
- manufacturing of orthopaedic devices

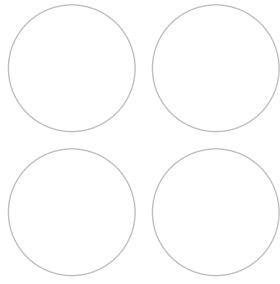
- provision of physiotherapy services (see paragraph 34 on page 35)
- referral of service users to other medical and rehabilitation services
- stock management, fixed assets management, inventory and ordering of material (see paragraphs 49-51 on pages 51-53)
- quality management (see paragraph 41 on page 41)
- staff management (see paragraph 46 on page 45)
- maintenance of premises and equipment (see paragraph 50 on page 52)
- workshop safety (see paragraph 38 on page 39)
- management of finances, including cost recovery and cost calculation (see paragraphs 52 and 53 on pages 53 and 56)
- documentation of services and preparation of statistics
- filing of documents and correspondence
- planning, monitoring and reporting (see paragraphs 43-45 on pages 43-44)
- collaboration with network partners (see paragraph 20 on page 23)

37. Essential documents have been prepared and are used.

Considerable documentation (information forms, questionnaires, criteria lists, plans, etc.) is needed to carry out daily work at a P&O centre. The development of this material is time consuming, but it is very important for tracking a centre's procedures and progress, and for offering guidance on how tasks should be implemented.

The documents needed include:

- descriptions of organization/execution of work, including:
 - general working procedures
 - priorities for types of services provided
 - protocols for management of service users (including ethical concerns and charter for the protection of users' rights)
 - treatment protocols (based on professional guidelines), including *written instructions and technical posters*



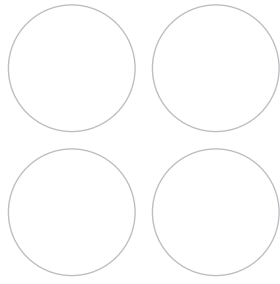
- protocols for staff management, including:
 - staff structure (organizational chart)
 - overview of number (and type) of staff that are needed
 - staff selection criteria
 - job descriptions
 - working rules
 - schedule for staff meetings
- data forms, including:
 - service user registration forms (as part of a complete system for registration of service users, which also needs to be in place)
 - gait training and physiotherapy forms
 - technical measurement card
 - checkout form
 - production statistics
 - staff productivity
- documents for quality management, including:
 - definition of minimum standard of quality
 - list of quality indicators
 - evaluation forms (questionnaires) to measure user satisfaction
 - other forms needed to ensure continuous quality control
- documents for centre maintenance, including:
 - equipment maintenance plan and logbook
 - detailed maintenance guidelines
- documents for ensuring workshop safety, including:
 - general workshop safety rules
 - instructions for the safe use of machines, tools and materials
 - lists of protective/safety gear and instructions for their proper use
 - safety awareness posters
- documents for store keeping and inventory
- documents for ordering
- format for annual plan

- format for reports
- information handouts for service users describing:
 - daily exercises
 - correct and safe use of the device
 - maintenance of the device/hygiene aspects
 - repair services (where they are and when they may be consulted)
- information material for raising awareness about disability and rehabilitation issues among the authorities and the general public
- information material about the existence of P&O services (leaflets)

38. Workshop safety rules and equipment are adhered to and properly used.

The production of P&O devices uses equipment that may cause injuries and chemicals that may be hazardous to the skin and lungs. It is crucial to implement measures to protect the health of those workers who are exposed to these dangers and to ensure that all staff are covered by insurance policies. Important safety measures should include providing instructions in the use of machines, tools and materials, and, as needed, providing the following safety equipment:

- personal protection:
 - gloves
 - eye protection
 - ear protection
 - dust masks
 - gas masks
 - protective footwear
- machinery designed to protect against injury from moving parts
- safely installed electrical hook-ups (earth, breakers, constructors etc.)
- exhaustion of evaporating gases and dust to ensure clean air
- fire extinguishers
- first aid kits and regularly repeated first aid courses
- safety awareness posters



FOLLOW-UP OF SERVICE USERS

39. Follow-up services are provided.

The responsibility of a P&O programme does not stop with the fitting of prostheses and orthoses, but must include making sure the devices are useful and can be maintained, adjusted, repaired and renewed as needed. Follow-up of service users is key to ensure best possible results. It includes making appointments with users for regular check-ups, involving resources at community level (such as CBR programmes — see paragraph 21 on page 26), organizing proper services for maintenance and repair (see paragraph 40 below) and implementing procedures for quality control (see paragraph 41 on page 41).

40. Services for maintenance and repairs are available.

Frequently in low-income countries, prostheses and orthoses are not adjusted when this is needed and there exist few local facilities for repairs when devices break. As a result, devices are often left unused, even when only a small intervention would be needed to fix them. Preventive maintenance is less expensive than repair work and can significantly increase the lifespan of a device. Such cost savings may lessen the economic burden for service users, P&O services and the national health care system as a whole.

Every P&O programme must ensure that maintenance and repair services are provided, both at the service facility and at more decentralized levels. The latter can be achieved by setting up small repair facilities — for example at a local hospital or through a CBR programme (see paragraph 21 on page 26) — and by selecting local craftsmen, possibly persons with experience of disability, and providing them with adequate training and equipment so they can execute the most common types of repair work (such as changing a belt, repairing a cosmetic cover, or, if found feasible, replacing a worn-out prosthetic foot). Services could also be integrated into other types of mechanical work, such as car repair and metal welding shops, in the community. These services can also repair other mobility devices, such as wheelchairs and crutches.

Another way of addressing this need could be to introduce simply equipped mobile repair services.¹⁵ By reaching out to the most remote parts of a country, the personnel of such units can also evaluate the services provided at the central level, and serve as an important link between service providers and users.

It is also critical to provide service users with complete oral and written instructions on how to use and maintain the devices, when to return for follow-up, and when and where to go for maintenance and repair work. It must be clear to the users that it is their *responsibility* to follow these instructions. To encourage service users to return for regular check-ups, the service provider may need to offer an incentive that compensates for the cost of transportation and time missed from work. For example, participants of a *maintenance programme* may be offered reduced service fees or they may be attended to sooner than non-participants when they need a new device.

QUALITY AND IMPACT OF SERVICES

41. The quality of services is correctly managed.

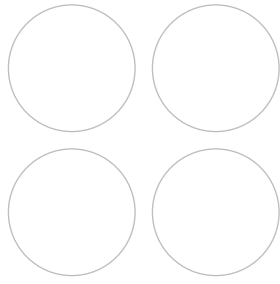
The *quality* of P&O services must always be of major concern for a service provider. To determine how successful the services are, counting the *number* of orthopaedic devices produced is not enough; it also has to be ensured that the devices are *useful*. A quality control system is needed to make sure the quality of the devices as well as of the *treatment process* and the *support system* is satisfactory.

Sound quality management helps ensure consumer needs are satisfied and materials are not wasted. It can lead to more efficient systems that shorten the stay of service users, fewer renewals of nonconforming products, fewer needs for repairs, etc. All of this can lead to cost savings and improvement of the centre's capacity to serve more people with better quality services.¹⁶

Measuring the Quality of Services

The quality of services may be measured with regard to the following factors:

- physical accessibility
- affordability
- attitude of staff
- availability and accuracy of the information service users receive
- professional treatment
- suitability of orthopaedic devices, for example in terms of:
 - fit
 - comfort
 - durability
 - functionality
 - cosmetic appearance
 - alignment
 - use of the device
 - impact of device on the user's life
- privacy
- ability to cater for the particular needs of certain target groups (for example, the availability of qualified female technicians for the treatment of women)
- confidentiality of information
- the time it takes before clients are attended to in the clinic



- production and delivery time
- availability of maintenance and repair services
- interaction with other relevant health and rehabilitation services
- follow-up
- cost-benefit ratio

To be able to measure the quality and outcome of the services, quality indicators, questionnaires and protocols need to be developed with regard to the factors listed above. Much of the information can be found in existing records, which, for example, can provide a picture of the length of the treatment, number of visits by the service user, costs associated with the production of a particular device, repair needs, details of failure and duration of use. Additional — and just as important — information can be collected directly from the service users by the use of standardized interview forms. This may be done prior to their departure from the centre and then at set times — for example six months or one or two years after finishing the treatment — and will give a picture of the long-term results of the fitting. To make sure the information is reliable, it should be collected by a third party, for example an association of persons with disabilities or a CBR programme. (If it is collected by the centres' own staff, service users may not feel that they can give completely honest answers since they are depending on the centre; should they express negative thoughts, they may risk not receiving the same attention as others next time they seek assistance.)

Quality control should as far as possible be implemented so that it becomes a continuous process and an integrated part of the duties of the centre. Regular controls may also be carried out by external evaluators.

Managing the Quality of Services

The broader concept of quality management includes defining minimum standards with regard to the above-mentioned factors and taking actions to ensure that minimum quality standards are met. This may include looking at all parts of the service process and, wherever needed, changing or adapting methods. For example, training may need to be provided to technical staff in order to improve their cast-taking skills, or the inspection procedure of devices may need to be modified in order to catch mistakes in the manufacturing process.

While levels of quality need to be as high as possible, programmes should always aim at applying international standards for P&O devices. It must be acknowledged, however, that this level will be difficult to reach in many countries; a comparison with the standards of other services in the country may show that a balance has to be struck between what a programme wants to achieve and what it realistically can achieve.

42. The impact of the programme is evaluated.

To understand the full benefits of a P&O programme, it is important to study its impact on society. This can be done by following up service users and analysing how they manage in everyday activities, employment and participation in society, and how they progress towards realizing personal goals. This, in turn, will influence the situation of the family, the community and the society. To carry out a detailed impact study may go beyond the capacity of a P&O programme and require a commitment by the government and additional support from donors (who indeed should also have an interest in seeing the result of such a study, since it may contribute to verifying the cost effectiveness and value of P&O services).

PLANNING AND REPORTING

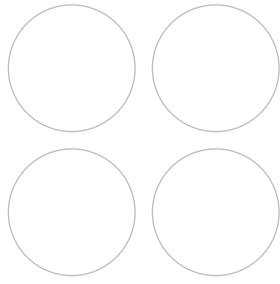
43. Routines for planning are in place.

The preparation of realistic long-term and annual plans is critical for the successful development of a P&O programme. A *long-term plan* should point out the direction of the programme and define the results that one would wish to see 5, 10 years — or even longer — down the road. The *annual plan* should bear in mind the original long-term goals while presenting all activities to be carried out over the coming year.

Annual plans may be prepared at the service level or by a planning office at a higher level. In the latter case, plans should be based on information submitted directly by the service facility. Plans include the objectives and budget for the coming year with regard to such things as number of service users to be treated and measures to improve quality of services and products, and may also describe:

Start and end dates of major tasks, such as:

- construction and renovation work
- detailed planning of such work
- the preparation and submission of orders
- preparation of service protocols and other documents
- tender processes
- training sessions to be carried out
- field visits
- assessments and surveys (and the different phases of this work)



Other events, such as:

- travel
- visitors to the programme

Representatives of service users should be involved in planning work (*see paragraph 1 on page 12*).

44. Routines for **monitoring** are in place.

To ensure that a P&O programme is implemented according to the objectives set in long-term and annual plans, and to be able to improve quality continuously, the implementation of the programme needs to be monitored and documented (see below). If stated objectives have not been achieved, or the context in which the programme is working is changing (needs may change over time for example), the plan and the scope of the programme may need revision.

Standardized performance indicators should be used in the monitoring process to ensure continuity.¹⁷

45. Routines for **reporting** are in place.

Typically, the service facility submits activity reports to the office with overall responsibility for the activities (for example, the relevant department of a national authority or the head office of a national organization). Reports are also submitted to national and international donors and supporting organizations where such exist, and possibly to collaborating partners.

Three types of reports are commonly used: 1) a *monthly report* with production statistics and very brief information about the status of the programme; 2) a more thorough *progress report* that is submitted on a quarterly or half-yearly basis; and 3) an *annual report*, which sums up the developments over the year. The latter two give details on the achievements made as compared to milestones defined in annual and long-term plans. Progress reports may serve as a basis for the annual reports.

Items covered in the reports may include:

- the general situation of the programme
- major tasks accomplished
- general programme implementation progress
- difficulties encountered and proposals on actions needed to solve these
- establishment and collaboration with network

- development of service protocols and needed documents
- service provision
- production and technical work
- training
- quality management/quality improvement
- finance
- cost recovery
- travel and visits made
- visitors received
- general conclusions

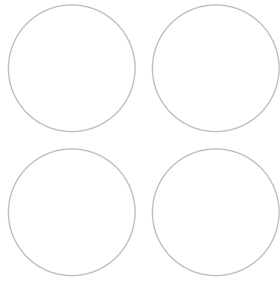
Reports may propose adapted schedules for work in specific areas as found needed.

STAFF ISSUES

46. Good **staff management procedures** apply.

Staff management issues, i.e. administration and supervision, may vary with the size of the programme. For a major P&O centre, these include:

- describing staff structure (including preparation of organizational chart)
- defining working procedures (i.e., a brief description of all tasks carried out at the centre and how they inter-relate — *see paragraph 36 on page 36*)
- defining needed number of staff
- defining selection criteria for staff
- preparing job descriptions (i.e. a brief description of posts used in the hiring of new staff and in appraisal work)
- staff evaluation (appraisal)
- hiring and firing staff
- preparing working rules
- defining working hours
- controlling staff members' presence on the job
- defining salaries
- defining a system for incentives that honours professionalism



As a rule, the Director of the centre has the ultimate responsibility for these issues, but many of them may be delegated to specialized staff, such as Administrators and office clerks. Much of the coordination is done at staff management meetings, with the participation of the Director, the Administrator, Heads of Sections and other staff members. Apart from the staff management issues listed above, these meetings may also deal with the planning and development of services (which also requires that individual sections have their own regular meetings). Management meetings should be held according to a regular schedule. Other, less frequent meetings may be held for all staff, offering everyone a forum for receiving information, discussing important issues, and voicing concerns.

47. A plan for staff development and training is in place and implemented.

Programme sustainability is enhanced with the employment of skilled professionals. The reality in many countries is that people with little formal training carry out P&O work. And though many of them may have strong practical skills, they lack much of the theoretical knowledge needed to develop and improve services. The provision of training is therefore of utmost importance for both new and existing staff. The education of both technical and administrative personnel may give this sector much needed recognition and can help ensure the work is carried out professionally.

An assessment of training needs may be done for each individual programme, but it could also be done at national level, as a joint exercise within the framework of a national strategy for the development of P&O services (*see paragraph 12 on page 17*). The actual training may be easier to realize if resources are shared among several programmes. The plan for training must carefully balance the number of practitioners needed with available resources.

Training In-Country and Abroad

Training should be carried out within the educational system of the country and follow national education laws. It should be done in association with an existing educational facility and follow the recommendations for training provided by ISPO.¹⁸

In-country training may increase recognition of P&O professionals (*see paragraph 48 on page 50*). To make sure that the graduates are accepted into the society to practice their trade, they should be certified and recognized by government entities. When a new level of training is established in a country, arrangements should be made to consider the position of technicians previously trained at a lower level. If there is no existing national professional profile in P&O, it may need to be introduced before setting up a training programme in order to establish professional recognition and a proper service structure.

Training may also be done at recognized training centres abroad. It is a great advantage if the course and associated certificates/diplomas can be recognized by the authorities in the student's home country. Since training abroad may constitute a substantial investment for the sponsoring organization or national authority, and since there may sometimes be a risk that individuals who have travelled abroad for training might not return to their country of origin upon completion of the course, a bond might need to be signed by the candidate, and the certificate be held by the relevant authority while the individual works an agreed period, say 3-5 years, after training.

Courses

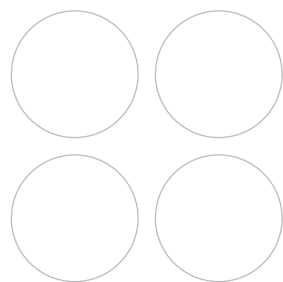
There are approximately 24 schools of varying levels and standards in low-income countries which train personnel qualified in some measure to fabricate and assess the biomechanical function of orthopaedic appliances. They graduate no more than 400 personnel per year for all developing countries, which is clearly inadequate in comparison to the need. More than 75% of developing countries have no prosthetics and orthotics training programmes at all.

There is only one ISPO Category I course in a low-income country (Tanzania). This newly established Bachelor of Science programme provides an opportunity to train future teachers and researchers. At the Category II level, there are a number of programs in different parts of the world. This training includes formal courses of 3-4 years in prosthetics and orthotics or 1½ year courses specializing in prosthetics or orthotics (which lessens the cost of training while enabling those who qualify to contribute — in their specialized field — to reducing the long list of persons in need of orthopaedic devices). Courses for Category III professionals are normally of two years.

It is also important to provide continuing education opportunities for those professionals who have practiced the trade for many years, some of whom may have passed other courses in the past but still lack updated information in their field. Such opportunities include modular courses, short refresher courses and on-the-job training with a final professional examination (independent of the education and training received).

Mentoring, Staff-Exchange Programmes and Self-Studies

In addition to formal training of P&O professionals, a system for mentoring may also be introduced. Having well-trained staff members (who may be local and/or expatriate) supervising and sharing experiences with newly graduated students (and other less experienced staff) can ensure that collective technical knowledge increases for all staff members.



Staff exchange programmes at the country or regional level may ensure that knowledge and skills of P&O professionals can be shared on an even greater scale. By involving different organizations and authorities, this approach may increase inter-agency collaboration.

It is important that the knowledge gained in any training is kept alive. This can be done by promoting study during working hours, by organizing regular case studies, and by setting up a referral library (which also includes study material from past courses). Staff should be encouraged to review this information and keep abreast of new developments. This may include using IT-technology.

Course Content

Education and training programmes must aim to produce professionals capable of adapting to a range of technologies. The training should provide a broad knowledge in techniques, components and materials. The focus must remain on appropriate, *low-cost technologies* likely to be used at the technicians' workplaces. The use of *high-technology systems* should be limited to a brief presentation since trainees may get the wrong idea of the working methods they will use after graduation. The training must explain the reasoning for this and should provide a major focus on problem-solving skills.

Theoretical training should include medical subjects, such as Anatomy, Physiology, Pathology and Orthopaedics, as well as technical ones — such as Materials Science, Technology, Mechanics and Biomechanics — and the application of these in clinical work. Meanwhile, the focus on the user of the service must remain central. The production of orthopaedic devices is always based on *interaction* between the producer and the service user.

To enhance prospects for sustainable services, P&O technical staff may need training in administrative duties, such as workshop management, staff management, financial management, cost-calculation and quality control. At the average P&O centre, however, the main part of these duties will be taken care of by administrative personnel, who should be given suitable professional development to learn this work (*see below*).

Considerations When Recruiting Students

Special considerations are needed when recruiting students for training in P&O. On the one hand, they must meet the entry requirements that have been set, which means that they should have a certain level of schooling. On the other hand, they should have an aptitude for manual work, which is frequently lacking among urban-based middle class who are the people most likely to possess the needed level of education. The production of P&O devices is, to a high degree, manual work and therefore applicants with excellent manual skills should be provided opportunities for educational training. This may require the provision of preparatory courses for this group to raise their level of education so that it can meet the entry

requirements. A great advantage of training students from rural areas is that they are more likely to accept working in such areas and under such conditions. Generally speaking, students should be selected from the areas where they are expected to work (whether at a permanent P&O facility, at a satellite workshops or within an out-reach programme). This will ensure they know the local language and customs, and they have motivation to help their “own people”. If so, they are likely to remain longer in that particular location, as well as in the profession.

Training of Persons with Disabilities

Persons with disabilities should be provided with opportunities for training and work in the P&O field (*see paragraph 6 on page 14*). Special initiatives may be needed to support persons with disabilities to undergo preparatory training to meet entry requirements of P&O courses, and advocacy may be required to make sure they get equal opportunities for employment.

Training of Female Professionals

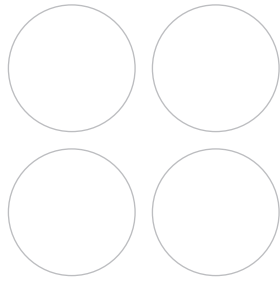
The training and employment of women¹⁹ is important since female service users may feel uncomfortable when treated by men, and, to avoid this discomfort, many may even prefer to go without an orthopaedic device. Also, special initiatives and advocacy may be needed so that women can meet entry requirements of professional courses and enjoy opportunities for employment equal to those of men.

Training of Physiotherapists

The principles mentioned above for selecting and training P&O professionals should also apply to physiotherapists working in the P&O programme. To ensure these two professions are given equal status, their training should preferably be held at the same level. Since great portions of medical and rehabilitation subjects are shared, parts of the training may be made together, which can further strengthen collaboration. Attention must also be paid so that equal opportunities for training at higher levels and abroad are given to the two groups. In addition to their basic education, physiotherapists need to be specialized in P&O-related work (*see also paragraph 34 on page 35*).

Training of Management and Administration Staff

Managers, administrators and office staff need to be specialized in their fields in the same way as P&O professionals are, and should be given appropriate training opportunities along normal procedures in the country. Directors, Administrators and other key staff would also need to be provided with essential knowledge of rehabilitation issues (physical disabilities, prevention, referral, fitting processes, etc.) as well as the broader aspects of the disability field (rights of persons with



disabilities, awareness raising, etc.). This will give them a better understanding of all facets of the P&O programme. All office staff, including logisticians and store keepers, needs computer training.

48. Staff is given appropriate recognition.

If the workers of a P&O programme are professionally recognized, the staff will be more motivated to devote their time and hard work to the development of the services. Recognition can include providing training to achieve a higher status in the P&O profession. The recognition may be particularly important if the training has a linkage with a university and with the national training of other medical and rehabilitation staff, and if it is recognized by ISPO and certified by relevant national authority.

Other important ways to recognize the work of P&O professionals is by:

- applying proper pay scales with salaries equal to those of similar professions (sufficient to ensure the staff can make a living without having to have other side jobs)
- introducing defined career structures
- providing a decent working environment — a safe, clean and neat environment will help visitors (including influential persons in other parts of the organization/agency) have a more favourable impression of the services
- establishing national rehabilitation societies and national professional associations (which in turn can apply for international recognition)
- increasing exchange and collaboration with professional groups working in P&O and closely related fields — nationally and internationally

Generally, the profession would gain a lot if it were better known to the public. The use of media and the promotion of the rights of persons with disabilities through public activities such as sporting events are ways of gaining higher recognition.

MANAGEMENT OF MATERIALS AND EQUIPMENT

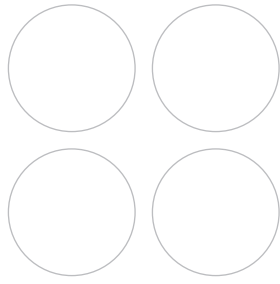
49. Good consumables management procedures apply.

A good system for stock management will enable monitoring consumables so the exact quantity of each material is known at any point in time and accurate orders can be prepared (*see paragraph 51 on page 53*). Good stock management will also detect shortages or missing material.

A consumables management system should include:

- using requisitions (for all items that leave the store)
- day-to-day registration of all outgoing material
- registration of all incoming material
- monthly registration of stock movements, possibly by the use of a computer programme
 - outgoing quantities are subtracted from the previous month's balance and incoming quantities are added (this can be done on a balance sheet — with all materials listed — or on stock cards, which can be printed and/or kept on electronic format)
- regular inventories (for example, quarterly), at which all items of every material in stock are counted
 - quantities found in the store are entered on the balance sheets/stock cards and compared with the calculated stock (i.e. the quantities that were supposed to be in stock according to the registered movement)
 - discrepancies found (both positive and negative) should be analysed and explained
 - balance sheets and stock cards should use the actual stock quantity as the basis for further calculations of stock movements

By comparing quantities of material used with the number of orthopaedic devices produced during the same time, the average consumption (of each material in stock) can be calculated for all types of devices. These figures will be used to calculate and forecast orders (*see paragraph 51 on page 53*) and determining whether consumption is at a reasonable level, or whether there is unnecessary waste or other mismanagement. Carefully tracking and comparing each month's average consumption will increase security of consumables. The staff who carry out consumables management and ordering should be qualified and carefully trained for this type of work, given its importance.



50. Good fixed assets management procedures apply.

A system needs to be in place to manage fixed assets (machines, tools and equipment). Consistent monitoring of the quantity, condition, maintenance needs and depreciation of fixed assets will minimize the risk that P&O production is interrupted because of unexpected equipment failure. Good fixed assets management is important for sound financial management, and can serve as theft deterrence.

Fixed assets management includes recording all essential information about the equipment (and spare parts) on identification cards, including the following data:

- name and description of the item
- brand, model and serial number
- reference number used by the centre
- supplier
- supplier's reference number
- normal life span (expiry date)
- unit
- cost
- delivery time

Regular inventories of all items are then made (at least annually) to identify the following:

- number in stock/in use
- condition of item(s)
- maintenance needs
- estimated timeframe before the item needs to be replaced

With accurate inventory management, a P&O centre can plan for proper equipment maintenance (in addition to the regular maintenance done according to an equipment maintenance plan — *see below*) and calculate depreciation costs in the annual budget, setting aside funds for future equipment orders or expected repairs.

Maintenance of Equipment

To make sure that workshop equipment lasts a maximum number of years, tools and machines must be regularly maintained according to a schedule and procedures defined in an equipment maintenance plan. Detailed maintenance guidelines should be prepared for each type of machine/tool based on the specific recommendations given by the supplier/manufacture. A logbook should be used to register the maintenance and repair work completed.

51. Good procedures for ordering are in place.

Though certain (more easily available) materials may be purchased as they are needed, orders of most materials should be placed on a regular basis (twice per year for example).

Accurate ordering depends on accurate management of consumables (*see paragraph 49 on page 51*). The material quantity needed is calculated by multiplying the *estimated monthly consumption* by the *number of months the material should last* (including a security stock in the case of late arrival of material). From this figure (the quantity that is needed), the quantity that is left in stock is deducted, which will give the quantity that should be ordered.

Accurate forecasting and ordering will help prevent shortages that interrupt production or incur unnecessary costs for placing rush orders. Ordering *too much* material is also not good since scarce financial resources will be invested in items that are not used (“dead stock”). It is important to get the figures right and improve inventory calculation and forecasting.

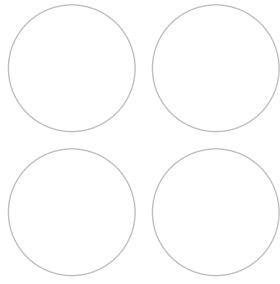
FINANCIAL MANAGEMENT

52. A system for the financing of services is in place.

Diverse funding sources are needed to finance and sustain long-term P&O programmes. Fundraising is an ongoing challenge to decrease dependency on any one particular source. Some donors are only interested in funding particular parts of a programme rather than providing general support. It is therefore important to identify and present to donors the smallest fundable pieces of the programme.

Possible sources of funding include:

- ministries, local authorities and municipalities
- insurance systems/agencies and social security programmes
- trust funds, credit unions and charity funds
- local NGOs and international agencies
- local businesses and international businesses, including multi-national corporations
- community groups (including faith-based institutions and congregations)
- service users



User Fees

There are several good reasons for asking users to pay a fee. Apart from generating an income to the services, user fees may:

- change the way service users are perceived — it will transform them into clients with rights to bargain for better quality and comfort, which will put pressure on the services to make improvements
- make service users more aware of the value of rehabilitation and orthopaedic devices, and more appreciative of the services
- make service users feel ownership of — and be responsible for — the devices and thereby more interested in maintaining them
- reduce the abuse of the services (when services are free it frequently happens that people with perfectly functional devices ask for a second or third one)

The introduction of user fees requires careful consideration in order to provide services in a fair manner without deterring any potential service users from seeking assistance. Thus, it is important to:

- carefully consider what proportion of the actual cost that the user could possibly cover (this proportion may vary between different types of devices) — in many countries this may be limited to a small fraction only
- consider the use of sliding scales so that service users with higher socio-economic status would be asked to pay a higher fee
- make sure no person is charged beyond his/her reasonable capacity to pay
- reduce the fee to a *symbolic* payment for those persons who are deemed too poor to pay according to the set price (this is preferred to exempting the fee completely — it is important that all service users pay something since even a token payment can generate the positive effects mentioned above)
- consider the exemption of fees for children below a certain age (to be defined)
- recognize that some service users contribute to the total cost by paying for transportation, accommodation and food, and that the time spent away from home can also be translated into financial terms (since the person normally would contribute to the family's economy in the home village, either at a paid work or by carrying out household chores)
- recognize that the contribution of a service user may not only consist of money, but also of in-kind contributions such as providing labour or community service in return for a device

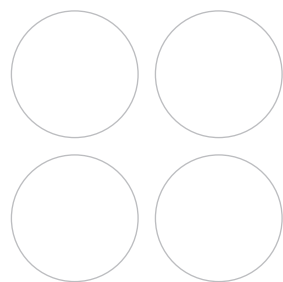
- acknowledge the fact that the fee may be paid by a third party (such as a church or mosque, the community, a local NGO or an international organization) and, if this is done, insist on the users making the actual payment (to promote their sense of ownership of the device)
- consider the use of several levels of technology (*see Socially-Oriented Service Fees below*)
- consider whether or not service users should be charged for repair services (i.e. whether or not a warranty concept should apply)

Socially-Oriented Service Fees

The introduction of a socially oriented service fee would mean those who can afford to are given the option to pay for more sophisticated devices, while those who cannot afford such devices could be subsidized to receive appropriate lower-cost devices. The introduction of such a system would help P&O programmes to assist more service users in diverse ways.

User fees could generate important income for P&O services, but the main portion of production costs will likely be borne by other funding sources (*listed on page 53*). One approach to cost coverage would be to contribute up to a certain level of the cost of the least expensive type of device. For example, a low-cost below-knee prosthesis could be covered 90% by the P&O centre. The service user would then be expected to pay the remaining 10%. The service user could also pay any additional cost associated with the production of a more sophisticated prosthesis. Thus, the financial assistance of the centre would remain the same, but the service user would be free to choose the technology according to his/her preference and financial capability. For users requesting more sophisticated devices, the services could consider charging the full cost or, to generate a net profit, a figure higher than the cost price. The profit may then be used to subsidize low-cost devices for poor users.

This approach presumes that several levels of technology are actually available in the country (and that higher-priced, high-technology devices are well made and up to the standard of those produced in other countries). As discussed earlier in this document (*see paragraph 30 on page 30*), the technologies would all be regarded *appropriate* as long as they do not impede the production of basic devices to other beneficiaries. The degree to which each technology is used will be determined by the financial capacity of the service users. The higher price of the more sophisticated prostheses and orthoses will naturally result in less demand for such devices.



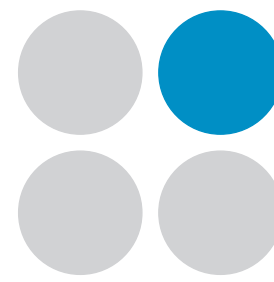
53. The cost of the service and its components are calculated.

To introduce a cost recovery system will require an analysis of the true costs of providing orthopaedic devices and services. Calculating these costs will require clear itemization of the cost of capital, administration, material and labour, etc. This will allow the authority/organization in charge of the programme to prepare accurate budgets. There are several, more or less advanced methods for cost-calculation.²⁰

To give a true picture of the costs involved in the fitting and manufacturing of an orthopaedic device, the calculation must take into consideration those expenses that are linked with the efforts of the service user — and any accompanying persons — to access orthopaedic services, such as costs of travelling, food and overnight stays. The calculation must also account for in-kind donation of equipment or materials required for device production.

54. Taxes and customs duties on import of P&O material and components are exempted.

The majority of P&O programmes in low-income countries do not generate any profits, but simply struggle to survive. It would be helpful for national authorities to recognize the difficult financial situation of P&O services and consider accepting that the import of orthopaedic components and production materials should not be subject to taxes and custom duties.

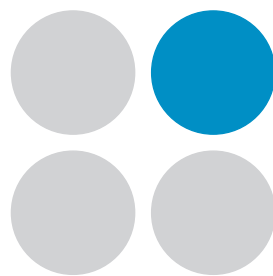


endnotes

1. Or “habilitation” (in the case of persons who are born with disabilities).
2. The definitions of the medical and social models presented here have been derived from the introduction chapter of the International Classification of Functioning, Disability and Health (ICF) of the World Health Organization (WHO).
3. *Health*, as defined by WHO, is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Further, according to WHO: “The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being” (<http://www.searo.who.int/aboutsearo/const.htm>, last visited 6 March, 2007).
4. *Guidelines for Training Personnel in Developing Countries for Prosthetics and Orthotics Services* (WHO, 2005)
5. The population of the worlds’ less developed regions is 4.8 billion (United Nations Population Division).
6. See Article 7 of the Convention on the Rights of Persons with Disabilities.
7. A guide for calculating the number of staff needed is provided in the WHO publication, *Guidelines for Training Personnel in Developing Countries for Prosthetics and Orthotics Services* (World Health Organization, 2005).
8. Committee on Economic, Cultural and Social Rights, General comment No. 14: The right to the highest attainable standard of health (art. 12), at 86, in *Compilation of general comments and general recommendations adopted by human rights treaty bodies*. HRI/GEN/1/Rev. 7
9. The provision of services of good quality requires that adequate time is spent on every work task.
10. Note that a wheelchair ramp may be difficult to walk on for users of prostheses and orthoses. Accessibility must be ensured for all types of service user.
11. Collaboration between P&O and CBR is discussed in more detail in the document *The Relationship between Prosthetics and Orthotics Services and Community-Based Rehabilitation — A Joint ISPO/WHO Statement*, 1999. For an introduction to the CBR concept, see *CBR: A Strategy for Rehabilitation, Equalization of Opportunities, Poverty Reduction and Social Inclusion of People with Disabilities*, Joint Position Paper of ILO, UNESCO and WHO, 2004. This and other WHO documents on CBR can be downloaded from <http://www.who.int/disabilities/publications/cbr/en/index.htm>, last visited 6 March, 2007.
12. The P&O field would benefit from the development of cost-benefit calculation tools that may be used as an international standard.
13. Definition from the The International Society for Prosthetics and Orthotics (ISPO) *Consensus Conference on Appropriate Prosthetic Technology in Developing Countries*, held in Phnom Penh, Cambodia, 5 - 10 June 1995.
14. This would normally be the task of an occupational therapist. In the absence of such professional it should be done by a physiotherapist.
15. Preferably, mobile services would deal only with maintenance and repair. Experience shows that mobile services for the production and fitting of new orthopaedic devices are often too expensive to run and maintain. They also tie up scarce professional staff, and because of the short time available for fitting and limited follow-up, there is a high risk that the quality of the services will be poor.
16. For example, if a quality management measure results in extending the average life span of devices from two to three years, the services will be able to increase the number of persons assisted by 50% with the same amount of annual funds. This represents a dramatic increase of benefits and effectiveness.
17. A detailed format for monitoring and evaluation has been developed by ISPO in the document *Planning, Monitoring and Evaluation of P&O Programmes*. This document may be adapted or be used in its original form — as an international standard — by any P&O implementer.
18. ISPO has prepared training packages for Category I, II and III professionals (see categorization below). Together with international P&O organizations, ISPO has an important role in advising governments on the various levels of education in P&O.

The ISPO categorization of prosthetic and orthotic staff is the following:
Category I Prosthetist/Orthotist (or equivalent term)
[Entry requirement: University entry level (or equivalent); Training: 3-4 years formal structured training leading to University Degree (or equivalent)]
Category II Orthopaedic Technologist (or equivalent term)
[Entry requirement: ‘O’ Level (or equivalent) — the usual requirement for paramedical education in developing countries; Training: 3 years formal structured training — lower than degree level]
Category III Prosthetic/Orthotic Technician (or equivalent term)
[Entry requirement: Elementary school diploma; Training: Formal structured or on-the-job training]

Category II courses should be seen as an interim solution for low-income countries until Category I courses are introduced. A Category II graduate should be able to work independently within his/her area of experience, adapt creatively to situations encountered in the working environment and cooperate with other medical and paramedical professionals involved.
19. Article 6 of the Convention on the Rights of Persons with Disabilities states that “States Parties shall take all appropriate measures to ensure the full development, advancement and empowerment of women...”
20. As of June 2004 a computer programme for cost-calculation is being developed by ISPO. When field-tested and finalized, it could be introduced and used as a standard method to determine costs in the P&O field. The software will ensure that the real production cost of all types of orthopaedic devices produced at a P&O centre can be calculated, and thereby allow making accurate comparisons between different technologies.



references

The Programme Guide was prepared after a review of the following:

DOCUMENT	REFERENCE CODE
Report of <i>ISPO Consensus Conference on Appropriate Prosthetic Technology for Developing Countries</i> held in Phnom Penh, Cambodia 5 - 10 June 1995	ISPO1
Report of <i>ISPO Consensus Conference on Appropriate Orthopaedic Technology for Low-Income Countries</i> held in Moshi, Tanzania 18 - 22 September 2000	ISPO2
Report from <i>DSE/GTZ International Conference on Orthopaedic Technology</i> held in Wuhan, People's Republic of China 4 - 9 November 1996	GTZ
Prosthetics and Orthotics Services in Developing Countries — A Discussion Document, Disability and Rehabilitation, World Health Organization (WHO/DAR), 1999	WHO1
Guidelines for Training Personnel in Developing Countries for Prosthetics and Orthotics Services, Disability and Rehabilitation, World Health Organization (WHO/DAR), 2005	WHO2
The Relationship between Prosthetics and Orthotics Services and Community-Based Rehabilitation — A Joint ISPO/WHO Statement, 1999 (Currently under revision)	ISPO/WHO
Practical Project Guidelines for the ICRC for the Preparation and Implementation of ICRC Physical Rehabilitation Projects, Physical Rehabilitation Program, International Committee of the Red Cross (Draft 2003)	ICRC1
Practical Project Guidelines for Physical Rehabilitation Centres — Standard Working Procedures and Protocols for the Management of Physical Rehabilitation Centres, Physical Rehabilitation Program, International Committee of the Red Cross (Draft 2003)	ICRC2
On the offer of assistive devices services in developing countries, Handicap International France, 2002	HIF
Manual de Administração do Centro Ortoprotésico, Angola, Handicap International Belgium, 2004	HIB
Victim assistance and the challenge of prosthetic services in developing countries, Polus Center for Social and Economic Development	Polus
National Strategy for the Development of Prosthetics & Orthotics Services, Ministry of Health and Sanitation, Government of Sierra Leone, 2002	SL

ABBREVIATIONS

chapter.....	ch.	paragraph.....	ph.	section.....	sn.
bullet.....	b.	presentation.....	pn.	sentence.....	se.
line.....	l.	point.....	pt.	Wuhan Declaration.....	WD.
page.....	p.	recommendation.....	R.		

For the preparation of the Programme Guide, facts and inspiration were gathered from the documents listed on the previous page according to the following:

P&O Rehabilitation

ISPO1 R.2; p.59, ph.5, last se.; p.70, pt. 4.3; p.117, ph.1; p.236, Thesis 3; p.242, notes 1-2
ISPO2 p.55, pt.b, b.2; p.293, sn.3-4; p.294, ph.2-5; p.295, pt.6; p.298, last ph.
GTZ WD, Summary (p.5), Introduction, se.1; p.40, ph.1 & 2 (b.4); p.45, ph.1, se.3; p.72, sn.3, ph.1, se.2
ICRC1 ch.1, ph.1
Polus sn.1, ph.2, last se.; sn.2; sn.7
SL p.6 ; ph.4; p.8, ph.1

Comprehensive and Efficient P&O Services

The Service User

ISPO1 R.14 & 32; p.20, pt.1e, ph.2
ISPO2 R.9, 10, 11 & 12; p.26, ph.11&12; p.28, pt.2, ph.2; p.118, ph.2, se.1&3; p.119, sn.2; p.139, ph.4, se.2; p.257; pt.1.5, b.1 & 8; p.260, pt.3.2; p.262, pt.3.11, b.1-4
GTZ WD.1.11, 1.12, 2.15 (se.2)
ISPO/WHO last but one sn.
ICRC2 ch.1, ph.1 & sn.4; ch.3, ph.2
HIF p.6, ph.1, last part
Polus sn.2, last se.; sn.8, ph.2
SL p.9, last ph., se.1; ch.16, ph.2

Awareness-Raising

ISPO1 p.4, Opening Ceremony, presentation 2, last ph.; p.70, pt.4.3; p.117, ph.3, se.1; p. 157, ph.2; p.236, Thesis 3
ISPO2 R.13; p.28, pt.3(iii); p.67, pt.1(g); p.129, last ph, se.2; p.291, pt.4.1; p.295, pt.6; p.298, last ph.
GTZ WD.2.11 (b.1); p.40, ph.1 & 2 (b.4)
ICRC2 ch.1, sn.3, b.3
HIF p.6, ph.2, first part
SL ch.1

The Role of Government

ISPO1 R.3; p.113, pt.b
ISPO2 R.1 & 6; p.40, pt.1; p.51; p.58, pt.1; p.105, pt.(i)
GTZ WD.1.4, 2.1 (last se.) & 2.13; p.48, ph.2, last b.; p.55, ph.4
WHO1 p.6, ph.1
HIF p.4, ph.5
Polus sn.6, se.3-4
SL ch.16

National Planning for Services

ISPO1 R.4
ISPO2 R.1, 4, 6 & 42; p.26, ph.2&6; p.105, pt.(i)
GTZ WD.1.4 & 2.1 (last se.); p.76, ph.3; p.154, l.5-6
WHO1 p.30 (bottom) - 31 (top)
ICRC1 ch.14
HIF p.4, ph.4, last part
SL the document as such

Accessibility

ISPO1 R.11; p.34, ph.1; p.70, pt.4.2; p.96, pt.3, se.4-7 & table; p.235, Thesis 2
ISPO2; p.67, pt.1(h); p.96, pt.3, se.4-7; p.257, pt.1.5, last b.; p.291, pt.4.2; p.296, sn.2, ph.1
GTZ WD, Summary (p.5), Introduction, se.2; WD.2.2 (se.2) & 2.9 (b.2, pt.2); p.154, l.2-3
WHO1 p.22
ICRC1 ch.1, ph.3-4
ICRC2 ch.1, ph.2, first part; ch.1, sn.3, b.2
HIF p.1, ph.4, se.3; p.6, ph.1, first part

Integration and Collaboration

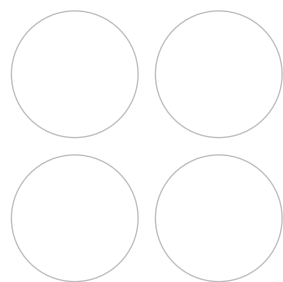
ISPO1 R.4, 5, 8 & 13; p.55, ph.4-5
ISPO2 R.2, 19, 20, 21 & 22; p.27, pt.3(ii); p.89-96; p.124, ph.4, b.4, p.322, ph.4
GTZ WD.1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.15 & 4.10; p.17, ph.2; p.65, ph.2, b.1; p.76, ph.4
WHO1 p.9-11; p.23 (middle); annexes I-II
ISPO/WHO the whole document
ICRC1 ch.1, ph.4, se.1
ICRC2 ch.2, ph.2; ch.10
HIF p.4, ph.4, last part
Polus sn.1, ph.1, se.1
SL ch.12, 13, 15 & 16

Priority-Setting

ISPO1 R.6 & 11; p.115, ph.7, se.4; p.117, ph.1; p.121, pt.5, ph.2, last se.; p.192, ph.4; p.193, ph.7, se.3; p.195, pt.1
ISPO2 R.35 & 36
GTZ WD, Summary (p.5), Introduction, se.2; p.22, ph.3
WHO1 p.8, ph.2
ICRC2 ch.1, ph.2, second part

Service Facilities

ISPO2 p.124, ph.4, b.3
WHO1 p.21-22
ICRC2 ch.5, ph.2
SL ch.3



Technology Aspects

ISPO1 R.19, 20, 21, 22, 23, 25, 27 & 34; p.1 (Foreword), ph.2; p.40, D9.6b, b.1, 3; p.52, pt.3, ph.2; p.117, ph.2, last se.
ISPO2 R.29, 30 & 32; p.52, pt.1(a), b.3 + comments, ph.1; p.67, pt.2; p.124, ph.4, b.4; p.296, sn.2, ph.3
GTZ WD.2.9 (b.2 (pt.1) & 5), 2.10 (b.2), 4.1, 4.2, 4.3, 4.4, 4.5, 4.9 & 4.10; p.140, ph.7, pt.1-6
WHO1 p.17-20
HIF p.3, sn.2.2, bt.2 (ph.2, last se.) & bt.3 (ph.1); p.4, ph.2 & 7 (last se.); p.6, ph.3, se.3-4
SL ch.6 & 7

Service Provision

ISPO1 R.31 & 32; p.55, ph.4, b.(i)
ISPO2 R.8 & 10; p.68, pt.1(a); p.103-104
ICRC2 ch.5, last sn
GTZ WD, Summary (p.5), pt.1, b.3; p.114, last but one ph.
ISPO/WHO last but one sn.
ICRC2 the whole document (general); particular: Introduction, sn.2; ch.2, ph.1; ch.2, sn.3; ch.4, ph.2; ch.5, last sn.

Follow-up of Service Users

ISPO1 R.25; p.33, last ph., b.1; p.194, ph.2, se.4; p.196, pt.7; p.240, Thesis 9
GTZ p.67, second half; p.70, ph.2-4
WHO1 p.21, last ph.; p.23 (bottom) - 24
HIF p.4, ph.6
SL ch.8

Quality and Impact of Services

ISPO1 R.12, 26 & 28; p.30, pt.4, ph.3; p.54 (top); p.72, ph.1
ISPO2 R.43, 44 & 45; p.28, pt.2, ph.1; p.47; p.49, ph.2; p.50, pt.(V); p.66, pt.1(f); p.118, sn.1 (ph.2, se.2) & sn.2; p.149, ph.11; p.256-265; p.268, ph.3 from end; p.270, last ph
GTZ WD.2.9 (b.3-4), 2.14 & 4.7; p.69, ph.8; p.70, ph.1 & last ph.; p.112-115; p.154, second half
WHO1 p.27-29
ICRC2 ch.8
SL ch.9

Planning and Reporting

ISPO1 R.12
ISPO2 R.26
GTZ WD.5.2
ICRC2 ch.11 & 12

Staff Issues

ISPO1 R.37; p.71, pt.6, ph.1; p.141, pt.6, ph.2, se.1; p.194, ph.2, se.4; p.195, ph.1; p.255, last ph.; p.261, ph.6
ISPO2 R.14, 15, 16 & 41; p.39, pt.2.10; p.59, pt.2, sn.2; p.60, last l.; p.66, pt.1(c); p.105, pt.(b)&(d); p.108, ph.2; p.127, b.1
GTZ WD.1.12, 2.11 (b.2-4), 3.1, 3.2, 3.4, 3.5, 3.8 & 3.9; p.65, ph.2, b.3; p.91; p.111, last ph.; p.114, last ph.; p.115, ph.2; p.141, ph.4, se.3

WHO1 p.11, ph.1; p.12-16

WHO2 the whole document

ICRC2 ch.4

HIF p.3, sn.2.2

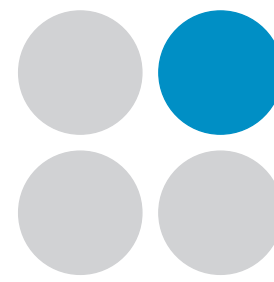
SL ch.4-5

Management of Materials and Equipment

HIB relevant parts

Financial Management

ISPO1 R.10 & 11; p.28, pt.3, ph.1 & 2; p.34, ph.1, last se.; p.96, pt.3, se.4-7 & table; p.204, last sn., b.2; p.216, table; p.223, sn.3, pt.e; p.257, last ph.
ISPO2 R.28 & 42; p.52, comments, ph.1; p.59, pt.2, sn. 3 (b.2) & 4 (b.5-7); p.67, pt.(i); p.69, pt.(i); p.120, ph.1; p.139, ph.4, last part; p.149, ph.2, 9 & 10; p.182, ph.1, last se.; p.253, last ph.; p.291, last se.
GTZ WD.2.4, 2.5, 2.7, 2.9 (last b.) & 2.12; p.22, ph.8, se.2; p.48, sn.6, ph.1; p.65, ph.9; p.65, ph.11 (last se.); p.66, ph.7, b.2-3; p.67, ph.6, b.1-2; p.69, ph.6 & 9-10; p.133, ph.4 & 5; p.141, ph.3
WHO p.25-26; p.30, sn.2
ICRC2 ch.9
HI p.5, ph.6, se.2
Polus sn.6, second half
SL ch.10 & 11



annex 1

The Standard Rules on the Equalization of Opportunities for Persons with Disabilities — an Introduction*

This document, which was adopted by the United Nations General Assembly in 1993, gives important directions on the rights of persons with disabilities. It states that:

“The principle of equal rights implies that the needs of each and every individual are of equal importance, that those needs must be made the basis for the planning of societies, and that all resources must be employed in such a way as to ensure that every individual has equal opportunity for participation.”

There are 22 UN Standard Rules, all dealing with different aspects of the rights of persons with disabilities to have equal opportunities. Concerning work in health related activities, rehabilitation and P&O, the following rules are of particular interest:

Rule 2. Medical care

States should ensure the provision of effective medical care to persons with disabilities.

Rule 3. Rehabilitation

States should ensure the provision of rehabilitation services to persons with disabilities in order for them to reach and sustain their optimum level of independence and functioning.

Rule 4. Support services

States should ensure the development and supply of support services, including assistive devices for persons with disabilities, to assist them to increase their level of independence in their daily living and to exercise their rights.

As can be understood from the latter rule, prosthetics and orthotics services have a wider purpose than “just” enabling people to walk or move about; the services are a means to provide persons with disabilities with the same opportunities as all other persons - the same opportunities to go to school, to work and to participate in the activities of their families, communities and societies just as other citizens do.

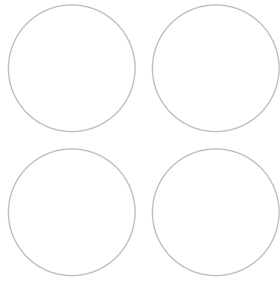
In order to provide appropriate health and rehabilitation services to persons with disabilities, properly trained personnel must be available. This is also noted in the UN Standard Rules:

Rule 19. Personnel training

States are responsible for ensuring the adequate training of personnel, at all levels, involved in the planning and provision of programmes and services concerning persons with disabilities.

Furthermore, the UN Standard Rules clearly indicate that it is the responsibility of states to ensure awareness-raising (rule 1), policy-making and planning (rule 14) and legislation (rule 15) in the disability field, as well as coordination (rule 17), national monitoring and evaluation of disability programmes (rule 20), technical and economic cooperation (rule 21) and international cooperation (rule 22). The document, as such, offers an instrument for this work, and it gives important guidance to governmental service providers — as well as to local and international organizations — on the planning and implementation of disability and rehabilitation programmes at country level. In addition, the Standard Rules can become international customary rules when they are applied by a greater number of states.

*The full document can be ordered free of charge from: Disabled Persons Unit, Department for Policy Coordination and Sustainable Development, United Nations, Room DC2-1302, New York, NY 10017, USA, Fax: +1 212 963-3062. It can also be found on: <http://www.un.org/esa/socdev/enable/dissre00>, last visited 6 March, 2007.



annex 2

The Convention on the Rights of Persons with Disabilities — an Introduction*

The Convention on the Rights of Persons with Disabilities was adopted on December 13, 2006, by the U.N. General Assembly following four years of negotiation. The Convention contains many provisions detailing the rights of persons with disabilities and calls on States to guarantee these rights.

The purpose of the Convention (**Article 1**) is

to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by persons with disabilities, and to promote respect for their inherent dignity.

Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.

The general principles of the Convention (**Article 3**) are:

Respect for inherent dignity, individual autonomy including the freedom to make one's own choices, and independence of persons; Non-discrimination; Full and effective participation and inclusion in society; Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity; Equality of opportunity; Accessibility; Equality between men and women; and Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities.

Concerning rehabilitation and prosthetics and orthotics services, Articles 20, 25 and 26 are of particular interest:

Article 20 — Personal Mobility

States Parties shall take effective measures to ensure personal mobility with the greatest possible independence for persons with disabilities, including by:

- (a) *Facilitating the personal mobility of persons with disabilities in the manner and at the time of their choice, and at affordable cost;*
- (b) *Facilitating access by persons with disabilities to quality mobility aids, devices, assistive technologies and forms of live assistance and intermediaries, including by making them available at affordable cost;*
- (c) *Providing training in mobility skills to persons with disabilities and to specialist staff working with persons with disabilities;*
- (d) *Encouraging entities that produce mobility aids, devices and assistive technologies to take into account all aspects of mobility for persons with disabilities.*

Article 25 — Health

States Parties recognize that persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability. States Parties shall take all appropriate measures to ensure access for persons with disabilities to health services that are gender sensitive, including health-related rehabilitation.

In particular, States Parties shall:

- (a) *Provide persons with disabilities with the same range, quality and standard of free or affordable health care and programmes as provided to other persons...;*
- (b) *Provide those health services needed by persons with disabilities specifically because of their disabilities, including early identification and intervention as appropriate, and services designed to minimize and prevent further disabilities, including among children and older persons;*
- (c) *Provide these health services as close as possible to people's own communities, including in rural areas.*

*The full text of the Convention can be found on: <http://www.un.org/esa/socdev/enable>.

Article 26 — Habilitation and Rehabilitation

1. *States Parties shall take effective and appropriate measures, including through peer support, to enable persons with disabilities to attain and maintain their maximum independence, full physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life. To that end, States Parties shall organize, strengthen and extend comprehensive habilitation and rehabilitation services and programmes, particularly in the areas of health, employment, education and social services, in such a way that these services and programmes:*
 - (a) *Begin at the earliest possible stage, and are based on the multidisciplinary assessment of individual needs and strengths;*
 - (b) *Support participation and inclusion in the community and all aspects of society, are voluntary, and are available to persons with disabilities as close as possible to their own communities, including in rural areas.*
2. *States Parties shall promote the development of initial and continuing training for professionals and staff working in habilitation and rehabilitation services.*
3. *States Parties shall promote the availability, knowledge and use of assistive devices and technologies, designed for persons with disabilities, as they relate to habilitation and rehabilitation.*

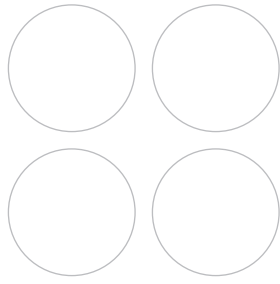
Article 4, furthermore, states that the **General Obligations** of States Parties include:

- *To undertake or promote research and development of universally designed goods, services, equipment and facilities... which should require the minimum possible adaptation and the least cost to meet the specific needs of a person with disabilities, to promote their availability and use, and to promote universal design in the development of standards and guidelines (1.f);*
- *To undertake or promote research and development of, and to promote the availability and use of new technologies, including information and communications technologies, mobility aids, devices and assistive technologies, suitable for persons with disabilities, giving priority to technologies at an affordable cost (1.g);*

as well as:

- *With regard to economic, social and cultural rights, each State Party undertakes to take measures to the maximum of its available resources and, where needed, within the framework of international cooperation, with a view to achieving progressively the full realization of these rights... (2);*
- *To adopt all appropriate legislative, administrative and other measures for the implementation of the rights recognized in the ... Convention (1.a);*
- *To promote the training of professionals and staff working with persons with disabilities in the rights recognized in [the] ...Convention so as to better provide the assistance and services guaranteed by those rights (1.i); and*
- *... [To] closely consult with and actively involve persons with disabilities ... through their representative organizations (3).*

The Convention also highlights the importance of Awareness-raising (**Article 8**), Accessibility (**Article 9**), International Cooperation (**Article 32**) and Coordination (**Article 33** (1)).



annex 3

UN Millennium Development Goals*

By the year 2015, all United Nations Member States have pledged to meet the following goals:

1. Eradicate extreme poverty and hunger

- Reduce by half the proportion of people living on less than a dollar a day
- Reduce by half the proportion of people who suffer from hunger

2. Achieve universal primary education

- Ensure that all boys and girls complete a full course of primary schooling

3. Promote gender equality and empower women

- Eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015

4. Reduce child mortality

- Reduce by two thirds the mortality rate among children under five

5. Improve maternal health

- Reduce by three quarters the maternal mortality ratio

6. Combat HIV/AIDS, malaria and other diseases

- Halt and begin to reverse the spread of HIV/AIDS
- Halt and begin to reverse the incidence of malaria and other major diseases

7. Ensure environmental sustainability

- Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources
- Reduce by half the proportion of people without sustainable access to safe drinking water
- Achieve significant improvement in lives of at least 100 million slum dwellers, by 2020

8. Develop a global partnership for development

- Develop further an open trading and financial system that is rule-based, predictable and non-discriminatory. Includes a commitment to good governance, development and poverty reduction — nationally and internationally
- Address the least developed countries' special needs. This includes tariff- and quota-free access for their exports; enhanced debt relief for heavily indebted poor countries; cancellation of official bilateral debt; and more generous official development assistance for countries committed to poverty reduction
- Address the special needs of landlocked and small island developing States
- Deal comprehensively with developing countries' debt problems through national and international measures to make debt sustainable in the long term
- In cooperation with the developing countries, develop decent and productive work for youth
- In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
- In cooperation with the private sector, make available the benefits of new technologies — especially information and communications technologies

* For more information, see <http://www.un.org/millenniumgoals>.

annex 4

PROSTHETICS AND ORTHOTICS PROGRAMME GUIDE: Implementing P&O Services in Low-Income Settings

Summary of Paragraphs

Important Aspects of P&O Rehabilitation

- P&O rehabilitation is an important part of an integrated menu of services needed to ensure the full rehabilitation and inclusion in society of persons with disabilities.
- P&O is not a charity issue but one of human rights.
- P&O rehabilitation has positive effects that go far beyond the individual beneficiary.
- The type of disability — not the cause — determines the need for P&O rehabilitation.
- Users of orthopaedic devices need lifelong access to P&O services.

Comprehensive and Efficient P&O Services

The Service User

1. Service users are consulted and involved in the planning, implementation and evaluation of P&O programmes.
2. Services apply a client-oriented approach.
3. The service user is seen as a member of the rehabilitation team.
4. Service users are provided opportunities to meet, interact and support each other.
5. Service users' waiting time at the P&O centre is made useful.
6. Service users and persons with disabilities are employed in the services.

Awareness-Raising

7. There is public awareness about persons with disabilities, their rights, their needs and their potential.
8. There is public awareness about the existence and role of P&O services.
9. There is public awareness about the economic benefits of P&O rehabilitation.
10. There is public awareness about the overall benefits of P&O rehabilitation.

The Role of Government

11. The government is actively involved in the P&O field.

National Planning for Services

12. There is a national plan for the development of P&O services.

Accessibility

13. Services are known to potential service users.
14. Non-discrimination principles apply; services are open for any person in need.
15. Services are physically accessible for service users.
16. Services are affordable.
17. Buildings are accessible for persons with disabilities.

Integration and Collaboration

18. The P&O programme is an integrated part of the national health care structure.
19. P&O services are an integrated part of physical rehabilitation services.
20. The P&O programme collaborates closely with other rehabilitation, reintegration and social services.
21. Collaboration is established with existing CBR programmes.

