

PHYSIOTHERAPY AT THE ICRC

REFERENCE MANUAL



ICRC



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Abbreviations and acronyms

CBR	community-based rehabilitation
CF	clubfoot
CP	cerebral palsy
CRPD	Convention on the Rights of Persons with Disabilities
HoD	head of department
IC	intermediate care
ICF	International Classification of Functioning, Disability and Health
ICRC	International Committee of the Red Cross
ICU	intensive care unit
IDT	interdisciplinary team
IHL	international humanitarian law
IHRL	international human rights law
ISO	International Organization for Standardization
ISPO	International Society for Prosthetics and Orthotics
MoH	Ministry of Health
NGO	non-governmental organization
OPD	outpatient department
OT	operating theatre
POP	plaster of Paris
PMS	Patient Management System
PRC	physical rehabilitation centre
PT	physiotherapist
PTA	physiotherapist assistant
PTH	physiotherapy helper
P&O	prosthetic and orthotic
SCI	spinal cord injury
SMO	senior medical officer
SnS	senior surgeon
WCPT	World Confederation for Physical Therapy

For the sake of convenience, the masculine pronoun is used to refer to both sexes. The term “service user” is used to mean those benefiting from services at a physical rehabilitation centre; the term “patient” is generally used only for people being treated at a hospital.

Introduction

The vision embedded in the ICRC Health Strategy is that “the health needs of people affected by armed conflict and other situations of violence are met by quality healthcare as part of an integrated public health approach to contribute to the protection of life and human dignity, and to prevent and alleviate suffering.”¹ ICRC physiotherapists are closely involved in three of the six types of health-care programmes, namely hospital care, physical rehabilitation, and mental health and psychosocial support. Following the principle that movement is central to good health, the ICRC provides physiotherapy services in two types of projects: physical rehabilitation projects for people with a physical disability and hospital projects, in which physiotherapists care mostly, but not exclusively, for war-wounded patients recovering from surgery. In both cases, therapy is provided mainly by local physiotherapists and physiotherapist assistants/helpers who are supported and mentored by expatriate staff. In certain circumstances, however, expatriate physiotherapists are directly involved in the provision of services.

Generally speaking, physiotherapists working in ICRC-supported projects need to develop skills beyond those commonly required in the Western world. For example, they will have to design the development of physiotherapy activities, learn to make circular plaster of Paris casts in surgical departments caring for the war-wounded, analyse prosthetic gait or plan the equipment needed for a physiotherapy department. This makes the technical aspects of the work quite challenging, not forgetting the emotional aspects of working in the context of war or in a post-conflict situation. Physiotherapists working for the ICRC need more than broad technical skills; they also need to be able to train others, have good reporting skills and be adept diplomats and managers. Great care needs to be taken, for example, when setting up and managing a physiotherapy department at a physical rehabilitation centre or a hospital in a specific context. The services provided are for human beings and consideration must therefore be given to creating an appropriate environment, ensuring that privacy is respected and adopting a management style that endorses individual and community diversity. Each context in which the ICRC works imposes certain constraints, which physiotherapists must take into account when dealing with patients, service users or beneficiaries. The ability to adapt successfully to various socio-cultural requirements may even be more important than technical skills alone. Moreover, a patient-centred, interdisciplinary approach is essential if sustainable, high-quality services are to be provided but is often challenging to implement in ICRC contexts.

The aim of this manual is twofold: to present ICRC physiotherapy activities and to provide advice on the planning and construction/renovation of physiotherapy facilities. It is therefore divided into two main parts; the first deals with aspects of physiotherapy in ICRC-supported projects, while the second addresses the setting-up of a physiotherapy department as part of a physical rehabilitation project or at a hospital.

¹ ICRC, *The ICRC strategy to assure health care for people affected by armed conflict and other situations of violence 2014-2018*, ICRC, Geneva, 2014.

Over the years, the ICRC's physical rehabilitation team has produced a number of standard documents and tools to assist in setting up and managing a physiotherapy department. The ICRC databases and archives contain all the materials developed and represent an accumulation of the decades of experience gained by all past and present ICRC physiotherapists. This manual does not set out to summarize or synthesize this vast knowledge bank but presents the most successful and accomplished ideas. It conveys a picture of the work carried out by physiotherapists at hospitals and physical rehabilitation centres. It also contains recommendations that may help experienced and less experienced professionals to develop physiotherapy services as part of humanitarian projects. It should provide guidance for ICRC personnel in their duties, not restricting or limiting developments but allowing for innovative proposals. It is the result of attempts, failures and successes, lessons learned and brainstorming about acceptable ICRC standards in this field.



A. ASPECTS OF PHYSIOTHERAPY

1. What is physiotherapy?

Physiotherapy (physical therapy) provides services to enable individuals to develop, maintain and restore maximum movement and functional ability throughout their lifetime. This includes providing services in circumstances where movement and function are threatened by ageing, injury, pain, disease, physical and/or mental disorders, external conditions or environmental factors. Functional movement is central to what it means to be healthy. Physiotherapy is concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation. This encompasses physical, psychological, emotional and social well-being. Physiotherapy involves interaction between the physiotherapist, patients/service users, other health professionals, families, carers and communities in a process in which movement potential is assessed and goals are agreed, using knowledge and skills unique to physiotherapists.²

The International Committee of the Red Cross (ICRC) works in conflict-ridden and low-income countries where physiotherapy is often undeveloped or unavailable. There may be a number of reasons for this, including a lack of qualified professionals or of training opportunities, general insecurity, difficulty in gaining access to services, the low priority given to rehabilitation in the health-care system, and national economic policy. In such circumstances, it is best if the objectives of physiotherapy projects are comparatively unambitious because the aforementioned physiotherapy activities cannot always be carried out.

Prevailing cultural, social and religious values or practices can have a major influence on the choice of techniques and the approach to rehabilitation as well as on training methods. For example, the rigid separation of women from men may result in duplication of every aspect

² World Confederation for Physical Therapy (WCPT), *Policy statement: Description of physical therapy*, WCPT, 2011, p. 1.

of assistance, while the existence of powerful hierarchical customs or habits can make it difficult to adopt a multidisciplinary approach or may complicate interactive training.

The work of physiotherapists can be defined as follows:

“Physiotherapists assess, plan and implement rehabilitative programs that improve or restore human motor functions, maximize movement ability, relieve pain syndromes, and treat or prevent physical challenges associated with injuries, diseases and other impairments. They apply a broad range of physical therapies and techniques such as movement, ultrasound, heating, laser and other techniques. They may develop and implement programmes for screening and prevention of common physical ailments and disorders.”³

Physiotherapists are highly skilled health (...) professionals who provide safe, quality client-centred physiotherapy through a commitment to service availability, accessibility and excellence. The profession is shaped by scientific evidence and the education and competencies of the physiotherapists delivering the services. Physiotherapy is grounded in the belief that, to be effective, its services must respond to the changing needs of populations and our health system.”⁴

Physiotherapists are “qualified and professionally required to:

- undertake a comprehensive examination/assessment of the patient/client or needs of a client group;
- evaluate the findings from the examination/assessment to make clinical judgements regarding patients/clients;
- formulate a diagnosis, prognosis and plan;
- provide consultation within their expertise and determine when patients/clients need to be referred to another healthcare professional;
- implement a physical therapist intervention/treatment programme;
- determine the outcomes of any interventions/treatments
- make recommendations for self-management.”⁵

According to WCPT, the scope of physiotherapy practice is “not limited to direct patient/client care, but also includes:

- public health strategies;
- advocating for patients/clients and for health;
- supervising and delegating to others;
- leading;
- managing;
- teaching;
- research;
- developing and implementing health policy locally, nationally and internationally.”⁶

This profile “reflects the diversity of physiotherapy practice and helps support evolution of the profession in relation to the changing nature of practice environments and advances in evidence-informed practice.”⁷

The roles of physiotherapists are diverse and may include the following functions⁸:

3 World Health Organization (WHO), *Classifying health workers: mapping occupations to the international standard classification*, WHO, Geneva.

4 Canadian Physiotherapy Association (CPA), *Description of Physiotherapy in Canada*, CPA, Ottawa, 2012.

5 World Confederation for Physical Therapy (WCPT), *op.cit.*, p. 2.

6 *Ibid.*

7 National Physiotherapy Advisory Group (NPAG), *Essential Competency Profile for Physiotherapists in Canada*, NPAG; 2009, p. 4.

8 *Ibid.*, p. 5 (adapted).

1. **Expert:** As experts in function and mobility, physiotherapists integrate all physiotherapist roles to lead in the promotion, improvement, and maintenance of people's mobility, health and well-being.
2. **Communicator:** Physiotherapists use effective communication to develop professional relationships with clients, families, care providers and other stakeholders.
3. **Collaborator:** Physiotherapists work collaboratively and effectively to promote interprofessional practice and achieve optimal client care.
4. **Manager:** Physiotherapists manage time, resources and priorities at all levels for individual practice and to ensure sustainable physiotherapy practice overall.
5. **Advocate:** Physiotherapists responsibly use their knowledge and expertise to promote the health and well-being of individual clients, communities, populations and the profession.
6. **Scholarly practitioner:** Physiotherapists are committed to ongoing learning for the purpose of improving client outcomes through seeking, creating, applying, disseminating and translating knowledge to physiotherapy practice.
7. **Professional:** Physiotherapists are committed to the best interests of clients and society through ethical practice, support of profession-led regulation, and high personal standards of behaviour.

Most of the aforementioned roles also apply in ICRC-supported contexts. Unfortunately, in those contexts there are often only a few trained physiotherapists or the staff in question are qualified only to assistant level or are only on-the-job trained; experts and managers are badly needed. Capacity building is an essential aspect of ICRC-supported projects, and physiotherapists are generally well accepted as scholarly practitioners as there is a keen interest in gaining knowledge and complying with international standards. The communicator role is also well received as physiotherapists often take the time to explain the service users' condition and to gain their trust; this role could therefore be highlighted as a means of increasing the visibility of physiotherapy activities. Interdisciplinary teamwork remains a challenge in contexts in which the medical model prevails or when rehabilitation is a private activity. Overall, the physiotherapy profession is still not widely recognized in low-income countries and the roles of advocate and professional therefore need to be better understood and developed.

2. The benefits of physiotherapy

The benefits of physiotherapy are well documented in Western literature but this is unfortunately not the case for contexts in which the ICRC works. Indeed, operational and clinical issues are given greater priority than documentation and research. Nevertheless, the disaster in Haiti in 2010 marked an increase in the literature describing physiotherapy activities in different settings as compared to usual physiotherapy practice in high-income countries. This manual includes a brief presentation of the functional, psychosocial, cost-effectiveness and social reintegration benefits of physiotherapy and thus highlights the essential role played by physiotherapists in physical rehabilitation or hospital projects. As members of an integrated primary health-care team, physiotherapists can make a significant contribution to continuously improving the quality of the care experience, improving health in populations, managing per capita costs and improving teamwork. Recent research has found that many primary care providers support the integration of physiotherapists into primary care settings. A study of recent literature which focused on the integration of physiotherapy in primary health-care settings revealed that where this integration had occurred, there were several positive results, including:

- increased levels of satisfaction with the service among both patients and physicians;
- shorter waiting times for services;
- greater cost-effectiveness compared to institutional care;
- reduced rates of referral to specialists; and
- improved outcomes for patients, such as better quality of life.⁹

In line with the United Nations Convention on the Rights of Persons with Disabilities (CRPD), the World Report on Disability¹⁰ draws attention to the fact that “unmet rehabilitation needs can delay discharge, limit activities, restrict participation, cause deterioration in health, increase dependency on others for assistance, and decrease quality of life. These negative outcomes can have broad social and financial implications for individuals, families, and communities.” It highlights the fact that rehabilitation is a “good investment because it builds human capital,” although “many countries – particularly low-income and middle-income countries – struggle to finance” it, and goes on to suggest that “financing strategies can improve the provision, access, and coverage of rehabilitation services, particularly in low-income and middle-income countries.” A positive step is to incorporate rehabilitation “into general legislation on health, and into relevant employment, education, and social services legislation, as well as into specific legislation for persons with disabilities.” Providing assistive technology – the responsibility of rehabilitation professionals such as physiotherapists – increases independence, improves participation, and may reduce care and support costs.

2.1 Functional and psychosocial benefits and cost-effectiveness

Physiotherapy optimizes the functional outcome of treatment and thus enhances the effectiveness of surgery and the fitting of assistive devices. In hospitals, early mobilization of affected limbs and physiotherapy exercises play a major role in preventing complications and stiffness, in reconditioning and in restoring function more quickly. In physical rehabilitation centres (PRCs), physiotherapy maximizes the functional ability of disabled people and thus their ability to participate in daily life. It also enables the most effective use of assistive devices, by “normalizing” function as far as possible and by preventing, or limiting, compensatory patterns that could lead to further disablement. “Rehabilitation that begins early produces better functional outcomes for almost all health conditions associated with disability.”¹¹

9 C.A. Cott et al., *Adult Rehabilitation and Primary Health Care in Ontario*, Arthritis Community Research & Evaluation Unit (ACREU), 2004, pp. 6-7.

10 World Health Organization (WHO) and the World Bank, *World Report on Disability*, 2011, www.who.int/disabilities/world_report/2011/en/, pp. 102-107.

11 *Ibid.*, p. 96.

Although not documented precisely in the literature reviewed, post-operative physiotherapy also has a psychosocial benefit for victims of disasters who have recently had surgery. Reference has already been made to the pivotal role played by physiotherapists in training and teaching patients and their families to continue physical exercises after discharge as well as to cope with the newly acquired injury or disablement. Physiotherapy thus promotes autonomy and self-esteem because it encourages patients to overcome physical and environmental challenges. Providing injured people with physical rehabilitation and adapting their coping mechanisms to their personal needs helps them to perform everyday activities and to move around more easily, thus gaining access to a wider range of activities and places. Making disabled people as self-sufficient as possible is a priority for physiotherapists and inevitably increases people's chances of achieving social reintegration, employment and full membership in their communities. This is an inestimable source of motivation for patients/service users and each sign of progress is an encouragement.¹²

Inadequate rehabilitative care or the failure to provide physiotherapy may lead to much higher long-term real costs. The reasons for this include the incidence of further complications in certain cases, the need for some patients to return earlier to rehabilitation centres or other medical facilities for additional care, and the need for people with disabilities to visit rehabilitation centres more frequently for adjustments to their assistive devices. By contrast, the costs incurred through the provision of physiotherapy – in terms of human resources and treatment expenses – are largely offset because fewer patients have to occupy hospital beds and more can attend outpatient departments. Better functional gains and the avoidance of complications enable people with disabilities and other patients to return to work sooner, which has an impact on the national economy.

Physiotherapists have an impact on quality of life and the cost-effectiveness of care by:

- providing early assessment and intervention;
- improving exercise tolerance and helping maintain or restore optimal function;
- assisting in the prevention and treatment of pain;
- promoting fitness, health and well-being;
- improving client satisfaction in care, including education and guidance on maintenance or improvement in overall function.¹³

Moreover, early assessment and treatment by physiotherapists have been found to lead to:

- fewer referrals to specialists;
- greater likelihood that patients will achieve their treatment goals;
- reduced absenteeism from work (musculoskeletal injuries);
- better functional outcomes for patients;
- cost-effective care and efficient use of health human resources.¹⁴

12 V. Hasselmann, P. Odermatt and B. Rau, *Post-operative physiotherapy in foreign medical intervention during humanitarian crises, a systematic review*, poster presented at the 2015 WPT Congress (publication pending).

13 Canadian Physiotherapy Association (CPA), *Position Statement: Primary Health Care*, CPA, Ottawa, 2006.

14 *Ibid.*



2.2 Social reintegration

Exercises

Physiotherapists are also required to train or educate patients/service users and their families to cope with disability or disease. As already observed, physical exercises boost autonomy and self-esteem by requiring injured people to overcome challenges. Providing physical training for people with disabilities and adapting their homes and workplaces to their physical needs make it easier for them to move about and give them access to a wider range of places and activities. Patients always derive encouragement from greater mobility and these issues are therefore key steps on the path to social reintegration.

As members of integrated primary health-care teams, physiotherapists can make a significant contribution to continuously improving the quality of the care experience, improving health, managing per capita costs and improving the services provided by the team. Recent research has found that integrating physiotherapists into primary care settings also leads to many of the benefits outlined above in connection with the provision of physiotherapy and early assessment by physiotherapists.

The current literature focuses almost exclusively on high-income countries and there is a clear need for research to be conducted in middle and low-income countries as well as in countries affected by war or other situations of conflict. The experience of ICRC physiotherapists working in such contexts indicates that most of the above-mentioned points also apply in those settings, although recorded supportive evidence is hard to find. Indeed, research in the field of physiotherapy is often not considered a priority and is difficult to conduct because of lack of resources and adequately trained human resources. The prevailing situation is reinforced because insufficient importance is attributed to providing quality services. For example, the literature shows that early intervention is particularly effective for children with, or at risk of, developmental delays and has been proved to increase educational and developmental gains. A position statement issued by the American Association of Intellectual and Developmental Disabilities (AAIDD) points out that “access to and quality of intensive intervention for children with developmental delays and disabilities remains inadequate, despite a validated knowledge-base that establishes its critical importance.”¹⁵ Such a statement is even truer of low-income countries, where most children suffering from a disability are not given any rehabilitation despite evidence to show that measurable, cost-effective and sound intervention will

15 American Association of Intellectual and Developmental Disabilities (AAIDD), *Early Intervention, Joint Position Statement of AAIDD and The Arc* (2008), <http://aaidd.org/news-policy/policy/position-statements/early-intervention#.VbIFXOkTIU>.

advance their development and support their health, well-being and community participation (increasing community inclusion for both families and children).

Because of the nature of their work at all levels of rehabilitation (hospitals, rehabilitation centres and communities) and the closeness and regularity of their contact with patients/service users and their families, physiotherapists are uniquely placed to promote and strengthen the links between rehabilitation services and the communities that they serve. It is crucial for strong links to be established between a rehabilitation programme and the local community. Taking a step in that direction, the ICRC has developed outreach activities (offering the community temporary services) but has neither the knowledge nor the resources to undertake community-based rehabilitation (i.e. rehabilitation developed for and by the community). Nonetheless, when implementing a programme, it is essential to build a network of contacts among organizations involved in community-based rehabilitation (CBR) in order to:

- identify the target population and its needs;
- classify the population on the basis of its needs and the resources and services available;
- organize a referral system between the community and the physical rehabilitation programme; and
- ensure follow-up for patients after they have returned to the community.

Sport

Participating in sport strengthens people with disabilities. It keeps them active, improves their general condition, balance and motor coordination and prevents further disablement. Sport also promotes hopefulness, self-esteem, reintegration into social and professional life, solidarity between people and community awareness of disability issues. As they grow in self-confidence, people with disabilities may find themselves wanting to play an active role in their communities. At the same time, sport provides communities with opportunities to develop innovative and culturally acceptable approaches to disablement.

While the ICRC does not specifically foster participation by people with disabilities in sport, its experience – of wheelchair basketball in Cambodia, Afghanistan and the Democratic Republic of Congo and cricket for people with disabilities in Bangladesh, for example – has convinced it that sport has a significant impact on individual and social integration. PRCs should make sports activities and games part of the rehabilitation process in order to promote physical activity as well as to create a friendly atmosphere and promote group solidarity. Links with sports associations and organizations should be systematically pursued when a physical rehabilitation programme is being established. Sports are one means of helping people with disabilities to integrate back into society. Education, vocational training and support in securing employment are other essential aspects of the social reintegration process; they are not developed in this manual.

The ICRC promotes:

- outreach activities, whenever necessary;
- cooperation and links with all those involved in community-based rehabilitation (CBR);
- the use of sports in the rehabilitation process; and
- key aspects of social integration.

3. The ICRC's approach to physiotherapy

Physiotherapy is one of the component activities in the ICRC's physical rehabilitation programme strategy and constitutes an integral part of the care that the organization provides for weapon-wounded people as well as of the physical rehabilitation work for those with impaired mobility. In the future the organization will also be more involved in the management of people suffering from non-communicable diseases. The continuum of care that is cited as a key objective of the Health Strategy is intended to promote the role of ICRC physiotherapists in ensuring the smooth transition of patients to physical rehabilitation service users and, from there, to becoming active members of society. The ICRC's physiotherapy activities are also being further promoted in 2017 and are characterized by the following features:

- Patient-centred approach;
- Interdisciplinarity;
- Use of policies and standard procedures.

The issue of physiotherapy in disasters and emergencies is also gaining in importance.



3.1 The patient-centred approach

The ICRC's physical rehabilitation programme increasingly promotes biopsychosocial and patient-centred care, which takes account of personal, socio-economic, cultural and environmental factors and does not regard a disability as an exclusively "medical or biological" dysfunction; patients/service users participate actively in the treatment, and their needs are of primary importance. ICRC staff increasingly use the framework of WHO's International Classification of Functioning, Disability and Health (ICF), which stresses disabled people's abilities – rather than their disabilities – and the social context.

The ICF takes the view adopted in the CRPD, which recognizes that "disability is an evolving concept and that disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others."¹⁶

¹⁶ United Nations Convention on the Rights of Persons with Disabilities (CRPD), Preamble (e).

The modern rehabilitation model considers patients/service users not as the passive recipients of treatment but as active participants in the process. They are actively involved in planning their physical rehabilitation and in setting the treatment objectives. Physiotherapists therefore also function as coaches and educators. Patient-centred care requires well-developed listening and communication skills, empathy, and the ability to motivate and instruct. In developing countries it is still a challenge to put this approach into practice. Hierarchical attitudes to medical treatment are often an obstacle; the medical doctor is in charge and the patient becomes a passive beneficiary of his expertise.

Current evidence has shown that a good therapeutic alliance, i.e. an approach that facilitates the involvement and participation of patients in the consultation, can positively influence “treatment outcomes such as improvement in symptoms and health status, and satisfaction with care.” The therapeutic alliance could be strengthened by clinicians who pursue “patient-centred care strategies – such as listening to what patients/service users have to say and asking them questions with a focus on emotional issues.” The intention behind establishing a good therapeutic alliance is to “help patients to adhere or engage more fully with their rehabilitation. Importantly, the quality of the alliance between clinicians and patients is in part determined by how clinicians and patients communicate. Effective communication is considered to be an essential skill that clinicians need to master in clinical practice to improve quality and efficiency of care.”¹⁷

Use of the ICF has also led to a realignment of the ICRC’s treatment or approach to the achievement of functional and participative results. Rehabilitation is a reiterative, active, educational, problem-solving process focused on a patient’s behaviour (disability), and goal-setting is one of its central components.¹⁸ Goal-setting is included as a recommended practice in contemporary clinical guidelines and professional standards of practice. It needs to be understood as a social action in which goals are shaped through the conversation between a physiotherapist and a patient.¹⁹ Studies have shown that goal-setting “improved team working, increased patient involvement in their rehabilitation process, improved acquisition of motor skills, was helpful to assess rehabilitation outcomes and helped to meet requirements set by professional organizations.” Goal-setting is defined as the “process during which patient and clinical members of the multidisciplinary team make a collective decision, following an informed discussion, of how and when to carry out rehabilitation activities. If a clinician is engaged in ‘patient-centred rehabilitation practice’ then the rehabilitation plan negotiated during goal setting must relate to the patients’ expressed needs, values and expectations. (...) Where professionals made efforts to involve patients in the goal-setting process, the patients, recognizing the importance of their involvement, were able to contribute effectively. Increased patient participation, information sharing and integration are thought to lead to better outcomes.”²⁰

The ICRC promotes:

- empathy with patients and skilful instructions;
- treatment of deficiencies and impairments;
- activities related to functional outcomes;
- participation in social activities; and
- consideration of the person’s environment and other personal factors.

17 R.Z. Pinto *et al.*, “Patient-centred communication is associated with positive therapeutic alliance: a systematic review,” *Journal of Physiotherapy*, Vol. 58, Issue 2, 2012, pp. 77-87.

18 V. Schoeb *et al.*, “‘What do you expect from physiotherapy?’: A detailed analysis of goal setting in physiotherapy,” *Disability and Rehabilitation*, Vol. 36, Issue 20, December 2013, pp. 1679-1686.

19 R.Z. Pinto *et al.*, *op. cit.*

20 S. Rosewilliam, C.A. Roskell and A.D. Pandyan, “A systematic review and synthesis of the quantitative and qualitative evidence behind patient-centred goal setting in stroke rehabilitation,” *Clinical Rehabilitation*, Vol. 25, Issue 6, 2011, pp. 501-514.



3.2 Interdisciplinarity

Central to contemporary rehabilitation philosophy, “well-functioning interdisciplinary teams (IDTs) are critical to service integration” and successful outcomes.²¹ The ever-increasing complexity of health-care interventions and the myriad challenges that impede patients in their quest to return to productivity require the existence of an interface between all health-care professionals. “The interdisciplinary team continues to provide more combined knowledge and skill, clinical expertise, sensitivity, compassion, and understanding for individuals with disabilities than can be found in any other area of health care. (...) The individual team members each bring a unique perspective and expertise to the collective planning of the group. But the team shares similar goals for the patient.”²²

The team approach requires a wide range of professionals as well as patients/service users and their families to work together to achieve a common goal, that of enabling people to reach and maintain their optimal level of physical, sensory, intellectual and social functioning. It thus plays an essential role in rehabilitation. It is not without challenges but it does have a number of benefits:

- More comprehensive and integrated care is provided as a team brings together a broader variety of clinical expertise than individuals working in isolation;
- Work is more effectively distributed and coordinated;
- Interaction between professionals is encouraged, which enables them to combine their skills;
- Team members acquire new skills and responsibilities;
- Services meet needs more effectively, as all the professionals involved participate in solving problems;
- Communication between all concerned is greatly improved.

Nevertheless, implementing a “team approach” is seldom easy in the various contexts in which the ICRC operates. Teamwork and communication are often made difficult because of:

- rigid hierarchical barriers between senior and junior staff members;
- gender and ethnic issues;

21 D.C. Strasser, J.M. Uomoto and S.J. Smits, “The Interdisciplinary Team and Polytrauma Rehabilitation: Prescription for Partnership,” *Archives of Physical Medicine and Rehabilitation*, Vol. 89, January 2008, pp. 179-181.

22 K.L. Easton, 1999, p. 31, quoted by J. Behm and N. Gray, “Interdisciplinary Rehabilitation Team,” in K.L. Mauk (ed.), *Rehabilitation nursing: a contemporary approach to practice*, Jones & Bartlett Learning, 2012, pp. 51-62.

- lack of training in teamwork – each professional is trained in his particular field and has a very limited understanding of the work of others;
- lack of professionals (orthopaedic surgeons and rehabilitation physicians are seldom available locally); and
- lack of communication and coordination between the various health-care and rehabilitation services and the community.

In general, advice from ICRC professionals is valued and respected. Expatriates are usually able to ensure the quality and effectiveness of the services provided, which should serve as an example to local staff. All professionals, while attending to their special fields, work with the others in the team to create a comprehensive treatment plan that is carried out jointly by everyone, including the patients/service users and their families.

However, particular efforts are needed to promote teamwork in the contexts in which the ICRC works. In physical rehabilitation programmes, the expatriate team usually consists only of an orthotist-prosthetist and a physiotherapist. Since they are charged with providing support for local personnel, it is essential that they jointly plan and carry out treatment; they must also join forces to provide support for the management team. The structure of hospitals and their working methods often make teamwork a little easier, despite the sometimes rigid hierarchical divisions that can be found in such establishments. Expatriates should encourage all team members in hospitals to work more closely together, to communicate and to be proactive when planning care and treatment.

The ICRC promotes:

- information and training in teamwork;
- interdisciplinary assessments, clinics and evaluations;
- proactive rules for communications; and
- respect for and understanding of one another's work.



3.3 Use of standard procedures and guidelines

Standard internal procedures and guidelines for managing physiotherapy patients/service users have been drawn up to ensure a high standard of care and uniformity of approach. They are a source of reference for all projects. The ICRC has defined physiotherapy standards and harmonized the level of physiotherapy service provision. Following an extensive literature review, 23 standards for physiotherapy have been developed and tools for their implementation have been identified.²³ This work will help assess, monitor and evaluate physiotherapy activities at both service and patient/service user levels. This is essential as expatriate staff come from different backgrounds and the level of qualification among national staff varies widely. In addition, the ICRC is being increasingly asked to document and justify its activities and to measure the quality of service provided; it is not enough to state that the activities or services are good and beneficial.

The use of standard procedures (protocols) and guidelines encourages the adoption of clinical reasoning. Clinical reasoning was defined in the early 1990s as “the thinking and decision-making processes associated with a physiotherapist’s assessment and management of a patient.” It therefore helps physiotherapists to acquire a better understanding of patients’ specific problems and to design treatment plans accordingly.²⁴

Protocols and clinical reasoning are used together when implementing a programme. Guidelines and protocols, supported by established standards and clinical reasoning, allow treatment to be adapted to the patient’s/service user’s specific needs, while always taking the socio-cultural context into account. Guidelines and protocols are essential for ensuring high standards of care, although experience shows that physiotherapists entirely reliant on protocols find it difficult to adjust their treatment to particular needs. To ensure the provision of high-quality services and treatment tailored to specific needs,

23 See by Binks *et al.*, Poster presented at the 2015 WPT Congress.

24 J. Higgs, “Developing knowledge: A process of construction, mapping and review,” *New Zealand Journal of Physiotherapy*, Vol. 20, 1990, pp. 23-30.

protocols, guidelines and clinical reasoning should be implemented at the beginning of every training programme. This is often the most challenging issue in ICRC contexts as the basic education of physiotherapists or physiotherapist assistants does not always allow for reflective practice.

A similar problem relates to the use of evidence-based practice, in which the most recent, appropriate and effective rehabilitation approaches are drawn from research and applied. Good rehabilitation practice uses research findings. It is not derived from single studies but from an interpretation of one or more studies, or systematic reviews of studies, and draws on the best available research on techniques, effectiveness, cost-benefits and consumer perspectives.

A wide variety of sources, including general bibliographical databases and databases specializing in rehabilitation research, are available on the internet. Most of these databases have already evaluated the research in terms of quality, provided ratings of research studies and summarized the findings. Rehabilitation professionals can obtain information on good practice through:

- guidelines that apply research knowledge, usually on a specific health condition;
- an independent search for specific interventions;
- continuing professional education;
- clinical guidance notes on good practice from employers and health-care organizations;
- discipline-specific internet databases that appraise the research for clinicians.

It is important to note, however, that evidence-based practice draws primarily on practice and research in high-income countries and recommendations are therefore difficult to implement in low-income countries. Where evidence is lacking, the expertise of clinicians and consumers could be used to develop consensus-based practice guidance. For instance, a “consensus conference” laid the foundation for WHO guidelines on the provision of manual wheelchairs in less-resourced settings.²⁵ The guidelines were developed in partnership with the International Society for Prosthetics and Orthotics (ISPO) and the United States Agency for International Development (USAID).

WHO recommendations on research and evidence-based practice propose that the following steps be taken:

- Increase research and data on needs, type and quality of services provided, and unmet needs (disaggregated by sex, age, and associated health condition);
- Improve access to evidence-based guidelines on cost-effective rehabilitation measures;
- Disaggregate expenditure data on rehabilitation services from other health care services;
- Assess the service outcomes and economic benefits of rehabilitation.²⁶

It is essential to recall that evidence-based practice refers to a decision-making process based not only on the available scientific evidence but also on the individual person's values and the physiotherapist's experience, taking various contextual factors into account. It recognizes that care is individualized and ever-changing and involves a degree of uncertainty. Evidence-based practice is an approach to treatment rather than a specific kind of treatment. It encourages high standards and use of the most effective therapeutic procedures. In pursuing that approach, the ICRC's physical rehabilitation teams plan for results in accordance with the ICRC approach known as “Planning for Results.” Measuring results and gathering evidence of good practice is not easy in low-income countries or in war-affected areas for a number of reasons, such as limited resources, the nature of the

25 World Health Organization (WHO), ISPO and USAID, *Guidelines on the provision of Manual Wheelchairs in less resourced settings*, WHO, Geneva, 2008.

26 World Health Organization (WHO) and the World Bank, *World Report on Disability*, WHO, Geneva, 2011, p. 123.

context (war, state of emergency, insecurity), cultural constraints, time-bound programmes and a shortage of specialists. Where evidence of practice is still comparatively scant, professionals have as much recourse as possible to proven methods of treatment (evidence-based treatment) or experts' opinions in order to provide the most effective care.

Lastly, physiotherapy is an important physical rehabilitation and therefore, physiotherapists should take part in projects aiming at developing/reforming policies, laws and delivery systems, including national rehabilitation plans that can help overcome the barriers to rehabilitation service provision.²⁷

With regard to policies and regulatory mechanisms, WHO makes the following recommendations:

- Assess existing policies, systems, services, and regulatory mechanisms, identifying gaps and priorities to improve provision;
- Develop or revise national rehabilitation plans, in accord with situation analysis, to maximize functioning within the population in a financially sustainable manner;
- Where policies exist, make the necessary changes to ensure consistency with the CRPD;
- Where policies do not exist, develop policies, legislation and regulatory mechanisms coherent with the country context and with the CRPD. Prioritize setting of minimum standards and monitoring.²⁸

The ICRC promotes:

- protocols and guidelines, in conjunction with reference to the patient's/ service user's needs;
- problem-solving approaches and clinical reasoning in every training and service provision;
- the increasing use of evidence-based techniques; and
- documentation of the best evidence available, whenever possible.

²⁷ *Ibid.*, p. 103.

²⁸ *Ibid.*, p. 122.



3.4 Physiotherapy in emergencies

The ICRC is a member of WHO and WCPT working groups defining rehabilitation activities in situations of disaster and other emergencies. It is not the aim of this manual to review the main references in this field (the SPHERE Handbook, WHO's Classification and Minimum Standards for Emergency Medical Teams in Sudden Onset Disasters, etc.) but it is important to draw attention to this relatively new field of activity. Physiotherapists may have been involved in emergencies in the past but it was more often than not on an ad hoc basis. At the ICRC, as elsewhere, they were frequently not considered to be essential staff complementing the core surgical team (surgeon, anesthetist and nurse) when responding to a disaster or in an acute conflict situation. This is, however, currently changing, especially in the light of the newly drafted standards for rehabilitation for emergency medical teams.²⁹

Article 11 of the CRPD states clearly that "States Parties shall take, in accordance with their obligations under international law, including international humanitarian law (IHL) and international human rights law (IHRL), all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters." The ICRC's position with regard to people with disabilities is clear, namely that "at times of crisis, people with disabilities are not only vulnerable to violence and abandonment, but they also face significant difficulties in obtaining basic services such as food, water, sanitation and health care."³⁰

The Haiti earthquake was an event which triggered a great deal of rehabilitation activity and related research. One of many articles highlights the fact that since that event, "well-established humanitarian and disaster relief organizations are now beginning to pay special attention to these emerging priorities: (1) mainstream disaster plans that are inclusive of persons with disabilities and (2) providing specialized services for persons with pre-existing disabilities or new disabilities resulting from disaster." The article also notes that activities were clearly defined and grouped into the following categories: "direct patient care, adaptive equipment sourcing and allocation, education and training, community outreach, and logistic or administrative duties."³¹

²⁹ WHO, *Minimum Technical Standards and Recommendations for Rehabilitation*, WHO, 2016.

³⁰ ICRC, *People with disabilities in emergencies*, Article, ICRC, Geneva, May 2015, <https://www.icrc.org/en/document/people-disabilities-emergencies>.

³¹ S. Klappa, J. Audette and S. Do, *The Roles, Barriers, and Experiences of Physical and Occupational Therapists in Disaster Relief: Post-earthquake Haiti 2010*, University of Rhode Island, 2013.

Three phases in conflict-affected settings have been clearly identified:³²

1. *Immediate post-conflict phase* with short-term objectives of addressing the most basic human needs such as water, sanitation, food, shelter and health care;
2. *Intermediate post-conflict phase* with medium-term objectives of restoring local capacities such as improving infrastructure, education, livelihood and economic growth and promoting the integration of all community members in the reconstruction and peace-building process. This phase can also promote new forms of local governance that is based on inclusion, representation, and accountability;
3. *Long-term post-conflict phase* with long-term objectives of strengthening systems and systems to ensure sustainable peace and development.

A great deal of assistance in immediate and intermediate post-conflict phases places the emphasis in physical rehabilitation on device production and fitting, accompanied by some limited psychosocial support. Non-governmental organizations (NGOs) often become key organizers of local capacity building, including the organizational development and training of human resources in rehabilitation, which are conducted on the basis of standardized guidelines and manuals. However, while consensus on technologies and standards has been developed, coordination and the sustainable integration of rehabilitation into the national health system are still underdeveloped. The capacities for rehabilitation services are often not institutionalized and are rarely integrated into long-term policies, strategies or plans for the development of the health sector. Most national governments rely primarily on the Ministry of Social Welfare for a broad array of rehabilitation services, while the role of the Ministry of Health often remains limited. This occurs despite the fact that emergency services, trauma care and medical rehabilitation are core responsibilities of the Ministry of Health. International organizations involved in providing emergency relief, such as the ICRC and Handicap International (HI), have long played very important provider roles in a large number of conflict and disaster-affected countries around the world, as they rapidly develop technically sophisticated rehabilitation systems for emergency use and take action to strengthen local capabilities.³³ However, these emergency rehabilitation systems are too rarely integrated into the national health-care system, which often is very rudimentary towards the end of the conflict and in the immediate post-conflict phase.

The need for continuity and harmonization in the transition from the immediate post-conflict phase to long-term sustainable peace and development is internationally recognized but often given insufficient attention as most partners make haste to provide humanitarian assistance – frequently on the basis of incomplete data and with limited consideration for intermediate and longer-term rehabilitation needs. “There is a clear relationship between emergency, rehabilitation and development. In order to ensure a smooth transition from relief to rehabilitation and development, emergency assistance should be provided in ways that will be supportive of recovery and long-term development. Thus, emergency measures should be seen as a step towards long-term development.”³⁴ Sustainable access to human physical rehabilitation is an essential part of ensuring “the health of all peoples [which] is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States.”³⁵ As conflict-affected countries continue to develop during the long-term post-conflict phase, the sustained rehabilitation of human beings is an essential part of ensuring peace and sustainable development for all. An estimated 80% of individuals with disabilities live in developing countries, especially in countries affected by conflict. Less than 5% of these people have access to rehabilitation services.³⁶

32 Rockhold and Hayashi, 2008, quoted in E. Martz (ed.), *Trauma Rehabilitation After War and Conflict*, Springer, 2010.

33 V. Hasselman, P. Odermatt and B. Rau, *Post-operative physiotherapy in foreign medical intervention during humanitarian crises, a systematic review*, poster presented at the 2015 WPT Congress (publication pending).

34 United Nations, *Strengthening of the coordination of humanitarian emergency assistance of the United Nations*, United Nations General Assembly, 78th plenary meeting, A/RES/46/182, 19 December 1991.

35 World Health Organization (WHO), *Constitution of the World Health Organization*, Basic Documents, Forty-fifth edition, Supplement, October 2006, p. 1.

36 CBM, *Physical Disability and Rehabilitation – Policy Paper*, CBM, 2007.

Physiotherapists are important players in the physical rehabilitation team, alongside the medical team, ortho-prosthesis or psychologists and social workers. Klappa *et al.* also observe that, following the earthquake in 2010, therapists working in Haiti “were challenged emotionally, had to maneuver a harsh environment with scarce resources, struggled with balancing respect for cultural customs and traditions with rehabilitation goals, and lastly, reflected on poor preparation prior to field assignment. Discharge planning was repeatedly described as emotionally taxing since patients/service users lost their homes, jobs, and families. Additionally, many people were discharged with little hope that they would have access to necessary follow-up care because of environmental factors such as blocked roads, inadequate transportation, and a severely limited number of healthcare facilities. These issues were further complicated by post-traumatic stress, fear, bereavement, loss of property, and the negative stigma attached to disability.”³⁷

A WCPT report published in 2016 briefs physiotherapists on the four phases of the disaster continuum (prevention, preparedness, response and recovery).³⁸ It recognizes that disasters resulting from natural, environmental and technological hazards (including biological, geological, hydrometeorological and social-natural hazards) have a major and long-lasting impact on people and the countries in which they live. WCPT encourages member organizations to facilitate the contribution of physiotherapists, as experts in physical therapy intervention/treatment including rehabilitation, to national and local disaster preparedness and management strategies. It recommends that physiotherapists:

- be involved in the process of developing policies and plans that help areas, countries and regions prepare for disasters;
- be involved in preventive education and measures before, during and after disasters;
- provide interventions/treatment, including rehabilitation to those affected by disasters;
- ensure that populations affected have access to physical therapy intervention/treatment, including rehabilitation services to achieve the highest attainable level of health and function.³⁹

WCPT has also published guidelines for physiotherapists who are interested in participating in an emergency response activities.⁴⁰ It highlights the need for physiotherapists to be involved in disaster management, particularly in the emergency medical team, and provides the information needed to prepare physiotherapists for work in such contexts. An older paper⁴¹ describes the roles played by physiotherapists in patient care and organization while providing disaster relief services. Those interviewed suggested that physiotherapist roles could be multifaceted and include triage and treatment of musculoskeletal, neuromuscular, integumentary and cardiopulmonary issues in ways that might reduce the workload of physicians and allow them to care for more critical cases. These suggestions are in line with the Guide for the Deployment of Therapist Officers issued by the US Public Health Service’s Office of Emergency Readiness, the experiences of US military physiotherapists working in combat zones, the standards observed by WHO’s Disability, Violence and Injury Prevention department, the rehabilitation standards for emergency medical teams⁴² and the “gold standard” Sphere Handbook, which includes physical rehabilitation services under recommendations for essential health services related to injury.

37 S. Klappa, J. Audette and S. Do, *op. cit.*, p. 9.

38 World Confederation for Physical Therapy (WCPT), *The role of physical therapists in disaster management*, WCPT, 2016.

39 World Confederation for Physical Therapy (WCPT), *Policy statement, Disaster Management*, WCPT, 2011, p. 1.

40 *Op. cit.*, footnote 38.

41 R.M. Harrison, “Preliminary Investigation into the Role of Physiotherapists in Disaster Response,” *Prehospital and Disaster Medicine*, Vol. 22, Issue 5, 2007, pp. 462–465.

42 WHO, *Minimum Technical Standards and Recommendations for Rehabilitation*, WHO, 2016.

4. Physiotherapy in ICRC-supported health structures

4.1 Physiotherapy at physical rehabilitation centres

Rehabilitation is “a set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments. (...) Provided along a continuum of care ranging from hospital care to rehabilitation in the community – it can improve health outcomes, reduce costs by shortening hospital stays, reduce disability, and improve quality of life.”⁴³ The primary goal of physical rehabilitation centres is to support people with disabilities until they have achieved functional ability that allows them to return to their homes and communities safely and without undue discomfort. Physical rehabilitation services work to keep people focused on the future and on overcoming obstacles of physical incapacity. In that sense physiotherapy is an essential part of physical rehabilitation and is used through a goals-based approach to help individuals to develop and attain personalized objectives. Physiotherapists are essential team members at the around 120 ICRC-supported physical rehabilitation centres (PRCs) in 2016, where they provide physiotherapy services for various persons with disabilities including, in particular, those with the following conditions:⁴⁴

- Amputation
- Poliomyelitis
- Peripheral nerve injury
- Spinal cord injury
- Stroke
- Clubfoot
- Cerebral palsy
- Diabetes
- Post-trauma conditions (fractures, burns, etc.)

Chronic non-communicable diseases are increasingly becoming a problem in low-income countries, and ICRC project teams will have to adapt their practice further in order to reflect the rehabilitation needs of people in such areas. This will involve medication management, service user education, long-term complication prevention and prevention campaigns. These matters are currently being analysed and developed for future use and are therefore not discussed in this manual.

The physical rehabilitation services consist of physiotherapy and the provision of orthopaedic devices, which include prostheses, orthoses, wheelchairs and other mobility/postural aids. Wheelchair distribution is now an integral part of the ICRC’s physical rehabilitation service “package,” which aims at encompassing the holistic needs of people with disabilities to enable them to regain maximal mobility. Social inclusion of service users is part of the ultimate goal of the rehabilitation process; physical rehabilitation staff should therefore be familiar with social inclusion activities. By virtue of their holistic approach to service user care, physiotherapists, in particular, play an important role in bridging the gap between medical and physical and social rehabilitation needs. Physiotherapy should be prescribed by a medical doctor but in most rehabilitation centres service users are often welcomed and supported without a referral. Assessments and clinical sessions should ideally be implemented through an interdisciplinary team which should include a physician specialized in physical rehabilitation. Where the presence of a physician cannot be assured, it is recommended that a reference medical doctor be identified who could be contacted for advice on complex cases.

The rehabilitation process can last from a few days to several weeks and during this period physiotherapists have to deal not only with service users but also with their families and/

43 World Health Organization and the World Bank, *op. cit.*, p. 96.

44 ICRC, *Physiotherapy Patient Management Guidelines*, ICRC, Geneva (internal ICRC document).

or carers. Before considering the details of the layout and the organization of the physiotherapy department, it is necessary to recall the general layout concept of a PRC. The three main areas at a PRC are:

- the living area / dormitory;
- the clinical-therapeutic area, which includes the physiotherapy area; and
- the workshop area, technical rooms and storerooms.

Between these areas, there are usually private spaces (toilets, changing rooms, staff rooms, etc.), public areas such as the entrance, reception, waiting area, and administrative offices.

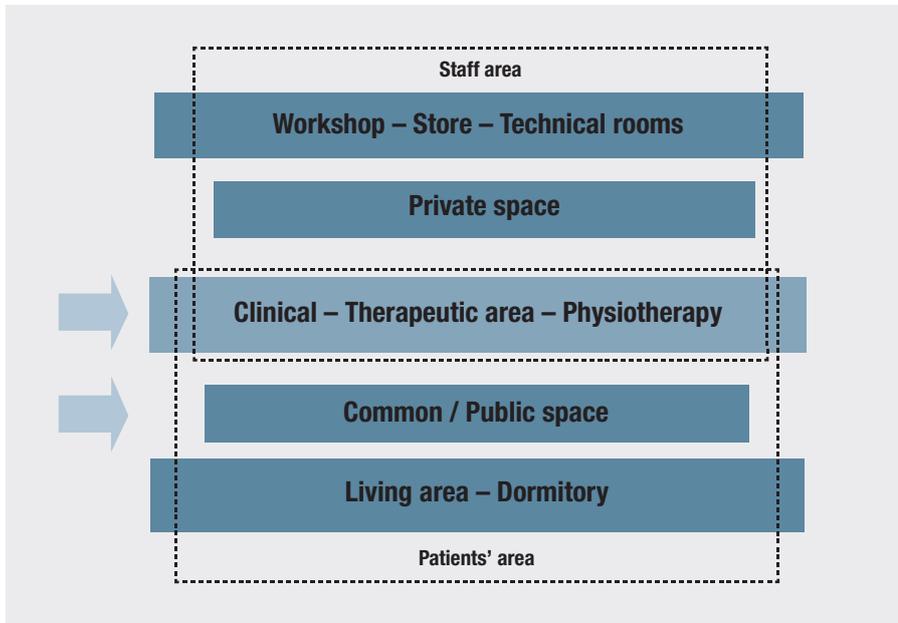


Figure 1. The main areas of a physical rehabilitation centre

In the next sections we will consider all public areas and all clinical-therapeutic areas, both of which are important to the provision of physiotherapy services. All figures cited below indicate the minimum size required for a PRC that serves around 100 service users per month (including those who need mobility devices) and up to 25 beneficiaries per day in the physiotherapy department.

The centre's immediate cooperation objective should be to establish a local network which focuses on the direct interests of the physical rehabilitation programme and its service users and aims at enhancing the services provided. This may include identifying referral services, such as medical and surgery care at local hospitals, or partners who may be able to assist in the identification of potential service users, such as social workers, community-based rehabilitation (CBR) programmes and NGOs.

In addition, the centre and its staff may work with any relevant network that operates at a higher (regional or national) level in order to promote the development of rehabilitation services on a larger scale. Different networks – possibly consisting of different partners – may be formed, depending on the aim of the joint activity. In any constellation (e.g. clusters), collaboration should be formalized, objectives defined and schedules for regular meetings planned. The size of any network, its composition, the aim of its work and the frequency of its meetings varies in line with the intended field of collaboration. The potential partners in a collaboration network include:

- providers of physical rehabilitation services: national service providers (governmental and non-governmental) or international organizations providing assistance in this field;
- health and medical services (governmental – Ministry of Health – and non-governmental);
- professional associations (national physiotherapy association);
- people with disabilities and their organizations;

- other rehabilitation and support services, such as physiotherapy services, occupational therapy services, psychosocial services/counselling, CBR, vocational/skills training, job-placement services, disabled sports associations, services providing support to economic self-reliance and reintegration;
- other local organizations, such as the National Red Cross or Red Crescent Society;
- other relevant ministries and government offices;
- the media.

External partners of a rehabilitation centre's physiotherapy department can be classified into two groups, as follows:

Upstream: mostly hospitals, clinics and all actors such as disabled persons' organizations (DPOs) who can refer people with permanent and non-permanent disabilities for physiotherapy and orthopaedic appliances. The relationships are mainly intended to ensure that all have equal access to the PRC and to share as much information as possible with the other stakeholders.

Downstream: all institutions which could be involved in service user follow-up and social inclusion activities. The relationships are mainly intended to ensure maximal opportunities to access other services in order to assist the service user after discharge back to the community. CBR organizations, DPOs and government offices are usually the main target institutions.

The potential areas – and the potential benefits – of collaboration are many and include:

- providing support for the development of government policy in the disability field;
- carrying out lobbying/advocacy on disability issues;
- coordinating activities in the field of physical rehabilitation services;
- carrying out surveys of potential service users;
- establishing a referral system for service users;
- sharing information and data (to avoid double registration and fitting);
- sharing knowledge and experience;
- sharing work among service providers (by distribution of mutual tasks);
- providing/receiving technical support;
- providing/receiving logistic support;
- sharing teaching/training resources.

The ICRC promotes:

- rehabilitation services for all people with a physical mobility disability;
- provision of prosthetic and orthotic devices, wheelchairs and walking aids alongside physiotherapy;
- the development of a proper rehabilitation network; and
- integration and promotion of physical rehabilitation services in the health system.



4.2 Physiotherapy at ICRC-supported hospitals

“The wounded [and sick] need access to a safe place supplied with water and power where they can receive competent medical and surgical treatment backed up by good nursing care within a well-organized system which receives adequate supplies.”⁴⁵ International humanitarian law (IHL) protects medical transport and civilian and military medical units, in particularly hospitals. Consequently, “all the wounded and sick and the medical personnel caring for them must also be respected and protected.”⁴⁶

“Patients in an ICRC-run or supported specialist service receive quality care (e.g. ICU, therapeutic feeding services, physiotherapy) meeting as a minimum the national / international standards.”⁴⁷ Physiotherapists are currently essential team members in ICRC hospital projects (hospitals entirely managed by the ICRC) or at ICRC-supported hospitals (local hospital fully or partially assisted by the ICRC). More and more physiotherapists are also included in ICRC mobile surgical teams (involved in emergency situations).

In its hospital projects, the ICRC makes use of physiotherapy in various fields, such as:

- post-surgery treatment of the war-wounded and other trauma patients (fractures and amputations, burns, thoracic-abdominal conditions);
- internal medicine (respiratory, cardiovascular and neurological conditions); and
- paediatrics.

In a plan of action for setting up a 50-bed surgical hospital, a physiotherapist is included in Phase 3 (during which the infrastructure is determined and organized, see Table 1). The provision of physiotherapy for inpatients is the priority of hospital physiotherapy services, the aim being to ensure that the patients receiving surgical and medical services can achieve an optimal level of function and be discharged early to make beds available for other, more recently injured victims.

45 J. Hayward-Karlsson. *et al.*, *Hospitals for war-wounded*, ICRC, Geneva, 2005, p. 1.

46 *Ibid.*, p. 6.

47 Specific objective 10, OP_ASSIST_SANTE reference framework for health interventions for wounded and sick, hospital care, June 2012 (internal ICRC document).

PHASE	KEY PERSONNEL	ADDITIONAL PERSONNEL	EQUIPMENT & SUPPLIES	TASKS
1 NEGOTIATE	Medical coordinator/ hospital director	Interpreters	Vehicles Fuel Accommodation Radio/communication	Contact/written agreements with: Ministry of Health Military authorities
AGREEMENT REACHED				
2 LOCATE HOSPITAL	PLUS Head nurse Hospital administrator Water and sanitation/ construction engineer	PLUS Drivers	ORDER Initial medical supplies Special technical material (X-ray, lab., etc.)	ASSESS SITE OR BUILDING FOR Security Access Construction/sanitation Logistics
HOSPITAL SITE AND/OR BUILDINGS LOCATED/RENTED				
3 INFRASTRUCTURE AND EXPERTISE	PLUS Operating theatre head nurse Teaching nurse Lab technician X-ray technician Physiotherapist	RECRUIT Administrative staff Security staff Construction/sanitation staff Special technical staff (X-ray, physio) Lab technician Porters	ORDER/PURCHASE Construction/ sanitation material Hospital furniture Non-medical equipment and furniture Operating theatre and sterilization material Food	CONSTRUCT OR ADAPT BUILDINGS' Power supply Water supply Sanitation system Stores/shelves
INFRASTRUCTURE IN PLACE				
4 ORGANIZE THE SYSTEM	PLUS Experienced ward nurses (6)	RECRUIT Local medical/nursing staff SUPPORT STAFF Porters Kitchen Laundry Sterilization		TEACHING NURSE Gives initial first aid/hygiene courses OPERATING THEATRE NURSE Trains sterilization staff PHYSIOTHERAPIST Trains physio staff WARD NURSES Establish nursing policies/procedures, set up wards
BEDS AND EQUIPMENT IN PLACE - SUPPLIES IN PLACE				
5 OPEN THE HOSPITAL	PLUS Surgeon Anaesthetist		ORDER Follow-up medical supplies	Open first ward (20-25 beds) Start first training programme for ward staff
6 EXPAND HOSPITAL CAPACITY	PLUS Experienced ward nurses			Open second ward Start second training programme for ward staff
MONITOR SITUATION CONSTANTLY - BE PREPARED TO EXPAND HOSPITAL CAPACITY				

Table 1. A plan of action for setting up a 50-bed surgical hospital. Source: ICRC, *Hospitals for War-Wounded*, 2005, p. 3.

Each physiotherapist works closely with the nursing and medical teams and communicates changes in the condition of patients. In ICRC-supported hospital projects in a number of low-income countries, physiotherapists – in addition to their customary duties in intensive care units, surgical and medical wards and outpatient departments – are also in charge of applying plaster of Paris (POP) immobilizations and of the follow-up for skeletal limb tractions. This is because of their particular expertise in dealing with fractures and because the ICRC surgeon is not always an orthopaedic surgeon and therefore relies on permanent staff to carry out such immobilizations.

The physiotherapy techniques and equipment used in such ICRC contexts are simple and inexpensive, while continuing to ensure quality physiotherapy services. Early physiotherapy treatment can prevent disabilities, even in the case of non-reversible lesions, for example by preventing joint contractions or muscle weakness. Prevention and restoration of limb function through exercise (muscle strengthening and lengthening) and specific functional training is one of the key areas of work within the hospital physiotherapy service. Early mobilization of patients can help to prevent respiratory, vascular and dermatological complications. Breathing exercises and techniques are important for all patients who have had a major injury and/or surgery (especially thoracic or abdominal), particularly if they have been given a general anaesthetic. The physiotherapy service also assists patients in retraining to walk or learning to use their walking aid(s) in a functional setting, including modifying tasks to enable them to complete everyday activities. Since patients are discharged rapidly, hospital stays are usually very short.

Proper referral is one of the hospital team's essential duties. The physiotherapist therefore plays a particularly important role in referrals for patients with physical impairments. It is often a challenge not to interrupt the rehabilitation process following the discharge of the patient from the hospital in a country with poor rehabilitation infrastructure. Links with external service providers are essential to the patient receiving ongoing physical rehabilitation to regain maximum use of the affected body part and to optimize function and participation.

Having the presence of physiotherapists at the hospital level is a key factor not only in initiating the early rehabilitation process and identifying conditions that will need longer-term rehabilitation follow-up after discharge, but also in providing advice and training for both patients and carers. It has been shown that informal carers, relatives or patients can provide suitable physiotherapy to maintain good range of motion in the joint and thus reduce the severity of the final disability.⁴⁸ Especially in emergency situations with limited resources, physiotherapists play an important role in teaching simple exercises and proper positioning and thus rendering daily physiotherapy possible at minimum cost. No specific and expensive physiotherapy equipment is required and few experienced rehabilitation professionals are needed. The education of family and relatives is also an excellent approach when outpatient follow-up is not possible or difficult because of security, transportation or housing constraints.⁴⁹ Finally, home exercises and self-training are even more relevant when patients are rapidly discharged after surgery in order to guarantee a quick turnover of hospital bed occupancy in emergency situations.

In humanitarian crises, the main objective of post-operative physiotherapy is to minimize complications of trauma surgery for direct victims of the disaster⁵⁰ by (a) improving survival and thus reducing morbidity, and (b) reducing secondary complications by restoring maximum function. Physiotherapeutic means are chosen according to the specific needs of the patient and the type of surgery undergone.

Post-operative physiotherapy management can make use of a number of different approaches:

- Manual therapy
- Active and passive mobilization
- Positioning and pressure sores prevention / treatment
- Chest physiotherapy and cardio-vascular training
- Muscle strengthening and stretching
- Balance and gait training
- Plaster of Paris and splint application
- Skeletal traction management
- Pre-prosthesis and post-prosthesis and orthosis rehabilitation
- Guided functional exercises (activities of daily living)
- Walking aids and other assistive devices instruction
- Education and counselling for patients and their relatives

For example, on completion of "surgical management" with external fixation, or POP immobilization, the patient will require extensive and ongoing physical rehabilitation to regain maximum use of the affected body part and prevent deconditioning of the unaffected areas. It is an essential duty of the hospital team to ensure proper and timely referral at discharge.

48 N. Roy *et al.*, "Surgical and psychosocial outcomes in the rural injured – a follow-up study of the 2001 earthquake victims," *Injury*, Vol. 36, Issue 8, 2005, pp. 927-934.

49 C. Burnweit and S. Stylianos, "Disaster response in a pediatric field hospital: Lessons learned in Haiti," *Journal of Pediatric Surgery*, Vol. 46, Issue 6, 2011, pp. 1131-1139.

50 J. Wickford and A. Duttine, "Answering Global Health Needs in Low-Income Countries: Considering the Role of Physical Therapists," *World Medical & Health Policy*, Vol. 5, Issue 2, 2013, pp. 141-160.

In areas where there is an ICRC hospital or the ICRC is supporting a hospital, it is essential to have links with external actors:

- as a referral source for patients to ensure continued physical rehabilitation so as to prevent disability and maximize function (including wheelchair services);
- to maintain supplies of local material and equipment for physiotherapy services;
- to establish links with physiotherapy training institutions and professional organizations.

It is important for the physiotherapy team to be aware of the services and networks that are available in the community so as to ensure patient referral on discharge from the ICRC-supported hospital or service. The physiotherapy team therefore plays an important role in referrals for patients with physical impairments. Records should be kept of the referral of patients to physical rehabilitation services. A dated copy is kept on the patient's file and one copy given to the patient for presentation to the external service provider.

The ICRC promotes:

- early rehabilitation to prevent complications and disablement;
- active training to restore maximum function and allow early discharge/referral;
- specific capacity building; and
- the full integration of physiotherapists in hospital teams.

4.3 Physiotherapy needs assessment

The ICRC uses various guidelines and forms to complete needs assessments and is currently developing a comprehensive health baseline assessment. Once services are running, the level of the department's performance must be assessed at regular intervals in order to plan further developments or to improve current practices. Before starting to plan and set up a new physiotherapy department, a needs assessment and a situational analysis have to be conducted in order to set specific objectives and goals. The outcomes of the needs assessment, the objectives and goals determined and the local and environmental constraints will help to determine the optimum design and size of the physiotherapy department, the type and number of human resources needed and the specific staff expertise required. The ICRC's newly developed physiotherapy standards should also be used as a checklist to identify gaps in service provision and help to plan activities.

The main issues to be assessed include:

- type of context: acute versus developmental;
- number of patients/service users: inadequate space will result in a crowded environment and a ratio of too many patients to staff will affect service quality;
- type of patient/service user population;
- whether the purpose of the PRC is to provide services for specific categories of patients/service users (e.g. post-fracture, polio, spinal cord injuries, cerebral palsy and clubfoot);
- whether services at a hospital are provided for weapon-wounded only during an acute crisis or for people with more diversified pathologies/injuries (e.g. surgery, paediatrics, obstetrics and internal medicine) in a chronic crisis or post-crisis situation.

Human resources

The availability of human resources, managerial capacity and many other local factors can restrict, or impose adaptations on, the way services are developed and provided. It is important to avoid unnecessary investment. Most of the time-limiting factors can be surmounted with the assistance of humanitarian actors (e.g. through scholarships, upgrading courses in management, financial support). Service costs can also influence access and have an impact on the type of services that are provided. Lastly, the recognition and status of physiotherapy and physical rehabilitation in the country might hamper the

use of such services; physiotherapy education is more frequently available than prosthetic and orthotic training in countries where the ICRC is present but not always at the level that is deemed necessary. The existence of a professional physiotherapy association and recognition of the profession by the Ministry of Health are key elements that support this field of activity. Capacity building is essential to ensure sustainability of services. This is carried out through sponsorships, on-the job training or short courses and support for national training institutions.

Physiotherapy department

The functions and roles proposed for the department will determine whether the services are available for inpatients and outpatients or if outreach services are provided. This information is essential to ensure that the planned department is of the correct size. While physical rehabilitation services are always set up with a long-term perspective, this is not necessarily the case for hospitals. In acute crisis situations, emergency field hospitals can be set up for a short period only. The physiotherapy department in such facilities will therefore always involve a minimum investment in equipment, as it is to be temporary. The future outlook for the department is related to the potential target population and catchment area of the centre/hospital and will determine if expansion is requested in the future.

The ICRC promotes:

- careful needs assessment;
- capacity building to ensure sustainability;
- use of guidelines and protocols; and
- careful reporting of activities.

B. SETTING UP AND MANAGING A PHYSIOTHERAPY DEPARTMENT

1. General considerations

Before starting any construction work and/or renovation of existing structures, several issues need to be taken into consideration. As the premises are being designed, a number of management tools and protocols should be implemented in order to create the best possible environment to promote good performance and quality physiotherapy services. In setting up a physiotherapy department at a physical rehabilitation centre (PRC) or a hospital, care needs to be taken, in particular, to ensure that a positive rehabilitation environment is created, personal privacy is respected and a management style is facilitated that will support patient-centred care and interdisciplinarity.

Design considerations will need to include function (size and utilization of the different activity areas), logistics (patient flow, physiotherapy staff flow, location of storage place), technical requirements (national regulations, lighting, acoustics, safety, accessibility for disabled persons, labour laws, etc.), and aesthetics (interior design, atmosphere, etc.). The parameters used in the needs assessment may change over time; consequently, the design of the facility should incorporate flexible elements to allow for adaptation to new circumstance (e.g. by allowing the building's structure to be changed or by using the building and space in different ways). Environmental control considerations include ventilation, heating and air conditioning, hygiene and access to water, and noise and sound control.

Buildings need to be planned to ensure their accessibility by people with mobility impairments: circulation based on likely patterns of movement with corridors that are wide enough, signalization and access to information with clear directional signs, paths and ramps so that building entrances are level with the ground, steps and handrails to facilitate use by ambulant disabled and elderly people, elevators, toilet layout to accommodate a stationary wheelchair with bars and back supports, accessibility of doors and reaching spaces such as the reception counter.

There are considerable differences between planning a totally new facility, planning a new department for an existing service, and renovating an old department/building. In renovating an old department, considerable restrictions will usually be imposed by existing structures and services. Standards for new buildings can nonetheless be used as references during renovation. The same design considerations as for a new building apply. To allow for subsequent changes in use or requirements, flexibility can be built into the design in two ways:

- Allowing the building's structure to be changed: the basic layout should be flexible enough to allow future changes in size in order to diversify treatment area possibilities;
- Using the building in different ways and/or by changing the pattern of use: rooms can be used for different purposes at the same time, saving space and offering a variety of possibilities for the future.

The department might also be used for family education or training/coaching purposes, either for its own staff or for other interns. The number of trainees/students planned will have an influence on the size of the rooms required for demonstration and teaching purposes. Detailed information is given in the handbook on the architectural design of physical rehabilitation centres⁵¹ and in the ICRC's health facility planning guidelines currently being developed.⁵²

51 S. Bonnet, *Physical Rehabilitation Centres: Architectural Programming Handbook*, ICRC, Geneva, 2015.

52 ICRC, *Health Facility Planning Guidelines*, ICRC, Geneva, publication pending.



1.1 Environmental control

Ventilation

Ventilation requirements will vary according to the number of people in a space, their activities and weather conditions such as temperature, humidity and air movement. It therefore needs to be possible to control the ventilation in different areas. Staff and patients/service users who are active will require lower temperatures and more air movement than those who are waiting for treatment or being given passive treatment. Draughty conditions and excessive air movement from fans must be avoided. If the building is designed to allow natural ventilation, its shape should encourage a cross flow of air wherever practicable. All internal rooms such as toilets, storage and offices should be adequately ventilated.

Heating and air conditioning

In extreme climates (hot or cold), outdoor spaces are often unworkable during certain periods of the year. Therefore, if possible, all rehabilitation installations should be available indoors. A central or local heating system or air conditioning system is required in many climatic environments to provide comfortable exercising and working conditions. Thermal insulation to walls and the roof will help to conserve heat, reduce costs and prevent condensation in winter. Waiting areas placed close to outside entrances may be uncomfortably cold in the winter or too warm during the hot season.

Hygiene and access to water

Maintaining a high level of hygiene in the physiotherapy department is very important to prevent care-associated cross-infections. Water must be readily available in every treatment area. If there is no functioning water system in place, a mobile hand-washing unit should be provided.

Noise and sound control

Background noise (e.g. traffic) creates an additional handicap for those who are hard of hearing, and can be stressful for staff and patients/service users. It can be reduced by structural sound insulation such as heavy walls and double-sealed windows. Internal noise can be reduced by covering walls, ceiling and floor surfaces with sound-absorbent material.

It should be possible to isolate group therapy rooms or other areas where there is a lot of noisy activity from other treatment and training areas or where a quiet atmosphere is required (e.g. the cerebral palsy (CP) room needs to be quiet in order to obtain maximum attention from the children and their parents). Impact noise, such as that made by weight and pulley systems, can be reduced by affixing resilient materials such as rubber to the plates.

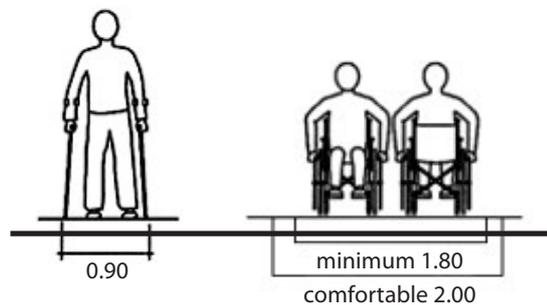
Account should be taken of the need for privacy by patients/service users talking to staff or having an assessment. A number of well-insulated interview rooms or cubicles should be provided for individual consultation and instruction.

1.2 Accessibility

This section provides the minimum useful information about accessibility for people with mobility impairments and is not a full compilation of all the necessary guidelines for the construction of accessible buildings. It mainly addresses the issue of accessibility for wheelchair users and people using crutches. All the drawings and standards shown below are taken from the "Accessibility for the Disabled, A Design Manual for a Barrier Free Environment."⁵³ Figures have been adjusted to comply with the ISO's International Standard 21542.

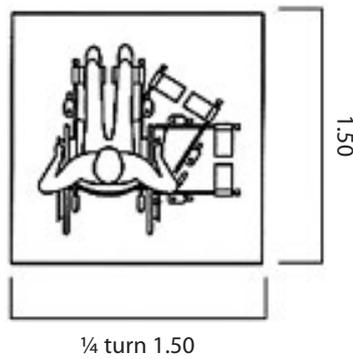
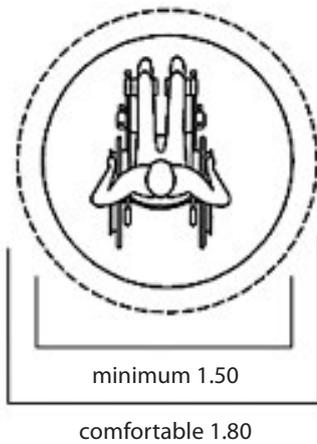
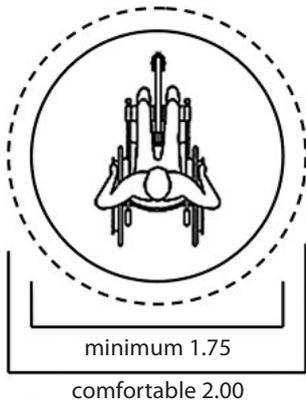
Circulation

The layout of the department should be based on likely patterns of movement. The entrance should be conveniently situated for all patients/service users, observable by physiotherapy staff and close to the main waiting area, with direct access to the main therapy areas. Narrow, long department layouts should be avoided as this increases walking distances and hinders good communications. The layout should be designed for easy supervision. Locked storage should be provided for personal items of value and for expensive and vulnerable items of equipment. Corridors should be wide enough to allow a trolley bed (85-90 cm wide) and a wheelchair (75 cm wide) or pedestrians (50 cm wide, with crutches 90 cm wide) to pass each other comfortably. Generally a minimum width of 180 cm (i.e. between handrails, if provided) is recommended to allow crossing.



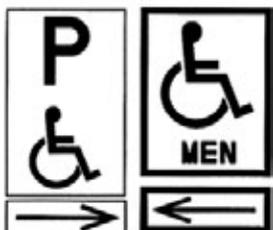
53 Available on the United Nations eNABLE website, <http://www.un.org/esa/socdev/enable/designm/>.

To allow a wheelchair to turn 180 degrees, the floor should be unobstructed in an area large enough to contain a circle that is at least 150 cm in diameter (175 cm for three-wheeled wheelchairs).



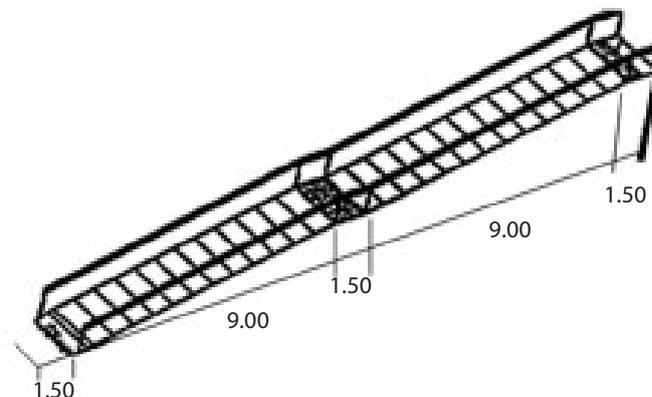
Signalization and access to information

Providing information to give people with disabilities independent access to buildings is the first step towards ensuring accessibility. This can range from suitably positioned signposts pointing to parking spaces for people with a disability, through ramps and access for wheelchairs and ensuring that the counter in the reception area is not too high for wheelchair users, to providing information in accessible formats, including information on emergency services, etc.

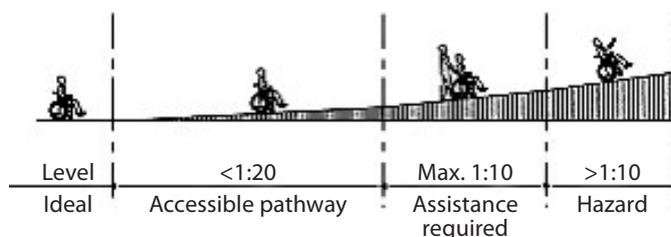


Floor, paths and ramps

Building entrances must be level with the ground or ramps installed. Horizontal landings must be provided at the top of the ramp and at 9-metre intervals along the ramp. A horizontal landing at the top of the ramp will make it easier and safer to pass through the door. The exact size of the landing will depend on the door (size and direction of opening) and the direction of approach. Landings must be at least as wide as the ramp and at least 1.5 metres long.



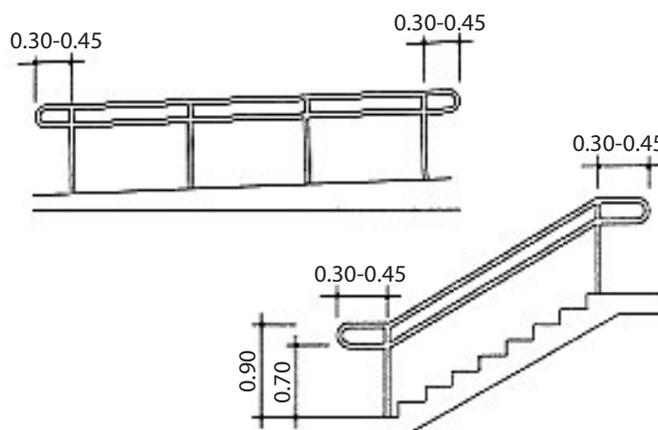
Ramps should have a constant gradient of no more than 1:12. A ramp with a rise greater than 15 cm should have a handrail on each side, with a minimum distance between handrails of 120 cm.



The width of ramps will depend on the anticipated traffic and location. Ramps with handrails are preferable to stairs for a change of level within the department. All ramp surfaces must be slip resistant.

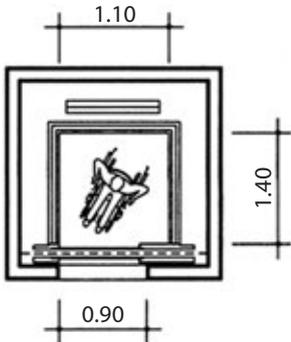
Steps and handrails

Handrails attached to the inside and outside of the building will ensure greater safety and independence for people who are able to walk but may have some problems with balance. Handrails must be provided on each side of all corridors and along the full length of stairs and landings. To facilitate use by ambulant disabled and elderly people, handrails should be mounted between 85 cm and 95 cm above the finished floor level. For the benefit of wheelchair users, a second handrail should be mounted between 70 cm and 75 cm from the floor. To facilitate use by children and short people, a third handrail can be mounted at a height of 0.60 metres. In addition, stairs and ramps need to be well lit and to have a slip-resistant finish.



Lifts

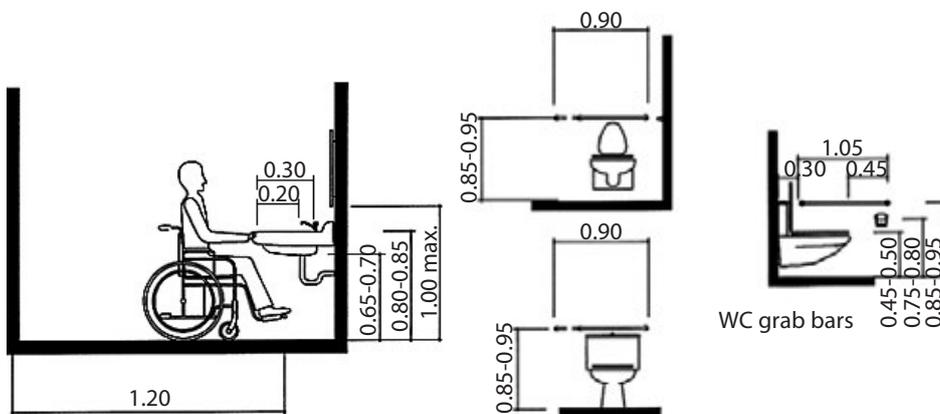
Well-dimensioned lifts should have a minimum size of 0.95 m x 1.25 m for a single wheelchair user. In general, wide lift cabins are preferable to long ones. For ease of reach, the control panel should be mounted between 0.90 m and 1.20 m from the floor. In existing constructions, it may be left in place if it is within 1.40 m of the floor, this being the maximum reach of a wheelchair user. The lift door should be no less than 0.80 m wide and the opening time should be increased to 5 minutes (3.6 minutes being the usual configuration).



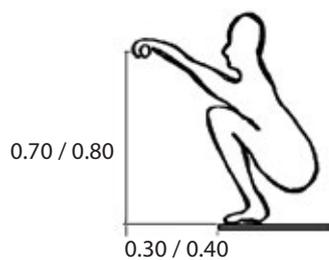
Toilets

Toilets require adequate clear floor space on one side to accommodate a stationary wheelchair. Transfer to and from the wheelchair will be easier and safer if the toilet seat and the wheelchair sitting surface (wheelchair seat and cushion height) are at the same height.

Grab bars and back supports may be needed for people with poor sitting balance. The basin should not be more than 55 cm deep and must be positioned relatively low. The upper surface should not be higher than 85 cm. Water and toilet paper dispensers should be within easy reach. Storage areas, electricity outlets and light switches must be within reach and mirrors should be low mounted or positioned at an angle.



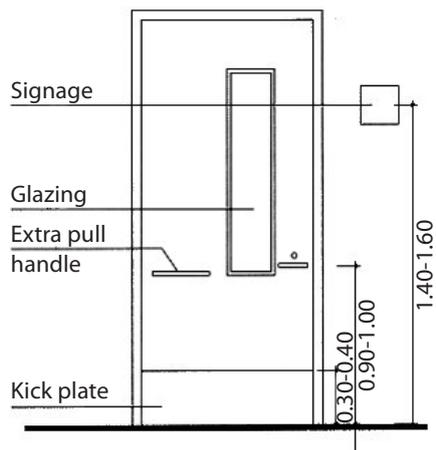
A squat toilet is not always the best solution for people with disabilities but, depending on the cultural context, it can be an option. It should face the wall, to which a front bar is fitted to help squatting.



Doors

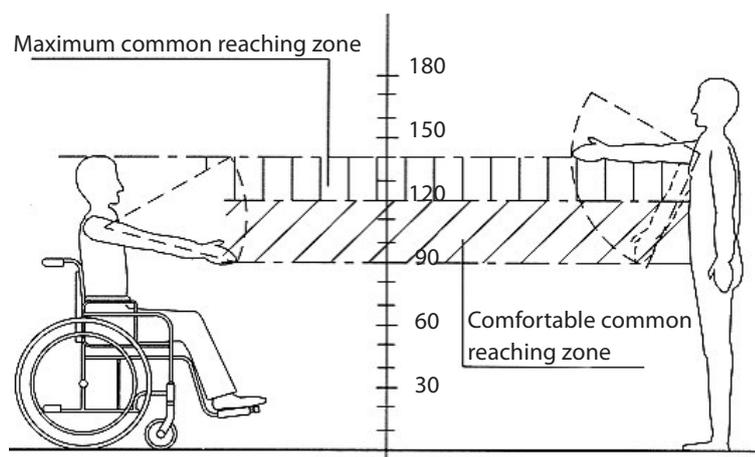
An accessible door is one that can be opened and closed by users without assistance. Accessible doors must have adequate clear floor space on both sides (push side and pull side) to allow users to open and close the door. It must also have adequate clear space when the door is open to allow a wheelchair user to move through without touching the door or door frame. The ideal doorway is a few centimetres wider than the standard wheelchair to allow easy passage through the space.

People must be able to reach and operate the lock and the door handle (90 cm from the floor). An additional pull handle is often useful, as is a kick plate covering the lower part of the door up to a height of 40 cm. A glass panel may be inserted into interior doors.



Reaching spaces

When planning rooms, placing shelves or fixing basins and any other items to the wall, consideration should be given to reaching areas and the specific forward vision of a wheelchair user (not more than 116 cm – 133 cm). It is important to design the reception counter, for example, in accordance with these specifications.



The ICRC promotes:

- full access to buildings for people with disabilities;
- respect for international standards;
- special considerations for crutch and wheelchair users; and
- observance of specific environmental factors.

1.3 Physiotherapy equipment and consumables

The ICRC's physical rehabilitation team has standard lists of equipment, materials and reference works to facilitate work in the field; they are reviewed regularly. As the equipment is used by patients/service users, special care should be taken regarding cleanliness, maintenance and supervision of use to ensure best standards. It is useful to have a small storage space for consumables and mobility aids that are used within the department and for loans, rather than relying solely on the central store. Management of the small store should be assigned to one person who understands store management logistic tools and reports regularly to the person in charge of the central store. The small store should have a logbook and one index card per item; these are used to record the number of items available, when they are taken from and returned to the store, minimum and maximum stock, details of the monthly inventory check, etc.

Readily available mobility aids will ensure that patients/service users are able to regain movement when ready, allowing faster discharge planning and reducing their length of stay in the centre or hospital. Distribution of mobility aids is usually the responsibility of the physiotherapy department, with physiotherapists making the necessary prescriptions and adaptations, as well as training the users. It must be noted in the person's records that instructions have been given for use of the aid. Specific attention should be given to the distribution of wheelchairs. Wheelchair provision involves assessment, prescription, fitting and adjustments, delivery, training and practice. For someone who will be in a wheelchair permanently, wheelchair prescription needs to be customized and is therefore a full service of its own provided by the physiotherapist, orthoptist-prosthetist or, when available, a wheelchair technologist or another person who has been appropriately trained. The service will need a variety of adjustable products to insure that the prescription is appropriate. At a PRC, wheelchairs are generally assembled outside the physiotherapy department in a specialized workshop. At a hospital, it may not be possible to provide this service.

The ICRC also lists tools or useful items of equipment that are used in the rehabilitation process and can be easily produced locally or bought within the country. It includes pictures, technical drawings and explanations about the material used and the manufacturing process. Electrotherapy agents are not widely used or promoted in ICRC-supported projects and evidence-based practice guidelines must be followed in detail to prevent inappropriate use. Table 2 is a list of basic items needed in a physiotherapy department; the quantity will depend on the number of staff and number of patients/service users in attendance. However, whether locally produced or imported, the quality of the material should be good, durable and safe to use. More specific equipment is listed in detail together with the description of each room in subsequent sections. In addition, details of the equipment required for specific treatment techniques, or the pathology being treated, can be found in internal ICRC guidelines and reference documents on that subject.

Assessment tools	Goniometer
	Sphygmamometer
	Stethoscope
	Stopwatch
	Plumb line
Educational and training material	Anatomical charts
	Skeleton
	Whiteboard (with pens and an eraser)
Treatment tables	Neurological physiotherapy and basic
Exercise equipment	Parallel bars
	Mirrors
	Wall bars
	Pulley cage and accessories (if enough space) or preferably wall pulleys
	Gymnastic mats
	Gymnastic balls
	Bicycle
	Trampoline
	Scales for weight transference
	Balance boards
	Medicine balls
	Dumb-bells and weight straps
Mobility aids	Wheelchairs
	Walking aids crutches, walking sticks, pick-up frames, forearm support frames
	Spirometers and peak flow meters
	Hand therapy equipment
	Standing frames
	Cushions for positioning (all shapes and sizes)
Consumables	Elastic bandages
	TheraBand
	Slings
	POP bandages
	Tape
	Hot and cold packs

Table 2. Basic items needed in a physiotherapy department. The list is non-exhaustive.

As the equipment is used by patients/service users, special care and supervision should be arranged. One staff member can be assigned on a rotation basis to check all equipment at the end of a working day and collect any reports of missing or damaged items from his colleagues. A simple report sheet can be created for this purpose. All broken equipment will be set aside and prohibited from use; it should be repaired or replaced as soon as possible. Sharp screws and metal or wooden splinters can cause injury and should be immediately noted and removed.

Special care should be taken when checking mobility aids (wheelchairs, walking frames and crutches) and specific apparatus with mobile mechanisms (e.g. tilt table) to ensure the safety of users and staff. All employees need to be well instructed in the use of the equipment, and it could be helpful to display instructions clearly. Equipment maintenance and cleaning needs to be organized and staff should have been taught the instructions for safe use and be familiar with them. The equipment should be cleaned each day and the cleaning process considered as part of the maintenance duties and general hygiene rules of the department.

1.4 Physiotherapy material management

Material and equipment from the small storage space or from the central store can be lent to patients/service users if loans are well organized. The physiotherapy team will have to label all wheelchairs, mobility devices or other material on loan (material for temporary immobilization) and keep a logbook in which the type and description of the material, name of the patient/service user, date of the loan and the expected return date of the material is recorded. Hygiene and technical checks should be carried out when the equipment is returned and systematic cleaning and repairs carried out before storing the items for future loans.

The staff at the hospital or physical rehabilitation centre must understand the difference between donations and loans. The item provided should always correspond to the patient's/service user's needs. A temporary loan could be agreed for a less-customized item. For example, non-adjustable orthopaedic wheelchairs, which are frequently used in medical services, are not issued to people on a permanent basis because they often cannot be adapted to individual needs; they can be lent to a patient who has broken both his legs for a month to help him during this period but should not be issued to a spinal cord injury patient on a permanent basis.

In some places, patients/service users have to be given a ticket with an item in order to pass the security guards and through the exit. In other places, mobility aids have to be bought at local markets. In this case, the physiotherapy department should have a list of places where the patient/service user or relative can find the specific item prescribed.

The ICRC promotes:

- the availability and use of clean, adequate and safe equipment;
- careful management of all equipment (stock and store);
- specific assessment and prescription for wheelchair users; and
- use of clinical expertise and evidence of practice to promote the use of physical agents.

2. Human resources

The physiotherapy team provides both direct and indirect contact activities for patients/service users. Direct patient contact includes activities that are diagnostic, evaluative and/or therapeutic and require the presence of the patient/service user (e.g. ward rounds, patient assessment and treatment). Indirect patient contact activities are those that support or supplement the diagnosis, evaluation or treatment of a specific patient/service user, whose presence is not required (e.g. completing files and referrals, IDT meetings).

The organization of the human resources, with its structure and hierarchy and the number of staff needed in relation to the activities and the working procedures, varies from one location to another and depends not only on ICRC standards, but also on local rules and habits and on the national status of the various professions involved. ICRC standards for physiotherapy departments at hospitals and at PRCs are discussed in Chapters B3 and B4, but attention is drawn here to some common practices based on past ICRC experience.

In hospitals worldwide, physiotherapy practice depends on referral by a medical doctor and, as has already been pointed out, physiotherapists generally work under the direct clinical guidance of a physician, the exception being in private practices and some hospital outpatient departments. Within the ICRC projects, the practice of referral by a medical doctor is strictly enforced at all hospitals. At some PRCs, service users are often admitted and given support without a referral. Assessments and clinical sessions should ideally be implemented through an interdisciplinary team which includes a physician specialized in physical rehabilitation and physiotherapists to ensure ethical practice. Where no physician is available, the minimum recommendation is to identify a reference physician who could be contacted for advice on complex cases.

2.1 Professional levels

Three different professional levels share the workload in the physiotherapy department:

- physiotherapist (PT);
- physiotherapist assistant (PTA);
- physiotherapy helper (PTH).

	Responsibilities	Type of education	Duration of education
Physiotherapist (PT)	Direct patient contact activities, independent practice	Bachelor's degree or equivalent	3-4 years
Physiotherapist assistant (PTA)	Direct patient contact activities under supervision	Certificate or diploma	1-2 years
Physiotherapy helper (PTH)	Indirect patient contact activities	None	On-the-job training

Table 3. The qualifications and roles of the three types of staff in a physiotherapy department

Within the physiotherapy department, the PT is responsible for the interpretation of referrals, the initial examination, evaluation, diagnosis and prognosis, the development and modification of the treatment plan, re-examination, elaboration of a discharge plan and the oversight of all documentation. The PT is also responsible for ensuring that PTAs are instructed in the various delegated tasks, are appraised, understand their role and responsibilities, perform their tasks competently and are able to access information easily.

A PTA must be directed and supervised by a qualified PT. The relationship between a PT and a PTA is determined by two essential components: supervision with clear guidelines and communication, and positive cooperation. After the patient's/service user's evaluation and the establishment of a treatment plan by the IDT and PT, the PT and PTA implement the plan. The PTA should have a mastery of physiotherapy techniques for patients and persons with disabilities and might work either independently or under supervision, with periodical appraisal by the PT. By contrast, a PTH is an attendant or auxiliary staff member, who assists the PT and PTA by carrying out activities indirectly related to patient care. PTHs have only basic on-the-job training and are wholly unqualified to work on their own in a physiotherapy setting. Our experience in the field has shown that quality supervision can be assured up to a maximum ratio of 1 PT to 5 PTAs.

Finding good and qualified staff is a key issue when setting up a new physiotherapy department. The goal should always be to hire trained local PTs and PTAs to ensure continuity of provision of services. However, the ICRC often works in places where there are no professionally trained PT/PTAs and where other health-care professionals may substitute as PTAs. Therefore, to provide long-term quality services and capacity, the ICRC promotes the use of on-the-job competence training, the establishment of recognized PTA training courses, and sponsorships leading to a Bachelor's degree in physiotherapy. Capacity building is an important part of the work of the expatriate physiotherapist.

Recruitment criteria vary greatly depending on the country and the working environment. Some basic principles for consideration include the hiring of both female and male staff in order to ensure a balance in access for both genders but also because, depending on the cultural norms, male employees may not be able to care for female patients/service users and vice versa. The ICRC also promotes the recruitment of people with disabilities to the physiotherapy team with a view to complying with the recommendations of the CRPD but also because a carer or therapist with a disability often contributes far more than just patient care.

Selection criteria should include:

- professional qualification requirements;
- applicant's motivation;
- empathy for patients/service users and victims;
- team spirit;
- English or French (an asset).

2.2 Roles within the physiotherapy department

Staff at ICRC-supported hospitals and PRCs are employed by the local partner. ICRC staff are mobile (expatriate) and resident (locally employed) personnel. The role of ICRC physiotherapists is discussed with the partner and they are often involved in the initial set-up, development and management of the physiotherapy service, ensuring optimal quality of care. ICRC physiotherapists also provide the necessary training, covering all aspects of clinical patient treatment and physiotherapy department management.

A local physiotherapist will eventually be appointed head of the physiotherapy department. Once the service can function at an appropriate level without the active involvement of ICRC staff, the ICRC team generally withdraws. The physiotherapy manager, or head of department (HoD), is responsible for the organization and management of the department, communication with all other departments, representation to the hierarchy, the quality of the service and the general results of the department. For a senior physiotherapist, the clinical time is often reduced to 40-50% as supervision and management tasks prevail.

All staff recruited must understand and accept their roles and responsibilities and agree to follow the standard treatment protocols. We recommend providing a written job description prior to any recruitment process. All job descriptions should be developed in conjunction with the partner organization in accordance with the specific features and context of the project. They are developed on the basis of a job analysis, which includes examining the tasks and sequences of tasks necessary to perform the job, and include a description of the areas of knowledge and skills required of the person appointed. It should also describe the relationship with supervisors and other colleagues. It is advisable not only to include the work that is currently expected but also to set out goals for what might be required in the future. When the tasks assigned change within the period covered by the employment agreement, job descriptions will need to be adjusted to include the employee's new tasks and responsibilities. Job descriptions are also used as a reference when appraising staff to ensure that performance is in accordance with the initial arrangement between the employee and the employer.

Staff appraisals are not discussed in this document. They can be very diverse in nature and may be used in different ways, depending on customs and the country's employment legislation. They are one of the tools used to manage human resources and can provide rewards and recognition for those who show motivation and commitment. They should be completed jointly by employers and employees in full transparency and discussed with the aim of promoting the development of staff skills.

2.3 Staffing and working hours

In order to calculate the number of staff needed, the tasks of the physiotherapy staff, both direct and indirect user care activities, should be listed. (The term "indirect care" is used in reference to services that are concerned with service users but do not require contact or interaction between the service user and the health-care provider.) Examples that are frequently overlooked include scheduling, charting and team meetings. Taking account of recommendations made in the relevant literature, in the difficult working environments in which ICRC physical rehabilitation projects are generally conducted, realistic figures are an average of eight service users for one physiotherapy staff member daily for approximately six working hours. This corresponds to five hours dedicated to individual/group treatment of 30 minutes each and one hour for indirect user contact activities. The actual situation will often be different in emergency situations or when there is only one PRC for a large population catchment area.

A PRC that serves 100 patients per month and where 25 service users (for an average rehabilitation period of two weeks each) are provided with physiotherapy services needs six to eight full-time physiotherapy positions.

The rationale behind this is that one physiotherapist provides individual treatment for eight people a day, meaning that at least three physiotherapists are required for 25 people. However, one has to consider that the annual working days are often not 260 but 200 and staffing calculations should allow 20-40% off-duty time for annual leave, sickness and study leave. We therefore recommend employing a minimum of six full-time physiotherapists for 100 persons per month (on average, people stay two weeks for rehabilitation, with the exception of paediatric cases). Some variations according to staff grades, specializations and responsibilities should also be considered. For example, a staff physiotherapist can provide maximum clinical time under supervision, while more senior grade staff should undertake a part-time clinical workload because of staff supervision and service development responsibilities. It is also important to note that employing more PTAs than PTs does not necessarily mean more treatments. Sometimes the figure can actually be less because of the time required for coaching and supervision.

ICRC physiotherapists are not included in the staff numbers given in this manual. Short-term missions by a mobile physiotherapist to reassess the physiotherapy service and carry out refresher training may be necessary to ensure that the quality of the service is maintained over a longer period. It is very important to understand that an ICRC project should not weaken existing services and that recruitment of qualified physiotherapists from existing local hospitals or rehabilitation centres should be avoided.

For the inpatient service in a standard 50-bed ward at an ICRC-supported hospital for war-wounded, the ratio of physiotherapy staff is one physiotherapist to 20 beds/patients. To cover the physiotherapy service in a 50-bed unit, the total number of physiotherapy staff should be three, to take account of holiday leave, training and other activities such as treatment in the ICU, operating theatre (OT) and non-clinical commitments (administration, management and reporting). The presence of an ICRC mobile physiotherapist is not included in this calculation.

The exact number of working hours and the working schedule will depend on each specific project. It usually covers a full physiotherapy service for a six-day working week, with reduced cover at the weekend. In specific cases, the senior medical officer may request physiotherapy services outside the usual hours. To provide physiotherapy services for intermediate care and outpatients requires a commitment to additional staff. On average, a physiotherapist treats around eight patients a day but this number can increase to 12-15 or more in emergencies. For ambulatory patients, one physiotherapist (PT) or physiotherapist assistant (PTA) can complete six to eight individual 30-minute treatments a day in addition to his other tasks.

The ICRC promotes:

- a skill mix of physiotherapists/physiotherapist assistants;
- clear job descriptions;
- capacity building as crucial for quality services;
- careful recruitment of qualified and non-qualified staff; and
- compliance with defined staffing recommendations and working conditions.

3. A physiotherapy department at a physical rehabilitation centre

When setting up a physical rehabilitation department or developing an existing structure, it is essential to identify the type of service that is to be provided. Continuum of care is essential. It is important to establish good working relations with first-aid, hospital and primary health-care colleagues as this can be very useful in connection with referrals for rehabilitation. When considering the number of service users to be catered for, it is important to remember that specific activities require separate rooms that are specifically equipped for the purpose in question. For example, when paediatric services are provided, the services users will be children and their parents, and more space is required in order to welcome and treat them appropriately; when wheelchair services are provided, additional equipment storage space needs to be planned as some of the items are quite bulky.

Most of the services users benefit from the exercise room and advanced training court but the following activities require specific areas:

- Management of children with clubfoot;
- Management of children with cerebral palsy;
- Outpatient services;
- Sports activities (e.g. wheelchair basketball or sitting ball).

Consideration should also be given to service user information and/or parent education or peer discussions and a room allocated for those purposes. Careful assessment of the planned activities will best determine the space needed for physiotherapy activities.

3.1 Common areas

These areas may be shared with other departments and not reserved solely for the physiotherapy department. Because the rooms are not dedicated to clinical work and treatment, no details are provided here. More information can be found in the ICRC's *Physical Rehabilitation Centres: Architectural Programming Handbook*, which provides guidance for the construction of PRCs.⁵⁴ The rooms can include:

- PRC entrance and reception (common to all services at the PRC);
- waiting area;
- administrative area;
- staff room (shared by all staff);
- service users' changing area;
- toilets for service users and staff;
- domestic services/cleaners' room, common to the entire PRC.

Entrance and reception

The entrance and reception area should be fully accessible to people with disabilities. The reception desk, the control point for access to the facility, should be located close to the entrance. It should also provide a clear view of the entrance and the entire waiting area. The reception desk should be low, open and friendly and be designed so as not to be perceived as a physical or organizational barrier. One section should be low enough for wheelchair users.

Waiting area

The waiting area for service users is a useful place to place information leaflets for people to take away and study. Especially if paediatric services are provided where parental compliance is important, a special space should be allocated to parental/family education.

54 S. Bonnet, *op. cit.*

Administrative area

It may not be necessary to have a separate staff office for each discipline. In fact, sharing office space improves communication and facilitates multidisciplinary team cooperation.

Staff room

A room in which the staff can rest and prepare beverages and snacks should be provided. Facilities should also be provided where staff can shower and change their clothes. Apart from showers, washbasins and a changing area, lockers must also be provided where staff can store their personal belongings.

Service users' changing area

Depended on the country and context, some service users will need to change before undergoing treatment. They will therefore require the privacy of a changing area.

Toilets for service users and staff

Toilets for service users should be located near the reception/waiting area as well as in the main therapy area.

3.2 Clinical and therapeutic areas

The clinical and therapeutic areas at the rehabilitation facility include assessment and fitting rooms. These rooms are, however, not part of the physiotherapy department. Located between the workshop and the physiotherapy department, they are part of the common clinical area.

Rooms which are part of the physiotherapy department include:

- exercise room;
- individual treatment cubicles;
- advanced training court (gait and wheelchair training);
- multi-use outdoor sports court;
- specialized treatment areas;
- cerebral palsy (CP) room;
- clubfoot (CF) room;
- spinal cord injury (SCI) area (a separate room is not recommended).

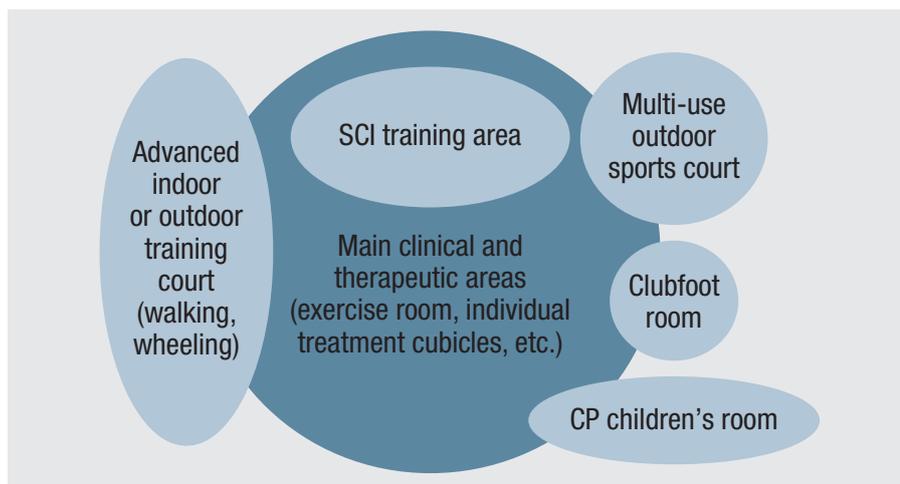


Figure 2. Therapeutic areas at a physical rehabilitation centre

Figure 2 shows the different therapeutic areas at a physical rehabilitation centre (PRC). The clubfoot room, CP children's room and the SCI training area are considered specific diagnosis-related areas and are not automatically part of a standard ICRC PRC.

Administrative area

No specific room is set aside for administrative tasks. There are desks for service user file completion and reporting tasks in each clinical/therapeutic room. Managerial and administrative tasks are carried out in the PRC's administrative offices.

Physiotherapy satellite storage

To avoid excessive material being kept in the therapeutic rooms, a small satellite store in the physiotherapy department is recommended. This also minimizes trips to the main store, where most of the equipment is kept.

3.3 Physiotherapy department specifications

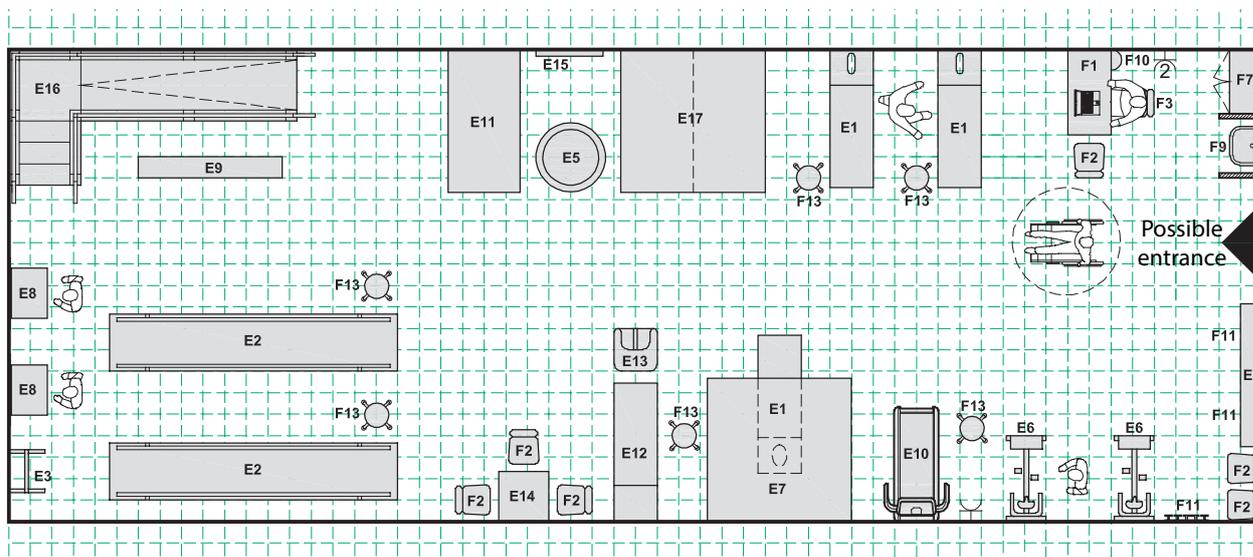
Table 4 sets out a variety of options, depending on the services provided by the centre. These approximate figures will help to estimate the overall size of a physiotherapy department for each option. The backbone of a physiotherapy department is the exercise room (sometimes referred to as a gymnasium), the individual treatment cubicles and the advanced training court (outdoor or indoor). The area of no less than 236 m² (including the satellite store) is needed to cater for 50 to 100 service users monthly and allows the implementation of quality physiotherapy services. Depending on the availability of additional services for children with clubfoot or cerebral palsy and for people with spinal cord injuries, the size of a physiotherapy department could increase up to 376 m² (excluding the common areas and assessment rooms) and even to 976 m² if additional space for sports activities is included.

Required area for physiotherapy (and related) activities	m ²	Service provision options			
		Standard physiotherapy	Physiotherapy + CF + CP	Physiotherapy + SCI	Full physiotherapy services + sport
Common areas					
Reception	28				
Archives / filing	8				
Waiting room / relative education	30				
Clinical and therapeutic areas					
Assessment room*	25				
Fitting room*	25				
Exercise room	120	√	√	180 m ²	180 m ²
Individual treatment cubicles	2 x 12	√	√	√	√
Obstacle training court	80	√	√	√	√
Multiple outdoor sports court	600				√
Cerebral palsy room	35		√		√
Clubfoot room	20		√		√
Nursing room	25			√	√
Storage areas					
Physiotherapy satellite store	12	√	√	√	√
Total area planned		236 m²	291 m²	321 m²	976 m²

*Common clinical areas, but included in this table for the sake of completion.

Table 4. Size specifications for a physiotherapy department

built, female and male exercise rooms might need to be separated. When that is the case, the male and female sections should each have the minimum required space of 120 m². Another option would be to provide access to the therapeutic rooms alternatively to males and females users. However, that tends to be complicated and is not recommended unless there is a shortage of space.



Individual treatment cubicle

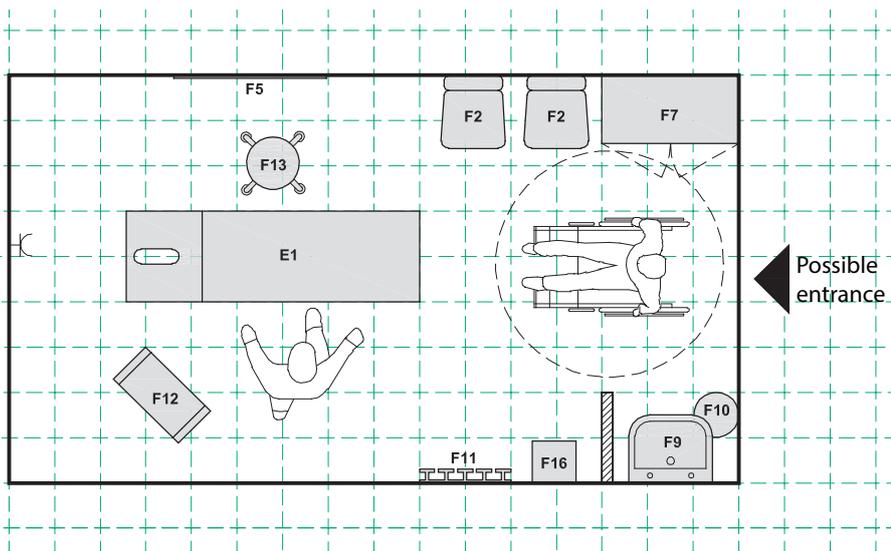
The usual way of ensuring privacy during treatment is by setting up cubicles. A cubicle is defined as an enclosed space in which the service user may undress and be assessed and treated. Activities that are likely to take place in a cubicle are individual sessions, including assessment, manual therapy, exercise programmes, respiratory therapy and electrotherapy. Cubicles should be quiet and pleasant with natural lighting and windows (with opaque glass) for ventilation.

Defining the exact number of individual treatment cubicles is a complex matter and depends on different factors such as the number of service users in need of individual treatment, the number and qualification of physiotherapy staff, the space available, the country and the cultural environment.

The following formula may be used to establish how many cubicles are required:

$$\frac{\text{Number of service users in need of individual treatment}}{\text{Number of individual sessions per day per physiotherapist}} = \text{Number of cubicles}$$

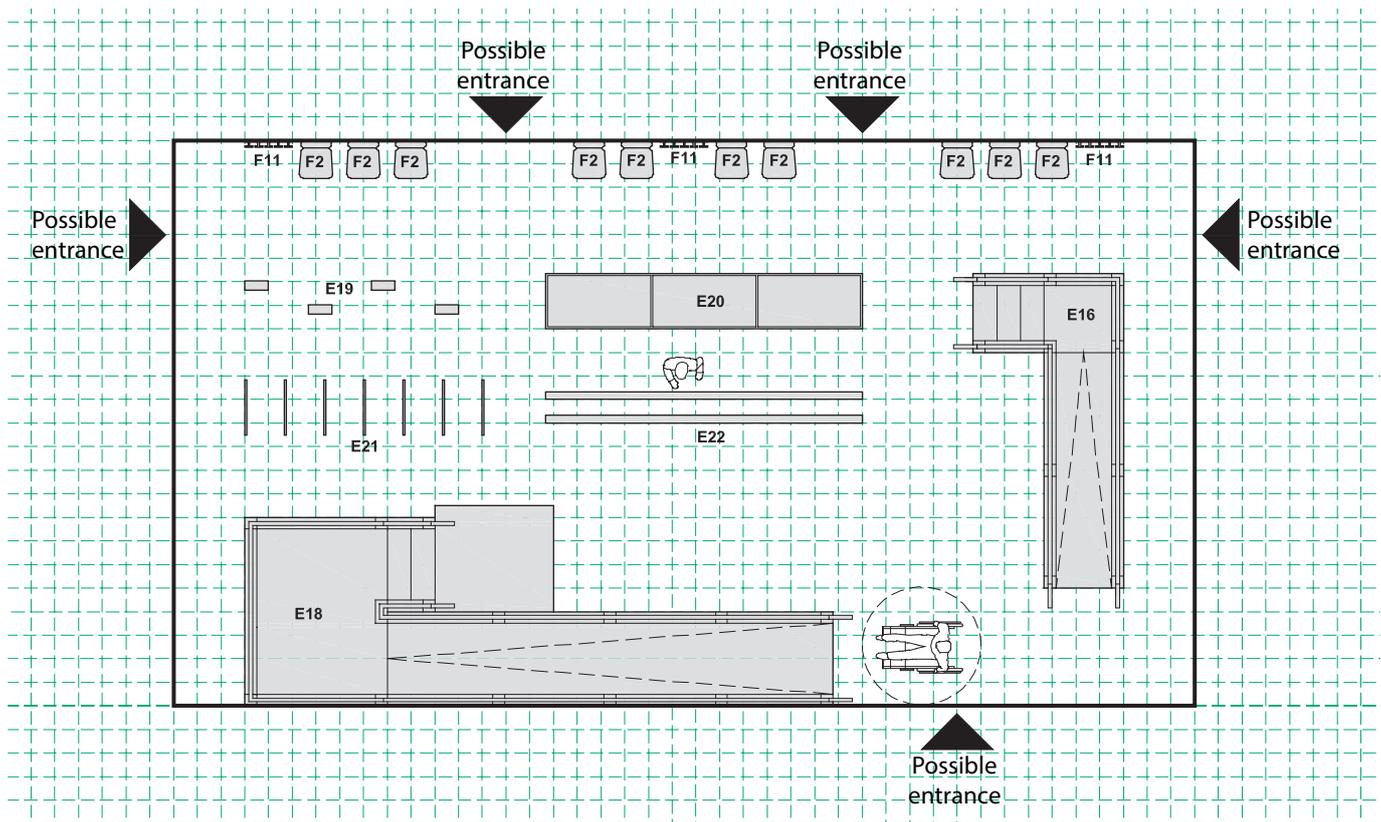
Six hours per day are considered to be the average effective working hours for physiotherapy staff. The average time of an individual session is 30 minutes. The number of treatment cubicles needed is therefore calculated on the basis of 12 service users per cubicle per day. If attendance is expected to be more than 12, two individual treatment cubicles are necessary; above 24, three cubicles are necessary, and so on. Walled rooms provide better privacy but the advantage of cubicles with curtains is that they can be removed to provide additional space for other purposes. Whichever option is chosen, it has to be understood that the space needed to set up the individual treatment cubicles should not be deducted from the space allocated to the exercise room.



Advanced training court

Any PRC undoubtedly benefits from being equipped with an advanced training court that ideally has direct access to the exercise room. If the climate allows, it could include an outside functional training area.

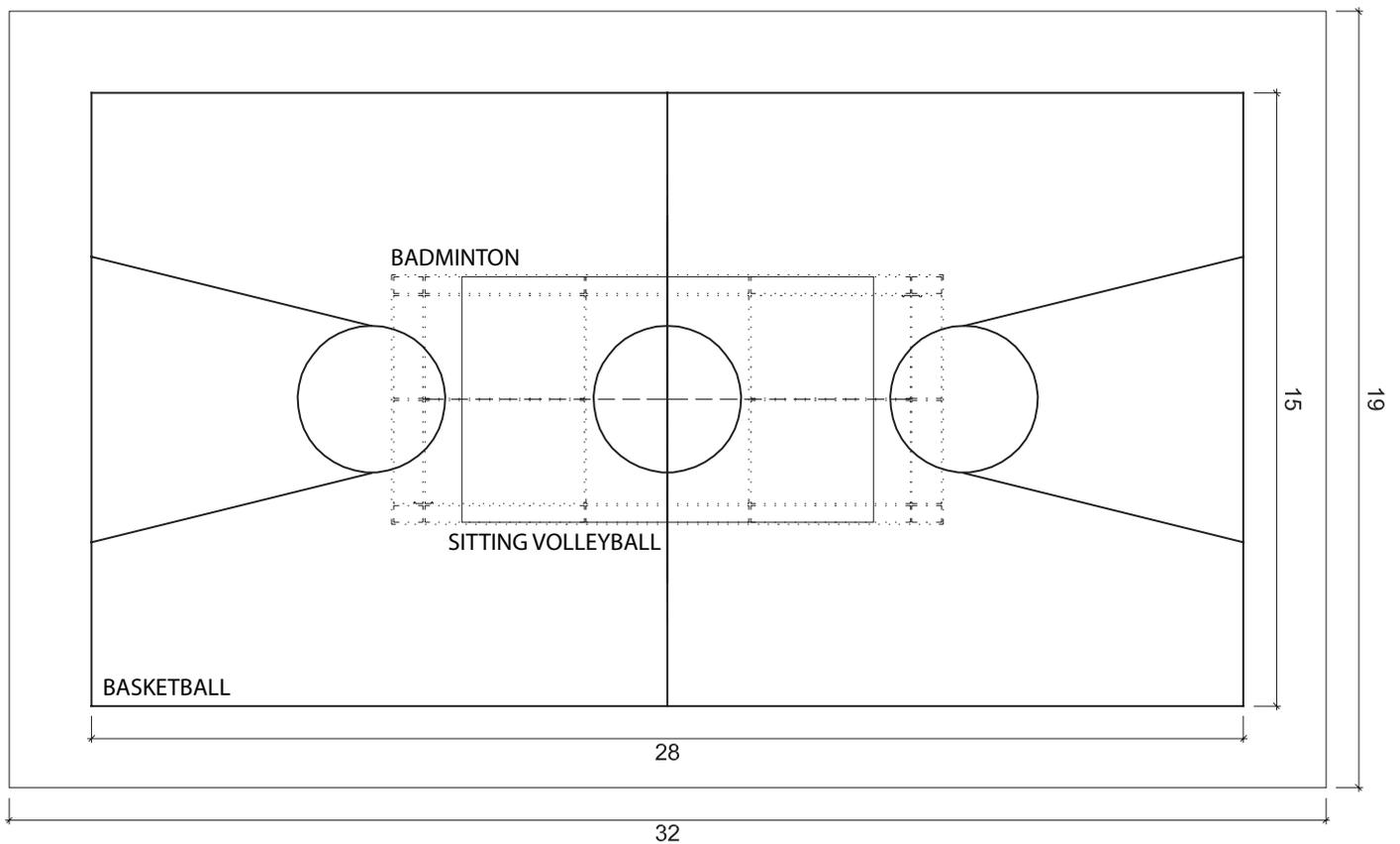
The area dedicated to functional training is designed to simulate situations/obstacles that people with disability can encounter in real everyday life, e.g. slopes, stairs and uneven and unstable surfaces. Integrated into the advanced training court, it should provide facilities to learn how to handle a wheelchair under different circumstances such as travelling in different directions, moving around obstacles and negotiating different surfaces, ramps, slopes, steps and curbs. A ceiling height of 4.5 m is recommended when exercise stairs and steps are installed or “over shoulder” activities take place (e.g. playing with a ball). Other examples of advanced training courts are available in the locally made equipment catalogue.



Outdoor sports court

A sports court is the best way to promote sports participation among service users at PRCs. It is used as part of the rehabilitation process and encourages team spirit, improves self-confidence, self-esteem and respect for others, as well as providing a means of social inclusion. Most importantly, the activities that it enables are enjoyable.

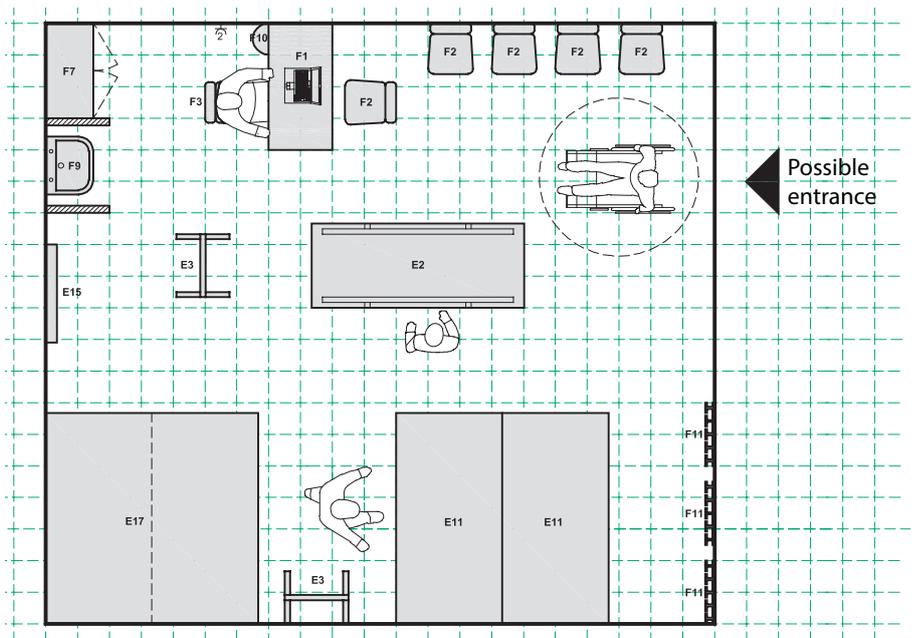
The court should be made to accommodate a range of different sports, such as wheelchair basketball, wheelchair tennis and/or sitting volleyball, and can be used by services users, staff and others. If the court is to be used by visitors and for tournaments, changing rooms should be added. It is important to ensure access to water for washing and refreshment somewhere near the courts and to provide a safe place to store equipment (e.g. room for sports wheelchairs). The net usable area is 28 m x 15 m and the obstruction-free gross usable area is 32 m x 19 m.



Specialized treatment area: cerebral palsy room

The size of the cerebral palsy room depends on the number of children attending daily. The size indicated below could accommodate two physiotherapists, each with one child and his parents. It could also provide enough space for peer training or a mother support group for up to seven children and mothers (14 people). It should also allow enough space for the provision of assistive devices and positioning aids (including special seating).

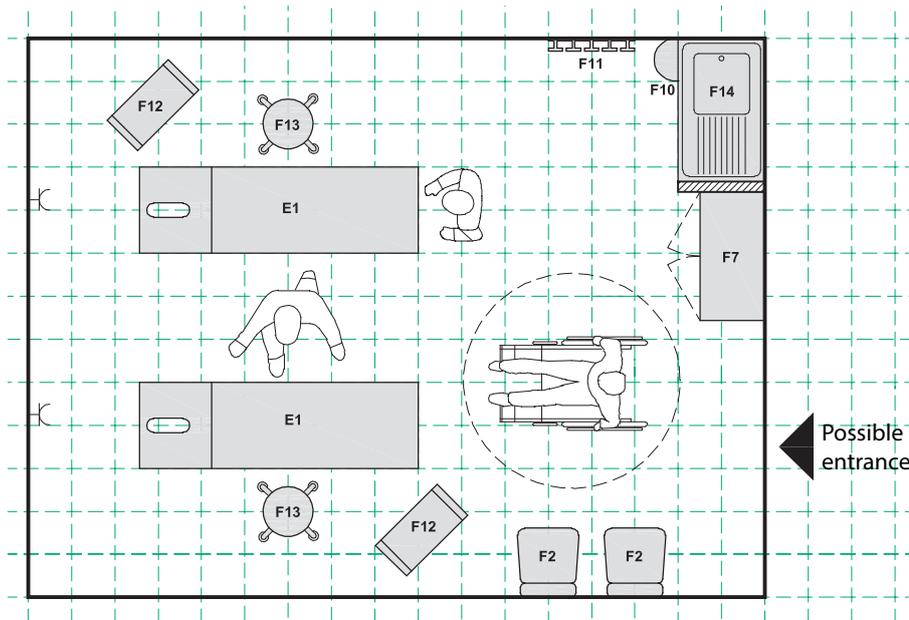
The room should be quiet and pleasant with natural ventilation and lightning and should be located close to the waiting area. Special attention should be given to hygiene and cleanliness. Tiling could be applied around the washbasin (on three vertical surfaces to door height).



Specialized treatment area: clubfoot room

Clubfoot services could be provided without a specific room. Serial casting could be carried out in the casting room (which has a sink with a plaster separation filter) and braces could be fitted in an individual treatment cubicle. The clinic day for clubfoot children may affect the daily organization of work at the centre if it occurs on a regular basis; the best option therefore remains a space entirely dedicated to clubfoot services. It is also highly recommended to follow the Ponsetti method adopted by the ICRC.

The room could be modest but should allow space for plaster work and storage of braces. Tenotomy is best carried out in a proper hospital environment, with the post-tenotomy cast being applied immediately after surgery. If this is not possible, tenotomy should be organized at the centre (as it requires only minor local transcutaneous anaesthesia), but surgeons will need to bring their sterile equipment and material (scalpel, gloves, dressings, etc.). The room should be easy to clean and well ventilated.



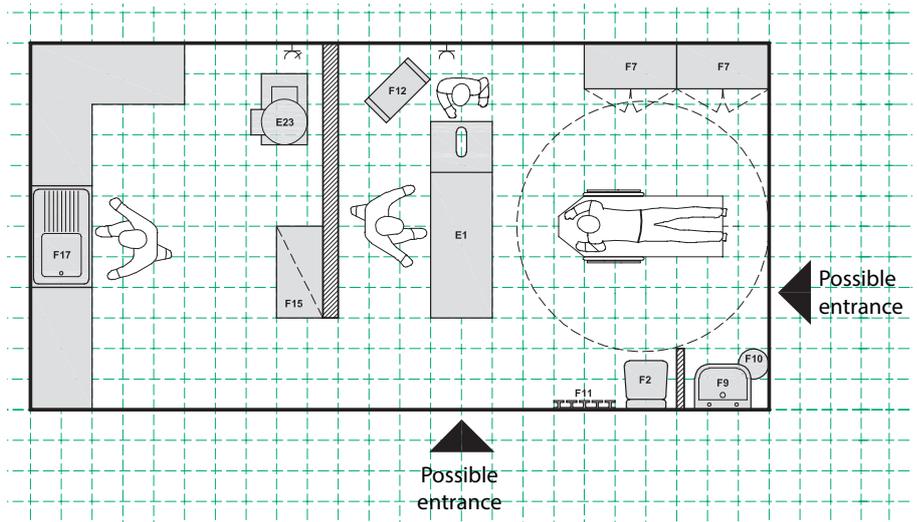
Nursing room and sterilization area

Nursing care needs to be provided for people with wounds (e.g. people with spinal cord injuries who are suffering from pressure sores) and a room should be specifically allocated to dressing wounds and equipped with sterile dressings and instruments. If possible, it should be located next to the dormitory. The ideal space would accommodate a nursing section together with a sterilization area (with an autoclave) that should be kept clean at all times. The area around the washbasin should be tiled (on three vertical surfaces to door height), as should the sterilization area (floor and walls to door height). Instructions on how to organize the room are available in the Health Unit Database.⁵⁶

No mention is made in the ICRC's *Physical Rehabilitation Centres: Architectural Programming Handbook*⁵⁷ of a specific rehabilitation room for spinal cord injuries but if a decision is made to provide this service, existing rooms should be adapted. The exercise room should be enlarged to accommodate additional equipment and extra space provided where service users can park their wheelchairs and trolley beds. The additional items of equipment suggested are a neurological table, a tilt table, a standing frame, a recumbent exercise bike, a treadmill and parallel bars. The assessment room, exercise room, toilets, bathroom and dormitory must also be accessible to trolley beds and the dormitory should allow more space between beds to make room for transfers.

⁵⁶ Internal ICRC resource.

⁵⁷ *Op. cit.*



Satellite physiotherapy store

The small store (around 12 m²) must be situated adjacent to or within the therapeutic areas. It consists of shelves and cupboards for the storage of small material and consumables. It should also include an empty space where wheelchairs, crutches and other walking aids can be stored.

3.4 Management of a physiotherapy department

The responsibility for managing staff should remain with the local authority/organization in charge of this service, while the role of the ICRC should be that of an adviser. Depending on the local context and local capacities, the exact distribution of staff management responsibilities may vary from one project to another and should therefore be clearly defined in the project agreement (which should also clarify how the responsibilities will be gradually transferred).

The physiotherapy department at a rehabilitation centre has direct relationships with the medical services, the P&O department and the social services for the care and follow-up of people with disabilities. The physiotherapist needs to have good relations all other departments such as:

- the administrative departments: for good administrative follow-up, organizing consultations, referrals, etc.;
- logistics: for any issues related to material/equipment supplies;
- guards: for security issues;
- maintenance and cleaners: for any problems with maintenance and for comprehensive hygiene;
- management.

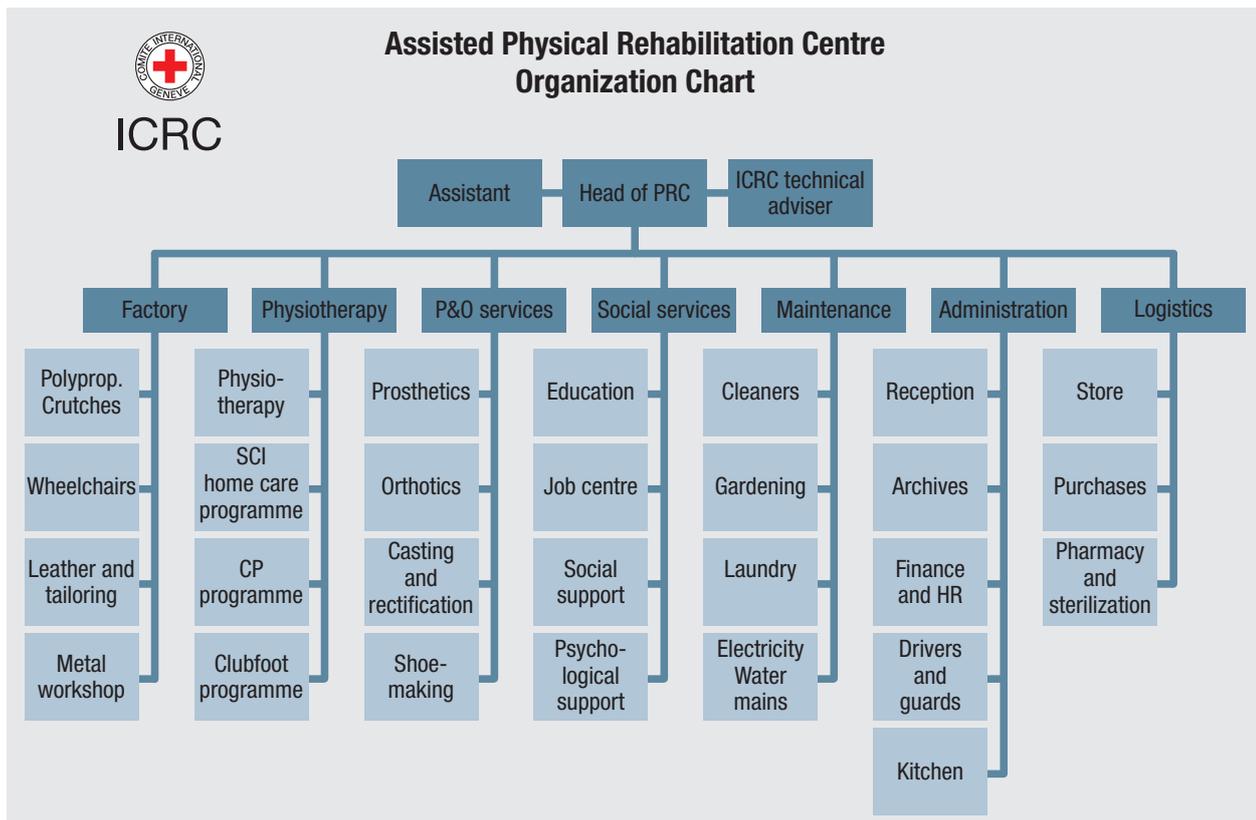


Figure 3. A PRC organization chart

Many of the people attending a physical rehabilitation centre will have a permanent disability and become lifetime service users. They will therefore depend on a highly professional and motivated team to achieve the best possible function and independence. The desired optimal result can only be achieved by an effective interdisciplinary team (IDT) approach.

Regular IDT meetings, with and without the service user, are important to prevent wrong decisions being taken and incorrect rehabilitation goals being set. We recommend that these meetings take place at:

- the first service user assessment;
- the first fitting (when a device is prescribed);
- each time that external referral has to be decided;
- the mid-term rehabilitation period;
- for discharge planning (when a device is prescribed);
- at discharge; and
- at each follow-up visit.

In addition, the team should meet whenever a decision or a major change regarding the treatment is taken. The IDT can include a physician (specialized in rehabilitation), a prosthetist/orthotist, a physiotherapist and a social worker. The service user and the parents of disabled children (or other family members) are also members of this team since they should be part of all decision-making processes and have information and knowledge that is vital to the rehabilitation process. In most ICRC-supported projects, the team may be smaller, but it should always include a prosthetist/orthotist, a physiotherapist and the service user.

For a successful result, some external referral possibilities may also be required. These are usually medical, such as services at a suitable hospital for wound dressing, stump revision and x-rays, or social and vocational, such as social inclusion services for leisure, education and job placement. All potential partners for referral should be identified so that they are available when needed.

Physiotherapy staff should know how to complete all aspects of the physiotherapy treatment and management in accordance with their job descriptions and profiles. However, in the daily functioning of the physiotherapy service, specific tasks will be distributed among the team members.

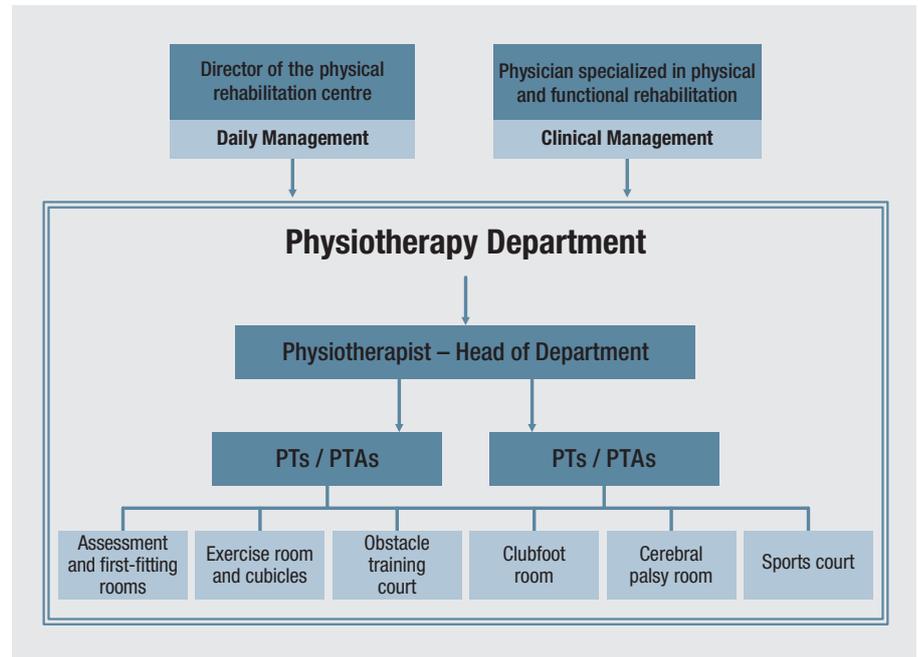


Figure 4. A standard organization chart of an ICRC physiotherapy department at a physical rehabilitation centre

In order to ensure quality of service, it is recommended that the work and tasks be distributed according to the individual's capabilities and that a physiotherapist follow the service user from assessment to discharge. All staff members should be able to work in all sections of the department. It is important to make sure that the individual treatment cubicles are not all booked at the same time and that all service users do not attend the exercise room together.

Clubfoot and cerebral palsy services need to be managed by staff specialized in these fields. Generally speaking, sports activities may be managed by any staff members who are interested in sports and games. However, if sports teams are set up with the objective of taking part in a league (national or regional) and a championship, a specialist is required to train players, coaches and referees on the specifics of the game.

The organization of responsibilities and departmental hierarchy should be kept simple. A physiotherapist head of department is responsible for the team's work and results; all staff members are subject to his leadership. Lower hierarchical links are established on the basis of individual skills and experience. For example, a PT is responsible for overseeing PTAs and PTHs in their daily practice. The distribution of responsibilities among the technical staff of a PRC may vary in different countries. Standard job descriptions are used and adapted to the local context but can be taken as a good example of "who does what" in a PRC physiotherapy department. The organization of a physiotherapy department should never be an obstacle to service quality but should be a means of providing support so that everyone can enforce the best established standards of care and clinical reasoning and a therapeutic approach that is adapted to each service user.

3.5 Service user flow

While studying service user flow, attendance at the physiotherapy department cannot be isolated from the rest of the services. The general flow of service users needs to be considered as their circulation within the centre and within the physiotherapy department is essential to optimize the work. Key circulation areas (compulsory for service users and/or involving the entire IDT) could be therefore identified as critical places that should be well organized and planned.

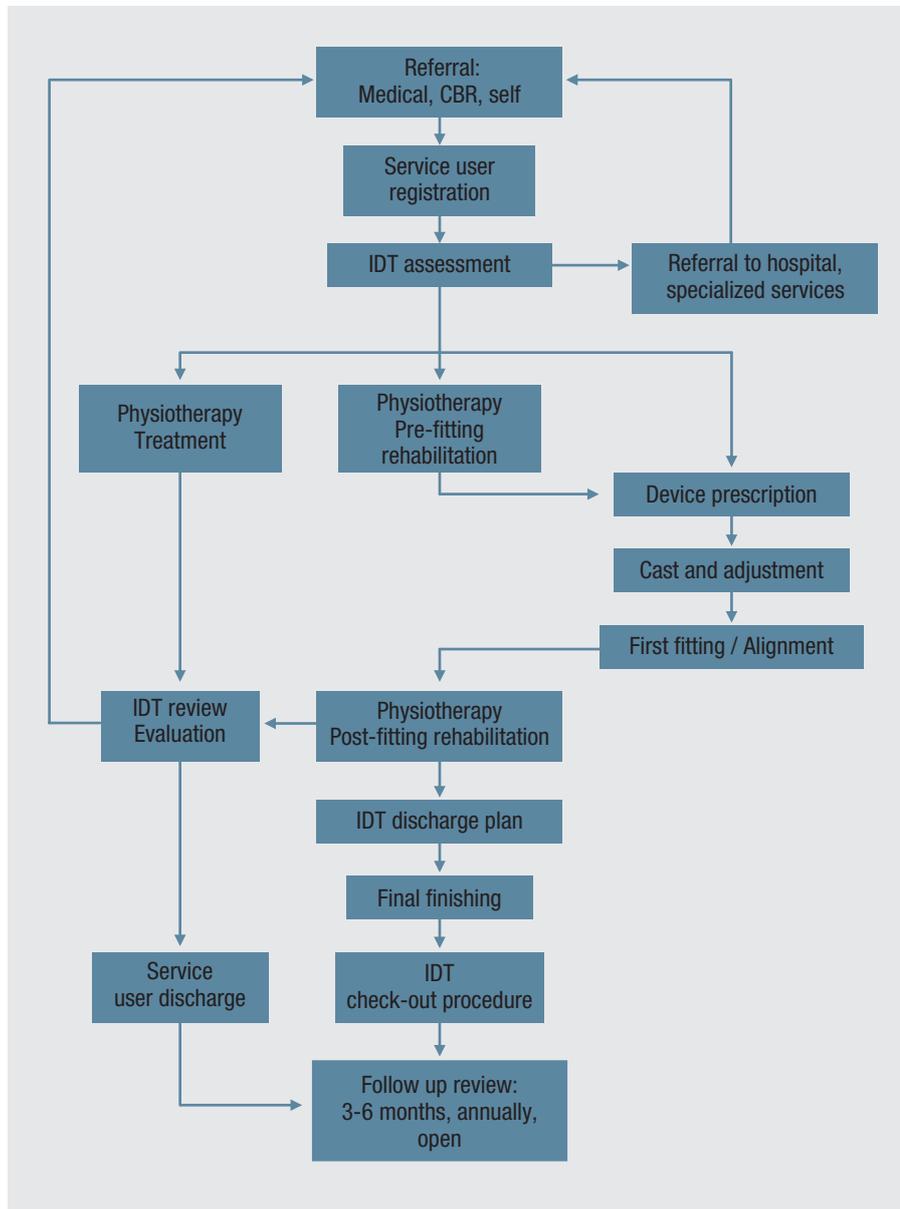
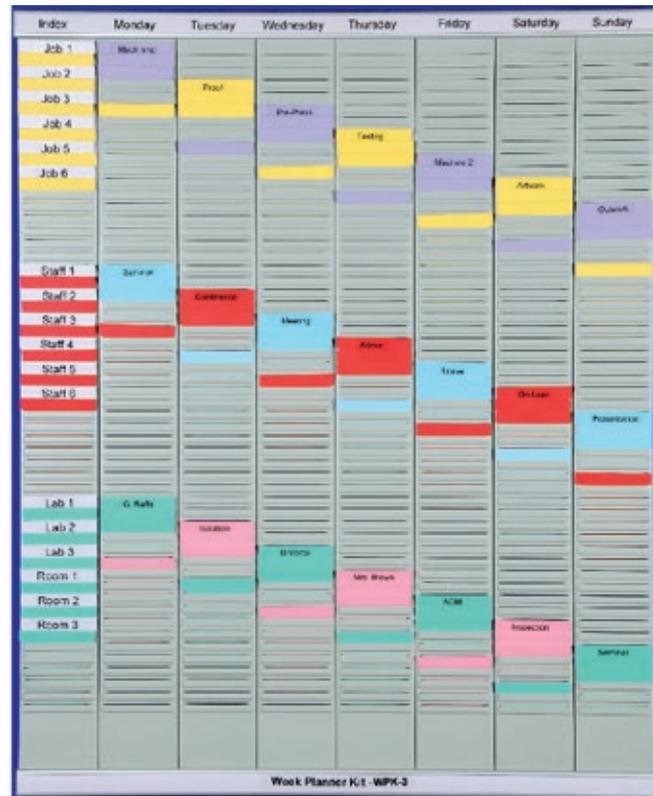


Figure 5. A physical rehabilitation service user flow diagram

The service user flow analysis can vary in accordance with the environment, premises, cultural issues and team size. It is nonetheless always interesting and instructive to conduct such an analysis. At each stage of the flow, the services provided and the staff involved are listed to provide an overview of the situation.

In all physiotherapy departments a service planning board should be in use. The “old” T-card planner is still one of the best tools to provide an immediate general overview of the activities of the department. It sorts the daily activities per staff member / service user / type of treatment.



User's name	IDT assessment	Physiotherapy treatment	First fitting	Check-out	Follow-up	PT's name	Comments
	10.10.12	15.10.12	23.10.12	09.11.12	10.02.13	Mahmoud	
	12.10.12	15.10.12	25.10.12	15.11.12		Mohamed	
	12.10.12	15.10.12		30.11.12		Alia	
	14.10.12	15.10.12				Alia	
	14.10.12	23.10.12	10.11.12			Mahmoud	
	14.10.12	17.10.12	08.11.12	22.11.12	03.05.13	Mohamed	
	14.10.12	18.10.12	30.10.12	15.11.12	03.11.13	Mahmoud	
	15.10.12	16.10.12	19.10.12			Mahmoud	
	15.10.12	17.10.12		13.02.13		Alia	

Figure 6. A typical chart showing the passage of service users through the various stages in the rehabilitation process

The T-card planner normally represents the current situation and prevents no view of the situation over time. It helps to distribute the work fairly to the physiotherapists and to determine room allocation (depending on how the board is organized). It is the main managerial tool used by the HoD to supervise the overall physiotherapy activities and manage his team. To be efficient, it has to be linked with the schedule of appointments managed by the reception, which is in charge of allocating the weekly/monthly workload. The number of people in attendance is then adjusted by the number of appointments on each clinic day.

Whiteboards can also be used for this purpose but are often quickly unreadable. They are nonetheless preferred by many because they allow dates to be written in the relevant boxes (as in Figure 6) and easily changed or erased. Computer software also exists but access is then limited to those who can use computers and is dependent on the electricity supply.

3.6 Physiotherapy reporting

A detailed record of the full treatment given to the service user must be kept, both for legal reasons and to allow proper follow-up of the rehabilitation process. The physiotherapy file should be part of the service user file and the two files should be stored together. To achieve good documentation, systematic ways of recording information can be implemented. The SOAP note (subjective, objective, assessment, plan) method or similar approaches are good ways of achieving that aim. Whether electronic or paper, service user records must contain standard information on service users and their treatment (essential to establish a clinical database), as well as all the specific information collected from the examination and during rehabilitation that is needed to establish a suitable programme and professional monitoring.

The assessment form should integrate the notions of the International Classification of Functioning, Disability and Health (ICF),⁵⁸ which include the evaluation of body functions and structures, the activity and participation and environmental/personal factors; the patient/service user should also be considered the main partner in the assessment. The initial form can be complemented by using a short checklist during assessment. The assessment findings should be followed systematically, the treatment objectives established together with the service user and the treatment plan and follow-up then completed.

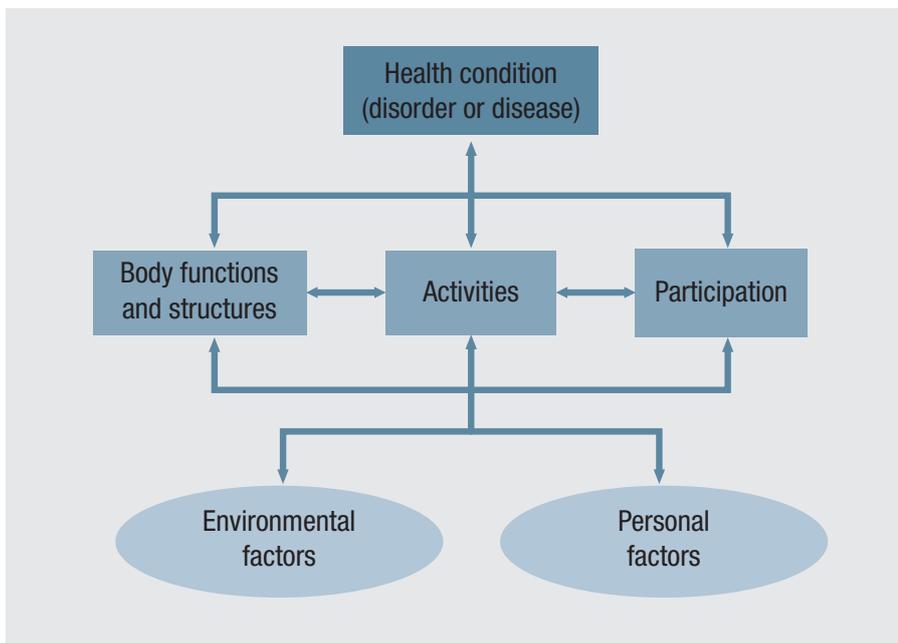


Figure 7. The ICF model

All changes in the treatment plan should be well documented and explained. The ICRC is in the process of developing a standard assessment form that reflects its physiotherapy standards. The discharge form is also used to assess and quantify the service user's performance.

58 World Health Organization (WHO), *The International Classification of Functioning, Disability and Health (ICF)*, WHO, Geneva, 2001.

Statistics and the documentation of activities are very important as a means of showing what is achieved and of providing evidence that the service makes a difference to service users. It also helps to understand whom the centre is serving, how the service works, and where there is room for improvement. The ICRC's physical rehabilitation team collects monthly statistics and uses statistical software known as the Patient Management System (PMS). The first page is used to collect demographic data and there is one page dedicated to physiotherapy. This is where data is collected on the number of service users attending the physiotherapy department and the number of sessions provided per day / month / year. It also makes it possible to put together a functional snapshot of the service user. Apart from a few generic indicators, it is very difficult to standardize data collection for all diseases or disabilities.

The ICRC promotes:

- careful planning of specific clinical areas;
- design related to rehabilitation activities and conditions;
- assessment of service user flow; and
- reporting as an essential activity.

4. A physiotherapy department at a hospital

Before selecting the optimal department layout, it is necessary to decide on the type of physiotherapy services that the hospital wishes to provide, which could, of course, depend on the situation, other health-care actors and the priorities set. There are two possible options:

- Inpatient only: all care takes place through bedside practice in the wards (often seen in emergency situations) and/or in the ICU;
- Inpatient and full outpatient services: extensive physiotherapy services for people from outside the hospital.

The first option, inpatients only, is often considered incomplete because it prohibits physiotherapy follow-up for discharged patients. At the other extreme, the construction of a wide-ranging physiotherapy outpatient department is rarely planned in an ICRC hospital project. Nevertheless, a physiotherapy outpatient department could be considered as having similar functions to a PRC physiotherapy department. All references and guidelines provided in Chapter B3 therefore apply. In the following sections only the “in-between” option, inpatients and intermediate care, will be developed as it is the most frequent choice for ICRC hospitals.

Careful consideration must be given to where to locate the physiotherapy department (exercise and plaster rooms) in the hospital. For efficiency of movement and services, close proximity with the wards is recommended. This level of planning is not always possible in an emergency hospital environment. It is not necessary to create a huge physiotherapy gym for the treatment of hospitalized patients as most of them will be discharged as soon as possible. Such a project can, however, be considered if proper use can be ensured. Because hospitals are usually large and provide a number of different services, it is generally not feasible to set up common areas in the physiotherapy department; those provided by the hospital itself can be used. For additional information on the infrastructure needed to run a hospital-based physiotherapy service, please refer to the ICRC’s hospital programme database.

4.1 Clinical and therapeutic areas

The main rooms are:

- exercise room;
- plaster room;
- individual treatment cubicle;
- outdoor advanced training court or mobility training space (gait and wheelchair).

The individual treatment cubicle is usually part of the physiotherapy exercise room. The physiotherapy team will also use the outdoor training court to assist patients to learn to use their walking aids or wheelchairs and to prepare them for discharge.

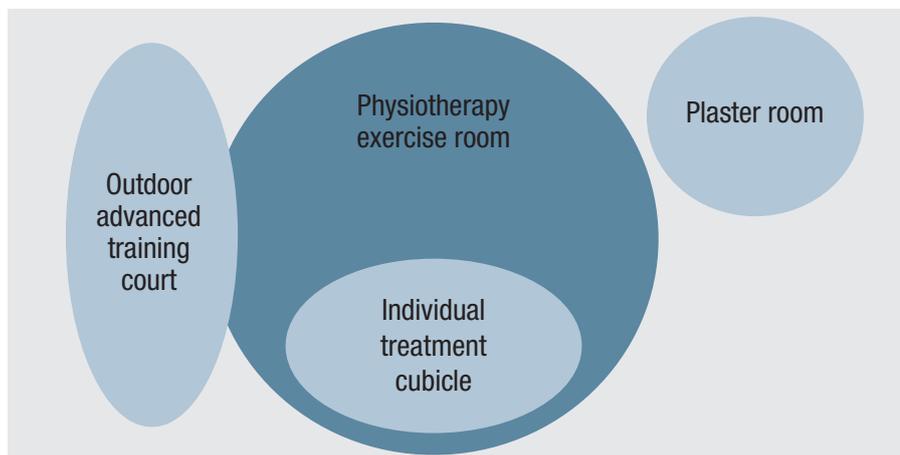


Figure 8. Therapeutic areas at a hospital

4.2 Physiotherapy department specifications

Staff require a place where they can complete administrative tasks, such as report writing, but this is not necessarily more than a desk. The physiotherapy storage area should consist of a daily physiotherapy store where orthopaedic wheelchairs, walking aids and traction frames (including weights and associated materials) used every day are easily accessible.

Table 5 shows the three hospital service options. The figures provided are approximate and help to estimate the overall size of a physiotherapy department for each option.

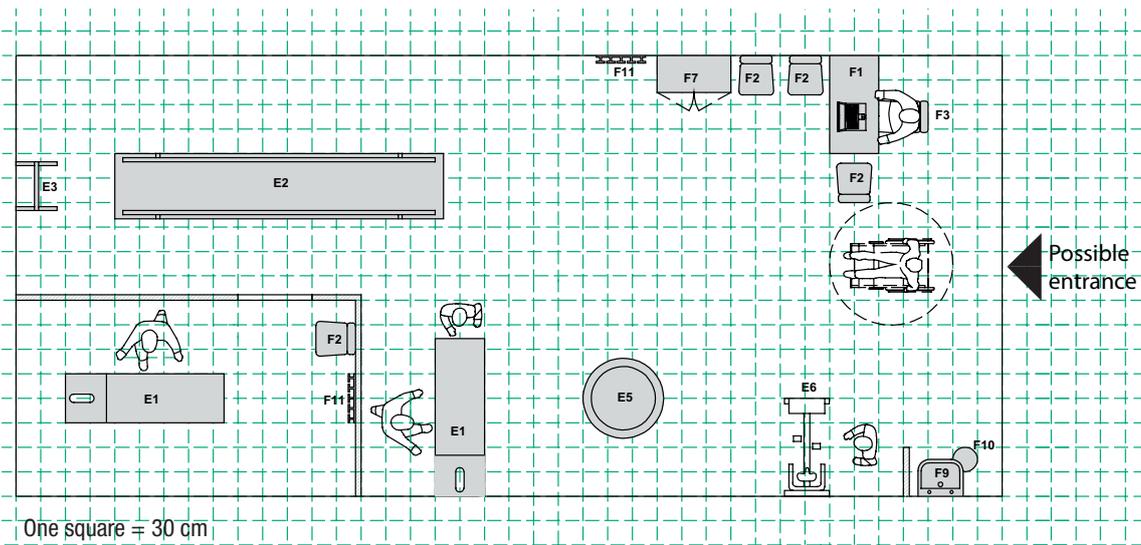
Area required for physiotherapy activities for an inpatient hospital service (50 beds)	m ²	Inpatients only	Inpatient and intermediate care	Inpatients and outpatients
Clinical and therapeutic areas				
Exercise room	60		√	180 m ² *
Plaster room	15	√	√	√
Individual treatment cubicle	(8)*		√	2 x 12 m ²
Obstacle training court (optional)	80		√	√
Administrative area				
Desk and patient file completion	(4)*	10 m ²	√	√
Storage areas				
Daily physiotherapy store	12	√	√	√
Total area required		37 m²	87 / 167 m²	231 m²
*Including the exercise room (60 m ²)				

Table 5. Calculating the size of a hospital-based physiotherapy department

Exercise room (including individual treatment cubicle)

Although the focus of hospital-based physiotherapy services is on inpatient treatment, provision may need to be made to carry out comprehensive rehabilitation services for ambulatory inpatients, intermediate care patients and outpatients.

The suggested size is sufficient to treat post-surgical ambulatory inpatients and up to six intermediate patients and/or outpatients a day. It also allows the physiotherapy staff to work in different locations at the same time, thus providing a comprehensive rehabilitation service. The unit does not provide (or replace) the services of a PRC.



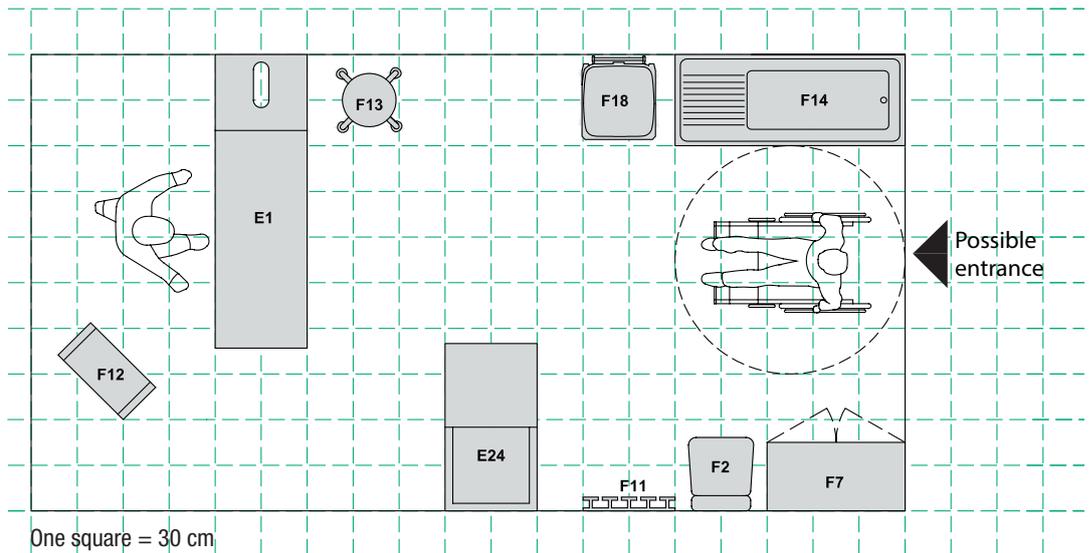
Indicative space for this activity	PT staff	P&O staff	Medical staff	Patient(s)	Relative(s)
60 m ²	2	N/A	N/A	Max. 5	N/A

Equipment and furniture checklist					
Code	Quantity	Description	Code	Quantity	Description
E1	2x	Treatment table	F2	4x	Chair
E2	1x	Parallel bars (4 m)	F3	1x	Office chair
E3	1x	Mobile mirror	F7	1x	Cupboard
E5	1x	Trampoline	F9	1x	Ceramic washbasin
E6	1x	Bicycle	F10	1x	Waste bin
F1	1x	Desk	F11	10x	Coat hanger

Plaster or casting room

In most ICRC hospital programmes, the physiotherapy department is responsible for the application of POP and the review of all fracture patients, with assistance from surgeons and nursing staff. The plaster room should be a simple area that offers patients secure privacy, a space in which the hospital staff can work comfortably and which contains all the necessary equipment to complete the application (and removal) of POP and splinting. The ICRC has developed substantial expertise in this field and has a standard reference manual.⁵⁹

59 ICRC, *Plaster of Paris and other fracture immobilizations*, ICRC, Geneva, 2016.



Indicative space for this activity	PT staff	P&O staff	Medical staff	Patient(s)	Relative(s)
16 m ²	N/A	1	N/A	1	1

Equipment and furniture checklist

Code	Quantity	Description	Code	Quantity	Description
E1	1x	Treatment table	F12	1x	Trolley
E24	1x	Casting chair	F13	1x	Stool on wheels
F2	1x	Chair	F14	1x	Sink with plaster-separation tank
F7	1x	Cupboard	F18	1x	Waste bin, 120 l
F11	5x	Coat hanger			

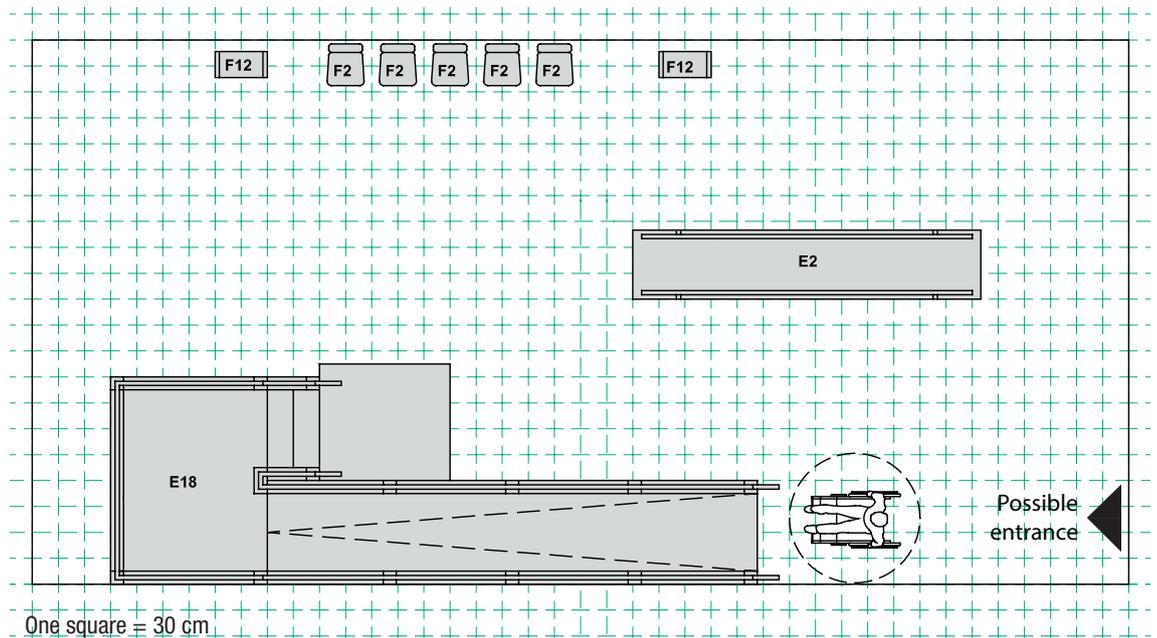
The material and equipment for the plaster room listed in Table 6 are the minimum required to make and remove POP casts. They should be of good quality, durable and safe to use. Staff should be familiar with their utilization and the instructions for their safe use.

Assessment tools	Goniometer
	Measuring tape
	Plumb line
	Demographic pencil
POP fabrication	POP bandage, 20 cm roll
	POP bandage, 15 cm roll
	POP bandage, 10 cm roll
	Cast tape
	Cotton wool
	Bandage padding, 15 cm roll
	Bandage padding, 10 cm roll
	Tubular bandages/stockinet, 15 cm roll
	Tubular bandages/stockinet, 10 cm roll
	Tubular bandages/stockinet, 8 cm roll
	Water basin
	Plastic sheet
	Adhesive tape, 2.5 cm
	Gloves
	Towels
	Betadine
	Bridges for POP
	Polycentric joints
	Pillows for elevation and/or support of the limb
	Walking heel / rocker for POP
Support to make hip spicas, if available	
Triangular bandage	
POP removal	Plaster shears
	Cast spreader
	Cast breaker
	Plaster knife
	Plaster scissors
	Scissors
	Oscillating saw
Burn treatment	Aquaplast for splinting
	Tubular support bandages
	Compress paraffin
	Coflex bandages with different stress levels
Treatment table	Treatment tables
Mobility aids	Crutches
	Walking frames
	Pre-fabricated devices (e.g. orthotics)

Table 6. Materials and equipment – minimum requirements for a plaster room

Outdoor advanced training court or mobility training space

It is advantageous to have an advanced training court whenever possible. When the climate allows, it is an outside functional training area situated close to the physiotherapy building and accessible from the exercise room. The area dedicated to simple functional training is designed to help patients to start walking outside and to learn how to handle a wheelchair.



Indicative space for this activity	PT staff	P&O staff	Medical staff	Service user(s)	Relative(s)
85 m ²	1	N/A	N/A	Max. 10	N/A

Equipment and furniture checklist					
Code	Quantity	Description	Code	Quantity	Description
E2	1x	Parallel bars (4 m)	F2	5x	Chair
E18	1x	Wheelchair training slope	F12	2x	Trolley

4.3 Management of a physiotherapy department

In order to provide quality physiotherapy services that are both effective and timely, a physiotherapy department requires good leadership, planning and coordination and the integrated use of procedures, policies and management practices. Clinical management ensures patient safety and good quality patient care and requires the supervision of correct use of medical supplies, physiotherapy techniques and equipment. Clinical guidelines and protocols need to be adhered to closely and clinical supervision and training included as part of the working procedure. Good quality patient care requires the timely availability of physiotherapy services and confirmed links with external actors.

Physiotherapy is just one aspect of the services provided by an interdisciplinary team of medical and non-medical support staff, all working for the benefit of the patient. The physiotherapy team is responsible for its department and the physiotherapy services provided, but the head nurse supervises the daily activities and the senior medical officer (SMO) or senior surgeon (SnS) supervises the physiotherapy department for clinical management issues. ICRC-supported hospitals are in most cases Ministry of Health (MoH) structures; the organization chart of the supported hospital is therefore used and the ICRC physiotherapists liaise with their counterpart national colleagues.

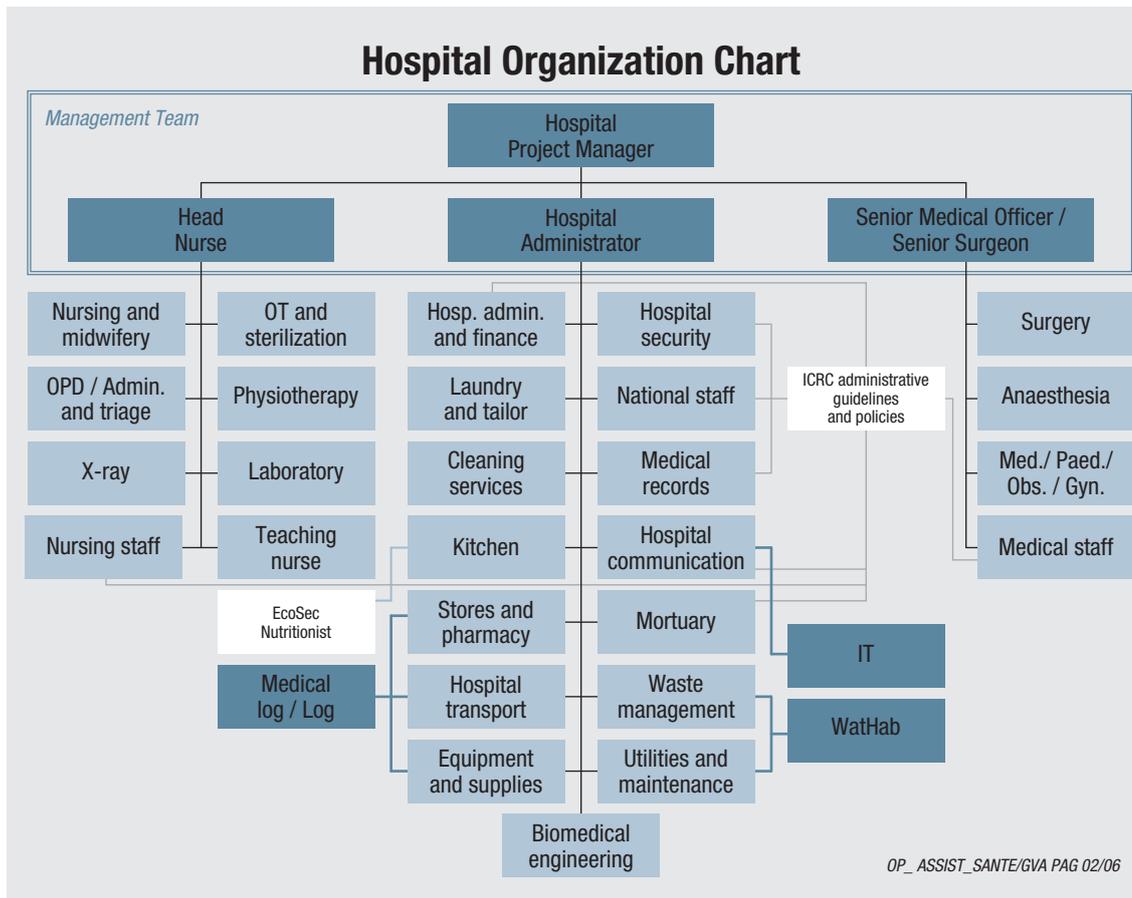


Figure 9. Hospital organization chart (The ICRC's hospital management strategy is to be revised in 2017.)

The IDT approach is encouraged in a hospital setting and effective communication is essential in the planning of patient care and treatment. The primary mechanism in this respect comprises the daily ward rounds, which are usually conducted in the morning before the OT list starts and include patients in the ICU. The physiotherapist should be present and be ready to share relevant, important information on the patient's physical and functional capabilities with the team. Ward rounds also provide an opportunity to ask questions or discuss any problems concerning the patient's status with the whole team.

The physiotherapy team interacts constantly with other staff during daily activities. It may be asked to participate in the training of other IDT members with respect to:

- the role of physiotherapists at the hospital;
- specific positioning, basic exercises and handling of patients.

Various training materials, such as a set of training cards entitled "Basic post-surgical interventions to prevent disability," have been developed to teach basic practical skills to non-professional staff in order to prevent complications and secondary disabilities. A one-hour standard lecture was designed to explain the role of the physiotherapist to nursing staff and to identify ways in which physiotherapists and nurses work together.

As at a PRC, all physiotherapy staff should know how to complete every aspect of physiotherapy treatment and management in accordance with their job descriptions and profile, although specific tasks will be allocated to different members of the team. Staff rotation can be organized to maintain the expertise of all staff members so as to cope with a possible rapid increase in the influx of patients due to disasters and war.

Figure 10 shows a standard organization chart for an ICRC-supported hospital physiotherapy department. The mobile physiotherapist position has not been included but would be placed between the ICRC head nurse and the SMO/SnS.

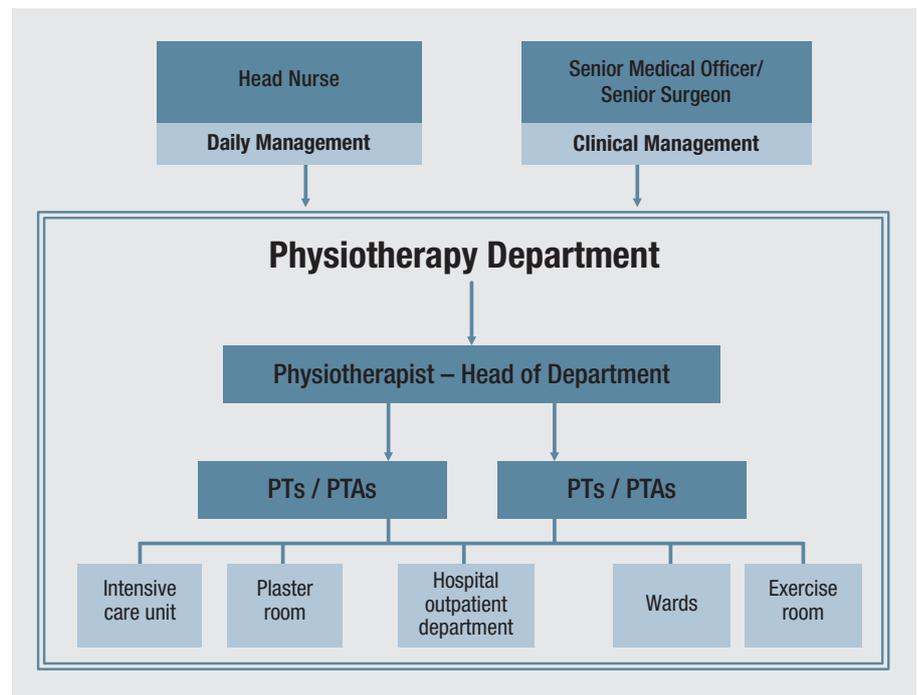


Figure 10. Physiotherapy department organization chart

The management of physiotherapy in the ICU and OT and the functioning of the POP room should be given careful consideration because specific competences are required. The staff in charge should be well trained before working independently in these departments. The organization of responsibilities and the chain of command should remain simple. A physiotherapist head of department is responsible for the team's work and results and all staff members are under his leadership. Lower hierarchical links are established on the basis of individual skills and competences. The physiotherapist will thus be responsible for overseeing the PTA and the PTH in their daily work. Responsibilities could be distributed among the technical staff of a hospital in a slightly different manner in different countries. Job descriptions are designed accordingly.

For emergency response as well as more general purposes, the ICRC has different lists of physiotherapy material and equipment that are also included in the surgical trauma kit.

Attention needs to be drawn to the fact that the distribution of custom wheelchairs requires the implementation of an extensive procedure that includes assessment, prescription, fitting and training and the availability of a range of different products (three-wheelers, four-wheelers, tricycles, etc). Wheelchair hire or leasing can be a solution for temporary use of unadjusted products but should only be available to people with a permanent disability, who should be asked to return for reassessment. Such people need a wheelchair that has been adapted to their needs and morphology; the wheelchair is regarded as part of their body. In places where it is not possible to refer patients to appropriate places (such as PRCs), the distribution of custom wheelchairs at the hospital could be useful and necessary. In that case, it is advisable to set apart adequate space (technical and clinical) for storing, assembling, adjusting and fitting the wheelchairs and for training the users. Staff need to be properly trained in this activity to ensure professional level services.

4.4 Physiotherapy reporting

Proper and timely referral to hospital physiotherapy services is an essential duty of hospital teams, as patients are discharged rapidly and hospital stays can be short. The physiotherapy team receives referrals through:

- completion of a physiotherapy request form (as an SMO or SnS referral);
- formal referral during ward rounds;
- verbal requests from the SMO or SnS.

Physiotherapy request forms might be required for all physiotherapy services provided. They can be completed by the physiotherapy team, nursing or surgical staff, but must be signed by the SMO/SnS before treatment is provided. All request forms are kept on the patient file. On admission to the hospital, each patient is given a number, which is used for all procedures and treatments, including physiotherapy. All his details are filed under this number, including subsequent outpatient treatments and services.

At all times, the physiotherapy progress notes should be kept on the patient's complete hospital file. For patients needing longer-term physiotherapy or when required by the hospital structure, a separate physiotherapy file should be developed in accordance with ICRC and local standards to allow proper follow-up of the rehabilitation process. The progress notes and/or files should also include the patient's status on discharge, any follow-up plan and any external referrals made. Instructions and advice provided by surgeons during ward rounds should be clearly documented on the patient's file. Accurate completion of patient files is important. Daily notes on a patient's progress have to be made to ensure good documentation. The SOAP note (subjective, objective, assessment, plan) method or a similar approach is a good way to promote systematic recording of information.

A T-card planner or a whiteboard is a useful patient management tool in a physiotherapy department. It can be used to follow the progress of the patients and to distribute the workload evenly among physiotherapy staff. Standard columns include:

- patient number;
- patient name;
- location (ward, ICU, IC/OPs);
- diagnosis;
- current treatment plan;
- expected discharge date;
- PT/PTA responsible.

Initial physiotherapy assessment and treatment may take longer than subsequent treatments, which generally take 15-30 minutes. Patients should be prioritized according to their pathology and discharge status. The usual prioritization includes patients requiring respiratory physiotherapy, planned discharges and new patients. Prior to discharge, the patient (and if possible a family member) should be given advice about how to manage his condition, including specific instructions on what he can and cannot do. This should also be provided in written form, a copy being given to the patient together with instructions about returning to the hospital or any referrals to external services. Home exercise programmes are also provided in written form, with a copy for the patient and another copy kept on the patient's file for future reference.

Physiotherapy department activities are part of the ICRC hospital programme and all statistics and reporting are specific to it. For supported hospital programmes, the hospital and government ministries responsible may require specific statistics. Physiotherapy activities are in the process of being included in the ICRC hospital programme's monthly statistical report (MSR) and medical activity database (MAD-hospital). The hospital project manager may request verbal and written reports on an ad hoc basis and the ICRC hospital programme requires the physiotherapy department to contribute to three reports which will be standardized in the near future:

- monthly hospital report;
- quarterly health report;
- end-of-mission report (or handover report).

The ICRC promotes:

- full participation of physiotherapists in ward rounds;
- recognition of physiotherapists' expertise in the management of POP and skeletal traction;
- management of the workload according to priorities;
- proper organization of the physiotherapy department (filing, material);
- reporting of activities in medical and other files; and
- referral for further rehabilitation when needed.

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