PATIENT MANAGEMENT GUIDELINES

ICRC PHYSIOTHERAPY REFERENCE MANUAL

ICRC

REFERENCE

ICRC

International Committee of the Red Cross
19, avenue de la Paix
1202 Geneva, Switzerland
T +41 22 734 60 01 F +41 22 733 20 57
E-mail: shop@icrc.org www.icrc.org

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Introduction

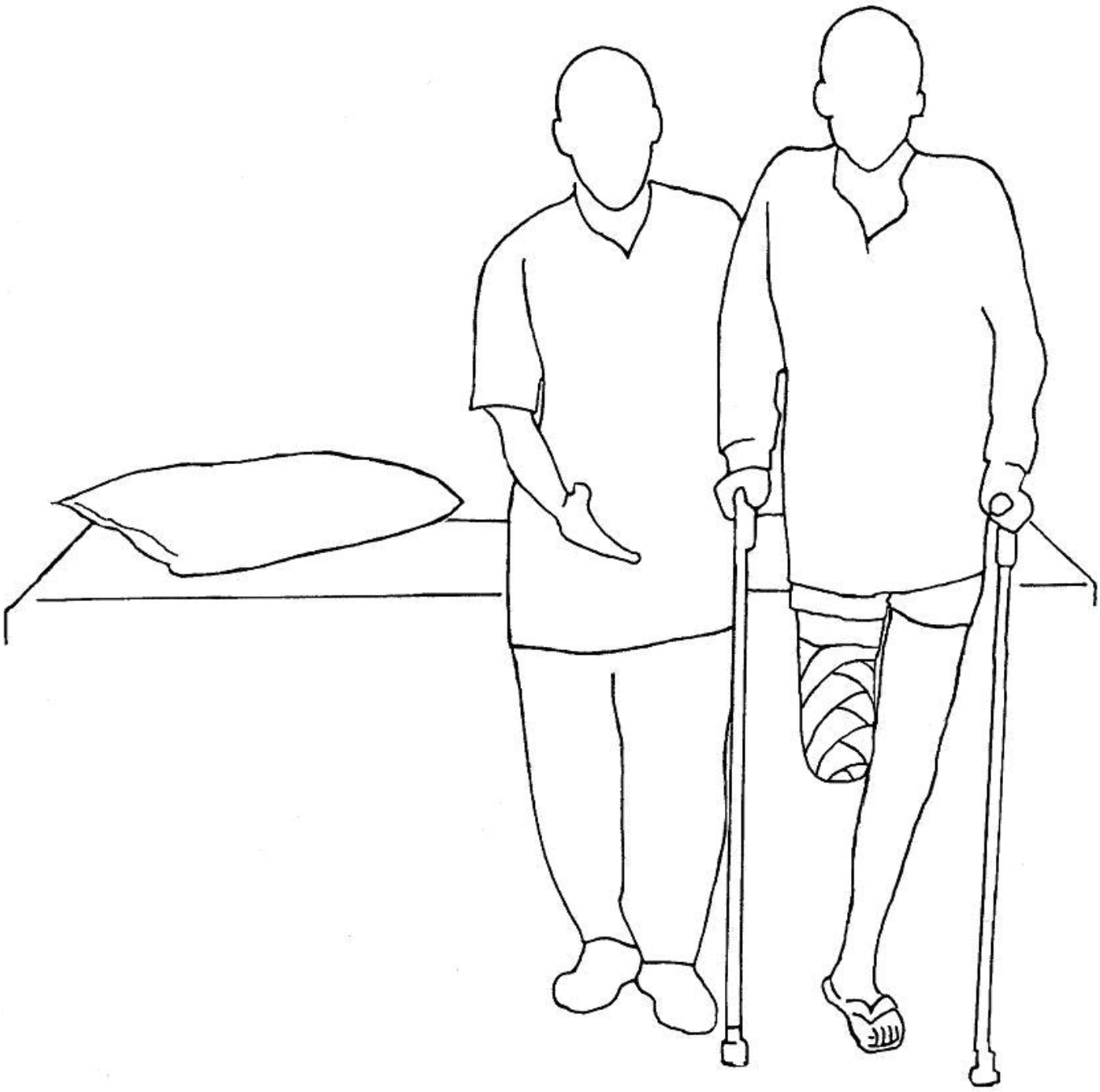
- The patient management guidelines for physiotherapy have been designed for the benefit of physiotherapists working in ICRC physical rehabilitation projects. The 12 sets of guidelines set out the physiotherapeutic practices intended to improve patient health by facilitating consistent care based on recognized standards.

- These guidelines have been developed by the physiotherapy technical commission in conjunction with physiotherapists in the field and are based on both international guidelines and field experience.

- Each set of patient management guidelines is followed by a patient management evaluation form for assessing the performance of practitioners. This short form is not exhaustive and is intended only to support the overall evaluation.

- In addition to the 12 sets of patient management guidelines, the manual contains a position paper on chronic low back pain. This document grew out of the recognition that the existence of pain-reduction measures had to be acknowledged, but no set of guidelines was drawn up in order to avoid promoting such measures in the framework of an ICRC project.

Lower-Limb Amputation 1



1 The objective

Through a multidisciplinary team approach, to restore the amputee's functional independence and afford him[1] optimal use of his prosthetic device.

2 Indications

All lower-limb amputees.

3 Contra-indications

3.1.
Prosthetic rehabilitation should be avoided when a positive functional outcome cannot be expected owing to age, type of amputation, medical complications, social and cultural environment or lack of patient motivation.

3.2.
Prosthetic fitting should be postponed in the event of an open wound, tissue inflammation, swelling, general weakness or pain.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1.
The physiotherapist should know the variety of available prosthetic components and the principles of each.

4.2.
The physiotherapist should understand the principles of physiological and prosthetic lower-limb function and the factors (both physical and biomechanical default) that affect them.

4.3.
The physiotherapist should know how to bandage stumps effectively.

4.4.
The physiotherapist should understand the principles of amputation surgery, nursing care and amputation-related hygiene.

4.5.
The physiotherapist should be aware that the level of amputation, pre-existing medical conditions and social environment can affect rehabilitation.

4.6.
The physiotherapist should understand the following points relating to prosthetics:
- the static and dynamic alignments of the prosthesis and their effect on pressure distribution within the socket
- the management of stump-volume changes in relation to socket fit
- the pressure-sensitive areas of the stump in relation to prosthetic fit
- the different methods of donning and doffing prostheses.

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

4.7.
The physiotherapist should understand when and how to apply the distinctive phases in a functional lower-limb training programme (e.g. progressive static weight-bearing, dynamic weight transfers, progressive walking exercises and training according to home environment).

4.8.
The physiotherapist should be aware of X-ray interpretations in the orthopaedic sphere.

5 Required equipment

The physiotherapist should have at his disposal the following materials and equipment:
- assessment tools such as a goniometer, measuring tape, plumb line
- bandages
- walking aids
- sandbags/weights
- strengthening equipment
- weight scale
- balance tools
- mats
- mirror
- treatment tables
- parallel bars
- obstacle course
- sports articles
- wheelchair
- reference documents

6 Patient management

6.1. Multidisciplinary aspects
Where possible in a rehabilitation centre or a hospital, the physiotherapist should contribute to the multidisciplinary team, together with ortho-prosthetists, occupational therapists, social workers, nurses and orthopaedic surgeons. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2. Assessment

6.2.1 Written records should be kept of the patient's diagnosis and history, and of his medical and surgical treatment.

6.2.2 The patient's physical status, including stump, general condition, and sound limb should be noted.

6.2.3 The patient's social situation, psychological status, dominant hand side and expectations should be recorded.

6.2.4 Relevant diseases, impaired cognition and other pathologies should be noted.

6.2.5 A treatment plan, including the goals agreed upon by the patient and the rehabilitation team, should be drawn up and regularly re-evaluated.

6.3. Treatment plan

Pre-fitting phase (post-operative)

6.3.1 The physiotherapist should help prevent all complications (e.g. pressure sores, contractures, muscle atrophy, scars, oedema and respiratory complications) by means of various techniques such as massage, bandaging, mobilizations, postures and exercises.

6.3.2 The physiotherapist should inform the patient about the physiotherapeutic treatment he will be receiving.

6.3.3 The physiotherapist should help manage residual limb pain, including phantom sensation.

6.3.4 The physiotherapist should improve the patient's general condition (e.g. endurance, function, and coordination) by means of muscular and respiratory exercises and general mobilization.

6.3.5 The physiotherapist should prepare the stump for prosthetic fitting in the following respects:

- improve the range of motion of the proximal joints
- reduce the oedema and improve the local vascular system
- increase the strength of weakened muscles.

6.3.6 Walking aids should be provided and the physiotherapist should train the patient in their use.

Post-fitting phase (starting three months after surgery)

6.3.7 Prosthetic rehabilitation should begin the same day as the prosthesis is received.

6.3.8 The physiotherapist should check the prosthesis for correct and comfortable fit prior to each treatment, until the patient is able to do it by himself. The patient should examine the residual limb before and after prosthetic use.

6.3.9 The physiotherapist should continue preparing the stump for the fitting, with respect to power, mobility, swelling, scarring and pain.

6.3.10 The physiotherapist should continue to help improve the patient's general condition (e.g. endurance, function and coordination) by means of muscular and respiratory exercises and general mobilization.

6.3.11 The physiotherapist should first teach efficient control of the prosthesis, through the use of posture, weight transfer, proprioception and specific muscle-strengthening and stretching exercises to prevent and correct gait deviation.

6.3.12 Under the guidance of the physiotherapist, the gait training should then be gradually built up, starting between the parallel bars and progressing with or without walking aids, and ending within the home environment.

6.3.13 Finally, the physiotherapist should teach the patient a range of functional tasks relevant to the goals set for that individual, such as setting himself down on, and getting himself up, off the floor, getting into and out of a car, going up and down stairs and slopes, walking in a crowded environment, and picking objects up from the floor.

6.3.14 Prosthetic rehabilitation should aim to establish an energy-efficient gait, based on a normal physiological walking pattern.

6.3.15 During the entire rehabilitation programme, the physiotherapist, alongside other professionals, should contribute to evaluation of the socket fit and adjustment of the dynamic alignment of the prosthesis.

6.3.16 Together with the ortho-prosthetist, the physiotherapist should review all fitted amputees every day to analyse the gait in frontal and lateral view and suggest improvements.

6.3.17 Patients should be instructed in proper prosthetic donning and doffing to ensure a correct socket fit, considering pressure-sensitive areas of the stump and the proper use of prosthetic suspension.

6.3.18 Guidance should be given on the daily care of the prosthesis, soft socket, stump socks (stockinet) and on hygiene practices for the stump and the socket.

Discharge and follow-up

6.3.19 A final evaluation should be performed and a summary should be written in the treatment file of the patient's function and mobility on the date of discharge.

6.3.20 Advice should be given to the patient regarding stump care and prosthetic care (such as cleaning and changing the shoe without influencing the alignment of the prothesis.

6.3.21 A home-exercise programme should be discussed between the patient, his family and the physiotherapist concerning the stump, the sound limb and the rest of the body.

6.3.22 A follow-up appointment should be fixed to monitor the patient's progress after discharge.

7 Remarks

7.1 A hands-on approach (close professional physical contact) is encouraged in physiotherapy.

7.2 In the acute phase, the physiotherapy treatment starts the day after surgery.

7.3 At least 30 minutes of individual treatment plus 30 minutes of group exercises a day is recommended for every patient.

7.4 Vascular and diabetic patients and their families should be made aware of the risks to the remaining foot and educated in how they can reduce these.

7.5 It is strongly recommended that the physiotherapy file be included in the hospital or P&O file.

7.6 Patient-information leaflets should be made available.

7.7 Sports and activities to help patients find their way in society should be encouraged.

7.8 Active participation by the patient's family should be encouraged.

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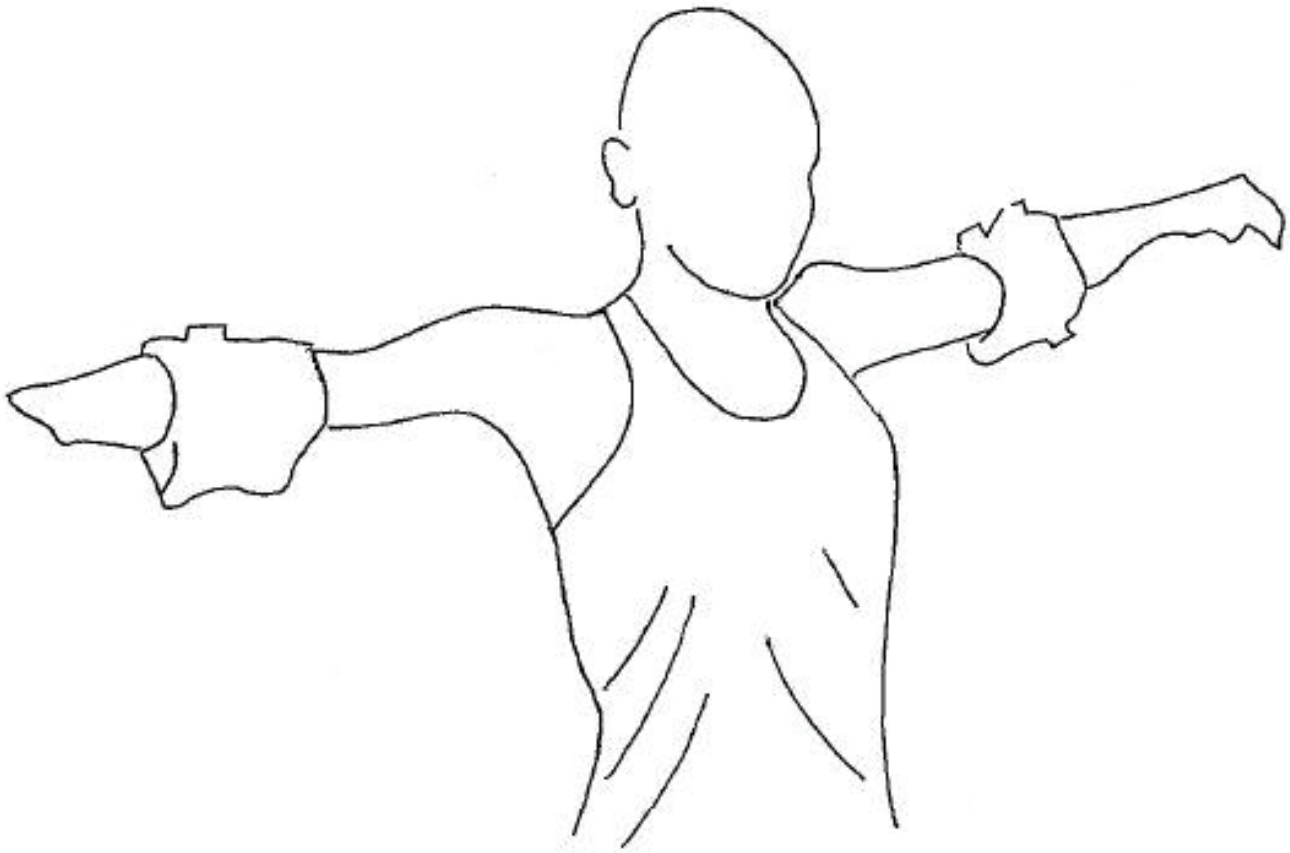
Patient management evaluation form: Lower-Limb Amputation

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology and amputation surgery • Prosthetic knowledge (e.g. components, prosthetic gait, alignment, socket design) • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of material				• Daily work organization & time management • Consumables renewed in time • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team • Attitude toward patients, family or carers and colleagues • Communication skills (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented • Regular re-evaluation of goals and objectives • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Positioning, massage, mobilization to prevent complications • Bandaging techniques to control swelling • Management of pain • Maintenance or improvement of general condition • Stump preparation before fitting the prosthesis (e.g. ROM, strengthening exercises) • Training in use of the prosthesis (e.g. postural control, weight transfer) • Gait training and correction of gait deviation • Functional training for independence in ADL • Instruction in donning & doffing and in daily care of the prosthesis • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Upper-Limb Amputation 2



1 The objective

Through a multidisciplinary team approach, to restore the amputee's functional independence and afford him[1] optimal use of his prosthetic device.

2 Indications

All upper-limb amputees.

3 Contra-indications

3.1.
Prosthetic rehabilitation should be avoided when a positive functional outcome cannot be expected owing to age, type of amputation, medical complications, social and cultural environment or lack of patient motivation.

3.2.
Prosthetic fitting should be postponed in the event of an open wound, tissue inflammation, swelling, general weakness or pain.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1.
The physiotherapist should know the variety of available prosthetic components and the principles of each.

4.2.
The physiotherapist should understand the principles of physiological and prosthetic upper-limb function and the factors (both physical and biomechanical default) that affect them.

4.3.
The physiotherapist should know how to bandage stumps effectively.

4.4.
The physiotherapist should understand the principles of amputation surgery, nursing care and amputation-related hygiene.

4.5.
The physiotherapist should be aware that the level of amputation, pre-existing medical conditions and social environment can affect rehabilitation.

4.6.
The physiotherapist should understand the following points relating to prosthetics:
- adjustments and suspensions of the prosthesis and their effect on pressure distribution within the socket
- the management of stump-volume changes in relation to socket fit
- the pressure-sensitive areas of the stump in relation to prosthetic fit
- the different methods of donning and doffing prostheses.

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

4.7.
The physiotherapist should understand when and how to apply the distinctive phases in a functional upper-limb training programme (progressive use, coordination, proprioception, manipulative skills, dexterity, dominant side, bimanual activities, vocational skills, functional exercises according to the home environment).

4.8.
The physiotherapist should be aware of X-ray interpretations in the orthopaedic sphere.

5 Required equipment

The physiotherapist should have at his disposal the following materials and equipment:
- assessment tools such as a goniometer, measuring tape, plumb line
- bandages, shrinker socks
- sandbags/weights
- strengthening equipment
- thera band
- mirror
- treatment tables
- activity/hand therapy table
- activities of daily living (ADL) training tools such as bucket, glasses, spoon, fork, plates, pencils, broom and gardening tools
- sports equipment
- reference documents

6 Patient management

6.1. Multidisciplinary aspects
Where possible in a rehabilitation centre or a hospital, the physiotherapist should contribute to the multidisciplinary team, together with ortho-prosthetists, occupational therapists, social workers, nurses and orthopaedic surgeons. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2. Assessment
6.2.1 Written records should be kept of the patient's diagnosis and history, and of his medical and surgical treatment.

6.2.2 The patient's physical status, including stump, general condition, condition of the sound arm and postural impairments should be noted.

6.2.3 The patient's social situation, psychological status, dominant hand side and expectations should be recorded.

6.2.4 Relevant diseases, impaired cognition and other pathologies should be noted.

6.2.5 A treatment plan, including the goals agreed upon by the patient and the rehabilitation team, should be drawn up and regularly re-evaluated.

6.3. Treatment plan
Pre-fitting phase (post-operative)

6.3.1 The physiotherapist should help prevent all complications (e.g. pressure sores, contractures, muscle atrophy, scars, oedema, postural impairments, neck, trunk and respiratory complications) by means of various techniques such as massage, bandaging (shrinker sock), mobilizations, postures and exercises.

6.3.2 The physiotherapist should inform the patient about the physiotherapeutic treatment he will be receiving.

6.3.3 The physiotherapist should help manage residual limb pain, including phantom sensation.

6.3.4 The physiotherapist should improve the patient's general condition (e.g. posture, function, ADL autonomy) by means of muscular and respiratory exercises and general mobilization.

6.3.5 The physiotherapist should prepare the stump for prosthetic fitting as follows:
- improve the range of motion of all proximal joints (e.g. shoulders, elbow)
- reduce oedema and promote active wound healing
- strengthen weakened muscles

6.3.6 Functional aids (e.g. for toileting, eating, dressing, and writing) should be provided and the physiotherapist should train the patient in their use.

6.3.7 If the dominant hand is affected, the physiotherapist should help, motivate and instruct the patient in the use of his non-dominant hand for daily activities.

Post-fitting phase (starting two or three months after surgery)

6.3.8 Prosthetic rehabilitation should begin the day the patient receives the prosthesis.

6.3.9 The physiotherapist should check the prosthesis for correct and comfortable fit prior to each treatment, until the patient is able to do this by himself. The patient should examine the residual limb before and after prosthetic use.

6.3.10 The physiotherapist should continue preparing the stump for fitting (power, mobility, swelling, scarring and pain).

6.3.11 The physiotherapist should continue to improve the patient's general condition (e.g. endurance, function and coordination) by means of muscular and respiratory exercises and general mobilization.

6.3.12 During the entire rehabilitation programme, the physiotherapist should adapt the treatment and its aim according to the functional dominance of the affected hand.

6.3.13 The physiotherapist should first teach efficient control of the prosthesis through the use of proprioception, coordination and specific muscle activity, stretching exercises and posture exercises to prevent and correct wrong positioning.

6.3.14 The physiotherapist should gradually teach proper handling of the prosthesis by means of basic movements such as grasping, holding and releasing an object.

6.3.15 Under the physiotherapist's guidance, the functional training should then be built up progressively, starting with simple unilateral activities and advancing to bilateral work within the home environment.

6.3.16 The physiotherapist should eventually teach the patient a range of functional tasks relevant to the goals set for that individual, such as eating, dressing and undressing, hygiene care, ADL (e.g. locks, laces, taps, buttons), carrying, and picking objects up from the floor.

6.3.17 When possible and when an occupational therapist is available, vocational training is recommended to complement rehabilitation.

6.3.18 During the entire rehabilitation programme, the physiotherapist, alongside other professionals, should evaluate the socket fit and help adjust the prosthesis.

6.3.19 Patients should be instructed in the proper donning and doffing of the prosthesis to assure correct socket fit, with due regard for pressure-sensitive areas of the stump and the proper use of prosthetic suspension.

6.3.20 Guidance should be given on daily care of the prosthesis, soft socket, stump socks (stockinet) and on hygiene related to the stump and the socket.

Discharge and follow-up

6.3.21 A final evaluation should be carried out and a summary of the patient's function and dexterity on the discharge date should be recorded in the treatment file.

6.3.22 Advice should be given to the patient regarding stump care and prosthetic care (such as cleaning the device).

6.3.23 A home-exercise programme (for the stump, the sound arm and the rest of the body) should be discussed between the patient, his family and the physiotherapist.

6.3.24 A follow-up appointment should be fixed to review the patient's progress after his discharge.

7 Remarks

7.1 A hands-on approach (close professional physical contact) is encouraged in physiotherapy.

7.2 In the acute phase, the physiotherapy treatment starts the day after surgery.

7.3 At least 30 minutes of individual treatment plus 30 minutes of group exercises a day is recommended for every patient.

7.4 It is strongly recommended that the physiotherapy file be included in the hospital or P&O file.

7.5 Patient-information leaflets should be made available.

7.6 Additional information about myoelectric prostheses may be shared with the patient if requested.

7.7 Social and vocational integration activities and sports should be encouraged.

7.8 Active participation by the patient's family should be encouraged.

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info@prostheticconcepts.ca

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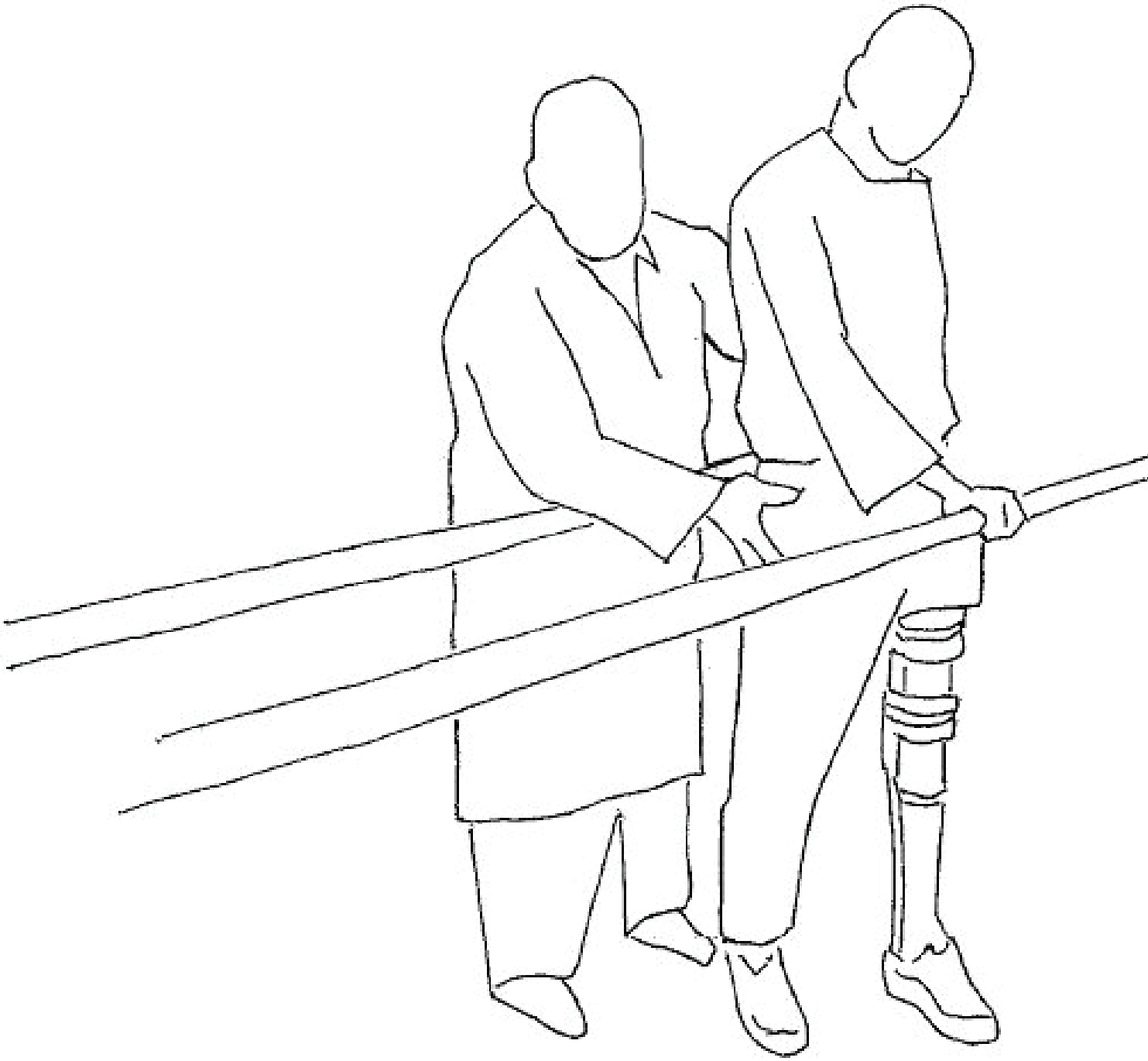
ICRC Code: LMEDORTBAAEN

Patient management evaluation form: Upper-Limb Amputation

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology and amputation surgery • Prosthetic knowledge (e.g. types of prostheses, components, alignment, socket design) • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team • Attitude toward patients, family or carers and colleagues • Communication skills (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented • Regular re-evaluation of goals and objectives • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Positioning, massage, mobilization to prevent complications • Bandaging techniques to control swelling • Management of pain • Maintenance or improvement of general condition • Stump preparation before fitting the prosthesis (e.g. ROM, strengthening, stretching exercises) • Training in use of the prosthesis (e.g. functional activities) • Upper-limb tasks such as holding, carrying, grasping • Functional training for independence in ADL • Instruction in donning & doffing and in daily care of the prosthesis • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Poliomyelitis 3



1 The objective

Through a multidisciplinary team approach, to restore the patient's functional independence and the optimal use of his[1] orthotic device(s).

2 Indications

All patients suffering from poliomyelitis (polio).

3 Contra-indications

3.1.
Rehabilitation should be avoided when a positive functional outcome cannot be expected owing to factors such as age, type of paralysis, medical complications, social and cultural environment and patient motivation.

3.2.
Orthotic fitting and physiotherapy should be postponed in the event of an open wound, fever, tissue inflammation, swelling, general weakness or pain.

3.3.
Neither exercises nor mobilization should be done during the acute illness stage.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1.
The physiotherapist should know the pathology of polio, including the different stages and levels of disability and the treatment related to each of them.

4.2.
The physiotherapist should know about other diseases with symptoms similar to those of polio in order to differentiate between misdiagnoses.

4.3.
The physiotherapist should be aware of vaccination programmes by the government and other organizations.

4.4.
The physiotherapist should know the practice of effective plaster of Paris (POP) stretching techniques and the use of wedging casts.

4.5.
The physiotherapist should understand the principles of the various surgical procedures and related nursing care needed to achieve maximum functional independence through rehabilitation.

4.6.
The physiotherapist should be aware that the level or grade of paralysis, pre-existing medical condition and social environment will affect the final outcome of the rehabilitation.

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

4.7.
The physiotherapist should understand the following points related to orthotics:
- the variety of available orthotic devices
- static and dynamic alignment principles and their effects on pressure distribution

4.8.
Additional knowledge of respiratory physiotherapy is required.

4.9.
The physiotherapist should know about all the programmes for social reintegration, daily-life activities, polio education and vocational training.

4.10.
The physiotherapist should be able to interpret X-rays in order to assess the patient's conditions and choose the optimal treatment.

5 Required equipment

The physiotherapist should have at his disposal the following materials and equipment:

- POP/immobilization equipment: POP bandages (different sizes), cotton, Lorenz's shears, cast spreader, plaster knife, cast-bending forceps, oscillating saw, scissors, water basin, tubular bandages/stockinet (different sizes), plastic bucket for POP application, plastic sheet, 2.5-cm tape
- assessment tools: goniometer, measuring tape, reflex hammer, vital capacity meter, plumb line
- positioning pillows
- walking aids
- sandbags/weights
- strengthening equipment
- weight scale
- balance tools
- mats
- mirror
- wall bars
- treatment tables
- parallel bars
- sports equipment
- wheelchair
- obstacle course
- reference documents

6 Patient management

6.1. Multidisciplinary aspects

6.1.1 Wherever possible in a rehabilitation centre or a hospital, the physiotherapist should contribute to the multidisciplinary team, together with orthotists, social workers, orthopaedic surgeons, neurologists, occupational therapists, psychologists and nurses.

6.1.2 Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2. Assessment

6.2.1 Written records should be kept of the patient's diagnosis and history, and of his X-ray and medical and surgical treatment, including figures on vaccinations.

6.2.2 Active and passive joint mobility, muscle charting and functional examination (e.g. gait, physical independence and self-care) have priority.

6.2.3 General assessment of the patient includes socio-economic and environmental factors such as living conditions, schooling and employment.

6.2.4 The patient's social situation and family attitude, psychological status and expectations should be taken into account.

6.2.5 Assessments should be repeated at the four stages (acute, paralytic, recovery, chronic) of the illness.

6.2.6 A treatment plan, including the goals agreed upon by the patient and the rehabilitation team, should be drawn up and regularly re-evaluated.

6.3. Treatment plan

Acute stage (first week)

6.3.1 Only positioning should be done. Flexion/abduction and flexion/adduction of the hip(s) and general foetal position should be avoided.

6.3.2 Mobilization of knee(s) and elbow(s) should be carefully carried out to prevent contractures and alleviate muscle spasms, and therefore pain. Postures can also be achieved with simple splints.

Paralytic stage (about two to three weeks)

6.3.3 The physiotherapist should inform the patient (or his relatives) about his physiotherapeutic treatment before starting, and also during the treatment.

6.3.4 The physiotherapist should continue preventing deformities through positioning and splinting in the bed with changes of position and gentle massage to increase circulation and avoid pressure sores.

6.3.5 The physiotherapist should start testing muscle power as the degree of the paralysis becomes clearer.

6.3.6 With the doctor's permission, the physiotherapist should promote recovery of the patient's mental image of the movement concerned, by means of careful mobilizations (passive and active) that avoid over-stretching.

6.3.7 To prevent and relieve spasms and contractures, the physiotherapist should apply warm, moist cloths to the painful muscles every four hours if necessary.

6.3.8 Chest physiotherapy should be given if required.

6.3.9 Urine retention and constipation should be prevented; the nursing staff will be of help in this regard.

Recovery stage (three weeks after onset of the illness)

6.3.10 The physiotherapist should continue testing muscle power as the degree of the paralysis becomes clearer.

6.3.11 Active and passive mobilizations below pain threshold should be continued, with gradual progress from horizontal to sitting and vertical positions.

6.3.12 Orthotic rehabilitation should begin the day the patient receives his orthosis.

6.3.13 The physiotherapist should check the orthosis for correct and comfortable fit prior to each treatment, until the patient is able to do it by himself.

6.3.14 The patient (or his relative) should be taught how to examine the paralyzed limb before and after use of the orthosis in order to avoid friction and wounds.

6.3.15 The physiotherapist should continue preparing the limb(s) for fitting (power, mobility, swelling, scarring and pain).

6.3.16 The physiotherapist should continue to improve the patient's general condition (e.g. endurance, function and coordination) by means of muscular and respiratory exercises and general mobilization.

6.3.17 The physiotherapist should first teach effective control of the orthosis by means of postural control, weight transfer, proprioception and specific muscle-strengthening and -stretching exercises so as to ensure optimal movement.

6.3.18 Under the physiotherapist's guidance, the gait training should build gradually, starting within the parallel bars and progressing with or without walking aids and if possible ending within the home environment.

6.3.19 Finally, the physiotherapist should teach the patient a range of functional tasks relevant to the goals set by that individual, such as setting himself down on the floor and getting up off it, getting in and out of a car, going up and down stairs and slopes, walking in a crowded environment, and picking up objects from the floor.

6.3.20 Orthotic rehabilitation should aim to establish a functional gait, based on a normal physiological walking pattern.

6.3.21 Throughout the rehabilitation programme, the physiotherapist, alongside other professionals, should contribute to evaluation of the fitting and the adjustment of the dynamic alignment of the orthosis.

6.3.22 Together with the ortho-prosthetist, the physiotherapist should daily review all fitted polio patients in order to analyse the gait and posture in frontal and sagittal views and suggest improvements.

6.3.23 Guidance should be given for daily care of the orthosis and hygiene for the affected limb.

The chronic stage and post-polio syndrome

6.3.24 For patients already under treatment, the chronic stage is the continuation of the paralytic stage.

6.3.25 For untreated patients, a treatment plan should be drawn up on the basis of any observed deformities (e.g. genu recurvatum, genu valgus, flexum, hip dislocation) or of permanent paralysis.

6.3.26 All physiotherapeutic techniques should be used to correct the deformities including (POP) stretching (corrective plaster) and splinting.

6.3.27 Mild contractures need manipulation or POP casts.

6.3.28 Weak muscles should be strengthened in accordance with muscle-testing charts.

6.3.29 Advice should be given on home exercises.

6.3.30 If orthotic devices are applied, the same procedures should be respected as at the paralytic stage.

Discharge and follow-up

6.3.31 Polio rehabilitation is a lifelong treatment that requires the family's involvement.

6.3.32 A final evaluation should be carried out and a summary of the patient's function and mobility at the discharge date should be recorded in the treatment file.

6.3.33 Advice should be given to the patient regarding care for the limb and orthotic care (such as cleaning the device or changing the shoe without influencing the alignment of the orthosis).

6.3.34 A home-exercise programme for the paralyzed limb and the rest of the body should be discussed between the patient, his family and the physiotherapist.

6.3.35 A follow-up appointment should be fixed to review the patient's progress.

7 Remarks

7.1 A hands-on approach (close professional physical contact) is encouraged in physiotherapy.

7.2 It is strongly recommended that the physiotherapy file be included in the hospital or P&O file.

7.3 Patient-information leaflets should be made available.

7.4 Maximum muscle recovery is achieved after one to two years.

7.5 Social integration activities and sport should be encouraged.

7.6 Active participation by the patient's family should be encouraged.

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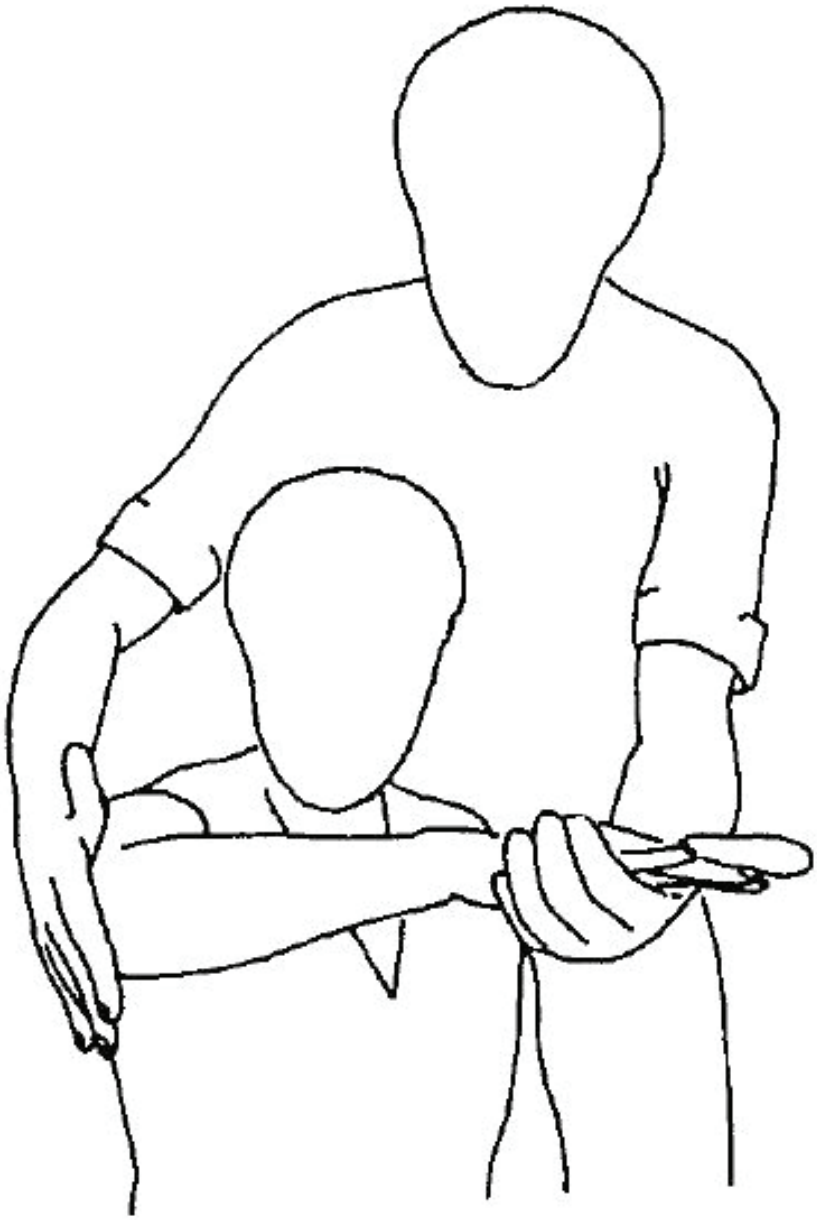
Patient management evaluation form: Poliomyelitis

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology, stages and level of disability • Orthotic knowledge (e.g. components, orthotic gait, alignment, fittings) • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time, splint material & POP • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team • Attitude toward patients, family or carers and colleagues • Ability to work with children • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented, especially capacity to do muscle testing • Regular re-evaluation of the goals and objectives at all four stages of the illness • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Positioning, heat therapy and splinting during the acute and paralytic stages • Management of pain • Maintenance or improvement of general condition • Exercises preparatory to fitting the orthosis (e.g. ROM & strengthening exercises) • Training in use of the orthosis (e.g. postural control, weight transfer) • Gait training and correction of gait deviation • Functional training for independence in ADL • Daily care of the orthosis • Management of corrective techniques if necessary (e.g. corrective plaster, stretching, splinting) • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Instruction provided to parents in this lifelong treatment • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Peripheral Nerve Injury 4



1 The objective

Through a multidisciplinary team approach, to restore the patient's functional independence in the least possible time after injury.

2 Indications

All patients with a peripheral nerve injury (PNI).

3 Contra-indications

3.1.
Mobilization of a limb with a PNI may have to be delayed in cases of ununited fractures and if the nerve has just been repaired surgically.

3.2.
Any PNI treatment should commence as soon as possible after the injury. If the period between injury and surgical repair is more than 18 months, there is no hope for significant improvement as deformities and adhesions may have already developed.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1.
The physiotherapist should know the different types of PNIs (neurapraxia, axonotmesis, neurotmesis), their causes (e.g. trauma, acute compression, chronic compression, mononeuritis multiplex), and the prognoses for recovery.

4.2.
The physiotherapist should check at-risk patients regularly.

4.3.
The physiotherapist should understand splinting techniques (static and dynamic splints).

4.4.
The physiotherapist should understand when and how to apply the distinctive phases in a progressive rehabilitation-training programme (passive mobilization, pendulum exercises, active assisted/active/active resisted exercises, progressive functional exercises and training according to the home environment).

5 Required equipment

The physiotherapist should have at his disposal the following materials and equipment:
- POP/immobilization equipment: POP bandages (different sizes), cotton, triangular bandages, Lorenz's shears, cast spreader, plaster knife, cast-bending forceps, oscillating saw, scissors, water basin, tubular bandages/stockinet (different sizes), plastic bucket for POP application, plastic sheet, safety pins, 2.5-cm tape, material for splints
- different types of pillow (triangular, rectangular) and slings for elevation and/or support of the limb
- muscle-strengthening equipment
- treatment table
- mirror

- balance tools
- parallel bars
- weight scale
- assessment tools: goniometer, measuring tape, plumb line
- dynamic splint material (wood, plastic, POP, elastic bands, springs, superglue, screws, metal filaments); dynamic splints are often easier to make by applying a circular POP, after cutting it and modifying it
- tools (pliers, screwdriver, pieces of wood and metal bars, wire, depending on the context, the material and equipment used)
- different items for intricate/precision exercises (balls of different hardness, screws and nuts, taps, rubber bands, clay)
- reference documents

6 Patient management

6.1 Multidisciplinary aspects

6.1.1 The physiotherapist should contribute to the multidisciplinary team, together with surgeons, doctors, nurses, occupational therapists, social workers, orthotists and other health professionals. He[1] must take part in ward rounds.

6.1.2 The physiotherapist should act as a liaison between the hospital and the physical rehabilitation unit.

6.2 Assessment

6.2.1 Written records shoud be kept of the patient's diagnosis and history, and of his medical and surgical treatment and X-rays (including old X-rays).

6.2.2 The patient's physical and neuro-vascular status (including the sound limb) and additional injuries should be noted.

6.2.3 Deficiencies in sensation, strength, movement patterns and autonomic disturbances should be noted and charted.

6.2.4 The patient's social situation, profession, psychological status and expectations should be taken into account.

6.2.5 Each act of physiotherapy should be recorded.

6.2.6 A treatment plan, including the goals agreed upon by the patient and the medical team, should be drawn up and regularly re-evaluated.

6.3 Treatment plan

The first stage (immediately after surgical repair)

6.3.1 After neurosurgery, the limb should be immobilized in a position that does not exert tension on the repaired ends of the nerve. The physiotherapist should respect the period and type of immobilization that has been prescribed by the doctor, and ensure appropriate positioning of the patient to avoid stretching the repaired nerve. Usually, the full range of movement is not allowed for six weeks after surgery and passive stretching of the nerve is not allowed for eight weeks.

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

6.3.2 In cases of neurapraxia or axonotmesis, the doctor may also prescribe a (short) period of immobilization. Otherwise, the physiotherapist may start mobilizing immediately.

6.3.3 The following methods of immobilization are practised by the doctor or by paramedical personnel under supervision:

- POP slabs (dorsal or ventral)
- miscellaneous splints
- slings

6.3.4 If the patient lacks sensation, special instructions should be given to avoid further injury.

6.3.5 Isometric contractions of the functional muscles in the splint should start from the very beginning. Proximal and distal joints may be mobilized if the movement does not stretch the nerve.

6.3.6 Ambulatory patients with an upper-limb PNI will require a sling to avoid oedema and subsequent contractures.

6.3.7 Ambulatory patients with a lower-limb PNI will require bandaging of the legs (or stocking) before standing up.

6.3.8 Splints may be needed to support distal joints. Otherwise, continuous stretching of capsulae and ligaments could cause further damage.

6.3.9 The physiotherapist should inform the patient about the treatment.

6.3.10 The physiotherapist should help (through specific techniques and by informing the doctor) to prevent complications due to immobilization (e.g. ischaemia, contractures, oedema and respiratory disorders). Muscle atrophy will always appear after a non-recovering PNI due to muscular autonomic disturbances.

6.3.11 The physiotherapist should follow the patient's progress and suggest useful changes to the treatment.

6.3.12 The physiotherapist should help to maintain the patient's general condition (e.g. endurance, function and coordination) by means of muscular and respiratory exercises and general mobilization.

6.3.13 The physiotherapist should, where possible, maintain the mobility of the proximal and distal joints of the injured limb.

The paralytic stage (after the end of immobilization following neurosurgery; after the end of immobilization in cases of neurapraxia and axonotmesis; immediately after the injury in cases of neurotmesis and if surgical repair is not possible)

6.3.14 The main applicable principles during this stage are:

- prevent oedema and maintain adequate circulation in the limb
- control pain
- maintain the power of all unaffected muscles
- maintain or regain full passive range of motion
- encourage function

6.3.15 Night splints might be necessary to avoid deformities.

6.3.16 Ambulatory patients will require the same precautions as at the previous stage and splints may also be necessary to support distal joints.

6.3.17 The physiotherapist should progressively increase passive mobilizations to regain range of motion.

6.3.18 Active movements for all normal muscles, to maintain power, avoid stiffness and provide sensory input.

6.3.19 Compensatory movements should be taught if the nerve is not expected to recover.

6.3.20 Dynamic splints can be used at all times.

6.3.21 The physiotherapist should continue improving the patient's general condition (e.g. endurance, function and coordination) by means of muscular and respiratory exercises and general mobilization.

The recovery stage

6.3.22 The physiotherapist should begin motor and sensory rehabilitation.

6.3.23 Each muscle must be reeducated both individually (if possible) and through general exercise.

6.3.24 Adequate handling is essential at this stage to control and provide sensory input.

6.3.25 The physiotherapist should use sensory stimuli with various objects and textures that might improve recovery.

6.3.26 The physiotherapist should encourage precision movements as much as exercise for strength.

6.3.27 At this stage it is essential that the patient use his injured limb and not overprotect it.

6.3.28 The physiotherapist should train the family and check regularly that the patient carries on with his treatment when at home.

6.3.29 If available, the physiotherapist can apply heat and hydrotherapy to make the exercises easier.

Discharge and follow-up

6.3.30 A final evaluation should be performed and a summary of the patient's function and mobility at discharge should be recorded in the treatment file.

6.3.31 A home programme with self-training exercises should be discussed jointly with the patient, his family and the physiotherapist.

6.3.32 If the patient lacks sensation, special instructions to avoid further injury should be given.

6.3.33 A follow-up appointment should be set to review the patient's progress after discharge.

6.3.34 If the patient is discharged with a POP or other splint, a follow-up appointment for the next visit to the hospital should be set and treatment details recorded on the patient's discharge card. Advice should be given to the patient regarding what he should and should not do.

7 Remarks

7.1
The most important treatment goal in cases of PNI is functional independence. Always keep in mind that a stiff limb, without movement, can still be useful depending on the final position it assumes.

7.2
There are three purposes for splinting an extremity with a PNI:
- joint protection
- contracture prevention
- assisting function

7.3
Loss of sensation means that the patient is very vulnerable to further injuries.

7.4
Immobilization may last for up to three months in cases of delayed repair (nerve growth = 1 mm/day).

7.5
If there is no appropriate follow-up, exercising and splinting, then the lack of opposing counterbalancing force to the intact, active muscles can produce deformities even months after the patient's discharge.

7.6
Most of the equipment can be manufactured locally, according to the needs and using the available material and facilities.

7.7
Although splints for PNIs can be made anywhere with any available material, the process is extremely time-consuming and the results may be poor. If a physical rehabilitation centre exists in the area, both dynamic and static splints should be manufactured there.

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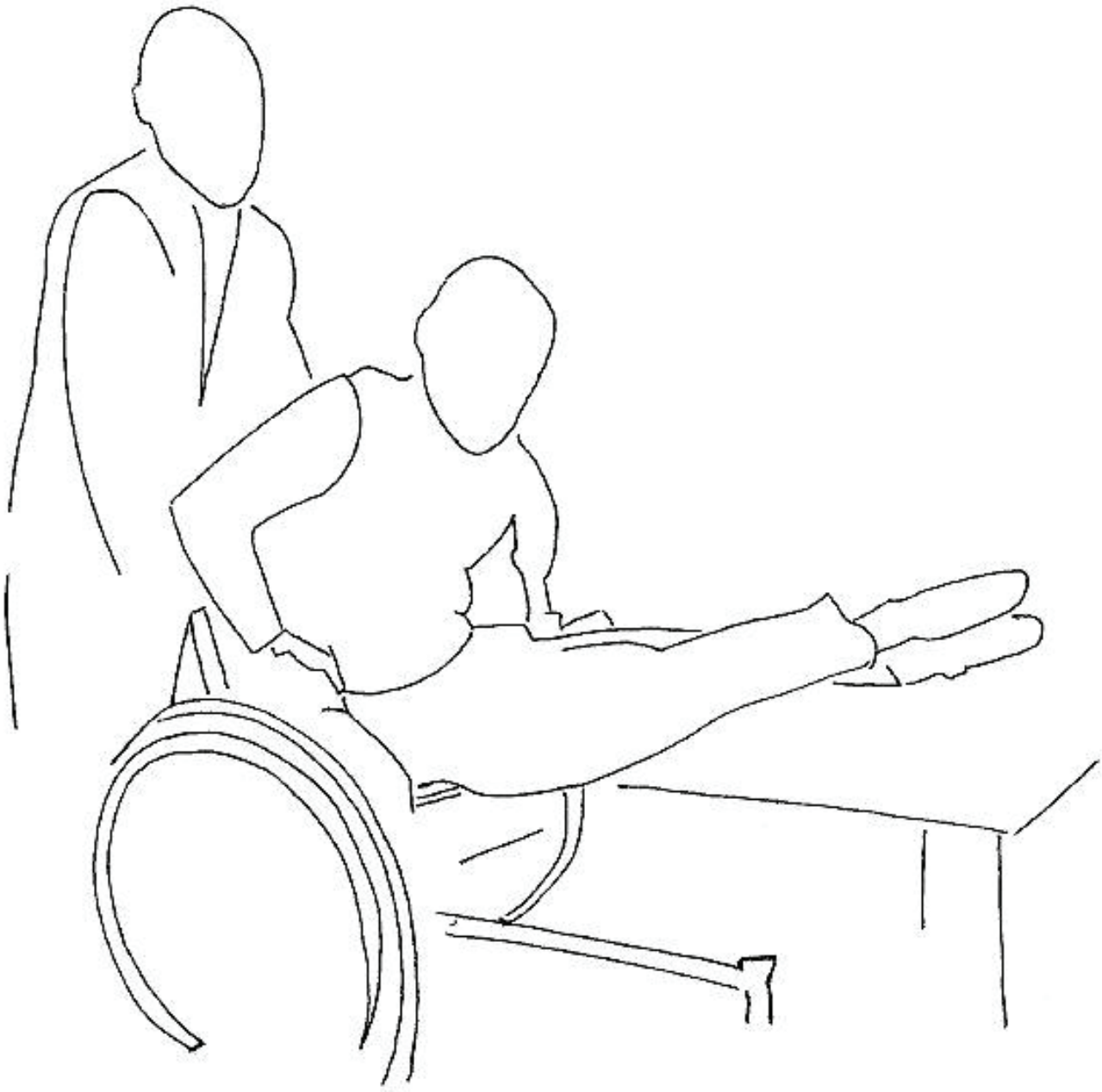
Patient management evaluation form: Peripheral Nerve Injury

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology and healing process • Static & dynamic splinting
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time (e.g. splint material & POP) • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team & participation in ward rounds • Attitude toward patients, family or carers and colleagues • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented, especially sensation & muscular deficits • Regular re-evaluation of goals and objectives • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Respect for the healing process (after injury or surgery) • Making/Fitting the immobilization (e.g. POP slab, splints & slings) • Supervision of areas that lack sensation • Positioning, massage, static/active exercises to prevent complications • Maintenance or improvement of general condition • Management of pain • Dynamic exercises and active splinting • Sensory rehabilitation • Restoring motor function of the injured limb (e.g. muscle strengthening, proprioception and precision exercises) • Functional training for independence in ADL • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Spinal Cord Injury 5



1 The objective

Through a multidisciplinary team approach, to restore functional independence to the victim of a spinal cord injury (SCI) and ensure optimal use of his[1] wheelchair and/or orthotic device.

2 Indications

All SCI patients, according to the scale established by the American Spinal Injury Association.

3 Contra-indications

3.1.
Rehabilitation should be minimal when a positive functional outcome cannot be expected as a result of age, level of injury (e.g. higher than C6), medical complications, associated diseases, poor social and cultural environment and insufficient patient motivation.

3.2.
Orthotic fitting should be postponed in the event of an open wound, tissue inflammation, swelling, general weakness or pain.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1.
The physiotherapist should know the characteristics of the different levels of SCI, including the phases and the types of rehabilitation related to each of them.

4.2
The physiotherapist should know the variety of orthoses used and the purpose of each.

4.3
The physiotherapist should understand the principles of gait with lower-limb orthoses and the factors (both physical and biomechanical) that affect their use.

4.4
The physiotherapist should know the range of available wheelchairs (e.g. three-wheeler, four-wheeler and tricycle) and the best way to use them.

4.5
The physiotherapist should know the various wheelchair-management techniques and when and how to apply them (e.g. managing slope, curb, stairs) depending on the patient's SCI level.

4.6
The physiotherapist should know the practice of effective hand bandaging (tenodesis for tetraplegics).

4.7
The physiotherapist should understand the principles of SCI, of nursing care and of general hygiene.

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

4.8
The physiotherapist should be aware that the SCI level, pre-existing medical condition and social environment will all affect the final outcome of the rehabilitation.

4.9
The physiotherapist should understand the following points relating to use of orthotics and wheelchairs:
- the static alignment of the orthosis and its effect on pressure distribution
- the mechanism of joint fixation
- the pressure-sensitive areas of the body sitting in a wheelchair or lying in bed
- the different components of the wheelchair and possibilities for influencing stability and mobility
- the basics of wheelchair maintenance.

4.10
The physiotherapist should understand when and how to apply the distinctive phases of a gait-training programme (e.g. progressive static weight bearing, dynamic weight transfers, progressive walking exercises within parallel bars, with or without mobility aids, progressive functional exercises and training according to the home environment).

4.11
The physiotherapist should understand the origin and characteristics of spasticity and the appropriate techniques for reducing it.

4.12
The physiotherapist should understand the major steps in managing bladder and bowel as well as problems relating to sexual dysfunction.

4.13
Physiotherapists should be aware of complications related to the neuro-vegetative system (e.g. autonomic dysreflexia).

5 Required equipment

The physiotherapist should have at his disposal the following items:
- assessment tools (goniometer, measuring tape)
- bandages
- walking aids
- sandbags/weights
- strengthening equipment
- weight scale
- balance tools/push-up handles
- mats
- mirror
- treatment tables
- parallel bars
- gait-training course
- sports equipment
- wheelchair(s)
- standing frame, standing table
- reference documents

6 Patient management

6.1 Multidisciplinary aspects

Where possible in a rehabilitation centre or a hospital, the physiotherapist should take part in the multidisciplinary team together with orthotists, social workers, nurses, neurosurgeons and psychologists. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2 Assessment

6.2.1 Written records should be kept of the patient's diagnosis and history, and of his X-rays and medical and surgical treatment.

6.2.2 The patient's physical status, including level of injury, motor and sensory impairments and general condition, should be recorded.

6.2.3 The patient's social situation, psychological status and expectations should be recorded.

6.2.4 Relevant diseases (e.g. renal disease, vascular disorders and upper-limb status), impaired cognition and other pathologies should be noted.

6.2.5 A treatment plan, including the goals agreed upon by the patient and the rehabilitation team, should be established and regularly re-evaluated.

6.3 Treatment plan

Bed-rest phase

6.3.1 Rehabilitation should ideally begin on the day of the injury and/or just after surgery; in any case, no later than one day after the injury.

6.3.2 The physiotherapist should help prevent all complications (e.g. pressure sores, contractures, muscle atrophy, oedema and respiratory disorders) by means of various techniques such as massage, mobilization, postures and muscle exercises.

6.3.3 The physiotherapist should inform the patient about the physiotherapy treatment and the importance of immobilization when a fracture has not been stabilized.

6.3.4 The physiotherapist should contribute to the management of back/neck pain and neurological pain in the limbs.

6.3.5 The physiotherapist should educate the patient in the prevention of severe spasticity, especially by means of early positioning.

6.3.6 The physiotherapist should improve the general condition (e.g. endurance, function) of the patient by means of muscular and respiratory exercises and general mobilization.

6.3.7 The physiotherapist should prepare the limbs in the following way for the orthotic fitting:

- improving all joints' range of motion and teach self-mobilization when possible
- reducing oedema and maintaining the local vascular system
- increasing the strength of weakened muscles

- increasing neck strength and stability, which should be sufficient in tetraplegics before verticalization
- upper-limb strength should be maximal before transferring out of bed

6.3.8 At the end of this phase, the physiotherapist should train the patient to overcome the loss of vasomotor control and postural sense with frequent change in position and gradual balance exercises.

6.3.9 A wheelchair and walking aids should be provided and the physiotherapist should prepare the patient for their use as early as possible to prevent further complications such as pressure sores and contractures.

Rehabilitation phase

6.3.10 The physiotherapist should check the wheelchair or orthosis for correct and comfortable fit at the beginning of each treatment, until the patient is able to do this for himself. The patient should learn to examine his skin before and after use of the wheelchair or orthosis.

6.3.11 The physiotherapist should continue close supervision of skin and breathing as long as the rehabilitation continues.

6.3.12 The physiotherapist should continue to improve the general condition (e.g. endurance, function and coordination) of the patient with muscular and respiratory exercises and general mobilization.

6.3.13 In order for the patient to adapt to the sitting position, progressive use of a standing table or standing frame is recommended.

6.3.14 The patient should be taught the best way to manage the wheelchair according to his neurological status. If possible, independence in the wheelchair should include management of curbs, slopes and stairs independently or with the help of a trained person.

6.3.15 The physiotherapist should teach the patient all relevant transfers to/from the bed or wheelchair, the toilet and the floor, depending on the level of injury. If possible, this should be accomplished independently or with the help of a trained carer.

6.3.16 With the patient wearing the orthosis, the physiotherapist should first teach him effective control of his limbs through postural control, weight transfers, and specific muscle-strengthening and stretching exercises in order to prevent or correct unnecessary gait deviations.

6.3.17 Under the physiotherapist's guidance, the gait training should then be built up gradually, starting within the parallel bars, and progress to walking aids such as a walking frame and axillary or elbow crutches. Moving about inside and outside the home environment should be practiced as well.

6.3.18 In the end, the physiotherapist should teach the patient a range of functional tasks relevant to the goals set for him, such as setting himself down on and getting up off the floor, getting into and out of a car, going up and down stairs and slopes, moving about in a crowded environment, and picking up objects from the floor.

6.3.19 Orthotic rehabilitation should aim to establish an energy-effective gait, based on a normal physiological walking pattern.

6.3.20 During the entire rehabilitation programme, the physiotherapist should work alongside other professionals to assess the orthotic and/or wheelchair fit.

6.3.21 The physiotherapist, the orthotist and/or a medical doctor should together review all fitted patients on a regular basis.

6.3.22 Patients should be given instructions on proper orthosis and wheelchair use, with particular attention to pressure-sensitive areas of the limbs.

6.3.23 Guidance should be given on daily care of the orthoses and socks, as well as hygiene related to the limbs (especially the feet).

6.3.24 Though bladder and bowel management should be left to a trained nurse, the physiotherapist should be able to participate actively in the education of the patient regarding the bladder and the bowels.

Discharge and follow-up

6.3.25 A final evaluation should be carried out and a summary made of the patient's function and wheelchair mobility. The discharge date should be recorded in the treatment file.

6.3.26 Advice should be given to the patient regarding limb, orthosis and wheelchair care (such as cleaning the device and changing the shoe without influencing the appliance's alignment).

6.3.27 A home-exercise programme should be discussed between the patient, his family and the physiotherapist for the upper and lower-limbs and the rest of the body. Specific advice should be given on skin protection and breathing.

6.3.28 When possible, simple adaptations of the patient's home should be made with the physiotherapist's help.

6.3.29 After discharge, a follow-up appointment should be fixed to review the patient's progress.

7 Remarks

7.1 A hands-on approach (close professional physical contact) is encouraged in physiotherapy.

7.2 In the bed-rest phase, the physiotherapeutic treatment starts the day after surgery.

7.3 During the rehabilitation phase, a minimum of 30 minutes of individual treatment plus 30 minutes of group exercises a day is recommended for each patient.

7.4 The provision of a bed may be recommended for high-level SCI patients to prevent complications, ease independence and care.

7.5 Additional equipment might be necessary for special-needs patients (e.g. dressing material for patients suffering from pressure sores or adaptive devices for tetraplegics) in order to prevent further complications.

7.6 For patients with a C7 or higher neurological level, special care should be taken of the hands: a splint to help tenodesis function and positioning are necessary.

7.7
For patients with abnormal hand function, adaptive devices should be provided, such as grip enlargements, wheeling gloves and writing splints.

7.8
The wheelchair should be regularly cleaned and maintained, all its parts oiled and checked, and the cushion washed when necessary.

7.9
It is strongly recommended that the physiotherapy file be included in the hospital or P&O file.

7.10
Patient-information leaflets about spinal cord injuries should be made available.

7.11
Social integration activities and sports should be encouraged.

7.12
Active participation by the patient's family is often essential and should be encouraged.

Patient Name _____

Examiner Name _____ Date/Time of Exam_____

ASIA
AMERICAN SPINAL INJURY ASSOCIATION

STANDARD NEUROLOGICAL CLASSIFICATION OF SPINAL CORD INJURY

ISCOS

MOTOR

KEY MUSCLES
(scoring on reverse side)

	R	L	
C5	☐	☐	Elbow flexors
C6	☐	☐	Wrist extensors
C7	☐	☐	Elbow extensors
C8	☐	☐	Finger flexors (distal phalanx of middle finger)
T1	☐	☐	Finger abductors (little finger)

UPPER LIMB TOTAL (MAXIMUM) ☐ + ☐ = ☐ (25) (25) (50)

Comments:

L2	☐	☐	Hip flexors
L3	☐	☐	Knee extensors
L4	☐	☐	Ankle dorsiflexors
L5	☐	☐	Long toe extensors
S1	☐	☐	Ankle plantar flexors

Voluntary anal contraction (Yes/No) ☐

LOWER LIMB TOTAL (MAXIMUM) ☐ + ☐ = ☐ (25) (25) (50)

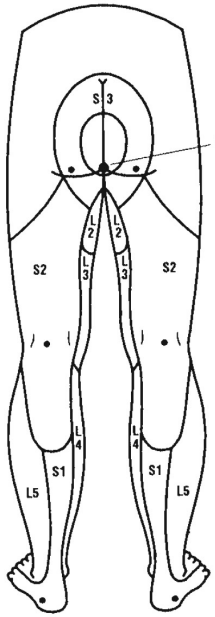
SENSORY

KEY SENSORY POINTS

	LIGHT TOUCH R	LIGHT TOUCH L	PIN PRICK R	PIN PRICK L
C2				
C3				
C4				
C5				
C6				
C7				
C8				
T1				
T2				
T3				
T4				
T5				
T6				
T7				
T8				
T9				
T10				
T11				
T12				
L1				
L2				
L3				
L4				
L5				
S1				
S2				
S3				
S4-5				

TOTALS (MAXIMUM) (56) (56) (56) (56)

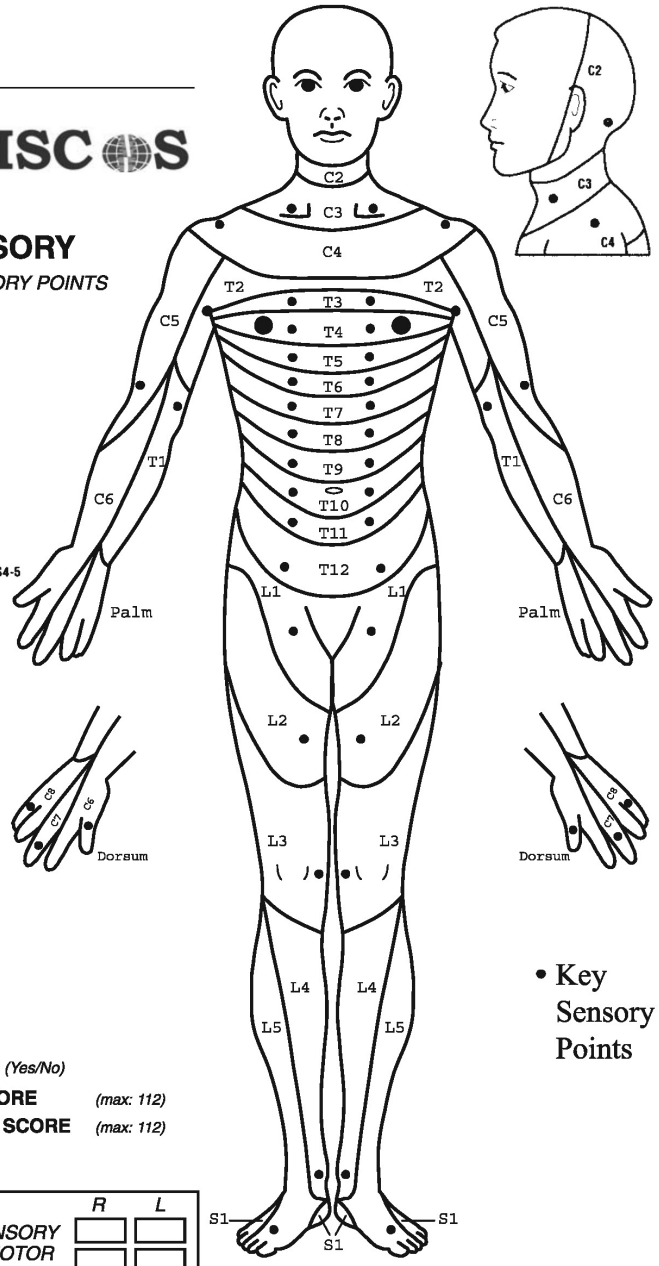
0 = absent
1 = impaired
2 = normal
NT = not testable



Any anal sensation (Yes/No) ☐

PIN PRICK SCORE (max: 112) ☐ + ☐ = ☐

LIGHT TOUCH SCORE (max: 112) ☐ = ☐



• Key Sensory Points

NEUROLOGICAL LEVEL		R	L
The most caudal segment with normal function	SENSORY	☐	☐
	MOTOR	☐	☐

COMPLETE OR INCOMPLETE? ☐
Incomplete = Any sensory or motor function in S4-S5

ASIA IMPAIRMENT SCALE ☐

ZONE OF PARTIAL PRESERVATION		R	L
Caudal extent of partially innervated segments	SENSORY	☐	☐
	MOTOR	☐	☐

REV 03/06

MUSCLE GRADING

0 total paralysis

1 palpable or visible contraction

2 active movement, full range of motion, gravity eliminated

3 active movement, full range of motion, against gravity

4 active movement, full range of motion, against gravity and provides some resistance

5 active movement, full range of motion, against gravity and provides normal resistance

5* muscle able to exert, in examiner's judgement, sufficient resistance to be considered normal if identifiable inhibiting factors were not present

NT not testable. Patient unable to reliably exert effort or muscle unavailable for testing due to factors such as immobilization, pain on effort or contracture.

ASIA IMPAIRMENT SCALE

☐ **A** = **Complete**: No motor or sensory function is preserved in the sacral segments S4-S5.

☐ **B** = **Incomplete:** Sensory but not motor function is preserved below the neurological level and includes the sacral segments S4-S5.

☐ **C** = **Incomplete:** Motor function is preserved below the neurological level, and more than half of key muscles below the neurological level have a muscle grade less than 3.

☐ **D** = **Incomplete:** Motor function is preserved below the neurological level, and at least half of key muscles below the neurological level have a muscle grade of 3 or more.

☐ **E** = **Normal:** Motor and sensory function are normal.

CLINICAL SYNDROMES (OPTIONAL)

☐ Central Cord
☐ Brown-Sequard
☐ Anterior Cord
☐ Conus Medullaris
☐ Cauda Equina

STEPS IN CLASSIFICATION

The following order is recommended in determining the classification of individuals with SCI.

1. Determine sensory levels for right and left sides.
2. Determine motor levels for right and left sides.
   Note: in regions where there is no myotome to test, the motor level is presumed to be the same as the sensory level.
3. Determine the single neurological level.
   This is the lowest segment where motor and sensory function is normal on both sides, and is the most cephalad of the sensory and motor levels determined in steps 1 and 2.
4. Determine whether the injury is Complete or Incomplete (sacral sparing).
   If voluntary anal contraction = **No** *AND all S4-5 sensory scores* = **0** *AND any anal sensation* = **No**, *then injury is COMPLETE. Otherwise injury is incomplete.*
5. Determine ASIA Impairment Scale (AIS) Grade:

Is injury <u>Complete</u>? If **YES**, AIS=A Record ZPP (For ZPP record lowest dermatome or myotome on each side with some (non-zero score) preservation)

NO ↓

Is injury motor <u>incomplete</u>?

If **NO**, AIS=B (Yes=voluntary anal contraction OR motor function more than three levels below the motor level on a given side.)

YES ↓

Are <u>at least</u> half of the key muscles below the (single) <u>neurological</u> level graded 3 or better?

NO ↓ AIS=C

YES ↓ AIS=D

If sensation and motor function is normal in all segments, AIS=E
Note: AIS E is used in follow up testing when an individual with a documented SCI has recovered normal function. If at initial testing no deficits are found, the individual is neurologically intact; the ASIA Impairment Scale does not apply.

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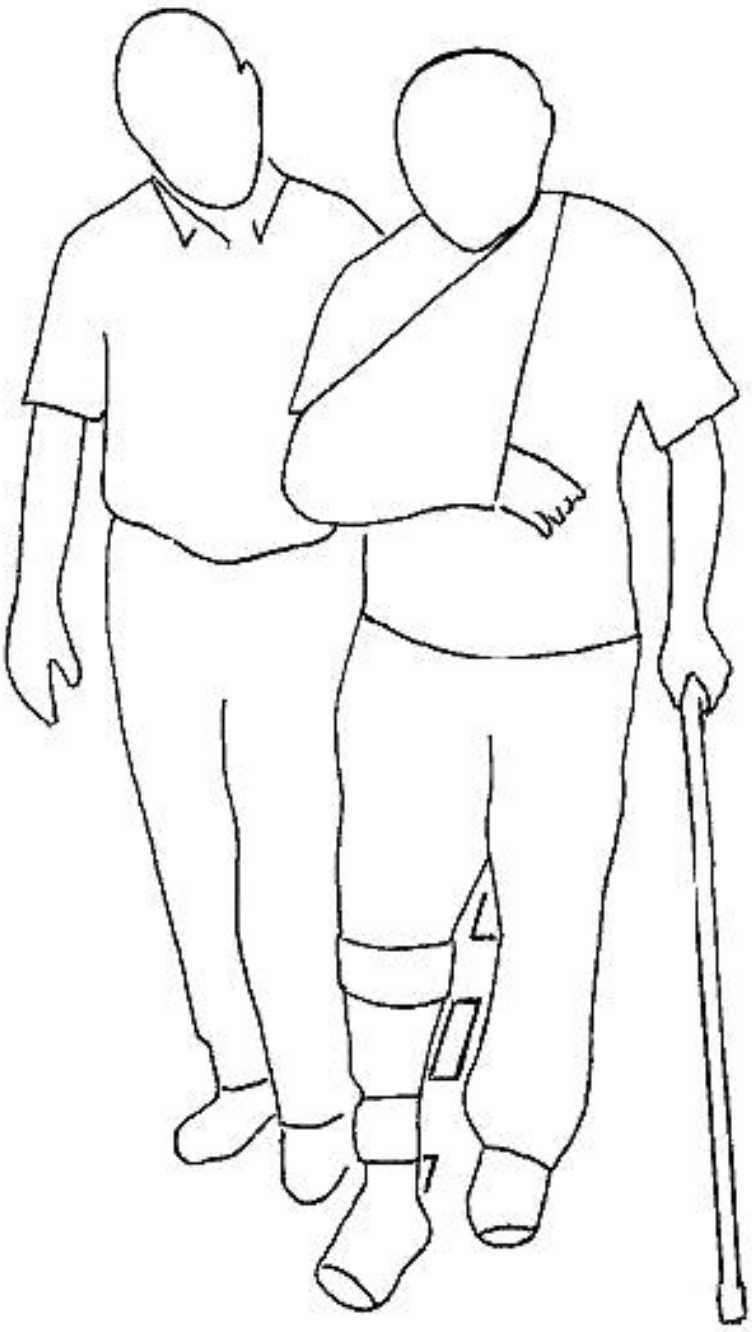
Patient management evaluation form: Spinal Cord Injury

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology, rehabilitation stages and level of injury • Management of bladder and bowel • Orthotic and wheelchair knowledge (e.g. components, orthotic gait, alignment, fittings) • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time, splint material & POP • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team • Attitude toward patients, family or carers and colleagues • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented, especially capacity to do muscle testing • Regular re-evaluation of goals and objectives at all four stages of the illness • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Positioning, chest therapy and ROM during acute phase to prevent complications • Management of pain, skin and spasticiy • Maintenance or improvement of general condition • Preparatory exercises for mobilization in wheelchair (e.g. ROM & strengthening exercises) • Hand function (e.g. tenodesis in tetraplegics) • Wheelchair training (e.g. transfers, in and outside obstacles management) • Gait training and correction of gait deviation with orthoses • Functional training for independence in ADL • Daily care of the orthoses and wheelchair • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Instruction provided to carers for the long term • Motivation provided for return to work or social activity (e.g. sports) • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Central Nerve Injury/Stroke 6



1 The objective

Through a multidisciplinary team approach, to restore the greatest possible functional independence.

2 Indications

All patients with stroke (e.g. caused by haemorrhage, ischemia, tumour).

3 Contra-indications

3.1.
Rehabilitation should be minimal when a positive functional outcome cannot be expected owing to age, type of stroke, medical complications, associated diseases, poor social and cultural environment and insufficient patient motivation.

3.2.
Orthotic fitting should be postponed in the event of an open wound, tissue inflammation, swelling, general weakness or pain.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1.
The physiotherapist should know the causes and symptoms of strokes and their prognoses.

4.2.
The physiotherapist should understand the relevant principles of physiology and the anatomy of the brain and central nervous system.

4.3
The physiotherapist should know the specific characteristics of a right and a left hemiplegic syndrome and of the lesion concerned.

4.4
The physiotherapist should be knowledgeable about nursing care and hygiene relating to the possible skin, breathing and incontinence complications.

4.5
The physiotherapist should be aware that the extent of brain damage, pre-existing medical conditions and the social environment will all affect rehabilitation.

4.6
The physiotherapist should understand when and how to apply the distinctive phases of the gait-training programme if necessary (e.g. progressive static weight bearing, dynamic weight transfers, walking exercises with or without mobility aids, progressive functional exercises and training according to the home environment).

4.7
The physiotherapist should know the variety of orthoses used and the purpose of each.

4.8
The physiotherapist should understand the principles of gait with lower-limb orthoses and the factors (both physical and biomechanical) that affect their use.

4.9
The physiotherapist should know the range of available wheelchairs (three-wheeler, four-wheeler and tricycle) and the best way to use them.

4.10
The physiotherapist should know the various wheelchair-management techniques and when and how to apply them (e.g. management of slope, curb, stairs) depending on the patient's status.

5 Required equipment

The physiotherapist should have at his[1] disposal the following materials and equipment:
- assessment tools: goniometer, pain scale
- bandages
- walking aids
- sandbags/weights
- strengthening equipment
- weight scale
- balance tools/push-up handles
- mats
- mirror
- treatment table
- parallel bars
- gait-training course
- sports equipment
- wheelchair
- standing frame, standing table
- reference documents

6 Patient management

6.1 Multidisciplinary aspects
Where possible in a rehabilitation centre or a hospital, the physiotherapist should contribute to the multidisciplinary team, together with nurses and doctors, social workers, occupational therapists and orthotists. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2 Assessment

6.2.1 Written records should be kept of the patient's diagnosis and history, and of his medical and (where applicable) surgical treatment.

6.2.2 The patient's physical status and any wheelchair adaptation should be recorded on a standard assessment form. Patients should preferably be assessed by a physiotherapist within 48 hours of admission.

6.2.3 The patient's social situation, psychological status and expectations should be recorded.

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

6.2.4 Relevant diseases (e.g. diabetes, vascular disorders), impaired cognition and other pathologies or disabilities should be noted.

6.2.5 A treatment plan, including the goals agreed upon by the patient and the rehabilitation team, should be established and regularly re-evaluated.

6.2.6 Goals should be meaningful and challenging but achievable. There should be both short- and long-term goals.

6.2.7 Where possible and available, the physiotherapist should use assessments or measures that have been studied in terms of validity and reliability.

6.2.8 Patients should be reassessed at appropriate intervals.

6.3 Treatment plan

Rehabilitation phase

6.3.1 The rehabilitation starts as soon as possible and continues as long as the patient is improving his functional skills.

6.3.2 The physiotherapist should inform the patient about the physiotherapeutic treatment he will be receiving and help prevent complications (e.g. aspiration and other breathing difficulties, shoulder pain, excessive muscle atrophy, contractures, blood circulation, skin sores, and oedema) by means of various techniques, such as positioning, mobilizations and chest physiotherapy. The same explanation should be given to staff and others looking after the patient.

6.3.3 The following methods of preventing shoulder pain should receive special attention:

- avoid using overhead arm slings, which can lead to uncontrolled movement
- use foam supports
- positioning
- inform staff and other care-givers about the correct handling of the hemiplegic arm

6.3.4 The physiotherapist should improve the patient's general condition (e.g. endurance, aerobic activity and coordination) by means of muscular and respiratory exercises and general mobilization. Resisted exercise should be considered to increase strength in key muscles.

6.3.5 All patients with stroke should be asked regularly whether pain is a significant problem or a factor contributing to their current clinical state. If significant pain is noted, the treatment should be adapted to reduce the intensity of the treatment and correct the joint alignment.

6.3.6 All members of the multidisciplinary team should take into consideration the patient's cognitive status (e.g. ability to understand, speak and read, body and environment perception) when planning and administering treatment.

6.3.7 For every patient with impaired spatial awareness, therapy sessions will have to be modified to cue attention to the impaired side.

6.3.8 For persons with memory difficulties, the physiotherapist should use techniques that capitalize on preserved abilities, e.g. visualization versus verbalization.

6.3.9 People who appear easily distracted or unable to concentrate require carefully managed therapy sessions to minimize the demands on their attention.

6.3.10 The physiotherapist should assist the bladder- and bowel-management units in establishing assessment and managing protocol for both urinary and faecal incontinence and for constipation.

6.3.11 The physiotherapist should be able to regulate or to try to keep the tone under control if it is causing functional problems (taking account of possible drugs). Spasticity should not limit the use of strength training.

6.3.12 The physiotherapist should help the patient to get out of bed and sit in a comfortable chair as soon as he is able to do so.

6.3.13 The physiotherapist should be able to facilitate the correction of trunk asymmetry and loading on the affected body side.

6.3.14 Intensive therapy for the upper limb should be considered to improve arm function (e.g. loading, bilateral arm training and functional tasks).

6.3.15 Walking sticks and/or ankle-foot orthoses should be considered to increase standing stability and walking possibilities for patients with severe disability. Gait re-education techniques should be provided to improve walking ability and to allow the patient to move safely.

6.3.16 The physiotherapist should eventually teach the patient a range of functional tasks relevant to the goals set him, such as setting himself down on and getting up off the floor, getting into and out of a car, going up and down stairs, walking in a crowded environment, increasing walking speed, and picking objects up from the floor.

6.3.17 Patients and their families should be offered educational programmes to help them adapt to their new situation. Information on the nature of stroke and its manifestations, such as cognitive loss, urinary incontinence and irritability, should be made freely available and handed out.

Discharge and follow-up

6.3.18 The team should systematically promote the incorporation of skills gained in therapy into the patient's daily routine.

6.3.19 A final evaluation should be carried out and a summary of the patient's function and mobility at discharge date should be recorded in the treatment file.

6.3.20 Advice should be given to the patient regarding limb care, orthotic and wheelchair care (such as cleaning devices and changing the shoe without influencing the alignment of the appliance).

6.3.21 Advice should be given to the patient regarding life after he is discharged from the rehabilitation setting. For example, he should stop smoking, get regular exercise, maintain a satisfactory weight, reduce the intake of salt and avoid excessive alcohol.

6.3.22 A home-exercise programme should be discussed between the patient, his family and the physiotherapist to optimize his condition.

6.3.23 A follow-up appointment should be fixed to review the patient after discharge.

7 Remarks

7.1 A hands-on approach (close professional physical contact) is encouraged in physiotherapy. However, it should be hands-off in the last few weeks before discharge.

7.2 In the acute phase, the physiotherapy treatment should start as soon as possible.

7.3 As soon as possible, rehabilitation should be focused on retraining for functional tasks.

7.4 A daily minimum of 30 minutes of individual treatment plus 30 minutes of self-exercises or group training is recommended for every patient.

7.5 Patients should be given the opportunity to repeatedly practise functional skills and activities.

7.6 Patients should undergo as much therapy appropriate to their needs as they are willing and able to tolerate.

7.7 For chronic stroke patients, the treatment is often restricted to tending to contractures and pain. In these cases, maximum independence should be encouraged, if not achieved over the short term.

7.8 In some cases, realignment treatment and general advice should be given to improve the already developed compensatory movements allowing functional activities.

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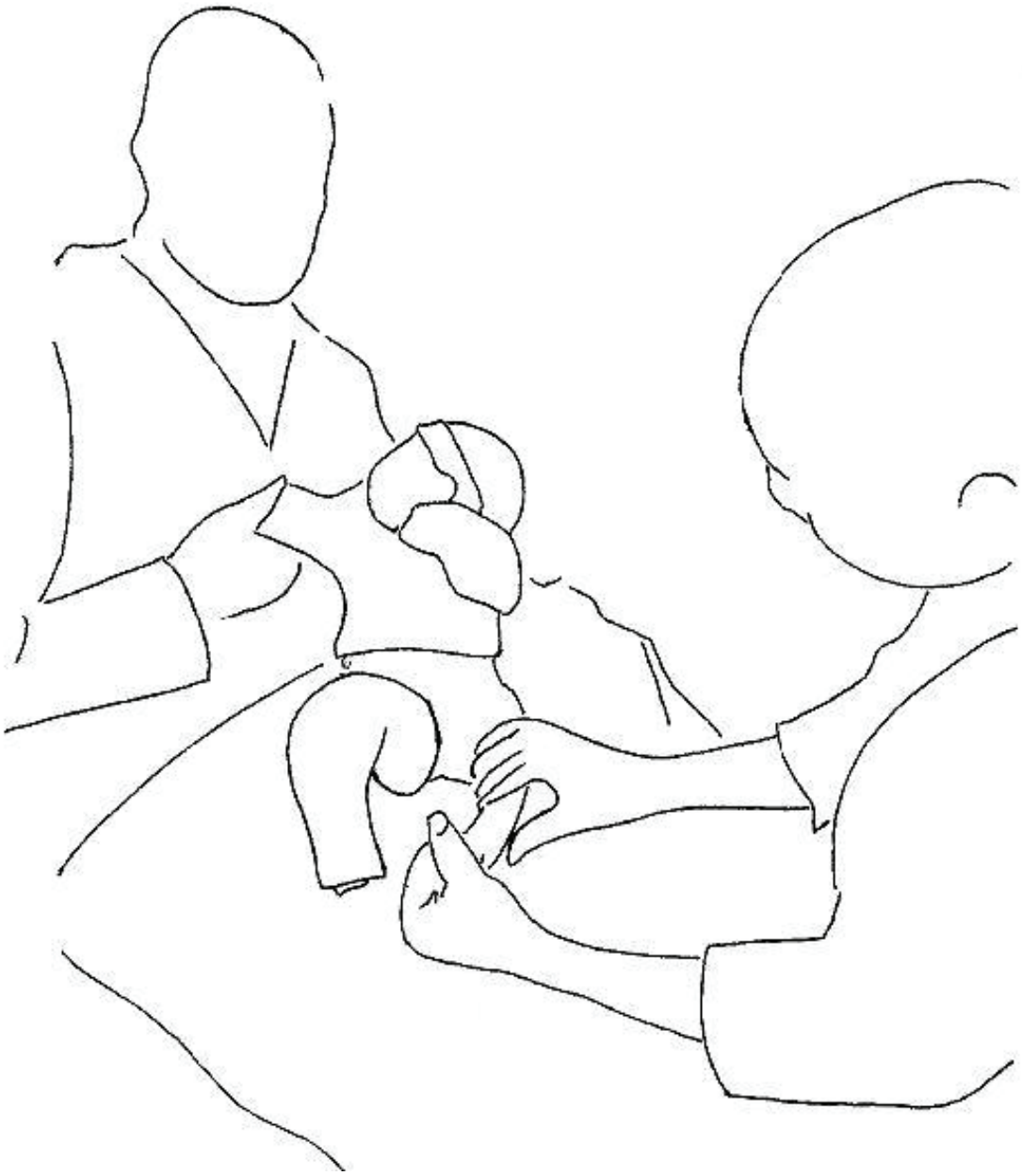
Patient management evaluation form: Stroke

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology, stages and level of disability • Orthotic and wheelchair knowledge (e.g. components, orthotic alignment, fittings) • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time, splint material • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team • Attitude toward patients, family or carers and colleagues • Ability to work with cognitively impaired people • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented • Regular re-evaluation of goals and objectives • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Positioning and mobilization techniques • Prevention of complications (e.g. skin, incontinence, swallowing) • Management of pain and spasticity • Maintenance or improvement of general condition (e.g. endurance) • Exercises preparatory to fitting the orthoses (e.g. ROM & strengthening exercises) • Training in use of the orthotic devices (postural control, weight transfer, hand splint) • Progressive gait training and correction of gait deviation • Functional training for independence in ADL • Daily care of the orthosis • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Instruction provided to carers in this lifelong disability • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Club foot 7



1 The objective

Through a multidisciplinary team approach, to reduce or eliminate the foot deformity, aiming at regaining complete functionality and preventing complications.

2 Indications

All patients suffering from a congenital club foot.

3 Contra-indications

3.1.
When there is no possibility at all for follow-up.

3.2.
In cases of resistant club foot and/or ankylosis.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1
The physiotherapist should know the classification of different types of club foot and their pathologies.

4.2
The physiotherapist should understand the complexity of foot and lower-limb movement.

4.3
The physiotherapist should know the different techniques of manual correction and immobilization of foot deformities (e.g. the Ponseti method), and their potential complications.

4.4
The physiotherapist should understand how to select the best orthotic devices.

4.5
The physiotherapist should understand the principles of surgery for club foot and post-operative treatment.

4.6
The physiotherapist should be aware of X-ray interpretations in the orthopaedic sphere.

5 Required equipment

5.1
The physiotherapist should work in an appropriate room in order to treat the patient in a calm and child-friendly environment and to involve his[1] family in the treatment.

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

5.2

The physiotherapist should have at his disposal the following materials and equipment:

- POP equipment: POP bandages (different sizes), cotton, Lorenz's shears, cast spreader, plaster knife, cast-bending forceps, oscillating saw, scissors, water basin, tubular bandages/stockinet (different sizes), plastic bucket for POP application, plastic sheet, 2.5-cm tape.
- for manual techniques and muscle stimulation: talcum powder, soft toothbrush, etc.
- for bracing: Dennis Brown brace
- for exercises, gait training, functional training: walking aids/orthopaedic shoes, parallel bars, push trolley, trampoline, balls, toys, balance tools, strengthening equipment, mats, bicycle

6 Patient management

6.1 Multidisciplinary aspects

The physiotherapist should contribute to the multidisciplinary team, together with surgeons, doctors, nurses, social workers, midwives, orthotists/shoemakers and other health professionals. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2 Assessment

6.2.1 Written records should be kept of the patient's diagnosis and history, including X-rays and medical history, and medical and surgical treatment.

6.2.2 The patient's physical status, including club foot type and other pathologies or deformities, should be noted.

6.2.3 The patient's social situation and family attitude, psychological status and expectations should be taken into account.

6.2.4 A treatment plan, including the goals agreed upon by the patient, his family and the medical team, should be drawn up and regularly re-evaluated.

6.2.5 Each act of physiotherapy should be recorded.

6.3 Treatment plan

6.3.1 The treatment should start as soon as possible after birth.

6.3.2 Accessibility to continued treatment should be ensured.

6.3.3 The family members should be actively involved in the treatment. The full compliance of parents is necessary to assure the long-term success of the treatment.

6.3.4 The treatment techniques include massage, stretching, manual mobilizations, muscle stimulations and immobilizations (e.g. POP, braces and corrective shoe wear).

6.3.5 The physiotherapist should start with massage of the contracted soft tissues of the foot and leg, followed by manual stretching.

6.3.6 The physiotherapist should correct the foot deformities by means of manual mobilizations, respecting the proper order to prevent rocker bottom (first cavus, after abduction, then equinus as advised by Ponseti).

6.3.7 Weak and overstretched muscles should be manually stimulated.

6.3.8 The physiotherapist should apply immobilization techniques after manual stretching and mobilization to maintain the correction.

6.3.9 The type of immobilization should be adapted to the severity of the deformity and the age of the patient.

6.3.10 Immobilization applications for small children should be changed weekly or more often where necessary. Serial POP casts is recommended and preferred to taping techniques.

6.3.11 If no progress in correction is obtained within six weeks, especially for the equinus, advice from an experienced orthopaedic surgeon should be sought (e.g. for small children, Ponseti advises total tenotomy).

6.3.12 Following correction, the physiotherapist should discuss with the surgeon and orthotist/shoemaker the choice of the orthopaedic device. For small children a Dennis Brown brace should be proposed according to Ponseti protocol (for three or four years).

6.3.13 The physiotherapist should ensure the family's understanding of and participation in the treatment.

6.3.14 During the walking phase, the physiotherapist should work to prevent a recurrence of deformities by means of strengthening and proprioceptive exercises and gait training and by having the patient put on a Dennis Brown brace at night.

6.3.15 In the event of surgery, the physiotherapist should remain involved in post-operative management, contributing to the prevention of complications.

Discharge and follow-up

6.3.16 A final evaluation should be carried out and a summary of the patient's function and mobility at the discharge date should be recorded in his file.

6.3.17 A home programme with self-training exercises should be discussed between the patient, his family and the physiotherapist.

6.3.18 A follow-up appointment should be fixed to review the patient's progress after discharge and the persistence of parents' compliance at this stage.

6.3.19 Regular check-ups are essential at least until the age of eight.

6.3.20 The importance of follow-up should be explained to the patient and his family.

7 Remarks

7.1 For conservative treatment, best results are gained in the first three months after birth.

7.2 If the patient's home is a long distance from the rehabilitation centre, admission to the dormitory is recommended during serial castings.

7.3 Achieving a positive functional outcome depends on the type of foot deformity, age, secondary causes such as spina bifida and long-term compliance with the bracing protocol.

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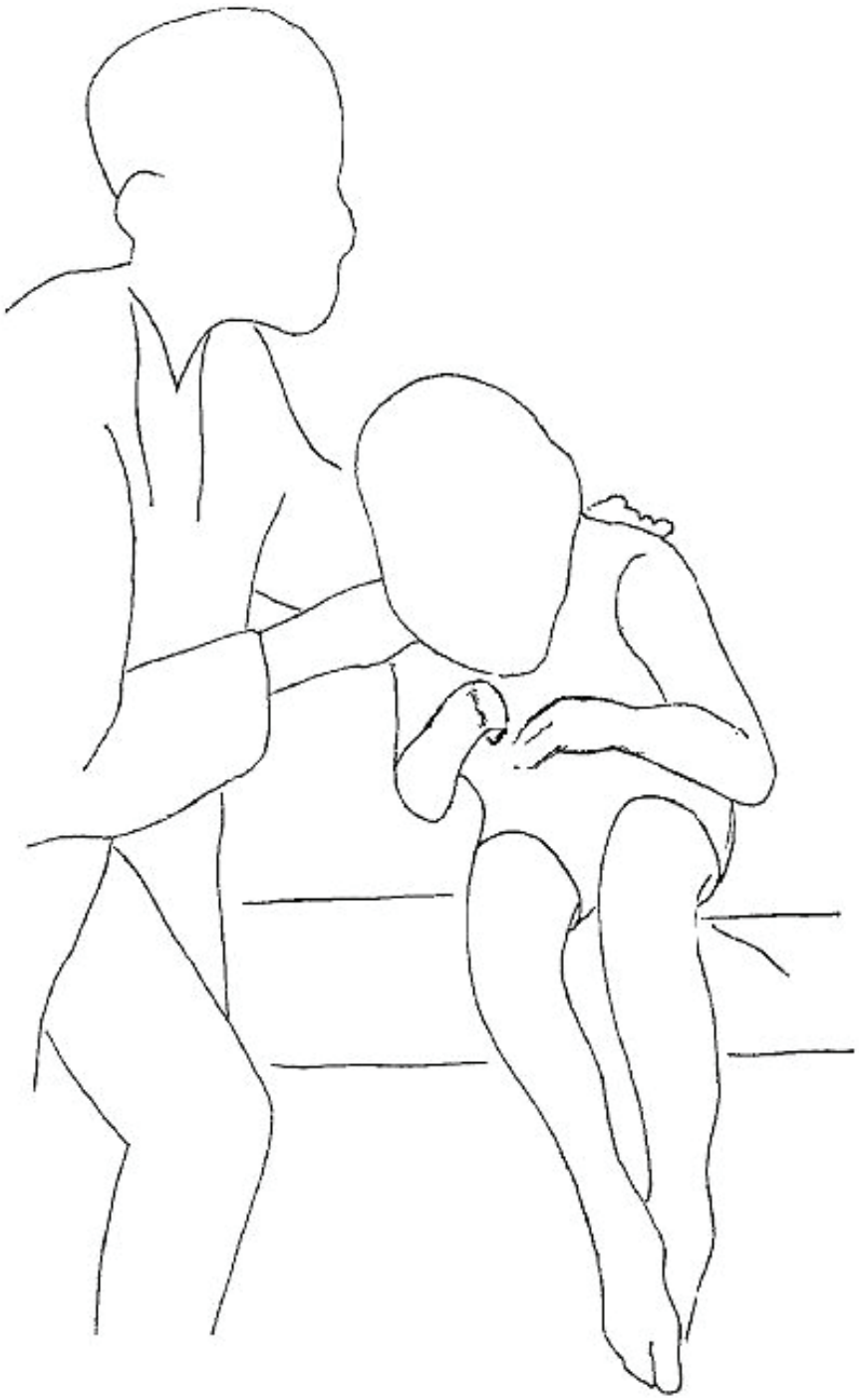
ICRC Code: LMEDPHYSPPEN

Patient management evaluation form: Club foot

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology, stages and level of disability • Orthotic knowledge (e.g. components, alignment, fittings) • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time, splint material & POP • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team (e.g. with orthopaedic surgeons) • Attitude toward patients, parents or carers and colleagues • Ability to work with children • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented • Regular re-evaluation of goals and objectives at the different stages • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Positioning and mobilization of lower-limb joints • Ponseti approach, corrective plaster, splinting • Maintenance of motor developpement (strength, coordination, changes of position) • Exercises preparatory to fitting the orthosis (e.g. ROM & strengthening exercises) • Adaptation to device • Gait training and correction of gait deviation (with older children) • Functional training for independence in ADL • Daily care of the orthosis by the parents or under their supervision • Weekly or monthly evaluation of the progression • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Instruction provided to parents in this lifelong treatment • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Cerebral Palsy 8



1 The objective

Through a multidisciplinary team approach, to improve the functions of the child with cerebral palsy (CP) and to prevent secondary impairments due to CP.

2 Indications

All children suffering from CP.

3 Contra-indications

CP rehabilitation should be avoided when a positive or minimal functional outcome cannot be expected.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1
The physiotherapist should know the causes and symptoms of CP and its prognosis.

4.2
The physiotherapist should understand the classification of different types of CP according to muscle tone (e.g. spastic, athetoid, ataxic or combined).

4.3
The physiotherapist should understand the classification of different types of CP according to topographic classification (e.g. monoplegia, diplegia, hemiplegia, tetraplegia).

4.4
The physiotherapist should know the different orthoses that might be prescribed as well as how to use them and what benefits they provide.

4.5
The physiotherapist should know specific techniques such as:
- tonus regulation techniques
- facilitation techniques
- specific ones for functional training of CP children

4.6
The physiotherapist should have additional knowledge of genetic disorders and pathologies similar to CP.

5 Required equipment

5.1
The physiotherapist should work in an appropriate room in order to be able to treat the patient in a calm and child-friendly environment.

5.2

The therapist should have the following materials and equipment at his[1] disposal:

- basic items: gymnastic balls of different sizes and rolls, pillows and mattresses of different sizes and shapes
- assessment tools: goniometer, measuring tape, plumb line
- mirror
- neurological treatment table
- large variety of toys to stimulate the child through his various senses: vision, hearing and touch
- special equipment such as a corner-chair, special seating, adapted wheelchairs and a standing frame
- reference documents

6 Patient management

6.1 Multidisciplinary aspects

The physiotherapist should contribute to the multidisciplinary team, together with surgeons, doctors, nurses, social workers, midwives, orthotists, speech therapists, occupational therapists and other health professionals. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2 Assessment

6.2.1 Written records should be kept of the patient's diagnosis and history, with complete clinical evaluation of function and tone, reporting of contractures, etc.

6.2.2 The patient's social situation, his family's attitude, and his psychological status and expectations should all be taken into account.

6.2.3 Each act of physiotherapy should be properly recorded and any changes in treatment documented.

6.2.4 A treatment plan, including the goals agreed upon by the family and the rehabilitation team, should be drawn up and regularly re-evaluated.

6.3 Treatment plan

6.3.1 The treatment should start as soon as possible after birth: an early diagnosis is crucial for the functional outcome of the treatment.

6.3.2 The physiotherapist should explain the following to the family: the nature of CP, their expectations regarding their child's response to therapy and the importance of their playing an active role in that therapy.

6.3.3 The physiotherapist should encourage positions that the child can manage at his stage of development. Assistive devices can be used in order to help the child achieve a better position in the limited period available.

6.3.4 The physiotherapist should improve the child's daily function with appropriate functional exercises adapted to his age, for example, lying, rolling and twisting, crawling, sitting, moving around, standing, using his hands–that is to say, playing.

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

6.3.5 The physiotherapist should use stimulation and facilitation techniques to make a particular movement occur as a response and give the child the correct instructions in order to make him perform a movement correctly.

6.3.6 The physiotherapist should prefer exercises that do not increase spasticity, but rather help to relax the spastic muscles.

6.3.7 When needed, the physiotherapist should make use of techniques that regulate muscle tone and prevent spasticity, prior to active exercises.

6.3.8 The physiotherapist should prevent contractures and loss of range of motion by means of corrective positioning and stretching techniques, giving priority to active exercises over passive mobilization.

6.3.9 The physiotherapist should train the child to improve his body balance while, for instance, lying, sitting, crawling, and standing.

6.3.10 The physiotherapist should teach the child new skills, stage by stage, at his own speed (not too fast, and not too slow) with time, energy and patience, according to the "child developmental milestones."

6.3.11 The physiotherapist should teach the child activities of daily life (ADL) and self-care: eating, dressing, washing, toileting and so on. He should promote and help improve language and communication skills.

6.3.12 If necessary, the physiotherapist should adapt tools and objects for the child's use in his ADL.

6.3.13 The physiotherapist should teach the family how and when to help or to not help the child.

6.3.14 In the event of surgery, the physiotherapist should remain involved in post-operative management, helping to prevent complications.

6.3.15 If tone-reducing medication is necessary, it should, ideally, be preceded by consultations between the physiotherapist and the paediatric neurologist.

6.3.16 Consultations between the physiotherapist and the orthotist should take place if an orthosis or other orthopaedic equipment is needed.

6.3.17 The physiotherapist should first teach effective control of the orthosis through postural control, weight transfers and training of proprioception with a view to enabling the patient to gradually acquire a functional gait with or without walking aids.

6.3.18 Led by the physiotherapist, the training should then be built up gradually, starting within the parallel bars, progressing with or without walking aids and, if possible, ending within the home environment.

6.3.19 Orthotic rehabilitation should aim to establish a functional gait, based on a normal physiological walking pattern.

6.3.20 During the entire rehabilitation programme, the physiotherapist, alongside other professionals, should help evaluate the fitting and adjustment of the dynamic alignment of the orthosis.

Discharge and follow-up

6.3.21 CP treatment is a lifelong treatment requiring the caretaker's involvement.

6.3.22 For the treatment's continuation, advice and directives for daily care and exercises should be given to the child and his family.

6.3.23 Home-care visits are highly recommended to ensure that the child is progressing.

6.3.24 Integration – in school and in the wider society – is highly recommended for CP children. The physiotherapist should promote this as much as possible.

7 Remarks

7.1 Since the therapy is intensive and visible improvement often relatively small, keep in mind that motivating and encouraging the child and his family is extremely important, and will have a bearing on the eventual result of the therapy.

7.2 Children learn much faster through playing.

7.3 For CP children, a hands-on approach in physiotherapy is essential for a positive outcome.

7.4 A minimum of one hour of individual treatment daily is recommended.

7.5 The physiotherapist is strongly advised to include the physiotherapy file in the hospital or P&O file.

7.6 Information leaflets and posters should be made available to the family.

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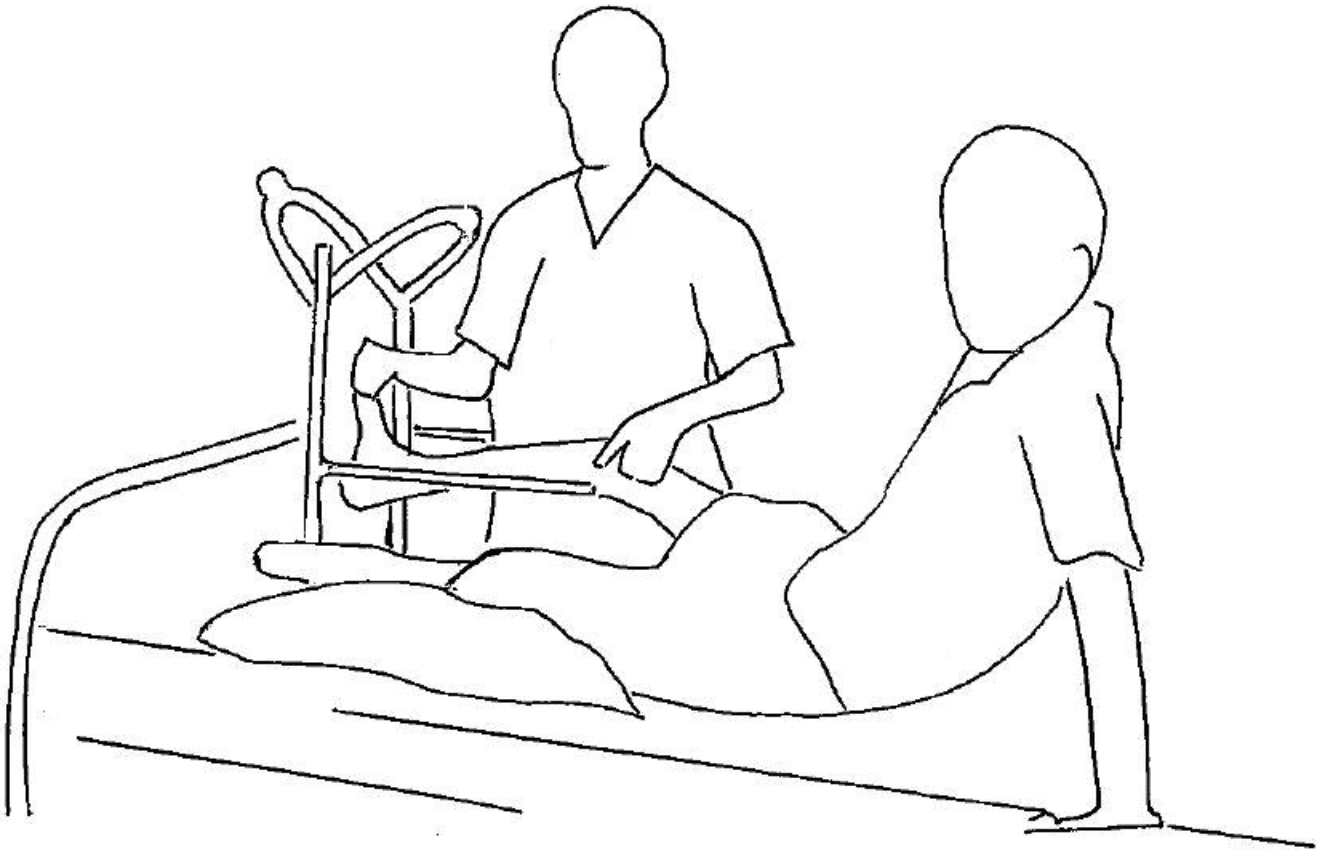
Patient management evaluation form : Cerebral Palsy

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology, types of disability • Orthotic and wheelchair knowledge (e.g. components, orthotic alignment, fittings) • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time, splint material & POP • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team (e.g. surgeons) • Attitude toward patients, parents or carers and colleagues • Ability to work with children • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented, especially capacity to do muscle testing • Regular re-evaluation of goals and objectives throughout the years • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Positioning and mobilization of joints • Management of spasticity & adequate handling • Facilitation of movement to develop new skills • Maintenance or improvement of general or specific condition (e.g. swallowing) • Exercises preparatory to fitting the orthosis (e.g. ROM & strengthening exercises) • Training in use of the orthosis (postural control, weight transfer) • Gait and wheelchair training and correction of gait deviation • Functional training for independence in ADL • Daily care of the orthosis by the parents or under their supervision • Adaptation of corrective techniques if necessary (e.g. corrective plaster, stretching, splinting) • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Instruction provided to parents in this lifelong treatment • Stimulation for education or integration with other children • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Lower-Limb Fracture 9



1 The objective

Through a multidisciplinary team approach, to restore the patient's functional independence in the minimum possible time after the fracture occurred.

2 Indications

All patients with lower-limb fractures.

3 Contra-indications

3.1
The fracture treatment may not be the priority in cases of fractures combined with other injuries (e.g. open wounds, injuries to vital organs). However, suitable initial immobilization is always necessary.

3.2
The treatment of the fracture is not the priority in case of compartment syndrome. Even initial immobilization may have to be kept to a minimum.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1
The physiotherapist should know the different types of fractures and consolidation processes.

4.2
The physiotherapist should understand the principles of surgical procedures related to the management of fractures and wounds with fractures, basic nursing care and hygiene.

4.3
The physiotherapist should know the different types of immobilization techniques (POP, external fixator(s), skin tractions, skeletal tractions).

4.4
The physiotherapist should be aware of the different types of pressure sores, their causes, prevention and treatment.

4.5
The physiotherapist should understand when and how to apply the distinctive phases in a gait-training programme (e.g. progressive weight bearing, weight transfers, progressive walking exercises between parallel bars with or without mobility aids, progressive functional exercises and training according to the home environment).

4.6
The physiotherapist should be aware of X-ray interpretations in the orthopaedic sphere.

5 Required equipment

The physiotherapist should have at his[1] disposal the following materials and equipment:
- POP and other immobilization equipment: POP bandages (different sizes), cotton, Lorenz's shears, cast spreader, plaster knife, cast-bending forceps, oscillating saw,

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

scissors, water basin, tubular bandages/stockinet (different sizes), plastic bucket for POP application, plastic sheet, 2.5-cm tape, bridges for POP
- traction instruments: adhesive tape for skin traction (different sizes), elastic bandages (different sizes), brown frames (different sizes or adjustable), sandbags (of different weights), rope, blocks for bed elevation, overhead bed frame, pulleys (different types or one system that can be adapted to different surfaces and angles)
- different types of pillow (triangular, rectangular) for elevation and/or for supporting the limb
- rocker for POP
- muscle-strengthening equipment
- treatment table
- support for making hip spica
- wheelchair (according to the set-up)
- walking aids
- parallel bars
- mirrors
- mats
- weight scale
- assessment tools: goniometer, measuring tape, plumb line
- tools (pliers, screwdriver, pieces of wood and metal bars, wire, depending on the context and the material and equipment used)
- reference documents

6 Patient management

6.1 Multidisciplinary aspects

6.1.1 The physiotherapist should contribute to the multidisciplinary team, together with surgeons, doctors, nurses, social workers and other health professionals. He must participate in ward rounds. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2 Assessment

6.2.1 Written records should be kept of the patient's diagnosis and history, and of his medical and surgical treatment and X-rays.

6.2.2 The patient's physical and neurovascular status (including the sound limb) and injuries should be noted.

6.2.3 The patient's social situation, psychological status and expectations should be taken into account.

6.2.4 Each act of physiotherapy should be recorded.

6.2.5 A treatment plan, including the goals agreed upon by the patient and the medical team, should be drawn up and regularly re-evaluated.

6.3 Treatment plan

Fracture-immobilization phase

6.3.1 The physiotherapist should respect the duration (total immobilization period for uncomplicated, closed fractures of the tibia is 6-8 weeks and of the femur 8-12 weeks) and type of immobilization that has been prescribed by the doctor, and ensure appropriate positioning of the patient.

6.3.2 Before immobilizing any fracture with a circular POP, the limb must be stabilized for the first five days after the injury with a POP back slab held in place with elastic bandages. If not, the rigidity of the plaster will not allow room for the oedema that might continue to develop.

6.3.3 The physiotherapist should participate in the application and/or supervision of the methods of immobilization usually practised by the doctor or paramedical personnel under supervision:

- POP back slab
- circular POP (Sarmiento, POP boots, hip spicas, etc.)
- pin traction
- skin traction
- external fixation

6.3.4 The physiotherapist should explain the treatment to the patient.

6.3.5 The physiotherapist should help to prevent (by means of specific techniques and by informing the doctor) complications due to immobilization (e.g. ischaemia, misalignment, mal-union, pressure sores, contractures, muscle atrophy, oedema, pin-site infections, osteomyelitis, peripheral nerve damage, respiratory complications, thrombosis, emboli and constipation).

6.3.6 The physiotherapist should follow the patient's progress and suggest necessary changes to the duration and the type of immobilization.

6.3.7 If the method of immobilizing the fracture site allows the patient to stand, the physiotherapist should choose the right mobility aid(s) and gradually start gait training.

6.3.8 The physiotherapist should improve the patient's general condition (e.g. endurance, function and coordination) by means of muscular and respiratory exercises and general mobilization.

6.3.9 The physiotherapist should, when possible, maintain the mobility of the proximal and distal joints of the fractured limb.

6.3.10 To prevent atrophy, careful isometric contractions of the fractured limb muscles should start immediately after the initial immobilization.

Phase involving removal of the means of immobilization and start of gait training

6.3.11 Orthopaedic support for the fracture site may be required after the removal of the immobilization device (e.g. Chinese splint or brace).

6.3.12 A few days of exercise in bed may be required after the removal of the immobilization device.

6.3.13 The physiotherapist should choose the appropriate mobility aid(s) and gradually start gait training.

6.3.14 Progressive weight bearing must be practised according to the doctor's recommendations.

6.3.15 To restore the function of the fractured limb, the following techniques may be used: mobilization, posture, muscle strengthening, coordination, weight transfer, balance and massage.

6.3.16 The physiotherapist should teach the patient a range of functional tasks that help achieve the goal set for him, such as setting himself down on the floor and getting up off it, getting in and out of a car, going up and down stairs and slopes, walking in a crowded environment, and picking up objects from the floor.

6.3.17 The physiotherapist should continue to improve the patient's general condition (e.g. endurance, function and coordination) by means of muscular and respiratory exercises and general mobilization.

6.3.18 When gait training commences, the principles of gradual progression should be respected regarding the weight bearing and the level of support provided by walking aids. Gait training should include functional exercises.

Discharge and follow-up

6.3.19 A final evaluation should be performed and a summary of the patient's function and mobility at the discharge date should be recorded in the treatment file.

6.3.20 A home programme with self-training exercises should be discussed between the patient, his family and the physiotherapist.

6.3.21 A follow-up appointment should be fixed to review the patient's progress after discharge.

6.3.22 If the patient is discharged with a POP or an external fixation, a follow-up date for the next visit to the hospital should be given and treatment details recorded on the patient's discharge card. Advice should be given to the patient regarding what he should do and what he should not.

7 Remarks

7.1
Pelvic fractures may require a pelvic sling. Pelvic fractures not affecting the weight-bearing line may not require immobilization.

7.2
Back slabs are not weight-bearing POPs.

7.3
Circular POPs may be made with a window for observation and treatment of small wounds or with a bridge for bigger wounds.

7.4
Circular POPs, including hip spicas, may be done with a walking rocker. Sarmiento POPs are always done with a walking rocker.

7.5
During application of pin tractions for treatment of femoral fractures, the limb may be positioned in different ways according to the type of fracture.

7.6
Gallow tractions should be used only for children weighing less than 15 kg.

7.7
A hands-on approach (close professional physical contact) is encouraged in physiotherapy.

7.8
The physiotherapeutic treatment starts the day after the surgery.

7.9
It is strongly recommended that the physiotherapy file be included in the hospital or P&O file.

7.10
Patient-information leaflets should be made available.

7.11
The active participation of the patient's family should be encouraged.

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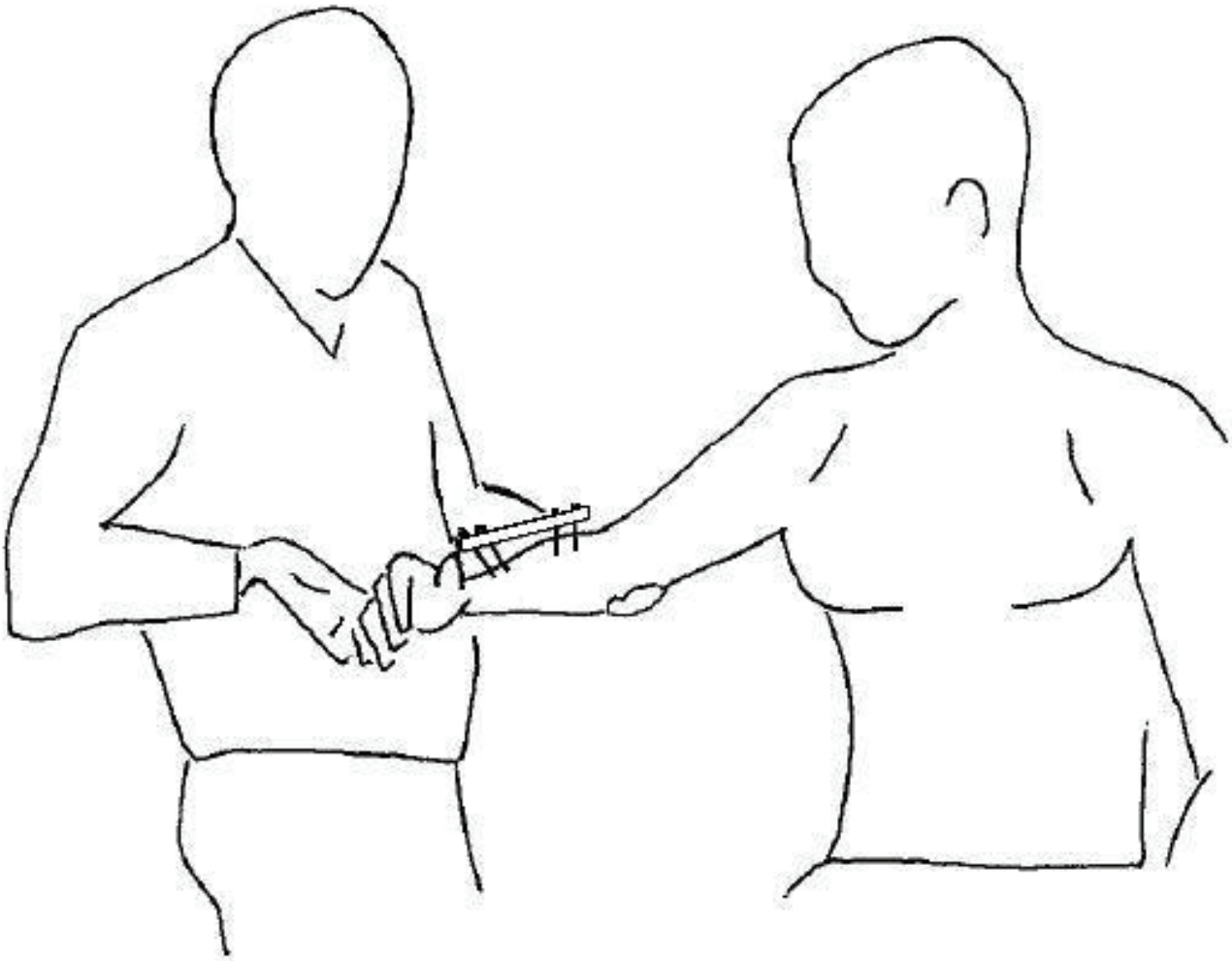
Patient management evaluation form: Lower-Limb Fracture

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Fractures & consolidation process • Surgeries & types of immobilization • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time, especially POP material • Maintenance of equipment, especially traction equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team & participation in ward rounds • Attitude toward patients, family or carers and colleagues • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented • Regular re-evaluation of goals and objectives • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Fabrication/installation and supervision of the immobilization (e.g. POP, splint, traction) • Positioning, massage, active mobilization to prevent complications • Respect for non-indicative exercises (risk of fracture displacement) • Instruction provided for exercises under immobilization • Maintenance or improvement of general condition • Teaching mobility during immobilization (in a wheelchair, by walking) • Restoring function of the fractured limb (mobilization, posture, muscle strengthening and massage) • Trainining in proper gait function (e.g. coordination, weight transfer, balance and gait) • Functional training for independence in ADL • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Upper-Limb Fracture 10



1 The objective

Through a multidisciplinary team approach, to restore the patient's functional independence in the minimum possible time after the fracture.

2 Indications

All patients with upper-limb fractures.

3 Contra-indications

3.1
The fracture treatment may not be the priority in cases of fractures combined with other injuries (open wounds, injuries to vital organs). However, suitable initial immobilization is always necessary.

3.2
Treating the fracture is not the priority in cases of compartment syndrome. Even initial immobilization may have to be kept to a minimum.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1
The physiotherapist should know the different types of fractures and consolidation processes.

4.2
The physiotherapist should be aware of the main surgical procedures related to managing fractures and wounds with fractures, basic nursing care and hygiene.

4.3
The physiotherapist should know the various types of immobilization techniques (POP external fixators, skin tractions, skeletal tractions).

4.4
The physiotherapist should be aware of X-ray interpretations in the orthopaedic sphere.

5 Required equipment

The physiotherapist should have at his[1] disposal the following materials and equipment:

- POP/immobilization equipment: POP bandages (different sizes), cotton, triangular bandages, tubular bandages, Lorenz's shears, cast spreader, plaster knife, cast-bending forceps, oscillating saw, scissors, water basin, tubular bandages/stockinet (different sizes), plastic bucket for POP application, plastic sheet, safety pins, 2.5-cm tape, material for splints (including old X-rays)
- traction instruments: adhesive tape for skin traction (different sizes), elastic bandages (different sizes), Dunlop frames (different sizes or adjustable), sand bags/weights (ranging from light to heavy), rope, overhead bed frame, pulleys (of different types or one system that is adaptable to different surfaces and angles)
- different types of pillow (triangular, rectangular) for elevation and/or for supporting the limb and trunk

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

- muscle-strengthening equipment
- treatment table
- mirrors
- shoulder wheel
- basketball/volleyball
- thera band
- hand-exercise equipment: e.g. eggserciser, putty, digiflex, club
- activity/hand therapy table
- assessment tools: goniometer, measuring tape, plumb line and dynamometer
- dynamic splint material: wood, polypropylene, POP, elastic bands, springs, superglue, screws, metal filaments
- hot/cool packs
- reference documents

6 Patient management

6.1 Multidisciplinary aspects

6.1.1 The physiotherapist should contribute to the multidisciplinary team, together with surgeons, doctors, nurses, occupational therapists and other health professionals. He should participate in ward rounds. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.2 Assessment

6.2.1 Written records should be kept of the patient's diagnosis, history, medical and surgical treatment and X-rays.

6.2.2 The patient's physical and neurovascular status (including that of the sound arm) and any injuries should be noted.

6.2.3 The patient's social situation, psychological status, dominant hand side and expectations should be taken into account.

6.2.4 Each act of physiotherapy should be recorded.

6.2.5 A treatment plan, including the goals agreed upon by the patient and the medical team, should be drawn up and regularly re-evaluated.

6.3 Treatment plan

Fracture-immobilization phase

6.3.1 The physiotherapist should respect the duration (total immobilization period for uncomplicated, closed fractures is generally 4-8 weeks) and type of immobilization that has been prescribed by the doctor, and ensure appropriate positioning of the affected arm.

6.3.2 Before immobilizing any fracture with a circular POP, the arm must be stabilized for the first five days after the injury with a POP back slab held in place with elastic bandages. If not, the rigidity of the plaster will not allow room for the oedema that might continue to develop.

6.3.3 The physiotherapist should help apply and/or supervise the immobilization methods usually applied by the doctor or paramedical personnel:

- POP back slab
- circular POP

- narrow or wide suspension sling
- "collar and cuff" tubular bandage
- "ball in the hand" bandage
- figure-of-eight bandage
- skin and skeletal traction
- external fixation
- Kirschner wiring

6.3.4 The physiotherapist should inform the patient about the physiotherapeutic treatment he will be receiving.

6.3.5 The physiotherapist should help to prevent, by specific techniques, complications arising from immobilization (e.g. frozen shoulder, contractures, muscle atrophy, oedema, abnormal posture of the trunk and respiratory complications).

6.3.6 The physiotherapist should pay attention to all possible complications (e.g. ischaemia, misalignment, malunion, pin-site infections, complex regional dystrophic syndrome (Südeck), osteomyelitis, peripheral nerve damage), when applying physiotherapeutic techniques and exercises.

6.3.7 The physiotherapist should monitor the patient's progress and suggest, if necessary, changes to the duration and the type of immobilization.

6.3.8 The physiotherapist should improve the patient's general condition (e.g. endurance, function and coordination) by means of muscular and respiratory exercises and general mobilization (walking, if possible).

6.3.9 The physiotherapist should, where possible, maintain the mobility of the proximal and distal joints of the fractured limb.

6.3.10 To prevent atrophy, careful isometric contractions of the muscles of the fractured limb should start immediately after the initial immobilization is applied.

6.3.11 To prevent stiffness, pendulum exercises for the shoulder should start immediately after the initial immobilization is applied.

Phase following end of immobilization

6.3.12 The physiotherapist should choose the appropriate aid(s) and start rehabilitation gradually.

6.3.13 Progressive resistance should be applied once the doctor has given his permission.

6.3.14 To restore the function of the fractured limb, the following techniques can be applied through a graduated rehabilitation programme: mobilization, posture, muscle-strengthening (e.g. active-assisted, active, active-resisted exercises), coordination and massage.

6.3.15 The physiotherapist should pay special attention to keeping the neck and vertebral column flexible, mobile and symmetrical.

6.3.16 The physiotherapist should revive, to the greatest extent possible, the function of the hand by means of specific exercises for strength, mobility and grasp to restore dexterity.

6.3.17 Ultimately, the physiotherapist should teach the patient a range of functional tasks relevant to the goals set for that individual, such as holding, carrying, grasping, writing, and even playing a musical instrument (all in accordance with the patient's previous abilities).

6.3.18 The most important goal in treating an upper-limb fracture is functional independence. Always keep in mind that a stiff upper-limb, lacking any movement, can still be useful depending on the final position it assumes.

6.3.19 The physiotherapist should continue to improve the patient's general condition (e.g. endurance, function and coordination) with muscular and respiratory exercises and general mobilization.

Discharge and follow-up

6.3.20 A final evaluation should be carried out and a summary of the patient's function and mobility at the discharge date should be recorded in the treatment file.

6.3.21 A home programme with self-training exercises should be discussed between the patient, his family and the physiotherapist.

6.3.22 A follow-up appointment should be fixed to review the patient's progress after discharge.

6.3.23 If the patient is discharged with a POP or external fixation, an appointment should be made for the next visit to the hospital and treatment details recorded on the patient's discharge card. Advice should be given to the patient regarding what he should do and what he should not.

7 Remarks

7.1 Humeral fractures may require just a narrow sling as hanging casts may result in malunion.

7.2 Positioning for upper-limb fractures is greatly influenced by gravity. This must always be kept in mind when considering immobilization, especially if the patient is ambulatory.

7.2.1 A circular POP may be made with a window for observation and treatment of small wounds or with a bridge for larger wounds.

7.3 Upper-limb fractures are commonly associated with dislocations. Early mobilization may have to be delayed if the same limb has suffered both a fracture and a dislocation.

7.4 If internal fixations are used, the physiotherapist should adapt these guidelines to the pertinent surgical protocols.

7.5 A hands-on approach in physiotherapy (close professional physical contact) is encouraged.

7.6 The physiotherapeutic treatment starts the day after surgery.

7.7 At least 30 minutes of individual treatment a day is recommended for every patient.

7.8 It is strongly recommended that the physiotherapy file be included in the hospital or P&O file.

7.9 Patient-information leaflets should be made available.

7.10 The active participation of the patient's family should be encouraged.

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ICRC Code: LMEDPHYSMJEN

Patient management evaluation form: Upper-Limb Fracture

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Fractures & consolidation process • Surgeries & types of immobilization • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time, especially POP material • Maintenance of equipment, especially traction equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team & participation in ward rounds • Attitude toward patients, family or carers and colleagues • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented • Regular re-evaluation of goals and objectives • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Fabrication/installation and supervision of the immobilization (e.g. POP, splint) • Positioning, massage, active mobilization to prevent complications (e.g. frozen shoulder, elbow flexum, Südeck) • Respect for non-indicative exercises (risk of fracture displacement) • Instruction provided for exercises under immobilization • Maintenance or improvement of general condition • Assuring mobility during upper-limb immobilization • Restoring function of the fractured limb (mobilization, posture, muscle strengthening and massage) • Trainining in proper upper-limb function (e.g. holding, grasping, carrying) • Functional training for independence in ADL • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Respiratory Disorder 11

1 The objective

Through a multidisciplinary team approach, to restore the patient's respiratory performance and to prevent chest complications by maintaining lung function and keeping the airways free of secretions.

2 Indications

All patients suffering from the following pathologies or confronting the following situations: all immobilizations following surgery, especially thoracic surgery and surgery for abdominal injuries; pneumonia and other lung diseases; deformities of the thorax.

3 Contra-indications

Rehabilitation should be avoided in cases of contagious acute pulmonary tuberculosis when a positive functional outcome cannot be expected.

4 Additional medical and non-medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1
The physiotherapist should deepen his[1] knowledge of normal lung function, breathing rates and lung auscultation.

4.2
The physiotherapist should know the function and physiology of all muscles involved in respiration.

4.3
The physiotherapist should understand the difference between a restrictive and an obstructive respiratory disorder and between the physiotherapeutic treatment for the two.

4.4
The physiotherapist should understand the different lung pathologies and injuries.

4.5
The physiotherapist should understand the principles of surgical procedures, nursing care (drains, tracheotomy, etc.) and should be familiar with the intensive-care-unit environment.

4.6
The physiotherapist should be aware of the consequences of using painkillers in post-operative and post-traumatic care.

4.7
The physiotherapist should be aware of X-ray interpretations of the thorax.

1

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

5 Required equipment

The physiotherapist should have at his disposal the following items:
- stethoscope
- water bottle (2- to 5-litre)
- suction tubes
- sputum cups
- pick-flow and spirometer
- positioning material
- bed or treatment table
- wheelchair
- mats
- dumbbells
- bandages
- reference documents

6 Patient management

6.1 Multidisciplinary aspects

The physiotherapist should contribute to the multidisciplinary approach, together with surgeons, physicians, anaesthetists, nurses, social workers and other health-care professionals. He should participate in ward rounds. Joint meetings to assess cases, evaluate treatment and discuss the discharging of the patients should take place regularly.

6.2 Assessment

6.2.1 Records should be kept of the patient's diagnosis, history, medical and surgical treatment and X-rays.

6.2.2 The patient's physical status, including his functional mobility and respiratory capacity (lung/thorax condition) should be noted.

6.2.3 The type of respiratory disorder should be identified (e.g. dysfunction of the external respiratory system, obstructive disorder or excess of bronchial secretion). Acute respiratory distress syndrome should not be considered as it requires intensive care that is well beyond the ICRC's standards.

6.2.4 The patient's social situation, psychological status and expectations should be recorded.

6.2.5 Each act of physiotherapy should be recorded. An assessment should be carried out before and after each treatment.

6.2.6 A treatment plan, including the goals agreed upon by the patient and the medical team, should be drawn up and regularly re-evaluated.

6.3 Treatment plan

6.3.1 The physiotherapist should create a calm and stress-free environment in which to provide respiratory therapy.

6.3.2 The physiotherapist should begin chest physiotherapy early on, but only after it has been ordered or recommended by the doctor.

6.3.3 The physiotherapeutic treatment should always be adapted to the patient's tolerance level and stamina (short but frequent sessions are better).

6.3.4 Treatments should be timed to fit in with the analgesia plan.

6.3.5 In restrictive disorders, the physiotherapist should select techniques aimed at improving ventilation and increasing oxygenation of the affected area. Localized thoracic expansion exercises and incentive spirometry (low-flow devices) are the best techniques in these cases.

6.3.6 If musculoskeletal exercises are prescribed, the physiotherapist should inform the patient of their purpose: restoring strength and range of motion for the limbs and thorax and especially for the diaphragm and other respiratory muscles when necessary.

6.3.7 Weakened abdominal muscles should be strengthened by applying a bandage to allow proper diaphragm function.

6.3.8 In obstructive disorders, the physiotherapist should use other techniques such as positioning, relaxation methods, breathing control and pursed-lip breathing.

6.3.9 When mucus mobilization and removal are needed, the physiotherapist should apply airway-clearance techniques such as postural drainage, deep-breathing exercises, forced expiration techniques, vibration and thoracic pressure techniques followed by coughing and huffing, or tracheal tickling.

6.3.10 The physiotherapist should facilitate the diagnostic procedure by collecting a good-quality sputum sample for culture. The consistency and colour of sputum also helps the physiotherapist to follow up his work.

6.3.11 Mobilization and change of position (sitting, walking) are strongly advised when possible, in order to facilitate recovery.

6.3.12 The physiotherapist should teach the patient and/or the family breathing exercises that the patient can perform on his own.

6.3.13 The patient and/or the family should understand how often the exercises should be performed, and how many repetitions of each exercise are necessary.

6.3.14 The physiotherapist should instruct the nurses in respiratory techniques when the physiotherapeutic staff is limited and the treatment requires constant supervision.

6.3.15 The physiotherapist should at all times help improve the patient's general condition by means such as general exercises and general mobilization.

6.3.16 In the intensive care unit, the physiotherapist should always be with the patient when he first sits and, later, when he stands up, guiding him closely to prevent him from falling.

6.3.17 Rehabilitation through exercises is often unavailable where the ICRC works, but the physiotherapist should nevertheless provide some degree of rehabilitation to ensure a positive functional outcome.

6.3.18 Oxygen therapy, nebulizations, airway suctioning and mechanical ventilation are not within the usual range of physiotherapeutic techniques offered by the ICRC for respiratory disorders.

Discharge and follow-up

6.3.19 The respiratory therapy can be stopped after consultation with the medical team.

6.3.20 A final evaluation should be carried out and recorded.

6.3.21 A home programme with self-training exercises should be discussed between the patient, his family and the physiotherapist.

6.3.22 A follow-up appointment should be fixed to review the patient after discharge.

7 Remarks

7.1 No devices should be used without specific medical instructions to do so, since their therapeutic effects have not always been thoroughly demonstrated for specific pathologies.

7.2 When the disease is contagious, the physiotherapist should protect himself and others as well as possible. The risk of cross-infection must be taken seriously.

7.3 In all cases, the physiotherapist should respect the rules of good hygiene, wear professional clothes, gloves and a mask.

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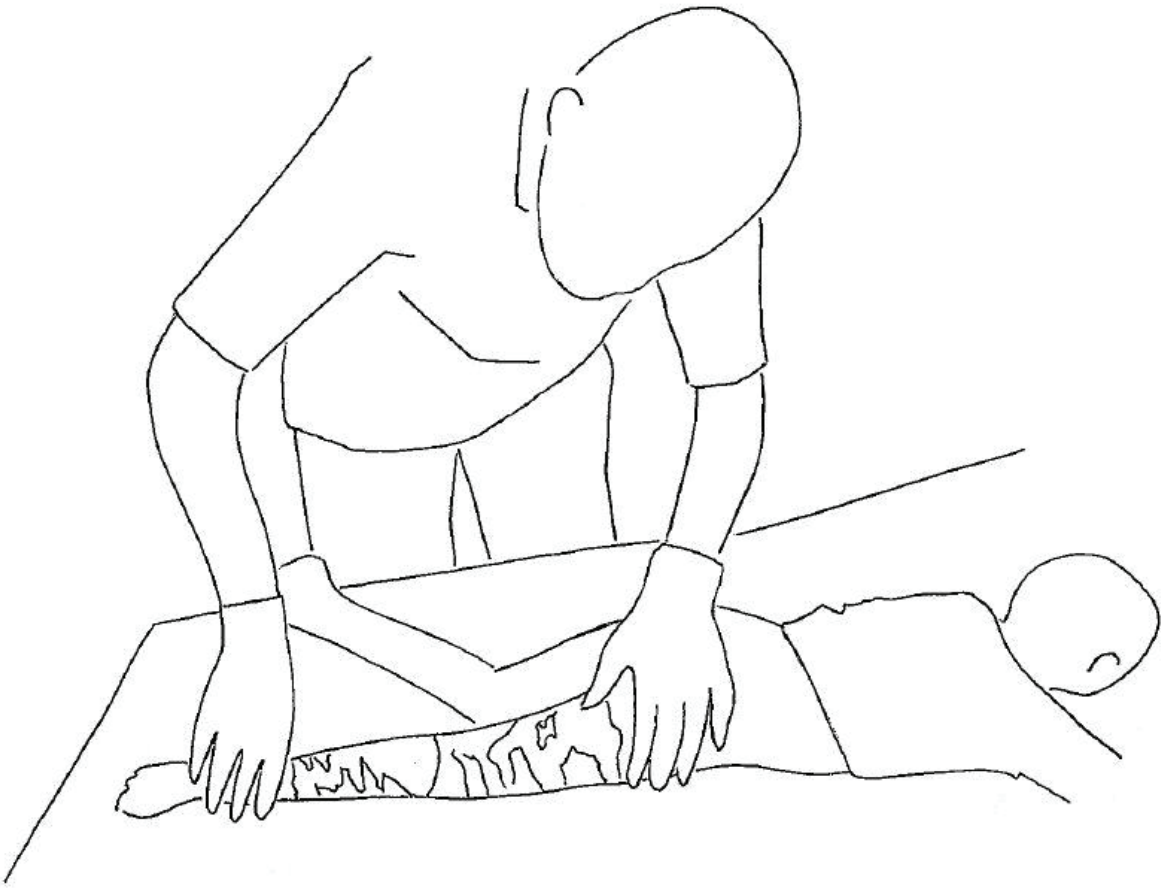
ICRC Code: LMEDHEALAHEN

Patient management evaluation form: Respiratory Disorder

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology • Basic physiotherapeutic techniques • Respiratory disorders pathology and specific diseases or injuries • Basic lung function tests • Chest X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time (in coordination with the medical team) • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team (e.g. nurses or doctors) • Attitude toward patients, family or carers and colleagues • Ability to work with children • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented, especially respiratory capacity • Regular re-evaluation of the evolution of the disease • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Chest physiotherapy (e.g. ventilation, oxygenation, air-clearance techniques, sputum collection) • Respect for patient's stamina and general condition • Positioning and general mobilization techniques (e.g. first sitting in intensive care unit) • Prevention of oedema and joint deformities (if prolonged immobilization) • Management of pain, especially during exercises • Maintenance or improvement of general condition (e.g. endurance) • Checking functional training for independence in ADL (if needed) • Hands-on approach • Protection for oneself if the disease is contagious
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout in collaboration with the medical team • Home programme exercises • Follow-up of the patient if the disease is chronic

M = Mastered A = Achieved I = Insufficient

Burn Injury 12



1 The objective

Through a multidisciplinary team approach, to rehabilitate people with burns in order to achieve the best functional and cosmetic outcome.

2 Indications

All burn patients suffering from functional restrictions.

3 Contra-indications

When the medical condition does not allow the patient to be treated (e.g. fever or shock phase).

4 Additional medical knowledge (beyond a basic knowledge of physiotherapy and of physiotherapeutic techniques)

4.1
The physiotherapist should know the different types of burns (depth, appearance, skin texture and signs of infection).

4.2
The physiotherapist should understand the anatomy/physiology of the skin as well as the complexity of its healing process.

4.3
The physiotherapist should be aware of the principles of pain management and wound care for people with burns.

4.3
The physiotherapist should know the variety of orthoses and splinting used and their purpose.

4.4
The physiotherapist should understand the principles of surgical operations (plastic surgery) and the post-operative treatment.

5 Required equipment

The physiotherapist should have at his[1] disposal the following materials and equipment:
- assessment tools: goniometer, measuring tape
- cotton
- scissors
- water basin
- tubular bandages/stockinet (different sizes)
- plastic sheet
- 2.5-cm tape
- gloves
- painkillers (on doctor's prescription)
- bandages
- walking aids

1 For simplicity's sake, the masculine form is used for both genders. The term 'family' refers to the parents, other family members or a caretaker.

- sandbags/weights
- strengthening equipment
- weight scale
- balance tools/push-up handles
- mats
- mirror
- treatment tables
- parallel bars
- gait-training course
- sports equipment
- standing frame, standing table
- reference documents

6 Patient management

6.1 Multidisciplinary aspects

6.1.1 The physiotherapist should contribute to the multidisciplinary team, together with nurses and doctors, social workers, occupational therapists and ortho-prosthetists. Joint meetings to assess cases, evaluate treatment and discuss the discharging of patients should take place regularly.

6.1.2 All members of the burn-management team should interact throughout the recovery period (from admission to scar maturation and beyond) to minimize the impact of the trauma in the long term.

6.2 Assessment

6.2.1 A record should be kept of the patient's diagnosis, age, gender, history, medical and surgical treatment and X-rays.

6.2.2 The patient's physical status should be noted, including the location of the wounds.

6.2.3 The patient's social situation, psychological status, previous injuries, behavioural problems, previous hospital experiences, learning disabilities, and level of alertness, as well as the response of his family and/or partner and their expectations, should all be recorded.

6.2.4 Each act of physiotherapy should be noted.

6.2.5 Before implementing an exercise programme, the physiotherapist should be aware of the depth and location of the burn with respect to the joints, type of possible skin replacement (grafting) and cardiovascular responses to the burn injury.

6.2.6 The physiotherapist should regularly review splint design in order to prevent complications.

6.2.7 The physiotherapist should assess the healing of the wound regularly and identify the proper time for employing scar-management techniques.

6.2.8 A treatment plan, including the goals agreed upon by the patient, the family and the medical team, should be drawn up and regularly re-evaluated.

6.3 Treatment plan

6.3.1 All the areas affected should be exercised through the full range, commencing on Day One.

6.3.2 The physiotherapist should implement a safe and timely exercise and mobility programme that achieves optimal functional and cosmetic outcomes for the patient.

6.3.3 The physiotherapist should have an appreciation of the possible complications of bed rest (e.g. atrophy, sarcomere adaptation, bone density) and infection-control policies should be followed.

6.3.4 The physiotherapist should liaise with the medical and nursing staff to ensure that each patient has sufficient pain-relief medication to allow functional activity and that the dressings do not restrict his movement.

6.3.5 Active exercises should always be preferred unless the patient is unable to cooperate.

6.3.6 The physiotherapist should implement a safe and well-timed positioning programme to prevent contractures throughout the recovery period, from admission to scar maturation.

6.3.7 With installed contractures, serial casting may be useful, particularly in managing established scars that limit the motion of major joints.

6.3.8 The physiotherapist must collaborate with the burn team to minimize oedema formation and to assist maximum oedema reduction. If a limb requires elevation, it should be done only when the patient is resting.

6.3.9 An appropriate splinting treatment may be required if the patient refuses to exercise. It could also be implemented overnight to prevent contracture formation.

6.3.10 If there is scar tissue, the physiotherapist should apply well-thought-out massage techniques to avoid adherences. Family members should be trained to perform massage several times each day.

6.3.11 The use of moisturizers may provide the added benefit of minimizing the inevitable dryness of recently healed burns.

6.3.12 Burnt areas which take longer than 20 days to heal need protection and pressure. The physiotherapist should be able to help the medical team apply bandages or pressure clothes.

6.3.13 Normal daily activities should be encouraged.

6.3.14 The physiotherapist should be aware of the impact that medication may have on the patient (e.g. nausea, drowsiness, postural hypotension).

Discharge and follow-up

6.3.15 A final evaluation should be carried out and a summary of the patient's function and mobility at discharge should be recorded in the treatment file.

6.3.16 A follow-up appointment should be fixed to review the patient's progress after discharge.

6.3.17 A home programme involving self-training exercises should be discussed between the patient, his family and the physiotherapist.

6.3.18 If necessary, information about the healing phases, including dressings, should be given.

7 Remarks

7.1 It should be remembered that small open wounds do not indicate a need to stop exercises.

7.2 Elderly people with burns need more attention since physical factors such as paramorphysm of the lower limbs, senile kiphosis, chest deformation and neuromotor deficit may hamper rehabilitation.

7.3 The patient should be advised to protect the burnt area from the sun.

7.4 Physiotherapy should start on the third day after necrectomy or transplantation surgery, after consultation with the surgeon or treating physician.

7.5 In cases of homograft, it is strongly recommended that exercise and mobilization of the affected limbs begin immediately.

7.6 In cases of autograft, positioning, splinting, exercise therapy and chest physiotherapy may be carried out.

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Patient management evaluation form: Burn Injury

GUIDELINES	CRITERIA	M	A	I	FOCUS THEMES FOR EVALUATION
THEORETICAL KNOWLEDGE	Basic physiotherapeutic skills Additional knowledge				• Anatomy – physiology – biomechanics • Basic physiotherapeutic techniques • Pathology, stages and types of burns • Orthotic knowledge (e.g. components, orthotic alignment, fittings) • X-rays
ORGANIZATION & EQUIPMENT	Structured organization Availability of materials				• Daily work organization & time management • Consumables renewed in time, splint material & POP • Maintenance of equipment • Good use of materials & equipment
COMMUNICATION & MULTIDISCIPLINARY ASPECT	Empathy toward patients Well-integrated in team				• Role played in a multidisciplinary team (e.g. nurses or surgeons involved in skin graft surgery) • Attitude toward patients, family or carers and colleagues • Ability to work with children • Communication (speaking clearly and listening)
ASSESSMENT	Quality of the patient's file Logic of the treatment plan				• Patient file management • Initial assessment well performed and documented, especially capacity to do muscle testing • Regular re-evaluation of goals and objectives at all four stages of the illness • Capacity for clinical reasoning
TREATMENT	Quality of techniques Handling Patient instruction Execution of the treatment plan				• Positioning, chest therapy and mobilization techniques • Prevention of oedema and joint deformities • Management of pain, especially during exercises • Maintenance or improvement of general condition (e.g. endurance) • Exercises preparatory to fitting the orthosis (e.g. ROM & strengthening exercises) • Restoration of hand function • Gait training and correction of gait deviation • Functional training for independence in ADL • Daily care of the devices • Management of corrective techniques if necessary (e.g. corrective stretching, splinting, gloves) • Hands-on approach
DISCHARGE & FOLLOW-UP	Instructions to patient and carer Involvement in discharge				• Proper final evaluation and checkout • Home programme exercises • Motivation for return to work and social activities • Follow-up of the patient

M = Mastered A = Achieved I = Insufficient

Position Paper: Chronic Low Back Pain 13

1 Purpose

Despite the fact that treatment for chronic low back pain (CLBP) is, on the whole, rare at the ICRC, it has long been a regular feature of certain ICRC physical rehabilitation projects. This situation needs clarification and the ICRC has to take a decision:

- Should we expand CLBP treatment to all ICRC physical rehabilitation projects?
- Should we limit CLBP treatment to certain situations?
- Should we recommend a general implementation of CLBP treatment within ICRC projects?

The purpose of the present text is to answer these questions and to define how CLBP treatment should be practised in ICRC physical rehabilitation projects.

2 General background

CLBP is often listed as the main cause of disability.

Literature on the epidemiology of low back pain is growing but restricted to high-income countries. Consequently, very little is known about CLBP in low-income countries. Nevertheless, we believe from experience that this literature is applicable to countries where the ICRC is working, because:

- access to preventive measures remains severely limited
- hard physical labour is often unavoidable from an early age through to old age

Specific diagnoses are frequently difficult to reach.

This is even more so in places where the possibilities for examination are limited and qualified doctors often in short supply. In most places where the ICRC works, good-quality radiographic imaging (X-ray, CT and MRI) is not easy to obtain. A differential diagnosis – between non-specific CLBP and specific disorders such as arthritis, degeneration of the discs, spinal disc herniation, vertebral fracture (such as from osteoporosis), tumour and infection – is therefore very difficult to establish prior to any treatment.

Many different types of physiotherapeutic treatment are commonly provided.

Today, the approaches to CLBP vary according to country. They mostly depend on the therapist in charge and on the priorities set at each centre. Briefly, they can be summed up as follows:

- physical treatment (electrotherapy, ultra-sound, thermotherapy, TENS)
- lumbar traction
- lumbar support
- back schools (training in how to take care of one's back)
- massage
- exercise therapy (stretching, strengthening, aerobic exercises)
- manual therapy (the spinal manipulation/mobilization package is often referred to as manual therapy; see Harvey *et al,* 2003).

In its amended version of 14 June 2005, the **European Guidelines for the Management of Non-specific CLBP** does not recommend, within the scope of conservative treatment, any physical treatment, lumbar traction, massage or lumbar support for CLBP.

On the other hand, supervised exercise therapy is recommended in the guidelines and, to some extent, back school and manipulations that can be considered for short-term improvement.

3 Summary of findings in ICRC contexts

In favour	Against
• CLBP treatment is often requested by patients • Disabilities are a cause of CLBP • CLBP treatment prevents additional impairments	• CLBP is primarily a pain-management issue that requires a multi-disciplinary team approach • The service's capacity is often limited and cannot always accommodate CLBP treatment • CLBP treatment usually requires highly skilled professionals • CLBP treatment can lead to care being offered only to those who can pay

CLBP treatment is often requested by patients.
Even if a patient is attending an ICRC-assisted centre for some other reason, back pain quickly becomes his/her main concern. The patient makes this request to the therapist during or after the assessment and expects to receive care. A therapist confronted with this request has no choice but to respond with a suggestion for treatment, or to give other advice. This situation is common in most ICRC physical rehabilitation projects.

Disabilities are a cause of CLBP.
Despite the rehabilitation, persons with disabilities often have to cope with lack of body balance due to their impairment. Over the long term, this lack of balance can lead to severe CLBP, aggravating the functional outcome of the rehabilitation.

When CLBP treatment is part of an ICRC physical rehabilitation project, it helps to prevent additional impairments and optimizes the general treatment.

Pain management has a minor role in ICRC physical rehabilitation.
In CLBP treatment, the therapist does not work on the disability only, but also (or mainly) on relieving the pain. It is a complex matter because the treatment should be tailored to the individual's condition and pain level. The therapist should constantly adapt his techniques to the patient's tolerance. This approach, centred on pain management, requires a large multidisciplinary team (of which physiotherapy is only one component), which barely exists in ICRC operations.

The service's capacity is often limited.
Moreover, even though CLBP treatment is useful, it often puts at risk the general quality of disability-related care because it tends to give priority to pain relief over treatment for the disabilities themselves. More specifically, promoting CLBP in a physical rehabilitation centre brings with it the risk of this potentially profitable service (some patients will pay for CLBP treatment) being assigned a higher priority than is clinically justified, especially if is accessible to 'private' patients. In ICRC-supported centres (to a greater extent than in ICRC centres, where this tendency can be controlled) one can quickly see a real promotion of private care for those able to pay.

Some CLBP treatment should be given by skilled physiotherapists.
Unfortunately, graduate physiotherapists (A1) are not common in ICRC-supported centres. And even where some qualified physiotherapists are available, they often do not have access to ongoing training that is adequate to ensure appropriate CLBP treatment. For this reason, even if manual therapy is taught and put into practice, there is a marked risk of damage being done.

4 Recommendations

Techniques recommended	Techniques not recommended
• Supervised exercise therapy • Back school	• Physical treatment (electrotherapy, ultra sound, thermotherapy, TENS) • Lumbar traction • Massage • Lumbar support • Manual therapy (spinal manipulation)

1) For CLBP treatment, we recommend the use of supervised exercise therapy (stretching, strengthening and aerobic exercises) and back school (brief courses to promote self-care). We do not recommend anything else.

2) For CLBP treatment, we do not recommend spinal manipulation or other manual therapy because of the difficulty of establishing a diagnosis and the potential risk posed by some techniques when they are not well mastered.

If CLBP treatment exists	IF CLBP treatment does not exist
• The ICRC supports it if priority is given to persons with disabilities	• The ICRC does not initiate or promote it

3) In the framework of ICRC physical rehabilitation projects, if services already include CLBP treatment, the ICRC can support the activity and can give advice. ICRC involvement must be conditional on priority access being given to persons with disabilities.

4) If a physical rehabilitation centre does not offer CLBP treatment, we do not recommend that the ICRC initiate or promote it.

5) In ICRC physical rehabilitation projects, if CLBP treatment already exists, it should:

- never be viewed as a priority given the risk of it occupying space and human resources initially assigned to other services
- always be given first and foremost to persons in the usual ICRC target population, with disabilities involving mobility impairment.

5 Impact on activities

1) In ICRC projects, the physical rehabilitation teams should neither initiate nor promote CLBP treatment, but should be prepared to assess the quality of the existing CLBP-reduction services and propose potential improvements if this represents a benefit for persons with disabilities. To the extent compatible with the priority assigned to it, knowledge regarding exercise therapy and back school of benefit to CLBP victims should be encouraged and maintained.

2) In all projects where CLBP treatment is available only through exercise therapy and back school, physical rehabilitation staff must adjust their approach and promote professional practices in keeping with the above recommendations.

ANSWERS TO THE ORIGINAL QUESTIONS:

Should we expand CLBP treatment to all ICRC physical rehabilitation projects? NO

Should we limit CLBP treatment to certain situations? YES

Should we recommend general implementation of CLBP treatment within ICRC projects? NO

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MISSION

The International Committee of the Red Cross (ICRC) is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance. The ICRC also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles. Established in 1863, the ICRC is at the origin of the Geneva Conventions and the International Red Cross and Red Crescent Movement. It directs and coordinates the international activities conducted by the Movement in armed conflicts and other situations of violence.

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