MINISTRY OF HEALTH

STANDARD OPERATING PROCEDURES FOR PHYSIOTHERAPY PRACTITIONERS UNDER THE MINISTRY OF HEALTH, IN ZAMBIA

First Edition 2017

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FOREWORD

As stated in the Zambia National Health Strategic Plan 2011 – 2015 and 2017 -2021 the Ministry of Health (MOH) is committed to "providing equity of access to cost – effective quality health care as close to the family as possible". In the quest to realize this commitment, there is need for Physiotherapy Practitioners at each level of health care to promote the use of evidence in their practice and the inevitable need to standardize physiotherapy clinical practice in Zambia.

The varying physiotherapy treatment modalities being employed by therapists within the health sector in Zambia are proving to be a challenge to monitoring and evaluating physiotherapy health care service delivery in the country.

In order to address these challenges, these Standard Operating Procedures (SOPs) have been developed to enhance and standardize the performance of Physiotherapy Practitioners in Zambia. Further, it is envisaged that these SOPs will maximize impact and reduce variation in practice. It is the expectation of the Zambia Society of Physiotherapy that the clinical practice of Physiotherapy Practitioners in Zambia will be guided by the patient management principles and approaches elaborated in this document.

It is the hope of the Ministry of Health and Zambia Society of Physiotherapy that once effected, the Standard Operating Procedures highlighted in this document will significantly improve health service delivery among Physiotherapy Practitioners in the country.

Dr. J. MULWANDA

PERMANENT SECRETARY- TECHNICAL SERVICES

ACKNOWLEDGEMENT

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STANDARD OPERATING PROCEDUREFORPHYSIOTHERAPY PRACTITIONERS UNDER THEMINISTRY OF HEALTH, IN ZAMBIA

This document relates to all Physiotherapy Practitioners employed by the Ministry of Health (MoH). It is aimed at the patient, as well as clinical staff such as inpatient and outpatient to inform Physiotherapy Practitioners, nurses and doctors to provide guided evidence based quality service.

Purpose of this document

The purpose of the Physiotherapy Department is to provide an expert physiotherapy service, with systematic methods of assessing Neuromuscular-skeletal disorders of function including pain and those of a psychosomatic origin and dealing with or preventing these problems by natural methods based essentially on movement, manual therapy and physical agencies. This pack helps guide the patient, and Physiotherapy Practitioner from their pre – op stage (physiotherapy prior to operation), their inpatient stay, and then their post-operative outpatient physiotherapy stage.

Physiotherapy departments must adhere to a very high level of standards.A description of such standard measures is included as follows:

1. Specialized treatment areas are assigned for patients with musculoskeletal conditions.

2. Every patient will be assessed thoroughly on the first day of assessment.

3. The initial assessment done and treatment given will be documented electronically(where applicable)or on hard copy on the same day.

4. Plan of care of treatment for each patient will be designed taking into consideration patients' current physical levels, prior levels, and their goals from Physiotherapy.

5. Goals, short term and or long term, should be set for each patient. These goals will be converted at the time of initial assessment. Thereafter, each patient will be reassessed weekly to assess their achievement of goals.

6. Strict Hospital infection control guidelines should be followed in the physiotherapy department

This document relates to all Physiotherapy Practitioners employed by the Ministry of Health (MoH). It is aimed at the patient, as well as clinical staff such as inpatient and outpatient Physiotherapy Practitioners, nurses and doctors to provide guided evidence based quality service.

PHYSIOTHERAPY IN MUSCULOSKELETAL CONDITIONS

Purpose of this document

The purpose of the Physiotherapy Department is to provide an expert physiotherapy service, with systematic methods of assessing musculo-skeletal disorders of function including pain and those of a psychosomatic origin and dealing with or preventing these problems by natural methods based essentially on movement, manual therapy and physical agencies. This pack helps guide the patient, and Physiotherapy Practitioner from their pre – op stage (physiotherapy prior to operation), their inpatient stay, and then their post-operative outpatient physiotherapy stage. The aim of this document is to help improve management of both cumulative and traumatic orthopedic conditionsby improving the quality of rehabilitative care and reducing risk.

Aims of Rehabilitation:

Rehabilitation following the initial injury and prior to surgery is very important to aid recovery back to health and to meet goals.

Goals could include:

· Assess current range of movement, and balance base line

· Increase range of movement

· Achieve good muscle function

· Improve balance / proprioception

· Encourage preparation prior to surgery

Initial Assessment of patient:

An initial assessment of every patient will be entered by a Physiotherapy Practitioner in the patients' case sheet, for inpatient initial assessment must be recorded in the patient's file. Initial assessment will include information gathered by the Physiotherapy Practitioner as follows:

i. Past medical, surgical history, present history and forms of treatment

ii. Doctor provided primary and secondary diagnosis, with onset

iii. Patient's current clinical condition

iv. Pain assessment

v. Muscle power

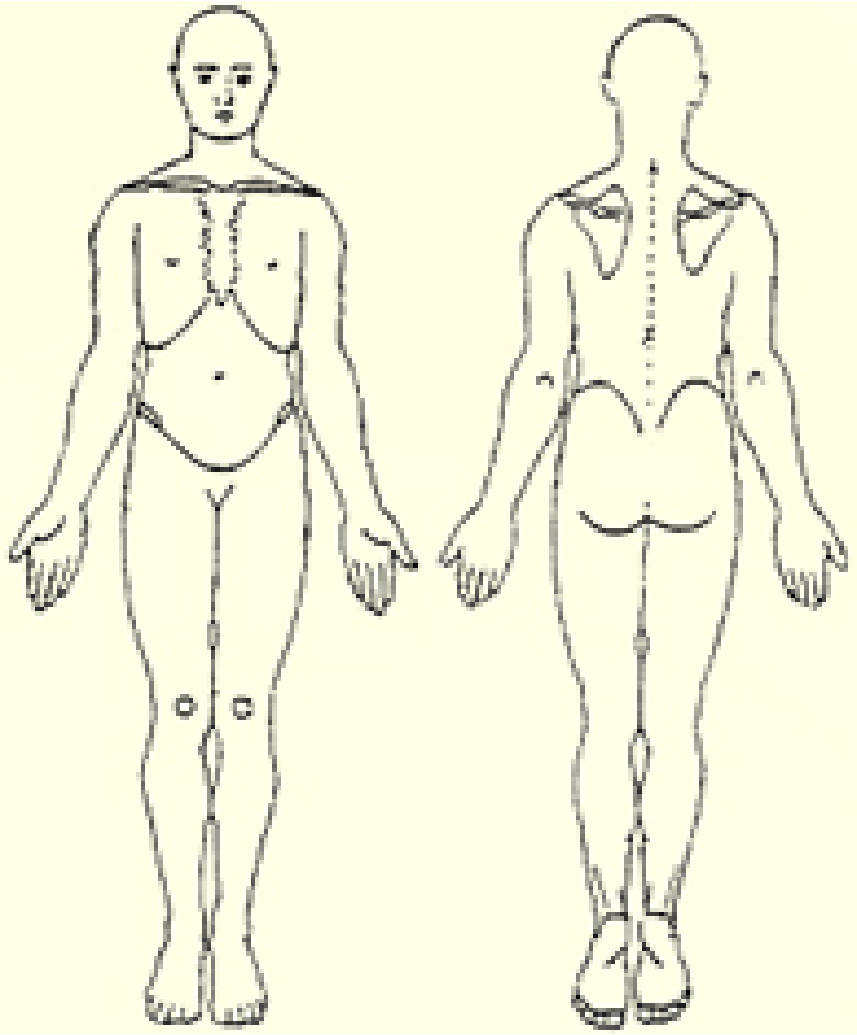
vi. Range of motion

vii. Functional limitations

SUBJECTIVE EXAMINATION

- History of present condition (HPC)
- Previous Medical History (PMH)
- Social history
- Intensity of pain (Visual analogue scale, pain descriptors)
- Body charts (relationship of symptoms)
- Aggravating factors (severe or irritable)
- Easing factors
- 24 hr behaviour
- Improving, static or worse

BODY CHART



The main problem is usually recorded on a body chart, all which have similar features & all are similarly asexual. The chart on the left is a more or less standard view of one. It shows an anterior & posterior view of the body & shows it in the anatomical position. Some departments will have their own symbols for describing pain, stiffness, acute, chronic, whether it radiates, etc.

PLANNING FOR PHYSICAL/OBJECTIVE EXAMINATION

- * Highlight with asterisks important findings
- Which joints, muscles & nerves could be the cause of symptoms?
- What other factors need to be examined?
- What is the severity, irritability & nature of the problem (SIN)?

PHYSICAL EXAMINATION

- Deductive vs. Intuition
- Observation
- Joint tests
- Muscle tests
- Neurological tests
- Neurodynamic tests (mobility of the nervous system)
- Special tests
- Accessory joint movements
- Other joints

MUSCLE STRENGTH TESTS

(Medical Council 1976)

Grade	Muscle activity
0No contraction	
1	Flicker or trace of contraction
2	Active movement with gravity eliminated
3	Active movement against gravity
4	Active movement against gravity and resistance
5	Normal strength

REFLEX TESTING

Refers to eliciting of deep tendon reflexes by tapping the tendon a number of times, commonly used deep tendon reflexes are the biceps, triceps, patellar &tendo-calcaneus. These reflexes may be graded as follows:

0: Absent	Areflexia
1: Diminished	Hyperflexia
+ or 2: Average	Normoreflexia
++ or 3: Exaggerated	Hyperflexia
+++ or 4: Clonus	Clonus

Isometric muscle testing

Cyriax (1982)

- Strong & painless – Normal
- Strong & painful – Suggests minor lesion of muscle or tendon e.g. tennis elbow
- Weak & painless – Complete rapture of muscle or tendon or disorder of the nervous system
- Weak & painful – Suggests gross lesion, e.g. fracture of patella
- All movements painful – Suggests emotional hypersensitivity
- Painful on repetition – intermittent claudication

Other tests

- Tape measure – Girth
- Drop arm test for rotator cuff muscles

Joint Palpation

- Palpate unaffected side first
- Palpate from superficial to deep
- Just enough force
- Never assume that an area does not need palpation
- Record on body chart

Neurological tests

Tests the Neurological integrity of the NS, usually to establish effects of compression of the PNS and these tests include Neurodynamic testing & some other tests.

Effects of compression of the PNS are:

- Reduced sensory input
- Reduced motor impulses along the nerve
- Reflex changes
- Pain usually in the myotome or dermatome distribution
- Autonomic disturbance such as hyperaesthesia, parasthesia or altered vasomotor tone.

Neurodynamic tests

- Examines the mobility of the nervous system by carrying out neurodynamic and tension tests.
- Tests format follow the same format as that of joint movement.
- Resting symptoms must be established prior to any testing movement.

Then the following information is noted:

- Quality of Movement
- Range of movement
- Resistance through range and at the end of range
- Pain behaviour (local and referred) through the range

Accessory Movements

- Identify & localize the affected joint
- Assess joint motion & nature of movement abnormality
- Provide a basis for selection of appropriate technique

Technique

- Pt/client comfort
- Examine unaffected side first
- Large area of skin comfort to improve pt/client comfort
- Force applied using body weight of the clinician
- Apply the force slowly through range with small oscillations at the end of range

PHYSIOTHERAPY PRACTITIONERS CARDIO RESPIRATORY EXAMINATION FORM

Demographic data Date of examination: ____ /___ /_____

File number: _____

Patient/Client Details

Name: _____ Age: _____ Gender: _____

Address: _____

_____

Phone: _____ Email: _____

Occupation**:** _____

Vital signs:

Blood Pressure: _____

Temperature: _____

Heart rate: _____

Pulse rate: _____

Respiratory rate: _____

Subjective evaluation

Case History

_____

_____

_____

_____

Summary of case History: Dyspnea [ ]

Orthopnoea [ ]

Wheeze [ ]

Cough [ ]

Sputum [ ]

Pain [ ]

Past Medical History:

Operations [ ]

Accidents [ ]

Rheumatic fever [ ]

Pulmonary TB [ ]

TB Contact [ ]

Known Allergy [ ]

Others: Specify: _____

Drug History: Current drugs _____

Social History: Married [ ]

Single [ ]

Widow [ ]

Widower [ ]

Divorced [ ]

Drinks alcohol [ ]

Smokes [ ]

Hobbies: _____

General Observations:

Gait: _____

Posture: _____

Anemia [ ]

Cyanosis [ ]

Clubbing [ ]

Edema [ ]

Deformities

Congenital:

Pectus Carinatum [ ]

Pectus Excavatum [ ]

Acquired:

Scoliosis [ ]

Kyphosis [ ]

Barrel Chest [ ]

Skeletal Mobility

Cervical Spine Mobility: _____

Thoracic Spine Mobility: _____

Shoulder girdle Mobility: _____

Respiratory Muscles

Primary: _____

Accessory: _____

Respiratory Pattern

Upper costal [ ]

Lower costal [ ]

Thoracic [ ]

Abdominal [ ]

Medical Investigations

Chest Radiograph: _____

Pulmonary Function Test (Spirometry): _____

Exercise tolerance (number of stairs client can climb or distance client can walk)

Blood Analysis:

WBC

Hemoglobin

Platelet

Prothrombin Time

Sodium

Potassium

Urea

Creatinine

Blood Gases

PAO2

PACO2

Chest auscultation

Patient positioning

Anterior/posterior/Axilla chest wall

Minimum 2 breathing cycles per spot

Note: The Essence of auscultation is to determine air entry and detect possible abnormal sounds associated with breathing.

Summary of Findings:

_____

_____

_____

Aims/Objectives for intervention:

_____

_____

_____

Plan of Intervention/Management:

Short Term

_____

_____

_____

Long term:

_____

_____

_____

Name of Physiotherapy personnel: _____

Date for Re-examination: ___ / _____ / ____

UTH protocol

Neurology Physiotherapy

Neurological physiotherapy is a program specializing on patients with trauma, diseases or disorders of the nervous system. Our goal is to reduce symptoms, and improve the well-being of the patient. We try to satisfy the needs of every single patient in our neurological physiotherapy program. The success of the physiotherapy however, doesn't only depend on the doctor, but also on the patient and their family.

The neurological rehabilitation focuses on physiotherapy for adults and children suffering from various diseases and conditions such as vertebra-genic disorders, neurological diseases, patients after surgeries, injuries of locomotive system, spine surgeries, as well as, patients with internal diseases that affect either peripheral or central nervous function.

Other prerequisite necessary for success is a variation of aids and devices. From orthotic aids, splints to complex instruments designed with the principle of biofeedback.

The patient is being scheduled for evaluation by physiotherapy practitioner as soon as possible. After evaluation the therapist must explain the plan of treatment to the patient.

Assessment by physiotherapy practitioner includes subjective, objective assessment and testing to determine suitability for further referral – history of present condition, past medical history, social history, drug history, special condition/area related questions, and goals at problems.

A. Daily Preparation.

1. Check working stock and restock if necessary.

B. Processing New Patients.

1.Receive the physiotherapy request form and ensure that ID information on the card is complete.

C. Chart Preparation.

1. Review medical record and ensure the information on patient’s card or file is complete.

2. A licensed, credentialed, and privileged physiotherapy practitioner (only) shall conduct an evaluation, documenting the following in patient’s card/record/file

a. History, chief complaint, or other pertinent information

b. Subjective data

c. Objective and evaluative data

d. Assessment

e. Plan of treatment

f. Frequency and duration of treatment and follow-up plan

3. Follow-up PT visits will be documented in patients file/card and will include the following:

a. Current subjective and objective status

b. Current level of function

c. Change in patient's symptoms

d. Changes in treatment plan

e. Further follow-up visits required

Objective assessment includes visualisation of the patient, their posture or gait, side and state of paralysis, Range and level of functional performance testing and special neurological tests

A neurological rehabilitation program is designed to meet the needs of the individual patient, depending on the specific problem or disease

The goal of neurological rehabilitation is to help the patient return to the highest level of function and independence possible, while improving the overall quality of life — physically, emotionally, and socially.

In order to help reach these goals, neurological rehabilitation programs may include the following:

- Re-training of motor function to rebuilt activities of daily living (ADLs), such as eating, dressing, bathing, toileting, handwriting, cooking, and basic housekeeping
- Refer for Speech therapy to help patients with speaking, reading, writing, or swallowing problems
- Stress, anxiety, and depression management
- Bladder and bowel retraining

- Activities to improve mobility (movement), muscle control, gait (walking), and balance
- Exercise programs to improve movement, prevent or decrease weakness caused by lack of use, manage spasticity and pain, and maintain range of motion
- Social and behavioral skills retraining
- Activities to improve cognitive impairments, such as problems with concentration, attention, memory, and poor judgment
- Help with obtaining assistive devices that promote independence
- Patient and family education and counseling
- Safety and independence measures and home care needs
- Pain management
- Stress management and emotional support
- Refer for Nutritional counseling where necessary

When we perform therapies in thePhysiotherapy Unita variety of methods and procedures have to be applied:

- Reflex locomotion method
- Dynamic neuromuscular stabilization
- Soft tissue mobilization
- Stretching
- Proprioceptive neuromuscular facilitation stretching
- Bobath concept

Therapeutic Treatment Modalities used in Physiotherapy

Some disorders of the inner ear result from the displacement of very small granular material from where they normally reside [within the vestibule] to other areas [semicircular canals], causing vertigo and imbalance. These symptoms can be very disabling, brought on by certain commonly performed movements such as turning in bed, looking up or turning one's head. Physiotherapy practitioners, who have specific training, can employ specialized techniques [Canalith Repositioning Procedures; CRP] to return these tiny granules to their correct

resting place, resolving this type of positional vertigo. The treatment is quick, painless and highly effective, within the first ten sessions.

Postural Training

Analyze the body's posture to identify areas of imbalance and inordinate stress, which are possibly contributing to a person's chronic pain or functional impairment. We use corrective measures to restore proper alignment of the musculoskeletal system to reduce undue stress and strain.

- General body strengthening
- Balance training
- Core stability training
- Coordination
- Proprioception

Body Mechanics/Ergonomics

Assessment of:

- Sitting arrangement and pattern
- Standing and bending patterns/arrangements
- Lifting, pushing and generally positioning the body to perform simple or complex physical tasks, during regular activities of daily living [ADL's] or within the worksite environment.

Physiotherapy practitioners are trained to understand proper movement techniques to:

- Identify incorrect techniques, with the goal of correction to a more efficient and productive movement model.
- They also utilize educational skills to teach corrective and proper technique
- Correct certain body impediments to proper mobility and corrective exercise to strengthen and fortify those body areas necessary for long term effectiveness.

Neuromuscular Re-education

Retraining of:

- Movement,
- Balance,
- Coordination,
- Posture and position sense (proprioception).

This is a highly specialized form of therapeutic exercise and movement re-training that often involves detailed exercise testing to guide and evaluate treatment and the use of visual biofeedback techniques in order to enhance the effects of therapy

Gait Training

Analysis of the different stages of walking to determine any deviations and the training to re-educate the body in the proper movement patterns:

- Heel strike
- Foot flat(planter grade)
- Take off(Heel off)
- Swing phase

Balance/Coordination Training

Exercises and activities to improve the ability to maintain the body in equilibrium

- statically (indifferent positions) and
- Dynamically (in different activities and in motion).

Therapeutic Exercise Prescription

Exercise is a very common and non-invasive method of treatment used in a physiotherapy setting. Exercise can help to improve patients:

- Strength,
- flexibility and
- Range of motion,
- Functional and mobile independence.

The uses, categories and variations of therapeutic exercise are too numerous to be presented in any detail here.

However, very generally, they can be:

- **PASSIVE:** Manual procedures [different than those previously described above] carried out by the therapist, without active patient participation.
- **ACTIVE/ASSISTED:** Movements performed by the patient, either the help of the therapist or with some form of manual or mechanical assistance. This is generally used to increase or restore normal joint mobility and to prepare for more free active exercises

- **ACTIVE:** Movements performed by the patient, either independently or with some form of manual or mechanical assistance. This is generally used to increase or restore normal joint mobility and to prepare for more vigorous exercise.
- **RESISTIVE:** Active movements performed by the patient, in order to produce muscle contraction that will ultimately result in increased muscular strength. This form of exercise can be used at various stages of tissue healing, as guided and directed by the physiotherapy practitioner. There are many types of resistive exercise, each having its own main benefit and precautions; Using:
- Your own body weight,
- external weights,
- elastic bands or
- exercise machines,

Physiotherapy practitioner will determine which exercises are appropriate for the patient and in which way to start and progress or change them.

Exercise is almost always incorporated into a physiotherapy program, and usually involves activities that the patient will be instructed to perform at home on their own, in addition to the clinical setting with a therapist.

Neurological physiotherapy session may last anywhere from 45 minutes to 90 minutes depending on the severity of patient's condition.

PRE AND POST NATAL PHYSIOTHERAPY

The physical changes to a women's body as related to pregnancy are multiple. The centre of mass changes, there is more pressure on the organs, and there is increased weight to be carried. All of this in a relatively short span of time often leads to back pain, pelvic pain and urinary incontinence. Evidence shows that group training programs designed and delivered by Physiotherapy Practitioners can relieve lower back pain, pelvic pain and urinary incontinence in pregnant women.

Physiotherapy Practitionerled exercises at 60 minutes a week from the 20th through the 36th week of pregnancy reduces the occurrence of lumbar-pelvic pain during pregnancy and after delivery.

With respect to pregnant women, it is recommended that:

1. Physiotherapy Practitioner directed pelvic floor muscle training to prevent urinary incontinence during pregnancy and after delivery.

2. Physiotherapy Practitioner directed core stability training to prevent and treat back and pelvic pain during and following pregnancy.

While pre and post-natal exercise programs are common, and they help many mothers, they may be harming others. Therefore it is important that the following are observed:

- There is a basic screening, assessment and continued monitoring
- Exercises are adapted for any pain, posture or/and incontinence
- Key factors such as the presence of a diastasis recti or caesarean section delivery should be addressed
- Presented exercises should be indicated and suitable for pregnant women in general
- The stage of pregnancy or post-partum status should be taken into account
- Exercises presented in group class settings should be designed according to the ability, stage of pregnancy and health status of individual participants

It is within the scope of practice of a Physiotherapy Practitioner to properly:

- Assess, treat and
- Educate pregnant women in effective and safe exercises that have been shown to decrease back pain, pelvic pain and urinary incontinence – throughout their pregnancy and post-partum.

A good Physiotherapy Practitioner delivered program for pregnant women would;

1. Screen patients to ensure they could safely participate in an exercise program;

2. Assess patients for posture, strength, flexibility, and balance as well as any musculoskeletal issues that could have a bearing on pregnancy;

3. Instruct patients on how to perform exercises safely and effectively;

4. Utilize an individualized approach – even in a group setting;

5. Enable group discussion and education regarding pre and post-natal issues.

The goal of such a program would be to offer women improved

- Prenatal fitness – that would lead to a healthier and easier pregnancy and delivery.
- A good program would also offer an integrated approach to health care – and share detailed assessment findings with the participant's primary and pregnancy health care providers.

PHYSIOTHERAPY WITH PREMATURE BABIES

Babies that go to full-term in the womb simulate their in vivo position by keeping their limbs tucked close to their bodies for several weeks after their birth. Their brains have developed enough to keep their muscles in this flexed position, which builds strength and enables them to calm and soothe themselves.

Premature babies, on the other hand, lack the development to hold their limbs close. This approach sees Physiotherapy Practitioners:

- Use of various positioning techniques to help build their strength.
- Introducing movement early,
- Use of Proper holding and positioning techniques can be used to help the babies tolerate any required medical interventions, and stabilize their heart rate and breathing.
- ensures that touch does not simply become associated with pain by offering a specialized therapeutic touch (massage)

Babies will be tested:

- On their muscle tone,
- Tremors,
- Range of motion,
- Transition to sleep,
- Wakefulness
- Excitability

As a result of therapy sessions including:

- Stretching,
- Massage and
- Different positions.

Measurements will be taken at their gestational ages of 34 and 40 weeks, to indicate how to better structure physical therapy interventions.

PHYSIOTHERAPY CLINICAL GUIDELINES FOR PAEDIATRIC CONDITIONS

1.1 Introduction

A Physiotherapy Practitioner, or physical therapist, is a health care professional that provides physical rehabilitation and pain relief to people including those with osteoarthritis, repetitive strain injury, whiplash, sports injuries, or spinal cord injuries. Paediatric therapists are increasingly trained to consider the needs of the child within the overall family structure, and encourage parents and health professionals to form partnerships around goal setting and decision making. Physiotherapy Practitioners work closely with families, carers, teachers, doctors and other health professionals. The approach is holistic and practical, with an emphasis on gross motor function and posture.

PaediatricPhysiotherapy Practitioners work with people of varying ages from premature babies to adolescents to ensure optimal physical function and development. Like all Physiotherapy Practitioners, they are concerned with movement, co-ordination, posture and the cardiorespiratory system. Treatment may involve soft tissue massage, mobilisation, stretching, specific therapeutic exercises and posture education. PaediatricPhysiotherapy Practitioners have a duty to maintain their clinical reasoning skills and up to date knowledge within their specific area of practice to ensure that interventions are appropriate and effective. Continuing professional development (CPD) to increase specialist knowledge, skill and experience can be gained through clinical working with children, attending specialist courses, reviewing the evidence base, reflecting on practice and undertaking research and is a ‘life long’ experience for all Physiotherapy Practitioners.

1.2 Paediatric physiotherapy standard operating procedures (Clinical guidelines)

Standard operating procedures are a specific set of practices that are required to be initiated and followed when specific circumstances arise. In present day medicine, clinicians are familiar with SOPs in restricted contexts, such as those described at the beginning of this article. Putting in place SOPs would enable clinical practitioners manage patients effectively and efficiently. Clinical guidelines are developed using evidence-based medicine criteria and consist of two distinct components: the evidence summary and the detailed instructions for the application of that evidence to patient care. For the common health care provider, guidelines require local adaptation to suit local circumstances and to achieve a feeling of ownership, both of which are important factors in guideline uptake and use.

Therapy begins with an evaluation and assessment.

Four major areas of paediatric physiotherapy include musculoskeletal disorders, neurological disorders, oncology and cardio-pulmonary disorders. The conditions under each area are as follows:

1. Neurological conditions
2. Musculoskeletal disorders
3. Mardio-pulmonary
4. Oncology

Assessment

Assessments are always made up of two parts namely the subjective and the objective. The former involves information gathered by questioning and the latter is what is seen and/or measured by the clinician. Without an accurate assessment it is impossible to develop an appropriate plan of treatment. Equally, a sound theoretical knowledge is required to develop an appropriate treatment plan for those problems which may be improved by physiotherapy. Once treatment has commenced it is important to assess its effectiveness regularly in relation to both the problems and goals (Pryor & Prasad, 2008).

Subjective assessment: Subjective assessment is based on an interview with the patient. It should generally start with open-ended questions - What is the main problem? What troubles you most? It allows the patient to discuss the problems that are most important to him at that time. As the interview progresses, questioning may become more focused on those important features that need clarification (Pryor & Prasad, 2008).

NEUROLOGICAL CONDITIONS

Paediatric neurological conditions include the following: Cerebral palsy; Brain injury; CNS infections leading to neurological sequelae; Complications of sickle cell anaemia (E.g. Hemiplegia); Spina bifida; Erb's palsy; Hydrocephalus; Progressive neuromuscular disorders (Muscular dystrophies and atrophies); Hypertonia; Hypotonia (E.g. congenital Hypotonia and Acute Flaccid Paralysis); Gross Motor delay (e.g. in Down's Syndrome); Developmental Coordination Disorder; Autism; Attention Deficit Hyperactivity Disorder; Global development delay.

Generic assessment for neurological conditions

Demographic characteristics		
Child's name		
Date of birth		Gender M/F
Mother's name		
Father's name		
Caregiver's name *		
Phone No.		
Address		
DIAGNOSIS		
Classification if diagnosis is cerebral palsy	- Spastic quadriplegia - Spastic diplegia - Choreoathetosis - Dystonic athetoid - Ataxia - Other	
Gross Motor Function Classification System (GMFCS)if diagnosis is cerebral palsy	1- Can walk, run and jump. Can climb stairs without holding onto anything. 2- Can walk. Can climb stairs holding onto the wall/railing. 3- Can walk independently with a	

	hand held device or can self-propel a wheelchair 4- Can move along the floor. Can roll from stomach to back and back to stomach. 5- Cannot move along the floor or roll	
Subjective assessment		
ASSOCIATED PROBLEMS:	**Vision, hearing, speech, epilepsy, Learning impairments, behavioural, etc**	
Obstetric history	**Before Pregnancy**	
	During pregnancy	
	Labour and delivery	
Child's birth	**-Was the child born at full term or how many months?** **-Was it a natural birth or C-section?** **- Were there any complications at birth?** **-Did the child cry immediately after birth?** **-Other information?**	
Child's case history and		

past medical history		
Child social history	**interests, motivation, cognition, ability to communicate, behaviour, social interaction**	
Family social history	Who lives with you and the child? Who care for the child at home most of the time? How many other children are you caring for? Do you have water and electricity at home?	
Parents/Guardian's main concerns		
Communication: (How child communicates)		
Activities of Daily Living (dependent, assisted, independent)	**- Eating and drinking** **-Dressing:** **-Bathing:** **-Toileting:** **-Playing:**	
Equipment: (Has, ordered, does not have, does not need)	**-Special chair** **-Standing frame** **-Splints for hands/legs** **-Bench** **-Positioning equipment:**	

	Roller/wedge	
Referral required		
OBJECTIVE ASSESSMENT		
Physical examination **Observation of child in different positions. Patterns of posture and movement** (Brief description of the predominant postural patterns and movements, distribution of abnormal tone, asymmetries and associated reactions, head/trunk control and activities in upper and lower limbs)	**-Prone** **-Supine** **-Sitting** **-Kneeling** **-Crawling** **-Standing** **-Walking**	
Hand function		
Summary of predominant postural tone and patterns		
Functional abilities: (What activities is the child able to do?)		

Functional Limitations: (what activities is the child unable to do?)		
Contractures/ Deformities		
Summary of main problems		
Treatment/therapy intervention		
Treatment goals: (to address main problems		
Treatment Plan: (Therapy Strategies)		
Home program:		

MUSCULOSKELETAL DISORDERS

Musculoskeletal physiotherapy (MSK) is probably the largest area of physiotherapy in terms of practitioner and patient numbers. Paediatric musculoskeletal conditions include the following:

- Congenital talipesequinovarus (CTEV);
- Congenital talipescalcaneovalgus (CTCV);
- Torticollis;
- Arthrogryposis,
- Post fracture rehabilitation;
- Hip dysplasia; Poor posture and gait correction;
- Pes planus (flat foot);
- Abnormal gait ;
- Scoliosis;

- Burns and Plastics ;
- Ostechondritis;
- Congenital absence /
- shortening of limbs ;
- Trauma / Injury.

Generic assessment for musculoskeletal disorders

1. Subjective assessment

- Demographic characteristics (Refer to neurological conditions assessment)
- Birth history
- Present complaint (Presenting condition)
- History of presenting condition (Was onset sudden (e.g. accident) or gradual or congenital)
- Any treatments or investigations done
- Other symptoms: Pain
- Past medical history
- Drug history
- Social history/family history

2. Objective assessment

- General observation: Muscle atrophy/hypertrophy, swelling, skin colour, condition of skin and nails, any abnormal growths or deformities, walking aids, orthotics
- Palpation:
- Posture: Symmetry, spine curvatures, base of support, hip rotation, etc.
- Gait:
- Range of motion (Use goniometer): Passive and active ROM, limiting factors such as pain/stiffness,

- Muscle power
- Functional gross motor movement: Ask the patient to scratch their ear or touch their nose to examine how upper limb functions

CARDIO-PULMONARY

Respiratory care in small children is very different from that in adults. There are anatomical and physiological differences which mean that additional criteria need to be used for assessment and treatment. In management of paediatric patients, it is important to include:

- parents,
- Relatives and
- carers as part of the care team.
- Parents should always have a full explanation of why treatment is required and how it is to be carried out.

Paediatric cardiopulmonary conditions managementinclude the following:

- ICU- airway secretions clearance;
- Pneumonia;
- Bronchiectasis;
- Chronic lung disease;
- Cystic fibrosis.

Assessment

In assessment of paediatric respiratory conditions, most of the aspects are similar to adult assessment. Below are the areas that should be considered in paediatrics besides the generic assessment (From Pryor & Prasad, 2008):

Initial assessment

- **Medical notes**: Information can be extracted from the medical notes relating to present condition and past medical history etc.

When assessing a neonate, the following points are relevant:

- History of pregnancy,
- labour, and delivery,
- The Apgar score, which relates to:

- Heart rate,
- respiratory effort,
- muscle tone,
- reflex irritability, and
- Colour, and gives an indication of the degree of asphyxiation suffered by the infant at birth, Gestational age and weight.

- Discuss with caregivers and other medical staff and find out about stability of child's condition, how well he/she is tolerating handling, feeding (NGT or oral), and if infant has rested from last episode of handling.

- Observation of medical charts: Pyrexia, tachycardia, apnoeic spells, etc.

- Check results of investigations done

i) Examination:

- Clinical signs: Normal values for heart rate, respiratory rate and blood pressure in table 2.

Table 2. Normal values of heart rate, respiratory rate and blood pressure according to age (Adapted from Pryor & Prasad, 2008).

Age group	Heart rate (Beats/min)	Respiratory rate(Breaths/min)	Blood pressure (mmHg)
Preterm infants	120-140	40-60	70/40
Full term infants	100-140	30-40	80/40
1-4 years	80-120	25-30	100/65
Adolescents	60-80	15-20	115/60

- Check for signs of respiratory distress such as:

- Respiratory signs- Recession - intercostal -subcostal -sternal • Nasal flaring • Tachypnoea • Expiratory grunting • Stridor • Cyanosis and Abnormal breath sounds

- Cardiac signs: Tachycardia/bradycardia • Hypertension/hypotension Other/general • Neck extension • Head bobbing • Pallor • Reluctance to feed • Irritability/restlessness • Altered conscious level • Headache

PHYSIOTHERAPY TREATMENT TECHNIQUES IN CARDIO-PULMONARY CONDITIONS

i) Chest percussion:

- Chest percussion includes chest clapping using the hand or a face mask.
- Clapping should be one-handed in small children and infants, while the first three or four fingers of one hand may be used in preterm infants.
- Chest percussion can be applied using a cup-shaped object such as a face mask.

ii) Vibrations and shaking: The chest wall is very compliant in infants and young children, so vibrations can be very effective in removing secretions when the respiratory rate is normal or near normal (30-40 breaths/min).

*Precautions for chest percussions:

- Children with dietary deficiencies,
- liver disease, or
- those who have been born preterm may develop rickets;
- Very preterm infants have extremely thin skin which is easily bruised and damaged; Bronchospasms.

iii) Postural drainage: Gravity-assisted positions can be used for children in the same way as for adults.
* A head-down tip should be avoided:

- ♦ in children with raised intracranial pressure and
- ♦ In preterm infants who are at risk of peri-ventricular haemorrhage.
- ♦ In infants and children with abdominal distension as this places the diaphragm at a mechanical disadvantage.
- ♦ Care should be taken in infants with a history of reflux.

iv) Positioning: Careful positioning is important to optimize lung function:

- Supine is the least beneficial position.
- Prone has been shown to be advantageous in terms of respiratory function.

- New-born infants are better oxygenated when tilted slightly head up.

v) Manual hyperinflation: The same indications and contraindications apply for children as for adults when considering manual hyperinflation as a physiotherapy technique:

  - ♦ 500 ml bags are used for infants and 1 litre bags are used for children.
  - ♦ * Manual hyperinflation should not be used as a physiotherapy technique in preterm infants.
  - ♦ Manual hyperinflation may cause over-distension of areas already inflated.
  - ♦ This increases the risk of pneumothorax and particular care should be taken in conditions causing hyperinflation, e.g. asthma and bronchiolitis.

vi) Breathing exercises:

- Laughing and crying are very effective means of lung expansion in infants.
- Encourage children to deep breathe from about 2 years of age by using bubbles, paper windmills,balloons etc. Older children can be taught the active cycle of breathing techniques.

vii) Coughing: Children from about 18 months of age can often mimic coughing if asked to do so, but it is often very difficult to persuade an acutely ill child to cough and expectorate, therefore:

  - ♦ Positioning or
  - ♦ Movement may cause mobilization of secretions which may stimulate a cough reflex.

viii) Airway suctioning:

- Pre-oxygenation is important to reduce hypoxia, but
- Care should be taken in preterm infants to avoid hypoxia.
- Diluents and mucolytic, e.g. saline in aliquots of 0.5 ml (preterm infant) to 5 ml may be used to enhance secretion clearance.

ix) Passive movements:

- Passive movements and
- Two-joint muscle stretches should be given regularly to older children in intensive care.
- Care should be taken when handling children and infants who are hypotonic in order to avoid soft tissue damage.

ONCOLOGY

Physiotherapy in paediatric oncology includes the following:

- Pre-surgery rehabilitation
- Post-surgery rehabilitation
- Neuro-rehabilitation (E.g. CNS tumours)

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