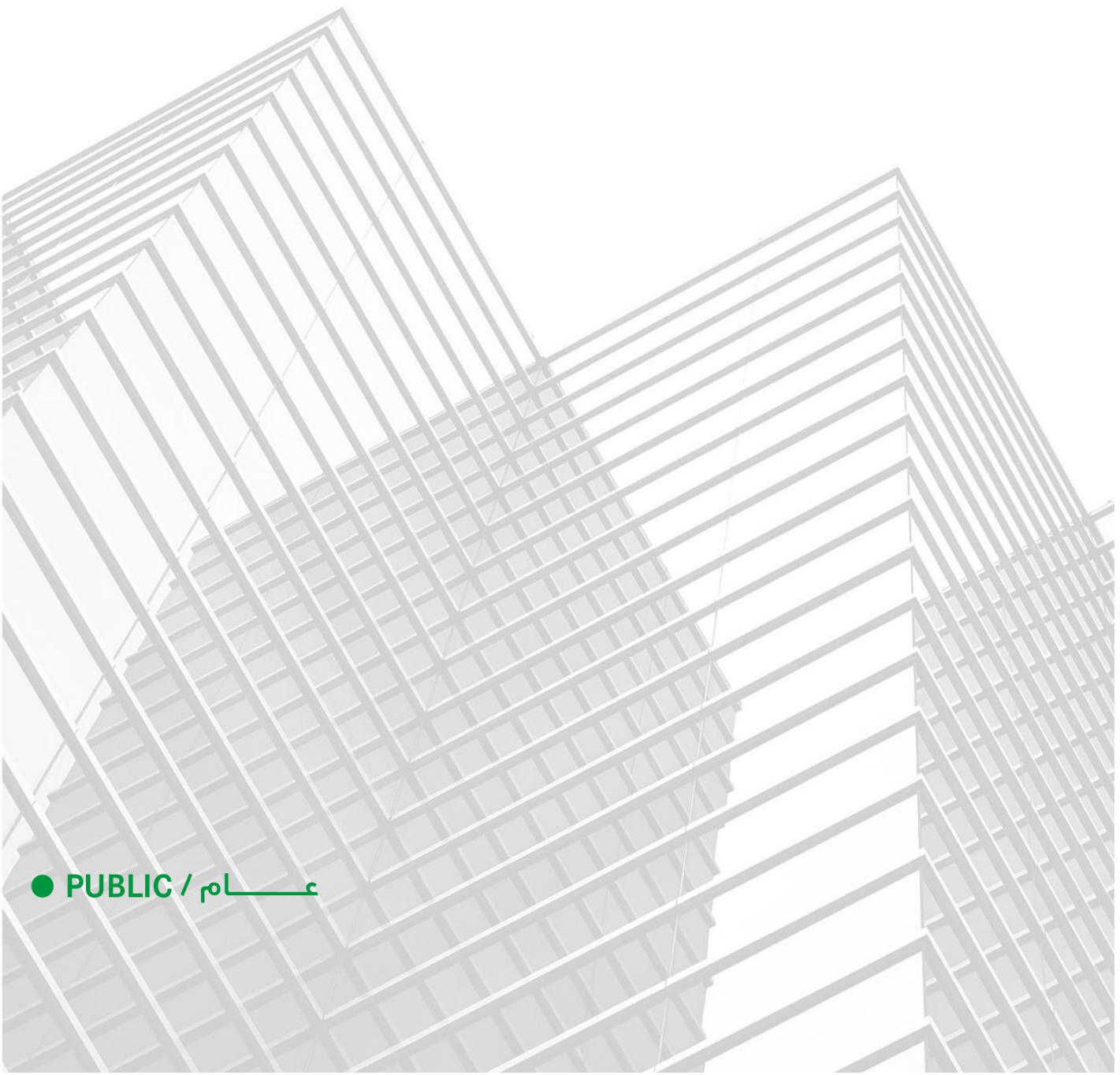




# Standard for Cerebral Palsy Rehabilitation in Children in the Emirate of Abu Dhabi



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## 1. Standard Purpose and Scope

Children with Cerebral Palsy present with a lifelong disability of varying severity and complexity, which requires individualized pathways of care. No specific treatments can remediate the brain damage responsible for the complex clinical-functional dysfunctions typical of Cerebral Palsy, however, a number of rehabilitation interventions can improve patients' activity level and participation and, therefore, their quality of life.

### Purpose:

This document sets the minimum requirements for the provision of Rehabilitative Services to Children with Cerebral Palsy in the Emirate of Abu Dhabi that is in line with evidence-based guidelines for rehabilitation interventions, so that they can be as physically and socially independent as possible, and therefore have the best possible quality of life.

### Scope:

This standard applies to all DOH licensed healthcare facilities and professionals engaged in the provision of care to children diagnosed with Cerebral Palsy.

## 2. Definitions and Abbreviations (Arrange alphabetically)

No.	Term / Abbreviation	Definition
2.1	<b>ADL</b>	Activities of Daily Living
2.2	<b>AFO</b>	Ankle Foot Orthoses
2.3	<b>CP</b>	Cerebral Palsy
2.4	<b>Cerebral Palsy</b>	Cerebral palsy (CP) describes a group of permanent disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of CP are often accompanied by disturbances of sensation, perception, cognition, communication and behavior; by epilepsy and by secondary musculoskeletal problems. <sup>1</sup>
2.5	<b>ICF</b>	International Classification of Functioning
2.6	<b>Malaffi</b>	Health Information Exchange platform, that safely and securely connects public and private healthcare providers in the Emirate of Abu Dhabi.
2.7	<b>Shafafiya</b>	Data Exchange software system that allows the movement of the data among healthcare partners.
2.8	<b>Snoezelen Multi-Sensory Environment</b>	Relaxing spaces that help reduce agitation and anxiety, engage and delight the user, stimulate reactions and encourage communication.
2.9	<b>GMFM</b>	Gross Motor Function Measure
2.10	<b>FIM</b>	Functional Independence Measure

<sup>1</sup>Bax M, Goldstein M, Rosenbaum P, et al. Proposed definition and classification of cerebral palsy, April 2005. *Dev Med Child Neurol* 2005;47:571–6.

<b>2.11</b>	<b>VP</b>	<i>Ventriculo-peritoneal shunt.</i>
<b>2.12</b>	<b>MDT</b>	Multi-disciplinary team

### 3. Standard Requirements and Specifications

Standard of Rehabilitation for Children with Cerebral Palsy in the Emirate of Abu Dhabi introduces the establishment of a Cerebral Palsy Program and its related requirements in participating facilities providing Cerebral Palsy Rehabilitation services in a comprehensive multidisciplinary approach that will ensure:

- Interventions are implemented as early as possible with early assessment and recognition of the signs of cerebral palsy.
- Once a diagnosis of cerebral palsy has been made, the child will be referred by the primary care provider to the Cerebral Palsy Program/Service.
- Allowing the child to be seen by different providers together at the same visit during the re assessment to establish clinical management.
- Availability of expertise of various healthcare professionals including those from rehabilitation medicine, neurology, psychology, orthopedics, neurosurgery and other specialties as needed.
- To engage the family in the comprehensive care and development of the child through support of health, educational, leisure and vocational needs.
- Enabling the child to be as physically, psychologically and socially independent as possible.
- To reduce the consequences of impairments and thus optimize the function of the developing child.
- Including community-based support such as teachers, therapists, and home nurses, in treatment plan development will be encouraged.
- Provide a plan for inclusion of children with cerebral palsy in the classroom at schools and provide them with the required accommodations.

#### 3.2 Eligibility and Enrollment Criteria:

##### 4.1. Eligibility:

The following is the inclusion and exclusion Criteria applicable to Children with Cerebral Palsy

###### Inclusion Criteria:

- Children with cerebral palsy between the ages of 6 months and 7 years.
- Children above 7 years to 16 years old provided their functional ability is below those of children aged 7 who do not have a disability.

###### Exclusion Criteria

- Children below the age of 6 months, and children above age 7 whose gross motor function is similar to other children aged 7 who do not have a disability.
- Children who have not achieved at least a 80% rate of attendance to therapy sessions in previous cycles without any justified medical reason.

Patients' eligible for the enrollment of the DOH's Cerebral Palsy Program have to;

##### 4.1.1. Meet the criteria for the diagnosis of Cerebral Palsy in children following comprehensive assessment and investigation by a pediatric neurologist.

**Service Specifications:****3.3 Minimum Staffing and Service Requirements:**

- A Rehabilitation service director or lead is required to lead the Multi-disciplinary teams, and provide oversight to clinical and administrative issues.
- In order to provide optimal level of care, appropriate levels of staffing is essential in all multi-disciplinary teams based on the total number of patients and the needs of the population served.
- Adequate number of care coordinators is required to coordinate patient care across disciplines.
- The rehabilitation service should have established pathways for referrals to the different required clinical subspecialties and completion of all assessments to ensure provision of comprehensive multidisciplinary care in a timely and efficient manner.
- The service should also provide tailored training programs to parents, caregivers, special education teachers, and others by qualified clinical educators.
- DOH licensed healthcare providers must comply with the terms and requirements of this Standard, and other DOH relevant Standards, and regulatory requirements. These include reporting of Key performance indicators, Malaffi and Shafafiya data reporting requirements.
- The following specialties/services should be provided to the patients in a comprehensive multi-disciplinary approach. Clear pathways should exist to ensure timely coordination & provision of these services to the patients.

**3.3.1 Professionals:**

The following expertise should be available in the facility providing Cerebral Palsy Rehabilitation services. These services should be provided in a comprehensive multidisciplinary approach:

**Rehabilitation Physician:**

- coordinates the cerebral palsy program
- carries out specialist assessment and management of spasticity and dystonia including medication prescription, and Botox injections
- undertakes regular patient reviews to monitor for early complications such as contracture and hip or spine issues, and to ensure rapid intervention to manage these complications
- arranges early referral to supporting specialties when identified complications require the intervention of these specialties

**General Pediatrician:**

- To provide primary care to CP patients.
- Liaise with other medical specialties in collaboration with the pediatric physiatrist
- Monitor other growth parameters in CP patients

**Physiotherapist for activities including:**

- gait training
- postural training
- activities for building endurance
- muscle strengthening
- increasing range of motion and flexibility
- enhancing coordination and balance
- learning the use of prosthesis

- overall fitness
- aquatic therapy
- assessment for standing aids
- assessment for walking aids

**Occupational therapist for activities including:**

- muscle training and movement re-education
- building endurance
- enhancing coordination and balance
- fine motor training (such as handwriting)
- hand-eye coordination/motor skills training
- learning to use a prosthetic (an artificial device that replaces a missing body part)
- teaching ADL and self-care techniques
- assessments for wheelchairs, commodes, hoists and hospital beds

**Orthotist for assessment and fitting of:**

- ankle foot orthoses (or “AFOs”)
- leg braces
- hand and wrist splints
- shoulder and elbow braces
- body braces

**Speech and language therapist:**

- To assess and manage swallowing difficulties
- To facilitate development of speech and communication with the use of appropriate augmentative communication devices

**Recreational therapist/Special Therapist/Behavioral Therapist:**

- To Increase the ability of children with cerebral palsy to get involved in tasks
- To encourage emotional well-being and improve physical function by getting them involved in activities they enjoy and benefit from.

**Liaison with Clinical Services:**

Having close liaison with other specialties and clear pathways of referral should be part of the scope of service. The clinical services include but not limited to:

**Pediatric neurology for:**

- Confirming the diagnosis of cerebral palsy and ruling out other neurologic disorders
- Management of seizure disorders and investigating-morbidities.
- Evaluation and management of spasticity and dystonia including medications and Botox injections
- Screen for all other possible medical comorbidities to provide proper referrals to required other medical professionals
- Requesting required laboratory work up whenever needed to check for any related comorbidities such as failure to thrive, feeding difficulties, endocrinological problems and bone health surveillance
- Requesting and doing required hearing tests to rule out sensorineural hearing impairment

**Neurosurgery – for interventions such as:**

- Insertion of VP shunt – for management of hydrocephalus
- Selective Dorsal Rhizotomy – for management of refractory spasticity
- Insertion of baclofen pump – for management of lower limb spasticity
- Deep brain stimulation – for management dystonia

### **Orthopedic surgery:**

For procedures including:

- Dega Osteotomy
- Femoral De-rotational Osteotomy
- Foot Fusions
- Hamstring Lengthening
- Posterior Spine Fusion
- Rectus Transfers Resection
- Adductor Lengthening
- Split Tibialis Posterior Tendon Transfer
- Tendon Achilles Lengthening procedures TAL Gastrocnemius Recession
- Tibial De-rotational Osteotomies for Tibial Torsion

### **Otolaryngology (ENT) and audiology:**

For assessment and management of:

- Enlarged tonsils or adenoids, which can cause snoring and difficulty breathing while sleeping.
- Drooling
- Hearing impairment and insertion of cochlear implants

### **Ophthalmology**

- For the Assessment, early detection and management of visual impairment

### **Dentistry**

- For regular dental checks and treatments

### **Pediatric Gastroenterology**

- To perform nutritional assessment including anthropometric measures.
- To perform assessment for micronutrient deficiencies (mineral and vitamin deficiencies).
- To manage all deficiencies through adjusting feeding regiments, feeding methods, type of feeds administered and supplemental vitamins and minerals as per patient requirement.
- To assess and manage the patients for common gastroenterology problems that are regularly encountered in children with disability. This includes; poor feeding, swallowing disorders, gastroesophageal reflux, gastroparesis, gastritis and esophagitis, intestinal motility disorders, small bowel overgrowth and constipation.
- To review feeding devices and manage feeding device related problems
- To coordinate and perform procedure such as nasogastric tube insertion, naso-jejunal tube insertion, gastro-jejunal tube insertion and diagnostic endoscopy.

### **Pediatric genetic and metabolic Specialty**

- To assess, diagnose and manage any metabolic/genetic primary conditions in children with cerebral palsy.

### **Psychology**

- To address issues related to emotional, behavioral and social development, as well as help with any behavior management or feeding problems

**Psychiatry:**

- To assess and manage coexisting mental health issues in children with Cerebral palsy (e.g. ADHD and ASD).

**Dietician/nutritional services**

- To help plan meals based on the specific medical condition and needs, especially in children with difficulty swallowing

**Care coordination**

- To coordinate care and appointments so that all the multi-disciplinary specialists can be seen on the same day if possible.

**Minimum Equipment Requirements:****Gait Analysis Service:**

To obtain objective real time information of the biomechanical stresses on the patient's body during walking in order to understand the cause of the patient's gait abnormalities and to create a treatment plan that is best suited for their individual limitations and mobility goals. It also allows the monitoring of the patient's progress and their response to therapy. More crucially, gait analysis is an invaluable tool in the preoperative assessment of patients scheduled for orthopedic procedures as it allows the surgeon to be more specific about the surgical procedure and for the surgery to have more predictable results

**Snoezelen Multi-Sensory Environment:**

To stimulate the child with cerebral palsy by providing exciting visuals, music and sounds, invigorating smells and textures to explore which helps to reduce agitation and anxiety, as well as to stimulate reactions, body awareness/proprioception and encourage communication.

**Gait Trainer:**

To improve the walking ability, speed and endurance in children through longer training sessions with more repetitions while maintaining a consistent movement pattern. Augmented feedback during robot-assisted gait training also appears to be a promising way of facilitating not just gait and physical function, but also of improving psychological and cognitive status.

**Virtual reality/Computer Based Activity:**

To provide a variety of controlled and interactive environments which provide repetitive practical and positive feedback in order to increase functional independence in daily tasks. This therapy encourages active participation and positively affects brain reorganization, plasticity, motor capacity, visual perceptive skills, social participation and personal factors.

Transference of these skills into daily activities ensures improvements in communication with others, improvement with social relations, and increases independence.

#### 4. Key stakeholder Roles and Responsibilities

No	Stakeholder	Roles & Responsibilities
1	Healthcare Providers licensed to provide Rehabilitation services	<p>Provide all services detailed in this standard by DOH licenced staff.</p> <p>Establish mechanisms to ensure ongoing communication and continuity of care between all levels of care delivery for children with cerebral palsy, particularly the involvement of primary care.</p> <p>Ensure that consent is obtained prior to assessment and/or treatment, and throughout the course of ongoing treatment, from the child's legal guardian. Consent must also be reaffirmed if there are significant changes to the treatment plan or the patient's condition."</p> <p>Review quarterly the safety &amp; quality performance of the service and report relevant KPIs on a quarterly basis to the Quality department in DoH</p> <p>Comply with DOH's requests to inspect, audit records and cooperate with DOH/ADPHC authorized auditors as required by DOH.</p> <p>Participate in DOH patient experience survey programs.</p> <p>Ensure adequate staffing and qualifications of staff providing rehabilitation services</p> <p>Communicate with patients and their caregivers regarding the new standards</p>
2	Healthcare Facilities Sector in DoH	<p>Put in place mechanisms to ensure the Implementation and monitoring of these Standards of Care in Abu Dhabi</p> <p>Update standards periodically and compare with best practices to improve clinical outcomes and patient experience.</p>

#### 5. Monitoring and Evaluation

The following Key performance Indicators will be applicable to healthcare providers who are licensed to provide rehabilitation services and will be monitored periodically.

#	Key Performance Indicator	Type of Measure	Target
1	Physical function improvement	Outcome	25% Improvement in 85% of patients within 6 months Measured biannually
2	Reduce functional dependence	Outcome	25% improvement in 85% of patients within 6 months Measured biannually
3	Patient attendance in Therapy sessions	Process	85% attendance rate in 85% of patients attending Measuring biannually
4	Patient Satisfaction	Outcome	>80% satisfaction rates in 85% of patients attending Rehabilitation measured biannually

## 6. Enforcement and Sanctions

DOH licensed healthcare providers must comply with the terms and requirements of this Standard, and other DOH relevant Standards, and regulatory requirements. These include reporting of Key performance indicators, Malaffi and Shafafiya data reporting requirements. DOH may impose sanctions in relation to any breach of requirements under this Standard in accordance with the disciplinary regulations of the healthcare sector. In the event of non-compliance with the standards, DoH has the right to revoke the license of the facility as a provider of rehabilitation services for Cerebral palsy.

## 7. References

No	Reference date	Reference Name	Relation Explanation / Coding / Publication Links
1	Feb 2023	<ol style="list-style-type: none"><li>1. Fairhurst C. Cerebral palsy: the whys and the hows. <i>Arch Dis Child Educ Pract Ed.</i> 2012;97:122-31 (doi:10.1136/archdischild-2011-300593).</li><li>2. Rosenbaum P, Paneth N, Leviton A, Goldstein M, Bax M. A report: The Definition and Classification of Cerebral Palsy April 2006. <i>Dev Med Child Neurol.</i> 2007;49(Suppl 109):8-14.</li><li>3. Prevalence and characteristics of children with cerebral palsy in Europe, SCPE. <i>Dev Med Child Neurol.</i> 2002;44:633-640.</li><li>4. Galea C, McIntyre S, Smithers-Sheedy H, Reid SM, Gibson C, Delacy M, Goldsmith S, Badawi N, Blair E. Cerebral palsy trends in Australia (1995–2009): a population-based observational study. <i>Dev Med Child Neurol.</i> 2019;61(2):186-193.</li><li>5. Hirtz D, Thurman DJ, Gwinn-Hardy K, Mohamed M, Chaudhuri AR, Zalutsky R. How common are the “common” neurologic disorders? <i>Neurology</i> 2007; 68: 326–37.</li><li>6. Oskoui M, Joseph L, Dagenais L, Shevell M. Prevalence of cerebral palsy in Quebec: alternative approaches. <i>Neuroepidemiology</i> 2013; 40: 264–8</li><li>7. Shaunak M, Kelly VB. Cerebral palsy in under 25s: assessment and management (NICE Guideline NG62). <i>Arch Dis Child Educ Pract Ed.</i> 2018;103:189-93.</li><li>8. Palisano R et al. Development and reliability of a system to classify gross motor function in children with cerebral palsy. <i>Dev Med Child Neurol.</i> 1997;39:214-223.</li><li>9. Bower E. A guide to physiotherapy techniques in cerebral palsy. <i>Current Paediatrics.</i> 1999;9:79-83.</li><li>10. Novak I. Therapy for children with cerebral palsy: who, what, and how much? <i>Dev Med Child Neurol.</i> 2020;62:17.</li></ol>	

		<p>11. Morris C et al. Variations in the orthotic management of cerebral palsy. <i>Child: Care, Health and Development</i>. 2002;28(2):139-147.</p> <p>12. Morris C. A review of the efficacy of lower-limb orthoses used for cerebral palsy. <i>Dev Med Child Neurol</i>. 2002;44:205-211.</p> <p>13. Dreher et al. Long-term development of gait after multilevel surgery in children with cerebral palsy: a multicentre cohort study. <i>Dev Med Child Neurol</i>. 2018;60:88-93.</p> <p>14. Gage J et al. Gait analysis: principles and applications. <i>J Bone Joint Surg</i>. 1995;77-A:1607-1623.</p> <p>15. DeLuca PA, Davis RB III, Ounpuu S, et al. Alterations in surgical decision making in patients with cerebral palsy based on three-dimensional gait analysis. <i>J Pediatr Orthop</i> 1997;17:608-14.</p> <p>16. Rodda J, Graham HK. Classification of gait patterns in spastic hemiplegia and spastic diplegia: a basis for management algorithm. <i>European J Neurol</i>. 2001;8(Suppl 5):98-108.</p> <p>17. Patrick JH, Roberts AP, Cole GF. Therapeutic choices in the locomotor management of the child with cerebral palsy – more luck than judgement? <i>Arch Dis Child</i>. 2001;85:275-279.</p> <p>18. Patrick JH. Techniques of psoas tenotomy and rectus femoris transfer: “new” operations for Cerebral Palsy diplegia—a description. <i>J Pediatr Orthop B</i> 1996; 5:242-6.</p> <p>19. Steinbok P, Reiner AM, Beauchamp R, et al. A randomized clinical trial to compare selective posterior rhizotomy plus physiotherapy with physiotherapy alone in children with spastic diplegic cerebral palsy. <i>Dev Med Child Neurol</i> 1997; 39:178-84.</p> <p>20. Wright FV, Sheil EM, Drake JM, et al. Evaluation of selective dorsal rhizotomy for the reduction of spasticity in cerebral palsy: a randomized controlled trial. <i>Dev Med Child Neurol</i> 1998;40:239-47.</p> <p>21. Novak I, McIntyre S, Morgan C, Campbell L, Dark L, Morton N, Stumbles E, Wilson S-A, Goldsmith S. A systematic review of interventions for children with cerebral palsy: state of the evidence. <i>Dev Med Child Neurol</i>. 2013;55:885-910.</p> <p>22. Cadwgan J, Pearse J, Devlin A, Basu A. Fifteen-minute consultation: management of the upper limb in unilateral cerebral palsy. <i>Arch Dis Child Educ Pract Ed</i>. 2019;104:58-65.</p> <p>23. Bell KL, Benfer KA, Ware RS, Patrao TA, Garvey JJ, Arvedson JC, Boyd RN, Davies PSW, Weir KA. Development and validation of a screening tool for feeding/swallowing difficulties and undernutrition in children with cerebral palsy. <i>Dev Med Child Neurol</i>. 2019;61(10):1175-1181.</p>	
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## 8. Appendices

### 8.1 Recommended Care Pathway for the Management and Treatment of Children Diagnosed with Cerebral Palsy

The aim of rehabilitation is to improve mobility, functional skills and communication skills affected by cerebral palsy so that the child can function as independently as possible in the home, school and community environments, and with the best quality of life.

The management of cerebral palsy requires a two-pronged approach. The first of these involves the optimization of movement and posture while minimizing potential secondary musculoskeletal deformity with spasticity treatments, orthotics and orthopedic surgery. While the second aspect of management is recognizing and intervening to address the many developmental and clinical comorbidities that are associated with cerebral palsy.

#### 1. Initial Assessment

Following referrals from other healthcare facilities, initial assessments by a rehabilitation physician should include meetings of the patients, the parents, and/or the care providers with the Multi-disciplinary team to discuss the aims and structure of the program, completion of detailed physical and functional assessments using standardized assessment tools, assessments of other health issues and comorbidities, and consequences of motor disorders such as drooling, incontinence, and orthopedic problems, and establishment of Patient centered goals with the involvement of the parents, the patient and the rehabilitation team.

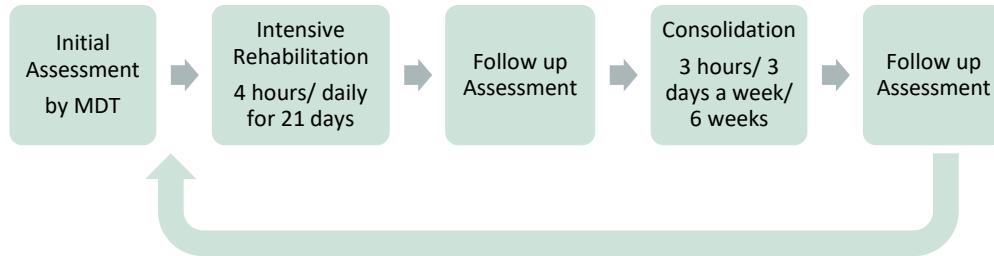
Based on the initial assessment, the team should liaise with other clinical services to complete other assessments and tailor individualized plans for the patients.

#### 2. Treatment Program

The Cerebral palsy Rehabilitation plan should consist of two distinct phases – the **intensive rehabilitation phase** and the **consolidation phase**.

The intensive rehabilitation phase should include 4 hours of therapy from the various treatment modalities daily for 21 consecutive days or 5 hours daily for 6 days per week for 3 weeks. These treatment modalities may include: Spinal function and strengthening, trigger point therapy, joint mobilization, therapeutic massages, movement exercises, group rhythmic exercises, strength training, rehabilitation computer games

This phase should be followed by the consolidation phase during which the child attends 3 hours of outpatient therapy 3 days per week, consisting of physiotherapy, occupational therapy and speech therapy, in addition to completing a daily home exercise program for 40 days. The consolidation phase is designed to further develop the child's newly acquired skills. Following this, the intensive rehabilitation phase should be restarted and the therapy cycle is repeated continually until the child reaches age 16 years.



### 3. Follow Up Assessment

MDT meetings should be scheduled with the patients, their parents and the rehabilitation team at the end of each phase of the treatment program in order to monitor the progress of the patients in achieving their identified goals. Detailed physical and functional and cognitive assessments should be carried out at these MDT meetings and the results compared to the previous outcomes. The patient's goals may then be modified or new goals set following discussion with the patients, their parents and the rehabilitation team.

### 4. Complimentary Therapies

Hydrotherapy is a type of complementary therapy which is administered in conjunction with other conventional modes of treatment for the treatment and rehabilitations of cerebral palsy patients. It consists of activities or exercises that are performed in warm water to help the child achieve the goals set for their therapy. Along with improving strength and mobility, hydrotherapy is also frequently used as part of rehabilitation programs following surgery. While the child with cerebral palsy is recovering from their surgery, hydrotherapy can help to gradually increase movement and their ability to put weight through their feet.

### 5. Working with Families

Care of the child with cerebral palsy involves developing a trusting and cooperative relationship with parents. As with all children, a supportive home environment builds self-esteem and confidence. Parents should be provided with practical support on how to establish a supportive home environment, provision of care at home, information about available support groups, and other resources.

### 6. Facility Requirement:

1. Cerebral Palsy Program should be listed as a service within facility.
2. Facilities providing the service will be listed on the DoH website.
3. The facility must integrate their electronic medical record system with Health Information Exchange system (Malaffi).
4. Affiliated with internationally recognized Cerebral Palsy Program

## 7. Recommended Functional Assessment Tools for Cerebral Palsy

### 7.1 Pediatric Functional independence Score



### 7.2 Gross Motor Function Measure Score



## 8.2 Monitoring KPIs

### 1. GMFM KPI indicator profile

#### Indicator Profile

Indicator Title	GROSS MOTOR FUNCTION MEASURE (GMFM)						
Definition	The instrument will be used to assess outcomes following treatment in a rehabilitation program by measuring the change in gross motor function over time in children with cerebral palsy between the ages of 6 months and 7 years, as well as in children above 7 years provided their gross motor function is below those of children aged 7 who do not have a disability.						
Unit of Measure	<input checked="" type="checkbox"/> Ratio		<input type="checkbox"/> Rate		<input type="checkbox"/> Count		
Type of Indicator	<input type="checkbox"/> Structure		<input type="checkbox"/> Process		<input checked="" type="checkbox"/> Outcome	<input type="checkbox"/> Balancing	
Reason for choosing Indicator	<input type="checkbox"/> High-cost	<input type="checkbox"/> High-Risk	<input type="checkbox"/> High-Volume	<input type="checkbox"/> Problem-prone	<input checked="" type="checkbox"/> Strategic Goal	<input type="checkbox"/> Other	
Domain	<input type="checkbox"/> Safety	<input type="checkbox"/> Timeliness	<input checked="" type="checkbox"/> Effectiveness	<input type="checkbox"/> Efficiency	<input type="checkbox"/> Availability	<input type="checkbox"/> Efficacy	
	<input type="checkbox"/> Continuity	<input type="checkbox"/> Appropriateness	<input type="checkbox"/> Respect/caring	<input checked="" type="checkbox"/> Patient Centred			
Measurement / Calculation	<ul style="list-style-type: none"> <li>● Numerator: GMFM Score at the start of therapy interval</li> <li>● Denominator: GMFM Score at the end of therapy interval</li> <li>● Inclusion: Children with cerebral palsy between the ages of 6 months and 7 years, as well as in children above 7 years provided their gross motor function is below those of children aged 7 who do not have a disability.</li> <li>● Exclusion: Children below the age of 6 months, and children above age 7 whose gross motor function is similar to other children aged 7 who do not have a disability. Children who have documented attendance rate of &lt; 85% in previous cycles.</li> </ul>						
Source of Data	<input checked="" type="checkbox"/> Manual Collection Tool		<input type="checkbox"/> Automated Report		<input type="checkbox"/> Other		
Data Collection Frequency	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Quarterly	<input checked="" type="checkbox"/> Biannually	<input type="checkbox"/> Annually		
Data collection Methodology	<input type="checkbox"/> Retrospective			<input checked="" type="checkbox"/> Concurrent			
Reporting Frequency	<input type="checkbox"/> Monthly		<input checked="" type="checkbox"/> Biannually		<input type="checkbox"/> Annually		

Target	<ul style="list-style-type: none"> <li>● To achieve a 25% improvement in GMFM score in 85% of Children attending the program within 6 months from starting the program.</li> </ul>		
Reference (List the References)	<input type="checkbox"/> M. Salavati, W.P. Krijnen, E.A. Rameckers, P.L. Looijestijn, C.G. Maathuis, C.P. van der Schans, <i>et al.</i> Reliability of the modified Gross Motor Function Measure-88 (GMFM-88) for children with both spastic cerebral palsy and cerebral visual impairment: a preliminary study <i>Res Dev Disabil</i> , 45–46 (2015), pp. 32-48	<input type="checkbox"/> J. Ko, M. Kim Reliability and responsiveness of the gross motor function measure-88 in children with cerebral palsy <i>Phys Ther</i> , 93 (2013), pp. 393-400	

## 2. Attendance Rate KPI indicator profile

### Indicator Profile

Indicator Title	Patient's Attendance in Outpatient Based Therapy Sessions								
Definition	Achievement of at least 85% attendance rate among 85% of children attending the CP rehabilitation program.								
Unit of Measure	<input checked="" type="checkbox"/> Ratio		<input type="checkbox"/> Rate		<input type="checkbox"/> Count				
Type of Indicator	<input type="checkbox"/> Structure		<input checked="" type="checkbox"/> Process		<input type="checkbox"/> Outcome		<input type="checkbox"/> Balancing		
Reason for choosing Indicator	<input type="checkbox"/> High-cost	<input type="checkbox"/> High-Risk	<input type="checkbox"/> High-Volume	<input type="checkbox"/> Problem-prone	<input checked="" type="checkbox"/> Strategic Goal	<input type="checkbox"/> Other			
Domain	<input type="checkbox"/> Safety	<input checked="" type="checkbox"/> Timeliness		<input type="checkbox"/> Effectiveness	<input type="checkbox"/> Efficiency	<input type="checkbox"/> Availability	<input checked="" type="checkbox"/> Efficacy		
	<input type="checkbox"/> Continuity	<input checked="" type="checkbox"/> Appropriateness		<input type="checkbox"/> Respect/caring	<input type="checkbox"/> Patient Centred				
Measurement / Calculation	<ul style="list-style-type: none"> <li>● Numerator: Number of children achieving at least 85% attendance rate during the CP rehabilitation program.</li> <li>● Denominator: Total number of children in the neuro-disability program.</li> <li>● Inclusion: Children with cerebral palsy between the ages of 6 months and 7 years, as well as in children above 7 years provided their functional ability is below those of children aged 7 who do not have a disability.</li> <li>● Exclusion: Children below the age of 6 months, and children above age 7 whose gross motor function is similar to other children aged 7 who do not have a disability. Children who have not achieved 85% rate of attendance in therapy sessions in previous cycles.</li> </ul>								
Source of Data	<input checked="" type="checkbox"/> Manual Collection Tool		<input type="checkbox"/> Automated Report		<input type="checkbox"/> Other				
Data collection Methodology	<input checked="" type="checkbox"/> Retrospective				<input checked="" type="checkbox"/> Concurrent				
Reporting Frequency	<input type="checkbox"/> Monthly		<input checked="" type="checkbox"/> Biannually		<input type="checkbox"/> Annually				
Target	<ul style="list-style-type: none"> <li>● 85% attendance rate during the CP rehabilitation program in 85% of the patients.</li> </ul>								
Reference (List the References)	<input type="checkbox"/> Msall ME, DiGaudio K, Rogers BT <i>et al.</i> (1994a): The Functional Independence Measure for Children (WeeFIM): Conceptual basis and pilot use in children with developmental disabilities. <i>Clin Pediatr</i> 33:421–430.				<input type="checkbox"/> Ottenbacher KJ, Msall ME, Lyon N <i>et al.</i> (1997): Interrater agreement and stability of the Functional Independence Measure for Children (WeeFIM). Use in children with developmental disabilities. <i>Arch Phys Med and Rehab</i>				

### 3. Wee FIM KPI Indicator Profile

#### Indicator Profile

Indicator Title	Paediatric Functional Independence Measure (WeeFIM)								
Definition	The instrument will be used to assess outcomes following treatment in a rehabilitation program by measuring the need for assistance, and severity of disability in children with cerebral palsy between the ages of 6 months and 7 years, as well as in children above 7 years provided their functional ability is below those of children aged 7 who do not have a disability.								
Unit of Measure	<input checked="" type="checkbox"/> Ratio		<input type="checkbox"/> Rate		<input type="checkbox"/> Count				
Type of Indicator	<input type="checkbox"/> Structure		<input type="checkbox"/> Process		<input checked="" type="checkbox"/> Outcome		<input type="checkbox"/> Balancing		
Reason for choosing Indicator	<input type="checkbox"/> High-cost	<input type="checkbox"/> High-Risk	<input type="checkbox"/> High-Volume	<input type="checkbox"/> Problem-prone	<input checked="" type="checkbox"/> Strategic Goal	<input type="checkbox"/> Other			
Domain	<input type="checkbox"/> Safety	<input type="checkbox"/> Timeliness		<input checked="" type="checkbox"/> Effectiveness	<input type="checkbox"/> Efficiency	<input type="checkbox"/> Availability	<input type="checkbox"/> Efficacy		
	<input type="checkbox"/> Continuity	<input type="checkbox"/> Appropriateness		<input type="checkbox"/> Respect/caring	<input checked="" type="checkbox"/> Patient Centered				
Measurement / Calculation	<ul style="list-style-type: none"> <li>● Numerator: WeeFim Score at the start of therapy interval</li> <li>● Denominator: WeeFim Score at the end of therapy interval</li> <li>● Inclusion: Children with cerebral palsy between the ages of 6 months and 7 years, as well as in children above 7 years provided their functional ability is below those of children aged 7 who do not have a disability.</li> <li>● Exclusion: Children below the age of 6 months, and children above age 7 whose functional ability is similar to other children aged 7 who do not have a disability Children with Children who have documented attendance rate of &lt; 85% in previous cycles.</li> </ul>								
Source of Data	<input checked="" type="checkbox"/> Manual Collection Tool		<input type="checkbox"/> Automated Report		<input type="checkbox"/> Other				
Data Collection Frequency	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly		<input checked="" type="checkbox"/> Quarterly	<input type="checkbox"/> Biannually	<input type="checkbox"/> Annually			
Data collection Methodology	<input type="checkbox"/> Retrospective				<input checked="" type="checkbox"/> Concurrent				
Reporting Frequency	<input type="checkbox"/> Monthly		<input checked="" type="checkbox"/> Bi-Annually			<input type="checkbox"/> Annually			
Target	<ul style="list-style-type: none"> <li>● To achieve a 25% improvement in WeeFIM score in 85% of Children attending the program within 6 months from starting the program.</li> </ul>								
Reference (List the References)	<input type="checkbox"/> Msall ME, DiGaudio K, Rogers BT et al. (1994a): The Functional Independence Measure for Children (WeeFIM): Conceptual basis and pilot use in children with developmental disabilities. Clin Pediatr 33:421–430.				<input type="checkbox"/> Ottenbacher KJ, Msall ME, Lyon N et al. (1997): Interrater agreement and stability of the Functional Independence Measure for Children (WeeFIM). Use in children with developmental disabilities. Arch Phys Med and Rehab				