Oxford Health
NHS Foundation Trust

Children's Integrated Therapy Service

A pathway for children with Cerebral Palsy

Date 6/9/2017
Version 3.0

Introduction

The Children's Integrated Therapy Service works with children and families to develop the following skills:
Self-care skills (feeding, dressing, etc.)
Hand skills
Movement and mobility skills
Play and leisure skills
Communication skills
Eating, drinking and swallowing skills

Pathway Structure

The term "pathway" is used to describe a framework for the referral, assessment and intervention process within healthcare. Pathways are used to implement national standards and guidelines to improve quality and service delivery. Therapy is provided within a partnership, where ideas and knowledge are shared and used to meet parents and their children's needs.

Pathway team and contact details

Title of Pathway	**Cerebral Palsy (CP)**
Service Name and Contact Details	Children's Community Occupational Therapy Service (CCOTS) Tel 01865 904464 oxonchildrens.therapies@oxfordhealth.nhs.uk Children's Community Physiotherapy Service (CCPS) Tel 01865 904464 childrens.physiotherapy@oxfordhealth.nhs.uk Childrens Community Speech and Language Therapy (CCSaLT) Tel: 01865 904464 oxonchildrens.therapies@oxfordhealth.nhs.uk
Pathway Managers	**Chandrasekar Rathinam** – Integrated Therapies Service Manager and Physiotherapy professional lead
Pathway Developers	**Julia Hyde** – CCPS **Helen Wakeling** – CCOTS **Chandrasekar Rathinam** **Sarah Rae** and **Lesley Bucke** – CCSaLT
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Pathway Guidance Notes

Definition of Client Group:
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 foetal or infant brain. The motor disorders of CP are often accompanied by disturbances of sensation, perception, cognition, communication and behaviour; by epilepsy; and by secondary musculoskeletal problems. CP is the most common cause of severe physical disability in childhood.

Aims of Intervention:

- To provide **children/Young people (CYP)**, families and school with strategies and opportunities to achieve functional skills
- To empower CYP to take ownership of their physical wellbeing
- To enable participation in everyday life activities at home, school and the community within their potential
- To modify the enviroment with equipment and adaptations to aid particpation and independence wherever possible
- To assist smooth transition at various stages (pre-school, primary and secondary school and adult service)
- To help CYP and families understand CP underpinning the universally accepted common classification system [Gross Motor Functional Classification System (GMFCS) and Manual Ability Classification System (MACS)]
- To help CYP and families understand the growth related secondary complications (e.g muscle tightness, contracture deformity etc) and its impact on mobility, self-care and activities of daily life
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Referral:

- CYP can be referred by Health and Education professionals
- Sometimes the CYP will be discharged from our service if they have reached their functional goals. Parents and young people can re-refer themselves with specific functional difficulties, if they have previously been known to the service.

Assessment Location:
CYP may be seen in NHS premises, in the community, their home or educational settings for an initial assessment and follow-up input

Areas of Assessment: Assessments (formal and informal) used will be determined on an individual basis depending upon the child's needs. Joint assessment will be carried out whenever possible to determine the child's abilities and difficulties.

Physiotherapy (PT) Assessment:

- GMFCS Classification
- Muscle tone and its impact on the child's functional skills in various posture
- Developmental profile: For under 2 years old, this will include their milestones and abilities in various functional postures; For over 2 years old, gross motor function measures (GMFM-88) will be used to determine the baseline gross motor skills
- Postural assessment (e.g. Chailey Postural Assessment)
- Other objective measurements: Range of movement (RoM); Muscle strength
- Optional assessments – Observational Gait Analysis, Physiological cost index (PCI), Functional Independent Measures (FIM) and Modified Ashworth scale, AHA, CHEQ, QOL, EQ5D, timed up and go, Functional mobility scale

Occupational Therapy (OT) Assessment:
According to child specific need assessment will be made in the following areas

- MACS classification
- Assisting Hand Assessment (AHA)
- Melbourne Hand Assessment 2 (MA2) / Shriners Hospital Upper Extremity Evaluation (SHUEE)
- Canadian Occupational Performance Measure (COPM)
- Activities of daily living
- Upper limb function
- Visual perceptual skills (Beery Visual Motor Integration and Motor-Free Visual Perceptual Test
- Housing and school adaptations
- Seating and special equipment and aids.

Speech and Language Therapy Assessment (SaLT):

According to child specific need assessment will be made in the following areas

- Attention and listening skills
- Language comprehension
- Expressive language
- Speech sounds
- Social interaction
- Alternative and augmentative communication (AAC)
- Dysphagia assessment

Interventions:

We are committed to provide evidence based intervention. A recent systematic review (http://onlinelibrary.wiley.com/doi/10.1111/dmcn.12246/epdf) (2013) looked at the available evidence for many interventions used in the management of CYP with CP. It offered a traffic light system indicating whether interventions should be used to manage different aspects of the presentation of cerebral palsy based on the strength of the available evidence.

In this review, Neurodevelopmental Therapy (e.g. Bobath) and Sensory Integration (SI) was rated as a Red intervention for contracture management and motor activity improvement with a recommendation to discontinue.

Home based programmes led by the parent/s and supported by a therapist, goal directed training, context focussed therapy, hip surveillance, Constraint Induced Movement Therapy and Bi-Manual Therapy were rated as Green, and therefore recommended interventions.

There are a number of Yellow rated interventions, with strong evidence. It is recommended to try these with individuals and assess using outcome measures to evaluate success. These include Hydrotherapy, use of equipment such as standing frames, seating and orthotics (which form part of 24 hour postural management programmes) and fitness training for aerobic fitness.

Oxfordshire Physiotherapy and occupational therapy intervention techniques for CYP with CP will be based on the above review findings.

A study from CanChild (http://jamanetwork.com/journals/jama/fullarticle/195300) found that generally 90% of gross motor development occurs by the age of 5 years but that the motor skills of CYP with the most severe difficulties (GMFCS level 5) plateaued by the age of 3. After this time the focus of therapy should be to maintain current motor skills function. (Rosenbaum et al, 2002). Once the child has achieved maximum gross motor

skills determined by the GMFM, physiotherapy intervention will be directed to maintain current motor skills. Please refer to **the levels of physiotherapy and occupational therapy intervention for children with CP** document.

Post-Botox and post-operative rehabilitation (multi-level surgery and other orthopaedic procedure) improves the CYP's functional skills. Please refer the **Post-botox and post-operative rehabilitation** documents for further detail.

Selective dorsal rhizotomy (SDR) is a surgical procedure used to minimise spasticity (muscle stiffness) in CYP with cerebral palsy. Long term post-operative physiotherapy is important for a better outcome. SDR is currently not available on the NHS and we are not commissioned to provide post-operative physiotherapy care. CYP who have undergone SDR will receive their usual physiotherapy care package based on their GMFCS level.

The type of therapy, frequency and location of intervention is determined by:

- Professional assessment
- GMFCS classification and GMFM result
- MACS classification
- The child and family's needs and realistic functional goals
- Collaboration with other professionals (health and education) involved with the child

Please refer to the **Speech and Language Therapy prioritisation and packages of support documents** for the child's age and educational setting as a guide to their expected level of Speech and Language Therapy provision.

Joint therapeutic working is key in achieving effective outcomes and is embedded within the integrated therapy team. Therapy may include:

- A therapist working with a child to achieve family centred outcomes. The child may be seen individually, in groups and / or have a programme to be included into the naturally occurring environment
- Provision and sharing of information, reports and advice
- Referral to and/or liaison with other professionals and services
- Recommendations and provision of equipment
- Recommendations for adaptations to the environment
- Access to ongoing support via telephone/email

Method of delivery

- CYP will be seen by therapists or technical instructors/therapy assistant practitioners for treatment.
- Pre-school children may be seen in a multi-disciplinary group for CYP with Physical Disability (PD) and undergo the therapy programme directed by their treating therapists. The children's specific therapy programme aims are incorporated into the group.
- CYP attending a Special School may be involved with the MOVE programme
- Secondary school CYP (GMFCS level I - III) are encouraged to do strengthening exercises directed by their treating therapists.
- CYP with GMFCS level IV & V will be seen for 24 hours postural care management.
- Therapists work in partnership with educational colleagues offering training and support to enable them to deliver the therapy programme in school In order to achieve the best outcomes for CYP the therapy programme should be incorporated throughout the day (at home and school). The therapist is available

for support and will review and update the programme as and when required CYP may be seen in NHS premises, in the community, their home or educational settings for an initial assessment and follow-up input. Home visits by physiotherapy staff will be offered to check equipment and for immediate post-operative management.

Equipment

CYP with CP require a range of equipment. Please refer to the **therapy equipment provision document** for detail. CYP with CP who require AAC to support their communication will be referred to the Oxfordshire SENSS SENICT AAC Team. If appropriate, funding for a voice output communication aid will be provided by the communication aid budget A referral to the Regional Specialist AAC Service, the ACE Centre will be made by the SENICT AAC Team Speech and Language Therapist if the child meets the criteria for the NHS England Specialised AAC Services (see www.acecentre.org.uk for details).

Standards of Practice:

- On receipt of referral the family of the child will be contacted and the target is to see the child within 18 weeks
- Contact and therapy intervention is recorded electronically on Oxford Health Care notes
- Following reports will be written and sent to the parents/carers, GP, Paediatrician, school and the other MDT members involved with the child and young people
    - Initial assessment report
    - Review report followed by a specific intervention (only if needed)
    - Yearly assessment report for education settings (EHCP)
    - Tribunal report as and when requested by the education authorities if needed
- National guidelines will be followed to update the Cerebral palsy, spasticity and other pathways.

Evaluations and Outcome Measures:

CYP with CP will be seen for a yearly review and their progress will be measured using standardised outcome measures wherever possible. Please refer to the outcome measures described in this document.

Discharge:

CYP will be discharged on completion of recommended intervention, following assessment and when no further functional goals are identified.

References

1. Novak I, McIntyre S, Morgan C, et al., **A systematic review of interventions for children with cerebral palsy: state of the evidence.** Dev Med Child Neurol. 2013 Oct;55(10):885-910. doi: 10.1111/dmcn.12246. Epub 2013 Aug 21. http://onlinelibrary.wiley.com/doi/10.1111/dmcn.12246/epdf
2. Rosenbaum PL, Walter SD, Hanna SE et al., **Prognosis for gross motor function in cerebral palsy: creation of motor development curves.** JAMA. 2002 Sep 18;288(11):1357-63. http://jamanetwork.com/journals/jama/fullarticle/195300
3. **Spasticity in under 19s: management Clinical guideline** NICE guidelines (Updated: November 2016; https://www.nice.org.uk/guidance/cg145)
4. **Cerebral palsy in under 25s: assessment and management** NICE guideline (Published date: January 2017) https://www.nice.org.uk/guidance/ng62
5. Cope S, Mohn-Johnsen S. **The effects of dosage time and frequency on motor**

outcomes in children with cerebral palsy: A systematic review. Dev Neurorehabil. 2017 Aug;20(6):376-387. doi: 10.1080/17518423.2017.1282053. Epub 2017 Feb 16.

Key Implications from Current Research

- Intervention should be goal/function focussed
- Intervention should be in collaboration with professionals, parents and CYP
- No significant difference between Constraint Induced Movement Therapy and Bi-Manual Training
- Home programs are effective interventions
- Context Focussed Therapy – Changing the environment / task to enable a child to have increased participation rather than remediation strategies to change the physical ability of a child.
- Strength training – Can be effectively used for GMFCS level 1 – 3 and level 4 - 5 will be mainly treated with postural care management principles.
- There is no current evidence supporting any particular level of intensity and duration of intervention. Implications – requiring further research
- The above pathway will be changed when there is new credible scientific evidence to indicate a need to change and the NICE guidelines indicate a need.