Transforming Hip Screening for Children with Cerebral Palsy
An Interdisciplinary Approach Following the Cerebral Palsy Integrated Pathway (CPIP)

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The Problem
Children with cerebral palsy (CP) are more likely to have hips which migrate or dislocate. This causes pain, reduced movement, less function and poor quality of life. Audit at Dorset County Hospital (DCH) highlighted that none of our children with CP were receiving standardised assessment and surveillance of their hips.

The Solution
Population-based hip surveillance programmes such as the Cerebral Palsy Integrated Pathway (CPIP) detect hip displacement, resulting in significantly lower incidence of dislocation.

CPIP involves hip X-rays, employing standardised positioning, reproducible measurement, throughout the pathway, enabling accurate measurement and surveillance of hip migration percentile (MP). The Radiographer and Physiotherapist work together to use standardised positioning in order to image the child.

Learning outcomes and reflection
Inter-professional working has led to standardised care following CPIP, improving the safety of imaging, better quality of care for children with CP and their families, with excellent service user satisfaction. This interdisciplinary working has forged new relationships across professions breaking down boundaries and has led not only to improved patient care, but also greater job satisfaction.

Further Work
- Full CPIP pathway with clinical measures awaiting Trust approval and support. A business case has been submitted
- Agreement to continue clinic, aiming for 100% compliance by 2020 as predicted in graph above
- Training of additional therapy and radiography staff required (to ensure permanent of clinic and consistency in positioning for imaging)
- Training cascaded to adjacent Trusts enabling regional standardisation allowing further scope for expansion

Clinical Audit 2016 Highlighted:
(registered number 3595)
- Retrospective data collected 2014-2016 from notes and X-ray records identified 87 children on caseload with CP (0-19 years)
- Local services were not meeting CPIP standards for MP measurements (3% n=3) or correct timing of imaging (5% n=4)
- Images were of poor quality for measurement purposes and were non-comparable
- Process mapping with team (radiographer, physiotherapist, radiographer, paediatrician) highlighted:
  - No dedicated time slots for patients as walk in service
  - Radiographer unlikely to know child's abilities/requirements
  - Radiographer limited awareness of dealing with spasticity and behavioural issues and no available assistance
  - Time constraints due to capacity/ demand issues with long wait to be seen
  - Radiographer limited awareness of importance of accurate positioning for reporting of MP and predictor values
  - Variability in radiology reporting standards
  - No standardised feedback from referrer
  - Parents reported hip X-rays a stressful procedure

Graphs Showing Comparison of CPIP Standards at DCH 2016-2019

X-ray image demonstrating how to measure hip migration percentage (MP) using Reimer’s Migration Indices

Hipp X-ray of the same child with CP imaged with CPIP positioning in 2017

Re - audit 2018/2019 Highlighted:
(registered number 4738)
- Substantial improvement in X-ray standardisation and quality (criteria met for MP measurement and timing for 100% of those imaged n=65)
- 61% of children with CP on caseload at DCH had been imaged by April 2019, all following CPIP standards
- The physiotherapist has prior knowledge of patient/carers; has the therapy skills to facilitate optimal positioning of child for the X-ray
- Appointed hip X-ray clinic sessions with both CPIP trained radiographer and physiotherapist present
- Correct equipment available (e.g. hoist) and child friendly X-ray room
- Physiotherapist authorised to request CPIP X-rays, directly freeing up consultant paediatrician time
- Database ensures timely imaging, reducing risk of over or under imaging
- The radiographer has additional post graduate training for reporting measurements and making recommendations
- No radiologist involvement allowing quicker and more cost effective reporting turnaround times
- Patient journey leaflet issued to child/family prior to clinic resulting in less child anxiety when presenting to clinic
- Excellent patient/parent feedback (45% questionnaire return rate)

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References
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