Congenital Foot Deformities Local Guideline

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Key Document Owner:	Viviana Weckemann
Approved by:	Paediatric Governance Meeting
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Date	Amendments	Approved by

Introduction

This guideline is intended for all staff who conduct neonatal examinations. It details the appearance of common congenital foot deformities, their management and how to refer to tertiary care if required. This guideline was designed in conjunction with the Physiotherapy department at Birmingham Children's Hospital.

Acknowledgments

Adapted with permission from Ryan Deakin (Advanced Paediatric Physiotherapist, Birmingham Children's Hospital) by Aiesha Alexander (Paediatric Registrar), Juliana Oyenyi (Paediatric Registrar), Viviana Weckemann (Consultant Paediatrician and Muhammad Muzaffar (Junior Clinical Fellow)

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Details of guideline

- All newborn babies are examined after birth and this examination should include an assessment for foot deformities.
- All newborn babies should have full passive ankle/foot range of movement (ROM) checked at birth.
- If the baby with a foot deformity has a full ROM this is classed as FULLY CORRECTABLE and is therefore normal. No referral is required as no intervention is needed.
- Inability to achieve full passive ankle/foot ROM is classed as NOT FULLY CORRECTABLE. ALL newborn feet that are NOT FULLY CORRECTABLE require a referral to paediatric physiotherapy as soon as possible.
- Talipes may be detected on antenatal scan, and a referral to physiotherapy made antenatally

Congenital Foot Deformities

- Clubfoot (congenital talipes equinovarus)
- Metatarsus Adductus
- Positional Calcaneovalgus
- Congenital vertical talus (rocker-bottom foot)

Clubfoot (Congenital Talipes Equinovarus)

It is more common in boys than girls. In most cases it is an isolated abnormality.

Classification

Positional Talipes	Idiopathic 'True' Talipes	Secondary/Syndromic
Temporary condition The foot may have some signs of a structural clubfoot deformity but is correctable by simple pain free manipulation on examination and able to move in all directions.	Structural deformity The position of the foot cannot be corrected on physical examination. Often detected on 20-week scan	When a structural 'true' talipes deformity is associated with an underlying medical condition such as Spina Bifida or Arthrogryposis

If True Talipes Equinovarus is not detected at birth or shortly after birth, the correction of the deformity can be hindered, and the outcome of the treatment will potentially be less successful. Unsuccessful treatment has a significant effect on the long-term functional ability of the child into their adult life.

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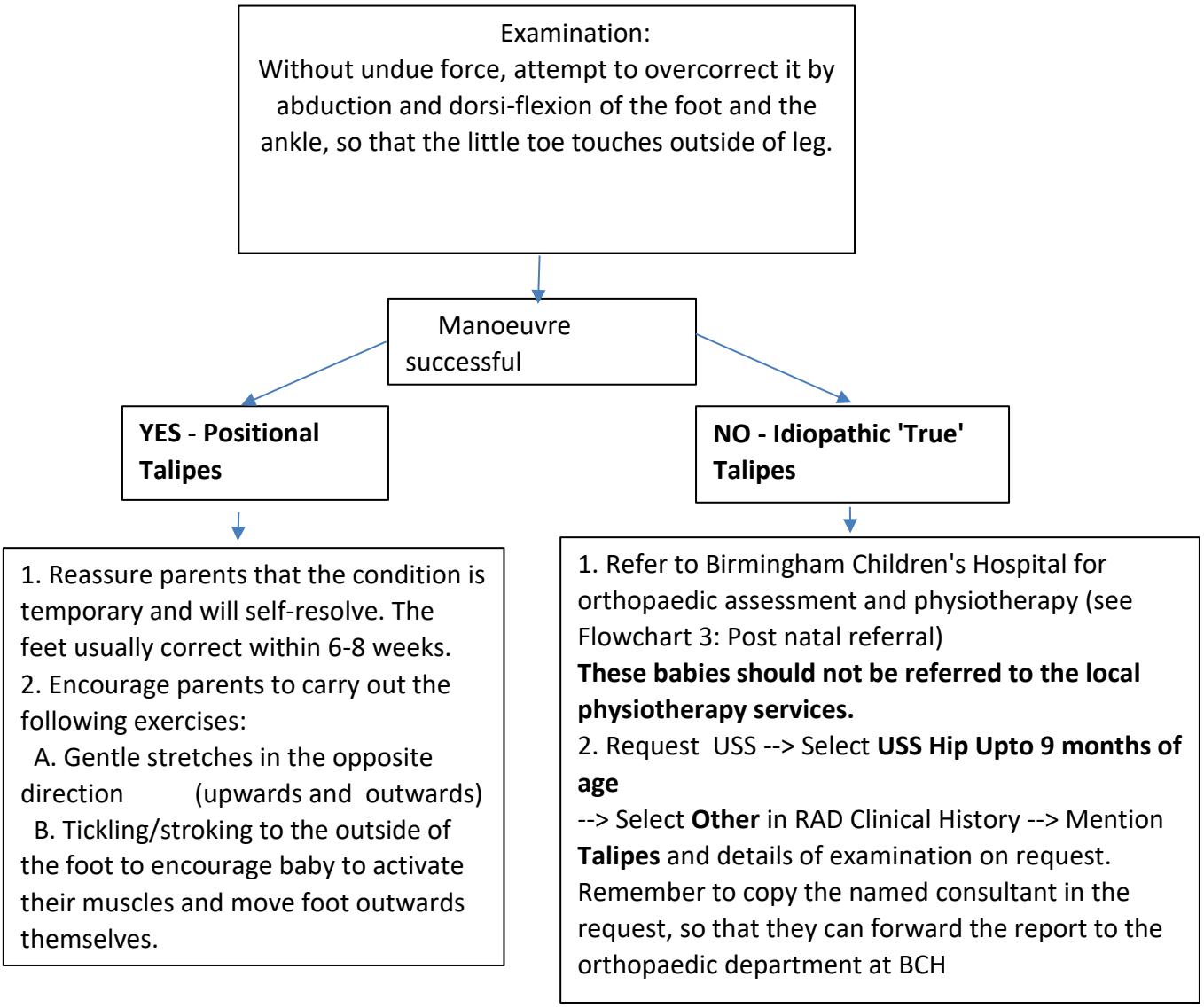
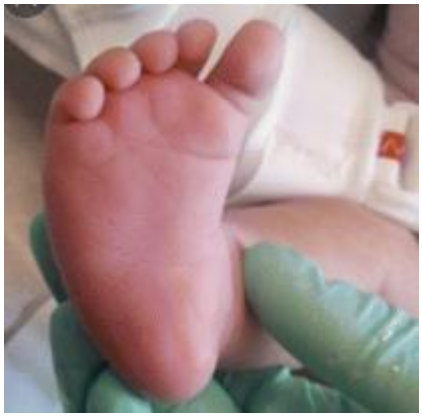
Assessment and Management Flowchart 1



Metatarsus Adductus



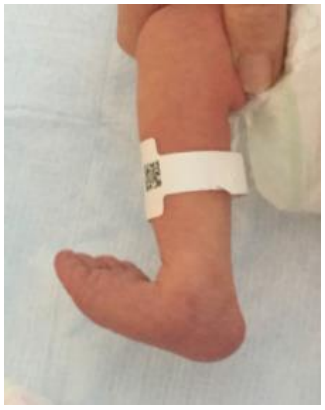
Common temporary condition where the front part of the foot and toes turn inwards causing a lateral curved border.

The rest of the foot is structurally normal with no restrictions in ROM.

Usually, no treatment is required.

If the metatarsus appears stiff with tightness in the medial foot structures these patients can be referred to physiotherapy.

Positional Calcaneovalgus



This is also a temporary foot condition with the foot in extreme dorsiflexion and eversion (foot is positioned upwards and outwards). A positional foot is flexible and corrects with gentle manipulation.

Stretching exercises are taught to parents to point the foot downwards and inwards. This will help stretch out any tightness or banding in the tendons at the front of the ankle.

The positional deformity usually corrects within 6-8 weeks.

Congenital vertical talus

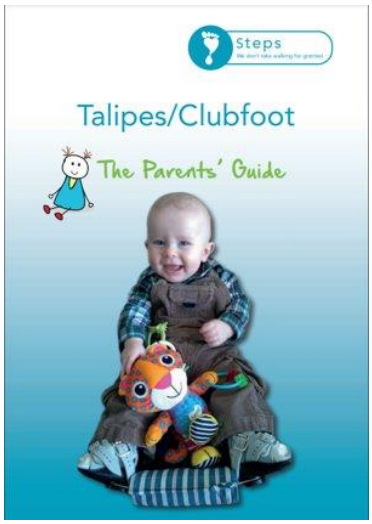
This is a rare condition, occurs in approximately 1 in 10,000 births. In 50% it is associated with other neuromuscular or syndromic conditions.

The talus is pointing down into the sole of the foot causing a “rocker-bottom” deformity. The foot is held upwards and outwards with a deep dorsolateral crease. The calcaneus is contracted due to a tight Achilles which lifts the heel up and outwards, therefore the heel feels soft and empty.

On examination the child will not be able to point the foot down and this cannot be corrected passively.

Treatment involves serial casts being applied to the foot and surgery.

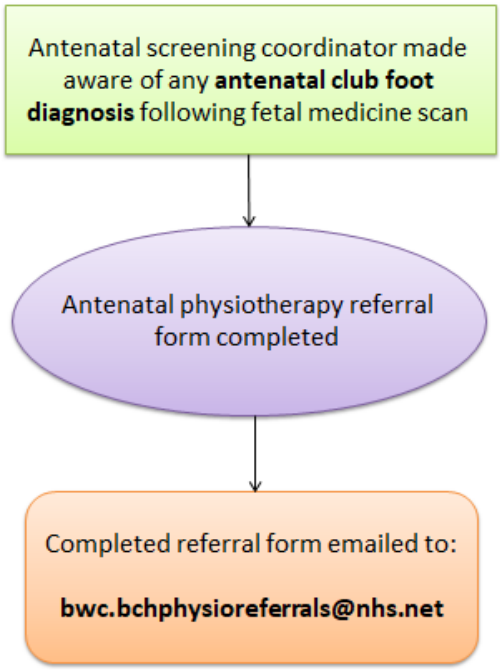
Information Leaflet for parents



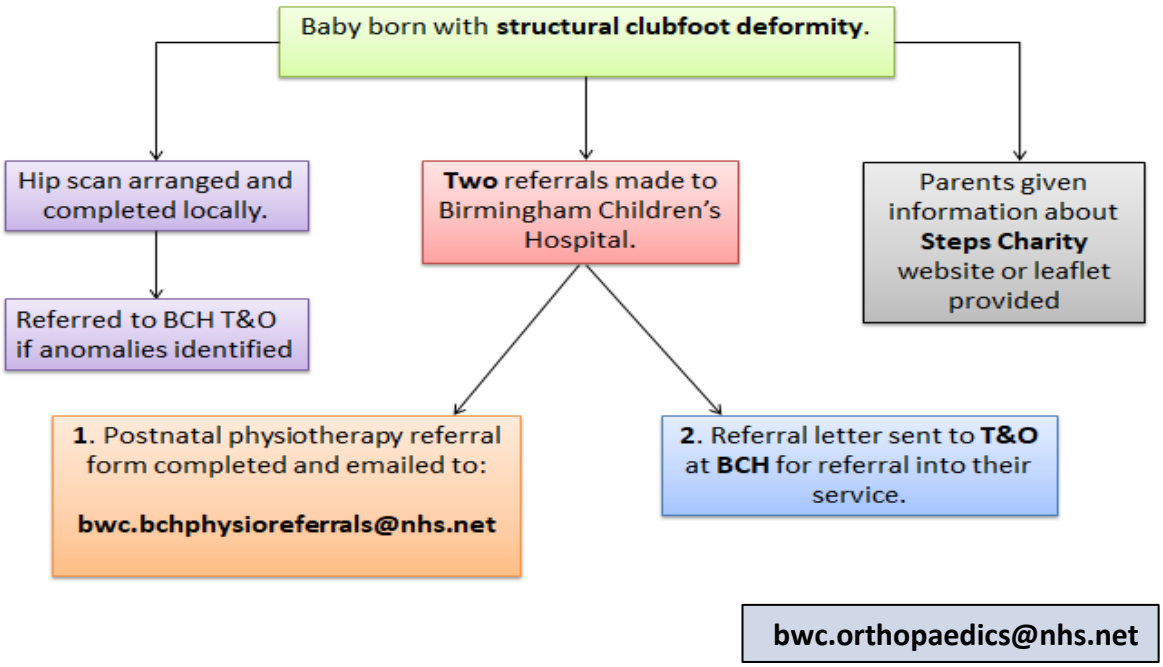
Link to download

[Talipes-Clubfoot 2021 v9 (stepsworldwide.org)]

Flowchart 2: ANTENATAL REFERRALS:



Flow chart 3: POSTNATAL REFERRALS:



BWC Hospitals club foot service: Referring centre information

Hospital:	**Contacts:**	
Worcestershire Royal Hospital Worcestershire Acute Hospitals NHS Trust Charles Hastings Way Worcester WR5 1DD	**Consultant Paediatrician:** **Antenatal and new-born screening coordinator:**	Named consultant of baby Generic email: Wah-tr.AntenatalScreeningResults@nhs.net

BWC Physiotherapy information:	**Useful contacts:**	
Birmingham Children's Hospital Therapies Department Parsons House Steelhouse Lane Birmingham B4 6NH	**Therapies reception:** **Admin team email:** **Outpatient physiotherapy team:** **Outpatient physiotherapists:** **Team leader:** **Orthopaedic secretaries:**	Tel: 0121 333 9480 Bwc.physioadmin@nhs.net bwc.bch.sharedphysio-team@nhs.net b.kinahan@nhs.net emily.hughes30@nhs.net luke.watson1@nhs.net 0121 333 8100

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POSTNATAL CLUB FOOT PHYSIOTHERAPY REFERRAL FORM

Following postnatal diagnosis of congenital foot deformity requiring specialist physiotherapy management, please complete the following referral form fully and email to **bwc.bchphysioreferrals@nhs.net**.

Referral to:	Birmingham Children's Hospital **Physiotherapy department**	**Date:**	
Name of Child:		**NHS No:**	
Date of Birth:		**Gender**:	
Address:		**GP details:**	
Parent 1: -Name -Date of birth -Contact number		**Parent 2:** -Name -Date of birth -Contact number	
Languages spoken:		Will an interpreter be required? **Yes** **No**	

Diagnosis:	
Birth history:	• Gestation: • Delivery method: • Birth weight: • Breech presentation: • Known complications/other:
Hip scan:	Has the child had a hip scan organised locally? **Yes** **No** Details: Result if known:
Other medical history:	
Referrer details:	

Please note that a separate referral letter must be sent to the Trauma & Orthopaedic team at Birmingham Children's Hospital to refer to their service.