

## GUIDELINE FOR FULL NEWBORN EXAMINATION

<b>Document Reference No:</b>	PTHB / MAT 018	
<b>Version No:</b>	3	
<b>Issue Date:</b>	November 2017	
<b>Review Date:</b>	November 2020	
<b>Author:</b>	Lead Midwife South Powys Midwife	
<b>Document Owner:</b>	Head of Midwifery	
<b>Accountable Executive:</b>	Director of Nursing	
<b>Approved By:</b>	Womens & Childrens Service	
<b>Approval Date:</b>	26 October 2017	
<b>Document Type:</b>	Guideline	Clinical
<b>Scope:</b>	Department/Service Specific Staff Group	

The latest approved version of this document is online.  
If the review date has passed please contact the Author for advice.

### Version Control

<b>Version</b>	<b>Summary of Changes/Amendments</b>	<b>Issue Date</b>
1	Initial Issue	June 2009
2	Reviewed and Updated	Nov 2013
3	Updated with NIPE National Guidance	Nov 2017

<b>Item No.</b>	<b>Contents</b>	<b>Page</b>
	<b>ENGAGEMENT &amp; CONSULTATION</b>	4
	<b>IMPACT ASSESSMENTS</b>	5
1	Introduction	6
2	Objective	6
3	Definition	7
4	Responsibility	7
<b>App. No.</b>	<b>Appendices</b>	<b>Page</b>
A	Newborn Infant and Physical Examination	15
B	NIPE Assessment Flow Chart	17
C	Incidence and Risk Factors	18

## ENGAGEMENT & CONSULTATION

### Key Individuals/Groups Involved in Developing this Document

Role / Designation
Midwives
Link Tutor's Staffordshire University

### Circulated to the following for Consultation

Date	Role / Designation
Aug 2016	Midwives
Aug 2016	Link Tutors Staffordshire university
Sept 2017	Midwifery management team
Nov 2017	Women's and Children's services leads

### Evidence Base

**Please list any National Guidelines, Legislation or Health and Care Standards relating to this subject area?**

**Health and care standards 3- Effective care.**

## IMPACT ASSESSMENTS

Equality Impact Assessment Summary					
	No impact	Adverse	Differential	Positive	<b>Statement</b>
					Please remember policy documents are published to both the <b>intranet</b> and <b>internet</b> .
<b>Age</b>	x				The version on the internet must be translated to Welsh.
<b>Disability</b>	x				
<b>Gender</b>	x				
<b>Race</b>	x				
<b>Religion/ Belief</b>	x				
<b>Sexual Orientation</b>	x				
<b>Welsh Language</b>	x				
<b>Human Rights</b>	x				
Risk Assessment Summary					
<b>Have you identified any risks arising from the implementation of this policy / procedure / written control document?</b>					
No					
<b>Have you identified any Information Governance issues arising from the implementation of this policy / procedure / written control document?</b>					
No					
<b>Have you identified any training and / or resource implications as a result of implementing this?</b>					
Midwives will need additional training to complete newborn examination and those trained will need to maintain their skills through CPD.					

## 1 Introduction

### About Public Health England Screening

Screening identifies apparently healthy people who may be at increased risk of a disease or condition, enabling earlier treatment or better informed decisions. National population screening programmes are implemented in the NHS on the advice of the UK National Screening Committee (UK NSC), which makes independent, evidence-based recommendations to ministers in the four UK countries. The Screening Quality Assurance Service ensures programmes are safe and effective by checking that national standards are met.

### The NHS Newborn and Infant Physical Examination Screening Programme (NIPE)

The NHS NIPE Programme's main aim is to identify and refer all children born with congenital abnormalities of the eyes, heart, hips and testes, where these are detectable, within 72 hours of birth; to further identify those abnormalities that may become detectable by 6-8 weeks of age, at the second physical examination and thereby reduce morbidity and mortality. These ages are recommended based on best practice and current evidence and should facilitate a prompt referral for early clinical assessment.

The screening elements of the NHS NIPE Programme are:

- **Eyes:** approximately 2 or 3 in 10,000 babies have problems with their eyes that require treatment. The prime purpose of screening is to identify congenital cataracts.
- **Heart:** approximately 4 -10 in 10,000 babies have a heart problem.
- **Hips:** approximately 1 or 2 in 1,000 babies have hip problems that require treatment.
- **Testes:** approximately 1 in 100 baby boys have problems with their testes that require treatment.

## 2 Objective

The overall aim must be to ensure safe and effective care is provided to women and their babies. Almost immediately after a baby is born, they should have an initial examination to ensure they have no obvious physical anomalies.

Each baby will then receive a detailed NIPE examination within 72 hours. NIPEs can be performed during the first few hours of life. There is no need

to wait 6 hours before completing. This will ensure that examinations can be completed by the midwife prior to leaving the birth centre or home (Short 2012).

It is considered safer to undertake the NIPE examination early with the potential for more false positives rather than risk missing screening altogether. (PHE 2016/7)

Eligibility – all newborn babies born in Powys or transferred home from District General Hospitals prior to examination and within 72 hours of life.

## **Aims**

- To confirm normal adaptation to extra-uterine life, including circulation, elimination and feeding
- Identification of common neonatal problems with advice about management or appropriate reassurance if no intervention is indicated
- The examination is a screening procedure, which marks the commencement of ongoing child health surveillance.
- It is an opportunity for health promotion and education on a range of areas relevant to maintaining infant health (jaundice, vitamin K, hearing screening, nutrition, hygiene, breastfeeding, reducing the risk of SIDS, safe transport in cars and maternal depression).

This examination also provides an opportunity to address broader psychosocial issues (mental health, substance abuse, and smoking) as well as spiritual and cultural needs

## **3 Definitions**

- **PTHB** – Powys Teaching Health Board
- **SIDS** - Sudden Infant Death Syndrome
- **Initial examination at birth** – this involves the first examination of the neonates by the midwife, at approximately one hour following birth.
- **NIPE** - Newborn and physical examination undertaken by an Accredited midwife
- **Accredited midwife** - A qualified Midwife who has undertaken additional training, which involves a theoretical and practical assessment.

## **4 Responsibilities**

## **Aim**

The overall aim must be to ensure safe and effective care is provided. The Midwife is responsible and accountable for maintaining and updating newborn examination skills (NMC, 2015). Whilst it is anticipated that Powys midwives will primarily examine babies born in Powys to low risk mothers. There may be occasion when a baby returns to the community from the DGH and requires an examination. The midwife must use her professional judgement to assess risk factors and refer such babies back to the DGH for examination if she feels that she does not have the skills and competence to carry out the examination.

## **Training**

All Midwives working within Powys hold a recognised midwifery qualification, In addition midwives carrying out full newborn examination must have satisfactorily carried out an appropriate course.

## **Full Newborn Examination**

The assessment of the infant should be performed with the mother's consent and all aspects of the assessment should be clearly explained. If for any reason the mother cannot be present, other family members should be involved and the mother should be made aware of the findings as soon as possible. Non consent of parent(s) to examination should be documented and notified to GP and Health Visitor for information. The setting should ensure comfort and safety for mother and baby, with measures taken to prevent cross infection. The environment should also provide privacy during and after the examination when confidential information may be discussed.

It is ideal to perform the examination when the baby is relaxed and not hungry, in a well lit, draught free environment.

Before the examination the examiner should familiarise themselves with maternal records and through discussion with the mother and if appropriate her partner:

## **Establish**

- A review of the medical history including: family history, Mother's social history, maternal, antenatal and perinatal history, infant, fetal and neonatal history and previously plotted birth weight and head circumference



- A review of parental concerns
- Identify drugs the mother may have taken during the pregnancy or received in labour
- Identify the mothers' blood group and the presence of any antibodies
- Identify if any resuscitation was required and Apgar scores.
- Check mother's decision re: administration of vitamin K
- Feeding
- Give relevant information to parents before the examination together with an opportunity to discuss the forthcoming screens
- Consent by mother to perform examination

**The Physical Examination Should Include the Following:**

- A check of whether the baby has passed meconium and urine (enquiring about the nature of urine stream in a boy)
- Observation of the baby's general condition including colour, breathing, behaviour, activity and posture
- Examination of the exposed parts of the baby first: scalp, head (including fontanelles), face, nose, mouth including soft and hard palate and tongue, ears, neck and general symmetry of head and facial features
- Examination of the baby's **eyes**
  - Eye opening – presence of eyes
  - Position and symmetry
  - Size and colour
  - For presence of red reflex
  - Screen positive – refer for appointment with consultant ophthalmologist by **2 weeks of age**
- If exposed, examination of the baby's neck and clavicles, limbs, hands, feet and digits, assessing proportions and symmetry.

**Undress Baby to Complete the Examination:**

Examination of the **heart:**

- Observation
  - General tone
  - Central and peripheral colour
  - Size and shape of chest
  - Respiratory rate
  - Symmetry of chest movement, use of diaphragm and abdominal muscles

- Signs of respiratory distress (recession/grunting)
- Palpation
  - Femoral and brachial pulses for strength rhythm and volume
  - Assess perfusion through capillary fill time
  - Position of cardiac apex (to exclude dextrocardia)
  - Palpation of liver to exclude hepatomegaly – may be present in congestive heart failure
  - +/- thrill
- Auscultation
  - Presence of a murmur – systolic/diastolic – loudness
  - Quality of heart sounds at the following 5 sites:
    - Second intercostal spaces adjacent to the sternum: left (pulmonary area)
    - Second intercostal spaces adjacent to the sternum: right (aortic area)
    - Lower left sternal border in the 4<sup>th</sup> intercostal space (tricuspid area)
    - Apex (mitral area)
    - Midscapulae (coarctation area)
- Examination of the hips
  - Observation
    - Symmetry of leg length
    - Level of knees when hips and knees are both flexed
    - Symmetry of skin folds in the buttocks and posterior thighs when baby is in ventral suspension
    - If legs can be fully abducted.
  - Manipulation
    - Undertake both the Ortolani and Barlow manoeuvres on each hip separately.
      - Ortolani manoeuvre is used to screen for a dislocated hip
      - Barlow manoeuvre is used to screen for dislocatable hip.
  - Screen positive following examination – babies who are found to have dislocated or dislocatable hips, +ve Ortolani or Barlow should be referred and undergo hip ultrasound with **two weeks of age.**

- Screen negative examination with risk factors (appendix \*\*)– should be referred and undergo hip ultrasound within **six weeks of age**.
- Examination of the **Testes**
  - Observation – scrotum for symmetry, size and colour
  - Palpation
    - Scrotal sac to determine location of testes bilaterally
    - If testes not located in the scrotal sac, palpation of the inguinal canal should be undertaken.
  - Screen positive
    - Bilateral undescended testes – to be reviewed by a senior paediatrician within **24 hours** of the examination to rule out metabolic and intersex conditions
    - Unilateral undescended testis – review at 6 – 8 week examination
    - of the baby’s abdomen – colour, shape and palpate to identify any organomegaly, and examination of the condition of the umbilical cord.
- Observation of the baby’s anus, to check completeness and patency. The presence of meconium does not indicate normal anal position or patency. It is important therefore to remove all visible meconium prior to examination.
- Inspection and palpation of the bony structures of the spine and the integrity of skin with the baby prone, noting the colour and texture of the skin as well as any birthmarks or rashes.
- Observation of the tone, behaviour, movements, and posture to complete the assessment of the central nervous system (CNS)
- If concerned, undertake more detailed neurological examination e.g. eliciting newborn reflexes
- Note sound of baby’s cry
- Consideration of any specific known risks in the baby’s home, and alerting appropriate professionals to parents who may have problems in caring for their baby

- Confirm findings with parents and allow time for discussion
- Ensuring that parents know how to assess their baby’s general condition and to contact a midwife, health visitor, doctor or emergency services if required. (NICE, 2006)

### Documentation

- A comprehensive account of the examination should be documented using the attached appendix 1, a copy of which must be sent to the clients GP.
- The Child Health Record must also be completed and signed by the examining midwife.
- On discharge the midwife must insert the details into Myrddin (the All Wales electronic record system) on the neonatal discharge examination section.

### Referral

If any abnormalities are detected, they should be communicated to the parents and referred to the appropriate professional within the district general hospital. Parents of babies who are referred should be given a full explanation of the reason for and timescale for referral.

<b>Standards</b>	<b>%</b>	<b>Clinical Exceptions</b>
All babies should be examined within 72 hours of birth	100%	Preterm or babies whose conditions deem in inappropriate for examination in Powys
A Datix will be completed when it is found that a NIPE has not been performed	100%	
All abnormalities identified following a newborn physical examination should be clearly documented on the reverse of the NIPE examination form (appendix 1) and inserted in the hospital records	100%	

## 6 Monitoring Compliance, Audit & Review

This policy will be monitored through issues raised through training days and the Datix reporting system. Notes audits will be regularly undertaken.

## Monitoring Tool

- How will monitoring be carried out?  
Clinical audit

This document will be reviewed every three years or earlier should audit results or changes to legislation / practice within PTHB indicate otherwise.

## 7 References / Bibliography

National Institute for Health and Care Excellence (2006). *Postnatal care: Routine Postnatal Care of Women and their Babies*. Clinical guideline 37, London, NICE

Hall D and Elliman D (2006) Eds. *Health for All Children*. 4<sup>th</sup> Edition. Oxford: University Press

Newborn and Infant Physical Examination (NIPE) Screening Programme (2016/17) *NIPE Standards and Competencies*. London:

NMC (2015) *The Code: Standards of conduct, performance and ethics for nurses and midwives*. London, NMC

Sherratt A (2001). Parent information and the neonatal discharge examination. *Journal of Neonatal Nursing* (7), 4

NICE (2014) *Intrapartum care: Care of Health Women and Babies during Childbirth*. NICE. London

Short A (2012) *Routine Examination of Newborn Infants Worcestershire Acute Hospitals NHS Trust* citing

UK National Screening Committee (2010) Statement from the NHS Newborn & Physical Examination Programme Centre on the impact of the policy for early (6hr or earlier) postnatal discharges on the timing of the newborn physical examination.

<http://newbornphysical.screening.nhs.uk/news.php?id=10962>

## Relevant Policies

### **NICE 2017 Post Natal Care guidelines**

**NEWBORN INFANT AND PHYSICAL EXAMINATION**

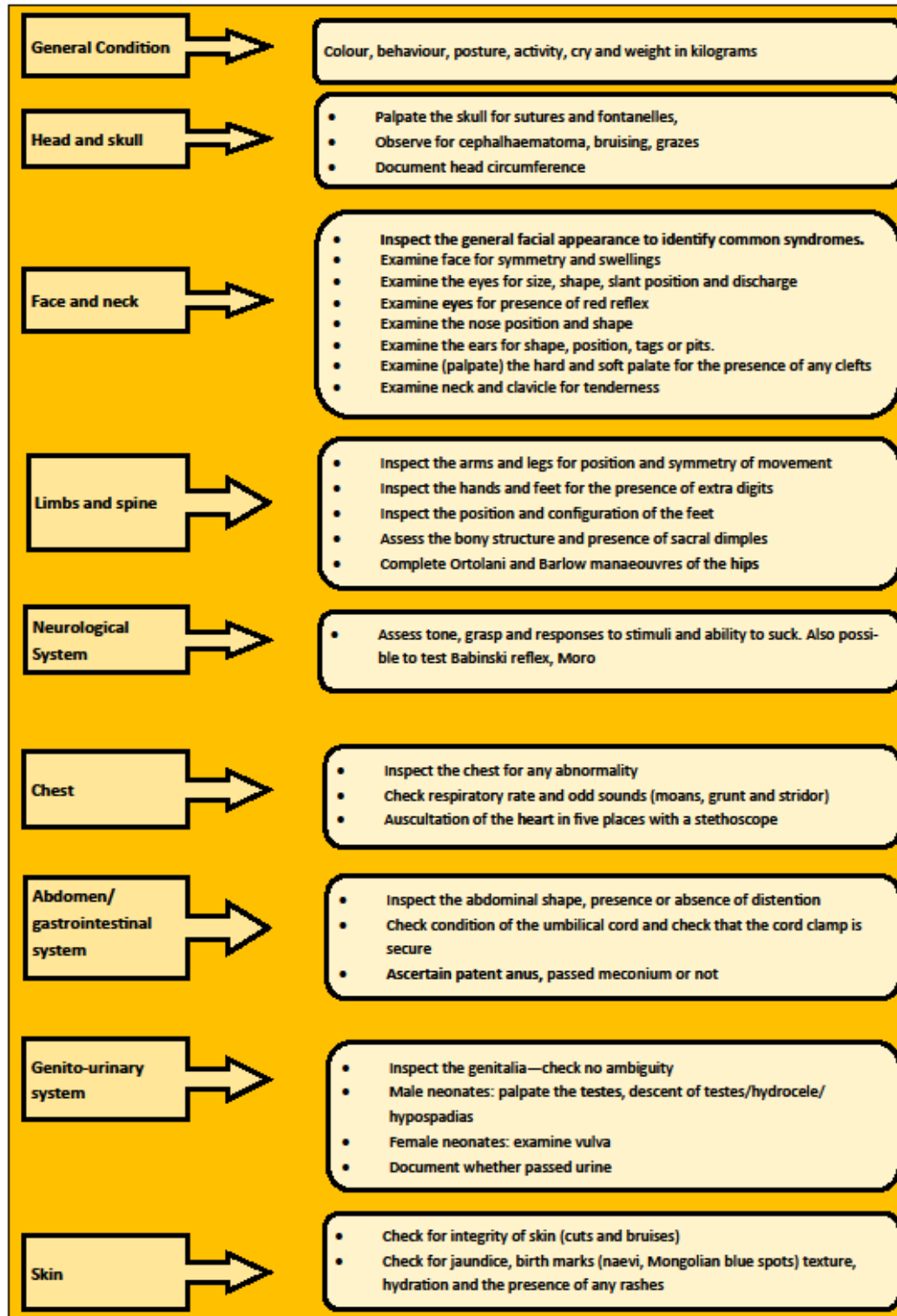


<b>Newborn Infant and Physical Examination</b>		Addressograph (maternal)	
Name			
NHS Number - -		Type of birth	
Date of Birth	Time of Birth	Place of birth	
Weight	Head circumference	Apgars @1	@5
Maternal Rhesus status		Consent for examination given?	
Relevant Medical or Obstetric History		Action below	
<b>Relevant Family History</b>	Congenital cardiac anomalies	Y/N	
Please give details	Congenital hip dysplasia	Y/N	
	Congenital hearing problems	Y/N	
GAP growth centile	High risk group for TB	Y/N	
	Congenital Cataracts	Y/N	
<b>Examination</b>			
<b>Eyes</b>	Red reflex present in both eyes	Y/N	If screen positive - referral completed Y/N
<b>Examination of the heart</b>	Observation	Tone	Colour
Femoral pulses	Respiratory rate		Air entry/rescession/grunting
Auscultation of the heart	Presence of a murmur	Y/ N	Systolic / Diastolic
<b>Examination of the hips</b>	Observation		
	Ortolani - screen for a dislocated hip	Right	Left
	Barlow - screen for a dislocatable hip	Right	Left
Abdominal palpation and observation			
	Genitalia	Male/female/indeterminate	
<b>Examination of the testes</b>	Bilateral descended	Unilateral undescended	R L
Posture	Spine	Umbilicus	
<b>Mouth</b>	Hard palate	Soft palate	Lips & tongue
Hands including palmer creases		Feet	
Neck	Skin	Head inc. fontanelles	
Reflexes present	Grasp	Moro	Babinski Suck
<b>Anus</b>	Patent / not patent	Passed urine	Y/N BO Y/N Colour
Vitamin K	I/M 1mg	Oral 2mg	Feeding
Date and time of examination	Date	Time	
Signature		Print name & qualification	
Copy sent to GP		This copy to be filed in maternal notes	

For variations and any screen positives, see overleaf



NIPE ASSESSMENT FLOW CHART





## APPENDIX C

### Incidence and Risk Factors

#### Eyes

Approximately 2 or 3 in 10,000 babies have problems with their eyes that require treatment. The prime purpose of screening is to identify congenital cataracts.

Associated risk factors

- Family history of congenital or hereditary cataracts (1<sup>st</sup> degree relative)

Additional risk factors

- Prematurity
- Children with Trisomy 21 have a high risk of ophthalmological disorders and should have continued surveillance
- Maternal exposure to viruses during pregnancy, including rubella and cytomegalovirus.

Although the primary purpose of screening is to identify congenital cataracts, local pathways should be followed for any additional risk factors of incidental findings, including the presence of aniridia, colobomata and retinoblastoma.

Screen positive following newborn examination

- The absence of any reflex suggests the presence of a congenital cataract
- A white reflex (leukocoria) is suggestive of a tumour of the eye (retinoblastoma)

#### The Heart

The overall incidence of congenital heart defects (CHD) is 4 – 10 per 1,000 live births ranging from non-significant to major and critical lesions. Critical or major congenital cardiac malformations are found in approximately 2 – 3 per 1,000 live births and are a leading cause of morbidity and mortality in the neonatal period and beyond.

Congenital heart abnormalities can be categorised as follows:

- **Critical CHD:** includes all potentially life threatening duct-dependent conditions and those conditions that require procedures within the first 28 days of life.
- **Major serious CHD:** those defects not classified as critical but require invasive intervention in the first year of life.

Associated risk factors

- Family history of congenital heart disease (1<sup>st</sup> degree relative)
- Fetal trisomy 21 or other trisomy diagnosed (please note that these babies have high risk of cardiac defects and require continued surveillance)

- Cardiac abnormality suspected from the antenatal scan

Other risk factors associated with CHD are:

- Maternal exposure to viruses, for example, rubella during the first trimester of pregnancy
- Maternal conditions, such as diabetes (Type 1), epilepsy, systemic lupus erythematosus (SLE)
- Drug related teratogens during pregnancy, for example, antiepileptic and psychotropic drugs.

Screen positive

The following signs and symptoms can be suggestive of critical or major congenital heart abnormality;

- Tachypnoea at rest
- Episodes of apnoea lasting longer than 20 seconds or associated with colour change
- Intercostal, sub-costal, sternal or supra-sternal recession, nasal flaring
- Central cyanosis
- Visible pulsations over the precordium, heaves, thrills
- Absent or weak femoral pulses
- Presence of cardiac murmurs/extra heart sounds
  - Significant murmurs are usually loud, heard over a wide area, have a harsh rather than soft quality and are associated with other abnormal findings
  - Benign murmurs are typically short, soft, systolic, localised to the left sternal border, have no added sounds or other clinical abnormalities associated with them.
  - *Many babies will have cardiac murmurs in the first 24 hours of life in the absence of a cardiac defect (linked to physiological changes at birth) However, cardiac murmurs may be absent in babies with a significant cardiac defect.*

## **The Hips**

Incidence – approximately 1 or 2 in 1,000 babies have hip problems that require treatment.

Undetected developmental dysplasia of the hips (DDH) or delayed treatment may result in the need for complex surgery and/or long term complications such as:

- Impaired mobility and pain
- Osteoarthritis of the hip and back

Early diagnosis and intervention will improve health outcomes and reduce the need for surgical intervention.

Associated risk factors

- 1<sup>st</sup> degree family history of hip problems in early life, that is, baby's parents, or siblings who have had a hip problem that started as a baby or young child that needed treatment with a splint, harness or operation
- Breech presentation at or after 36 completed weeks of pregnancy, irrespective of presentation at delivery or mode of delivery, or breech presentation at delivery if this is early than 36 weeks
- In the case of a multiple birth: if any of the babies is breech presentation, all babies in the pregnancy should have an ultrasound examination within 6 weeks of age. The rationale for this advice is that if one of the babies meets the criteria of breech presentation, as described above, it may be difficult to accurately identify which baby was affected.

#### Screen positive

- Difference in leg length
- Knees at different levels when hips and knees are bilaterally flexed
- Difficulty in abducting the hip to 90 degrees
- Asymmetry of skin folds in the buttocks and posterior thighs when baby is in ventral suspension
- Palpable 'clunk' when undertaking either the Ortolani or Barlow manoeuvres.

Clicky hips – babies who have no predisposing risk factors and are found to have 'clicky hips' on physical examination should be managed and referred as per local arrangement and should not be included in NIPE screening KPI's

#### **The Testes**

Incidence – cryptorchidism affects approximately 2-6% of male babies born at term. It is associated with:

- A significant increase in the risk of testicular cancer (primarily seminoma)
- Reduced fertility when compared with normally descended testes
- It may also be associated with other urogenital problems such as hypospadias and testicular torsion

Bilateral undescended testes in the newborn may be associated with ambiguous genitalia or an underlying endocrine disorder such as congenital adrenal hyperplasia.

Early diagnosis and intervention improves fertility, reduces the risk of torsion and may aid earlier identification of testicular cancer

Associated risk factors

- 1<sup>st</sup> degree family history of cryptorchidism (baby's father or sibling)
- Low birth weight

Small for gestational age or preterm delivery