1. **Aim/Purpose of this Guideline**

1.1. This guideline is designed to support clinical staff, both medical and nursing, involved in the care of an infant requiring a heel prick blood sample.

2. **The Guidance**

2.1 **Background.**

**All personnel undertaking heel prick tests should have within year satisfactory ANTT assessment.**

Blood sampling via heel prick with correct technique obtains adequate volumes for a variety of tests therefore minimising trauma to venous access sites. The aim of this guideline is to provide clear and standardised guidance for all healthcare professionals performing this procedure, using evidence based practice.

Heel pricks are performed by Doctors, nurses and midwives, and although the procedure is quick and easy to learn, if it is carried out incorrectly it can cause excessive pain, tissue damage and inaccurate test results. Therefore it is the healthcare professional’s responsibility to ensure they have achieved competency in the procedure. The nursing/midwifery staff caring for the patient must ensure the appropriateness of the procedure and follow up the results; the procedure may be delegated providing competency has been ascertained.

Capillary sampling can be used to obtain samples for:

- Blood gas analysis
- Blood sugar monitoring
- Neonatal screening tests
- Bilirubin levels
- Urea and electrolyte monitoring
- Drug levels

Capillary blood sampling **should not** be used to obtain samples for the following investigations as these can be inaccurate via this method:

- Blood cultures
- Haematocrit estimation
- Coagulation studies
- Measurement of critical potassium or calcium level

2.2 **Equipment**

- Non sterile gloves
- Appropriate paediatric blood collection bottles/ capillary tube/new born screening card
- Sucrose/ pacifier/ Expressed Breast Milk
- Single use lancet (term/preterm)

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>INFANT WEIGHT</th>
<th>INCISION DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quickheel</td>
<td>Infants less</td>
<td>0.85mm</td>
</tr>
</tbody>
</table>
### 2.3 Risks of capillary blood sampling
- Increased pain compared to venous sampling
- Local trauma
- Damage to nerves, blood vessels and bones
- Excessive blood loss
- Infection
- Scaring

These problems can be avoided by using a good technique. However, before doing to heel prick, perhaps consider whether a venous sample would be more appropriate, as it is a less painful procedure and poor perfusion does not permit successful capillary sampling.

### 2.4 Procedure

#### Preparation
- Confirm identity of the infant as per Positive Patient Identification Policy.
- Where possible explain procedure and blood tests to family/carers to gain consent as per Policy for Consent.
- The request forms should be ordered via Maxims. If handwritten the request card must be filled in with all details clearly and in black in. If crucial information is missing or the test is inadequate a repeat test maybe requested by the laboratory.
- Co-ordinate procedure at appropriate time with other planned care for the infant.
- Collect all equipment before starting procedure.
- Wash hands and use gloves in accordance with infection Control Policy.
- Administer pain relief, to reduce discomfort, see below.
- Inspect heel to identify optimal area, avoid previously bruised or managed sites.
- Ensure foot is warm and adequately perfused.
- Identify optimal puncture sites. See diagram

#### Pain relief
Systematic reviews have shown that breastfeeding during painful procedures is the most effective way of relieving procedural pain in new-born infants and should be encouraged, promoted and supported wherever possible. However, if breastfeeding is not available, feasible or practicable, the use of oral sucrose is an effective alternative. This should, wherever possible, be used in conjunction with other non-pharmacological methods of pain relief during capillary sampling such as swaddling/ skin to skin/use of pacifier.

**Procedure**

- Ensure appropriate support and developmental care to the infant during and after procedure to minimise pain and discomfort such as sucrose/Expressed Breast Milk, pacifier/sucking, containment holding and skin to skin.
- Adhere to Infection control Policy for handling of bodily fluids.
- Use positive touch techniques to prepare the infant for the procedure.
- Samples should only be taken from the medial/outer aspect of the heel. See diagram below.

![Diagram of heel prick blood sampling](image)

- Grasp foot exposing heel between thumb and index finger.
- Clean with gauze and sterile water and allow to dry.
- Place heel lancet flush to infants heel, avoiding exerting excessive pressure.
- Activate lancet.
- Allow heel for recover for a few seconds.
- If blood not flowing well, the foot should be milked by a gentle squeeze and release action.
- **Do not** apply excessive pressure as this can lead to spurious results and bruising.
- Collect sample in appropriate receptacle.
- Apply pressure with gauze to stop bleeding.
- Dispose of lancet as per RCHT Sharps Policy.
- Wash hands.
- Document the result as per Clinical Record Keeping Policy.
- Settle infant using developmental care techniques, see guideline.
- Label blood sample at cot side following Policy.
3. **Monitoring compliance and effectiveness**

This part must provide information on the processes and methodology for monitoring compliance with, and effectiveness of, the policy using the table below.

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Key Changes to practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Dr. Paul Munyard</td>
</tr>
<tr>
<td>Tool</td>
<td>Audit</td>
</tr>
<tr>
<td>Frequency</td>
<td>As dictated by audit findings</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>Include in neonatal clinical audit programme, findings reported to the directorate audit meeting / Governance meeting</td>
</tr>
<tr>
<td>Acting on recommendations and Lead(s)</td>
<td>Dr. Paul Munyard Neonatal Guidelines Group</td>
</tr>
<tr>
<td>Change in practice and lessons to be shared</td>
<td>Required changes to practice will be identified and actioned within 3 months. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders</td>
</tr>
</tbody>
</table>

4. **Equality and Diversity**

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Diversity & Human Rights Policy' or the Equality and Diversity website.

4.2. **Equality Impact Assessment**

The Initial Equality Impact Assessment Screening Form is at Appendix 2.
## Appendix 1. Governance Information

<table>
<thead>
<tr>
<th><strong>Document Title</strong></th>
<th>HEEL PRICK BLOOD SAMPLING IN INFANTS AND YOUNG CHILDREN–NEONATAL CLINICAL GUIDELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date Issued/Approved:</strong></td>
<td>June 2017</td>
</tr>
<tr>
<td><strong>Date Valid From:</strong></td>
<td>June 2017</td>
</tr>
<tr>
<td><strong>Date Valid To:</strong></td>
<td>June 2020</td>
</tr>
<tr>
<td><strong>Directorate / Department responsible (author/owner):</strong></td>
<td>Claire Tregonning. Senior Staff Nurse. Neonatal Unit. RCHT</td>
</tr>
<tr>
<td><strong>Contact details:</strong></td>
<td>(01872) 252667</td>
</tr>
<tr>
<td><strong>Brief summary of contents</strong></td>
<td>This guideline outlines the clinical responsibilities of staff involved in heel prick blood sampling in neonates, infants and young children</td>
</tr>
<tr>
<td><strong>Suggested Keywords:</strong></td>
<td>Neonatal. Neonate. New-born. Infant. Children Heel Prick Blood Sample</td>
</tr>
<tr>
<td><strong>Target Audience</strong></td>
<td>RCHT</td>
</tr>
<tr>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Executive Director responsible for Policy:</strong></td>
<td>Medical Director</td>
</tr>
<tr>
<td><strong>Date revised:</strong></td>
<td>November 2016</td>
</tr>
<tr>
<td><strong>This document replaces (exact title of previous version):</strong></td>
<td>Heel Prick Sampling in Infants and Young Children – Clinical Guideline</td>
</tr>
<tr>
<td><strong>Approval route (names of committees)/consultation:</strong></td>
<td>Consultant approval. Child Health Directorate Audit. Neonatal Clinical Guidelines Group</td>
</tr>
<tr>
<td><strong>Divisional Manager confirming approval processes</strong></td>
<td>David Smith</td>
</tr>
<tr>
<td><strong>Name and Post Title of additional signatories</strong></td>
<td>Not Required</td>
</tr>
<tr>
<td><strong>Signature of Executive Director giving approval</strong></td>
<td>{Original Copy Signed}</td>
</tr>
<tr>
<td><strong>Publication Location (refer to Policy on Policies – Approvals and Ratification):</strong></td>
<td>Internet &amp; Intranet</td>
</tr>
<tr>
<td><strong>Links to key external standards</strong></td>
<td>None</td>
</tr>
</tbody>
</table>
### REFERENCES

### Version Control Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 2013</td>
<td>V1.0</td>
<td>Initial issue.</td>
<td>Andrew Collinson. Consultant Paediatrician and Neonatologist</td>
</tr>
<tr>
<td>June 2017</td>
<td>V2.0</td>
<td>Consultant Approved</td>
<td>Author: Claire Tregonning. Senior Staff Nurse. Formatter: Kim Smith. Staff Nurse.</td>
</tr>
</tbody>
</table>

**All or part of this document can be released under the Freedom of Information Act 2000**

**This document is to be retained for 10 years from the date of expiry.**

**This document is only valid on the day of printing.**

**Controlled Document**

Heel Prick Blood Sampling in infants and young children – Neonatal Clinical Guideline

Page 7 of 10
Appendix 2. Initial Equality Impact Assessment Form

Name of the strategy / policy / proposal / service function to be assessed (hereafter referred to as policy) (Provide brief description):
Heel prick blood sampling in infants and young children – Neonatal Clinical Guideline

<table>
<thead>
<tr>
<th>Directorate and service area: Child and Women’s Health. Neonatal</th>
<th>Is this a new or existing Policy? Existing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of individual completing assessment: Dr. Paul Munyard.</td>
<td>Telephone: (01872) 252667</td>
</tr>
</tbody>
</table>

1. Policy Aim*  
Who is the strategy / policy / proposal / service function aimed at?  
This guideline is aimed at clinical staff responsible for heel prick blood sampling on infants and young children

2. Policy Objectives*  
As above

3. Policy – intended Outcomes*  
Audit

4. *How will you measure the outcome?  
Audit

5. Who is intended to benefit from the policy?  
Patients. Medical and nursing staff.

6a) Is consultation required with the workforce, equality groups, local interest groups etc. around this policy?  
No. Consultant approved.

b) If yes, have these *groups been consulted?  
N/A

C). Please list any groups who have been consulted about this procedure.  
N/A

7. The Impact  
Please complete the following table.

Are there concerns that the policy could have differential impact on:
### Equality Strands: 

<table>
<thead>
<tr>
<th>Equality Strands</th>
<th>Yes</th>
<th>No</th>
<th>Rationale for Assessment / Existing Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>(male, female, transgender / gender reassignment)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Race / Ethnic communities /groups</strong></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><strong>Disability</strong></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>learning disability, physical disability, sensory impairment and mental health problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion / other beliefs</strong></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><strong>Marriage and civil partnership</strong></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><strong>Pregnancy and maternity</strong></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><strong>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</strong></td>
<td></td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:
- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation - this excludes any policies which have been identified as not requiring consultation. or
- Major service redesign or development

8. Please indicate if a full equality analysis is recommended. **No**

9. If you are not recommending a Full Impact assessment please explain why.

No area indicated

Signature of policy developer / lead manager / director
Dr Paul Munyard

16/06/2017

Names and signatures of members carrying out the Screening Assessment
1. 
2. 

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead, c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa, Truro, Cornwall, TR1 3HD
A summary of the results will be published on the Trust’s web site.