



PROCEDURE	
Blood Sampling (Heel and Finger Prick)	
Scope (Staff):	Community health staff
Scope (Area):	CACH, WACHS

This document should be read in conjunction with this [DISCLAIMER](#)

Aim

To provide guidance for undertaking a capillary blood sample.

Risk

1. Incorrect methods of collecting, labelling and storage of blood specimens can result in patient injury, false results, delayed diagnosis and necessitate repeat sampling causing unnecessary distress for the child and family.
2. Failure to comply with safe work practices places the healthcare worker at risk of needle stick injury and exposure to blood borne pathogens.

Background

These blood collection procedures can be used to conduct a range of tests where small amounts of blood or repeat testing is required, including the following;

- Haemoglobin estimation
- Blood glucose levels
- Newborn Bloodspot Screening Test (NBST)

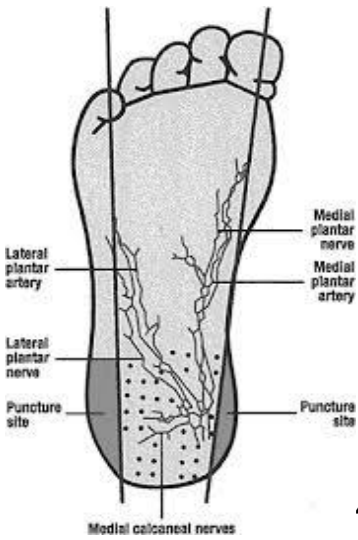
If specific blood specimens are required (e.g. Full Blood Count, Urea and Electrolytes, drug testing) appropriately trained staff can perform a venepuncture. Venepuncture is the preferred method of blood sampling in infants, as it causes less pain, offers more reliable collection, and therefore less need for repeat sampling.¹

Key Points

- To be performed only by staff with appropriate training.
- The equipment being used for analysis of Blood Glucose Levels (BGL) and haemoglobin (Hb) must be well maintained, regularly calibrated and correct collection technique must be performed as per manufacturer's guidelines.²
- Recommended depth of puncture is 1.5mm for children aged 6 months to 8 years and 2.4 mm for children over 8 years of age.¹
- Do not use soft paraffin at the puncture site.
- Community health staff must follow the organisation's overarching infection prevention and management policies and perform hand hygiene in accordance with WA Health guidelines at all appropriate stages of the procedure.

- Selection of site chosen for blood sampling will depend on the client's age and weight – see Table 1 for further clarification.

Table 1: Selecting the site for capillary blood sampling ^{1,3}

Factors	Heel-prick	Finger-prick
Age	<ul style="list-style-type: none"> • Birth to 6 months (approximately) 	<ul style="list-style-type: none"> • Over 6 months
Weight	<ul style="list-style-type: none"> • 3-10kg (approximately) 	<ul style="list-style-type: none"> • Over 10kg
Length of lancet	<ul style="list-style-type: none"> • 0.85mm neonates • Maximum 2.4mm 	<ul style="list-style-type: none"> • 1.5mm: >6 months to 8 years • 2.4mm: over 8 years
Placement of lancet	<ul style="list-style-type: none"> • Choose the puncture site on the medial or lateral aspect of the heel. • Safest sites for heel stick are outer edges of heel (darker shaded areas in diagram below).⁴ <div style="text-align: center;">  </div>	<ul style="list-style-type: none"> • The 3rd finger (middle) and 4th finger (ring) are recommended. Avoid using little finger as tissue depth is insufficient.¹

Equipment

- Automated lancet device and appropriate 'sharps' disposal container
- Lint free wipes or tissues
- Disposable non-latex gloves

- Correct specimen collection receptacle (Microcurvettes used in HemoCue[®] machines), testing strip for BGL estimation purpose or NBST card
- Correct, functional, cleaned and calibrated specimen analysing equipment

Procedure

Observe the 5 moments of hand hygiene throughout procedure

Steps	Additional Information
<p>1. Engagement and consent</p> <ul style="list-style-type: none"> • If parent/carer present; provide relevant information, enable discussion and obtain informed consent (verbal). • Encourage parent/carer to stay with child to provide support. 	<ul style="list-style-type: none"> • Settings where parent not present (e.g. school), ensure client identification procedures are adhered to.
<p>2. Preparation</p> <ul style="list-style-type: none"> • Ensure equipment for estimation of blood glucose or Hb is calibrated and operated in accordance with manufacturer's guidelines.² • Ensure the finger or heel is warm enough.² • If limb is cool or poorly perfused, apply extra clothing or warm the site with a soft cloth moistened with warm water prior to the procedure. • Choose appropriate size lancet for client. • Choose appropriate site for puncture (refer to Selecting site for capillary blood sampling section above). • Clean the site to be used with water and a tissue or lint free wipe.² If alcohol swabs are available these can be used² unless testing for BGL. Allow to thoroughly dry. • Wash hands and put on gloves. 	<ul style="list-style-type: none"> • Equipment that is not calibrated or maintained may result in false results leading to unnecessary further testing. • Blood taken from cool, poorly perfused sites can affect blood sample quality.³ • Recommended depth of puncture is 1.5mm for children aged 6 months to 8 years, and 2.4 mm for children over 8 years of age.¹ Staff should make themselves familiar with locally used lancets and their sizing • Moisture residue on the skin may dilute the sample and adversely affect the test results. • Use of non-latex gloves is required as per infection control procedures.
<p>3. Procedure</p> <p>Finger prick</p> <ul style="list-style-type: none"> • Ask the parent/carer to have a firm comfortable hold of the child and immobilise the finger to be punctured to prevent sudden movement and accidental injury.¹ 	<ul style="list-style-type: none"> • Wipe the first drop of blood away as it may be diluted by interstitial fluid. • Avoid milking or excessive squeezing of the finger as this may activate haemolysis and reduce blood flow.^{1, 3} • Do not top up the test pad or cuvette

Steps	Additional Information
<ul style="list-style-type: none"> • Prick the child’s finger to form a large drop of blood at the end of the finger. • Wipe away initial blood flow with lint free wipe or tissue (2-3 drops for Hb testing and 1 drop for BGL testing). • As drops of blood form, fill the Microcurvette or test pad/strip in one continuous process, do not refill. • If blood does not flow freely, gently squeeze the finger from the base to the tip. • If this is unsuccessful perform another puncture on a different site. <p>Heel Prick</p> <ul style="list-style-type: none"> • Ask parent/carer to have a firm comfortable hold of the infant during the procedure. • Partly encircle the infant’s heel at the arch and ankle with non-dominant hand and gently squeeze foot to bulge flesh away from bone.³ • Using a sterile lancet, and in a deliberate motion puncture the heel at a 90° angle. • Wipe the first drop of blood away as it may be diluted by interstitial fluid (for Hb testing wipe away first 2-3 drops).² • Apply intermittent pressure with fingers to aid blood drops to form and flow. • If blood does not flow freely, perform another puncture with a new lancet in a different site rather than massage.⁵ 	<p>after the first filling.</p>
<p>3.1 Blood Glucose Estimation</p> <ul style="list-style-type: none"> • Ensure selected site is clean and dry prior to puncture - do not use alcohol swab. • Collect the second large drop and cover test pad evenly with blood. 	<ul style="list-style-type: none"> • Alcohol residue on the skin may dilute the sample and adversely affect the test results.

Steps	Additional Information
<p>3.2 Haemoglobin Analysis</p> <ul style="list-style-type: none"> If using HemoCue® analyser or other machine, follow manufacturer's instructions.² 	<ul style="list-style-type: none"> Check expiry dates on Microcuvettes before use. Ensure correct storage of cuvettes as per manufacturer recommendations. Refer to Appendix A for Hb levels for anaemia and if further information required refer to <i>Anaemia in childhood</i> policy.
<p>3.3 Newborn Bloodspot sampling</p> <ul style="list-style-type: none"> Refer to KEMH guidelines - Newborn Bloodspot Screening.⁶ 	
<p>4. Post Procedure</p> <ul style="list-style-type: none"> Press cotton ball or tissue onto puncture site until bleeding stops. Handling and disposal of all sharps should be in accordance with relevant policy guidelines. 	<ul style="list-style-type: none"> Adhesive tape is not usually required or recommended. Follow <i>Sharps Management</i> policy.

Referral pathway

Refer to a medical practitioner if:

- Inadequate blood sample obtained
- Non-compliance and sample not able to be obtained
- Blood results not within normal limits.

For school setting – if testing BGL, once result obtained follow individual student's *Diabetes Management Plan* and follow appropriate pathway.

Documentation

Community health staff will document relevant findings according to local processes.

Related policies, procedures and guidelines

The following documents can be accessed in the **Clinical Nursing Manual** via the [HealthPoint](#) link, [Internet](#) link or for WACHS staff in the [WACHS Policy](#) link

Anaemia in Childhood

Clinical Handover – Nursing

The following documents can be accessed in the [CACH Operational Manual](#)

Blood and Body Fluid Exposure Management
Blood and Body Fluid Spill Management
Client Identification
Consent for Services
Hand Hygiene
Latex Minimisation
The following documents can be accessed in the CAHS Policy Manual
Blood Glucose Testing & Monitoring
Capillary Blood Sampling (Heel and Finger Prick)
Sharps Management
Standard and Transmission Base Precautions
The following documents can be accessed in WACHS Policy
Blood and Blood Products Management - WACHS Clinical Practice Standard
Infection Prevention and Control Policy

Related CAHS-CH forms
The following resources and forms can be accessed from the CAHS-Community Health Forms page on HealthPoint
Clinical Handover/Referral Form (CHS663)
Diabetes Record Management Chart for Education Support Students (CHS427)

Related external resources
Diabetes WA – Diabetes management and action plans - https://diabeteswa.com.au/professionals/training/diabetes-awareness-in-schools-2/diabetes-action-and-management-plans/
HemoCue® operating manual – https://www.cliawaived.com/web/items/pdf/HMC-111716_201_Operating_Manual~2068file3.pdf

Appendix A: Haemoglobin Levels for Anaemia

Table 1: Haemoglobin levels for anaemia	
Age	Anaemia if Haemoglobin below the lower limit of the reference range below:
At birth	<130 g/L
<6 months*	95 g/L
6 – 12 months	105 g/L
1 - 4 years	110 g/L
5 – 7 years	115 g/L
8 -11 years	115g/L (KAMSC and CARPA = 119 g/l)



Source: PathWest QEII Haematology Reference Data - Haematology Methods Manual 2012

**There is some variation in the values in the first five weeks.*

References

1. World Health Organization. WHO guidelines on drawing blood: best practices in phlebotomy. Switzerland: WHO Press World Health Organization; 2010.
2. Kimberley Aboriginal Medical Services. Anaemia in Children. Kimberley Aboriginal Medical Service; 2015.
3. Perth Children's Hospital. Capillary Blood Sampling (Heel and Finger Prick). In: Manual CP, editor. Perth: Child and Adolescent Health Services; 2018.
4. Vedder T. Heel Sticks: Overview, Periprocedural Care Techniques 2015 [cited 2019 May 23]. Available from: <https://emedicine.medscape.com/article/1413486-overview#a2>.
5. Women and Newborn Health Service. Blood Sampling: Capillary, Venepuncture, Peripheral Arterial, UAC, UVC and CVC. Women and Newborn Health Service; 2014.
6. Women and Newborn Health Service. Newborn Bloodspot Screening: Clinical Practice Guideline. Perth: Women and Newborn Health Service; 2017.

This document can be made available in alternative formats on request for a person with a disability.

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