

Royal Hospital for Women (RHW)
NEONATAL BUSINESS RULE
COVER SHEET



Health
South Eastern Sydney
Local Health District

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SUMMARY	To provide clinicians the safe and correct technique for performing a heel prick for blood sampling in neonates
Key Words	Heel prick, blood sampling, neonate, procedure

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This Clinical Business Rule (CBR) is developed to guide safe clinical practice at the Royal Hospital for Women (RHW). Individual patient circumstances may mean that practice diverges from this Clinical Business Rule. Using this document outside RHW or its reproduction in whole or part, is subject to acknowledgement that it is the property of RHW and is valid and applicable for use at the time of publication. RHW is not responsible for consequences that may develop from the use of this document outside RHW.

Within this document we will use the term woman, this is not to exclude those who give birth and do not identify as female. It is crucial to use the preferred language and terminology as described and guided by each individual person when providing care.

1 BACKGROUND

Capillary collection can be performed from the heels of neonates. It enables point of care testing (POCT) to be performed at or near the bedside. Capillary blood sampling is used for a range of tests where small amounts of blood are required, usually <1mL. In RHW, these tests can include:

- Capillary blood gas (CBG)
- Group and Hold/crossmatch
- Full blood count (FBC), Electrolytes, Urea, Creatinine (EUC)
- Serum bilirubin (SBR)
- Blood glucose levels (BGL)
- Newborn Bloodspot Screening Test (NBST)

2 RESPONSIBILITIES

2.1 Staff

2.1.1 Medical- identify neonates that require capillary blood sampling, order required investigations on neonate's medical record, perform capillary blood sampling following correct procedures, sign/co-sign pathology request forms, hand write group and hold patient identification (ID) labels, label all pathology samples appropriately, send pathology samples through the SCUD, follow up on results of blood tests and inform nursing/midwifery staff of any intervention required.

2.1.2 Nursing/midwifery- identify neonates that require capillary blood sampling, perform capillary blood sampling following correct procedures, sign/co-sign pathology request forms, hand write group and hold patient ID labels, label all pathology samples appropriately, send pathology samples through the SCUD, follow up on results of blood tests and inform medical staff.

2.1.3 Porter- collect urgent samples from appropriate location and transport to pathology

3 PROCEDURE

3.1 Equipment





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- Non- sterile gloves
- Gauze
- Appropriate Puncture Device (Picture 1)
- Alcohol 70% Swab
- Required Blood/Capillary Tubes
- NBST card completed with required patient information (if performing)
- Bedside glucometer (if performing BGL)
- Radiometer ABL 90 Flex Plus blood gas analyser (for capillary blood gas in NCC ONLY)
- Oral Sucrose 24% or expressed breast milk (EBM)
- Sharps disposal container
- Pathology request form +/- handwritten group and hold ID label
- Patient ID sticker (printed version)
- Pathology sample bag
- Tray
- Disinfectant wipes (as per hospital cleaning policy)

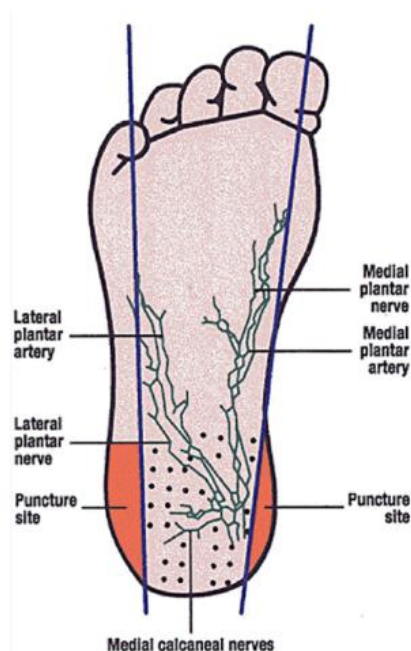
DEVICE	DEVICE NAME	DEVICE TYPE	WIDTH X DEPTH (MM)	INTENDED USE	LOCATION OF USE
	BD Microtainer contact- activated lancet (Purple)	Puncture (needle)	30G x 1.5mm	Finger stick- low flow (single drop)	Birth Unit and Postnatal ward if BD microtainer- pink lancet unavailable
	BD Microtainer contact- activated lancet (Pink)	Puncture (needle)	21G x 1.8mm	Finger stick- medium flow	Birth Unit, Postnatal and Antenatal Ward
	BD Microtainer Quikheel Lancet™ (Pink)	Incision (blade)	1.75mm x 0.8mm	Heelstick- low flow Premature neonates, Low birth weight or full term neonates where lower blood volume is required	NCC, Birth Unit
	BD Microtainer Quikheel Lancet™ (Teal)	Incision (blade)	2.5mm x 1.0mm	Heelstick- high flow Full term neonates where higher blood volume is required	Birth Unit, NCC, Postnatal and Antenatal Ward

Picture 1

3.2 Clinical Practice

- Check that required blood tests have been ordered correctly and are required for the neonate.
- Inform parent/carer if present. Ensure consent for NBST is completed prior to performing test.
- Perform hand hygiene and clean tray.
- Collect equipment. Select appropriate puncture device (Picture 1).

- Ensure neonate's foot is warm and well perfused prior to heel prick
 - If foot is cool or poorly perfused, apply extra clothing or warm the site with a soft cloth moistened with warm water prior to the procedure or ask parent/carers to hold foot
- Perform hand hygiene.
- Offer neonate breastfeed. If not able to breastfeed, offer skin to skin and administer EBM or oral sucrose 24%. Provide additional comfort measures as appropriate (i.e. swaddling, containment).
- Select appropriate site on the foot, either on the medial or lateral plantar surface, ensuring that the foot to be pricked does not have injuries (Picture 2).
 - Continue in a "stepping" ladder pattern from the first puncture for subsequent blood sampling



Picture 2

- Perform hand hygiene and don non-sterile gloves.
- Clean the foot with alcohol 70% swab and allow to dry for 30 seconds.
- Partly encircle the neonate's heel at the arch and ankle with nondominant hand and gently squeeze foot to bulge flesh away from bone.
- Puncture heel holding the puncture device at a 90- degree angle (Picture 3 & 4).
- Dispose of puncture device into blue tray or directly into sharps disposal container.
- Relax tension on the heel and wipe the first drop of blood away as it may be diluted by interstitial fluid. For FBC testing wipe away first 2-3 drops.
- Collect blood in correct order of draw (Figure 1), gently agitating tubes between each drop while avoiding scraping and scooping.



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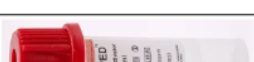

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Picture 3

Picture 4

Figure 1. Order of draw for blood collection

TUBE COLOUR	TUBE DESCRIPTION	DETERMINATION	SPECIMEN VOLUME	INSTRUCTIONS
	45µl electrolyte balanced heparin capillary tube	Capillary blood gas	45µl	Fill tube completely, avoiding air bubbles. Place cap on end to avoid air bubbles
	Citrate 3.2%	Coagulation Studies	1mL	Mix by gentle inversion NOT FOR CAPILLARY BLOOD
	K2 EDTA	FBC, Group and Hold/Crossmatch	0.5mL	Mix by gentle inversion
	Serum gel	EUC, CRP, Billirubin, LFT, Endocrine, Rheumatology, Serology, Immunology, Drug levels	0.8mL	Mix by gentle inversion Protect bilirubin from light
	Fluoride Oxidate	Glucose, Lactate	0.25mL	Mix by gentle inversion Requires ordering from pathology
	Serum clot plain	Caffeine, Anti convulsant, preferably all drugs	1mL	Mix by gentle inversion
	Lithium Heparin	Karyotype, Cytogenetics	1 mL	Mix by gentle inversion

- Seal blood containers/tubes and mix gently.
- Apply direct pressure to puncture site until bleeding stops.
- Apply patient ID labels to ALL blood tubes.
 - **A handwritten label is required for all group and hold/crossmatch samples.**
 - **Patient information details must be identical to the request form.**
 - **Handwritten labels MUST be counter- signed by second clinician and must match what is signed on the request form (Picture 4).**

MRN	DOB
Surname	
First name	
Collection date	Collection time
Initial 1 _____	Initial 2 _____

Picture 4

- Dispose of puncture device in sharps container.
- Collect and dispose of remaining equipment.
- Clean tray and remove gloves.
- Perform hand hygiene.

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- Put all pathology samples into pathology bag, seal bag. Sign pathology request form and insert into pathology bag.
- Send samples using the SCUD or call the porter for urgent pathology samples.
 - For NBST, place the completed card in the drying rack within your department

3.3 Documentation

- eRIC
- eMR
- Standard Neonatal Observation chart
- Newborn Bloodspot Screening Test
- NSW Health My Personal Health Record (Blue Book)
- Pathology request form

3.4 Abbreviations

POCT	Point of care testing	CBG	Capillary Blood Gas
FBC	Full Blood Count	EUC	Electrolytes, Urea, Creatinine
SBR	Serum Bilirubin	BGL	Blood glucose level
NBST	Newborn Bloodspot Screening Test	ID	Identification
EBM	Expressed Breast Milk		

3.5 Related Policies/procedures

- NSW Health GL2024_002 Guideline Blood and Body Substances Occupational Exposure Prevention
- NSW Health PD2023_025 Policy Directive Infection Prevention and Control in Healthcare Settings
- NSW Health PD2021_033 Policy Directive Patient Identification Bands
- NSW Health PD 2016_015 Policy Directive Newborn Bloodspot Screening
- RHW CBR- Hypoglycaemia - Monitoring and management of at risk neonates
- RHW CBR- Neonatal Observations outside Newborn Care Centre
- RHW NCC CBR- Antisepsis in the Newborn Care Centre

3.6 References

1. Krljeza JL, Dorotic A, Grzunov A, Maradin M; Croatian Society of Medical Biochemistry and Laboratory Medicine. Capillary blood sampling: national recommendations on behalf of the Croatian Society of Medical Biochemistry and Laboratory Medicine. Biochem Med (Zagreb). 2015 Oct 15;25(3):335-58. doi: <https://doi.org/10.11613/BM.2015.034>

4 ABORIGINAL HEALTH IMPACT STATEMENT DOCUMENTATION

- Considerations for culturally safe and appropriate care provision have been made in the development of this Business Rule and will be accounted for in its implementation.
- When clinical risks are identified for an Aboriginal and/or Torres Strait Islander woman or family, they may require additional supports. This may include Aboriginal health professionals such as Aboriginal Liaison Officers, health workers or other culturally specific services

5 CULTURAL SUPPORT

- For a Culturally and Linguistically Diverse CALD woman, notify the nominated cross-cultural health worker during Monday to Friday business hours
- If the woman is from a non-English speaking background, call the interpreter service: NSW Ministry of Health Policy Directive PD2017 044-Interpreters Standard Procedures for Working with Health Care Interpreters.

6 NATIONAL STANDARDS

- Standard 1 Clinical Governance
- Standard 2 Partnering with Consumers
- Standard 3 Preventing and Controlling Infections
- Standard 5 Comprehensive Care
- Standard 6 Communicating for Safety
- Standard 7 Blood Management

7 REVISION AND APPROVAL HISTORY

Date	Revision No.	Author and Approval
20.8.13	1	E Siddons (RN)
17.4.18	2	E Siddons (RN)
8.9.20	3	E Siddons (RN), NCC LOP's committee
1.8.2025	4	R Jackson (NE)
13.10.25	4	RHW BRGC