

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



Health
South Eastern Sydney
Local Health District

Ref T24/41165

NAME OF DOCUMENT	Arterial Line Blood Sampling
TYPE OF DOCUMENT	Clinical Business Rule
DOCUMENT NUMBER	RHW CLIN055
DATE OF PUBLICATION	21.6.24
RISK RATING	Low
REVIEW DATE	June 2029
FORMER REFERENCE(S)	N/A
EXECUTIVE SPONSOR	S Bolisetty (Medical Co-Director Newborn Care Centre); S Wise (Nursing Co-Director Newborn Care Centre)
AUTHOR	C Walter (CNE)
SUMMARY	To provide nurses with information on how to take blood samples from arterial lines peripheral and UAC

Royal Hospital for Women (RHW) BUSINESS RULE

Arterial Line Blood Sampling

RHW CLIN055

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

1. BACKGROUND

Peripheral and umbilical arterial lines are devices used to collect blood samples. This policy informs the nurse on the procedure to collect bloods from an arterial line.

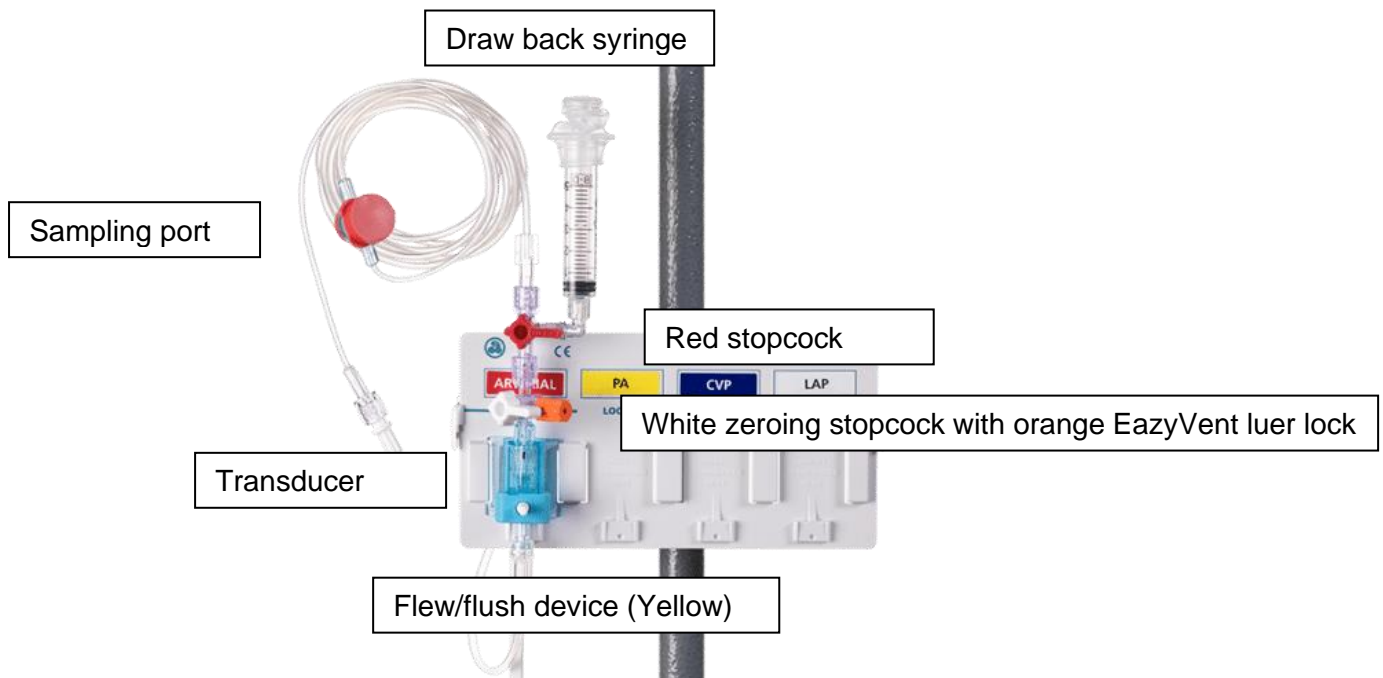
2. RESPONSIBILITIES

Medical and Nursing Staff

3. PROCEDURE

3.1 Equipment

- Gloves
- Transducer blood sampling set (Picture1)
- Arterial Syringe or luer slip intravenous syringe
- 0.5% Chlorhexidine and 70% Alcohol Swab
- Appropriate blood collection tubes and request form



Picture 1

Royal Hospital for Women (RHW) BUSINESS RULE

Arterial Line Blood Sampling

RHW CLIN055

3.2 Clinical Practice Procedure

1. Perform hand hygiene.
2. Press pause on pump of heparinised saline solution infusing through arterial line.
3. Perform hand hygiene and don gloves.
4. Clean red sampling port close to patient end of sample line with 0.5% chlorhexidine and 70% alcohol swab and allow to dry. (Picture 1)
5. Turn red stop cock off to the transducer (down) to open the line to the draw back syringe attached (Picture 1).
6. Pull back on draw back syringe slowly until 3mL mark to aspirate diluted blood into the tubing, past the sampling port, leaving pure blood sample at the port site. (Picture 3)
7. Ensure you observe perfusion of abdomen and/or limbs as you draw back. You will see blood slowly start to fill the sample line and fill the draw back syringe (Picture 4).
8. Observe for blanching at cannula site when peripheral arterial line in use. Stop procedure until circulation and normal skin colour returns.
9. Turn the red stopcock off to the patient line (up).
10. Attach arterial syringe or luer syringe to sample port and draw back volume of blood required.
11. Remove blood sample and clean the sampling port with 0.5% chlorhexidine and 70% alcohol swab.
12. Turn the red stopcock off to the transducer (down) and slowly return the 3mL diluted blood to the patient from draw back syringe and to clear the blood from the line.
13. Turn red stop cock off to draw back syringe and on to syringe driver. (Picture 5).
14. Squeeze and hold the yellow flew/flush device at transducer (Picture 6) to purge 1mL of heparinised saline from syringe driver if there is visible blood in line remained. Clear all blood from arterial set.
15. Recommence heparinised saline solution at 0.5ml/hr via syringe driver.
16. Transfer blood from collection syringe to appropriate blood tubes or analyse through blood gas machine.
17. Ensure all blood tubes are correctly labelled with patients ID stickers or handwritten label for group and hold/blood group.
18. Sign pathology request form. Send blood samples and request form in pathology bag via shute



Picture 2



Picture 3



Picture 4

Royal Hospital for Women (RHW) BUSINESS RULE

Arterial Line Blood Sampling

RHW CLIN055



Picture 5



Picture 6

3.3 Educational Notes

- Perform all blood gas and additional blood work before collecting coagulation bloods, OR if no other bloods are required, remove 1mL of blood, then take coagulation sample and return the previously removed 1mL of blood to the patient.
- Use standard intravenous syringe (without heparin) to collect coagulation profile.
- Document on the pathology request form that the coagulation sample was taken from an arterial line.
- All blood results can potentially be altered if diluted arterial sample is analysed. Medical staff may request of a capillary sample to confirm /compare blood test results.

3.4 Abbreviations

ID	Identification		
----	----------------	--	--

3.5 References

1. Merit Medical, [Learn More About Safedraw® Closed Arterial Blood Sampling Systems \(merit.com\)](https://www.merit.com/learn-more-about-safedraw-closed-arterial-blood-sampling-systems) Accessed 21/03/2024.
2. Goenka A, Bhoola R, McKerrow N. Neonatal Blood Gas Sampling Methodes. SAJCH. 2012, 6:3-9

4. RELATED BUSINESS RULES AND POLICY DOCUMENTS

- RHW NCC CBR Nursing - Arterial Line - Peripheral intra-arterial line set up
- RHW NCC CBR Medical - Umbilical catheterisation

5. CULTURAL SUPPORT

- When clinical risks are identified for an Aboriginal family, they may require additional supports. This may include Aboriginal health professionals such as Aboriginal liaison officers, health workers or other culturally specific services.
- For a Culturally and Linguistically Diverse CALD family, notify the nominated cross-cultural health worker during Monday to Friday business hours.

Royal Hospital for Women (RHW)

BUSINESS RULE

Arterial Line Blood Sampling

RHW CLIN055

- If the family 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. IMPLEMENTATION PLAN

This revised CBR will be distributed to all medical, nursing and midwifery staff via @health email. The CBR will be discussed at ward meetings, education and patient quality and safety meetings. Education will occur through in-services, open forum and local ward implementation strategies to address changes to practice. The staff are asked to respond to an email or sign an audit sheet in their clinical area to acknowledge they have read and understood the revised CBR. The CBR will be uploaded to the CBR tab on the intranet and staff are informed how to access.

7. RISK RATING

- Low

8. NATIONAL STANDARDS

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

9. REVISION AND APPROVAL HISTORY

Date	Revision No.	Author and Approval
15/7/2013	1	KB Lindrea (CNC), A Sidhu (RN)
22/3/18	2	NCC LOP Committee
21/03/2024	3	C Walter (CNE)
3.6.24	4	Titled changed to include "neonatal" Endorsed BRGC