

Canberra Hospital and Health Services Clinical Procedure Venepuncture Blood Specimen Collection

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Purpose

This document describes the technical procedure for collecting a blood specimen for clinical analysis or pre-transfusion testing via venepuncture. It is to ensure that blood specimens are collected from patients with a minimum of discomfort and with no complications.

Alerts

- Only phlebotomists from ACT Pathology, medical officers and appropriately qualified nursing staff are to perform venepuncture on children under 12 years of age.
- Only 2 venepuncture attempts should be performed, after which someone else should be asked to complete the collection. This applies to all patients.
- If an occupational exposure occurred during the venepuncture procedure, the staff member involved should complete a Staff Accident Incident Report (SAIRS) in Riskman and contact the Canberra Hospital Occupational Medicine Unit (OMU) and follow their directions. After hours, contact the After Hours CNC via the switch.
- Where possible, all patients should have blood specimens collected as part of an IVC insertion procedure, to prevent unnecessary venepuncture.
- When Blood Culture specimens are collected, the CHHS Blood Culture Collection Clinical Procedure; and the Aseptic Non Touch Technique Procedure must be complied with.
- Ward staff should document each completed venepuncture procedure in the patient's clinical record, detailing any complications, assessment, interventions and patient outcome.
- Report any venepuncture problems or complications abnormal findings to a medical officer.
- Clean any obvious blood spills on furniture with Viraclean and discard contaminated tourniquets. Soak tourniquets in Viraclean at the end of each shift.
- The person who has ordered the blood sample is also responsible for checking the result

Scope

This document pertains to all inpatients and outpatients of all ages, who require collection of a blood specimen for clinical testing via venepuncture at Canberra Hospital and associated Health Services.

All staff members collecting blood specimens via venepuncture are required to comply with this clinical procedure and must have completed the 'Venepuncture and Blood Culture Collection' course accessible via Capabiliti on the ACT Health Intranet.

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This document applies to the following Canberra Hospital Health Services (CHHS) staff, working within their scope of practice:

- Medical Officers
- Phlebotomists
- Occupational Medicine Unit (OMU)
- After Hours Clinical Nurse Consultant (AHCNC)
- Nurses and Midwives
- Healthcare students under direct supervision.

Section 1 – Pre Collection Procedure

Equipment

If a scalp vein needle is required for blood collection, a safety lock - scalp vein set with a safety resheathing device must be used. The Gauge of the needle should be selected depending on – the patient’s age, vein size and site to be used.

- 21G is recommended for adults with good venous access.
- 23G is recommended for adolescents and older paediatrics and patients with limited venous access.
- 25G is recommended for younger paediatric patients and for patients with difficult venous access e.g. the back of the of the hand or foot.

Procedure

- Before collecting a blood specimen from a patient, it is mandatory that a Pathology request form be obtained, completed with the patient’s identification details and tests required.
- Refer to the CHHS “Pathology Requests and Specimens” Procedure for all mandatory information required on Pathology request forms.

Note: This Pathology request form, and no other patient’s request form, must be kept with the collector during the entire collection and specimen labelling procedure

- The patient must be correctly and accurately identified before collection as per the mandatory protocol in the ACT Health Patient Identification - Pathology Specimen Labelling Procedure
- Explain to the patient the procedure that is about to take place and its purpose, and obtain verbal consent from the patient or patient’s parent, or if the patient is unresponsive the next of kin, or enduring power of attorney (if these people are present) before proceeding.
- If the patient does not speak or understand English well, an Interpreter from the Translating and Interpreting Service (Phone 13 1450) should be used. Refer to the ACT Health “Language Services Policy,” and “Language Services Interpreters Procedure,”.

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Section 2 – Adult and Paediatric Venepuncture Procedure

Equipment

- Alcohol based hand rub (ABHR)
- Alcohol wipes
- Vacutainer needle and holder
- Syringe of appropriate size, depending on volume of blood required (required for difficult to collect patients, e.g. Paediatric patients)
- Transfer device (to be used for transferring blood collected via syringe to Vacutainer vials).
- Blood collection needle or safety lock - scalp vein set (select gauge depending on vein size and location)
- Personal protective equipment (safety goggles, gloves x1 pair)
- Tourniquet
- Bandaid
- Cotton balls
- Kidney dish
- Blood collection vials (Ensure that the correct vial is selected for the appropriate test ordered)
- Paediatric vials (required for difficult to collect patients, e.g. paediatric patients)
- Sharps disposal container
- Biohazard bag for transferring specimen.

Venepuncture Procedure

1. Attend hand hygiene before touching the patient by either hand washing or using ABHR
2. Ensure Privacy
3. Confirm allergies to dressings or tapes
4. Position the patient in a semi-recumbent position in bed or sitting in a chair

Note: Paediatric patients may be more comfortable lying supine on an examination table

5. Identify the limb (arm or leg) from which the specimen will be collected.
6. Position the selected limb below the level of the heart to encourage blood vessel filling
7. Ensure that the extended limb is well supported
8. If required, apply a tourniquet to observe and palpate veins to select the appropriate site for venepuncture. The patient's vein should feel firm, elastic, engorged and round. Ask patient to clench their fist to promote vasodilatation
 - The most commonly used veins are the cephalic, basilic or the median cubital followed by the superficial veins on the dorsal aspect of the hand
 - For small paediatric patients, a tourniquet is not necessary and engorgement of veins will occur by holding the patient's hand or foot to stabilise.
 - In sick paediatric patients, avoid the median cubital or long saphenous vein, as they may be used at a later time to insert a central catheter.

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- Avoid:
 - Thrombosed veins, veins near an infiltrated or phlebitic area
 - An arm with an arteriovenous fistula or gortex loop
 - An arm that may be used for an arteriovenous fistula or gortex loop
 - An area which is infected, oedematous or has a blood clot

Notes:

- Never apply a tourniquet to an arm the same side as a mastectomy.
- Never take blood from an arm a sewith an intravenous line in situ (if there is absolutely no other option, ensure the intravenous infusion is stopped for a minimum of 5 minutes before venepuncture).
- Do not leave the tourniquet in situ for longer than 2 minutes.
- With paediatric patients, apply a topical anaesthetic cream to the selected puncture site, and use distraction techniques.

9. Release the tourniquet after selection of the appropriate vein
10. Attend hand hygiene by either hand washing or using ABHR
11. Set up equipment at the patient's bedside, including connecting a blood collection needle or safety lock - scalp vein needle to the Vacutainer holder
12. Discard packaging in a general waste receptacle
13. Attend hand hygiene by either hand washing or using ABHR
14. Don clean gloves
15. Reapply the tourniquet approximately 5 – 10 cm above the selected puncture site

Notes:

- The collector should be aware of the location of the brachial artery and median nerve as injury to either will cause pain or may cause temporary or permanent damage.
- Three major nerves (radial, ulnar and median) are located within a 5 cm radius of the inner aspect of the wrist in adults. **Venepuncture should not be performed in this area.**

16. Cleanse the skin with an alcohol wipe in a circular motion out from the chosen site for approximately a 2 cm radius
17. Allow the area to dry
18. Immobilise the chosen vein with the thumb and draw the skin taut immediately below the site
19. Insert the needle or the safety scalp vein needle with bevel up in one continuous movement at an angle between 5-25 degrees, depending on the individual patient.
 - For difficult to collect patients (e.g. paediatric patients), connect a syringe of appropriate size to the safety scalp vein needle prior to insertion of the needle).
 - In children with small veins, the drip method may be used (i.e. no connection to syringe or Vacationer. Blood is collected by letting it drip into a paediatric collection tube)

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Note: Observe for a flash back when using a safety scalp vein needle.

Note: To reduce the risk of nerve damage, abandon the procedure if the patient complains of pain or a pins-and-needles sensation going down into the fingertips.

20. Insert the specimen tube into the plastic needle holder (Vacutainer barrel) and into the needle valve so as to puncture the rubber top of the specimen tube ensuring correct order of draw is followed.
21. Where a syringe is being used for difficult to collect patients (e.g. paediatric patients), gently draw the syringe plunger back, until the syringe is filled with the required volume of blood)
22. Once there is a good blood flow into the specimen tube, the tourniquet should be loosened. The vial will automatically fill with blood to the required level, then the flow will cease
23. Remove the specimen tube from the Vacutainer barrel
24. If further blood samples are required, leave the needle in situ, select the next specimen tube and repeat steps 21 to 23 until all required specimen tubes have been collected
25. After the last specimen tube is filled, remove the loosened tourniquet
26. Apply a cotton ball lightly to the site and withdraw needle or safety lock – scalp vein needle from the vein and discard into a sharps disposal container (refer to “ACT Health Waste Management Policy”)
27. Where a syringe is used, detach needle or safety lock – scalp vein needle and dispose into a sharps disposal container, then connect the syringe to a Transfer Device, and puncture the first Vacutainer tube and allow the required volume of blood to be drawn into it, and then repeat with any further required Vacutainer tubes.
28. If screw top specimen containers are used, unscrew the lid of the first container, and very gently push the syringe plunger to fill the container with the required volume of blood then proceed to the next container, until all containers have been filled.
29. In all cases, adhere strictly to correct order of draw.
30. Apply digital pressure to puncture site for 2-3 minutes (3-5 minutes if the patient has a clotting disorder)

Note: Do not apply pressure to the cotton ball while the needle is in situ in the vein as this may cause pain, damage to the vein wall and formation of a haematoma.

31. Apply a bandaid

Notes: Provide post-procedure advice to the patient, particularly regarding prevention of haematoma development. This should include the following points:

- Instructing the patient to apply direct pressure to the venepuncture site for several minutes and to not bend their arm during this time.
- To avoid bruising, do not lift heavy items or exercise for 2 hours after the test
- Keep the site covered and dry for 15 minutes

32. Gently invert all specimen tubes several times (this is to prevent or facilitate the blood clotting, depending on the additive in the respective tube)

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33. Immediately after specimen collection, the collector must personally label all specimen tubes before leaving the patient's side, and ensure they are correctly and accurately labelled by complying with the ACT Health "Patient Identification - Pathology Specimen Labelling" procedure
34. Discard all consumables appropriately, (refer to "ACT Health Waste Management Policy")
35. Remove goggles and gloves
36. Attend hand Hygiene by either hand washing or using ABHR
37. Ensure patient comfort on terminating procedure
38. Instruct patient to report the following potential complications to staff:
 - Excessive bruising radiating from the puncture site
 - Any tingling sensation, pain or swelling in the arm, which could indicate nerve damage.

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Section 3 – Neonatal Venepuncture Procedure

Equipment:

- Pathology form
- gloves
- tourniquet
- skin preparation – Chlorhexidine 0.2%
- pain relief – sucrose 25%, dummy, breastmilk (if baby feeding)
- sheet for swaddling
- sterile gauze swabs
- venepuncture Neosafe needle
- pathology specimen containers
- Sharps disposal container
- alcohol based hand rub (ABHR)

Venepuncture Procedure

1. Advise parents, if present, of procedure
2. Correctly identify patient and order for specimen collection
3. Swaddle baby in a blanket or sheet
4. Administer sucrose, breast milk and/or use dummy for pain relief where possible
Choose appropriate gauge needle for size of the infant
5. Set up equipment at the patient's bedside
6. Attend hand hygiene before touching the patient by either hand washing or using ABHR
7. Apply a tourniquet (if required) to observe and palpate veins to select the appropriate site for venepuncture
8. Ask a colleague to support the neonate's positioning and give pain relief (sucrose, breast milk)
9. Don clean gloves
10. Cleanse the skin with Chlorhexidine 0.2%

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11. Allow the skin to dry
12. Insert venepuncture needle (Neosafe) with bevel uppermost

Note: It is important to use the most distal aspect of the hand or the foot when taking blood via venepuncture to preserve larger veins for intravenous cannulation or Peripherally Inserted Central Catheters (PICC).

13. Direct the needle into the vein at a 45° angle
14. Await blood return and then allow blood to drip into specimen bottle
15. Loosen tourniquet if it was used
16. Withdraw needle and apply pressure with gauze swab
17. Maintain pressure on the site until bleeding has stopped
18. Document the following on flow chart:
 - Blood sampling site.
 - Test ordered.
 - Volume of blood taken (fluid balance chart).
 - Document any bruising or injury to the neonate as a result of sampling.
19. **Immediately** after specimen collection, the collector must personally label all specimen tubes before leaving the patient’s side, and ensure they are correctly and accurately labelled by complying with the ACT Health “Patient Identification – Pathology Specimen Labelling” procedure
20. Send specimens with completed and signed request form to Pathology via Pathology pneumatic tube located in Neonatal Intensive Care (NICU) and Special Care Nursery (SCN)
21. Send specimen from Paediatrics via the pneumatic tube located in NICU
22. Reposition the infant comfortably
23. Dispose of used equipment according to the “ACT Health Waste Management Policy”

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Implementation

This procedure will be communicated to all staff via a News Hub announcement. This news item will alert staff to the fact that the Neonatal Venepuncture procedure has been consolidated into this procedure, and that it can be accessed via the Policy and Clinical Guidance Register in the Policy/Clinical Guidance section on the ACT Health Intranet.

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Related Policies, Procedures, Guidelines and Legislation

Policies

- CHHS Patient Identification and Procedure Matching Clinical Policy
- ACT Health, Nursing and Midwifery Continuing Competence Policy
- ACT Health Language Services Policy

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- ACT Health Waste Management Policy
- ACT Health Work Health and Safety Policy

Procedures

- CHHS Patient Identification and Procedure Matching Clinical Procedure
- ACT Health Patient Identification – Pathology Specimen Labelling Procedure
- ACT Health Language Services Interpreters Procedure
- Canberra Hospital Pathology Requests and Specimens SOP
- ACT Health Nursing and Midwifery Continuing Competence Standard Operating Procedure
- CHHS Blood Culture Collection Clinical Procedure
- CHHS Aseptic Non Touch Technique SOP

Legislation

- *Human Rights Act 2004*

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Definition of Terms

ABHR:	Alcohol based hand rub
Capabiliti:	ACT Health’s staff training software system
Venepuncture:	Process of collecting blood by inserting a needle into a patient’s vein
WPS:	Workplace Safety

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Search Terms

Blood, Venepuncture, Phlebotomy, Collection, Collect, Specimen, Sample, Pathology, Paediatric, Neonate, Neosafe, New Born, Vacutainer, Venesection

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Date Amended	Section Amended	Approved By
<i>Eg: 17 August 2014</i>	<i>Section 1</i>	<i>ED/CHHSPC Chair</i>

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