



# Capital Health

## INTERDISCIPLINARY CLINICAL MANUAL

### Policy and Procedure

<b>TITLE:</b> Venipuncture for Blood Specimen Collection	<b>NUMBER:</b> CC 85-079
Effective Date : October 2013	Page 1 of 10
Applies To: Holders of Interdisciplinary Clinical Manuals	

**THIS IS A POST-ENTRY LEVEL COMPETENCY FOR *HEALTHCARE PROVIDERS* PERFORMING VENIPUNCTURE AND REQUIRES ASSESSMENT OF COMPETENCY PRIOR TO PERFORMANCE**

#### TABLE OF CONTENTS

	<b>Page</b>
Policy .....	1
Guiding Principles and Values .....	4
Definitions .....	4
Procedure	
Equipment .....	5
Procedure .....	5
References .....	10
Related Documents .....	10

#### **POLICY**

1. This policy applies to the collection of blood specimens by venipuncture for the purpose of medical diagnosis, ongoing monitoring and/or evaluation of patient responses to treatment.
2. Phlebotomy is a post entry level competency for healthcare providers.
  - 2.1. Initial assessment of competency requires successful completion of the learning module and includes direct observation. A record of competency must be formally documented prior to performing without supervision.
  - 2.2. Annual assessment of competency with direct observation is recommended to ensure safe patient care. (***Venipuncture Competency –Direct Observation Template***)

***This is a CONTROLLED document for internal use only. Any documents appearing in paper form are not controlled and should be checked against the electronic file version prior to use.***

- 2.3. If annual assessment of competency with direct observation is not performed, audits of phlebotomy may be led by the Department of Pathology and Laboratory Medicine to minimize pre-analytical errors and ensure specimen integrity.
3. An authorized prescriber's written/preprinted order is required.
  4. Venipuncture must be performed using aseptic technique following routine practice.
  5. Venipuncture is **not to be performed**:
    - 5.1. on an extremity with an active shunt or fistula, or central vascular access device,
    - 5.2. on the same side as axillary lymph node surgery as in the case of a mastectomy,
    - 5.3. from an area where a hematoma is present,
    - 5.4. from an artery, or
    - 5.5. proximal to an active intravenous (IV) site.
  6. A completed *Physician's Authority to Draw Blood Under Special Circumstances form (CD2154MR)* is required for laboratory staff prior to drawing blood from:
    - 6.1. the arm of an inactive fistula,
    - 6.2. the same side as a mastectomy, or
    - 6.3. the foot.
  7. Venipuncture from the foot of a diabetic patient should be avoided if at all possible. If the foot must be used and there is concern about the status of the circulation in the foot, a physician should be consulted.

Laboratory staff are not permitted to collect from the foot of a diabetic.
  8. Only **two attempts** at venipuncture on any one patient by a single phlebotomist are permitted.
  9. The **Blood Collection Order of Draw must be followed**.
  10. Specific test requirements (e.g. tube type, volume, handling), as detailed in the **Laboratory Test Catalogue** must be followed. Consultation with the laboratory is required prior to collection of tests not listed in the Laboratory Test Catalogue.
  11. Whenever possible, equipment that collects the specimen directly into the tube/bottle is to be used to minimize the risk for needle stick injury and contact with the blood; (e.g., butterfly needle with Vacutainer® adaptor).
    - 11.1. Safety needle devices are to be used for venipuncture in accordance with *Safe Needles in Healthcare Workplaces Act*
    - 11.2. The Vacutainer® holder is **single use only**, and must be discarded along with the sharps device into the sharps container.

- 11.3. When a blood specimen must be obtained using a syringe, a transfer device is required for safe direct transfer into the appropriate tubes/bottles.
- 11.4. If the specimen does not transfer by vacuum, consider the tube/bottle defective and obtain a new one.
12. Non-latex equipment is to be used during the venipuncture procedure (e.g., gloves, tourniquet). Sterile gloves are required when obtaining blood culture specimens.
  - 12.1. Each inpatient is to have a non-latex tourniquet in a labeled plastic bag at their bedside for **dedicated use on that patient only** during their hospital stay, unless deemed inappropriate for an individual patient or specific group of patients. (e.g., Mental Health areas). The tourniquet is to be discarded when the patient is discharged.
  - 12.2. For ambulatory care (outpatients) the same tourniquet can be used for multiple patients but must be discarded if the patient is identified as being on precautions. A tourniquet used on multiple patients must be discarded at the end of the day.
  - 12.3. Any tourniquet must be discarded at the point it becomes visibly soiled.
13. Prior to performing the venipuncture, the phlebotomist must confirm identification of the patient. This confirmation involves ensuring the two unique identifiers found on the patient armband or other recognized ID, match with the information on the requested order and the patient labels. (Refer to *Patient Identification and Same Name Alert CH 70-040*)
  - 13.1. **This is a required step to ensure positive identification of the patient.**
  - 13.2. **Do not** perform venipuncture if the required identification is missing, illegible or if there is any discrepancy with the health record or requested order
  - 13.3. Once identification is confirmed do not leave the bedside or the blood collection booth until the collection procedure is complete as otherwise the identification process must be repeated.
13. Labeling of all blood specimens and completion of the collection information on the requisition and/or label **are to take place in the presence of the patient immediately following collection.**
  - 13.1. Labels must meet the requirements as set by the **Laboratory Specimen Acceptance and Rejection Policy**.
14. In the case of a specimen for *Blood Transfusion*, both the phlebotomist and the witness must sign their **full signatures** on the Blood Transfusion requisition and initial the specimen label in **the presence of the patient.**
  - 14.1. A completed signed Blood Transfusion requisition must also accompany any electronic orders.. This is a legal declaration that certifies the patient information is correct and consistent with the patient's armband.
  - 14.2. In an outpatient setting the patient may act as the witness.

15. To maintain specimen integrity transport all specimens as soon as possible after collection. Ensure adherence to all laboratory requirements associated with handling, packaging and testing. Refer to [Laboratory Test Catalogue](#).

## GUIDING PRINCIPLES AND VALUES

1. Venipuncture is performed on all Capital Health patients (inpatients and ambulatory care) in accordance with this policy and procedure to ensure that blood specimens have the required integrity to provide quality results and inform patient care.
2. By following an established procedure for venipuncture many pre-analytical errors can be avoided. [Venipuncture Job Aid](#) )
3. Patient safety is the ultimate goal.

## DEFINITIONS

<b>Aseptic technique:</b>	A procedure that is performed under clean conditions to reduce the risk of post procedure infection.
<b>Authorized Prescriber:</b>	<ul style="list-style-type: none"><li>• Qualified physicians and dentists registered to practice in their respective province or country.</li><li>• Nurse practitioners registered in the province of Nova Scotia who have a collaborative practice. An ordering authorized prescriber is the authorized prescriber who has ordered a diagnostic test, and who is responsible for initiating follow-up of abnormal results.</li></ul> <p><b>Note</b> - Clinical Clerks are <b>not</b> authorized prescribers.</p>
<b>Authorized Requestor:</b>	In addition to an authorized prescriber, anyone who has been delegated the authority to order a test through medical directives, delegated medical functions, expanded role designation, specific policies, etc.
<b>Hematoma</b>	Mass of clotted blood that forms in a tissue, organ or body space as a result of a broken blood vessel.
<b>Phlebotomist:</b>	Any Healthcare Provider trained to draw blood competently by venipuncture.
<b>Pre-Analytical Errors:</b>	Errors during the specimen collection, handling and transportation or storage process that impact upon the quality of test results.

## PROCEDURE

### Equipment

General collection supplies, use as appropriate. Inspect all supplies for possible defects and applicable expiration dates.

- 10% povidone iodine (for serum alcohol collection)
- 70% alcohol swabs
- Adhesive bandage or tape
- Blood tubes, as required Discard tube ( sodium citrate)
- Gauze
- Gloves (non-latex disposable)
- Needle as determined by venipuncture site:
  - Vacutainer® needles- 21g, 22g
  - butterfly, winged needle - 21g, 23g
- Sharps container
- Specimen bags (plastic)
- Specimen labels
- Tourniquet (non-latex disposable)
- Transfer device used with butterfly/winged needle and syringe
- Vacutainer® holder (single use)

In addition to the general supplies listed above use the following when collecting Blood Culture specimens:

- 2% Chlorhexidine with 70% alcohol swabstick
- Blood Culture bottle(s) (aerobic/anaerobic as requested) with discard tube (sodium citrate)
- Butterfly, winged needle - 21g, 23g
- Dressing tray (optional)
- Gloves (sterile)

1. Check the authorized prescriber's order and determine if any collection conditions are specified. {E.g., AC/NPO (fasting), time scheduled.}
2. When applicable, review patient history for special considerations and previous blood test results.
3. Obtain requisition and/or labels and ensure appropriate blood collection equipment is available. Ensure tubes/bottles have not expired.
4. Perform hand hygiene **in front of the patient** and put on gloves.
5. Greet patient, introducing yourself and indicate the process to occur.
6. **Confirm patient's identity:**

- 6.1. *Inpatients or outpatients with an identification band:* check the patient's identification band for the full name and Capital Health Medical Record number and verify the information against the appropriate documentation (e.g., chart, requisitions etc.).
- 6.2. *In settings where patients are unable to wear an armband:* the nurse in charge of the patient may identify the patient using the patient's health record (photo) identification. (Refer to *Patient Identification and Same Name Alert CH 70-040*)
- 6.3. *Outpatients without an identification band:* check the patient's identification by asking the patient to state their official name and date of birth and verifying the information against the registration label and requisition.
- 6.4. Once identification is confirmed, do not leave the patient as otherwise the identification process must be repeated.
- 6.5. In the case of *blood transfusion* specimens, both the phlebotomist and a witness sign their full signatures on the requisition and initial the specimen label, **in the presence of the patient**. (In outpatient blood collection settings the patient can sign.)
7. Position the patient with the arm in a downward straight line from shoulder to wrist with a slight bend at the elbow. Support the arm with a pillow or towel as required. Select venipuncture site. (Refer to the **Venipuncture Learning Module**)

**NOTE:**

In the absence of other acceptable sites, and **only when absolutely necessary**, venipuncture below an active infusing intravenous site can be performed if the **following steps and precautions are taken**:

- ensure the IV infusion is shut off for at least 2 minutes prior to the venipuncture
- apply the tourniquet below the IV site and above the intended puncture site

8. Apply the tourniquet 8-10 cm above the puncture site with enough pressure to compress the vein but not the artery. (May be confirmed by finding a pulse distal to the tourniquet.)
  - 8.1. If the tourniquet time is longer than 1 minute, release and reapply after two minutes.
9. Instruct the patient to close the hand and hold a fist, refraining from pumping the hand.
10. Select the vein using the index or middle finger using the following criteria:
  - 10.1. median cubital vein is preferred,
  - 10.2. cephalic vein is second choice,

- 10.3. and basilic vein when above selections will not be successful.
- 10.4. The selected vein should be spongy, elastic and give under pressure of the finger.
11. Gently massage the arm from wrist to elbow or lightly tap the vein with the fingers 2-3 times to dilate the vein and increase blood flow.
12. Release the tourniquet. Cleanse the site using friction with appropriate cleanser as per the following table:

Situation/Site	Skin Preparation	Site Cleansing
Venipuncture site	70% alcohol	Circular
Blood culture site	2% Chlorhexidine with 70% alcohol	Vertical, horizontal, circular
Serum alcohol level	10% povidone iodine	Circular
Allergy to topical alcohol	The strongest antimicrobial solution that the patient can tolerate. (Consult Infection Control if required)	As per situation/site

13. Allow to air dry for 30-60 seconds to minimize pre-analytical error and provide for full antibacterial effect. If the site has to be re-palpated for any reason, repeat cleansing.
14. While the cleanser is drying, place equipment and supplies within easy access. Assemble blood tubes according to **Blood Collection Order of Draw**.
15. Remove caps from blood culture bottles marking the level of culture media. Cleanse tops with alcohol swabs. Cleanse sodium citrate discard tube. Allow to air dry.

**NOTE:**

The sodium citrate discard tube **must** be collected prior to collection of peripheral blood cultures to ensure the initial skin plug caused by needle insertion does not contaminate the blood culture specimen. **Provincial Microbiology Users Manual**

16. For Blood Culture collections repeat hand cleansing and apply sterile gloves.
17. Reapply the tourniquet.

18. Attach the Vacutainer® needle to the holder and uncap the needle. Inspect the bevel of the needle for any burrs or defects.
19. Anchor the vein using the following technique:
  - 19.1. Place thumb about 1-2 inches below where the needle is to enter and hold the arm firmly, distal to the puncture site.
  - 19.2. At the same time, pull the skin downward. Fingers may be placed around and underneath the arm to secure against the patient moving unexpectedly.
20. Perform venipuncture inserting the needle with the bevel up, in-line with the vein at 15° to 30° angle, in a smooth **forward** motion.
21. Support the needle in the vein and using the index and middle fingers on the flanges of the tube holder, push the tube onto the needle/holder assembly. Maintain the tube/bottle below the site when the needle is in the vein.
22. As blood begins to flow into the collection tube, have the patient open the hand; release the tourniquet. Re-confirm blood flow.
23. Continue to collect specimens as required according to the **Blood Collection Order of Draw**.
  - 23.1. Change tubes for *multiple* specimens ensuring stabilization of needle position.
  - 23.2. Gently invert tubes immediately upon filling following the instructions as outlined in the **Blood Collection Order of Draw**.

**NOTE:**

The specimens **must be adequately** mixed to ensure appropriate integrity for lab testing

- 23.3. Allow the tubes to fill until the vacuum is exhausted **and** appropriate volume is collected.

**NOTE:**

- Sodium citrate tubes for coagulation studies **will be rejected** unless tube is filled to the line.
- Tubes not filled completely may lead to results that are too high or too low. This could lead to inappropriate treatment.
- The ratio of specimen to culture medium for both aerobic and anaerobic blood cultures is a **minimum of 5 mls and maximum of 10 mls**, in each bottle.

- 23.4. Simultaneously remove the venipuncture needle activating the safety mechanism. With a gauze pad apply firm pressure to the site until the bleeding has stopped.



24. Dispose of the needle with the Vacutainer® holder attached in the approved sharps container. Dispose of the discard tube in the biohazard waste receptacle.
25. Apply an adhesive bandage or tape a gauze in place.
26. Inpatients: Reposition the patient and return the tourniquet to the labeled plastic bag at the bedside.
27. Label the blood tubes **in the presence of the patient** as per the Department of Pathology and Laboratory Medicine **Specimen and Collection Requirements**
28. Perform final patient identification (**Final Check**) on all patients wearing an identification armband.

**Final Check:**

Read aloud the last three numbers of the medical record number:

- on the patient's identification armband,
- on each specimen label,
- and on the laboratory requisition (if required)

Verify that all numbers match.

29. Complete any requisition(s), electronic order (s) and specimen labels providing all required collection information. Ensure the date and time of collection is recorded as per the **Specimen and Collection Requirements**.
30. Ensure the patient is comfortable.
31. Remove gloves and perform hand hygiene.
32. Ensure specimens are transported to the laboratory as soon as possible ensuring adherence to all laboratory requirements associated with handling and packaging as identified in the **Laboratory Test Catalogue**.

**NOTE:**

Specimens collected and analyzed on Point of Care Testing (POCT) devices are to be delivered to the laboratory when confirmation of results is indicated.

## REFERENCES

### Legislation

Safer Needles in Healthcare Act, Nova Scotia, 2006

### Other

CLSI. Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard-Sixth Edition. CLSI document H3-A6. Wayne, PA; Clinical and Laboratory Standards Institute; 2007.

Perry and Potter, Clinical Nursing Skills and Techniques 7<sup>th</sup> edition, 2010

## RELATED DOCUMENTS

### Policies

- CC 80-019 Peripheral IV Therapy Initiation and Maintenance
- CC 85-040 Mislabeled Laboratory Specimens for Diagnostic Testing
- CC 85-070 Unlabeled Laboratory Specimens for Diagnostic Testing
- CH 30-041 Unidentified Patient
- CH 70-040 Patient Identification and Same Name Alert
- CH 80-060 Sharps Disposal
- IC 04-002 Routine Practice
- IC 06-016 Hand Hygiene for Health Care Providers

### Laboratory Specimen Acceptance and Rejection Policy

### Forms

CD215MR Physician's Authority to Draw Blood under Special Circumstances Form

### Other

#### Blood Collection Order of Draw

#### Provincial Microbiology Users Manual

Practice Alert Posters CH PrinA818, A819 A824 and PrinA825

#### Laboratory Test Catalogue

#### Specimen and Collection Requirements

#### The Final Check: A Toolkit for the Prevention of Mislabeled Blood Specimens

#### Venipuncture Job Aid

#### Venipuncture Learning Module

#### Venipuncture Competency –Direct Observation Template

\* \* \*