 Department of Health Government of Nunavut		NURSING POLICY, PROCEDURE AND PROTOCOLS	
		Community Health Nursing	
TITLE:		SECTION:	POLICY NUMBER:
Venipuncture		Diagnostics	08-016-00
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APPLIES TO:			
Community Health Nurses			

POLICY:

A nurse is authorized to perform venipuncture for blood procurement as a result of a direct physician order or transferred function.

If unable to obtain blood after two venipuncture attempts, where possible, another nurse/physician should be consulted for assistance. Avoid using the lower extremities for peripheral venipuncture.

DEFINITIONS:

Peripheral venipuncture is a procedure performed for the purposes of obtaining blood for analysis, culture and sensitivity and transfusion medicine.

PRINCIPLES:

- Collecting and requisitioning blood specimens will be guided by the policies and procedures of the *Health Centre Laboratory Manual*.
- Venipuncture requires special competence and shall not be delegated to unregulated healthcare workers unless directed by the Regional Director and the duty is included in the worker's job description.

RELATED POLICIES, GUIDELINES AND LEGISLATION:

Policy 08-001-00 Laboratory Procedures
 Policy 08-002-00 Requisitioning Laboratory Studies
 Policy 08-004-00 Post Mortem Samples
 Government of Nunavut *Health Centre Laboratory Manual*

Venipuncture for Blood Specimens

Considerations:

1. Mislabelling or wrong client identity can have fatal adverse outcomes.
2. Prolonged application of the tourniquet may make samples unsuitable for some biochemical or haematological tests. If it is necessary to leave the tourniquet on for more than 1 to 2 minutes, release it and re-apply.
3. Never attempt venipuncture in the arm when arteriovenous fistula/graft is present, or when a mastectomy has been performed on the same side.
4. Under filling a vacutainer tubes can affect the test results. All tubes should be filled to the extent the vacuum allows.
5. Therapeutic drug levels are normally drawn pre-dose with the time of draw documented on both the lab form and the client's health record.
 - a. If drawing a post drug level, document the start and finish time of the drug administration in the health record, as well as the time in which blood is drawn.
 - b. Follow the Health Centre Lab Manual for detailed instructions on therapeutic drug levels.
6. Indicate on the requisition if the blood was drawn from below an IV site and what solution was infusing.
7. If venipuncture is unsuccessful, discard the needle and use a new one.
8. The antecubital fossa is the preferred site for blood procurement.
9. Blood samples should be collected as per order of draw: blood cultures, non-additive tubes, coagulation/citrate tubes, additive tubes, EDTA (lavender top) tubes.
10. Check the expiry date on all tubes and blood cultures prior to drawing blood.
11. All vacutainer tubes must be mixed seven to ten times with gentle inversion to ensure sufficient mixing.

Venipuncture for Blood Procurement

Equipment:

- Blood tube holder
- Blood collecting tubes as required
- Requisitions and identification labels (if available)
- Non-sterile gloves
- Winged Blood Collection Set (21G/23G) or Safety Collection Needle
- Alcohol swab
- Tourniquet
- 2x2 gauze/cotton ball
- Sharps container
- Plastic specimen bag
- Tape (optional)

Procedure:

1. Explain the procedure to the client.
2. Confirm the client's identity by ensuring that the client's identifier information matches the requisitions, labels and tubes exactly.
3. Assemble equipment.
4. Perform hand hygiene.
5. Position the client comfortably and ensure that the arm is supported.
6. Apply the tourniquet approximately 5-10 cm above the selected venipuncture site. To avoid pinching the skin, the tourniquet may be applied over the client's clothing.
7. Select the vein; glove.
8. Thoroughly cleanse the area with an alcohol swab. Allow to air dry. Do not re-palpate.
9. Select the appropriate tube and rest it in the tube holder.
10. Immobilize the vein and inform the patient of your intent to insert the needle.
11. Insert the needle with bevel up at a 15-30 degree angle and penetrate the skin in a single, smooth motion (non-traumatic insertion technique). With the winged blood collection set, blood will be seen in the tubing if successful. Push the blood collecting tube(s) onto the rubber-tipped needle and allow the tube(s) to fill.
12. If venipuncture is unsuccessful, gently palpate the needle tip position in relation to the vein. Without removing the needle and depending on client tolerance, attempt to access the vein by making necessary adjustments. If unsuccessful, terminate the procedure.
13. Release tourniquet when last tube is filled and pull the blood tube off the rubber tipped needle.



14. Withdraw the needle at the same angle as insertion. Apply gentle pressure over the venipuncture site with a dry cotton ball/gauze for approximately 1-2 minutes. Securing with tape is optional.
15. Do not bend the client's arm as this can increase the risk of subcutaneous bleeding.
16. Dispose of the needle and holder as one unit immediately into sharps container.
17. Remove any blood droplets from the tube stopper with an alcohol swab. Gently invert any additive tubes as per the procedures contained within the *Health Centre Laboratory Manual*. Remove gloves.
18. Label each tube individually (clearly print client information on the tubes if labels are not available) and complete the requisitions (date, time, and signature). Verify labelled tubes against the requisition(s).
19. Place tube(s) into plastic specimen bag(s) and affix requisition(s).
20. Ensure specimens are stored and sent to the laboratory according to the policies and procedures contained within the *Health Centre Laboratory Manual*.

Paediatric Considerations:

- Explain procedure to child at developmentally appropriate age
- Only use restraints when the risk outweighs not using a restraint. Consider an alternative method first, and document the method.
- When performing venipuncture on children, you need to explore a variety of sources for vein access: scalp, antecubital fossa, saphenous, and hand veins.
- Application of EMLA cream may be ordered to reduce pain in infants and young children
- Vacutainers are not recommended in children under 2 years of age due to possible vein collapse with their use.

Unexpected Outcomes:

1. Hematoma forms at venipuncture site
Intervention:
 Apply pressure
 Monitor client for pain and discomfort
2. Bleeding at site continues
Intervention:
 Apply pressure to site
 Instruct client to apply pressure
 Monitor client
 Notify physician if bleeding persists
3. Signs and symptoms of infection at venipuncture site occur.
Intervention:
 Swab site for C&S and treat according to clinical guidelines or physician order
 Apply moist heat to site



4. Client becomes dizzy or faints during venipuncture
Intervention:
 - Assist client into chair or bed
 - Lower client's head between knees
 - Remain with client
5. Laboratory tests reveal abnormal blood constituents
Intervention:
 - Notify physician

REFERENCES:

Perry, A. G. and Potter, P.A. (2010). *Clinical Nursing Skills and Techniques 7th ed.* Mosby.

Weinstein, S. (2007). *Plumer's Principles and Practice of Intravenous Therapy 8th Ed.* Philadelphia: Lippincott.

Government of Nunavut *Health Centre Laboratory Manual*
GUIDELINES 08-016-02

Venipuncture for Blood Cultures

Considerations:

1. For Adults: Two sets of blood cultures should always be drawn even if blood culture "x 1" is ordered. Each set will be a separate venipuncture from a separate site. The first set will consist of one aerobic and one anaerobic bottle. The second set will consist of only one aerobic bottle. The volume of blood to be collected is important. Mark the labels 10 ml above the growth medium to indicate the level of blood to be added. The sets may be drawn one after the other.
2. Neonatal and Paediatric blood cultures should be drawn in the Peds plus bottle. Do not collect two sets of cultures as indicated for adults.
Optimal volume per bottle for Neonates: 1-1.5ml of blood
Optimal volume per bottle for Pediatric: 1-5ml of blood
3. Unless endocarditis is suspected there is no need for a third set. With suspected endocarditis, the third set will consist of only one aerobic bottle. The first, second, and third set should each be drawn 30-60 minutes apart.
4. It is recommended that no more than three sets of blood cultures be drawn on any one client in a twenty four-hour period.
5. Blood cultures are not to be drawn from central venous lines unless ordered by a physician.
6. Each bottle must have its own client label. When placing a patient label on the bottle, do not cover the bar code or the bottom of the bottle.



Equipment:

- Blood culture bottles (verify expiry date)
- Requisition and identification labels (per set)
- Non-sterile gloves
- Winged Blood Collection Set or Safety Collection Needle
- Blood Collection Set with Male Adapter (holder for culture bottles)
- Chlorhexidine Alcohol swab
- Alcohol swab
- Tourniquet
- 2x2 gauze/cotton ball
- Sharps container
- Plastic specimen bag
- Tape (optional)

Procedure:

1. Refer to Procedure steps 1 through 7 as described in Guideline 08-016-01: Venipuncture for Blood Collection.
2. If using Winged Blood Collection Set, connect butterfly needle to blood collection set ensuring no contamination of equipment occurs.
3. Lines denoting 5 ml increments are present on the culture bottle labels. Mark the labels 10 ml above the growth medium to indicate the level of blood to be added.
4. Snap off the cap(s) from the culture bottle(s) and cleanse rubber stopper with an alcohol swab.
5. Apply the tourniquet approximately 5-10 cm above the selected venipuncture site. To avoid pinching the skin, the tourniquet may be applied over the client's clothing.
6. Select the vein; glove.
7. Thoroughly cleanse area with alcohol/ chlorhexidine swab. Allow to air dry. Do not re-palpate.
8. Perform the venipuncture in the usual manner.
9. Firmly push the aerobic culture bottle first onto the rubber tipped needle and allow 10 mls of blood to be drawn into the bottle. Do not allow the vacuum to draw more than this amount.
10. Follow with the second bottle (if appropriate) and allow approximately 10 mls of blood to be drawn into the bottle. Remove the spike from the bottle.
11. Remove the tourniquet and the needle from the vein and with one hand press shield over needle until it locks into place. Apply gentle pressure over the venipuncture site with a dry cotton ball/gauze for approximately 1-2 minutes. Securing with tape is optional.
12. Dispose of the needle and holder as one unit immediately into sharps container
13. Label each bottle individually but do not cover the bar code or the bottom of the bottle. The label may be applied around the bottom 1/3 of the bottle. Complete the requisition including the time the culture is taken and verify the labelled bottles against the requisition.



14. Invert bottles 8-10 times.
15. Place tube(s) into plastic specimen bag(s) and affix requisition(s).
16. Ensure specimens are stored and sent to the laboratory as outlined in the policies and procedures of the *Health Centre Laboratory Manual*.

Pediatric Considerations:



- Explain procedure to child at developmentally appropriate age
- Only use restraints when the risk outweighs not using a restraint. Consider an alternative method first, and document the method.
- When performing venipuncture on children, you need to explore a variety of sources for vein access: scalp, antecubital fossa, saphenous, and hand veins.
- Application of EMLA cream may be ordered to reduce pain in infants and young children
- Vacutainers are not recommended in children under 2 years of age due to possible vein collapse with their use.

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