

KINGSTON GENERAL HOSPITAL

NURSING POLICY & PROCEDURE

SUBJECT	Venipuncture for Obtaining a Blood Sample (Neonatal and Pediatric): Advanced Competency (AC) for Nurses (Registered Nurses and Registered Practical Nurses)	NUMBER	B-4581
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NOTE: Refer to Nursing Policy and Procedure B-4580 for adult venipuncture.

Introduction:

1. Venipuncture involves inserting a needle into a vein. In addition to withdrawing a blood sample, venipuncture may also be performed for the purpose of injecting a medication. This policy and procedure applies to venipuncture for obtaining a blood sample.
2. Successful venipuncture for withdrawing a blood sample is associated with factors such as technical skill and experience of the clinician, size of veins, skin integrity or status, and age.
3. Complications that may arise include puncturing a nerve or artery, infection, or hematoma.
4. Venipuncture should be performed cautiously in patients with clotting disorders or in those patients receiving anticoagulant therapy.
5. Common errors with blood specimen collection include:
 - 5.1. unlabelled and mislabelled specimens
 - 5.2. Insufficient blood volume in the tube
 - 5.3. insufficient mixing of the blood in the tube
 - 5.4. incorrect order of draw
6. Venipuncture is less painful than capillary blood sampling by heel puncture and is required for the following:
 - 6.1. a large quantity of blood
NOTE: Venous sampling is the preferred method of blood collection versus capillary sampling for volumes greater than 1 mL.
 - 6.2. sterile collection for blood culture
 - 6.3. laboratory tests requiring venous sampling

Definitions:

Infant - a child from birth to one year of age.

Neonate - an infant from birth to 28 chronological days

Principles:

Pain Management

1. There is a need to consider the impact of pain on the patient during the venipuncture procedure.
2. Assessment of the patient's psychological and physiological need for comfort should occur prior to the procedure.
3. It is recommended to wake sleeping patients gently prior to painful procedures.

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4. The provision of a soother or a finger (parent or gloved health care provider's) to suck on may assist infants with a sense of security.
5. Oral sucrose solution is safe and effective for pain relief in infants during painful procedures.
6. Breastfeeding has been demonstrated to significantly reduce distress in infants, in particular neonates, during venipuncture.
7. Consider obtaining an order for the application of a topical anesthetic which may decrease the pain associated with venipuncture.

Determination of Blood Volumes for Sampling

1. Infants have a smaller circulating blood volume than adults and a loss of greater than 10% can produce symptoms of hypovolemia.
2. Consider the amount of previous blood sampling and assess the patient to determine if smaller volumes or microsampling is required.

Safety

1. Parents should be given the choice as to whether they wish to be present for the procedure.
2. If possible, a parent or another health care provider should hold the patient.
 - 2.1 Holding the patient safely and gently maintains safety and prevents injury.
 - 2.2 An infant can be swaddled in a blanket but if held by the parent, for example during breastfeeding, swaddling may not be required.
 - 2.3 Swaddling and cuddling may provide comfort as well as security.

Finding an Appropriate Vein

1. An appropriate vein needs to be identified prior to venipuncture.
2. The best veins in the infant are usually in the dorsal portion of the hand or the antecubital fossa region – the median cubital, basilica and median cephalic veins.
3. The brachial artery needs to be avoided.
4. A transilluminator or vein viewer may be used to visualize suitable veins in the dorsal portion of the hand.

Policy:

1. Only authorized nurses may perform venipuncture on neonatal and pediatric patients for the purpose of obtaining a blood sample (see Nursing Policies A-1250 and A-1257 for authorization requirements and competency to perform).

EXCEPTION: Nurses who are authorized for venipuncture for the purpose of obtaining a blood sample from adult patients may perform venipuncture on older pediatric patients (greater than 10 years of age) as appropriate taking into consideration their physiological and psychological status (see Nursing Policy and Procedure B-4580).
2. Practical Nurse students may not perform this Advanced Competency (AC) at this time.
3. Baccalaureate nursing students may perform venipuncture for the purpose of obtaining a blood sample when the following conditions are met:
 - 3.1 AC theory, including classroom experience, is part of the student's basic curriculum
 - 3.2 The AC is commonly practiced by the nurses on the assigned clinical unit
 - 3.3 The student is in their consolidating experience at the end of their educational program and is under the direct supervision of the authorized Nurse Preceptor/delegate
 - 3.4 The student completes a written test with a score of 80%, or greater

NOTE: This process will not authorize the student for this procedure. While consolidating students may perform procedures under certain conditions, only nurses are eligible for authorization.

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4. A maximum of only two attempts to successfully perform venipuncture are made before consulting another authorized nurse.

Equipment:

Butterfly needle (e.g. Vacutainer Brand Safety-Lok collection set) (21, 23 or 25 Gauge)
Syringe (3 or 10 mL) (**NOTE:** In older pediatric patients, the Vacutainer Brand Safety-Lok collection set can also be used with a Vacutainer needle adaptor and holder to obtain blood rather than a syringe. Select equipment that is best suited for the nature of the blood collection procedure, the experience of the individual obtaining the blood, and the patient)
Appropriate Antiseptic Solution or Swab (see Nursing Policy C-4000 Cleansing Agents for Skin, Invasive Lines, and Wounds). **NOTE:** Use chlorhexidine gluconate (CHG) 2% alcohol free on neonates.
Sterile Gauze 2 x 2s
Tape
Gloves
Lab Order Entry labels or patient labels and requisitions (e.g. newborn screening)
Blood Collection Tubes or Syringes (as required) (for blood cultures see Blood Culture Collection Tool under Clinical Tools on the KGH Intranet Homepage)
Tourniquet or Small Elastic Band
Warming device (if necessary)
Topical anesthetic agent (if ordered)

Procedure:

1. Obtain informed consent from parent for blood work and explain procedure.
2. If multiple tubes need to be collected, have all required tubes easily available in the correct order of draw (refer to the Clinical Laboratories, Kingston General Hospital Order of Draw Chart).
3. Prepare Lab Order Entry labels and verify that the patient information on the patient care orders matches with them (refer to KGH Administrative Policy 20-045 Lab Specimen Requisitions and Labels).
4. Take completed Lab Order Entry labels to bedside and verify that the information on the patient's identification bracelet matches the information on the requisitions and labels (see Administrative Policy 13-10 Patient Identification).
 - 4.1 Do not pre-label specimen containers (see Administrative Policy 20-045 Lab Specimen Requisitions and Labels).
5. Determine if parent wishes to hold their child during procedure.
 - 5.1 If parent does not wish to hold their child and holding is warranted, obtain assistance of another health care provider.
6. If needed, wrap younger patients so that only limb to be used for blood work is exposed.
 - 6.1 As appropriate, make provisions for either breastfeeding or the use of some type of pain management (sucrose, pacifier, parent's finger, gloved health care provider's finger) during procedure.
7. Select venipuncture site.
 - 7.1 Use caution in patients with coagulation disorders.
 - 7.2 Do not use limb with inadequate or impaired circulation.

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- 7.3 Always differentiate between veins and arteries.
- 7.4 Avoid sites near areas of infection or impaired skin integrity.
- 7.5 Avoid sites (e.g. antecubital fossa) that may be used for insertion of a peripherally inserted central catheter (PICC).
8. Apply topical anesthetic, if ordered, for appropriate length of time and then remove.
9. Visualize vein.
 - 9.1 Application of a tourniquet, small elastic band, or transilluminator or vein viewer may be needed.
 - 9.2 Apply warming device, if necessary.
10. Perform hand hygiene and apply gloves.
11. Ensure that site is secure.
12. Cleanse site thoroughly with appropriate antiseptic solution or swab (see Nursing Policy C-4000 Cleansing Agents for Skin, Invasive Lines, and Wounds).
 - 12.1 For neonates:
 - 12.1.1 Apply CHG 2% for 30 seconds or with 2 consecutive wipings.
 - 12.1.2 Do not use of isopropyl alcohol for skin cleansing.
13. Connect syringe to butterfly.
 - 13.1 If blood is required for newborn screening only, a syringe is not required.
14. Penetrate skin at 15 - 30 degree angle with bevel of butterfly needle pointed upwards.
15. Obtain blood samples.
 - 15.1 For metabolic screening only: Once flashback is obtained allow blood to travel by gravity down butterfly tubing and fill circles on requisition completely and in numerical order.
 - 15.2 For all other bloodwork: Once flashback is obtained, apply gentle traction to syringe until required amount of blood is collected.

NOTE: Vein may collapse if strong traction applied.
 - 15.3 If unsuccessful obtaining blood with syringe, removing butterfly needle will often result in blood flowing freely from venipuncture site.
 - 15.3.1 Allow free flowing blood to fill metabolic screening circles in numerical order or fill blood collections tubes with required amount of blood.

NOTE: Do not pump hand or foot aggressively or squeeze site as this will lead to a hematoma.
 - 15.4 After a maximum of two unsuccessful attempts, consult another authorized nurse
 - 15.4.1 If applicable, consider an alternate site or method (e.g. capillary sampling).
16. Remove tourniquet or small elastic band, if applied.
17. Remove needle, apply safety device, and apply gentle pressure to area until hemostasis occurs.
18. Assess patient's tolerance of procedure.
19. Fill blood collection tubes as necessary and send to laboratory.
 - 19.1 When using vacutainers invert tubes 8-10 times and label tubes with patient-specific specimen labels.
 - 19.1.1 Initial all labels and write the time of collection.

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Reporting and Recording:

1. Document in Interprofessional Progress Notes or on unit-specific flowsheet:
 - 1.1 Date, time, method and location of sampling
 - 1.2 Amount of blood obtained
 - 1.3 Blood tests completed
 - 1.4 Any unusual problems
 - 1.5 Patient's tolerance of procedure

Related Policies and Procedures:

Administrative Policy 13-10 Patient Identification
Administrative Policy 20-045 Lab Specimen Requisitions and Labels
Clinical Laboratories, Kingston General Hospital Order of Draw Chart
Laboratory Users' Handbook Blood Cultures Appendix
Nursing Policy A-1250 Clinical Nursing Procedures - Designation, Authorization and Education, and Competency to Perform
Nursing Policy A-1257 Clinical Nursing Procedures - Advanced Competency Procedures Approved for Nurses (RNs and RPNs), Authorization/Challenge/Re-authorization Requirements, and Basic Procedures for Which Additional Education is Required
Nursing Policy C-4000 Cleansing Agents for Skin, Invasive Lines, and Wounds
Nursing Policy and Procedure B-4580 Venipuncture for Obtaining a Blood Sample (Adult): AC for Nurses (RNs and RPNs)
Nursing Policy and Procedure B-4585 Capillary Blood Sampling by Heel Puncture (Neonatal and Pediatric): AC for Nurses (RNs and RPNs)

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Date