Sanford Policy Laboratory, Network Facilities Fargo Region Phlebotomy/Processing:	VENIPUNCTURE 4.90
	APPROVED BY: CLINICAL LABORATORY DOCTOR, CONSULTING TECHNOLOGIST, DIRECTOR, LABORATORY OPERATIONS, MANAGER, LABORATORY, PHYSICIAN - INTERNAL MEDICINE, PHYSICIAN - PATHOLOGY - ANATOMIC & CLINICAL
DATE REVIEWED/REVISED: 11/02/2024	**FORMULATED BY:** MANAGER, LABORATORY

SCOPE: Sanford Medical Center Fargo I94 Clinic, Fargo Broadway Clinic, South University, Children's Southwest Clinic, Clinical Care, Horace Clinic, Moorhead Clinic, North Fargo Clinic, Orthopedic Center, Southpointe Clinic, Veteran's Square Clinic, West Fargo Clinic, Alexandria Broadway Clinic, Detroit Lakes Clinic, Devils Lake Clinic, East Grand Forks DeMers Ave Clinic, East Grand Forks Central Ave Clinic, Edgeley Clinic, Ellendale Clinic, Enderlin Clinic, Finley Clinic, Forman Clinic, Grand Forks Clinic, Grand Forks Patient Service Center, Gwinner Clinic, Halstad Clinic, Hawley Clinic, Hillsboro Medical Center, Jamestown 2nd Ave Clinic, Jamestown 5th Ave Clinic, Lamoure Clinic, Lidgerwood Clinic, Lisbon Clinic, Mayville Medical Center, Oakes Clinic, Parkers Prairie Clinic, Pelican Rapids Clinic, Thief River Falls Medical Center, Twin Valley Clinic, Ulen Clinic, Valley City Clinic, Wahpeton Clinic, Wheaton Medical Center, Reproductive Medicine

PURPOSE:
To define procedure for collection of blood specimens by venipuncture.

PRINCIPLE:
Venous blood is a primary source for clinical laboratory analysis. A venipuncture is the procedure used to obtain a venous blood sample. The technique used to obtain the specimen is crucial in maintaining its integrity. Personnel are trained in collection techniques, proper selection, use of equipment, and supplies. Only those individuals orientated and proven competent may perform this procedure.

MATERIALS:
The following supplies are stored according to manufacturer instructions and available when venipunctures are performed.
1. Tourniquet (latex-free)
2. 70% alcohol prep pads
3. 10% Povidone - iodine swab sticks if blood alcohol is to be drawn
4. Gauze
5. Adhesive bandage, co-flex, or paper tape
6. Single use Vacutainer holder or syringe
7. Safety Needles (BD Eclipse blood collection needle) 21g or 22g multi-draw; or 21g, 23g or 25g syringe needle, or winged blood collection needle for difficult draws.
8. Syringe transfer device.
9. Gloves (latex-free)
10. Appropriate evacuated blood collection tubes
11. Puncture Resistant Sharps Container

PROCEDURE:
1. Introduce yourself to patient.
2. Verify patient information on bar-coded labels, requisition forms and/or patient ID band.
3. Identify patient using 2 unique identifiers. See Patient Identification and Wrist Band Identification- Enterprise policy on the Patient Care Manual.
4. Use proper Hand Hygiene- Enterprise per policy and Standard and Transmission Based Precautions (Isolation)- Enterprise per direct patient care and potential exposure to body fluids.
5. Verify patient's diet restrictions or required preparation, as appropriate for requested testing.

6. When selecting an arm ensure there is no reason that arm cannot be used. i.e. ask the patient "is there any reason we should not draw you from this arm?"
   A. **Inpatients**: if patient has had a mastectomy, shunt/fistula, etc., a limb alert bracelet must be placed on the patient. Contact the patient's nurse to place the bracelet.
   Note: A nursing communication placed in OneChart is required if the provider instructs that the extremity with the limb alert is to be used for blood collection.
   B. If a specimen cannot be collected from either arm and a provider instructs that a foot draw should be performed, a nursing communication order must be placed into OneChart with this indication.
7. Assemble necessary supplies. Check all tubes and equipment (if applicable) for expiration.
8. Explain procedure and reassure the patient. If the patient requests to lie down or at the first unusual signs refer to ADVERSE REACTIONS 4.01. Any serious reaction or injury will be documented in the safety event reporting system and the Sanford Risk department notified.
9. Position patients by having the arm extended to form a straight line from the shoulder to the wrist.
10. Apply tourniquet around the arm 3 to 4 inches above the venipuncture site. Tourniquet application for vein selection, must not exceed one minute. Release and reapply if needed.
11. Ask patient to form fist, if possible.
12. Select vein site.
    A. To locate a vein, palpate and trace the path of the vein with the index finger.
    B. Punctures to the median cubital veins are preferred because of the close proximity to the surface and the vein is most stationary.
    C. Although the median cubital is preferred, basilic and cephalic veins can also be utilized.
    D. Veins on the back of the hand are also acceptable (butterfly collection only).
    E. The palm side of the wrist is not an acceptable collection site.
13. Using 70% isopropyl alcohol, cleanse the site.
14. Allow the area to air dry.
15. Perform venipuncture.
    A. Anchor the vein by holding the patient's arm and drawing the skin taut over the intended puncture site.
    B. Puncture the vein with the bevel of the needle up and at an angle of 15-30 degrees.
    C. Using a Vacutainer system:
       1) Keeping the needle as stable as possible, push/connect the first tube onto the needle.
       2) Allow the tube to fill until the vacuum is exhausted and blood ceases to fill the tube.
       3) Release the tourniquet, as soon as possible, after the blood begins to flow.
       4) Remove the tube from the holder, invert tube 5 times, and insert the next tube if additional specimens are required. Follow the ORDER OF DRAW 4.45 policy.
       5) Ask the patient to release their fist and withdraw needle from the patient's arm.
       6) Activate the safety feature of the blood collection needle.
       7) Place the gauze pad over the puncture site, maintaining mild direct pressure
    D. Using a winged device or syringe and needle:
       1) Keeping the needle stable, withdraw the required amount of blood.
       2) Release the tourniquet, as soon as possible, after the blood begins to flow.
       3) Ask the patient to release their fist and activate the safety feature of the winged device while in the patient's arm. If using a hypodermic safety needle withdraw the needle and activate the needle shield.
       4) Place the gauze pad over the puncture site, maintaining mild direct pressure.
       5) Remove needle from syringe and attach a safety transfer device. Following the order of draw policy ORDER OF DRAW 4.45, transfer blood to vacutainer collection tubes.
       6) Invert tubes gently 5 - 10 times.
       7) Dispose of needles, blood collection devices, transfer devices and syringes in sharps container.
       8) Label tubes at patient side (SPECIMEN LABELING 4.65). Record time and date of collection and collector ID on tube label and requisition form, if applicable.
    E. Venous Blood Gas Collection (**NOTE:** ARTERIAL blood gas samples are collected by Respiratory Therapy):
       1) Draw a small amount of blood into an alternate (non ABG) syringe to remove air from the butterfly tubing. NOTE: Any other lab tests should be collected at this time.

2) Uncap ABG syringe, **expel air out of syringe prior to connecting butterfly, DO NOT push air into vein.**
3) Draw blood slowly into ABG syringe avoiding air bubbles:
   Preferred Volume: **1.0 mL whole blood**
   Minimum Volume: **0.5 mL whole blood**
4) After collection recap syringe
5) If air bubbles present, push lightly on plunger to expel them
6) Invert syringe to assure additive is distributed evenly.

F. Show the patient the labeled tube/container and have them confirm his or her name and date of birth.
G. Bandage the arm, checking to ensure that bleeding has ceased. If bleeding persists longer than normal or the patient is taking an anticoagulant, the arm may need to be wrapped with gauze or coflex and the patient is instructed to leave this on for up to one hour.
H. If an inpatient: place the patient's bed in the same position as it was prior to venipuncture and replace blood pressure cuff on the same arm as it was removed, if removed.
I. Handle specimens according to protocol.
J. Document collect and received times of specimen.
K. Send specimens to designated laboratories for testing.
L. The arms of the draw chair are cleaned with a Sani-cloth wipe after each patient and allowed to dry for three minutes.

LIMITATIONS:

FYI Flags

1. Watch for notes/"FYI Flags" that are displayed once accessing a patients' chart via chart review or on the Rover PDA.
2. These flags are patient specific and may provide valuable information to the collector regarding collection of lab samples.
3. Any questions regarding the lab flag should be brought to the attention of the shift lead, supervisor, or manager. **Factors to consider in Site Selection:**
4. Extensive scarring: Avoid healed burned areas.
5. Mastectomy: Because of lymphostasis, specimens taken from side on which a mastectomy was performed may not be truly representative specimens. There is also an increased potential for infection in the mastectomy arm. In case of a double mastectomy, it is best to use the arm with oldest surgery. If both surgeries are recent, consult the physician.
6. Hematoma: Specimens collected from a hematoma may cause erroneous test results. If another vein site is not available, collect the specimen distal (below) the hematoma.
7. Intravenous Therapy (IV)/ and other vascular access devices (VAD- PICC, Port, etc.):
   A. Specimens will be collected from the arm without the VAD.
   B. If this is not possible:
      1) The IV/ VAD must be shut off for a minimum of 2 minutes. Have the nurse complete this step.
      2) A location that is distal (below) the IV/ VAD is the best option to reduce the risk of contamination. The tourniquet needs to be applied between the IV/ VAD and intended puncture site.
      3) If a distal site is not available, a proximal (above the IV/ VAD) may be chosen. Proximal (above) to the IV/VAD site is not recommended and should only be attempted when other alternatives have been exhausted.
      4) Once the draw is complete, inform the nurse that the IV may be turned back on.
   C. If the IV/VAD cannot be shut off, do a capillary stick or get provider permission to collect specimens from a foot vein. A copy of written or electronic permission must be obtained prior to performing a foot draw.
   D. Shunt or Fistula: do not use arm unless shunt is no longer functioning. If patient is to have a shunt or fistula inserted, do **NOT** use antecubital vein for venipuncture. Use other arm.
   E. Blood Transfusion: Do not obtain blood specimen during a blood transfusion. However, if ordering provider specifically requests a blood sample is collected, collect specimen from arm not being infused.

F. Closures/tube caps must not be removed to fill tubes or transfer blood from one tube to another.

Sterile Supplies:

1. Needles, syringes, and holders must be assembled immediately prior to specimen collection to maintain sterility. Devices assembled but not used in the collection are discarded after the collection and not used with other patients.
2. All needles are disposable single use devices. Once a needle has punctured and been removed from the venipuncture site it must be discarded as it is no longer sterile. Additional venipuncture attempts must be made with new needles.

Blood Specimen that cannot be obtained:

1. Change the position of the needle, by advancing slightly or pulling back.
2. Ensure the vacutainer tube is fully advanced into the hub.
3. Try another vacutainer tube to ensure that the tube selected is not defective.
4. Venipunctures are not attempted more than twice by the same phlebotomist. Ask another phlebotomist to attempt the procedure or notify the provider or nursing unit.
5. NOTE (Outreach Phlebotomists Only):
   A. Laboratory Outreach phlebotomist will notify resident/ client's nurse when unable to obtain specimen requested.
   B. Outreach Phlebotomist will document nurse's full name on booked appointment/ DAR along with number of attempts and what site (left or right arm or hand) was used during attempt(s).
   C. Outreach staff will indicate this information in cancellation notes and follow up with resident's nurse for recollection as needed.

Children and Difficult Conditions:

1. When drawing pediatric patients it is preferable to withdraw the smallest amount of blood that will allow the testing to be completed. The laboratory will monitor blood drawn with pediatric punctures. The patient's provider will monitor the longer-term effects of blood draws.
2. To assist in drawing the minimum amount needed for testing the Unit/Department is encouraged to use the REQUEST FOR MINIMUM DRAW VOLUMES -SMCF 4.90.L02.
   A. Form completed by the unit
   B. Sent to laboratory for volume determination.
   C. Two different lab staff will double check volume totals
   D. Lab staff will return form with appropriate specimen containers clearly labeled with volumes required.
   E. Laboratory will contact the Unit/Department if there are circumstances in which the amount needed exceeds the suggested blood volume allowed for a 24 hr period to assist in determining priorities for collection .
   Once blood is collected, the Unit will send the form back to the laboratory with the blood to ensure that what was requested was received- discrepancies will be investigated and corrected if needed
3. The nursing unit and the attending providers will monitor total blood volumes taken on hospitalized pediatric and critically ill patients. Phlebotomists will contact the nursing units regarding blood volumes and will report the volume of blood taken when requested by the nursing units.
   A. When more blood is drawn than listed below, the blood loss could cause measurable health consequences. Literature does not provide universal agreement on the precise numbers, rather a general awareness that it is best to minimize blood loss. Phlebotomists will use the MAXIMUM AMOUNTS OF BLOOD TO BE DRAWN FROM PATIENTS YOUNGER THAN 14 YEARS 4.90.T01 in the collection of blood from pediatric patients under the age of 14 unless they have alternate instructions from the provider.
   B. It may be necessary to use a 23 - 25 gauge winged blood collection set to reduce the stress exerted on the vein to prevent collapsing.

REFERENCES:

1. CLSI "Procedures for the Collection of Diagnostic Blood Specimens by

Venipuncture; Approved Standard CLSI GP41 ED7: 2017
2. CAP Standards, 6/9/2021 GEN. 40100.
3. Phlebotomy Handbook- Blood Specimen Collection from Basic To Advanced (Diana Garza, Kathleen Becan-McBride, 10th Ed.

ATTACHMENTS:

1. TRAINING AND COMPETENCY ASSESSMENT - General 30.01
2. MAXIMUM AMOUNTS OF BLOOD TO BE DRAWN FROM PATIENTS YOUNGER THAN 14 YEARS 4.90.T01
3. REQUEST FOR MINIMUM DRAW VOLUMES -SMCF 4.90.L02
4. Blood Gas Collection- Quick Steps