

STANDARD OPERATING PROCEDURES

BLOOD COLLECTION (FOR NON-LABORATORY PERSONNEL)

PURPOSE

Certain non-laboratory personnel have been trained to collect laboratory blood samples in order to reduce turnaround time of results. This protocol emphasizes the most critical steps in patient identification, specimen requirements, and specimen labeling. Highly sophisticated testing cannot produce a good result from a poor specimen. This is a condensed version of current laboratory policies.

POLICIES

- I. For the safety of the phlebotomist, personal protective devices are available to guard against needle sticks and must be used when performing phlebotomy to prevent accidental injury and exposure to blood borne pathogens.
 - Only auto-disabling single-use finger stick devices are used for assisting monitoring of blood glucose and other point-of-care testing. These devices are designed to be used only once, after which the blade is retracted, capped or otherwise made unusable."
- II. Non-laboratory personnel are trained to perform phlebotomy on all patients with the following exceptions:
 - A. Lab will continue to collect all pediatric patients (excluding NICU), when requested.
 - B. Lab will continue to collect blood cultures on adult and pediatric patients.

(NOTE: Trained nursing staff in pediatric or adult nursing units may collect routine labs or blood cultures on patients when starting an IV, if appropriate.)
 - C. Trained nursing staff or respiratory therapy will collect Arterial Blood Gases.
- III. For more detailed information refer to the following laboratory procedures/hospital policies:
 - Gen103 Specimen Labeling and Rejection (found in the Lab Test Catalog on the Hub)
 - 6000-12 Patient Identification (Hospital SOP)
 - S-30 Specimen Collection Procedure
 - POC501_POCT Compliance Policy

STANDARD PRECAUTIONS

"Standard blood and body fluid precautions" recommended by CDC must be adhered to for all patients and for all specimens.

PROCEDURES

- I. PATIENT IDENTIFICATION:

Identify and verify patient identification using two identifiers according to SOP 6000-12 Patient Identification.

II. COLLECTION TECHNIQUE AND TUBE REQUIREMENTS FOR LABORATORY TESTS:

- A. Avoid using indwelling lines/Vascular Access Devices (VAD) for blood sample collections when collecting:
1. heparin Xa from a heparinized VAD or after heparin infusion
 2. chemistry panel (BMP or CMP) after TPN infusion
 3. triglyceride after lipid infusion
 4. any lab test after infusion of the specific medication/analyte that will be measured
- B. When indwelling lines/VAD are used for blood collection, use the following guidelines found in Table 1. to minimize contamination.

TABLE 1.

VAD	Flush	Shut off time	Waste diverted/discarded*
Venous – Adult*	5 mL NaCl	2 minutes	5 mL or 6 times (whichever is greater) dead space volume discarded
Arterial – Adult	Not applicable	Not applicable	<ul style="list-style-type: none"> • 5 mL or 6 times (whichever is greater) dead space volume discarded/diverted in closed system. • If using a VAMP system pull back full 12 ml blood into reservoir syringe. Close stopcock at top of reservoir, prior to aspirating blood
Venous – Pediatric	0.5-5 mL with solution per MD order	Not applicable	2-3 mL diverted in closed system
Arterial – Pediatric	0.5-5 mL with solution per MD order	Not applicable	2-3 mL diverted in closed system
Peripheral Arterial – Pediatric	Not applicable	Not applicable	3-5 drops discarded

*See nursing procedure I-62 for Hickman line specifications

- C. Using a vacutainer with hub is the best technique for collecting lab blood specimens. A hub, 21g needle and a saline lock should be used with indwelling lines.
- D. For syringe draws, be sure to draw back plunger slowly to prevent sample hemolysis and immediately transfer blood to vacutainer(s) using a safety transfer device.
- E. If the tourniquet is on longer than 1 minute for an IV start, do not remove blood for lab until the tourniquet has been removed for at least 2 minutes.

- F. The order in which samples are collected can impact test validity. See Table 2 for required tube collection order.
- G. The required tube types and fill volume for the most commonly performed laboratory tests are listed in Table 2. For tests not listed, please consult the Laboratory Reference Manual or call the Laboratory at extension 7311.
- H. Immediately after collection, mix all blood sample tubes by gentle inversion the stated number of times required by additive. See Table 2.

TABLE 2.

Draw order	Tube type/ additive	Test	Fill volume	Mix by Inversion
1.	Blood Culture Bottles (adult)/Culture Media	Blood Culture	6-10mL	8 to 10 times
2	Blue Top/Sodium Citrate	Protime, PTT, D-Dimer, Fibrinogen, HepXa	1.8 mL*	3 to 4 times
3.	Gold Top/ Gel separator, Clot activator	PSA, ANA, Vitamin D, selected tests	3.5 mL	5 times
4.	Red Top/Clot activator	Selected tests, sendouts	4.0 mL	5 times
5.	Green top/Lithium Heparin	Glucose, Electrolytes, BMP, CMP	3-4 mL	8 to 10 times
6.	Lavender Top/EDTA	CBC, Platelet, H/H	3.0 mL	8 to 10 times
7.	Pink Top/EDTA	Type and Screen, BB Hold, DAT, RHIGSS, and Fetal bleed	6.0 mL	8 to 10 times
8.	Gray Top/Sodium Fluoride	Lactic Acid	2.0 mL	8 to 10 times

*Specimen integrity/test validity may be affected if tubes are over or under filled. Blue top tubes must be filled to top of manufacturer label on the tube.

III. SPECIMEN LABELING:

Specimens must be labeled at the time of collection. Specimens received in the laboratory unlabeled or mislabeled are unacceptable. Labels with incomplete information may delay testing.

- A. To prepare for collection of a lab specimen:
 - 1. Verify the specimen collection status is Unit Collect.
 - 2. Place order for the lab.
 - 3. Print Label and Collect Specimen. This is the action that will release the order across the interface to the LIS and generate the specimen label on the blaster printer, if applicable.
- B. Prior to any labeling proper identification of the patient must be established.
- C. Collect blood specimen(s) according to applicable procedure for your collection method.
- D. Draw one tube type for each computer label for which you have an order. Only when the patient is a difficult stick are tests that share the same sample type combined to one specimen.

E. Before leaving the patient's side, label specimen(s) using the steps outlined in the table below.

IF ...	AND ...	THEN ...
Specimen is NOT a pre-transfusion sample	LIS computer label available	<ul style="list-style-type: none"> • Position the short, square end of the label with the patient name near the specimen cap • Directly over the manufacturer label, secure the patient label. • Write collect time/date and initials or employee number on the label
	HIS computer label available	<ul style="list-style-type: none"> • Position the patient name near the specimen cap • Directly over the manufacturer label, secure the patient label • Write the test(s) to be performed on the label • Write collect time/date and initials or employee number on the label
	Label not available	<ul style="list-style-type: none"> • Legibly hand write the patient's first and last name and MRN or B-band number (or DOB if MRN is not available). • Write the test to be performed on the label • Write collect time/date and initials or employee number on the label
Specimen IS a pre-transfusion sample (Type and Screen or BBHOLD)	Patient is wearing hospital armband	<ul style="list-style-type: none"> • Follow directions above for placing a computer label (LIS or HIS) on the pink (EDTA) sample. Legible hand written samples are also acceptable. Label must have patient name and either the medical record number or account number on it. • Write collect time/date and initials or employee number on the label. • Patients drawn for OP infusion center must have a B- Band number assigned. This number <u>must</u> be written on the sample. See below.

	Patient is NOT wearing an armband	<ul style="list-style-type: none"> • Patient must have a B-band number assigned. • Place a red B-band armband on the patient. This B-band should already have a number written on it. • Legibly hand write the patient's first and last name and expiration date (T+3days) on the red B-band armband. • Follow directions above for placing a computer label (LIS/HIS or Clinic) on the pink (EDTA) sample. Legible hand written samples are also acceptable. Label must have patient's first and last name on it. (Only exception is an unidentified trauma patient) • Write the B band number, collect time/date, initials or employee number, and test(s) to be performed on the label.
	Patient is refusing blood products	<ul style="list-style-type: none"> • Patient will have on a blue arm band that states "No Blood Transfusions" – no pre-transfusion collection will be necessary. Blue armbands are available in the Blood Bank Laboratory.

- F. When the specimen(s) has/have been labeled, verify proper specimen identification by comparing the labeled specimen(s) to the patient's hospital armband (or B-band if applicable) before you leave the patient side.
- G. Transport specimen(s) and extra LIS labels to laboratory for specimen receipt and processing.

VI. SPECIMEN REJECTION:

An event report will be filled out to document rejected specimens. See Gen103 Specimen Labeling and Rejection in the Lab Test Catalog on the hub for more information.

REFERENCES:

1. CLSI. Collection of Diagnostic Venous Blood Specimens 7th Ed, CLSI Standard GP41 - Wayne, PA Clinical and Laboratory Standards Institute:2017
2. CLSI. Collection, Transport, and Processing of Blood Specimens for Testing-Based Coagulation Assays; Approved Guideline – 5th Ed. CLSI Standard H21-A5 Clinical and Laboratory Standards Institute; Wayne, PA 2008.
3. Lynn-McHale Wiegand,DJ & Carlson,K eds. AACN Procedure Manual for Critical Care, 5th edition. St. Louis: Elsevier Saunders, 2005.

Reviewed/Revised: 11/1997, 08/1998, 10/2000, 11/2001, 6/2003, 11/2005, 2/2006, 11/2007, 07/2008, 08/2012, 10/2012, 11/2013, 4/2015, 7/2018, 9/2019