

Venipuncture

Proper collection of venous blood specimens is necessary to maintain the integrity of patient samples to yield accurate test results. The principles for safe handling of Blood and Body Fluids should be in practice in your laboratory area; they will protect both the patient and the phlebotomist from exposure to potentially infectious materials.

We recommend attending a Phlebotomy Training Class by contacting the PA College Admissions Office at <u>admissions@pacollege.edu</u> or (800) 622-5443. The primary link for open studies is here: <u>https://www.pacollege.edu/academics/continuing-education-adult-learners/open-studies/</u>

HSC 150 Phlebotomy 3-credit course. This course advances the learner's knowledge of the role of the phlebotomist, phlebotomy techniques, safety precautions and the application of best practices. Completion of this course provides the educational basis for certification; however, students will need to achieve practice hours outside of the classroom in order to sit for certification. Prerequisite: None

HSC 151 Phlebotomy Clinical 2-credit course. This course is the supervised application of skills acquired in HSC 150. The student learns to function competently as a phlebotomist at an affiliated clinical training site. Prerequisite: HSC 150

In addition to the Phlebotomy classes that are offered through PA College, all Penn Medicine Lancaster General Health staff that perform complete phlebotomy services are to attend a 6 hour class that is provided by the lab. This helps to ensure the quality of sample that is received in the lab for testing.

Equipment:

Alcohol Preps Blood Collection Tubes Gauze Safety needle device Needles – Multisample: 21G x 1" (Green), 22G x 1" (Black) - Butterflies (Safety Loc): 21G x 1" (Green), 23G x 1" (Blue) Tourniquet (latex free) Gloves (latex free, preferably) Sharps containers Adhesive bandages Labels



Procedure:

- 1) Review the request for laboratory services: patient name, address, date of birth, medical record number (MRN), if available, Social Security Number, insurance information, ordering physician's full name (or nursing home), tests ordered, <u>with ICD-10 code included</u>, date of request, notations of copies, fax, or STAT priority.
- 2) Patient interaction: *verify patient ID do not draw blood if there are discrepancies*; armband for Blood Bank, if necessary (OP labs only); evaluation of patient's diet status
- 3) Assemble your supplies: verify requests with tube selections
- 4) Obtain the specimen(s)
- 5) Label the specimen
- 6) Process and/or package the specimens

Venipuncture Notes:

- 1) Invert all tubes, gently, 8 to 10 times, to mix thoroughly. DO NOT SHAKE.
- 2) Order of multiple tube draws (prevents cross contamination and allows prompt mixing):

See Tube Designation Key on back of Specimen Collection Tab for tube abbreviations.

- a) Blood Cultures, Sterile Tubes
- b) Additive Tubes collected in this order:
 - 1. Yellow ACD
 - 2. Lt Blue
 - 3. Red
 - 4. PLDKBL
 - 5. SST
 - 6. GrnNa, GRN LIT
 - 7. Lav/Pink
 - 8. EDKBL
 - 9. GY

2) Precautions:

- a) Faulty tubes with cracks or with no vacuum do happen: if a tube does not fill and the needle is positioned in the vein, change to another tube.
- b) Repositioning the needle by a small adjustment, slightly forward, backward, or by rotating the needle, may increase a slow blood flow.
- c) Releasing a too tight tourniquet may increase a slow blood flow.
- d) Do not probe.
- e) Elevate arm if bleeding persists. Pressure bandages may be needed for patients with bleeding problems or if the patient is on anticoagulant therapy.
- f) Do not leave tourniquet on for more than 2 minutes at a time.



Capillary Collection

Capillary collection should be used when it becomes difficult or impractical to obtain venous blood specimens. (Venipuncture is **not** recommended for children under the age of one year.) This technique refers to acquiring blood from the finger, toe, or heel. There are several advantages and disadvantages inherent with using these specimens:

Advantages

- Venipuncture on infants can be extremely hazardous
- Small volumes used newborns, children with low blood volumes
- Adults with poor veins or no access (i.e. IV's, extreme obesity, severe burns)
- Easily used for bedside/home testing

Disadvantages

- Small volumes possible QNS or clotted specimens obtained
- Physiological differences between capillary and venous specimens
- Patients with edema increased likelihood of tissue fluid dilution of specimen
- Excessive squeezing may cause specimen hemolysis or dilution by tissue fluid
- Possible consumption of cellular elements due to clotting at puncture site (i.e. platelets)
- Falsely elevated results due to skin surface contamination (i.e. pediatric lead levels)

Questions about capillary collection requirements can be directed to 717-544 -1764.

Equipment:

Alcohol Preps 1X1 Gauze Pads (cotton balls may leave threads that will complicate capillary collection) Sterile Lancet or Safety Lancet Device Microtainer Tubes – green, lavender, gold Gloves (latex free) Sharps Containers Adhesive Bandages Labels

Penn Medicine Lancaster General Health

Procedure:

- 1) Review the request for laboratory services: patient name, address, date of birth, medical record number (MRN) if available, Social Security Number, insurance information, ordering physician's full name (or nursing home), tests ordered, with ICD-10 code included, date of request, notations of copies, fax, or STAT priority.
- Patient (parent/guardian) interaction: <u>verify patient ID do not draw blood if there are</u> <u>discrepancies;</u> evaluation of patient's diet status.
- 3) Assemble your supplies: verify requests with tube selections.
- 4) Select the site:
 - Adults/Children Use the middle or ring finger and make the puncture towards the side of the finger (not in the middle of the fleshy pad), near the end of the fingernail.
 - ✓ Infants Perform the puncture on the most medial or lateral portion of the plantar surface of the heel, avoiding any previous puncture sites.
- 5) Obtain the specimen(s).
- 6) Discard used equipment into correct containers (general waste vs. Sharps Container).
- 7) Label the specimen
- 8) Process and/or package the specimens.

Penn Medicine Lancaster General Health

Tube Code	Color/Description	Specifications
PLDKBL	Dark Blue top tube	Contains no additive (trace metal free).
EDKBL	Dark Blue top tube	Contains EDTA (trace metal free); invert
		8-10 times to mix.
SST	Gold top, SST tube	No anticoagulant; has clot activator and gel for serum separation from clot after centrifugation; invert 5 times to mix with activator. Allow to glot for 30 minutes in
		to mix with activator. Allow to clot for 50 minutes in the upright position before contribution; inspect for
		complete separation after centrifugation. Re-spin only
		clear serum portion in another tube, if there is cell
		contamination or poor barrier separation Pour off
		before freezing.
GRAY	Gray top	Contains Potassium Oxalate/Sodium Fluoride as anti-
		glycolytic; invert 8-10 times to mix.
Lt Blue	Light Blue top	Contains buffered 3.2% Sodium Citrate solution; 2.7
		or 4.5 ml draw volumes available- must fill to line on
		label for reliable results; invert 8-10 times promptly to
		mix.
LiGN	Green top, Heparin	Contains Lithium Heparin as anticoagulant; invert 8-
		10 times to mix. 4.5 or 6ml draw volumes available.
Lav	Lavender top	Contains Potassium EDTA as anticoagulant; invert 8-
		10 times to mix. <u>Note:</u> 4 ml (2 ml minimum) and 7 ml
		(3 ml minimum) tubes – minimum required due to
		dilution effect of anticoagulant.
GrnNa	Green top, Heparin	Contains Sodium Heparin as anticoagulant; invert 8-10
Ded	Ded plain	Contains no additives must be used for Plead Park
Rea	Red, plain	specimens
V-SPS	Vellow top SPS	Contains Sodium Polyanetholesulfonate as
1-51 5	Certain body fluids:	anticoagulant and stabilizer: invert several times to
	Microbiology testing	mix
YT	Yellow top, ACD	Contains Acid Citrate Dextrose, Solution A or B
		(interchangeable) as anticoagulant and preservative:
		invert to mix.



Capillary	Color/Description	Specifications
Tube Code		
Green Cap	Green with brown vial	Contains Lithium Heparin as anticoagulant, with
		separator gel for plasma separation; do not
		overfill; invert several times to mix.
Lavender Cap	Lavender with frosted vial	Contains Disodium EDTA as anticoagulant;
		invert several times to mix.
Gold Cap	Brown vial	Contains separator gel for serum separation.
	Serum Samples	