I. PRINCIPLE:

Laboratory test results are only good as the specimen, and the specimen is only as good as the method by which the sample is collected, handled and processed. This procedure is designed to provide step by step instruction for obtaining a quality sample. Consideration is placed on the comfort and safety of the patient, safety of the collector and the integrity of the sample.

II. PURPOSE:

To establish a standardized phlebotomy procedure to be used for all UCDHS Clinical Laboratory phlebotomists and ensure a quality specimen is collected for diagnostic purposes and treatments.

III. DEFINITIONS:

A phlebotomist is personnel who are licensed to perform phlebotomy. This includes physicians (MD, DO), physician assistant (PA),Nurse Practitioner (NP), registered nurses (RN,CRNA), Licensed vocational nurses (LVN), medical assistants (MA), Clinical Laboratory Scientists (CLS) and CLS trainees, and Laboratory Certified Phlebotomists (CPT).

IV. SCOPE OF PRACTICE:

UCDHS Certified Phlebotomy Technician II – Perform adult (18-64yrs), geriatric (65yrs and older), adolescent (9-18yrs), pediatric (2 months – 8 yrs.), and neonatal (0-30 days) venipuncture and neonatal skin punctures on inpatient and outpatient areas.

UCDHS Certified Phlebotomy Technician III Supervisor/Trainer - Perform adult (18-64yrs), geriatric (65yrs and older), adolescent (9-18yrs), pediatric (2 months – 8 yrs.), and neonatal (0-30 days) venipuncture and neonatal skin punctures on inpatient and outpatient areas.

V. SCOPE OF RESPONSIBILITY:

Venipuncture and/or skin puncture is performed when a test is ordered by the patient's health care provider either in inpatient or outpatient setting. All phlebotomists must possess a valid State of California Certified Phlebotomy Technician (CPT) Certification. It is the responsibility of the phlebotomist to renew certification in a timely manner before the expiration date. If certification expires the phlebotomist will not be allowed to perform venipuncture procedure.

A UCDHS Pathology Department phlebotomy trainer, regardless of prior certification, will evaluate all new phlebotomists. A copy of the training and orientation will be sent to the employee's training and competency personnel file in Pathology.

VI. PROCEDURE:

A. Patients must be properly identified according to UCDHS hospital policy and procedure, patient safety goals and Laboratory Medicine policy before proceeding with the venipuncture procedure. See hospital policy #2702 http://intranet.ucdmc.ucdavis.edu/policies/hospital_policies_and_procedures/patients_medical_management/2702.shtml

1. **Inpatients:** All hospital patients should be wearing an identification bracelet that includes their last and first name, date of birth and patient's unique medical record number. If the patient does not have a hospital ID bracelet, stop and ask the nurse or unit charge nurse to positively identify the patient and to place a hospital ID bracelet on the patient.

   a. Upon entering in the patient's room, introduce yourself, inform the patient you are from the laboratory, state the procedure(s) that you are about to perform and obtain their consent and cooperation. Ask the patient to verbally state their complete name and date of birth. Do not ask the patient to confirm their identity by requesting a yes/no response.
   b. Compare the information given by the patient against the patient's wristband; verify patient's medical record number on the wristband matches each LIS label prior to sample collection.
   c. Patients who are not capable of verbalizing their name, maybe identified through verification by another adult who can personally identify the patient or UCDHS nurse providing care to the patient.
   d. If the hospital ID band is a "John Doe," but the unit number matches, and the request form or EMR bar code labels have both the "John Doe" name and the patient name, the patient may be drawn. Verify the "Doe" ID number set for the patient (e.g. 9KH). See Hospital Policy # 1184 http://intranet.ucdmc.ucdavis.edu/policies/hospital_policies_and_procedues/admissions_bed_control/1184.shtml

2. **Outpatients:** Positive patient identification is to be followed at the point of registration and prior to venipuncture process.

   a. Greet the patient and ask the patient to state their complete name and date of birth.
   b. Locate the patient in Electronic Medical Record (EMR) and compare the information the patient provided to EMR. If necessary, request for a form of identification to ensure positive patient identification.

c. Prior to sample collection, ask the patient to restate their full name and date of birth if collector is different from the phlebotomist that performed the registration.
d. For non-English speaking patients, call hospital operator and ask for interpreting services to translate to verify identification.

B. Verify all phlebotomy supplies are within manufacturer's issued expiration date. All supplies are to be inspected prior to use and ensure that no defective supplies are used. See Attachment 4 for phlebotomy supplies
See Hospital Policy # 2103
http://intranet.ucdmc.ucdavis.edu/policies/hospital_policies_and_procedures/infection_control_employee_health_services/2103.shtml

C. Hands must be washed prior to and after each phlebotomy procedure. Alcohol gel cannot be used exclusively. Proper hand washing technique is to be followed according to UCDHS Patient Care Standards XI-08. Only approved hand soap and alcohol foam/gel are to be used.
http://intranet.ucdmc.ucdavis.edu/policies/patient_care_standards/infectious_diseases/xi-08.shtml

D. Gloves are to be worn when performing all phlebotomy procedures and performing patient care. ***Gloves must be changed before each new patient is drawn and if bloody or when torn or contaminated with blood or bodily fluids.***
Hospital Policy # XI-23
http://intranet.ucdmc.ucdavis.edu/policies/patient_care_standards/infectious_diseases/xi-23.shtml

E. All phlebotomist will adhere and follow all isolation precautions posted and wear required isolation attire before entering the patient's room. Phlebotomist will perform venipuncture procedure using the required and appropriate isolation attire that is in line with the isolation type the patient is in. All isolation attire must be removed in the designated area before continuing to the next patient. Inpatients and Hospital Base Clinic Draw station phlebotomist must wear issued laboratory coats.
Hospital Policies:
#XI-08
http://intranet.ucdmc.ucdavis.edu/policies/patient_care_standards/infectious_diseases/xi-08.shtml
#2028

http://intranet.ucdmc.ucdavis.edu/policies/hospital_policies_and_procedures/infection_control/2038.shtml
#2038
http://intranet.ucdmc.ucdavis.edu/policies/hospital_policies_and_procedures/infection_control/2038.shtml

F. Greet the patient and inform the patient and/or patient parent/caregiver of the procedure(s) that you are about to perform and obtain their permission and cooperation. Situations/conditions where the patient is uncooperative should be referred to Laboratory Draw station supervisor, or RN assigned to patient.

G. Phlebotomist will manage the uncooperative or abusive patient or visitor as established in UCDHS Patient Care standard IV-67; Management of a Violent Patient or Visitor.
http://intranet.ucdmc.ucdavis.edu/policies/patient_care_standards/general_functions/iv- 67.shtml

H. For neonatal & pediatric patients, tests volumes are to be calculated and evaluated based on patient's body weight. (*See attachment # 2: Maximum blood volumes drawn on Pediatric patients).* Every effort should be made to minimize test volumes. If the required minimum volume is greater than the maximum allowed, phlebotomist is to contact the ordering provider to determine test priority. For specimen minimum volumes, see UCDHS Clinical Laboratory Test Directory: https://www.testmenu.com/ucdavis

I. Examine the patient's antecubital area and obtain information from the patient as to phlebotomy restrictions (e.g. limitations due to surgeries, AV shunts, fistulas, peripheral IV's, mastectomies, etc.). If neither arm is available, examine the patient's dorsal hands or wrist veins and collect with a smaller gauge needle (23g). Use extreme caution and avoid drawing from the underside of wrist as this area is highly vascular & contains several nerves. Phlebotomist will not draw from extremities with running IV's, PICC's, active shunts/fistulas, vascular grafts, through hematomas, edema, burns, scars, leg veins and will not draw from heparin locks, saline locks or where an arterial line is located. Phlebotomist **will not** draw from neonatal antecubital veins without physician approval for in-patients settings per lab policy 555.B.

J. Select a vein by using a tourniquet located three to four inches above the venipuncture site with enough tension to compress the veins, but not the artery. Have the patient close their hand, but do not allow patients to pump their fist.

Note: ***Hemoconcentration will occur after one minute. If a tourniquet has been applied for longer than 1 minute while vein is being located, release it for at least 2 minutes, reapply the tourniquet and relocate the vein.*** Identify cephalic, cephalic medial, median basilica and basilica veins usually arranged in a slanted "H" or "M" pattern. Patients may be required to pronate their arm to identify these structures. Avoid drawing from the basilic veins due to the close proximity of the medial nerve and brachial artery that lay just beneath, especially in children.

1. Blood can **only** be drawn from the extremity intended for the shunt placement ***with the expressed written permission of the attending physician.*** Should it become known to the phlebotomist that a fistula or shunt does indeed exist and the blood has already been drawn, the nursing/physician staff must be notified and the phlebotomist will note this information on the lab slip (or in requisition comment field) that the blood was drawn from a shunt or fistula (whichever is applicable) and send the samples to the lab for testing.
2. Phlebotomy should never be performed while the patient is standing.
3. K. Laboratory blood work should not be collected from patients during blood/blood products transfusion.

K. Release the tourniquet

L. Cleanse the area for venipuncture in a circular pattern from the center using concentric circles starting at the venipuncture site and wiping outward to approximately 2 – 3 inches with a 70% isopropyl alcohol pad. Allow to air dry before proceeding.

1. Betadine or chlorohexidine may be used if mandated by hospital policy# XIII-15 http://intranet.ucdmc.ucdavis.edu/policies/patient_care_standards/line_management_therapy/xiii-15.shtml
2. Use nonalcoholic germicidal solution for ETOH (alcohol) draws per Dept. of Pathology Chemistry policy # 3126
3. Do not use chlorhexidine for newborns less than 37 weeks gestational age or for patients with a known sensitivity to CHG. SEPP® 2 percent tincture of iodine may be used instead. Apply the iodine solution in a circular pattern, starting at the center and continuing outward until an area of approximately 3 inches for adults (3cm for pediatric patients) is covered. Air dry for 1-2 minutes.

M. Inspect the supplies to be used: needle bevel, vacutainer(s), and syringe to ensure that no defective supplies are being used.

NOTE: Phlebotomist will not preassemble puncture devices. All devices are to be assembled at the time of draw and in the presence of the patient. Phlebotomists will assure that each puncture unit remains sterile before use.

N. Reapply tourniquet.

O. Anchor one of the veins in the antecubital area by placing your free thumb below the venipuncture site where the needle is to enter and pull skin taut.

P. Notify the patient prior to performing the venipuncture stick.

Q. Pierce the skin with the needle bevel-side up at a 30-40 degree angle (10-15 degree angle for butterfly collection sets using hand veins). Once the needle is properly positioned in the vein, anchor the needle by grasping the needle holder with thumb on top and other fingers under the holder, resting securely on the patient's arm. Push the appropriate Vacutainer tube into the holder with gentle pressure in order to puncture the cap. The tube will fill with blood. Vacutainer tubes are intended for single use only.

1. If blood flow cannot be established you may:
    a. Change the position of the needle, but without probing to see if you can establish blood flow. No more than 3 corrections
    b. Select another tube in case the first one has lost its vacuum
    c. If unable to obtain blood, release the tourniquet, remove the needle and select another venipuncture site.

NOTE: When using a winged blood collection set (butterfly) for venipuncture and a coagulation or ESR tube is the first tube to be drawn, a discard tube should be drawn first. The discard tube must be used to fill the butterfly tubing dead space and to assure maintenance of the proper anticoagulant/blood ratio. The discard tube should be a coagulation or ESR tube.

1. Phlebotomists are limited to two (2) attempts per patient. If phlebotomist is unable to collect sample within two attempts, they are to request the assistance of another phlebotomist in drawing the patient or notify the nursing staff taking care of the patient. A second phlebotomist may perform another (1) attempt to a total of (3) attempts per patient encounter. With patient and supervisor approval, phlebotomist may exceed three attempts in order to obtain an adequate sample, however every effort shall be made to minimize attempts to decrease patient discomfort.
2. Collect adequate specimen for test to be performed per lab test menu www.testmenu.com/ucdavis, in EMR Kernel page, or within the EMR test order).

3. If a syringe is used to withdraw blood, use a needleless transfer device to transfer blood to the collection tubes. Fill the appropriate tubes without applying force on the plunger. The order in which Vacutainer tubes or microcontainers are filled from the syringe is the same as for the Vacutainer system order of draw.

R. Draw required tubes in correct order of draw, reassuring the patient during the collection. (See Attachment #1)

S. Gently invert all tubes 8-10 times after filling.

T. Release tourniquet within one minute.

U. When all tubes are filled, withdraw the last tube, place sterile gauze square over the site and withdraw the needle, activating the safety device.

V. Apply pressure to the site until bleeding has stopped.

W. Discard the activated needle and holder into the puncture resistant sharps container. Never re-cap the needle.

X. Inspect the puncture wound. When bleeding has stopped, apply a bandage. If bleeding continues, apply pressure for an additional 3-5 minutes. Prolonged bleeding may be related to the patient's medical condition or medication use. If bleeding continues despite direct pressure after 3-5 minutes, contact nurse or patient's healthcare provider for further assistance.

Y. Always label specimen containers in the presence of the patient.

Z. Ensure each specimen/tube is labeled with a barcoded LIS label and the phlebotomist initials in block letters along with date & time of collection. Every specimen shall have at least two identifiers. **NOTE: Blood collection tubes will not be pre-labeled before obtaining specimens.** Hospital policy #2024 http://intranet.ucdmc.ucdavis.edu/policies/hospital_policies_and_procedures/infection_control/2024.shtml

AA. For patients requiring a Type & Screen (TS), the date/time of collection, and name of the phlebotomist (1st initial and last name) are required on specimen barcode label
1. When collecting blood for blood type verification(ABDV), **ALL** of the following criteria must be met:

a. The blood sample must be collected by a different phlebotomist and drawn at least 5 minutes before or after the first blood sample.
b. The blood sample must be properly labeled with, date/time of collection, and name of the phlebotomist (1st initial and last name).

BB. **Blood Cultures**

Blood cultures are important diagnostic tools that assist physicians in developing a patient's plan of care and help guide appropriate use of antibiotics.

1. For adults and pediatrics 9 years or older, anaerobic/aerobic cultures are recommended.
2. For neonates and pediatrics less than 9 years old, aerobic only is recommended unless requested differently by physician.
3. When an order for blood cultures indicates that 2 "sets" of blood cultures be drawn, each "set" is drawn from a different site. For adults and pediatrics 9 years or older, a "set" consists of one aerobic and one anaerobic bottle. For neonates and pediatrics less than 9 years old, a "set" consists of a pediatric aerobic bottle only, and each aerobic "set" is drawn from a different site. It is always at the discretion of the ordering physician to add anaerobic bottles to blood cultures ordered for neonates or pediatrics less than 9 years old. If anaerobic is ordered, it should always be accompanied by aerobic bottle. Do not send anaerobic bottle by itself to lab.
4. For best results, the 2 "sets" are drawn from two separate peripheral sites. The 2 sets of blood cultures should be obtained simultaneously or within 30-60 minutes.
5. Prepare collection bottles:
    a. Inspect each blood culture bottle to ensure that the media is clear and that each bottle is intact.
    b. Remove the flip-off caps from the culture bottles, cleanse the rubber top diaphragm of each culture bottle for 15-30 seconds (one aerobic/one anaerobic) with alcohol pad (one pad for each bottle top), and allow to air dry for 15-30 seconds.
6. Cleanse the puncture site with chlorhexidine sponge applicator. Beginning at the site, use repeated back and forth firm strokes for 30 seconds and allow to air dry for 30 seconds. Do not blot or wipe dry. Do not use for patients sensitive to chlorhexidine or for patients less than 37 weeks corrected gestational age.
    a. For patients sensitive to chlorhexidine, use SEPP 2 percent tincture of iodine. With the applicator tip in the downward position, pinch the center of SEPP to crush ampule. Do not

continue to squeeze. When the applicator tip is moist, apply the tincture of iodine solution in a circular pattern. Start in the center and continue outward until an area of approximately 3 square inches (3 centimeters for pediatrics) is covered. Let it dry for a minimum of 30 seconds. Do not use if patient is sensitive to iodine.

b. For patients less than 37 weeks gestation and less than 2 weeks of age, cleanse skin using povidone-iodine swab sticks.

7. Do not palpate the insertion site after the skin has been cleansed with the antiseptic
8. Perform the venipuncture and withdraw correct volume for specimen. See chart below.

Patient Population	Bottle Type	Recommended Blood Volume Per Bottle*
under 1 year old	Pediatric aerobic	0.5 - 1 mL
1 - 8 years old	Pediatric aerobic	3 mL
9 - 14 years old	Adult aerobic & anaerobic	5 - 8 mL
15 years old - adult	Adult aerobic & anaerobic	10 mL

9. Ensure that no air is injected into the anaerobic bottle
10. If tincture of iodine is used, remove iodine from skin with 70 percent alcohol to avoid iodine burns or skin irritation.
11. Withdraw required amount of blood into a sterile syringe. Use two (12 mL) syringes for adults. Attach syringe to a female Vacutainer transfer device and inject specimen into the culture bottles which have previously been cleaned with alcohol. Inject into aerobic bottle first. Inject into anaerobic bottle next. You may have to remove syringe prior to the entire specimen entering the bottle to ensure that no air is injected into the anaerobic bottle.
12. Invert specimen bottles 5-7 times to mix and prevent clotting. Do not shake bottles.
13. Labeling Bottles:
    a. Use specimen labels and place labels on the bottles. Do not cover the bar code.
    b. Enter the location (actual peripheral site, e.g. LAC) where the specimen was obtained from.

Hospital policy #XIII-15:
http://intranet.ucdmc.ucdavis.edu/policies/patient_care_standards/line management therapy/xiii-15.shtml

CC. **Venous Blood Gas collection**

For venous blood gas orders, first verify collection is acceptable in the lab test directory for phlebotomist collection.

1. Use butterfly needle set to cannulate vein and perform any other requested tests per UCDHS approved order of draw (See attachment 1)
2. After other tests have been collected, crimp collection tubing and remove hub.
3. Attach Li Heparin venous blood gas syringe and collect sample according to Lab Test Directory required volume.
4. Remove tourniquet, then remove needle engaging engineered safety device and dispose of in appropriate sharps biohazard bin.
5. Remove syringe from butterfly tubing and place filtered cap onto the tip of the syringe.
6. Dispel any air bubbles that have accumulated in syringe by gently depressing plunger until air bubble has been removed and filter is saturated with blood.
7. Label specimen according to UCDHS policy # 2024 and transport immediately to blood gas lab within appropriate temperature stability according to lab test directory.

VII. Inpatient Procedures:

A. Requests for phlebotomy services are placed into the Phlebotomy Draw list within EMR by patient care unit/floor prior to the start of the scheduled draw.
   1. Adult draws are scheduled at 0500 AM.
   2. Pediatric draws are schedules no earlier than 0730 AM.
   3. Order in which patient care units is drawn is determined by unit needs, nursing team and/or health system initiatives.

B. Phlebotomist will leave the laboratory ***no later than 10 minutes*** after the published draw time.

C. Phlebotomist will complete the phlebotomy log by signing out when leaving and sign-in when returning to SARC.

D. Phlebotomist will log into the EMR, pull up the Phlebotomy Draw List.

E. Phlebotomist will collect all orders with the appropriate scheduled date and time. (Except timed tests and STAT) With expected collection time of 0300 to one hour after the current draw time for the patient will be collected.

F. Should a patient not be in their bed upon arrival, proceed to the next draw. After completing all other draws, return to the room(s) of the patient(s) that were bypassed earlier. DO NOT return more than once. If lab orders have been released from EMR, cancel the specimen(s) and place the canceled barcode labels on the Phlebotomy Canceled Specimen form, and notify to the patients nurse. NOTE: See Attachment # 3

G. Keep phlebotomy cart outside the patient's room. Gather all phlebotomy supplies needed for the collection before entering the patient's room.

H. The patient must be assured of his/her own safety. Bed rails that have been lowered to facilitate the venipuncture process must be raised before leaving the bedside. Restraints that have been placed on the patient are not to be removed by the phlebotomist.

I. Phlebotomist will request assistance with patients who refuse, who are abusive, or who are uncooperative.

J. All physical restrictions that affect phlebotomy services will be clearly posted, i.e., latex allergies, tape allergies, mastectomy, shunts, PIC lines, etc. Phlebotomists will adhere to these special restrictions.

K. After each patient is drawn, phlebotomist is to remove the patient from the phlebotomy draw list.

L. Phlebotomists are to place specimens periodically in the designated routine lab area for courier to pick up or transport specimens to the laboratory via the pneumatic tube system.

M. Phlebotomists will shut down and plug the laptop into an electrical outlet for charging when cart is returned to the phlebotomy room, to ensure a full charge for the next shift.

N. Phlebotomist will clean and restock the phlebotomy cart. "Special/individual" restocking is not allowed.

O. The number of patients taken and the number of patients successfully drawn will be indicated on the SARC phlebotomy documentation list, "No draws" will be documented by printing the canceled test report from EMR or by placing the canceled barcode labels on the Phlebotomy Canceled Specimen.

VIII. Outpatient Procedures:

A. Patients will be drawn on a first-come, first-serve basis. At patient service centers where number system is available (e.g.Qmatic), each patient is required to take a ticket when entering the laboratory draw station. The number from the designated ticket dispenser is selected according to the type of service selected.
NOTE: The patient selects the ticket based on the type of services requested (e.g. specimen drop-off, transplant, etc.)

B. All patients will be registered in EMR following the established EMR registration workflows.

C. Laboratory test requests will be released from EMR according to expected date and standing order requirements, received in LIS and/or manually requisitioned into LIS before the time of collection by laboratory personnel. **No specimens shall be drawn without a valid order from a physician.**
1. Phlebotomist will print any "Lab Misc" order which is used to create a SENDM and enclose it with specimen to be transported to the main lab.

D. All laboratory requisitions must adhere to departmental policy #910, including the following:
1. Full and complete patient name
2. Medical record number
3. DOB
4. Ordering physician
5. Clinic/ PCN of Origin/ Ordering location in LIS
6. ICD 9/ICD10 codes
7. Name of test(s) requested

E. After completion of each draw, phlebotomists are to stabilize specimens for transport as outlined in the Lab Test Directory: https://www.testmenu.com/ucdavis including, but not limited to:
1. Stabilizing urine in preservative tubes <30 minutes
2. Immediately centrifuging collection tubes for chemistry testing
3. Placing specimens at appropriate temperature requirements immediately (on ice, frozen or at 37C)

NOTE: Phlebotomist will not allow specimens to gather at their draw stations, but deliver them to the designated processing/batch-out areas of their draw stations.

F. All barcoded specimens will be bagged or racked as a collection of specimens in a clean plastic biohazard bag. The requests slip(s) for "Lab Misc" orders, esoteric or unusual test requests must be placed in the side pouch of each bag. Place specimens periodically in the designated batch-out area to be placed on the site batch list for scheduled pick-up by couriers to transport to the main clinical lab. **NOTE:** Most testing that generates an orderable LIS barcode label does not need any paperwork including the EMR order to accompany it with the exception of esoteric, unusual or outside orders.

G. When blood or urine is spilled in the work areas or on the blood drawing station, the phlebotomist will clean using a bleach solution or approved hospital grade disinfectant. Phlebotomist are to follow standard precautions and established UCDHS Hospital policy # 2028 http://intranet.ucdmc.ucdavis.edu/policies/hospital_policies_and_procedures/infection_control/2028.shtml

IX. Special Circumstances

A. Mastectomy (Breast removal)
Blood should never be collected from the side where a mastectomy has been performed. Mastectomy causes lymphostasis (stoppage of lymph flow).
1. Lymphostasis may cause false test results. Collect specimen from antecubital region opposite of the mastectomy.
2. In the event of double radical mastectomy, ordering physician is to be contacted to obtain permission to perform venipuncture from hands or antecubital region.

B. Adverse Reactions to Phlebotomy
At the first sign of a reaction, discontinue the phlebotomy procedure immediately. Remove the needle from the patients arm or hand and apply pressure to the site immediately. In case of a severe reaction such as convulsion, dizziness, fainting, nausea, vomiting, shooting pain or respiratory arrest, etc. for inpatients, call for RN for help immediately. For outpatients in Patient Care Network (PCN) Laboratory draw station, ensure patient is safe and call the closest clinic RN or MD for assistance. If needed, ask coworker for assistance. Call 911 as advised to do so by the RN or MD who responds. For outpatients in Hospital Based Clinic (HBC) laboratory draw stations, ensure patient is safe and call 911. If needed, ask co-worker or laboratory supervisor for assistance.

1. If a patient is feeling faint at an out-patient environment, the phlebotomist should advise the patient to remain seated and lay their head down on the table. If the patient's symptoms don't improve or continue to deteriorate, call 911.
2. In the event that a patient actually does lose consciousness, 911 should be called and every effort shall be made to with assistance, place the patient on his/her back.

C. Extremities with Occluded Shunts
   1. Phlebotomist will draw from extremities with an occluded (non-active) AV shunts, fistulas or vascular graft. When drawing from a site with a occluded/non-active the following process is to be followed:
      a. Collection is to be performed distal (below) the occluded Av shunt, fistula, or graft.
      b. Cleanse the puncture area thoroughly prior to collection to prevent infection.
      c. Venipuncture should be performed at least 4 inches below the access site.
      d. If a tourniquet is necessary, it is important the tourniquet is applied 4 inches below the non-active shunt.

D. Drawing from extremities with IV Saline & Heparin Locks
   When drawing from an extremity with a heparin/ saline lock, the following process is to be followed:
   1. Before proceeding, establish that an alternate extremity is available.
   2. The minimum distance from the lock site for sample collection is five (5) centimeters (or 2 inches) distal to the lock site. A distance greater than 5cm is desirable.
   3. Establish if venipuncture can be performed in an alternative blood vessel from the one the lock is placed in.
   4. Make contact with the attending RN and inquire as to whether the lock has been accessed within the last 5 minutes for either flush or medication administration. If so, wait 5 minutes prior to withdrawing blood to avoid potential medication or saline/heparin reflux.
   5. Tourniquet may be applied below the lock. Note: Many locks are placed on the dorsal side of the patient's hand, which exclude the extremity for laboratory staff to use. DO NOT place tourniquet around wrist for draws distal to the lock.
   6. Release the tourniquet.
   7. Proceed with the venipuncture procedure following all established

UCDHS & Department of Pathology phlebotomy procedures.

8. Handwrite on LIS barcode label "BIVL" – Below IV Lock
9. If any of the required criteria cannot be satisfied, complete the laboratory Phlebotomy Canceled Specimen form and inform the nurse taking care of the patient.

See Attachment # 3: Phlebotomy Canceled Specimen form

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Attachment 1: UCDHS Order of Draw

UC Davis Health System
Department of Pathology & Laboratory Medicine
Order of Draw Guide – Vacutainer Common Tubes

Sterile Blood Culture Bottles are always collected **first** when drawn at the same time as other lab tests/tubes.

 # 1: [LTBLU] Blue/Lt Blue Top Sodium Citrate 2.7 mL or 1.8 mL (pediatric)

 # 5: [DKGRN] Dark Green Top Sodium Heparin 4 mL

 # 2: [RED] Red Top 4 mL or 0.6 mL microtainer

 # 6: [LAV] Lav/Purple Top (EDTA) 4 mL or 0.5 mL microtainer

 # 3: [SST] Gold Top Serum Separator Tube (SST) 5 mL, 3.5 mL, or 0.6 mL microtainer

 # 7: [ACD] Acid Citrate Dextrose 8.5 mL

 # 4: [LTGRN] Light Green Top Lithium Heparin (PST) 3 mL or 0.6 mL microtainer

 # 8: [GRAY] Gray Top (Sodium Fluoride/ Potassium Oxalate) 4 mL or 0.6 mL microtainer

Lab Test Directory www.testmenu.com/ucdavis
Client Services (916) 734-7373

Attachment 2: MAXIMUM BLOOD VOLUMES DRAWN ON PEDIATRIC PATIENTS

PATIENT'S WEIGHT IN POUNDS	PATIENT'S WEIGHT IN KILOGRAMS	MAX VOLUME PER DAY (ML)	MAX VOLUME PER MONTH (ML)
6-8	2.7-3.6	2.5	23
8-10	3.6-4.5	3.5	30
10-15	4.5-6.8	5	40
16-20	7.3-9.1	10	60
21-25	9.5-11.4	10	70
26-30	11.8-13.6	10	80
31-35	14.1-15.9	20	100
36-40	16.4-18.2	20	130
41-45	18.6-20.5	20	140
46-50	20.9-22.7	20	160
51-55	23.2-25.0	20	180
56-60	25.5-27.3	20	200
61-65	27.7-29.5	25	220
66-70	30.0-31.8	30	240
71-75	32.3-34.1	30	250
76-80	34.5-36.4	30	270
81-85	36.8-38.6	30	290
86-90	39.1-40.9	30	310
91-95	41.4-43.2	30	330
96-100	43.6-45.5	30	350

Attachment 3: Phlebotomy Canceled Specimen Form

Date: _____

Canceled Barcode labels

Problem

- ○ Patient refused
- ○ Hard stick; unable to obtain blood
- ○ Patient unavailable
- ○ IV or Heparin lock in both arms
- ○ No I.D. band on patient
- ○ Already drawn
- ○ Other_____

Phlebotomist Please print and sign full name: Print:_____

Signature:_____

Attachment 4: MATERIALS/EQUIPMENT:

Venipuncture Collection:

- Tourniquet- Latex free, single use
- Gloves- Latex free, single use.
- 70 % isopropyl alcohol wipes
- Vacutainer safety needles
- Winged collection (butterfly)sets.
- Vacutainer blood tubes and/or blood culture bottles
- Needle holder (HUB) Adhesive bandage, tape and/ or coban
- Transfer devices
- Syringes (3ml, 6 ml or 10 ml)
- Specimen transport biohazard bag
- Ice for transporting specimen, when indicated

Capillary Collection:

- Sterile blood lancets (should be < 2.0 mm for newborns or 1.5mm for premies)
- Microtainer collection tube
- Heel warmer

Blood Culture Collection:

- Chlorohexidine gluconate preps
- Blood Culture bottles (aerobic and anaerobic bottles) adult & pediatric

PROCEDURE HISTORY

Date	Written/ Revised by	Revision	Approved Date	Approved by
6/94	G. Cooper	New	6/94	Dr. E. Larkin
1/95	G. Cooper	Revised	1/95	Dr. C. Marshal
12/96	D. Wright	Revised	12/96	Dr. E. Larkin
3/98	D. Wright	Annual Review	4/98	Dr. E. Larkin
10/98	R. Longoria	Revised	10/98	Dr. E. Larkin
11/99	D. Wright	Revised	11/29/99	Dr. E. Larkin
10/00	R. Longoria	Revised	10/00	Dr. E. Larkin
10/01	R. Longoria	Revised	10/01	Dr. E. Larkin
11/02	R. Longoria	Revised	11/02	Dr. E. Larkin
10/03	R. Longoria	Revised	10/03	Dr. E. Larkin
10/04	R. Longoria	Revised	10/04	Dr. E. Larkin
06/05	R. Longoria	Revised	6/05	Ralph Green, MD
9/06	D. Wright	Revised	9/06	Ralph Green, MD
4/07	D. Wright	Revised	4/07	Ralph Green, MD
4/08	D. Wright	Annual Review	4/08	Ralph Green, MD
8/08	R. Longoria	Revised	8/08	Dr. L. Howell
9/09	R. Longoria	Revised	9/09	Dr. L. Howell
11/09	C. White	Reviewed	12/09	Dr. J. Bishop
06/10	S. Paul	Revised	06/10	L. Howell
10/10	C. White	Revised	10/10	L. Howell
9/11	S. Paul/C.White	Revised	9/11	L. Howell

08/14	A. Castaneda	Revised	09/14	C. Polage
02/16	D. Brent/ T.Cox	Revised- combine 555. A and 555.C; added IV lock; blood cultures.	02/16	L. Howell