**SPECIMEN COLLECTION PROCEDURE**

**BLOOD**

1. Identify the patient by asking his or her name and verify names via picture ID.
2. Compare the patient’s name to the name written in the laboratory requisition or physician’s prescription.
3. Identify yourself by name and purpose for the phlebotomy.
4. Review test ordered and sample requirements.
5. Assemble all the necessary equipment at arm reach. The equipment needed will be:
   1. Gauze or cotton ball
   2. Alcohol pad
   3. Tubes to be drawn
   4. New needle in holder
   5. Tourniquet
   6. Band-Aid
6. Position the patient so that the veins are readily accessible. The patient should be sitting, since the patient could faint.
   1. Position the arm over the arm rest
   2. Apply the tourniquet over the biceps and request the patient to make a fist.
   3. Palpate for a vein, if a vein is not located, check the other arm
   4. Put gloves on
   5. Cleanse the site with an alcohol wipe, dry with gauze
7. Perform the phlebotomy
   1. Remove the needle sheath
   2. Position the needle bevel up by rotating the vacutainer holder.
   3. Hold the vein in place by placing your left thumb about an inch below where the needle is to enter and press down on the arm and at the same time pull the skin towards the patient’s hand.
   4. Align the needle with the vein.
   5. Enter the vein with the needle at a 15-degree angle with the skin.
   6. Push the blood collection tube against the back of the holder. Once the first collection tube is full, remove it and repeat this step for all other tubes to be collected.
8. Release the tourniquet.
9. Apply gauze over the wound site (without pressure) and remove the needle, apply pressure.
10. Instruct the patient to keep the arm extended in a straight position and have him/her press the gauze pad for at least three minutes.
11. Disposed of the needle in a sharp’s container.
12. **Label the samples collected with last and first name and date of birth**. Two identifiers should be present.
13. Inspect the puncture wound, if the bleeding has stopped, apply a Band-Aid.
14. Escort the patient to the door; make sure that the patient does not feel faintly. If he/she does, allow them to sit for a few minutes.
15. Distribute samples to the lab area, remove gloves and wash your hands.

Notes:

1. Hold the vacutainer holder firmly to avoid the needle from slipping out of the vein, resulting in a hematoma.
2. Introduce the needle into the lumen of the vein about ½ inch or more. If the depth is too shallow, it may cause a hematoma or bleeding by the wound site.
3. If there is no blood flow, the tip of the needle may not be in the lumen of the vein:
   1. Slightly push forward in case the needle tip is not into the vein.
   2. Slightly pull back in case the needle tip went thru the vein.
   3. If the vein was missed, palpate with the left index finger for the relocation of the vein, pull the needle back without exposing the bevel (loss of vacuum) and try to penetrate the vein by pushing forward. This could be painful to the patient and a new phlebotomy may be required.
   4. If a second phlebotomy stick is required, make sure to change the needle. Do not perform more than two attempts to draw the blood sample.
4. Collection for Multiple Tests:
   1. Draw sterile tube or SST tube first.
   2. 2nd Draw Red-Stopper or SST tubes.
   3. 3rd draws anticoagulant added tubes and last draw anticoagulant tubes. Mix by inversion after each tube is removed from the vacutainer holder.
   4. If only coagulation tests are collected, draw and discard first 5ml of blood, then collect the coagulation tubes.
5. Do not remove the sheath from the needle until just prior to the actual skin puncture. If the needle touches any surface other than the cleansed site, it is no longer sterile. It must be discarded, and a new needle must be used.
6. Perform a blood collection from the hand by use of syringe, butterfly or vacutainer, if a vein in the arm could not be located.
   1. Apply the tourniquet about the middle of the forearm
   2. Select the largest straight vein
   3. Put on your gloves
   4. Cleanse the area with an alcohol pad.
   5. Hold the vein in place with your thumb and pull the skin slightly toward the patient fingers. This is a sensitive area and the patient could move his/her hand, reassure the patient and instruct him/her not to move.
   6. Following the length of the vein, introduce the needle, bevel up, at least 1/4 inch into the lumen of the vein. Make sure to firmly hold the needle in place.
   7. Depending on the system used proceed as follows:
7. Vacutainer holder. - push the tubes into the holder as previously described. The tubes should be as small as possible to avoid excess pressure on the vein resulting in hematoma.
8. Syringe. - pull back on the plunger, collect as much as necessary. When the syringe is taken out of the sterile envelope, push on the plunger to break the vacuum seal. This should be done prior to removing the cap and inserting the needle. Never push on the plunger while collecting blood from the patient’s arm.
9. Butterfly. - this needle could be applied to a vacutainer holder or to a syringe once it is inserted into the vein, the flaps should rest on the patient skin, and then the blood is collected as described above.
   1. Release the tourniquet as soon as all samples have been collected
   2. Apply gauze to the site, remove the needle and apply pressure
   3. Apply a Band-Aid to the puncture site
   4. Label the tubes as previously described.
10. If drawing with a syringe, insert the needle into the tubes to be collected with anticoagulant first and allow the vacuum of the tube to draw as needed.
11. If the top of a tube is removed in order to fill a tube, the loss of vacuum may allow the top not to seal tight when re-stoppered, do not invert unless the top is secured by tape or your gloved hand.
12. When disposing of a butterfly, insert the phlebotomy needle into the disposal container, guide the line thru the opening until the base of the second needle can be placed thru the v opening, dislodged the second needle by turning the holder counterclockwise. Make sure to pay attention when disposing of used needles.

**General Specifications:**

Type of Vacutainer tubes to be used are specified for each assay in the requisition (See Test Selection instructions. A 21gauge Vacutainer needle is recommended to prevent hemolysis. Blood should flow easily into the vacutainer tube.

If Red-Stopper is used, separate serum and transfer to a plastic transfer tube

Never freeze Vacutainer tubes with whole blood inside unless specified in the instructions. Invert tubes several times. If whole blood is the specimen required keep it at room temperature or refrigerated according to instructions provided.

Fill up anticoagulant tubes until vacuum is extracted. Citrated samples (light blue tubes) must be allowed to be fully collected or results will be affected by the amount of anticoagulant present. Invert the tube several times. Separate plasma from cells after spinning being careful not to transfer cell to the plastic transfer tube. Refrigerate or freeze after collection.

Allow serum tubes, (SST) to clot. Place the SST collected in a rack and allow to clot for 30 minutes. Centrifuge the SST for 10 minutes 3500 RPMs. Verify that gel separation took place between the RBC and serum. Prolonged cell contact of serum with RBC results in lower glucose and abnormal high levels of Potassium, LDH and Phosphorus. Presence of fibrin or cells interfere with sample testing, which are due to incomplete clotting of the samples.

**If multiple tests require frozen samples, submit individual 1 ml aliquot of Serum, EDTA-Plasma or other anticoagulated plasma for each test request. (See Minimum Volume Section)**

**Assays of Analyte with diurnal variation:**

**Steroid Test:**

Diurnal Variation occurs with high values during the night and up to 10 AM and low values during the afternoon until about 6 PM. The magnitudes of the variations are different for each steroid. For cortisol the variation has diagnostic significance. Values for specimen drawn from 8-10 AM and from 4-6 PM have different reference ranges. Specify the times the specimens were drawn.

**Dynamic Testing:** Glucose or Insulin Tolerance

Timely specimens obtained after stimulation or inhibition of endocrine glands must be drawn in tubes labeled with two identifiers and the time of collection. For example, Glucose or Insulin tolerances samples should be labeled with 0 time baseline or fasting and time sequence 30’, 60’, 90’, 12’ etc. or actual time drawn 7 AM, 7:30 AM, 8 AM , etc. Separate and transfer Serum or Plasma to plastic transfer tube labeled as above and freeze.

**URINE:** Urine collections should follow clean catch instructions

**1. Clean Catch Collection:**

A. Clean the head of the penis or labia with towel provided.

B. Proceed with the urine stream into waste.

C. Collect middle portion of the stream without interrupting flow.

D. Close vial tightly, and label appropriately. Make sure it does not leak if inverted.

**2. Culture:**

A. From the clean catch urine, collect a preserved sample.

B. Open collection device and place straw into the urine cup

C. Place gray top over the collector device and push tube through the needle. (Urine preservative Transport (UPT)

D. Label sample

**3. Routine:**

A. From the clean catch urine, collect a preserved sample.

B. Open collection device and place straw into the urine cup

C. Place red/yellow top over the collector device and push tube through the needle. If a collection device is not available pipette or pour urine into the urine tube and cap it.

D. Label sample

**4. DAU**: Submit labeled clean catch vial

**5. 24 hr. Urine** Collection: Instruct the patient as follows:

A. Void the first sample in the morning and discard.

B. Collect all subsequent samples until the next morning first sample.

C. Entire Volume should be submitted to the Laboratory. If any voided portion was missed, it will require a recollection.

D. Patient should be instructed if the 24hr. container has a preservative, that some preservatives are corrosive acids or bases and direct contact of skin with the container should be avoided. A secondary container or cup should be used to collect each urine voiding and then transfer the sample to the 24 Urine container.

6. **BD Preserved Urine for CT/GC**

A. Collect the urine in a sterile cup

B. Add **one mL** of urine to the BD Max Preserved Urine tube.

C. Label the urine tube with patient names and DOB and submit to the lab.

D. A label urine cup can be received within 48 hours of collection if kept at room temperature.

**SWABS:**

* + 1. Clean area with soap and water, swab area showing injury, mucus or irritation/secretions.
    2. Replaced swab in the media container, or device provided.
    3. Label the device provided with patient names and DOB.
    4. **Specific** media-swabs are required based on the type of culture to be collected:

1. Aerobic/anaerobic culture swabs
2. Transport swabs for Viruses, Chlamydia, Mycoplasma and Urea plasma
3. BD Probetec/ BD Max amplified DNA Assay for CT and GC
4. Swabs are not interchangeable.

**Preparing samples for Lab submittal:**

1. **Make sure all samples collected are identified with last name, first name, date of collection, and DOB. Two identifiers should be present.**
2. Aliquot as needed and label those the same as the original sample.
3. Place specimen along with its requisition in a specimen bag.
4. Place bag in proper storage temperature according to instructions.
5. If more than one temperature is required, maintain each sample accordingly until prior courier arrival, place all samples in the bag and notify the driver.

**INSTRUCTIONS FOR COMPLETING THE LABORATORY REQUISITION**

**Front of the requisition:**

**Client Demographics**

1. Preprinted client information is provided in the upper left corner of the requisition.
2. Notify the laboratory that requisition replacement is needed.
3. Ready to print copy is available in the Infertilitylab.com website. Make sure to include client information in this section if a copy of the requisition is printed at your location.

**Patient and Sample Information**

1. Record the following information under the Required Information headings:
   1. Patient names
   2. Sex
   3. D.O.B.
   4. Age
   5. Fasting
   6. Stat
   7. Collection Date
   8. Collection Time
2. Billing information
3. Enter type of billing by applying a check mark to: Client, Patient, Medicare or Insurance
4. Enter patient information as requested, including address,
5. Enter Medicare or Insurance information as requested.
6. Enter ICD code for diagnosis

**Patient’s Responsibility**

1. Explain to the patient his/her financial responsibility for payment if ordered procedures are denied by Medicare or insurance. Have patient sign and date the designated white portion of the header.
2. Please see ABN portion at the back of the requisition.

**Notes**

1. Enter in this section any test ordered by the physician, which is not listed in the requisition.
2. Use this section for adding comments that may require action from our part: Who to call, who to charge, report to given to the patient, etc.
3. Write in any tests not listed in the requisition on the Notes section.
4. Area for customized requisition with tests requested by the client

**Test Selection:**

1. Place a checkmark by the test name ordered by the physician.
2. Verify specimen requirements according to the abbreviated code to the right of the test
3. Abbreviated codes:
4. SST – Tiger top tube with gel, for serum collection (7.5 mL draw)
5. Lav or L – Lavender top tube with EDTA whole blood or EDTA plasma
6. UR – Urine cup of Tube
7. Swab – Swab for culture, PCR, etc.
8. UR/Swab – Urine and/or swab for CT/GC Collection
9. UTM – Myco/Urea media container
10. FRZ Semen – Frozen semen sample
11. GRN – Green (heparin) anticoagulated tube
12. Y – ACD anticoagulated tube
13. B – 3.2% Light Blue Citrated anticoagulated tube
14. RBL – Royal Heparin tube for collection of metals

**Type and amounts of samples required for Test Panels provided by Unilab**

1. FDA Female Panel: 2 SST, 5 Lavenders, and 1 Urine BD Max vial (additional Information is provided in the FDA section of our Infertilitylab.com Website.
2. Hepatitis B Core Antibody Total
3. Hepatitis B Surface Antigen
4. Hepatitis C Antibody
5. HIV 1,2, O Antibody Screen
6. MPX (HBV, HCV, HIV) PCR
7. RPR
8. WNV (required from June 1 – October 31st)
9. CT/GC DNA Amplification
10. FDA Male Panel: 2 SST, 5 Lavenders, and 1 Urine BD Max vial
11. Hepatitis B Core Antibody Total
12. Hepatitis B Surface Antigen
13. Hepatitis C Antibody
14. HIV 1,2, O Antibody Screen
15. MPX (HBV, HCV, HIV) PCR
16. RPR
17. WNV (required from June 1 – October 31st)
18. CT/GC DNA Amplification
19. HTLV I/II Antibody
20. CMV Antibody with reflex to CMV IgM
21. Comprehensive Metabolic Profile: 1 SST (one mL of serum)
22. Glucose
23. BUN
24. Creatinine
25. Calcium
26. Sodium
27. Potassium
28. Chloride
29. Carbon Dioxide
30. Total Protein
31. Albumin
32. Total Bilirubin
33. Alkaline Phosphatase
34. ALT
35. AST
36. B/C Ratio
37. eGFR
38. Globulin
39. A/G Ratio
40. Basic Metabolic Profile: 1 SST (one ml of serum)
41. Glucose
42. BUN
43. Creatinine
44. Calcium
45. Sodium
46. Potassium
47. Chloride
48. Carbon Dioxide
49. B/C Ratio
50. eGFR
51. Hepatic Profile: 1 SST (one mL of serum)
52. Total Protein
53. Albumin
54. Total Bilirubin
55. Direct Bilirubin
56. Alkaline Phosphatase
57. ALT
58. AST
59. Globulin
60. A/G Ratio
61. Lipid Profile: 1 SST (one mL of serum)
62. Cholesterol
63. HDL
64. Triglycerides
65. LDL Calculation
66. VLDL Calculation

**Minimizing blood volume draws**

1. SST tube provided by Unilab contains a total volume of 7.5 ml of blood or approximately 3 ml of serum **when the tube is filled completely.** Three (3) mL of serum can be allocated as follows:
2. One mL for a comprehensive metabolic panel or single component.
3. One mL for Infectious markers HBcAb, HCV, HIV, HBsAg, HTLVI/II
4. One mL for a referred test.
5. One SST will suffice for three referred tests.
6. Lavenders (EDTA) tubes provided by Unilab contains a total volume of 2.5 ml of blood or approximately 1.3 ml of plasma.
7. One EDTA is enough for a CBC and ABO & Rh typing
8. Hemoglobin electrophoresis, ESR, etc. require individual EDTA tubes
9. MPX and WNV requires 1.5 ml of EDTA plasma. Five tubes are required if a repeat run is needed.
10. Light Blue tube (Citrated sample) provided by Unilab contains a total volume of 2.5 ml of blood or approximately 1.3 ml of plasma. The tube must be full. One citrated sample must be collected for each coagulation assay requested. (See General Specifications section)

**Back of the requisition**

1. ABN section for Medicare patients
2. Worry Free Billing
3. Will Patient receive Unilab Bills