Bassett Healthcare
Mary Imogene Bassett Hospital Clinical Laboratories

SPECIMEN PROCESSING POLICY

A. General Statement of Policy

After specimens have been reviewed for acceptability as described in the Specimen Receiving Policy and routed to the technical sections as described in the Specimen Routing Policy, specimen delivered to the processing section of CLP will be handled following these guidelines.

B. Scope

This policy shall apply to processing of all specimens in the Processing area of the CLP section of the Clinical Laboratory.

C. Administration

The Central Lab Processing Team Leader will be responsible for the implementation, review and revision of this policy.

D. Procedure

Definitions:

Serum: formed by clotted blood that contains fibrin.
Plasma: formed from blood that is not allowed to clot because of an anticoagulant.

Specimen Processing Guidelines:

1. Specimens collected for testing that requires serum or plasma must be centrifuged to separate the liquid portion of the blood (serum or plasma) from the cellular portion of the blood (red blood cells, white blood cells, platelets).

2. Serum separator tubes (SST) and plasma separator tubes (PST) are often collected for ease of separation between serum/plasma and cells. These tubes contain a gel that moves up between the serum/plasma and cells upon centrifugation. This barrier prevents the cellular portion of the blood from further utilizing the components in the serum/plasma portion (i.e. glucose) thereby keeping the specimen similar to original drawing state. SST tubes must be held for 30 minutes then placed on the automation line and PST tubes can be placed directly on the automation line.

3. Red top tubes (serum tubes) are silicone coated to activate a clot. These tubes need 60 minutes before centrifugation.

4. If the centrifuge on the Automation line is down, specimens will be spun in CLP.

5. Place vacutainer tubes into the centrifuge in such a way that all specimens are balanced. The same sized tubes should be placed exactly opposite each other. If an odd number of specimens is to be processed, water tubes should be used for balance. Follow specific guidelines for each centrifuge.

6. All specimens to be centrifuged must be capped to prevent aerosolization.

7. Close and lock the centrifuge. Set the centrifuge at the appropriate speed (Allegra X-22R at 4000 rpm room temperature and the Allegra 6 at 3000 rpm). Set the timer at 10 minutes. For specifics for each centrifuge, refer to the operational manual for that specific model.

8. Once the centrifuge has come to a complete stop, remove specimens from the centrifuge. Check tests listed on label. If the specimen is not collected in a SST tube, remove the stopper (using the work shield to protect yourself from splashing), and insert a plastic filter separator carefully into the tube. Plunge the separator through the serum down to the red cells, without disturbing the cells. This filter acts similarly to the gel barrier in the SST tube.

9. Tests that need plastic aliquot tubes should have an LIS label printed at the time of test request or receipt. This extra label is affixed to the plastic aliquot tube, accession number toward the bottom of the tube. Use screw-capped Mayo aliquots for testing sent to Mayo. Use no-additive tubes for special chemistries performed in-house. Before aliquoting the serum or plasma, verify that the information on the label on the original tube matches the information on the label on the aliquot tube. If appropriate, indicate that the specimen is plasma by affixing a plasma label to the tube or writing "plasma" on the label. Pour over, cap, initial the label, and place in the appropriate rack for send outs. For non-Mayo referral testing, package for UPS or FedEx shipment, or prepare for courier pick-up.

10. Serology testing is performed in Microbiology except for RPRs. Micro specimens should be delivered to the rack in the cart inside the micro door.

11. All RPR testing is forwarded to O'Connor Hospital. Decant those specimens into properly labeled no-additive aliquot tubes, cap and initial the label. Store the specimen in the designated RPR Screen rack in the CLP refrigerator.

12. Lead testing that is collected in a MAP capillary collection container is forwarded to Fox Tri-Town Hospital for testing. Store specimen in the designated rack in the CLP refrigerator. All lead testing collected in a metal free vacutainer and tan top tube is forwarded to Mayo. Store whole blood specimens in the designated Mayo rack in the CLP refrigerator until ready to batch and send.

Coagulation Specimens:

All routine clotting assay tubes (blue tops) are placed on the automation line to be performed in house. Specimens that are intended to be sent out are checked for clots using two wooden applicator sticks. The cap is replaced and marked with a line to indicate it was checked. It is then centrifuged for 10 minutes at 4000 rpm in the Allegra X-22R centrifuge. A setting of 20C is used for routine centrifugation. Decant those specimens into properly labeled no-additive aliquot tubes, cap and initial the label. Store the specimen in the designated rack in CLP until ready to batch and send.

Procedure for Aliquoting from Urine Specimens for Microbiology Cultures:

Single sterile urine specimens submitted to the CLP area with requisitions/orders for urine culture and other urine testing need to be promptly separated and distributed to appropriate sections in a timely manner. This also includes urines that also have orders for Cytology.

1. Receive specimen and/or enter the test request into the LIS following established protocol. The primary specimen should have two patient identifiers and a barcoded label should be placed in the specimen bag for cultures.

2. When there are also Cytology orders, a non-gyn Cytology label should print when the urine is scanned into receiving.

3. If an aliquot is needed, place the LIS generated label on the aliquot container. Initial the aliquot label(s) and leave the rest of the labels in the bag with the specimen.

4. Under the hood, gently swirl specimen container to re-suspend cellular components prior to opening lid.

5. Aseptically transfer urine: Remove cover from sterile container, putting the inside of the cover facing up on the hood counter. Pour urine into aliquot labeled in step #2 above. Be careful not to introduce any foreign material into the sterile container. Leave at least five drops of urine in sterile container for culture. After transferring urine, replace cover on sterile container carefully and cap aliquot container.

6. Deliver specimens to appropriate sections for testing following routing procedure. If delay in transport in anticipated, store in refrigerator at 2 – 6 degrees C. If an aliquot was prepared for Cytology testing, place the aliquot in the pathology box in CLP.

7. If specimen for culture is unsuitable, document the reason on the microbiology requisition and forward to Microbiology. Follow established protocol for notification of rejection of specimens. The information of who was notified will be documented on the requisition and delivered to Microbiology for follow up.

Preparation of Specimens for Reference Lab Testing:

1. Refer to the online lab manual to determine which reference lab performs the requested test. We are required by New York State Department of Health (NYSDOH) to refer specimens only to laboratories that possess a NYSDOH permit. If a request is made for a specimen to be referred to an unfamiliar laboratory, refer to an LST II, LST III, CLP Team Leader, Laboratory Technical Assistant, the Laboratory Support Services Manager or Clinical Director for assistance.

2. Using the lab manual for that specific reference lab, follow the handling requirements listed under the test(s) requested. For specimens that require centrifugation, refer to the Specimen Processing Guidelines section of this procedure.

3. For MAYO Medical Laboratories follow the batching procedure under the Creating Mayo Batches section of the Mayo Medical Laboratory guidelines. Mayo has a courier pickup Sunday-Friday, excluding major holidays.

4. For Albany Medical Center, Specialty Laboratories, NYSDOH Laboratories and other reference laboratories, refer to the online lab manual for specimen requirements, handling, shipping, and paperwork required. If the test is not listed in the online manual, look up the specimen requirements on the reference lab's web site, or call for instructions.

5. All other referral testing must be shipped out via UPS or Federal Express. See attached procedure for packaging specimens for special delivery.

6. A&D STAT Courier may be used if specimens must be delivered the same day it is collected. A courier request form must be completed along with the required paperwork and specimen submission.

7. For tests in question, refer to an LST II, LST III, CLP Team Leader, Laboratory Technical Assistant, the Laboratory Support Services Manager or Clinical Director for assistance.

Procedure for Handling Acute and Convalescent Serology Specimen Requests:

1. There are times when it is necessary for a patient following treatment to have serum specimens drawn during the time they demonstrate symptoms (acute) and 2 – 4 weeks later (convalescent). The following procedure will be followed for these types of specimens:

2. During the "Acute" phase, the physician will order "acute serology – freeze and hold in lab."

3. Two, large, red-topped tubes will be collected from the patient following established protocol.

4. Label two plastic aliquot tubes and write on them "**Acute Serum**." Centrifuge the red-topped tubes and pour the serum from each tube into a separate aliquot tube, initial both labels. Place the aliquot tubes in the CLP freezer in the "**Freeze and Hold" rack.** No specimen is sent to the reference lab at this time.

5. After the appropriate time has passed, the patient should present again. At this time, another specimen (the convalescent specimen) will be obtained. The physician will request which test(s) are required on the #2 requisition. They will also indicate on the requisition that the specimen is a "Convalescent" specimen. The phlebotomist will draw the appropriate specimen required for the testing requested.

6. Upon receipt in the laboratory, the CLP tech who receives the sample should note the "Convalescent" on the requisition. This should alert them to pull out the "acute" requisition from the "Freeze and Hold" rack. Enter the order in the LIS using the appropriate test code(s) as ordered on the requisition. Make sure to use the code for Acute and Convalescent if available.

7. The CLP tech responsible for specimen processing will fill out the required reference lab requisition, ordering the test(s) using the acute and convalescent code if available. Make sure

to pull out the acute sample from the "freeze and hold" rack in the CLP freezer. These samples are labeled as "acute" and "convalescent" respectively. They are submitted together.

Packing List and Send-out Bench

A Packing List is used when samples collected at one site need to be sent to another site or lab for analysis. A Downtime packing list is used when samples need to be sent to an alternate performing site due to a down instrument, lack of reagent, etc. The Send-out Bench is used to determine if all samples have been accounted for and sent out to another lab for analysis, but have not been placed on a packing list. It should be empty, or nearly so, by the end of the day. Always resolve any remaining specimens.

1. **Create a Packing List**
    a. Open the **Packing List Editor**
    b. **Create** a Packing List and choose an appropriate list from the category list, e.g. Mayo-Refrigerated or ARUP-Ambient
    c. A packing list ID is automatically generated
    d. Click **Accept**
    e. Scan each specimen that is available for that packing list
    f. The system will not allow a specimen to be placed on an incorrect list, e.g. a room temperature specimen cannot be added to a refrigerated list
    g. Once all available specimens have been added to the list, it can be marked **Ready**
    h. Click on **Picked Up**
    i. The **Picked Up** button must be clicked so the Destination lab can receive and process the specimens on the packing list
    j. The list cannot be unlocked once it is marked for pick up
    k. The list automatically prints to be sent with specimens

2. **Create a Reference Labs-Non Interfaced Packing List (Non-Mayo, Non-ARUP)**
    a. Go to **Packing List Editor**
    b. **Create** a **Non-Interfaced Reference Labs** packing list
    c. At **Destination** field, select **Reference Lab Non Interfaced** from category list, if not already displayed
    d. Scan specimens to **Packing list**
    e. Click **Ready** and **Picked Up** when list is complete

3. **Downtime Packing List**
    a. Go to **Packing List Editor**
    b. Create a **Downtime Packing List**
    c. At **Destination** field, using the category list, select the lab that will be doing the testing
    d. Scan specimens to **Packing list**
        i. With the **container** box highlighted, note that the tests are listed, but not automatically selected.
        ii. Place a check mark in the box next to the test that needs to be sent
    e. Click **Ready** and **Picked up** when list is complete

4. **Send-out Bench**
    a. Open **Send out Bench**
        i. A list of all specimens to be sent out from the logged in department is displayed
        ii. Remember to physically find the specimen before adding to a packing list
    b. With desired sample highlighted, click on **Add to Packing list**
    c. At **Packing list look-up**, **Create** a **Packing list** to which you will add specimens
    d. Click **Ready** and **Picked up**

5. **Print Insurance Information from EPIC**
When preparing paperwork for send out specimens, the patients insurance information may be required. That information can be printed directly from EPIC.
    a. Go to **Patient Station** to open patients chart
    b. Highlight the appropriate encounter
    c. To access insurance information
        i. Right click on the visit and select **Print Forms** or Click on the **Print Forms** button
    d. The **Form Reprints** dialog box opens
    e. Check the box for **ADT Face Sheet – ETX Version** and confirm the correct printer is displayed