

## General Laboratory Information

### MEDICAL AND SUPERVISORY COVERAGE

Laboratory physicians and supervisors are available to assist you 24 hours a day.

- Shift supervisor/coordinator-available on site in the main clinical laboratory, blood bank, and anatomic pathology during regular hours of operation as listed above. *Please ask for supervisor.*
- Blood Bank supervisor on-call contact through 8-5630.
- Blood Bank/Clinical Pathology physician on-call contact through 8-5630.
- Anatomic Pathology physician on-call contact through hospital page operator 8-6110.

### COLLECTION AND IDENTIFICATION OF LABORATORY SPECIMENS

#### Registration

Patients must have a current hospital registration and a current date account number. **Inpatients must have a valid UMMC hospital identification band.**

#### Sample Label

For UMMC patients, the patient's name and date of birth or medical record number must appear on an adhesive label firmly affixed to the primary specimen container. (For any Trauma Doe it must be Trauma Doe number and medical record number.)

#### IMPORTANT!!

- Required labeling procedure
  - Must use **two identifiers** as per hospital policy
  - Collect the specimen(s) and label all before leaving the bedside. Be sure to double check that labels match patient ID band.
  - Vacutainer tubes have a colored notch at the top of the manufacturer's tube label which matches the vacutainer cap. The laboratory labels have a notch on one side. Place the label on the tube so that the 2 notches line up. When the 2 notches are lined up the label will be vertical with the name and medical record number visible.

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- Urine samples should be collected using the hospital approved urine collection kit. Use the blue capped cup to fill the yellow and gray tubes. Label urine samples vertically as described above.
- Send **ONLY** the full yellow top conical and gray tubes to the laboratory. Please **DO NOT** send blue capped cup to laboratory. Dispose blue capped cup as you would any other sharp.
- Fluids in a tube should also be labeled vertically with the name and medical record number visible.
- The date and time need to be correct on the label, so if the label in hand has a wrong date and time it should be reordered and a new label printed.
- The computer system has the ability to combine tests that can be performed from the same specimen tube to minimize the amount of blood drawn from a patient. However depending upon how the order was placed in EPIC tests will not combine if not ordered in the same ordering event (order sentence) or by different people for slightly different times. Check your labels to see what tests are printed for each sample because it may be more efficient to re-order the testing if for example a phosphorus and magnesium are not combined with a BMP. **Otherwise you will need to draw a separate tube for each label printed.**
- **After filling** the container and **before leaving the patient's side** recheck the name and date of birth (or DOE number and history number) on the label for correctness, matching it with the Patient Identification Bracelet if an inpatient or having the patient repeat his/her name and date of birth to you if an outpatient.
- **A requisition**, whether or not attached to the primary specimen container, **is not an acceptable substitute for a label.**
- It is **not acceptable** to apply the label to an outer container, e.g. a cup of ice or a plastic transport bag, in lieu of the primary specimen container. **The label must be affixed to each tube, cup or culture.**
- **Unlabeled or improperly labeled specimens will not be accepted for analysis.** The label must match the requisition.
- Special requirements apply to samples for compatibility testing. *See Blood Bank section on Laboratory home page.*

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### Requisition

Physicians should only order tests that they believe are medically necessary for the diagnosis and treatment of their patients during that visit. The laboratory requests the submission of all ICD-9 diagnosis codes instead of narrative diagnostic descriptions. The ICD-9 code must reflect diagnosis for the diagnostic tests ordered at that particular patient encounter. If more than one lab test is ordered for more than one illness, more than one ICD-9 code may be needed.

- All specimens must be accompanied by a valid electronic order. If the laboratory receives a specimen without a valid order or with an ambiguous order, the laboratory must verify the requested test(s) by calling the licensed independent practitioner, to assure the correct test(s) is performed and billed.
- Paper requisitions will only be accepted during computer downtimes and from units with pre-approved exceptions. The laboratory requisition must have the same name and date of birth (or Trauma DOE and medical record number) as the specimen label. The requisition must also have the requesting physician's full name and contact information.
- The following information is necessary for optimal provision of laboratory services and communication of results. These items must appear on a paper requisition, analysis will not be refused in their absence but missing information may delay processing:
  - 1) Patient location and requestor's full name and telephone number
  - 2) Date and time of specimen collection
  - 3) Information pertinent to specific tests, e.g. time of last dose and draw time for therapeutic drug levels.

### Emergency requests:

- *Request forms:* If "STAT" requests, please mark "STAT" on requisition

### Add-ons:

- All add-ons must be accompanied by a hard copy request.

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### PHLEBOTOMY SERVICES/IV STARTS

#### Inpatients

- **Routine phlebotomy rounds** are made daily at 3:00 a.m., 4:30 a.m., 10 a.m., 1 p.m., 3 p.m., 7 p.m. and 11 p.m.
  - *CPOE* : Enter the order at least 60 minutes before the scheduled draw time for all draws including the 3 a.m.
- **Stat phlebotomy** must be performed by clinical unit personnel (e.g. nurses, physicians).
- **IV starts** are performed on the same schedule as phlebotomy rounds (except 4:30 a.m. rounds).

### SPECIMEN DROP OFF IN THE LABORATORY

- Deliver all clinical laboratory specimens except those for Blood Bank to the main laboratory reception desk, Room N2W57. (near the North Hospital elevators, second floor)
- Deliver Blood Bank specimens directly to the Blood Bank, Room N2W48.
- Both areas are open 24 hours a day, seven days a week.
- Deliver anatomic pathology specimens directly to the Anatomic Pathology Lab in the North Hospital basement floor (near the North elevators) Monday through Friday from 7:30 a.m. to 5:00 p.m. At all other times, deliver to the clinical lab reception desk, Room N2W57.
- Special Notes: Microbiology does not accept samples in formalin. All specimens in formalin go to Anatomic Pathology.

### PNEUMATIC TUBE SYSTEM

Some inpatient units have pneumatic tube stations. The pneumatic tube is used to transport patient specimens to the lab. Carriers are returned to patient units once emptied.

- Place appropriately labeled specimens in a plastic bag along with the requisition.
- All lab specimens must be in a sealed plastic bag **before** placing them in a carrier. Be sure the bag is sealed completely.
- Place specimens in "biohazard" carriers with foam inserts. **DO NOT REMOVE THE FOAM FROM THE CARRIER.**
- Close and latch all carriers before sending.

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- **Do not return blood products through the tube if the bag has been spiked or if the bag is leaking.**
- To send a carrier:
  - Place carrier on the dispatcher
  - Press destination number from list
  - Press "send".
- Return all carriers marked "Return to....." as soon as they are emptied.
- Do not leave carriers in the bottom of the station. Store them on the shelf provided in the station or place them in a box nearby. If carriers back up in the station, they can shut down the entire zone.
- Each nursing unit should have a total of only 3 carriers - two marked "biohazard" for lab specimens and one unmarked for the pharmacy.
- If the tube system is not working call 8-5174.

## LABORATORY SPECIMEN CONTAINERS

All laboratory specimens must be submitted in well-constructed containers with secure lids to prevent leakage during transport. Use only specimen containers obtained from central stores by the nursing unit or obtained directly from the laboratory. Check all containers for leakage before transport. Check all containers for expiration date.

The following containers are available on all inpatient and outpatient nursing units:

<u>Vacutainer</u>	<u>Additive</u>
gold (Gold or Tiger Red)	Clot activator
Red top, gel	None
Red top	None
Lavender top	EDTA-potassium
Pink top	EDTA potassium-Blood Bank
Green top	Lithium heparin
Amber top	Lead free
Light blue top	Citrate
Yellow top	ACD solution
Gray top	Oxalates, fluoride
Blood Culture Vials (for routine blood cultures)	
Jugs for 24 hour urine	
Heparinized syringes for blood gases	
Pediatric microtainers for chemistry and hematology	
Plastic urine specimen cups (sterile and non-sterile)	
Yellow Top (urine) with no additive	
Gray Top (urine) with Boric acid preservative	

For special container information contact the laboratory at 8-3704.

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### ORDER OF DRAW FOR MULTIPLE SPECIMENS

When collecting multiple specimens from a single venipuncture, the order in which the specimens are collected is critical to the quality of the specimens. To eliminate carryover of tube additives when collecting multiple specimens, collect the specimens in the following order:

- Blood culture tube or sterile sample
- Coagulation tube (e.g. light blue stopper)
- Serum (red/tiger top/gold stopper)
- Heparin (green stopper)
- EDTA (lavender stopper)
- EDTA (pink stopper)
- Oxalate (gray stopper)

All tubes containing additives (blue, green, lavender, gray, or yellow) must be filled to maintain correct blood to additive ratio. If you are using a butterfly needle to draw your specimens you will need to use either a red or additional blue as a primer to fill the butterfly tubing with blood. You may stop draw as soon as tubing is filled and then go on to draw the blue (coagulation) tube otherwise the blue top may not fill to the correct level.

### COLLECTION OF TIMED URINE SPECIMENS

#### 24 Hour Urine Collections

The patient must collect ALL urine during the timed period into a clean 24 hour urine collection bottle. Some tests require a preservative to be added to the collection container prior to the addition of urine. Consult the laboratory for appropriate preservatives. To collect a 24 hour specimen:

1. Day 1            7 a.m. Have patient void and discard the urine. Collect ALL urine for the next 24 hours.
2. Day 2            7 a.m. Have the patient void and add this urine to the previously collected urine.
3. Refrigerate the specimen during the collection period to inhibit bacterial growth and reduce the possibility of changes in the analytes.

**NOTE:** For creatinine clearance, a blood creatinine level must be collected within 24 hours of of the 24 hour urine collection period. The patient height and weight must also be provided.

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### **SAMPLE VOLUMES**

Sample requirements, including volumes, for individual tests are detailed in the sections which follow. For multiple tests ordered on the same sample, the following rules of thumb may be helpful. Consult the laboratory if you have any questions.

- Chemistry panels can be performed on one full green top tube.
- One full green top tube (heparin) is required for any lymphocyte phenotyping panel.
- Immunology testing requires a full gold top and cannot be combined with Chemistry testing.
- One full green top is required for each chemistry label printed. NOTE: Some drug levels require a different collection tube, e.g. cyclosporine requires a purple top (EDTA).
- One full 3.0 ml purple top tube (EDTA) suffices for: CBC, diff, reticulocyte count, sedimentation rate and sickle prep.
- One full 2.7 ml blue top tube (citrate) suffices for PT, PTT, fibrinogen and thrombin time.

### **RESULT REPORTING**

Paper reports are sent only to outpatient sites and special studies at the request of the site. Inpatient laboratory results are available in EPIC as they are verified.

- Call the Lab at 8-3704 if you need help finding results.
- Call the information systems help desk (8-HELP) for questions or problems related to the computer system including training and passwords.

In the event of unusual circumstances in the laboratory that patient testing will be significantly delayed the laboratory will inform the floors of the delay in resulting and whether alternative testing arrangements will be made.