Upper Valley Medical Center
Laboratory Service Manual
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**UVMC CLINICAL LABORATORY**
Upper Valley Medical Center
3130 North Dixie Highway
Troy, Ohio

## UVMC Laboratory Hours and Staffing

**Location:**

Upper Valley Medical Center Clinical Laboratory is located on the lower level of the hospital at 3130 North Dixie Highway

**Telephone:**

Laboratory Call Center: (937) 440-4025
Pathology Office Coordinator: (937) 440-4637

**Hours of Operation:**

Upper Valley Medical Center Clinical Laboratory is a full service laboratory Staffed 24 hours a day, 7 days a week.

**UVMC Clinical Laboratory Medical Director:**

Carlos Machicao, MD

**UVMC Clinical Laboratory Administrative Director:**

Shelly Buehler, MT (ASCP)

8/2009

Upper Valley Medical Center
Clinical Laboratory
3130 N. Dixie Highway
Troy, Ohio 45373

**INFECTION CONTROL**

**BIOLOGICAL SPECIMEN HANDLING, TRANSPORT, AND STORAGE**

DISCUSSION

Due to their biohazardous nature, specimens submitted for laboratory analysis must be handled, transported, and stored in a manner that minimizes the possibility of inadvertent employee contact with blood or other potentially infectious materials. This procedure provides guidelines for safe handling of such specimens during processing, transport within or between UVMC facilities, testing, and storage by volunteers, couriers, laboratory personnel, or other hospital staff, in accordance with NCCLS, OSHA, DOT and EPA regulations.

Special requirements to insure specimen stability after collection, during storage and transport to the laboratory, can be found in the Laboratory Services Manual under the test directory for each test that is being collected.

GENERAL GUIDELINES FOR HANDLING OF BIOLOGICAL SPECIMENS

1. Gloves and other appropriate personal protective equipment must be worn, and required engineering and work practice controls used, whenever contact with blood or other potentially infectious materials or contaminated surfaces can be reasonably anticipated. Refer to “Laboratory Task Exposure List” for guidelines.
2. All biological specimens must be covered, capped, corked, or plugged except while being collected, or in the process of separation, pouring, or analysis. Various sizes of plastic caps and stoppers for tubes, and parafilm, are provided for this purpose.
3. To avoid contamination of the outside of a tube, the stopper should be covered with gauze or Kim-wipe during removal or recapping; and should be removed by gentle twisting to prevent formation of aerosols generated by “popping.” Additionally, specimens requiring transfer to another tube should be transferred by use of a bulb suction pipette (such as a “Dispo” pipette) rather than by pouring from the tube.
4. To prevent contamination of paperwork, specimen containers that are likely to leak, or that are to be handled as if they are contaminated on the outside (see #s 10, 11, and 12), should not be allowed to come in contact with barcode labels or other documents. Barcode labels and other documents should not be placed in a “bucket” or basin that may contain specimens that could leak, and should never be placed in the zippered compartment of a transport bag with *any* specimen, unless required for chain of custody purposes.
5. If the outside of a tube or other container becomes contaminated, it should be wiped with gauze or Kim-wipe moistened with 10% bleach or other hospital-approved disinfectant. The use of alcohol or of disinfectants containing alcohol should be avoided because it damages the print on our barcode labels, making them unreadable.
6. Pipetting is to be done using a suction bulb or other safety device, never by mouth.
7. Safety transfer devices are available for the transfer of a specimen from a syringe to a vacutainer tube. If a needle must be used for transfer, do not hold the tube or bottle in your hand as the needle is inserted through the stopper; the tube should be placed in a rack or other holder. Allow the vacuum in the tube to “draw” the specimen from the syringe. Do not force liquid into a vacutainer tube; if insufficient vacuum is present, the stopper may “pop,” creating aerosols and/or splashing. If the liquid isn’t drawn into the tube, try another tube; if this fails, the transfer device or needle may need to be removed and the specimen ejected into an unstoppered tube as described in the next paragraph.
8. If it is necessary to eject a fluid from a syringe (as with some microbiology specimens), always
   - remove the needle *after* activating the safety feature, using either a safety device designed for this purpose or a hemostat,
   - discard the needle in a sharps disposal container,
   - and allow the fluid to run down the inside of the container, if possible.

9. Liquid respiratory specimens (such as nasal/nasopharyngeal washings) and the extraction step of respiratory antigen testing (such as Influenza or Strep A) should be handled in a laminar flow hood or behind a countertop shield over a plastic-backed absorbent mat, in addition to using appropriate PPE (gloves, lab coat), to prevent disease transmission due to aerosol and/or droplet contamination of counters, nearby equipment and other items.

(GENERAL GUIDELINES FOR HANDLING OF BIOLOGICAL SPECIMENS, continued)

10. All containers of bronchopulmonary washings or brushings, nasal washings, or sputum are to be handled as if they are contaminated on the outside. They should not be included in a bag with other specimens.

- These containers are to be transported and delivered to laboratory departments in secondary containers such as zip-closure specimen transport bags (see #13).
- All outside surfaces of these containers must be decontaminated (or the specimen transferred to a properly labeled clean container with a secure closure) before sending to a reference laboratory.
  NOTE: A container that does not have a secure closure cannot be sent to a reference laboratory; the specimen *must* be transferred to a container with a secure closure before sending.
- To prevent possible contamination of another specimen container resulting from re-use, any bag that has contained one of these respiratory specimens must be discarded--the bag may be used for storage of the specimen, and then discarded with the specimen.

11. All containers of fecal material (stool specimens), as well as colon or duodenal washings or aspirates, are to be handled as if they are contaminated on the outside. Due to the nature of these specimens, pressure tends to build up in tightly closed containers and escapes explosively when the container is opened. Pressure accumulation may also cause tubing to detach from the lid of a mucus trap. Any container of fecal material, colon or duodenal washings, or aspirates, should not be included in a bag with other specimens.

- These containers are to be transported and delivered to laboratory departments in secondary containers such as zip-closure specimen transport bags (see #13).
- All outside surfaces of these containers must be decontaminated (or the specimen transferred to a properly labeled clean container with a secure closure) before sending to a reference laboratory.
  NOTE: A container that does not have a secure closure cannot be sent to a reference laboratory; the specimen *must* be transferred to a container with a secure closure before sending.
- To prevent possible contamination of another specimen container resulting from re-use, any bag that has contained one of these specimens must be discarded--the bag may be used for storage of the specimen, and then discarded with the specimen.

12. Gloves must be worn when handling all containers of CSF; the method of collection of these specimens makes external contamination of the container likely. Any transfer to another container for testing or storage should take place behind a shield or in a laminar flow hood.

- Cerebrospinal fluid specimens from patients with possible meningitis must be handled with extreme care in order to reduce the potential for exposure to Neisseria meningitidis. (Diagnosis may mention fever, weakness, headache, stiff neck, lack of coordination, or unresponsiveness; the word “meningitis” is not always included.) Outsides of containers should be decontaminated upon removal from transport bags, *before* centrifugation or distributing to laboratory departments. Culture set-up must take place in the laminar flow hood in the Microbiology department; and work with any culture suspicious for Neisseria meningitidis, regardless of source, must be performed in the laminar flow hood. Culture plates from suspicious sources or containing suspicious colonies are to be taped shut when not in the laminar flow hood.
- To prevent possible contamination of another specimen container resulting from re-use, any bag that has contained a CSF specimen must be discarded.

13. Any and all containers with attached suction tubing, syringes, or other containers with closures that are not secure, are to be transported and delivered to laboratory departments in secondary containers such as zip-closure specimen transport bags.

- The specimen must be transferred to a clean container with a secure closure before sending to a reference laboratory. NOTE: A container that does not have a secure closure cannot be sent to a reference laboratory; the specimen *must* be transferred to a container with a secure closure before sending.
- Tubing on mucus traps (suction containers) should be secured against straightening before the lid is removed; this tubing loosens from the lid readily and tends to straighten abruptly, rapidly expelling any specimen remaining in the tubing.
- Proper barrier precautions and PPE must be used when handling these specimens; barrier precautions must protect both the person handling the specimen and anyone present to the sides and opposite that work station.
- To prevent possible contamination of another specimen container resulting from re-use, the bag that contained the specimen must be discarded--the bag may be used for storage of the specimen, then discarded with the specimen.

14. Zip-closure plastic bags used as secondary containers for the transport of specimens for laboratory analysis may be re-used by laboratory personnel only if they are known not to be contaminated, such as the outer bag from double-

bagged specimens transported through the pneumatic tube system. These bags should not be re-used by non-laboratory departments (such as nursing floors and doctors' offices). Bags that have been in contact with specimen containers that are to be handled as if contaminated on the outside (respiratory, fecal, and CSF specimens) must not be re-used other than for storage and disposal of those specimens.

GUIDELINES FOR SPECIMEN HANDLING DURING TRANSPORT WITHIN THE FACILITY

1. Specimens for laboratory analysis are to be collected and labeled as specified in the UVMC Laboratory Services Manual.
2. Lids of all specimen containers must be closed carefully, ensuring a secure fit to minimize leakage. If the specimen could puncture the primary container, the primary container must be placed within a secondary container that is puncture-resistant.
3. The specimen container must be placed inside the zippered compartment of a specimen transport bag bearing the biohazard symbol, and the bag sealed securely.
4. All applicable specimen routing slips, transport lists, or written orders are to be placed in the outside pocket of the specimen transport bag. **Do not place paperwork of any kind inside the zippered compartment with the specimen container**, unless required for chain of custody purposes, as this increases the possibility of contamination.*
5. The bagged specimen is then transported to the laboratory.
6. **Specimens transported through the pneumatic tube system must be double-bagged.** The outer bag may be re-used by laboratory personnel if it is known not to be contaminated; the bag containing the specimen should be discarded to prevent possible contamination of another specimen container resulting from re-use.
7. **Specimens contained in syringes, or in other containers whose closures cannot be secured, must never be transported through the pneumatic tube system, as abrupt motion of the carrier is likely to cause leaking or loss of the specimen.**
8. **Irretrievable specimens are never to be transported through the pneumatic tube system.**

*Any paperwork, barcode labels, etc., which have been placed inside the zippered compartment with any specimen container that is to be handled as if contaminated on the outside, are to be considered contaminated and handledaccording to UVMC "Contaminated Documents" policies. (Barcode labels can be reprinted; other paperwork can be inserted in a page protector and copied before discarding, with the copy dated and initialed; original chain of custody paperwork must be retained, and can be kept in a page protector marked "contaminated.")

GUIDELINES FOR SPECIMEN HANDLING DURING TRANSPORT TO AND FROM VARIOUS UVMC FACILITIES

1. Specimens for laboratory analysis are to be collected, labeled, and processed as specified in the UVMC Laboratory Services Manual. *Please confirm specific instructions and storage requirements before processing and transporting specimens, for each test that is being collected, in order to ensure specimen stability.*
2. Lids of all specimen containers must be closed carefully, ensuring a secure fit to minimize leakage. Lids that could loosen easily during transport due to vibration or movement should be secured with parafilm or tape, taking care to avoid applying tape to the patient/specimen identification (label) area. If the specimen could puncture the primary container, the primary container must be placed within a secondary container that is puncture-resistant.
3. Refer to the Laboratory Services Manual under the test directory for each test that is being collected for specific instructions and storage requirements of the specimen to ensure specimen stability.**
4. All specimens should be packaged in zippered specimen transport bags bearing the biohazard symbol, sealed securely, and stored according to appropriate temperature and handling requirements**, to await pick-up by the lab courier.
5. Respiratory specimens such as sputums and nasal washings, stool specimens, and CSF, must be placed individually in separate bags for transport, not in the same bag with other specimens, unless with the same type specimens from the same patient.
   - Multiple specimens contained in a single bag dropped off by a patient may remain in that bag together provided they have the same storage/transport requirements.
   - Multiple vials of CSF from one patient should be placed into one bag; each vial must be properly labeled.
6. All applicable specimen routing slips, transport lists, or written orders are to be placed in the outside pocket of the specimen transport bag. **Do not place paperwork of any kind inside the zippered compartment with the specimen container**, as this increases the possibility of contamination.*
7. When transported off-site, sealed biohazard transport bags must be transported in a crush-resistant container with a positive closure, at the appropriate temperature for specimen stability**. Acceptable containers include: "Playmate" type coolers with latching lids, thermal beverage type containers with screw tops, and Styrofoam containers with

secure closures. Each approved container must be clearly labeled to indicate contents ("Patient Specimens" or "Biological Substances, Category B).

- When transported by a local contract courier (lab courier), a sealable secondary container (such as a sealed biohazard transport bag) is required; either the specimen container or the secondary container must be labeled with the international biohazard symbol, and the secondary container must contain absorbent material in a quantity sufficient to absorb any and all liquid specimens being transported, in case of leakage.*** The outer container may not contain more than a total of 4 liters of liquid specimens or 4 kilograms of solid specimens. No single specimen container may contain more than 1 liter of liquid.
- When transported by persons other than couriers (laboratory, nursing, or security personnel, for example), a sealable secondary container is optional; the specimen container, secondary container, or the outer container must be labeled with the international biohazard symbol. The outer container must contain absorbent material in a quantity sufficient to absorb any and all liquid specimens being transported, in case of leakage,*** and must be secured against movement in the vehicle.

(GUIDELINES FOR SPECIMEN HANDLING DURING TRANSPORT TO AND FROM VARIOUS UVMC FACILITIES, cont'd)

8. All laboratory personnel who package specimens to be transported must satisfactorily complete training and be certified in the specific requirements set forth by the U.S. Public Health Service, the U.S. International Air Transport Association (IATA), the U.S. Department of Transportation (DOT), and the U.S. Postal Service. These requirements apply to domestic transportation by land, air or sea, and to international air transportation. Training and certification are required by CAP every 2 years.

*Any paperwork, barcode labels, etc., which have been placed inside the zippered compartment with any specimen container that is to be handled as if contaminated on the outside, are to be considered contaminated and handled according to UVMC "Contaminated Documents" policies. (Barcode labels can be reprinted; other paperwork can be inserted in a page protector and copied before discarding, with the copy dated and initialed; original chain of custody paperwork must be retained, and can be kept in a page protector marked "contaminated.") ** Special temperature and handling requirements are listed in the Laboratory Services Manual test directory; please confirm requirements *before* processing and transporting specimens.

***The absorbent material should be placed in the bottom of the container in order to promote absorption of any leaking specimens(s). Contaminated absorbent material must be replaced and the transport container decontaminated as soon as feasible after the occurrence of any leaks.

GUIDELINES TO BE FOLLOWED AT DESTINATION FACILITY

1. Specimens are to be checked for integrity and appropriate labeling upon arrival at the testing facility and any necessary corrective measures taken immediately.
2. Any respiratory, fecal, gastro-intestinal, or CSF specimen that may have leaked is to be handled only in the laminar flow hood in the Microbiology department, utilizing appropriate personal protective equipment, until the container has been decontaminated.
3. Paperwork is to be processed as needed and specimens distributed to the appropriate departments according to the "Guidelines For Handling of Biological Specimens."
4. To avoid contamination of paperwork, barcode labels or other documents should not be placed in a "bucket" or basin with specimens that may leak, and should never be placed in the zippered compartment of a transport bag with a specimen unless required for chain of custody purposes.*
5. Specimen containers that are to be handled as if they are contaminated on the outside should not come in direct contact with any paperwork unless they have been decontaminated.* (see "General Guidelines for - Handling of Biological Specimens," above).

*Any paperwork, barcode labels, etc., which have been placed inside the zippered compartment with any specimen container that is to be handled as if contaminated on the outside, are to be considered contaminated and handled according to UVMC "Contaminated Documents" policies. (Barcode labels can be reprinted; other paperwork can be inserted in a page protector and copied before discading, with the copy dated and initialed; original chain of custody paperwork must be retained, and can be kept in a page protector marked "contaminated.")

## STORAGE

1. All specimens must be securely closed or covered during storage.
2. To avoid contamination of paperwork, barcode labels or other documents should not be placed in a "bucket" or basin with specimens that may leak, and should never be placed in the zippered compartment of a transport bag with a specimen unless required for chain of custody purposes.*
3. Bronchopulmonary washings, nasal washings, sputum, fecal (stool) specimens, colon or duodenal washings or aspirates, and cerebrospinal fluid specimens are to be stored in zippered bags in addition to being closed securely. Multiple specimens may be stored in the same bag.
4. Refrigerators and freezers used for storage of biological specimens, controls, and/or reagents are clearly marked and are not used for storage of food.
5. Blood bank refrigerators and freezers are used for storage of blood bank specimens, reagents and products, and for Platelet Function Analyzer test cartridges; and are not used for storage of food or other items.

*Any paperwork, barcode labels, etc., which have been placed inside the zippered compartment with any specimen container that is to be handled as if contaminated on the outside, are to be considered contaminated and handled according to UVMC "Contaminated Documents" policies. (Barcode labels can be reprinted; other paperwork can be inserted in a page protector and copied before discading, with the copy dated and initialed; original chain of custody paperwork must be retained, and can be kept in a page protector marked "contaminated.")

## REFERENCES


OSHA Standard 29 CFR Part 1920.1030, "Occupational Exposure to Bloodborne Pathogens."
DOT Standard 49CFR 178, Specifications for Packagings
DOT Standard 49CFR 173.196, Infectious Substances (etiologic agents)
DOT Standard 49CFR 173.199, Diagnostic specimens and used health care products
NCCLS document H5-A3, "Procedures for the Handling and Transport of Diagnostic Specimens and Etiologic Agents—Third Edition; Approved Standard.
NCCLS M29-A2, Protection of Laboratory Workers from Instrument Biohazards and Infectious Disease Transmitted by Blood, Body Fluids, and Tissue; Approved Guideline (second edition)
AABB Technical Manual, 15th edition, 2005.
College of American Pathologists (CAP)Laboratory Accreditation Program, "Laboratory General Checklist," GEN.40522.


Revised procedure prepared by /S/ T. Saunders date 09/25/2009 supersedes procedure written 6/30/2004

UPPER VALLEY MEDICAL CENTER
CLINICAL LABORATORY
North Dixie Highway
Troy, Ohio 45373

# CRITERIA FOR REJECTION OF SPECIMENS

## PRINCIPLE:

It is important for the quality of results that all specimens received in the laboratory meet the requested test's specific specimen requirements and the laboratory's identification standards. It is not the intent of this laboratory to cause inconvenience to the patient, and every effort will be made to correct the problem without affecting patient care and satisfaction. A signed order from the physician is required for all tests.

Any deviation from this policy may only be made at the discretion of the medical director, laboratory administrative director, or in their absence, a laboratory supervisor.

If collections from an Outpatient/Outreach/Dr. Office location need to be rejected and recollected, refer to the Outreach/Outpatient Follow-up On Rejected Specimens or Tests That Need Redrawn procedure for instructions.

## PROCEDURE FOR REJECTING SPECIMENS DUE TO LABELING ISSUES:

- For purposes of determining if a specimen should be rejected due to labeling issues, the different specimen types, (i.e. retrievable, irretrievable, those collected by non-UVMC personnel) need to be considered. See below for rejection guidelines for different sample types.
- A problem log must be generated for all unusual identification issues, and all mislabeled specimens. If the test is cancelled before being received, a problem log must be generated. If there are any unusual circumstances associated with a cancellation, a problem log must be written. Tests
  cancelled on doctor's office collections or OPT collections need a problem log for documentation and follow-up.
- A problem log is not necessary for unlabeled, clotted or hemolyzed specimens, as long as the accession is received with the correct collector ID, and then cancelled as "unlabeled, clotted, etc" and the patient is not an outpatient/doctor's office collection.
- If the specimen arrives on an off-shift when the collecting personnel cannot be contacted (i.e., physician office that is closed) and specimen stability is an issue, run the tests and hold the results until clarification is received.

SPECIMEN IDENTIFICATION

**Two patient identifiers are to be used at the bedside when collecting specimens. Name and date of birth are those acceptable identifiers at UVMC.**

For every specimen that is hand labeled, (ie., not labeled with a Cerner barcode label) the following information must be on the label. If not, refer to the subsection below for different specimen types for direction on how to handle the rejection.

- First and last name of patient
- Date of birth is the first choice as a second form of patient identifier. Medical record number is acceptable if using a pre-printed barcode label.
- Date/Time specimen was collected
- Initials of person collecting specimen, if not a UVMC employee. All UVMC employees must use their Cerner ID.
- Blood Bank specimens drawn for purposes of cross matching and potential transfusion of blood products must have the unique Blood Bank identification number on them. This same unique number must be attached to the patient in the form of a blood bank armband.

RETRIEVABLE SPECIMENS

No retrievable specimen collected by UVMC staff will be accepted if any of the information defined above under the Specimen Identification guidelines is missing on the specimen label. Missing information, such as collector ID or time, must be obtained before processing the specimen. Any unlabeled specimen will be rejected and must be recollected. Any specimen that is received only partially labeled (must have patient's name at the minimum) will not be received until all information is complete.

In the event that patient care will be compromised, or the sample in question is STAT, consult with a Supervisor, Administrative Laboratory Director or Medical Laboratory Director for guidance. Special circumstances may require the specimen to be processed prior to having non-identifying information missing from the label.

Any specimen that is mislabeled will be rejected and the accessions will be cancelled with the correct cancellation code, if the mistake is discovered before test results are released. Problem logs **must** be written for any mislabeled specimens, whether results have been released or not.

See the section marked Incorrect Orders below for instructions on how to handle order discrepancies.

## B. DRUG SCREENING SPECIMENS

Due to the confidentiality issue for this test, no name is required. However there must be a unique identifying number on the container. The person responsible for collecting the specimen may come to the lab and fill in the additional information if that employee is able to verify, without a doubt, that the information is correct. Once all information is on the specimen label, the specimen can be received. If the collector is unavailable for

a period of time and a delay would cause a specimen integrity issue or a significant delay in test results, the specimen should be run with the results not being put into the computer until the issue can be resolved.

## C. IRRETRIEVABLE SPECIMENS

An exception to labeling requirements will be made if dealing with irretrievable specimens, such as surgical specimens, CSF specimens and Pre and Post-Dialysis specimens. In the event that we receive an unlabeled or mislabeled irretrievable specimen, the person collecting the specimen will be contacted. Every attempt will be made to make a positive identification of the specimen in question. The laboratory medical director or the laboratory administrative director must approve rejection of an irretrievable specimen. The medical director, lab administrative director, or a UVMC lab supervisor must verify approval for acceptance of these specimens. A disclaimer will then be attached to the report stating the specimen was received unlabeled or mislabeled. The disclaimer will be added to the test result under Result Comments, in order to be visible to the clinician. The disclaimer forms for documentation of the information are located in the Registration room and in the processing department.

## D. SPECIMENS COLLECTED BY NON-UVMC PERSONNEL

Unlabeled specimens collected by non-UVMC personnel, (i.e., doctor's offices or nursing homes) will be accepted if the collector can positively identify them. A disclaimer will be added to the test result under Result Comments stating that the specimen was received unlabeled and was identified by the collector. The registration/processor handling the specimen will attach the disclaimer slip listing all the relevant information to the specimen barcode so that the resulting technologist can enter the information into Result Comments. If the specimen arrives on an off-shift when the collecting personnel cannot be contacted (i.e., physician office that is closed) and specimen stability is an issue, run the tests and hold the results until clarification is received.

Mislabeled specimens that are collected by non-UVMC personnel will need to be reviewed on a case-by-case basis. Most would be cancelled and recollected, but if extenuating circumstances exist, discuss the issue with the laboratory medical or administrative director. In the event of their absence, a department supervisor can be consulted. Any tests resulted from a mislabeled or unlabeled specimen must have a disclaimer added to the test result under Result Comments. If stability is an issue, tests may be run and results held until approval is obtained.

# PROCEDURE FOR REJECTION OF SPECIMENS DUE TO REASONS OTHER THAN IDENTIFICATION ERRORS

## A. DATA INFORMATION

- If the test requisition does not have all the required information (i.e. source, test(s) requested), the results will not be released until this information is obtained.

## B. SPECIMEN CONTAINER

- If the specimen container is not appropriate for the test (s) ordered (i.e. anticoagulant), the specimen will be rejected and a new specimen must be obtained.

- If a specimen is received broken or has leaked in transit, and it is a retrievable specimen, the specimen will be rejected. If an irretrievable specimen has leaked in transit, consult the laboratory medical director or administrative director, or in their absence, a department supervisor for guidance on how to handle the specimen.

## C. SPECIMEN CONDITION

- If incorrect specimen material is submitted, the specimen will be rejected and a new specimen will need to be obtained.

- If a line draw specimen yields questionable results, the redraw to check the specimen should be via venipuncture, if possible.

- If improper preservative or fixative has been used, the specimen will be rejected and a correct specimen must be collected.

- If the specimen has been improperly stored during storage or transportation or the specimen exceeds it's stability requirement, the specimen will be rejected and a new specimen must be collected unless there are special circumstances involved. Consult the Medical Director or Administrative Director for guidance on releasing test with a disclaimer under special circumstances.

## D. SPECIMEN REJECTIONS THAT MUST BE APPROVED BY A TECHNOLOGIST

- Improperly centrifuging of specimens: Any specimen that appears to not have been spun down correctly from another facility, it must be the decision of the resulting technologist whether the specimen will be rejected and a new specimen collected. **DO NOT RE-SPIN** tubes without checking with technologist first.

- When a specimen is hemolyzed or lipemic and this condition is documented as causing inaccurate test results, it will be the decision of the resulting technologist whether the specimen will be rejected and a new specimen collected.
- When a specimen quantity is insufficient for proper performance of procedure (see lab services manual for minimum requirements), it will be the decision of the resulting technologist whether the specimen will be rejected and a new specimen collected.

- When specimen integrity issues are in question, it will be the decision of the resulting technologist whether the specimen will be rejected and a new specimen collected.

## E. INCORRECT ORDERS

- If the orders do not match the specimen label, and it is determined that the specimen is labeled with the correct patient's name but the order was in error, the tests should not be received until clarification is made. If the specimen label is correct but the orders are wrong, new orders must be obtained before receiving the specimen.

- If the specimen arrives on an off-shift when the collecting personnel cannot be contacted (i.e., physician office that is closed) and specimen stability is an issue, run the tests and hold the results until clarification is received.

## F. SPECIMEN REJECTION PROCEDURES FOR SPECIFIC DEPARTMENTS

- Refer to Microbiology Department for specific specimen rejection procedure.
- Refer to Cerner Specimen Rejection procedure for the computer process of rejecting a specimen.

Refer to the Procedure for Laboratory Specimen Rejection for additional instructions on specimen rejection.

New Procedure prepared by Pam Rader date 9/6/96

Revised procedure prepared by SMW date 07/14/09, supercedes procedure written 11/14/08, 3/22/07, 5/08/06, 3/28/06, 2/27/06, 1/27/2003, 2/1/01, 11/6/98, 9/6/96

UPPER VALLEY MEDICAL CENTER
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# UVMC LABORATORY CRITICAL VALUES/TESTS

## MICROBIOLOGY CRITICAL VALUES

Positive CSF results (culture, gram stain, increased WBCs on stain, India Ink)

## HEMATOLOGY CRITICAL VALUES

| | | |
|---|---|---|
| D-Dimer | >1,000 ng/mL | |
| Hemoglobin | **Adults** | **Neonates** (Birth - 2 weeks) |
| | <6.5 g/dL | <8.5 g/dL or >24 g/dL |
| Platelets | <50 x $10^3$/uL or >999 x $10^3$/uL | |
| Protime | INR > 6.5 | |
| PTT | >100 seconds | |
| WBC | **Adults** | **Neonates** (Birth - 2 week) |
| | <2.0 x $10^3$/uL or >40.0 x $10^3$/uL | < 4.0 x $10^3$/uL or > 30.0 x $10^3$/uL |

## CHEMISTRY CRITICAL VALUES

| | | |
|---|---|---|
| Acetominophen | >120 ug/mL (4 hrs post) | |
| | >50 ug/mL (12 hrs post) | |
| Amylase | >1000 U/L | |
| Bilirubin, neonatal | >15.00 mg/dL | |
| Calcium | <6.0 mg/dL or >13.0 mg/dL | |
| Carbamazepine | >12.0 ug/mL | |
| Digoxin | >2.5 ng/mL | |
| Glucose(serum) | Adult | Pediatric |
| | <40 mg/dL | >40 mg/dL |
| | >450 mg/dL | >300 mg/dL |
| Ionized Calcium | $\leq$3.2 mg/dL or $\geq$ 6.2 mg/dL | |

| | | |
|---|---|---|
| Lactate | >24 mg/dL | |
| CHEMISTRY CRITICAL VALUES CONTINUE | | |
| Lithium | >1.5 mmol/L post 12 hour dose | |
| Magnesium | <1.0 mg/dL or >5.0 mg/dL | |
| Phenobarbital | >45.0 ug/mL | |
| Phenytoin | >30.0 ug/mL | |
| Phosphorous | <1.0 mg/dL | |
| Potassium | Adult | Newborn |
| | <2.9 mEq/L | <3.0 mEq/L |
| | >6.1 mEq/L | >7.0 mEq/L |
| Sodium | <125 mEq/L or >160 mEq/L | |
| Troponin I | >0.780 ng/mL | |
| Valproic Acid | >125 ug/mL | |

**SEND OUT CRITICAL VALUES-REFERENCE LAB**

Send out test results are defined as critical using the reference lab's critical values list. These results will be called directly to us and a copy of the results will be sent via fax. It is then our responsibility to inform the ordering physician using our normal critical result procedure. See attachment for list of send out criticals.

**SEND OUT-MANAGED CARE**

Quest Diagnostics will call us with any critical values on a managed care patient. It is then our responsibility to call the ordering physician using our normal calling critical result procedure.

Revised 12/23/08 by smw, supersedes policy written 12/21/2007 by Dr. Machicao, 1/11/99,11/17/99, 3/13/00, 4/11/00,7/19/00, 10/30/00, 1/28/03, 4/9/05, 4/5/06, 11/20/06,3/12/07

UPPER VALLEY MEDICAL CENTER CLINICAL LABORATORY
3130 N. DIXIE HWY
TROY, OH 45373

**UVMC REFERENCE LAB CRITICAL VALUES**

The following are UVMC critical values for reference work sent to Quest Diagnostics Laboratory.

| | |
|---|---|
| Malaria parasites or other organisms (Babesia, Ehrlichia, Trypanosomes etc.) | Positive for verified *Plasmodium falciparum* or unidentified "Plasmodium species" |
| *Bacillus anthracis,* culture, nucleic acid, or antigen test | Positive |
| Bacterial meningitis antigens, CSF | Positive |
| *Brucella sp*., culture, nucleic acid or antigen test | Positive |
| *Cryptococcus* antigen, serum or CSF | Positive |
| *Francisella tularensis*, culture, nucleic acid, or antigen test | Positive |
| Isolation and/or identification of an infectious agent that requires *immediate* Public Health notification | (Refer to Microbiology departmental procedure: Procedure for Communicable Diseases to Health Department for specific diseases and major public health concerns.) |
| *Yersinia pestis, culture, nucleic acid, or antigen test* | Positive |
| Amitriptyline + Nortriptyline total [mcg/L] | ≥ 1000 |
| Amobarbital [mg/L] | ≥ 20 |
| Butalbital [mg/L] | > 10 |
| Cadmium, Blood [mcg/L] | ≥ 30 |
| Caffeine [mg/L] | ≥ 50 |
| Carboxyhemoglobin [% of total Hgb] | ≥ 20 |
| Chlorpromazine [ng/ml] | ≥ 750 |
| Clomipramine and Metabolite, total (ng/ml) | ≥ 600 |
| Cyanide [mg/L] | ≥ 1.0 |
| Cyclosporine, as Trough [mcg/L] | ≥ 600 |

| | |
|---|---|
| Desipramine [mcg/L] | ≥ 600 |
| Diazepam and Nordiazepam, total [mg/L] | ≥ 3.0 |
| Digitoxin [mcg/L] | ≥ 45 |
| Disopyramide [mg/L] | ≥ 7.0 |
| Doxepin + Nordoxepin, total [mcg/L] | ≥ 600 |
| Ethosuximide [mg/L] | ≥ 150 |
| Ethylene glycol [mg/L] | ≥ 100 |
| Flecainide [mg/L] | ≥ 1.0 |
| Fluphenazine [mcg/L] | ≥ 50 |
| Ibuprofen [mg/L] | ≥ 100 |
| Imipramine or Desipramine, total [mcg/L] | ≥ 600 |
| Isopropanol [mg/dL] | ≥50 |
| Lead, blood [mcg/dL] | ≥ 45 for < 6 years |
| Lidocaine [mg/L] | ≥ 6 |
| Mercury, Urine, 24 hr [mcg/L] | ≥ 150 |
| Mercury, Urine, Random [mcg/g creatinine] | ≥ 150 |
| Methanol [mg/dL] | ≥ 5 |
| Methemoglobin [% of total Hgb] | ≥ 70 |
| Methotrexate *at 24 h* [µmol/L] | ≥ 5 |
| Mexiletine [mg/L] | ≥ 5 |
| Methsuximide, as Normethsuximide [mg/L] | > 40 |
| Nortriptyline [mcg/L] | ≥500 |
| Phenytoin, free [mg/L] | > 3.0 |
| Primidone [mg/L] | > 15.0 |
| Procainamide [mg/L] | ≥14.0 |
| Procainamide + NAPA total [mg/L] | > 30.0 |
| Protriptyline [mcg/L] | > 500 |
| Propafenone [mg/L] | > 2.0 |
| Quinidine [mg/L] | ≥ 10 |
| Thallium, Blood [mcg/L] | ≥ 80 |
| Thallium, Urine, 24 hr [mcg/L] | ≥ 200 |

New procedure written 12/14/06
Revised 7/20/09, supercedes revised procedure written 1/15/08.

UPPER VALLEY MEDICAL CENTER
CLINICAL LABORATORY
North Dixie Highway
Troy, Ohio 45373

# PROCEDURE FOR CALLING LAB RESULTS

## PURPOSE:

To provide continuity of patient care, insuring timely communication of significant results to the physician.

## GENERAL POLICY:

Most of our UVMC medical staff offices are linked to our Cerner computer system. Those physicians/msp (Medical Services Practitioner) that are linked have their reports sent to them via either printer or fax. There is a comprehensive list located in the laboratory secretary's office and on the desktop computers named Physician, Phone & Fax icon. The procedure below will address these outpatient physicians. In all cases, if an outpatient's physician is not linked to our computer, all STAT results need to be manually called or faxed and documented as such. The manual expedite tool within Order Result Viewer allows the processing staff to enter the miscellaneous physician's fax number for all appropriate accession numbers and mark them to generate a report that will print at the time the technologist verifies the results. Refer to **Manually Created Expedite Reports Created upon Authentication of Results** procedure for questions/additional information.

**1. STATS:** All STAT orders are to take priority over everything else.

Inpatient and outpatient results will print automatically on the nursing station or physician office fax or printer (if linked) upon release of the results into the computer system (CERNER). All outpatient results must be called immediately upon release. Document in Order Notes or Result Notes who was contacted and what time they were contacted. Whenever possible, when contacting the physician office, make sure they are aware of the results printing and refer them to the printed report versus manually giving results over the phone. This decreases the risk of a clerical error. These results do **NOT** need to be called for inpatients, except in two instances:

1. The first exception is when the computer system (Cerner or AS400) is down. At this time, the results need to be faxed or called to the nursing stations as soon as the results are completed. When the computer systems (s) comes back up, the date/time called, person called to, and the tech that called the results must be documented.

2. The second exception is if the STAT result is critical, the nursing station or physician/msp should be called immediately to inform them of the critical. Refer below to Critical results.

If you have to manually call or fax a result, the date/time, person called to and called by are to be documented in the computer in Result Notes or Order Notes.

**ASAP AND TIMED:**

ASAP and Timed orders are to take priority after STAT testing. The expected turn around time is no longer than 2 hours. ASAP results print automatically to inpatient locations. Outpatient Testing will only use the order priority of ASAP when ordering blood work on organ transplant patients who need their test results by 2:00pm. It is not necessary for techs to call the physicians/msp office to report that ASAP testing is complete.

Distribution printing of completed Outpatient reports will be increased to every three hours between 7:00 and 19:30. Timed results print automatically to the floors.

**CRITICAL RESULTS:**

Technologists should be aware of the critical values found listed elsewhere in the department procedure manual. All critical values should be called immediately not exceeding 10 minutes. With all verbal notification of critical test results, the person receiving the information must write it down or have the hard copy report available. They must read back the result to the reporting tech. This will be documented in Result Notes or Order Notes using the F2 template CR (Critical Results) and filling in all required information.

Inpatient results: Call the nursing station immediately. Critical inpatient test results can only be given to an RN or physician/msp. The date/time called, person called to, called by and read back of all criticals should be documented in the computer, using the F2 template of "CR". If multiple criticals exist on one accession number, document what was called in one of the Result Note fields. (For example, a patient has a critical BUN, K+, and Na. Under one result note, document "BUN, K+ and Na called" along with the date, time, caregiver's name, etc.)

Outpatient results (including outreach facilities): The critical result should be called to the physician/msp or physician's office immediately not to exceed 10 minutes upon discovery. If unable to reach the physician/msp immediately, document the date/time you paged the physician/msp and your initials under result notes and release the results. After the physician/msp has returned the page, document all information by using the CR template in Order Notes. See above under Inpatient results for documenting more than one critical per accession number.

Nursing Homes, Dettmer, Home Health or Hospice results: If the critical result that needs to be called involves a resident of a nursing home or Dettmer Hospital, call the nursing station where the patient is located. If unable to reach the nursing station at Dettmer or the Nursing Home immediately, not to exceed 10 minutes, document the date/time of the first call and your initials under result notes, and release the results, if able. Continue attempting to reach them until successful. Document all subsequent calls in Order Notes if the test is already released, or in Result Notes if not released. Once the result has been given to the caregiver, finish the documentation of date/time, called to, called and read back by (using the "CR" template) of all critical results in the computer under Order Notes if the test is released or Result Notes if not already released.

If the patient is a Home Health or Hospice patient, call the Home Health or Hospice office. If the office is closed, call the UVMC operator who will page the on-call nurse for that location. When paging, tell the operator this is a STAT page for a critical result. The critical result should be called immediately not to exceed 10 minutes upon discovery. If not able to reach Hospice or Home Health

immediately, not to exceed 10 minutes, document the date, time you paged the on-call RN for Home Health or Hospice and your initials under result notes and release the results. If the RN has not called back within 30 minutes, repage them through the UVMC operator. Continue to page until successful. Once the result has been given to the RN, you will need to go back and document the date/time, called to, called by and read back (using the "CR" template) of all criticals in the computer in Order Notes or Result Notes.

**CRITICAL REVIEW:**

Critical review Exception Report will print automatically from Cerner to include these time intervals: 3rd shift: 21:00 to 03:00, 1st shift: 03:01 to 13:00, and 2nd shift: 13:01 to 21:00. Actual auto print times
on the Chemistry Printer will be approximately 3:30 am, 13:30 pm & 21:30 pm. The Chemistry Techs on each shift are responsible to review the report and to call any critical results that were not called upon release, documenting time called and to whom in Cerner in Order Notes. Then document on check off list in Chemistry, initial printouts and place them in designated space in Chemistry.

**CALLING PROCEDURE FOR OUTPATIENT CRITICAL RESULTS:**

When calling an outpatient's critical results to the physician, use the following options for locating the physician:

A. If the physician/msp has given a telephone number where he/she may be reached, dial that number first. Otherwise call the physician office during normal business hours.
B. Attempt to contact the physician/msp by pager through the UVMC operator. Make sure you tell the operator to page the physician/msp **stat**. If the operator does not get a response back from the physician/msp, and they have used all available methods of contact, they will inform the original person requesting the page that the physician/msp has not called back. Proceed to step C and/or D.
C. If the physician/msp does not call back in a timely manner, inform the immediate supervisor, and/or the Laboratory Administrative Director or Laboratory Medical Director.
D. The Laboratory Medical Director or designee should contact the section chief through the UVMC operator.

**FOR NON-UVMC PHYSICIANS:**

Call the number provided, or the one we have on record. If the physician/msp cannot be located by page within 30 minutes, contact the pathologist on call. If needed, the pathologist will contact the patient advising him/her to go to the ED. The pathologist may designate a tech/supervisor to contact the patient in their place. If the patient or physician/msp can't be reached immediately, continue to attempt to reach both until you are successful. After the patient is contacted, the critical result will still need to be called to the ordering physician/msp during normal office hours. This may include several shifts. A problem log and occurrence monitor must then be generated by the tech that attempted the calls.

**NOTE: Critical values MUST be called to a caregiver. Never leave a critical uncalled.**

After successfully calling the results to the physician document date/time, called to, called by, and read back of all criticals in the computer under Result Notes or Order Notes.

**NOTE: Critical test results may not be left on an answering machine! Messages regarding critical results should not be left on an answering machine, either! Follow the process for paging a caregiver**

Revised procedure prepared by sab/smw 1/31/08, supersedes revision on 9/14/06, supersedes revisions 5/8/06, 2/6/06 and 10/11/05, supersedes procedure by pjr 4/5/04, also 1/29/03, 1/12/99, 9/9/96.

# UVMC Instructions for Laboratory Specimen Collections

## 24 Hour Urine Specimen Collection

1. Obtain 24-hour urine specimen container from the laboratory.

   **Note: Different tests require different preservatives. Be sure to notify the laboratory of all tests that are to be collected for this specimen.**

2. Label the patient container.
3. Instruct the patient to empty bladder and discard specimen before beginning collection in the morning. If the patient is catheterized, the bag should be emptied before beginning the timing of the collection.
4. Save all urine for the next 24 hours including the next morning specimen in the laboratory container provided. Do not include stool (fecal matter) or toilet paper in the container.
5. Store the container on ice or in the refrigerator.
6. Submit to the laboratory along with the HIS routing slips for all tests ordered within one hour of the end of specimen collection.

## Urine for Culture/Urinalysis /Cytology -Mid stream / clean catch

**Note: For CYTOLOGY specimens, early morning specimens are preferred.**

1. Instruct patient to wash hands thoroughly and to cleanse the penis or vulva with down strokes using moistened cleansing towelettes.
2. Instruct patient to hold the container on the outside to collect the urine and not to touch the inside of the lid or container.
3. Patient should begin to urinate directly into the toilet or bedpan, stop urinating, position container, and collect a midstream specimen.
4. Screw cap securely on container.
5. Label the container and submit to the laboratory along with the HIS routing slips or requisition. The urine must be processed in the laboratory OR refrigerated within one hour of collection.

Note: **For infants and young children** -clean as above and attach a pediatric collection device. When the specimen has been collected, place in a sterile container and handle as directed above.

## Collection of Sputum for Culture and/or Cytology

An early morning specimen is the most productive for testing of this specimen. Sputum must result from a deep chest cough. Saliva is not acceptable- the specimen should be collected in a clean, sterile container Label the container and submit to the laboratory along with the HIS routing slips or requisitions for all tests ordered within one hour of collection.

## Glucose Tolerance Testing - Please schedule with Central Scheduling.

Patient should be fasting between 8 to 12 hours prior to testing (unless the physician advised differently).

Please contact either out-pt testing or UVMC lab for any questions about your specimen collection requirements.

**UVMC Lab- 440-4625**
**UVMC Out-Pt Testing 440-4568**

Procedure updated 10/21/09 tmc

UPPERVALLEY MEDICAL CENTER
CLINICAL LABORATORY
North Dixie Highway
Troy, Ohio 45373

# UVMC Instructions for Stool Collection by Outpatients

Your physician has requested collection of stool for testing. It is important that care be used in the collection of these specimens so that the test results are accurate. These written instructions are intended to reinforce or supplement the verbal instructions you were given by your physician's office or the Outpatient Testing Dept. at UVMC.

If you have questions regarding the collection of these samples, please call Outpatient testing at 440-4568, Monday thru Friday 6:30 am to 6:00pm, or on Saturday 07:00 am to 12:00 pm. You may call the laboratory, 440-4645, at anytime.

Please note that you will need to go through the registration process when bringing the specimens to the hospital for testing.

**Note: Warning on container labels that the fluids in these containers are harmful if swallowed and should not be ingested.

If you cannot fill all the required containers from one stool collection, it is acceptable to add stool from another collection if it is within the same day as the first sample.

## Collection of Stool for Culture (Orange Cap Container)

Directions for placing the stool sample into the preservative must be followed carefully. Stool samples for culture testing must be put into preservative solutions within 1 hour of collection.

1. Collect the specimen in the clean over-the-toilet container that you were given by your doctor or Outpatient Testing Services. Do not contaminate the container with urine.
2. Transfer enough stool specimen into the orange cap container to raise the level of the liquid to the red line. Do this slowly and in small increments, if possible, to avoid overfilling the container. DO NOT ADD AN EXCESSIVE AMOUNT OF SPECIMEN, WHICH CAN CAUSE THE LIQUID TO GO OVER THE RED LINE.

   **Overfilling or under-filling will be reason for rejection of the specimen and recollection will be necessary.**
3. Recap the container tightly, and label it with your name and the date & time of collection. Note the consistency of the stool on the side of the container. This container should not be refrigerated. Bring it to UVMC as soon as possible, no longer than 96 hours after collection. The specimen can also be dropped of at one of the outreach facilities, Hyatt, Stanfield, Medical Services North and Medical Services South as long as time permits.

## Collection of Stool for O&P (Pink and Gray Cap Containers)

Directions for placing the stool sample into the preservative vials must be followed carefully. Stool samples for ova/parasite testing must be put into preservative solutions within 1 hour of collection.

1. Collect the specimen in the clean over-the-toilet container that you were given by your doctor or Outpatient Testing Services. Do not contaminate the container with urine.
2. Transfer enough stool specimen into the pink and gray-capped containers to raise the level of the liquid to the red line. Do this slowly and in small increments, if possible, to avoid overfilling the container. DO NOT ADD AN EXCESSIVE AMOUNT OF STOOL SPECIMEN, WHICH CAN CAUSE THE LIQUID TO GO OVER THE RED LINE.

   **Overfilling or under-filling will be reason for rejection of the specimen and recollection will be necessary.**
3. Recap both containers tightly and label with your name and time & date of collection.
4. Note the consistency of the stool specimen on the labels of pink and gray-capped containers. If the specimen is liquid or loose, a portion of unpreserved stool is also requested, but not required. Keep all containers at room temperature. The stool in the pink and gray-capped containers is stable for 14 days. The specimen can be returned to the outpatient department at UVMC or to one of the outreach facilities (Hyatt, Stanfield, Medical Services North or Medical Services South).

**Collection of Stool for Clostridium Difficile (White capped container with no liquid inside)**

1. Collect the specimen in the clean over-the-toilet container that you were given by your doctor or Outpatient Testing Services. Do not contaminate the container with urine.
2. Transfer the stool specimen into the white-capped container. This container should not have a preservative in it.
3. Recap the container and label with your name and date/time of collection.
4. Refrigerate this container. Transport to the hospital within 24 hours for testing.

**Collection of Stool for Occult blood**

Follow directions from your physician regarding drug or diet restrictions.

Diet and Drug Guidelines: Eat a well balanced diet including fiber such as bran cereals, fruits and vegetables. For three days before and during stool collection period, avoid red meats (beef, lamb and liver). For seven days before and during the stool collection period, avoid non-steroidal anti inflammatory drugs such as ibuprofen (Motrin, Advil), naproxen or aspirin (more than one adult aspirin a day). Acetominophen (Tylenol ) can be taken as needed. For three days before and during stool collection period, avoid Vitamin C in excess of 250 mg a day from supplements, and citrus fruits and juices.

Collecting the stool sample: For accurate test results, collect each stool sample before contact with the toilet bowl water. You may use any clean, dry container. Do not collect sample if blood is visible in your stool or urine (e.g. menstruation, active hemorrhoids, urinary tract infection). Patients using the Hemoccult II screening test should collect stool specimens from bowel movements on three different days. Samples should be collected from two different sections of each fecal specimen.

Using the Hemoccult Card: Label the front of the card with your name, date of birth and date and time of sample collection. Using the applicator provided, collect small fecal sample. Open the front of the card (the side to be filled out with your name). Apply a thin smear covering Box A. Reuse applicator to obtain a second sample from a different part of the stool. Apply thin smear covering Box B. Close cover flap. Dispose of applicator in waste container.

Return the completed card to the UVMC outpatient testing department or one of the outreach facilities (Hyatt, Stanfield, Medical Services North and Medical Services South. Testing should be completed no later than 14 days after the first sample collection.

**Collection of Stool for Rotavirus Antigen (White capped container with no liquid inside)**

1. Collect the specimen in the clean over-the-toilet container that you were given by your doctor or Outpatient Testing Services. Do not contaminate the container with urine. If the collection is done on a

diaper wearing child, the diaper can be lined with plastic wrap to prevent absorption of the stool into the diaper. Be certain not to contaminate the stool with urine.

2. Transfer a small amount (approximately a teaspoon) of the stool specimen into the white-capped container. This container should not have a preservative in it.
3. Recap the container and label with your name and date/time of collection.
4. Refrigerate this container. Transport to the hospital within 24 hours for testing.

**Collection of Stool for WBC (White Blood Cells) (White capped container with no liquid inside)**

1. Collect the specimen in the clean over-the-toilet container that you were given by your doctor or Outpatient Testing Services. Do not contaminate the container with urine.
2. Transfer a small amount (approximately a teaspoon) of the stool specimen into the white-capped container. This container should not have a preservative in it.
3. Recap the container and label with your name and date/time of collection.
4. Refrigerate this container. Transport to the hospital within 24 hours for testing.

**Collection of Stool for Reducing Substances (White capped container with no liquid inside)**

1. Collect the specimen in the clean over-the-toilet container that you were given by your doctor or Outpatient Testing Services. Do not contaminate the container with urine. If the collection is done on a diaper wearing child, the diaper can be lined with plastic wrap to prevent absorption of the stool into the diaper. Be certain not to contaminate the stool with urine.
2. Transfer a small amount (approximately 1-2 teaspoons) of the stool specimen into the white-capped container. This container should not have a preservative in it.
3. Recap the container and label with your name and date/time of collection.
4. Refrigerate this container. Transport to the hospital within 24 hours for testing.

**Collection of Specimen for Pinworms (Pinworm collection kit)**

Because pinworms generally come out at night to deposit their eggs, specimens are best obtained a few hours after the patient has retired for the night, or in the morning before the patient has awakened. It is recommended that a special collection device available from the Laboratory be used. Warning: Discard any devices whose package is not intact.

Hold the device paddle by the cap and remove it from the tube. Separate the patient's buttocks and press the "sticky surface" of the paddle against several areas of the perianal (around the anus). Wash hands to prevent spread of infection.

Label the container with the patient's name, date of birth and the date and time collected.
Return specimen to the outpatient department at UVMC or to one of the outreach facilities (Hyatt, Stanfield, Medical Services North or Medical Services South).

In order for UVMC laboratory to provide quality results for our patients, we must reject samples that do not provide the optimum conditions for testing. We realize that recollection of samples are inconvenient for patients and delay getting results to physicians, but our first consideration is providing accuracy and value to our clients for each of the tests we perform.

Please contact UVMC outpatient testing (440-4568) or laboratory (440-4625) for any questions concerning specimen collection requirements.

Current revision 5/2/08 supersedes revision on 12/14/07, 7/25/04.

# SEMEN ANALYSIS INSTRUCTIONS AND COLLECTION DATA SHEET

UPPER VALLEY MEDICAL CENTER
CLINICAL LABORATORY
3130 North Dixie Highway
Troy, Ohio
937-440-4025

Instructions for the Collection of a Semen Analysis (Obtain a container from your doctor or Outpatient Testing)

This specimen must be brought directly to Upper Valley Medical Center Outpatient Testing between 6:30 am and 6:00 pm Monday through Friday; Saturday 7:00 am to 11:00 am.

1. Remain sexually inactive for 3 days before collection the specimen.
2. Collection containers may be glass or plastic, similar to those used for urine collection. They must be clean and free of chemical or soap residue.
3. The specimen should be obtained by masturbation without the aid of any lubricants, taking care to include the entire specimen; cap tightly. Interrupted intercourse and oral collections are not acceptable methods of collection because of bacterial contamination and pH changes. Lubricants and ordinary condoms may interfere with the sperm viability and must not be used. However, if your physician provides a semen collection kit, that special condom included in the kit may be used.
4. Label the container with the patient's name, date of birth, and date and time the specimen was collected. Keep the specimen as near to body temperature as possible and deliver to Upper Valley Medical Center Outpatient Testing within **30 minutes** of collection.

All items highlighted must be completed by the patient and accompany the specimen to the lab.

PATIENT NAME: _____

METHOD OF COLLECTION (circle):

Masturbation Other (specify): _____

TIME OF SPECIMEN COLLECTION: _____

TYPE OF SPECIMEN CONTAINER (circle):

Sterile urine cup Other (specify): _____

DAYS OF ABSTINENCE PRIOR TO COLLECTION: _____

COLLECTION OR TRANSPORT DIFFICULTIES (circle):

None
Incomplete specimen
Exposure to extreme temperature
Other (specify):

TIME OF SPECIMEN RECEIPT at lab: _____

## GUIDELINES FOR
## THERAPEUTIC DRUG MONITORING

Plasma drug concentrations are useful in the clinical setting to measure whether a sub-therapeutic, therapeutic, or toxic level has resulted from a particular dosage regimen. Interpretation of the result is based upon the premise that plasma drug levels reflect drug concentrations at the receptor site and therefore, can be correlated with a pharmacological response. It is essential to know when the drug regimen was initiated, the administration time of the most recent dose, and the time the plasma sample was obtained. For example, if a plasma sample is obtained before distribution of the drug into tissue is complete, the measured level may be higher than expected. Also, samples obtained prior to steady-state (4 to 5 times the half-life) may be different than expected. The purpose of the following information is to provide useful guidelines in assuring the optimal utilization of drug level analysis based on pharmacokinetic principles. The patient's current clinical status and response to therapy should always be considered when interpreting drug level results. Refer to the result report for corresponding therapeutic or reference ranges as quantitative results may vary slightly based on differences in reagent source, assay technology, or instrument calibration.

| GENERIC-<br>BRAND NAME<br>(HALF LIFE-hrs) | ROUTE | SUGGESTED SAMPLE TIMES | COMMENTS |
|---|---|---|---|
| Amikacin<br>AMIKIN<br>(1-7+) | IV | Trough: 15-30 minutes prior to infusion.<br>Peak: 15-30 minutes after dose infused.<br>Random: Anytime during dose interval. | Trough could be obtained just prior to dose administration. Peak will be affected by a short distribution phase. A pair of peak and trough levels should be obtained around the 3rd dose in most patients. Two random levels (usually 1-1.5 half-lives apart on the same dosage interval) can be drawn on a loading dose. Verify with the RN or MAR that dosing interval or administration time is as expected. Document exact draw times on pharmacokinetic dosing service records. |
| Acetaminophen<br>TYLENOL | PO | Trough: Immediately prior to next dose.<br>For toxicity: 4-12 hours after ingestion. | Suggest three serial levels, each 2-3 hours apart. |
| Aspirin<br>Salicylate<br>(5-10) | PO | Trough: Immediately prior to next dose.<br>For toxicity: ASAP and 6 hrs later. | Trough levels are most reproducible and should be obtained whenever possible. Levels obtained within one week of a dosage change should be viewed with caution. |
| Carbamazepine<br>TEGRETOL<br>(5-35) | PO | Trough: Immediately prior to next dose. | Levels obtained within the first few weeks of therapy may be useful to establish a relationship to clinical response. This data should be interpreted cautiously if attempting to predict long-term dose response relationship. Dosage adjustments should be made in small increments. |
| Cortisol | PO | AM: 8-9am<br>PM: 4-5pm | Dexamethasone Suppression Test--Administer 1 mg dexamethasone at 11pm evening prior to test. |
| Digoxin<br>LANOXIN<br>(28-48) | PO | >6 hours after dose or immediately prior to next dose. | Steady state levels can be obtained 7-14 days after instituting or changing a dose in patients with normal renal function. In the presence of renal insufficiency, the time to achieve steady state levels may be 3 weeks or more. (See note on co-administration of quinidine below) |
| | IV | > 4 hours after dose or immediately prior to next dose. | |
| Disopyramide<br>NORPACE | PO | Trough: Immediately prior to next dose. | Steady state levels should be obtained after 3-4 days of therapy. |
| Ethosuximide<br>ZARONTIN (60) | PO | Trough: Immediately prior to next dose. | Steady state levels should be obtained after 4-7 days of therapy in children, and even longer in adults. |
| Gentamycin<br>GARAMYCIN<br>(1-7+) | IV | Trough: 15-30 minutes prior to infusion.<br>Peak: 15-30 minutes after dose infused.<br>Random: Anytime during dose interval. | Trough could be obtained just prior to dose administration. Peak will be affected by a short distribution phase. A pair of peak and trough levels should be obtained around the 3rd dose in most patients. Two random levels (usually 1-1.5 half-lives apart on the same dosage interval) can be drawn on a loading dose. Verify with the RN or MAR that dosing interval or administration time is as expected. Document exact draw times on pharmacokinetic dosing service records. |
| | IM | Trough: 15 minutes before next dose.<br>Peak: 60 minutes after IM dose. | |
| Lidocaine<br>(1-5) | IV | 4-8 hours after start of therapy. | Levels obtained 4-8 hours after initiation or change in therapy, should approximate steady state concentrations. |
| Lithium<br>(14-30) | PO | Trough: Immediately prior to first morning dose and approximately 12 hours after last evening dose. | Steady state lithium levels should be obtained 3-5 days after initiation of therapy or change in dose. |

| GENERIC-BRAND NAME (HALF LIFE-hrs) | ROUTE | SUGGESTED SAMPLE TIMES | COMMENTS |
|---|---|---|---|
| Phenobarbital (80-100) | PO | Trough: Immediately prior to next dose or at least 12-18 hrs after dose.<br>Peak: 1-3 hrs after dose | Trough levels are preferred. Routine samples should be monitored 2 to 3 weeks after initiation or change in regimen. Plasma samples obtained before this time should be used either to determine whether an additional loading dose is needed or whether the maintenance dose should be withheld. |
| | IV | Trough: Immediately prior to next dose.<br>Peak: 30-60 minutes after dose. | |
| | IM | Trough: Immediately prior to next dose.<br>Peak: 3-6 hours after dose. | |
| Phenytoin DILANTIN (varies) | PO | Trough: Immediately prior to next dose.<br>Peak: (to confirm toxicity) can be obtained 3-9 hrs after dose. | Recommend obtaining trough sample for routine monitoring of efficacy. The time required to achieve a steady state can be prolonged (1-5 weeks). Plasma levels should be monitored prior to steady state to avoid under/over dosing. Levels prior to steady state must be used cautiously in designing new dosing regimens. |
| | IV/IM | Trough: Immediately prior to next dose.<br>Peak: (to confirm toxicity) can be obtained 2-4 hrs after dose. | |
| Primidone MYSOLINE (6-12) | PO | Trough: Immediately prior to next dose. | Trough levels preferred. Phenobarb is a metabolite of primidone and should be measured with primidone samples. An assessment of steady state can be obtained as follows: primidone: 50-60 hours; phenobarbital: 10-25 days. |
| Procainamide PRONESTYL (3) | PO | Trough: Immediately prior to next dose. | Trough levels are more reproducible. Also measure N-acetyl metabolite (NAPA). Steady state levels are achieved at approximately 24 hours. |
| Quinidine (4-7) | PO | Trough: Immediately prior to next dose. | Trough levels are more reproducible. Steady-state levels are achieved at approximately 24 hours. (See note on co-administration of digoxin below) |
| Theophylline Aminophylline (6-14)<br><br>THEODUR SLOBID UNIPHYL | PO | IMMEDIATE RELEASE:<br>Trough: Immediately prior to next dose.<br>Peak: 2 hours after dose.<br>SUSTAINED RELEASE:<br>Trough: Immediately prior to next dose.<br>Peak: 4-6 hours after dose. | Routine monitoring of theophylline plasma levels can usually begin approximately 24 hours after initiation of therapy or 24 hours after a change in therapy. Levels obtained within the first 18 hours of therapy should be interpreted cautiously. Outpatients taking sustained-release preparations must be treated cautiously as levels obtained 12-24 hours after admission may represent an unknown rate of theophylline absorption from all doses taken prior to admission.<br><br>(Aminophylline = 80% theophylline) |
| | IV | Steady state: Anytime approximately 24 hours after start of infusion. | |
| | IVPB | Trough: Immediately prior to next dose.<br>Peak: 15 minutes after dose infused. | |
| Tobramycin NEBCIN (1-7+) | IV | Trough: 15-30 minutes prior to infusion.<br>Peak: 15-30 minutes after dose infused.<br>Random: Anytime during dose interval. | Trough could be obtained just prior to dose administration. Peak will be affected by a short distribution phase. A pair of peak and trough levels should be obtained around the 3rd dose in most patients. Two random levels (usually 1-1.5 half-lives apart on the same dosage interval) can be drawn on a loading dose. Verify with the RN or MAR that dosing interval or administration time is as expected. Document exact draw times on pharmacokinetic dosing service records. |
| | IM | Trough: 15 minutes prior to next dose.<br>Peak: 60 minutes after IM dose. | |
| Valproic Acid DEPAKENE DEPACON DEPAKOTE (7-14+) | PO/IV | Trough: 15-30 minutes prior to next dose | Steady state levels should be obtained after 2-4 days. |
| Vancomycin VANCOCIN (6-12+) | IV | Trough: 15-30 minutes prior to infusion.<br>Alpha Peak: 1-2 hr after dose infused.<br>Beta Peak: 4-6 hr after dose infused.<br>Random: During dose interval after beta peak has passed. | Trough could be obtained just prior to dose administration. There is a long distribution phase which affects alpha peak more than beta peak. A pair of beta peak and trough levels should be obtained around the 3rd dose in most patients. Two random levels (usually 1-1.5 half-lives apart on the same dosage interval) can be drawn on a loading dose. Verify with the RN or MAR that dosing interval or administration time is as expected. Document exact draw times on pharmacokinetic dosing service records. |

**Digoxin - quinidine co-administration:**

**Patients who are currently receiving digoxin and are initiated on quinidine therapy may require digoxin plasma level monitoring. Ideally, digoxin samples should be obtained at a time which corresponds to the trough of the quinidine dosing interval and which avoids the distribution phase of digoxin. (at least 6 hours post dose-PO and 4 hours post dose-IV). Digoxin levels will not reach a new steady state for 7-14 days.**

Prepared by Hunter Russell, Director of Pharmacy (orig 7/92) ; Revised by Stephen Pawloski, Clinical Pharmacst (rev 7/94, 8/96, 7/98) T. Zaug (3/00)
Reviewed 1/2/2007 - Pharmacy

# UVMC PANEL DEFINITION

**Comprehensive Metabolic Panel**

Sodium
Potassium
Chloride
Carbon Dioxide
Glucose
BUN
Creatinine
Calcium
Albumin
Bilirubin, Total
Alkaline Phosphatase
Total Protein
ALT/SGPT
AST/SGOT

**Renal Function Panel**

Sodium
Potassium
Chloride
Carbon Dioxide
Glucose
BUN
Creatinine
Calcium
Albumin
Phosphorus

**Basic Metabolic Panel**

Sodium
Potassium
Chloride
Carbon Dioxide
Glucose
BUN
Creatinine
Calcium

**Electrolytes**

Sodium
Potassium
Chloride
Carbon Dioxide

**Hepatic Function Panel**

Albumin
Bilirubin, Total
Bilirubin, Direct
Alkaline Phosphatase
Total Protein
ALT/SGPT
AST/SGOT

**Obstetric Panel**

CB-auto diff
Hepatitis B surf Ag
Rubella Antibody
RPR
Antibody Screen
Blood Type, ABO
Blood Type, RH

**Lipid Panel**

Cholesterol
Triglycerides
HDL

**Acute Hepatitis Panel**

Hepatitis A Ab, IGM
Hepatitis B Core Ab, IGM
Hepatitis B surface Ag
Hepatitis C Ab

Effective 1-1-2002 pjr
12/06 tmc

**Upper Valley Medical Center Clinical Laboratory**
**3130 N. Dixie Highway Troy, Ohio 45373**

## Laboratory Compendium In House and Out Reach Facilities

**Red top tube =** no additive, no gel, **(serum)** be sure that blood is fully clotted before centrifuging.
**Lt Blue top tube or Blue/black =** 3.2% Sodium Citrate tube, **(plasma)**. Tube m**ust** be filled to the indicated line.
**Gold top tube** = gel**, (serum)** be sure tube has clotted before centrifuging.
**Green/black top tube =** Lithium Heparin, gel (plasma)
**Green top tube, (no gel) = Lithium** heparin, **(plasma). Read label.**
**Lavender top tube =** EDTA, **(plasma)** (1 ml min. draw on 3 ml tube or 3 ml min. draw on 7 ml tube).
**Blood Bank tube =** EDTA Lavender top 7ml tube (must be arm banded accordingly).
**Grey top tube =** Sodium Fluoride/Potassium Oxalate
**Green-top tube, (plasma) no gel)** = Sodium Heparin, 5 ml tube, (read tube label).
**Royal Blue tube** = **Sodium Heparin**, 7 ml tube and **EDTA**, 7 ml tube, and **No Additive**, 7 ml tube. **Contact Laboratory for assistance**.

**PLEASE REFER TO:** Proper Order of Drawing for specimens, Body Fluids, CSF Fluids and Culture Sections when appropriate.
**Keep all specimens Refrigerated unless noted below.**

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| 5-HIAA | QU# 9936N | 10ml aliquot of 24hr urine. Use 25ml of 6N HCL as preservative. (Collection may be done with out preservative if PH is below 6 and specimen is shipped frozen.) Patient should avoid foods high in indoles: Avocado, banana, tomato, plum, walnut, pineapple, and eggplant. Also avoid tobacco, tea and coffee three days prior to testing. Call lab for container. Keep refrigerated. See 24-Hour Urine Collections Procedure. | |
| 5-HIAA, Serum | | See Serotonin, Serum | |
| 5 Nucleotidase | QU# 671X | 1 full tube blood in red top or gold top tube. Serum must be refrigerated. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| 17-a-Hydroxprogesterone | QU# 17180X | 1 full tube blood in red top tube. **Gel barrier/SST tubes are unacceptable.** | |
| 17 Hydroxycorticosteroids | QU# 15202X | 20 ml aliquot from 24hour urine collection. Place **10gm of boric acid** into the collection container prior to collection. Call lab for container. Keep Refrigerated. See 24-Hour Urine Collections Procedure. | |
| ABO & RH | In house | See Type and Rh or Blood Group and Rh | |
| ABO and Screen | | See Type and Screen | |
| ABO and Screen | | See Type and Screen | |
| ACE (Angiotensin Converting Enzyme) | QU# 18572E | 1 full tube of blood in a red top tube. SST tubes are also acceptable. | |
| Acetaminophen (Tylenol) | In house | 1 full tube (min. 3 mls) blood in red top tube only. State time of last dose. **Deliver to lab immediately**. | |
| Acetone, blood (Ketones) | In house | 1 full tube (min. 3 mls) blood in green/black tube or gold top tube. **Tubes that have been previously opened are not acceptable due to evaporation**. | |
| Acetylcholine Receptor Antibodies (ACHR) (Binding) | QU# 206X | 1 full tube (min. 3 mls) blood in red top or gold top tube. Allow specimen to clot at room temp. Centrifuge within 1 hour. Refrigerate serum. | |
| Acid Hemolysis (Ham's Test) | QU# 135335P | 1 full tube whole blood (5 mls lavender-top tube). **Draw as late as possible in day** (due to specimen stability of only 24 hours). Room Temp. | |
| Acid Phosphatase, Total | QU# 17152P | 1 full tube (min. 3 mls) blood in red top tube (no gel) or gold-top tube. Specimen should be spun and separated immediately; freeze serum promptly. Frozen. | |
| Acid Phosphatase, Prostatic | QU# 208X | 1full tube (2.0ml serum) blood in gold top (SST) tube or red top tube. Separate serum and freeze. Frozen. | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Acid Phosphatase, Prostatic | QU# 208X | 1full tube (2.0ml serum) blood in gold top (SST) tube or red top tube. Separate serum and freeze. Frozen. | |
| ACTH | QU# 211X | See Adrenocorticotropic Hormone for special instructions. | |
| ACTH Stimulation Test | | Contact Central Scheduling to arrange appointment. Test to be collected in Cancer Care Department. Special Handling Instructions: If any of the specimens are hemolysed, continue with testing until the ordering physician can be contacted to determine whether to run test or recollect. Hold specimens (frig up to 7 days) if necessary. | |
| Activated Partial Thromboplastin | In house | 1 full light blue top tube. Fill tube to the indicated line. | |
| Acute Leukemia Profile | | See Leukemia/Lymphoma Evaluation | |
| Adenovirus DFA | QU# 8355X | **Call Lab –** Nasopharyngeal aspirate/wash, throat swab or bronchial lavage specimens in M4 media**. Refrigerate.** | |
| Adrenocorticotropic Hormone (ACTH), Plasma | QU# 21410P | 3ml blood in plastic EDTA tube, (lavender top tube). **Maintain collection tube in an ice bath before and after blood collection. *Mix Well.*** Separate plasma by centrifugation at 4C within 1hour of collection. Refrigerate. | |
| AFB (Acid Fast) | | See Culture, Mycobacteria/AFB | |
| AFP, Maternal I | QU# 729T | 1 full tube blood in red top gold top tube. Maternal date of birth, weight, race, insulin dependant diabetic status, gestational age (14-22) weeks, EDD, method of determining EDD and date of collection **MUST** be provided for the interpretation of results (see Obstetric/Gynecology Requisition Form). Quest recommends that clients keep a duplicate *frozen* specimen at requesting lab. Refrigerate. | |
| AFP, Maternal III | | See Maternal Screen III | |
| AFP, Maternal IV | | See Maternal Screen IV | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| AFP, Tumor Marker | QU# 41434F | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. For males or non-pregnant females. Refrigerate. | |
| AIDS | | See HIV | |
| Albumin, blood | In house | 1 full tube (min. 3mls) blood in green/black tube or gold top tube. | |
| Albumin, Body Fluid | In house | 1 ml body fluid. State source of body fluid. | |
| Albumin, 5% | | **Call Pharmacy** | |
| Albumin, 25% | | **Call Pharmacy** | |
| Alcohol, Blood (Ethanol Level) | In house | *1 full tube (Min. 3mLs) blood in each tube, gray-top tubes. Use betadine to cleanse arm prior to venipuncture (**Do Not use alcohol to cleanse**). Keep specimen tightly capped.<br>* **(Chain of Custody Alcohol requires 2 separate tubes.)** | |
| Aldolase | QU# 66985R | 1 full tube (min. 3mls) blood in red top tube or gold top tube. Refrigerate. | |
| Aldosterone, Serum | QU#17181X | 1 full tube (min. 3mls) blood in red top tube. Refrigerate. | |
| Aldosterone, 24 hour urine | QU# 7062N | 15 ml of a well mixed 24 hour urine to which 1 gram of boric acid has been added. Record the total volume on specimen container and on the test requisition. Refrigerate during and after collection. 24 hour urine collection procedure. ORDER AS MISCELLANOUS TEST | |
| Alkaline Phosphatase, **Blood** | In house | 1 full tube (min. 3mls) blood in green/black tube or gold top tube. Hemolyzed specimens are not acceptable. | |
| Alkaline Phosphatase, **Body Fluid** | In house | 1 ml body fluid. State source of body fluid. | |
| Alkaline Phosphatase **Isoenzymes** | QU# 3228N | 1 full tube (min. 3 mls) blood in a redtop or gold-top tube. Refrigerate. | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Alkaline Phosphatase<br>**Leukocyte (LAP Score)** | QU# 233X | ****SPECIAL INSTRUCTIONS**** 5ML (**2** tubes) whole blood, bone marrow in green-top tube, **or** at least 2 blood or bone marrow slides.<br>**Collect Monday through Thursday only.** Quest courier must receive specimens on the day of collection. Room Temp. | |
| Allergen Profile, Zone 8 | QU# 20201 | 1 full red top or red/black tube. Refrigerate. | |
| Alpha-1-Antitrypsin, Quant. | QU# 67710E | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. Spin and separate immediately. | |
| Alpha-fetoprotein, Maternal 3<br>(AFP, Maternal Screen III) | QU# 224F | ****Special Instructions** -** 1 full tube blood in gold top tube or red/black top tube. **Must fill out Alpha-Fetoprotein/Maternal Serum Screening form completely**. Physicians Office to supply needed information. Call Lab for extra forms. | |
| Alpha-Fetoprotein Serum<br>(Tumor Marker) (AFP, Tumor) | QU# 41434F | 1 full tube (min. 3mls) blood in red top tube or gold-top tube. For males or non-pregnant females. No hemolysis. | |
| Alpha Melanocyte Stimulating Hormone | QU# 38830X | 1 full Lavender tube. Spin and separate plasma and refrigerate. | |
| ALT (SGPT) | In house | 1 full tube (min. 3 mls) blood in green/black tube or gold-top tube. | |
| Aluminum, Serum | QU# 55764P | ****Special Tube Call Lab**** 2ml serum collected using a **Royal Blue (No Additive) Tube.** *Patient should not take antacids containing aluminum compounds at least three days prior to testing***.** Refrigerate | |
| Amikacin: **Trough** | QU# 33217W | 1 full tube (min. 3 mls) blood in red top tube. **Do not use serum separator tube**. State time of last dose. **Indicate Trough in comments**. | |
| Amikacin: **Peak** | QU# 33191E | 1 full tube (min. 3 mls) blood in red top tube. **Do not use serum separator tube**. State time of last dose. **Indicate Peak in comments.** | |
| Amikacin: **Random** | QU# 33209W | 1 full tube (min. 3 mls) blood in red top tube. **Do not use serum separator tube.** State time of last dose. **Indicate Random in comments.** | |
| Aminophylline, (Theophylline) | In house | 1 full green top or red top tube. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Amiodarone (Cordarone) | QU# 36721X | 1 full tube (min. 3 mls) blood in red top tube (no gel), or green-top tube. Do Not use a serum separator tube. | |
| Ammonia (NH3) | In house | **Special Instructions Call Lab** 1 full tube blood in EDTA lavender-top tube. Place on **ice** immediately. Centrifuge and separate plasma from cells within 15 minutes, **keep plasma on ice**. Call Lab immediately and send **STAT**. | |
| Amylase, **Blood** | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold-top tube | |
| Amylase, **Body Fluid** | In house | 0.5 ml body fluid in sterile container. State source of fluid. | |
| Amylase, **Random Urine** | In house | 1ml random urine in urine container. | |
| Amylase, **24-hour Urine** | In house | 10 ml aliquot from a 24hour collection with no preservative. Pick-up container from lab. Keep refrigerated. Record time and volume. See 24-Hour Urine Collections Procedure | |
| ANA (Anti-Nuclear Antibody) Screen EIA Titer w/reflex IFA | QU# 249X | 1 full tube (min. 3 mls) blood in red top tube or gold-top tube. Positive samples will reflex to a titer. | |
| ANCA Vasculitides (C-ANCA & P-ANCA) (Antineutrophil Cytoplasma Antibodies) | QU# 4044F | 1 full tube blood in red top or gold top tube. Specimens that are grossly hemolyzed, lipemic or contain heavy visible particulates are not acceptable | |
| Androstenedione | QU# 17182X | 1 full tube (min. 3 mls) blood in red top tube (serum separator is unacceptable). **Morning specimen preferred.** **Do not submit glass tubes.** Plasma from EDTA lavender top and blue top or sodium heparin or lithium heparin green top tubes are also acceptable. | |
| Angiotensin Converting Enzyme (ACE) | QU# 18572E | **1 full** tube blood in red top tube. Centrifuge, separate and refrigerate within 1hr. | |
| Angiotensin Coverting Enzyme, CSF | QU# 34692N | 1 ml frozen CSF is a sterile screw top container. | |
| Antibody Screen (Indirect Coombs) | In house | 7 mls blood in lavender top tube (Blood Bank Tube) | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Antibody Titer, Blood Bank (SO) | QU# 4005 | 5 ml whole blood in yellow top (ACD-A or ACD-B) perfered (starting Nov 9, 2009). EDTA Lavender top also acceptable. (Draw 2-15ml red top *prior* to Nov 9 2009.) | |
| AntiCardiolipin Antibody, IgG and IgM | QU# 10793A | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Anti-DNA-**DS** (Double Stranded) | QU# 51300E | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Anti-DNA-**SS** (Single Stranded) | QU# 14857X | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Anti-HU | QU# 9175N | See Neuronal Nuclear (HU) Antibody | |
| Anti-Jo-1 | QU#52340E | 1 full tube of blood in red top tube or serum separator top tube. Samples that are grossly hemolyzed or lipemic will be rejected. | |
| Anti-La | | See Sjogren's Antibody | |
| Antimitochondrial Antibody | QU# 42481A | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Antimicrosomal Antibody (Thyroid Peroxidase (TPO) Abs.) | QU# 80994R | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Antineutrophil Cytoplasma Abs. (ANCA Vasculitides) | QU# 4044F | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Antinuclear Antibodies Screen (EIA w/reflex titer IFA) | QU# 2766F | 1 full tube blood in red top or gold top tube. Positive samples will reflex to a titer. | |
| Antipancreatic Islet Cells | QU# 52654P | 1 full tube (min. 2mls) blood in red top tube or gold top tube. | |
| Antiplatelet / Platelet Antibodies, (IgG) Direct | QU# 140129P | 1 full 7ml lavender top (EDTA) top tube, or 2 full 4ml lavender tops. **Keep specimen at room temperature**. Do not Centrifuge. Do not refrigerate or freeze. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Anti-Ro | | See Sjogren's Antibody | |
| Anti-SS-A/Anti-SS-B | | See Sjogren's Antibody | |
| Anti-Scleroderma (SCL-70) | QU# 53488W | 1 full tube blood in red top, gold top, or red/black top tube. NO lipemia, hemolysis or microbial contamination. | . |
| AntiSmooth Muscle Antibodies | QU# 42085F | 1 full red to or gold top tube. Specimen should avoid extreme of heat and cold. Specimens that are grossly hemolyzed or lipemic will be rejected. | |
| AntiStreptolysin O Antibody (ASO) | QU# 53702E | 1 full tube (min. 3 mls) blood in red top tube or gold-top tube. | |
| AntiStriational Antibody | QU# 42119N | 1 full red top or gold top tube. | |
| Antithrombin III Activity | QU# 216X | 1 full Lt. Blue top (Sdium citrate) tube. Hemolyzed specimens are not acceptable. Submit a separated frozen vial for each special coag assay ordered. Freeze plasma. | |
| Antithrombin III Ag (Thrombin III, Antigen), Plasma | QU# 18689P | **Special Instructions ** - 1 full tube of blood in light blue-top tube (3.2% buffered sodium citrate). Fill to indicated line. PATIENT SHOULD ABSTAIN FROM ANABOLIC STEROIDS, GEMFIBROZIL, WARFARIN (COUMADIN), HEPARIN THERAPY, ASPARAGINASE, ESTROGENS, GESTODENE AND ORAL CONTRCEPTIVES OPTIMALLY FOR THREE DAYS PRIOR TO SPECIMEN COLLECTION. **Overnight fasting is preferred.** Frozen. | |
| AntiThyroglobulin Antibody, (Thyroglobulin Antibody) | QU# 80986R | 1 full tube of blood in red top or gold top tube. | |
| Anti-Yo | QU# 52605P | See Myocardial Antibody | |
| Apheresed Platelets | In house | See Platelets, Apheresed (Ordered from Community Blood Center). Call Blood Bank for STATS and ASAPS. | |
| APTT (Activated Partial Thromboplastin or PTT) | In house | 1 full light blue top tube (with 3.2% sodium citrate). **Tube must be filled to top of label.** | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Arthritis Panel | | Must Order the Following Tests Individually: Uric Acid, W. Sed Rate, ANA & RA | |
| Arthropod Identification | ODH send out | Submit specimen in clean, dry urine container. **Call lab to schedule an examination**. Exams are **done only on First Shift**. | |
| ASO (Screen)<br>(AntiStreptolysin O Ab) | QU# 53702E | 1 full tube (min. 3 mls) blood in gold-top tube or red top tube. | |
| Aspirin, (Salicylate) | In house | 1 full red top tube. | |
| AST (SGOT) | In house | 1 full tube (min. 3 mls) blood in green/black top tube, or gold top tube | |
| Autoclave Indicator Check | In house | Call Lab | |
| Autologous Blood | In house | Order Crossmatch 1 unit Autologous CBC. Patient must have donated unit prior to admission. | |
| Aventyl | QU# 38729W | 1 Full red top, green top or lavender top tube. **Do not use sst/serum separator tubes.** | |
| B. Pertussis Culture w/Smear<br>(Bordetella Pertussis) | QU# 2246F | Call Lab - 2 swabs; collect nasopharyngel specimen using a calcium alginate or Dacron swab. Place 1 swab in Bordetella (Regan-Lowe) transport medium. Use the second swab to prepare two slides. Allow slides to air dry. Room Temp | |
| B. Pertussis Smear, DFA<br>(Bordetella Pertussis) | QU# 34966X | Collect 1 nasopharyngel swab or aspirate using mini-tip calcium alginate or Dacron swabs. Use swab to prepare 2 slides. Air dry. Do not fix slides. Label slides and keep at room temperature. Room Temp | |
| Bacterial ID, Anaerobic | QU# 84830N | Pure culture isolate on swab in anaerobic transport tube or plate in anaerobic bag. Do not refrigerate or freeze. Indicate source on test requisition. | |
| Basic Metabolic Panel (BMP)<br>(Sodium, Potassium, Chloride, CO2, Gluc, BUN, Creat. & Ca) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Basic Metabolic Panel **minus** glucose (BMP-glucose) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Bence Jones | | See Immunofixation, Urine | |
| Beta-2-Microglobulin, CSF | QU# 5500X | 1ml CSF collected in a sterile container. | |
| Beta-2-Microglobulin, **Serum** | QU# 19521E | 1 full tube (min. 3 mls) blood in red top or gold top tube. Hemolyzed specimens are unacceptable. | |
| Beta-2-Microglobulin, **Urine** | QU# 4944X | 1ml random urine, **Frozen.** ****Special instructions:** Patient should void bladder, then drink at least 500ml of water. A urine sample should be collected within 1 hour and ph adjusted to PH 6-8 with 1M NaOH (Notify lab when sample has been collected). Frozen | |
| Bicarbonate (CO2 or Carbon Dioxide) | In house | 1 full tube (min. 3mls) blood in redtop tube or gold top tube. | |
| Bilirubin, **Cord Blood** | In house | 1 full red top tube. **Protect specimen from light.** | |
| Bilirubin, **Direct** | In house | 1 full tube (min. 3 mls) blood in green/black top tube, or gold top tube (gel). **Protect specimen from light.** | |
| Bilirubin, **Fractionated** | In house | See Indirect bilirubin. | |
| Bilirubin, **Indirect** | In house | Please order **both** Direct and Total Bilirubin | |
| Bilirubin, **Total** | In house | 1 full tube (min. 3 mls) blood in green/black top tube, or gold top tube **Protect specimen from light.** | |
| Biopsy | | Call Histology (x4638) | |
| Bleeding Time | In house | **As of March 28, 2007 this test had been discontinued. Please refer to Platelet Function Analysis for collection protocol. ** | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Blood Group & Rh, (Type and Rh) | In house | 1 full 7ml EDTA lavender tube (Blood Bank tube). | |
| Blood Smear, Pathology Interpretation | In house | Whole blood in Lavender-top tube.<br>(1ml min draw in a 3 ml tube or 3 ml min. draw in a 7 ml tube.) | |
| Blood, Urine | In house | 1 ml random urine in a sterile container. | |
| BMP: Basic Metabolic Panel<br>(Lytes, Glucose, BUN, Creatinine, Calcium) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| BMP minus glucose | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| BNP (Brain Natriuretic Peptide) | In house | **1 full** (3-5 ml) tube blood in **Dark Purple/Black** tube. Draw **separate** specimen for this test. ***This tube is acceptable for BNP's only***. If testing is delayed, store EDTA plasma in ***plastic tubes*** at 2-8C or freeze at or below –20C if delay is more than 24hours. | |
| **Body Fluids** | | **Submit Entire Specimen to Lab** | |
| Body Fluid, **Albumin** | In house | 1 ml body fluid in sterile container. State source of body fluid. | |
| Body Fluid, **Alkaline Phosphatase** | In house | 1 ml body fluid in sterile container. State source of body fluid. | |
| Body Fluid, **Amylase** | In house | 0.5 ml body fluid in a sterile container. State source of fluid. | |
| Body Fluid, **BF Cell Count** | In house | 1ml body fluid in EDTA or Heparin to prevent clotting. State Body Fluid Source. | |
| Body Fluid, **Cholesterol** | In house | 0.5 ml body fluid in a sterile container. State source of fluid. | |
| Body Fluid, **Culture**<br>(Includes gram smear) | In house | Sterile container, state source | |
| Body Fluid, **Glucose** | In house | 0.5 mls body fluid in a sterile container. State Source of fluid. | |
| Body Fluid, **HDL** | In house | 0.5 mls body fluid in a sterile container. State Source of fluid. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Body Fluid, **LDH** | In house | 0.5 mls body fluid in a sterile container. State Source of fluid. | |
| Body Fluid**, pH** | In house | Fluid aspirated anaerobically into a syringe rinsed with heparin and sent to Lab **ASAP on ice**. State Source | |
| Body Fluid, **Protein, (Total)** | In house | 1 ml fluid in a sterile container: State Source | |
| Body Fluid, **Triglycerides** | In house | 0.5 ml fluid in a sterile container: State Source | |
| Body Fluid, **Uric Acid** | In house | 1 ml body fluid in a sterile container: State Source | |
| Bone Marrow & Biopsy Collection and Preparation | In house | Call Histology (x4638) to schedule a time for procedure. | |
| Bordetella Pertussis culture | QU# 5260X | See B. Pertussis culture w/Smear | |
| Bordetella Pertussis Smear, DFA | QU# 34966X | Collect 1 nasopharyngeal swab or aspirate specimen using mini-tip calcium alginate or Dacron swab. Use swab to prepare 2 slides. Allow slides to air dry. Do not fix slides. Label slides and keep at room temperature. Room Temp. | |
| Borrelia burgdorferi | | See Lyme Disease Antibodies | |
| Brain Natriuretic Peptide (BNP) | In house | **1 full** (3-5 ml) tube blood in **Dark Purple/Black** tube. Draw **separate** specimen for this test. ***This tube is acceptable for BNP's only***. If testing is delayed, store EDTA plasma in ***plastic tubes*** at 2-8C or freeze at or below –20C if delay is more than 24hours. | |
| Breast Cancer Profile, Paraffin Block | | Call Histology (x4638) | |
| Bronchial **Brushings** | In house | Call Histology (x4638) - See Cytology. 4 slides sprayed with cytology fixative. Non-GYN Request. | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Bronchial **Washings** | In house | Call Histology (x4638) - See Cytology. **Send to Lab ASAP.** | |
| Bun (Urea Nitrogen), **Blood** | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold-top tube. See Urea Nitrogen. | |
| Bun, **24 hr. urine** | In house | 10 ml aliquot of urine from 24hour collection with no preservative. Pick-up container from lab. Keep refrigerated. Record date and volume. | |
| Bun, **Random urine** | In house | 1 ml random urine in plastic container. | |
| C-3, Complement | QU# 44859W | 1 full tube of blood in a serum separator tube or red top tube. Call lab for pediatric specimen requirements. | |
| C-4, Complement | QU# 44982E | 1 full tube of blood in a serum separator tube or red top tube. Call lab for pediatric specimen requirements. | |
| CD4/CD8 Ratio, Helper/ Suppressor Panel | | See Lymphocyte Subset Panel | |
| CH-50, Complement | QU# 45328P | 1 full tube of blood in a red top tube. **See Complement, Total (CH50), for details on special instructions for processing** | |
| CA 19-9 (Carbohydrate Antigen) | QU# 20099W | 1 full tube (min 3mls) red top or gold top tube. | |
| CA 27.29 (Cancer Antigen) | QU# 20123E | 1 full tube (min 3mls) red top or gold top tube. | |
| CA 125 | In house | 1 full tube (min 4mls) red top tube. Stable 1 day refrigerated; freeze if testing is delayed. | |
| $CO_2$ (Bicarbonate or Carbon Dioxide) | In house | 1 full tube (min 3mls) red top or gold top tube. | |
| C. Difficile | | See Clostridium Difficile | |
| C. Diff Toxin Screen | | See Cytotoxin Assay | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| C-Peptide, Serum | QU# 19869W | 1 full tube (min. 3 mls) blood in red top tube or gold-top tube. Allow to clot, separate and freeze serum immediately. Frozen | |
| C-Reactive Protein | QU# 19885R | 1 full tube (min 3 mls) blood in gold top or red/black top tube. Store Refrigerated. | |
| C-Reactive Protien-Cardio | QU# 10124F | 1 Full tube (min 3 mls) blood in gold top or red/black top tube. **Overnight fasting is preferred**. **FDA approved for use in cardiac patients. Requires ABN.** | |
| C-Reactive Protein (CRP) Wide Range (Quantitative, High Sensitivity, Cardiac) | In house | 1 full tube (min 3mls) blood in gold top or red/black top tube. **Overnight fasting is preferred. Specimen must be separated from cells within 2 hours.** Store Refrigerated. *UVMC has successfully correlated out in-house CRP-Wide Range with CRP High Sensitivity. As a result, all CRP-wide Range and CRP High Sensitvity will be performed at UVMC Laboratory. If a CRP-Cardio is requested, please refer to C-Reactive Protien-Cardio. Test is sent to reference Quest for testing.* | |
| Cadmium Blood | QU# 56093P | 7 mls whole blood in EDTA Royal Blue top tube. Must **complete** Heavy Metals Form. *Restrict patient from eating shellfish for 3 days prior to testing.* Room Temp | |
| Cadmium, 24-hr Urine | QU# 89722N | 7ml aliquot of a 24hour urine collected in an acid washed (metal free) container. **Do not measure 24hour volume.** Send aliquot in a trace element free container. *Restrict patient from eating shellfish for 3 days prior to testing.* | |
| Calcium, **Blood** | In house | 1 full tube (min. 3mls) blood in green/black tube or gold top tube. | |
| Calcium, **Ionized serum** | In house | ****Special Instructions** -** 1 full tube blood in gold top sst tube. **Tube must not be opened at any time!!!** *Centrifuge specimen 30 minutes after drawing and **refrigerate immediately**.* Send unopened tube to lab; transport refrigerated. | |
| Calcium, **Urine 24 hour** | In house | 10ml aliquot from a 24hour urine collected with no preservative. Pick-up container from lab. Keep refrigerated. Record total volume. | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Calcium, **Random Urine** | In house | 1 ml of random urine collected in a plastic container. Keep refrigerated. No preservative. | |
| Calculus Analysis | SEND OUT | See Stone Analysis. **MUST** fill out Surgical Path & order Tissue requisition. | |
| Candida Albicans, Skin Test | | See Skin Test, Candida | |
| Carbamazepine Level | In house | 1 full green top tube | |
| Carbohydrate Antigen 19-9 | | See CA 19-9 | |
| Carbon dioxide | | See CO 2 or Bicarbonate | |
| Carcinoembyronic Antigen | In house | 1 full green/black or gold top tube. | |
| (Anti) Cardiolipin Abs IgG, IgM | QU# 10793A | 1 full red or gold top tube. Centrifuge and separate serum from cells. Ship **Refrigerated.** A full Lt Blue top tube is also acceptable. | |
| Carotene | QU# 20537P | **1 full tube** blood in redtop tube or gold top tube. **Protect from light by wrapping tube in aluminum foil**. Centrifuge within 1 hour of collection. No vitamin supplements 24hours prior to testing. Frozen | |
| Catecholamines, **plasma** | QU# 314X | ****Special Instructions Call Lab** -** 2 full green or green/black tubes. Tube should be chilled prior to drawing patient. Plasma should be separated in a refrigerated centrifuge within 30 minutes of collection and **frozen** immediately at –20C. Patients should be relaxed in a supine or an upright position before blood is drawn. Indicate on requisition if the patient is supine or upright. Patient should avoid alcohol, coffee, tea, tobacco and strenuous exercise prior to collection. Overnight fasting is required. Frozen | |
| Catecholamines, Urine, 24 hour (Fractionated) | QU# 4168N | 10 ml aliquot of urine from a 24hr collection. Collect urine using 25ml of 6N HCL or 15gm of boric acid as a preservative. It is preferable for the patient to be off medications for three days prior to testing. **Call lab for details.** Patient should also avoid alcohol, coffee, tea tobacco and strenuous exercise prior to collection. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| CBC Minus Differential | In house | Whole blood in Lavender-top tube.<br>(1 ml min. draw in a 3ml. tube or 3 ml min. draw in a 7ml. tube.) | |
| CBC (Complete Blood Count):<br>Includes Differential | In house | Whole blood in Lavender-top tube.<br>(1 ml min. draw in a 3ml. tube or 3 ml min. draw in a 7ml. tube.) | |
| CCP Antibody | | See Cyclic Citrulline Peptide, IgG | |
| CEA (Carcinoembryonic Antigen) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Cell Count, Body Fluid | In house | 1ml body fluid in EDTA or Heparin to prevent clotting. **State Body Fluid Source. Send entire specimen.** See Body Fluid, BF Cell Count | |
| Cell Count, CSF Fluid | In house | 1 ml CSF fluid in sterile container. Send to Lab ASAP | |
| Celiac Panel<br>{includes:Gliadin AB (IgG & IgA) Panel, Tissue Transglutaminase, IgA, Reticulin AB,IgA (w/reflex titer), Reticulin AB, IgG(w/reflex titer)} | Care Set | **1 full** tube blood in a gold top or red top tube. Spin and separate. Refrigerate. | |
| Ceruloplasmin | QU# 20644R | **1 Full tube** (min. 3 mls) blood in a gold top or red top tube. Spin and separate immediately. Refrigerate | |
| C. Trachomatis Culture | QU# 63495R | PREFERRED SPECIMEN REQUIREMENTS: Dacron/Rayon swab from endocervix, urethra, conjunctiva, rectal mucosa (without feces), fluid aspirate, tissue, nasopharynx or throat in Microteast (M4) microbe transport tube (red or blue cap). *Other acceptable specimens*: Cytobrush, post hysterectomy specimens. **REJECTION CRITERIA**: Wooden shaft and calcium alginate swabs; dry swabs. Refrigerate. | |
| Chlamydia DNA Probe<br>(Female=endocervical / Male=urethra) | QU# 49932E | Collect specimen using the correct collection kit; Female collections use the pink kit –Males use the blue kit. Female kits contain two swabs, one to remove excess mucus from the cervical area and the second to collect the actual specimen. Male kits contain only one swab for specimen collection. Collection **swabs must be transported in a GEN_PROBE transport tube.** For conjunctiva collections use Male/Blue kit. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Chlamydia/GC (Neisseria Gonorrheae) DNA, Probe (orderable by Laboratory staff only) | QU# 20027 | **Genital** Specimens: Separate kits are available for male and female specimens. ***Eye/conjunctive specimens are not acceptable for this testing. Please refer to Chlamydia DNA Probe.*** | |
| Chlamydia/GC (Neisseria Gonorrheae) DNA, SDA (Female=endocervical / Male=urethral) | QU# 17305X | **Genital** specimens: BD ProbeTec ET CT/GC kit. Separate kits are available for male and female specimens.<br>**Urine** specimens: Collect 10 to 15ml of first catch urine (first part of the stream) into a clean polypropylene container. *Patient must not have urinated during the previous two hours.* This method had a 2 day TAT.<br>***Eye/conjunctive specimens are not acceptable for this method.*** | |
| Chloride, **Blood** (CL) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Chloride, **Urine 24-Hour** | In house | Call Lab for 24-hr container.1 ml aliquot of 24-Hour Urine See 24 hr Urine, Chloride. | |
| Chloride, **Urine Random** | In house | 1 ml random urine in a sterile container. | |
| Cholesterol, blood | In house | 1 full tube (min. 3mls) blood in green/black tube or gold top tube. | |
| Cholinesterase, **Plasma & RBC** | QU# 338X | ****Special Instructions** -** 2 full tubes whole blood in EDTA lavender-top or royal blue top tube. Spin **one** tube and separate plasma into a plastic aliquot tube. Ship both whole blood and plasma samples refrigerated. | |
| Chromium, 24-hr Urine | QU# 10944X | 2ml aliquot from a 24hour urine collected in an acid washed (metal free) container. Call lab for container. Record total volume on test request and urine container. See 24-hour Urine Collections Procedure. | |
| Chromogranin A | Qu# 34468X | 1 full red/black top sst tube. Refrigerate serum. | |
| Chromosome Analysis, (Karyotyping) | QU# 14596X | 5mls whole blood in green-stopper (sodium heparin). **Keep at room temperature**. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Chromosome Analysis, Hematologic, Malignancy | QU# 83972N | **Special Instructions Call Histology x4638** 3 ml bone marrow or whole blood in sodium heparin green-stopper tube. **Keep at Room Temperature.** | |
| Chromosome (Tissue, Skin, Products of Conception) | QU# 14593X | **Special Container Call Histology x4638** Preferred specimen: 2x3mm fresh tissue submitted in a sterile, leak proof container with Hanks' or Ringers" solution. Specimens submitted in culture medium with antibiotics are also acceptable. Refrigerate – **Do not Freeze** | |
| CK | | See CPK | |
| CK Isoenzymes | QU# 1362A | 1 full red top or gold top tube.<br>Separate serum into a plastic vial and **freeze** immediately. | |
| CK-MB (Quantitative) | In house | 1 full tube (min. 3mls) blood in green/black top tube or gold top tube. | |
| CL (Chloride) | | See Chloride | |
| Clostridium Difficile Toxin Assay (Cytotoxin Assay) | | See Cytotoxin Assay | |
| Clostridium Difficile Screen **(C Difficile Toxin A & B Detection, EIA)** | In house | 5g fresh stool, in sterile container without preservative. Keep refrigerated. Must be in Lab within 24 hours of collection. | |
| CMP (Comprehensive Metabolic Panel): (Sodium, Potassium, Chloride, CO2, Glu, BUN, Creat., Calcium, Alb., T.Bili., Alk. Phos, T. Protein, ALT/SGPT & AST/SGOT) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| CMP Minus Glucose (Comprehensive Metabolic Panel minus glucose) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| CMV (IGG, IGM, and Panel) | QU# 9928T | 1 full tube blood in red top tube or gold top tube. No hemolysis. Refrigerate. | |
| CO2, blood (Bicarbonate or Carbon Dioxide) | In house | 1 full tube (min. 3mls) blood in redtop tube or gold top tube. | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Complement, C3 | QU# 44859W | **Call Lab** for pediatric specimen requirements. 1 full tube (min. 3 mls) blood in redtop tube. Refrigerate | |
| Complement, C4 | QU# 44982E | **Call Lab** for pediatric specimen requirements.<br>1 full tube (min. 3 mls) blood in redtop tube. Refrigerate | |
| Complement, Total (CH50) | QU# 45328P | ****Special Instructions**** **1** full tube (min. 3 mls) blood in red top tube. Draw sample without anticoagulant. Allow specimen to fully clot. Separate serum into a **plastic** tube and **freeze** sample within 1 hour of time drawn. Avoid hemolysis. Specimens drawn in sst tubes are acceptable, but not preferred. Frozen | |
| Cold Agglutinins, Titer | QU# 349X | ****Must be drawn at UVMC outpatient services due to special handling****1full tube of blood in a red top or gold top tube. Bring specimen to lab immediately so that the specimen can clot in warm waterbath, then spin immediately and separate. Do not refrigerate. **Do not draw on weekends**; Specimen is only stable for 2 days at room temperature. | |
| Complete Blood Count (CBC) | In house | Whole blood in Lavender-top tube. 1 ml min. draw on a 3-ml.-tube (.3 ml min.) draw on a 7-ml. tube. | |
| Comprehensive Metabolic Panel | | See CMP | |
| Comprehensive Metabolic Panel minus glucose | | See CMP minus glucose | |
| Coombs, **Direct** | | See Direct Coombs | |
| Coombs, **Indirect** (Antibody Screen) | | See Antibody Screen | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Copper, Blood | QU# 363X | **Special Instructions** **COLLECT IN SPECIAL TRACE ELLEMENT KIT**. *Contact Lab for kit*. Refrain from taking vitamins, minerals or herbal supplements for one week prior to specimen collection. Separate serum and refrigerate. Royal Blue EDTA plasma also acceptable for this test. | |
| Copper, 24-hr Urine | QU# 7567N | 7m aliquot from 24-hr Urine collection. **Special Instructions** Collect urine in an acid washed (metal free) container. **Do not** measure volume. Send 24hr aliquot in an acid-washed (metal free) container. Patient should refrain from taking vitamins, minerals or herbal supplements for one week prior to collection. Room Temp. See 24-hour Urine Collections Procedure. | |
| Cordarone | | See Amiodarone | |
| Cord Blood Bilirubin | In house | Collect **cord blood** in red or gold-top tube. Protect from light. | |
| Cord Blood Workup | In house | 6 ml cord blood in **pink** top tube. **Protect from light.** Label with Baby's name or Mom's name, but **MUST** be ordered on Baby's account. Mark specimen as Cord Blood. | |
| Coronary Risk Lipid Profile (Chol., HDL, TRIG., calculated LDL&VLDL With LDL/HDL ratio) | In house | (Lipid Profile with LDL/HDL Ratio) 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. Fasting Recommended. | |
| Cortisol**, Total,** (serum) | In house | 1 full tube (min 3mls) blood in red top tube. Plasma is not acceptable. Refrigerate. Ultracentrifuge grossly lipemic samples. . | |
| Cortisol, **AM** (serum) | In house | 1 full tube (min 3mls) blood in red top tube. Draw AM specimen between 07:00 and 10:00 AM, preferably within 1 hour of awakening. Mark specimen with date and time drawn. Plasma is not acceptable. Refrigerate. Ultracentrifuge grossly lipemic samples. | |
| Cortisol, **PM** (serum) | In house | 1 full tube (min 3mls) blood in red top tube. Draw specimen at 4:00 pm (16:00). Mark specimen with the date and time drawn. Plasma is not acceptable. Refrigerate. Ultracentrifuge grossly lipemic samples. | |
| Cosyntropin Challenge | | See ACTH Stimulation Test | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Coxsackie A Titer | QU# 2324 | 1 Full tube blood in red top tube. Room Temp | |
| Coxsackie Viral B (1-6) Antibodies (Coxsackie B Titer) | QU# 3210N | **1 full** tube blood in red top tube or gold top tube. Identify as acute or convalescent. CSF is also an acceptable specimen | |
| CPK (Creatine Kinase) CK | In house | 1 full tube (min. 3 mls) blood in red top, gold top or geen/black top tube. | |
| Creatine Kinase Isoenzymes (Isoenzymes, CPK) | QU# 4451X | **1 full** tube red top tube or gold top tube. Separate and **Freeze** serum immediately in a plastic vial. Hemolyzed samples *not* acceptable. | |
| Creatinine, **Urine-24-hour** If Protein/Creatinine Ratio is needed, see Protein/Creatinine Ratio | In house | 10 ml aliquot of urine from a 24hr collection with **no preservative**. Call lab for container. Keep refrigerated. Record total volume. See 24-Hour Urine Collections Procedure. | |
| Creatinine, **Urine Random** | In house | 1ml random urine in a sterile container. | |
| CRP | | See C-Reactive Protein | |
| CRP-Cardio | | See C-Reactive Protien-Cardio | |
| CRP, Wide Range or High Sensitivity | | See C-Reactive Protein Wide Range | |
| Cryoglobulin, % Cryocrit - Serum | QU# 36562X | ****Special Instructions Call Lab for Special Preparations** Test must be drawn at UVMC Out Patient Lab.** Draw 10 ml red top tube. Deliver tube immediately. Place tube immediately in a 37C water bath for 1 hour to clot. Centrifuge and separate serum. Ship specimens at Room Temperature. | |
| Cryoprecipitate (CRYO) | In house | ****Call Blood Bank, Special Order**** Specimen is associated with Type & Rh. (May need to order Type & Rh) | |
| Cryptococcal Ag, EIA (CSF) | QU# 11197X | 1ml CSF in sterile screw cap container. **Freeze** and *do not thaw*! Positive results will prompt a reflex test. | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Crystal Examination | In house | 1 ml **body fluid** (State fuid source) Transport in sterile container at room temperateure ASAP. {For bile samples *only* – send to lab immediately. For off-site collections. Centrifuge in a sterile screw top tube, pour off supernatent and freeze sediment. Transport frozen sediment via courier.} | |
| **CSF FLUIDS** | | **Do Not Tube** to Laboratory Must bring down. | |
| (CSF), **Bacterial Antigen Panel** | In house | 1ml of CSF in sterile container. | |
| (CSF), **CSF Cell Count** | In house | 1 ml CSF in sterile container. Send to Lab ASAP. | |
| (CSF), **Culture** (includes gram stain) | In house | 0.5 mls CSF in sterile container: **DO NOT Refrigerate. Send to Lab ASAP** | |
| (CSF), **Glucose** | In house | 0.5 mls CSF in sterile container. | |
| (CSF), **Lactate** (Lactic Acid) | In house | 0.5 mls CSF in sterile container. | |
| (CSF), **Protein (Total)** | In house | 1 ml CSF in sterile container. | |
| **CULTURES** | In house | See Culture Listing at the end of the pink pages. | |
| Cyanide, Blood | QU# 56341E | **5 mls** whole blood in Grey top tube is the only acceptable specimen. Refrigerate. | |
| Cyclic Citrulline Peptide, IgG | QU# 11173X | 1 full tube blood in Gold top, Red top, or Red/Black top tube. (Min. 3 mls blood) | |
| Cyclosporine, LC/MS/MS | QU# 15220X | 1 full tube whole blood in 7ml lavender top tube, green-top sodium heparin, or sodium heparin (lead-free) tan top tube. **Draw 1 hour before next dose.** | |
| Cystic Fibrosis, Carrier Screen (DNA Analysis) | QU# 10458N | **5 mls** whole blood in Lavender top tube (EDTA). Whole blood from ACD Solution A or B (yellow top), Sodium heparin (green top) or EDTA (royal Blue top) tubes are also acceptable. **Indicate ethnicity of patient and the clinical indication for testing on the test request form**. Store and ship ambient – immediately. Do not freeze. Room Temp. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Cytomegalovirus Abs. IgG & IgM | QU# 9928T | **1 full tube** blood in red top tube or gold top tube. No hemolysis. Refrigerate. | |
| Cytomegalovirus AB IgG | QU# 51243E | **1 full tube** blood in red top tube or gold top tube. State acute or convalescent. Grossly lipemic and hemolyzed specimens will be rejected. | |
| Cytomegalovirus AB IgM | QU# 51268W | **1 full tube** blood in red top tube or gold top tube. Recommended for acute infections only. Grossly lipemic and hemolyzed specimens will be rejected. | |
| Cytomegalovirus AB Panel, IgG and IgM | QU# 9928T | **1 full tube** of blood in red top or gold top tubes**.** No hemolysis. Refrigerate**.** | |
| Cytotoxin Assay, Antibody Neutralization (Clostridium Difficile Toxin Assay) | QU# 1174 | **1 full tube** of blood in red top or sst tube. Refrigerate. | |
| D-Dimer or FDP (Fibrin Degradation Products) | In house | **1 full tube** blood in blue/black (center) or lt blue tube (3.2 % citrated plasma). Must be filled to the indicated line. **2 hr. stability time**. If testing is delayed centrifuge, separate and store plasma refrigerated up to 48 hours. | |
| Depakene (Valproic Acid or Depakote) | In house | 1 full tube (min. 3 mls) blood in green top tube or red top tube. No gel barrier tubes. State time of last dose. | |
| DHEA Sulfate (Dehydroepiandrosterone Sulfate) | QU# 402X | 1 full tube (min. 3 mls) of blood in red top tube or gold top tuber. **Specify age and sex** on test request form. | |
| Digoxin | In house | 1 full tube (min. 3 mls) blood in green top tube or red top tube. Gel barrier tube are acceptable. State time of last dose. | |
| Dilantin (Phenytoin) | In house | 1 full tube (min. 3 mls blood in red top tube or green top tube (no gel) State time of last dose. | |
| Dilantin, Free (Phenytoin, Free) | QU# 39693E | **1 full tube** of blood in red top tube. **Do not use serum separator tube**. State time of last dose. | |
| Direct Coombs | In house | 7 mls blood in lavender top tube (Blood Bank Tube). | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Direct LDL | | See LDL Direct | |
| Directed RBC | | Call Blood Bank for Product Order | |
| Directed RBC/ Irradiated | | Call Blood Bank for Product Order | |
| Disopyramide, (Norpace) Serum | QU# 35766P | 1 full tube of blood in red top tube. **Serum separator – SST tube not acceptable.** | |
| DNA (DS) Antibodies | QU# 255X | 1 full tube of blood in a gold top (sst) tube. Grossly lipemic and hemolyzed specimens will be rejected | |
| DNA (SS) Antibodies | QU# 14857X | 1 full tube in a red top or gold top tube | |
| DNA Cell Cycle Analysis | | Call Pathology/Histology | |
| DNA Histogram | | Call Pathology/Histology | |
| Drug Screens | | See Drug Screens | |
| EBV | | See Epstein Barr | |
| E. Coli | | See Stool Culture | |
| Electrolyte Panel (Lytes): (Sodium, Chloride, Potassium, Carbon Dioxide) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
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| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| **ELECTROPHORESIS PROTEIN** | | | |
| Protein Electrophoresis, **CSF** | QU# 749X | 1 ml CSF in sterile container. | Protein Electrophoresis, **CSF** |
| Electrophoresis (IFE & EPP) Profile, **Serum** | QU# 5077 | 2 full tubes blood in red top or gold top tube. **Fasting specimen** is preferred. Hemolysis, lipemia, and plasma specimens may be rejected. Samples that have been left uncapped are unacceptable due to evaporation. | |
| Electrophoresis Protein, w/protein**, Serum** | QU# 687T | 1 full tube (min 3 mls) blood in red top tube or gold top tube. **Fasting specimen** is preferred. Hemolysis, lipemia, and plasma specimens may be rejected. Samples that have been left uncapped are unacceptable due to evaporation. | |
| Electrophoresis Protein Total**, Random Urine** | QU# 8525X | 10ml random urine, no preservative in urine container.<br>First morning specimen preferred. | |
| Electrophoresis Protein Total, **24-Hour Urine** | QU# 750X | 10mls of urine from a 24hour collection. No preservative. Discard first morning specimen before starting the 24hour collection. Random, first catch morning, urine sample are also acceptable.<br>See 24-Hour Urine Collections Procedure. | |
| **Immunofixation**, **Urine** | QU# 134403E | 50mls of urine from a 24hour collection. Random urine is also acceptable.<br>See 24-Hour Urine Collections Procedure. | |
| Eosinophil Count | In house | 1 full tube of blood in lavender top tube. (1 ml min. draw on 3 ml tube or 3 ml min. draw on a 7 ml tube) | |
| EPO, (Erythropoietin) | QU# 22376R | 1 full tube of blood in a red top or gold top tube. | |
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| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Epstein-Barr Virus AB Panel (EBV Nuclear Ag, IgG, Epstein-Barr VCA IgG Ab, and Epstein-Barr VCA IgM Ab) | QU# 6421X | **1 full tube** of blood in red top tube or gold top tube. Grossly lipemic and hemolyzed specimens will be rejected. | |
| Epstein-Barr Virus Capsid Antibody (IgG and IgM) | QU# 4066 | **1 full tube** (min. 3mls) of blood in red top tube or gold top tube. Grossly lipemic and hemolyzed specimens will be rejected. Avoid extremes of heat and cold. Room Temp | |
| Epstein-Barr VCA IgG Antibody | QU# 8474X | **1 full tube** (min. 3mls) of blood in red top tube or gold top tube. Grossly lipemic and hemolyzed specimens will be rejected. | |
| Epstein-Barr VCA IgM Antibody | QU# 8426X | **1 full tube** (min. 3mls) of blood in red top tube or gold top tube. Use for the diagnosis of an acute or recent infection. Grossly lipemic and hemolyzed specimens will be rejected. Avoid extremes of heat and cold. | |
| ERA/ PRA Assay | | Call Histology (x4638) | |
| Erythropoietin (EPO) | QU# 22376R | **1 full tube** (min. 5mls) of blood in red top tube or gold top tube. | |
| ESBL Confirmation | QU# 36470A | Submit pure culture of the organism to be confirmed on Agar slant. **Must** be transported in a Double-Walled container. | |
| ESR | | See Sedimentation Rate | |
| Estradiol, **serum** | In house | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. | |
| Estrogen, Total | QU# 22541P | **1 full tube** blood in red top tube or gold top tube (serum). Plasma from EDTA (lavender or royal blue top), Sodium or lithium heparin (green top) tubes are also acceptable. | |
| Estrone | QU# 23244X | 1 full red/black top sst tube. Specify age and sex on test requisition. Refrigerate serum. | |
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| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Factor II, DNA Analysis (Prothrombin Gene Mutation Analysis) | QU# 30326X | **Need 2 full Tubes** 2 lavender top tubes (7 mls whole blood). Specimens drawn in EDTA royal blue top, sodium heparin, lithium heparin and ACD solution B (yellow top) tubes are also acceptable. **Do not centrifuge specimens. Keep at room temperature.** | |
| Factor V Activity | QU# 344X | **Special Instructions Call Lab** 1full lt blue top tube, (3.2% or 3.8% Sodium Citrate tubes are acceptable). ***Immediately*** centrifuge for 15 minutes at 3500 rpm, separate and **freeze** plasma. Submit separate, frozen vials for each coagulation assay ordered. | |
| Factor V Leiden | QU# 22722X | 5mls whole blood from EDTA lavender top tube. Royal blue top EDTA, green top sodium heparin or lithium heparin and yellow top ACD solution B tubes are also acceptable. Must be kept at **room temperature**. ***Specimen stability is crucial.*** For prenatal /fetal specimens call the lab. | |
| Factor VIII, (component) | In house | **Call** Blood Bank for product order | |
| Factor VIII, Von Willebrand Factor Antigen, Ristocetin | QU# 20231 | See Von Willebrand Profile | |
| Factor VII, Activity | QU# 346X | ** **Special Instructions Call Lab**** 1 full Lt Blue top tube. (3.2% or 3.8% Sodium Citrate). Centrifuge at 3500 rpm for 15 minutes. Separate and **freeze plasma immediately.** Submit separate, frozen vials for each assay ordered. | |
| Factor IX, (component) | In house | **Call** Blood Bank for product order | |
| Factor IX, Activity | QU# 352X | ****Special Instructions Call Lab**** 1 Full 4.5ml LT Blue top tube, (3.2% or 3.8% Sodium Citrate tube). Centrifuge for 15 minutes at 3500 rpm, separate and **freeze plasma immediately**. Submit separate, frozen vials for each assay ordered. | |
| FDP (Fibrin Degradation Products) or D-Dimer | In house | **1 full tube** blood in blue/black (center) or lt blue top tube (3.2 % citrated plasma). The tube must be filled to the indicated line. Specimen in only **stable for 4 hrs** after draw time. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Fecal Fat Qualitative or Stool, Fat Qualitative | QU# 22707W | 5gm random fresh stool in sterile container. *Stool specimens in transport media or on a swab will be rejected.* **Ship Frozen.** **Order as Miscellaneous test.** | |
| Fecal Fat Quantitative or Stool, Fat Quantitative | QU# 3046N | ****Special Instructions Call Lab** 24, 48 or 72 hour stool collection. Record total collection time and weight on test requisition.** Keep refrigerated. Use 1gallon plastic leak-proof container with screw cap. Specimens collected in metal paint containers will be rejected. **Patient should be on a diet including 100 grams of fat per day for 3 days prior to and during collection.** | |
| Fecal Reducing Substances or Stool, Reducing Substances | QU# 5022X | Collect 10-30 grams stool in plastic container. Seal container in a plastic bag before shipping. **Store and ship specimen frozen.** Do not collect specimen in metal can. | |
| Fecal WBC, Smear or Stool, WBC | In house | 1g fresh stool, random in sterile container. Stable up to 24 hours refrigerated. | |
| Ferritin, blood | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Fetal Fibronectin | In house | ****Special Kit Call Lab**** Adeza Biomedical specimen collection kit, swab. Provided by the Lab. | |
| Fetal Hemoglobin (stain for quantitation) | In house | 7 mls blood in lavender top tube. (Blood Bank tube) | |
| FFP | | See Fresh Frozen Plasma | |
| Fibrin Degradation Products FDP Or D-Dimer | | See FDP or D-Dimer | |
| Fibrin Split Products | | See Fibrin Degradation Products (above) | |
| Fibrinogen | In house | **1 full tube** blood in lt blue top tube (3.2 % citrated plasma). Must be filled to the indicated line. Specimen is stable only 4 hours. | |
| Fine Needle Aspiration | | Call Histology **(x4638)** / NON-GYN | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| FISH, CML/ALL bcr/abl Blood | QU# 12070N | 1-3 mls bone marrow or whole blood in a sodium heparin (green-top, dark-blue-top or lead free tan-top) tube. **Ship at room temperature.** Provide the following information: specimen type, volume, clinical indication, prior therapy/transplant, referring physician/phone#, client/phone#, client accession# and patient ID. | |
| Flow Cytometry | | See Leukemia/Lymphoma Evaluation | |
| Folate, **serum** | | See Folic Acid, serum | |
| Folate, RBC | QU# 1768T | 1 full tube (min. 1 ml.) blood in Lavender top EDTA tube. **Whole blood specimen.** **Minimize exposure to light during sample handling and storage; keep tube wrapped in foil.** | |
| Folate and Vitamin B12 | | See Vitamin B12 & Folate | |
| Folic Acid, **serum** (Folate, **Serum**) | In house | 1 full tube (min. 3 mls) blood in gold top tube. **Protect specimen from light**. No hemolysis. Fasting required. | |
| Follicle Stimulating Hormone, **serum** (FSH) | QU# 22863E | 1 full tube (min. 3 mls) blood in gold top tube. | |
| Food Profile, Allergen Panel | QU# 20226 | 1full tube blood in gold top or red top tube. | |
| Free PSA | | See Prostatic Specific Antigen, Free. | |
| Free T4 | | See T4 Free | |
| Free Testosterone | | See Testosterone Free | |
| Fresh Frozen Plasma (FFP) | In house | **Call Blood Bank** Specimen is associated with Type & Rh (May need to order Type & Rh) | |
| Frozen Section | In house | Call Histology **(x4638)** Tissue, fresh specimen. | |
| FSH | QU# 22863E | 1 full tube blood in gold top tube. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| FTA-Abs, Serum (Fluorescent Treponemal Antibody) | QU# 53934R | **1 full tube** blood in red top tube or gold top tube. Specimens will be rejected for gross hemolysis or lipemia. | |
| FTI | | Order both T-uptake & T4 | |
| Fungus KOH, smear | In house | See KOH Smear | |
| G-6-PD, Blood and RBC Count (Glucose 6Phosphate Dehydrogenase, Quantitative) | QU# 23572P | 1 ml whole EDTA blood (lavender top tube or royal blue top tube). **Frozen samples are unacceptable.** | |
| Gabapetin (Neurotin) | QU# 97386P | 1 full 7ml lavender or royal blue (EDTA) top tube. Sodium heparin (green top), Lithium heparin (green top), no additive (red top and royal blue top) tubes are also acceptable. Draw sample 2 hours after last dose at steady state. **Contact lab for special Quest instructions.** | |
| GAD-65 | QU# 34878X | See Glutamic Acid Decarboxylase-65 Antibody | |
| Gamma GGT | | See GGT | |
| Ganglioside GM-1 Antibodies (IgG, IgM), EIA | QU# 7997N | 1 full gold-top or red/black-top tube. **Overnight fasting preferred**. Refrigerate. | |
| Gastric Fluid, occult blood | In house | 1 ml Gastric contents, in container. Sample need to be sent to Lab **immediately** for testing. | |
| Gastrin | QU# 478X | ****Special Instructions** - 1 full tube** (min**.** 3mLs) blood in red top tube or gold top tube**. Overnight fasting required**. Centrifuge with in 1 hour of collection. Separate and freeze immediately. Frozen | |
| GC (Neisseria gonorrhoeae) DNA Probe | QU# 50286R | Collect specimen using the chlamydia trachomatis/Neisseria gonorrhoeae **Pace DNA Probe collection kit**. **Swabs must be submitted in the Gen-Probe collection container.** | |
| GC Screens | | See Cultures | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Genosure | | See HIV Genotype | |
| Gentamicin: **Peak** | In house | 1 full tube (min. 3mls) blood in red top tube or green top tube.<br>State time of last dose. | |
| Gentamicin: **Trough** | In house | 1 full tube (min. 3mls) blood in red top tube or green top tube.<br>State time of last dose. | |
| Gentamicin: **Random** | In house | 1 full tube (min. 3mls) blood in red top tube or green top tube.<br>State time of last dose. | |
| Gentamicin: **Random** | In house | 1 full tube (min. 3mls) blood in red top tube or green top tube.<br>State time of last dose. | |
| Genital Herpes | | See Herpes Culture | |
| GGT (Gamma Glutamyl Transpeptidase) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Giardia Lamblia Antigen, EIA | QU# 64121E | 5g fresh stool in 10%formalin (O & P KIT). Keep specimen at **room temperature.** OTHER ACCEPTABLE SPECIMENS: fresh unpreserved stool refrigerated less than 48 hours old or frozen. **Rejection Criteria:** Stool preserved in medium other than 10%formalin and PVA, SAF or MIF. Stool in 10%formalin received frozen. Stool submitted in expired transport vial.<br>Room Temp. | |
| Globulin | In house | Order both Total Protein & Albumin | |
| Glucagon, Plasma | QU# 519X | 2 full lavender top tubes. Centrifuge, separate and **Freeze** plasma immediately. | |
| Glucose-6-Phosphate Dehydrogenase, Blood & RBC Count (G-6-PD) | QU# 23572P | 1 ML EDTA whole blood drawn in a **LAVENDER TOP TUBE.** Do not freeze. | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Glucose: **1 hour PP, Blood** | In house | 1 full tube (min. 3 mls) blood in green/black top or gold top tube. | |
| Glucose: **2 hour PP, Blood** | In house | 1 full tube (min. 3 mls) blood in green/black top or gold top tube. | |
| Glucose: **Body Fluid** | In house | 0.5 mls body fluid in a sterile container. State Source | |
| Glucose: **CSF** | In house | 0.5 mls CSF in a sterile container. | |
| Glucose: Fasting or Random, **Blood** | In house | 1 full tube (min. 3 mls) blood in green/black top or gold top tube. | |
| Glucose: Fasting or Random, **Urine** | In house | 1 ml random urine in a urine container. Refrigerate | |
| **Glucose Tolerance** 2hour GTT, 3hour GTT, 4hour GTT, and 5hour GTT | In house | ****2 specimens, one blood / one urine**, needed for each hour of the tolerance. Refer to collection procedure in the phlebotomy section of the Lab Services Manual. *It is preferred that Outpatients schedule testing with Central scheduling.* | |
| Glutamic Acid Decarboxylase-65 Antibody | QU# 34878X | 1 full gold-top or red/black top tube. Refrigerate. | |
| Glycohemoglobin or HgbA1C | In house | See Hemoglobin A1C | |
| GM-1Ab, IgG & IgM | QU# 7997N | See Ganglioside GM-1 Antibodies (IgG, IgM), EIA | |
| GQ1B AB (IgG) | QU# 14254P | 1 full red/black top (10 ml) tube. Refrigerate serum. | |
| Gram Stain Smear | In house | Collect specimen using a culture swab (red or blue) or collect specimen in a sterile tube or sterile cup. | |
| Graves Test | | Need to order **both** AntiThyroglobulin AB and TPO. See Thyroid ABS. | |
| H pylori | | See Helicobacter Pylori IgG Antibody | |
| Ham's Test | | See Acid Hemolysis | |
| Haptoglobin | QU# 45427W | **1 full tube** blood in red top tube or gold top tube. | |

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| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| HCG, Tumor Marker, (Quantitative) | In house | 1 tube blood in green/black top, red top tube or gold top tube (Min. 3 mls blood). | |
| HCG Pregnancy Test Serum (Human Chorionic Gonadotropin) | | See Pregnancy Test, Serum | |
| HCV RNA Genotype, LIPA (Hepatitis C Viral RNA Genotype) | QU# 37811X | 2 full lavender (EDTA) tubes. **Separate plasma within 2 hours of collection and immediately freeze sample.** Interpretive Information: Patients infected with HCV types other than 2 or 3 have a poor potential for response to treatment and require 48 weeks of therapy even if the virus is undetectable at 24 weeks. Conversely, in patients with type 2 0r 3 infection, treatment may be stopped at 24 weeks. Treatment decisions should also take into account other factors that may influence therapeutic response, such as pretreament HCV viral load and cirrhosis status, sex and age of the patient, and other clinical and laboratory findings. Patients may be infected with multiple HCV subtypes. | |
| HDL (High Density Lipoprotein) | In house | 1 tube blood in green/black top tube or gold top tube, (Min. 3 mls.) 12 hour fasting preferred. | |
| Heavy Metals Profile1, **Blood** (Includes: Arsenic, Lead (adult), Mercury And Creatinine) | QU# 7674N | ****Special Tube ** 2 tubes** whole blood in **Royal Blue Top (EDTA)** tube. Sodium heparin royal blue top tubes are also acceptable. To avoid contamination, use powder less gloves for collection and handling. Room Temp. | |
| Heavy Metals Profile 1, **Urine, 24HR** (Includes Arsenic, Mercury, Lead and Creatinine) | QU# 6510N | (Used for **Health Fairs/Fireman Panel)**Call Lab** *10ml aliquot from a 24hour urine collected in an acid wash (metal free) container. *Do not use a preservative*. Patient should refrain from eating seafood 3 days prior to collection. Do not measure total volume. Send aliquot in trace element free container. See 24-Hour Urine Collections Procedure. | |
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| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
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| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Heavy Metals Profile 1, **Urine, 24HR** (Includes Arsenic, Mercury, Lead and Creatinine) | QU# 6510N | (Used for **Health Fairs/Fireman Panel)****Call Lab** *10ml aliquot from a 24hour urine collected in an acid wash (metal free) container. *Do not use a preservative*. Patient should refrain from eating seafood 3 days prior to collection. Do not measure total volume. Send aliquot in trace element free container. See 24-Hour Urine Collections Procedure. | |
| Heavy Metals Profile 1, **Urine, 24HR** (Includes Arsenic, Mercury, Lead and Creatinine) | QU# 6510N | (Used for **Health Fairs/Fireman Panel)****Call Lab** *10ml aliquot from a 24hour urine collected in an acid wash (metal free) container. *Do not use a preservative*. Patient should refrain from eating seafood 3 days prior to collection. Do not measure total volume. Send aliquot in trace element free container. See 24-Hour Urine Collections Procedure. | |
| Helicobacter Pylori IgG Antibody (H. Pylori, IgG) | QU# 51763E | 1 full tube (min. 3mls) blood in red top tube or gold top tube. Plasma specimens will be rejected. *Specimens that contain hemolysis, lipemia or are icteric are not acceptable.* | |
| Hemochromotosis, (Hereditary DNA) | 35079X | See Hereditary Hemochromotosis | |
| Hematocrit | In house | 3mls Whole blood in lavender-top tube. (1 ml minimum draw in a 3 ml tube **or** 3 ml minimum draw in a 7 ml tube). | |
| Hemoglobin | In house | 3mls Whole blood in lavender-top tube. (1ml. min. draw in a 3 ml tube **or** 3 ml min. draw in a 7 ml tube). | |
| Hemoglobin Electrophoresis | | See Hemoglobinopathy Evaluation | |
| Hemoglobin & Hematocrit | In house | 3mls Whole blood in lavender-top tube. (1ml minimum draw in a 3 ml tube **or** 3 ml minimum draw in a 7 ml tube). | |
| Hemoglobin A1C (Glycohemoglobin) | In house | 2-3 mls whole blood in lavender-top tube. (2ml minimum draw ) | |
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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Hemoglobin, plasma | QU# 7211P | 1 full (10 ml) green top (Sodium or lithium heparin). **Draw sample using a 19gauge needle to avoid hemoysis.** *Separate plasma from cells immediately and refirgerate* | |
| Hemoglobin solubility (Sickle cell) | QU# 68643E | 1 full tube (min. 3mls) Whole blood in lavender-top tube. Invert tube 6 times to prevent clotting. Absolute minimum specimen requirement 50ull sample. | |
| Hemoglobinopathy Evaluation: (Includes Hbg A1, Hbg A2, Hbg F, Abn Hbg1, Abn Hbg 2, Abn Hbg 3, RBC, Hbg, Hct, MCV, MCH, RDW, with interpretation.) | QU# 35489X | 1 full 7ml lavender top (EDTA) tube. | |
| Hemoglobin, Fetal | | See Fetal Hemoglobin | |
| Heparin Induced Platelet Antibody (HIPA) | Compunet #70488 | 2 Full lt. blue tubes (3.2% sodium citrate) tubes. Separate plasma and freeze. Specimen is sent to Compunet for testing. | |
| Heparin, Low Molecular Weight | QU# 30292X | 2 full lt blue-top (3.2%sodium citrate) tubes. Centrifuge @1500g/15min. Respin plasma 1500g/15min. Freeze plasma immediately. No hemolysis. | |
| Hepatic Function Panel (Albumin, Bilirubin (Total & Direct), Alk Phos. T.Protein, AST/SGOT & ALT/SGPT) (Liver) | In house | 1 full tube (min. 3mls) blood in green/black top tube or gold top tube. | |
| Hepatitis A Total Antibody | QU# 51839W | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Hepatitis A Antibody (IgM) | QU# 51813E | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Hepatitis B Core Antibody, (IgM) | QU# 51854R | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Hepatitis B Core Total Antibody | QU# 51870E | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Hepatitis B Virus Surface **Antibody** | In house | 1 full tube blood in red top, gold top or lavender top tube. Testing will be done on M-W-F; refrigerate unless testing is delayed more that 3 days, then freeze. | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Hepatitis B Virus Surface **Antigen** | QU# 265F | 1 full tube blood in red top tube or gold top tube. | |
| Hepatitis BE Panel (Be Ag & Be AB) | QU# 27 | 1 full tube blood in red top tube or gold top tube. No gross hemlysis or lipemia. | |
| Hepatitis C, Antibody (w/reflex to RIBA) | QU# 37677X | 1 full tube blood in red top tube or gold top tube | |
| Hepatitis C AB, RIBA (Confirmation only) | QU# 1354N | 1 full tube (min. 3mls) blood in red top tube or gold top tube. **Centrifuge within 1 hour of collection.** | |
| Hepatitis C (Virus RNA) by PCR, [Quantitative – (viral load)] | QU# 35645X | 1 Full lavender top tube is preferred. Serum is also acceptable. **Separate plasma or serum from cells within 6hours by centrifuging @ 800-1600xg for 20 minutes at room temperature.** Transport in polypropylene vial. | |
| Hepatitis Panel **Acute** (Hep. B Surface Ag, Hep A AB., IgM, Hep. B Core AB, IgM, Hep. C AB) | QU# 10306F | ****Need 2 Tubes**** 2 Full red top tubes or red/black top tubes. | |
| Hereditary Hemochromotosis DNA | QU# 35079X | 1 full 7ml Lavender top (EDTA) tube. Sodium heparin (green-top), and ACD solution B (yellow-top) are also acceptable specimens. Refrigerate. | |
| Herpes Culture | | See Culture, Herpes | |
| Herpes Type 1 & 2, DNA, PCR (CSF) | Sent to Compunet | 1ml CSF, Frozen is the preferred sample. Samples that are also acceptable: 1ml of serum, plasma or whole blood from EDTA lavender top or ACD-B yellow top tubes. Serum/plasma specimens ship frozen; whole blood specimens ship refrigerated. Most body fluids or specimens collected on swabs (collected on M4 viral transport medium) shipped frozen are also acceptable. Call lab for details. | |
| Herpes Simplex Virus I & II IgG (HSV I & II IgG Herpeselect AB) | QU# 6447T | 1 full tube (min. 3mls) blood in red top tube or gold top tube. Samples that are grossly hemolyzed or lipemic will be rejected. | |
| Herpes Simplex Virus, IgM (HSV I & II is not differentiated in this test) | QU# 7438X | 1 full tube (min. 3mls) blood in red top tube or gold top tube. Samples that are grossly hemolyzed or lipemic will be rejected. | |
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| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Herpes Simplex Virus Type II Antibody, IgG | QU# 10005F | 1 full tube (min. 3mls) blood in red top tube or gold top tube. Samples that are grossly lipemic or hemolyzed will be rejected. | |
| Heterophile | | See Mono Test | |
| High Density Lipoprotein | | See HDL | |
| Hirsutism Profile Comprehensive (Includes: Androstenedione; Dehydroepian-drosterone Sulfate; Testosterone, free and total. | QU# 36707X | **Need 2 Tubes** 2 tubes of blood in red top tubes or gold top tubes. (6.5mls serum min.) Specify age and sex on requisition. Early morning specimen is preferred. | |
| Histoplasma Antibodies | QU# 526X | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Histoplasma Antigen | QU# 19994X | 5 mLs urine in screw cap container, or, 3 full red top or gold top tubes. CSF and Bronchial Lavage/washings are also acceptable specimens. *Indicate specimen type and date collected on test request.* | |
| HIT (Heparin Induced Thrombocytopenia) | | Call lab for assistance | |
| HIV | In house | 1full tube (min. 3 mls) blood in red, goldor red/black top tube. Refrigerate. | |
| HIV– 1 Genotype (HIV Genosure) | QU# 83600N | **2 full lavender top tubes** (Separate plasma within 2 hours of collection.) Transfer to plastic transport tube, Ship **Frozen**. *There are other acceptable specimens for this test call lab with questions.* | |
| HIV-1 Quantitative, PCR Viral Load, Ultra Sensitive | QU# 40085X | **1 full lavender top (EDTA) tube.** (Separate plasma within 6 hours of collection). Transfer to plastic transport tube, Ship **Frozen.** *There are other acceptable specimens for this test, call lab with questions.* | |
| HLA DR2, DQ1 | | See Narcolepsy Profile | |
| HLA Typing | | Call Lab (Human Leukocyte Antigen) | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| HLA-B27 Typing | QU# 48215P | **Special tube** 1 10ml yellow top tube (ACD Solution A or B). **Do not freeze or refrigerate**. Specimen must reach testing site within 24 hours of collection. **Send Monday through Friday only!** Room Temp | |
| Homocystine (Serum) | QU# 24281E | 1 full tube (3 mls min.) blood in gold or red top tube. 10 hour fast is strongly recommended before specimen collection. **Keep blood on ice and separate from cells within 1 hour of draw.** EDTA (lavender top) or sodium heparin (green top) tubes are also acceptable. | |
| Horsham Allergy Panel | QU#12165 | 1 full tube blood in gold, red top, or red and black top tube. Minimum requirement: 5 mL blood. Room Temp. | |
| HPV -Human Papillomavirus (High/Low Risk) (Digene Hybrid Capture) | QU# 9662N | Cervical swab/brush or fresh cervical biopsy. Thin prep vial or Digene Kit. Room Temp | |
| HPV -Human Papillomavirus (High Risk Only) (Digene Hybrid Capture) | QU# 10801A | Thin Prep Vial or Digene Kit. Room Temp | |
| HPV with Thin Prep | | See Thin Prep with HPV reflex | |
| HSV I & II IgG | | See Herpes Simplex Virus I & II IgG | |
| HSV I & II IgM | | See Herpes Simplex Virus I & II IgM | |
| HSV, Culture Rapid | | See Herpes Culture | |
| HSV Type II antibody | | See Herpes Simplex Virus Type II Antibody | |
| HTLV-III | | See HIV | |
| (Anti) Hu | | See Neuronal Nuclear (HU) AB | |
| (Anti) Hu, CSF | | See Neuronal Nuclear (Hu) AB, CSF | |
| Human Papillomavirus | | See HPV Digene Hybrid Capture test selections. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| 17 Hydroxycorticosteroids, 24 hr. Urine (17OH) | QU# 15202X | 20ml aliquot from 24hr urine. Place 10gm of boric acid into a 24hr container prior to collection. **Call lab for container.** See 24-Hour Urine Collections Procedure | |
| 5-Hydroxyindoleacetic Acid, Quant., 24 hr. Urine (5-HIAA 24 Hour) | QU# 9936N | 10 ml aliquot of 24hr urine. Use 25ml of 6N HCL as preservative. (Collection may be done without preservative if PH is below 6 and specimen is shipped frozen.) Patient should avoid foods high in indoles: Avocado, banana, tomato, plum, walnut, pineapple, and eggplant. Also avoid tobacco, tea and coffee three days prior to testing. See 24-Hour Urine Collections Procedure | |
| 17-Hydroxyprogesterone, Serum | QU# 17180X | 1 full tube (min. 3mls) blood in red top tube. **Gel barrier/SST tubes are unacceptable.** | |
| ID & Sensitivity from Culture device | In house | Call Lab (Microbiology x4642) | |
| IgE, Serum | QU# 24620E | 1 full tube (min. 3 mls) blood in gold top or red/black top or red top tube. | |
| IGF-I (Insulin-like growth factor) (Somatomedin C.) | QU# 839X | 1 full tube (min. 3mLs) blood in red top tube. Centrifuge within one hour of collection and transfer specimen to a plastic container. **Freeze specimen.** | |
| IgG Subclasses 1-4 (Includes Total IgG) | QU# 5173N | 1 full tube in red top or gold top tube. Centrifuge with in 1 hour of collection and transfer serum to a plastic. **Overnight fasting is preferred.** | |
| IgG Index & Synthesis | QU# 7558X | ****Special Instructions** 2 Different Specimens**** 2mls CSF **AND** 1 full tube blood in red top or gold top tube. Blood specimen should be drawn after CSF is collected. Collection date **must** be same for both specimens. **CSF must be clear**. | |
| IgM, Serum Immunoglobulin (Quantitative) | QU# 24729W | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Immunoelectrophoresis | | See Electrophoresis and/or Protein Electrophoresis | |
| Immunoelectrophoresis & Fixation | | See Electrophoresis and/or Protein Electrophoresis | |
| Immunofixation (IgG, IgA, IgM) | QU# 992A | 1 full red top or gold top tube. Refrigerate serum. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Immunofixation, Urine (Light Chains or Quantitative Immunoglobulins) | QU# 134403E | 50ml urine from a 24hour collection is preferred. Random urine sample is also acceptable. See 24-Hour Urine Collections Procedure | |
| Immunoglobulin **CSF**, **(IgA, IgG, IgM)** | QU# 7104N | 2 mls CSF in sterile CSF tube. **Overnight fasting is preferred.** | |
| Immunglobulin E, IgE, Serum | QU# 24620E | 1 full tube (min. 3 mls) blood in gold top or red/black top or red top tube. | |
| Immunoglobulins, Quant., **Serum** **(IgA, IgG & IgM)** | QU# 1370A | **1 full tube** blood in red top tube or gold top tube. | |
| Immunoglobulins, **Serum** Quant. **(IgA, IgE, IgG & IgM)** | QU# 5111 | **1 full tube** blood in red top tube or gold top tube. | |
| Immunoglobulins, IgM | | See IgM | |
| Influenza A&B direct Antigen | In house | Nasal Aspirate, nasal wash (pediatric patients), nasal swab (red-capped transport medium), throat swab (red-capped transport medium). | |
| Insulin Autoantibody | QU# 52324P | 1 full tube blood in red top tube or gold top tube. Transport at *room temp*. | |
| Insulin, Free & Total | QU# 20021 | 1 full tube blood in red top tube. Patient should fast for 12-14 hours before specimen is collected. | |
| Insulin Resistance Challenge, 2hour | In house | Draw 1 gold top tube and 1 green/black top tube for both the fasting and the 2 hour draw time. Patient must be fasting. See Insulin Resistance Challenge Procedure. | |
| Insulin, Total | QU# 15701E | 1 full tube blood in red top or gold top tube. **OVERNIGHT FASTING REQUIRED.** | |
| Insulin-like growth factor I | QU# 24844P | 1 full red top or gold top tube. Centrifuge within 1 hour of collection and transfer into plastic container. **Freeze specimen**. Plasma is no longer an acceptable specimen. | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Intrinsic Factor Blocking Antibody, Serum | QU# 568X | 1 full tube blood in a red top or gold top tube. | |
| Ionized Calcium | In house | See Calcium, Ionized Serum | |
| Iron | In house | 1 full tube (min. 3mls) blood in green/black top tube or gold top tube. | |
| Iron Binding Capacity Total | | See TIBC | |
| Islet Cell AB w/reflex | QU# 52654P | 1 full tube (min. 4 mls) blood in gold top, red/black top, or red top tube | |
| Isoenzymes, CPK | | See Creatine Kinase Isoenzymes | |
| JAK 2 Mutation Blood | QU# 16539X | 5ml EDTA whole blood or bone marrow (Call lab for other acceptable specimens) **The draw time and date must be recorded on the tube**. Ship immediately, the specimen is acceptable for up to 72 hours. | |
| Ketones, **Blood** (Acetone) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Ketones, **Urine** | In house | 1 ml urine in urine container, (keep refrigerated) | |
| KOH Smear, Genital | In house | Vaginal swabs in 1ml sterile saline or Microbiology culture transport medium (red or blue cap). Red top swab or swab in 1 cc of sterile saline. | |
| KOH Smear, Non-Genital **Must state source** | In house | PREFERRED SPECIMEN: Raw specimen, any source *other than* blood or raw stool specimens are acceptable. Submit stool in stool culture transport medium. Collect oral, nose nasopharynx, ear, eye, wound or urethral specimens using culture **swab transport system**/liquid medium. Use **sterile plastic container** for respiratory secretions, body fluid, tissue, CSF, urine, contact lens (or contact lens fluid). For tissue samples add a small amount or saline to sample. **Transport raw specimens refrigerated; transport swab specimens at room temperature**. | |
| Lactate (Lactic Acid) | In house | ****Special Instructions Call Lab** Do Not Use Tourniquet**. 1 full tube in gray-top tube. **Deliver to lab on ice** (Centrifuge within 15 min. of draw, then separate plasma.) | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Lactate, CSF | In house | 0.5mls CSF in a sterile container. | |
| Lamotrigine | QU# 69484P | 1 full (10ml) red top (No additive) tube. ****Special Instructions**** Draw ½ - 1 hour before dose at steady state. **Centrifuge within 1 hour of collection**. Do no use gel barrier tubes. Refrigerate serum. | |
| Latex specific IgE, Quant. (K82) | QU# 8927X | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. | |
| LAP Score | | See Alkaline Phosphatase Leukocyte | |
| LDH, **blood** | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| LDH, **Body Fluid** | In house | 1 ml fluid in a sterile container: State Source | |
| LDL, Direct | In house | 1 full tube (min. 3 mls) blood in red top tube, or green/black top-tube. Spin and pour off immediately. | |
| Lead, Heavy Metal Profile Mercury, Heavy Metal | | See Heavy Metals Profile 1 | |
| Lead, Industrial | | See Lead level, Adult | |
| Lead Level, Adult | QU# 56713E | 1 full tube of whole blood drawn in a Royal blue top (EDTA) tube. **Capillary collections are only acceptable from physicin offices (0.5ml sample in lavender top microtainer**. Clotted or viscous samples will be rejected. | . |
| Lead & Zinc Protoporphyrin | QU# 6904 | 1 full tube whole blood drawn in a Royal blue top (EDTA) tube. **For capillary collections provide 0.5ml sample in lavender top microtainer.** Clotted or viscous samples will be rejected. | |
| Legionella Pneumophilia Antibodies, Serum | QU# 52365R | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| | | | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Legionella Pneumophilia **Urinary Antigen, EIA** | QU# 64477W | 1ml clean catch urine, collected in a sterile cup or a gray top tube. Keep refrigerated. | |
| Legionella Species **Culture** | QU# 668X | Submit fresh biopsy tissue; lower respiratory tract specimens, or pleural fluid in a sterile screw-capped container. **Keep Refrigerated. Do not fix samples.** | |
| Leukemia/Lymphoma Evaluation | Genzyme | Peripheral Blood: Contact Lab for special collection kit.<br>Bone Marrow: Contact Lab for special collection kit. | |
| Leukocyte Alkaline Phosphatase | | See Alkaline Phosphatase Leukocyte | |
| Leukoreduced Platelet | | See Platelet, Apheresed | |
| Leukoreduced RBC | | See RBC, Leukoreduced | |
| Leukoreduced RBC/Irradiated | | See RBC, Leukoreduced Irradiated | |
| LH (Luteinizing Hormone) | QU# 25791E | 1 full tube (min. 3 mls) blood in gold top tube. | |
| Light Chains, Urine | | See Immunofixation, Urine | |
| Lipase | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Lipid Panel<br>(Cholesterol, HDL, TRIG, calculated LDL&VLDL) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. Fasting Recommended. | |
| Lipid Profile with LDL/HDL Ratio<br>(Chol, HDL, TRIG, calculated LDL&VLDL) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. Fasting Recommended. **(Also Called Coronary Risk Lipid Profile)** | |
| | | | |
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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Lipids, Total, **Stool** | QU# 3046N | ****Special Instructions**24, 48 or 72 stool collection**. Record total collection time and weight on requisition. Keep refrigerated. Use a 1gallon, plastic leak-proof container with screw cap. **Patient should be on a diet including 100 grams of fat per day for three days prior and during the collection period**. | |
| Lipoprotein (a) | QU# 108357P | 1 full tube (min. 3mls) blood in red top tube. 12 hour fast is required. Centrifuge within 1 hour of collection. Avoid hemolysis; Grossly lipemic samples are unacceptable. | |
| Lithium | In house | 1 full tube (min. 3mls) blood in red top tube. State time of last dose. | |
| Liver (Profile) | | See Hepatic Function Panel | |
| Liver Kidney Microsomal Antibodies | QU# 15038X | 1 full tube (min. 3mls) blood in red top or gold top tube. | |
| Lupus Anticoagulant Evaluation (Includes: Russell's viper venom time; Partial Thromboplastin time; Lupus anticoag.) | QU# 7079N | ****Special Instructions Call Lab** 2 full tubes blood in Lt blue tube, 3.2% Sodium Citrate is the only acceptable sample type.** Separate plasma into 2 (1ml) aliquots and **ship frozen** (-20C). Submit 1additional plasma aliquot for repeat and/or test additions. ***Prolonged tests will reflex an additional test/charge.*** Hemolyzed specimens are not acceptable. Frozen. | |
| Luteinizing Hormone, (LH) | QU# 25791E | 1 full tube blood in red top or gold top tube. | |
| Lyme Disease Antibodies, IgG and IgM | QU# 1529T | **1 full tube** (min. 3mls) of blood in red top tube or gold top tube. **A positive or equivocal result will reflex a western blot confirmation with an additional charge.** Hemolyzed and lipemic samples will be rejected. | |
| Lyme Disease, DNA PCR | QU# 30297X | 1 ml CSF in a sterile CSF tube. Synovial fluid is also an acceptable specimen. **Freeze specimen**. | |
| Lymphocyte Subset or T-Lymph Helper/Suppressor Ratio: (Total Lymph, Total T cells, T-Lymphocytes subsets). CBC not included. | QU# 7195X | ****Call Lab for Special Tube and 2 Different Tubes** Draw 2 full** tubes blood in lavender top tube. Stable for 30 hours at Room Temperature only. **Must submit Monday-Thursday only**. Room Temp. | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Lymphoma / CLL Flow | | See Leukemia/Lymphoma Evaluation | |
| Lytes | | See Electrolyte Panel | |
| MAG-SGPG AB (IGM) | QU# 136648P | See Myeline-Associated Glycoprotein-Sulfated Glucuronic | |
| Magnesium, **Blood** | In house | **1 full tube** in green/black top tube or gold top tube. | |
| Maternal Serum Screen I (Alpha-fetoprotein, Maternal) | QU# 5059X | 1 full tube blood in red top or gold top tube. Maternal date of birth, weight, race, insulin dependent status, gestational age (14-22) weeks, EDD, method of determining EDD and date collected **MUST** be provided for interpretation of results *(See Obstetric/Gynecology Requisition Form.). Quest recommends that client keep a duplicate sample frozen at the requesting lab.* | |
| Maternal Serum AFP | | See Maternal Serum Screen 1 | |
| Maternal Serum Screen III (AFP, Quant. B-HCG & Unconj. Estradiol) | QU# 7292X | 1 full tube blood in red top or gold top tube. The Obstetric/Gynecology Requisition Form (or equal information) **MUST** be complete and sent with the specimen (*See* Maternal Screen I above). *Quest recommends that client keep a duplicate sample frozen at the requesting lab.* | |
| Maternal Serum Screen IV (Tetra) | QU# 30294X | 1 full tube blood in red top or gold top tube. The Obstetric/Gynecology Requisition Form (or equal information) **MUST** be complete and sent with the specimen (See maternal Screen I above). *Quest recommends that client keep a duplicate sample frozen at the requesting lab.* | |
| Maturation Index | In house | Estrogen level, collect from posterior vaginal wall. Smear onto slides and spray fix or drop into 95% alcohol immediately. Must supply **GYN request**. | |
| Measles Antibody, IgG | QU# 52449W | 1 full tube blood in a red top or gold top tube. Specimens that are grossly hemolyzed or lipemic will be rejected. | |
| Metabolic Panel, **Basic** | | See BMP or Basic Metabolic Panel | |
| Metabolic Panel, **Basic minus Glucose** | | See BMP minus glucose | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Metabolic Panel, **Comprehensive** | In house | See CMP or Comprehensive Metabolic Panel | |
| Metabolic Panel, **Comprehensive minus Glucose** | | See CMP minus glucose | |
| Methadone | | See DRUG SCREENS | |
| Methylenetetrahydrofolate Reductase | QU# 36165X | 1 full tube blood in 7ml lavender top (EDTA) tube. Room Temp | |
| Methylmalonic acid, serum | QU# 34879X | 1 full tube blood in red top tube. Place specimen in refrigerator or ice bath for 30 minutes after collection. Centrifuge after complete clot formation. **Separate serum within 1 hour** of draw**. FROZEN. Patient should be fasting.** | |
| Methylmalonic acid, urine | QU# 44131N | 5 mls random urine, **FROZEN**. No Preservative. | |
| Mexiletine (Mexitil) | QU# 4934X | **1 full blood** tube in red top tube. **Do not use gel-barrier tube**. Centrifuge within 1hour of collection. *Plasma from lavender top (EDTA) tube is also acceptable.* | |
| MG | | See Magnesium | |
| MHA-TP (Microhemagglutinin Test (For Treponema Pallidum Antibodies) | | See FTA-ABS or T. Pallidum Abs or (FTA-Abs) | |
| Microalbumin, **24 hour Urine** | In house | 10 ml of Urine 24 hour container. No preservative. Keep refrigerated. Record total volume. See 24-Hour Urine Collections Procedure. | |
| Microalbumin, **Random Urine** | In house | 10 mls urine random. No preservative. Keep refrigerated. | |
| Microalbumin/Creatinine **Ratio** (Random Urine) | In house | 10 mls urine random. No preservative. Keep refrigerated. | |
| Microscopic Only, Urinalysis | | See Urinalysis Microscopic Only | |
| | | | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Mitochondrial Antibodies | QU# 42481A | 1full tube of blood in a red or gold top tube. Avoid extremes of hot and cold. Specimens that have gross hemolysis or lipemia will be rejected. | |
| Mixing Study PT or PTT | | See Protime and PTT | |
| MMA, **serum** | | See Methylmalonic acid, serum | |
| MMA, **urine** | | See Methylmalonic acid, urine | |
| Mono Test, Heterophile | In house | 1 full tube (min. 3 mls) blood in red top tube or 3 mls blood in lavender top tube. | |
| MTHFR | QU# 36165X | See Methylenetetrahydrofolate Reductase | |
| Mumps Antibody Panel, IgG and IgM | QU# 85845N | 1 full red-top tube. **Do not collect in a gel barrier tube**. Refrigerate. | |
| Mumps Virus AB IgG | QU# 64766R | 1 full gold or red/black top tube. Refrigerate. Gross lipemia and hemolysis are unaccepatable. | |
| Mumps Skin Test | | Injected by Nursing. ****Send routing slip to Lab immediately**** | |
| Muscle Biopsy | | Call Histology **(x4638)** to schedule prior to procedure.<br>Fresh tissue or tongue blade. | |
| Mycoplasma Pneumoniae, IgG Antibody | QU# 659X | 1 full tube (min. 3mls) of blood in red top tube or gold top tube. | |
| Mycoplasma Pneumoniae, IgM Antibody | QU# 21130X | 1 full tube (min. 3mls) of blood in red top tube or gold top tube. | |
| Myeline-Associated Glycoprotien-Sulfated Glucuronic | QU# 136648P | 1 full (10 ml) red/black top sst tube. *Avoid hemolysis*. **Overnight fasting is preferred**. Refrigerate serum | |
| Myocardial Antibody (with reflex to titer) | QU# 52605P | 1 full gold top or red/ black top tube. Ship serum refrigerated. Gross hemylosis is unacceptable. | |
| Myoglobin, Quantitative Serum | QU# 660X | 1 full tube of blood in red top tube or gold top tube. | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Myoglobin, Quantitative Urine | QU# 661X | 5mls Random Urine (no preservative). Frozen. | |
| Mysoline | | See Primidone | |
| NAPA | | See Procainamide | |
| Narcolepsy Evaluation, HLA | QU# 34339N | 2 full yellow top tubes (ACD Solution A or B). It is essential that ethnic origin be included on requisition. **Do not freeze or refrigerate**. Specimen must reach Quest laboratory within 24 hours of collection. Room Temp. | |
| N. (Neisseria) Gonorrhea DNA Probe (Female Endocervical or Male Urethral) | QU# 50286R | Collect specimen using the Chlamydia trachomatis/Neisseria Gonorrhoeae **Pace DNA Probe collection kit**. Separate kits available for male and female specimens. **Swabs must be submitted in the Gen-Probe collection container.** | |
| Neuronal Nuclear (HU) AB (With reflex to Western Blot) | QU# 37053X | 1 full (10 ml) red/black top tube. Refrigerate serum. **Overnight fasting is perfered.** | |
| Neuronal Nuclear (HU) AB, CSF (With reflex to Western Blot) | QU# 54700N | 3mls CSF (1.5 mls minimum) **Overnight fasting preferred**. Refrigerate. | |
| Neurotin Level (Gabapetin) | QU# 97386P | 1 full tube blood in large (7 ml) lavender top (EDTA) tube or 2 (3 ml) lavender top (EDTA) tubes. **DO NOT USE GEL TUBE** | |
| Neutrophil Cytoplasmic Antibodies (ANCA Vasculitides) | QU# 4044F | 1 Full red top or gold top tube. Specimens that are grossly hemolyzed, lipemic or contain heavy visible particles are not acceptable. | |
| Disopyramide, (Norpace), Serum | QU# 35766P | 1 full tube (min. 3 mls) blood in red top tube. **Do not use serum separator tube.** | |
| Nortriptyline (Aventyl) | QU# 38729W | 1 full tube blood in red top, green top, or lavender (EDTA) tube. **Do not use serum separator tube**. | |
| 5 Nucleatidase | QU# 671X | 1 full tube blood in red top tube or gold top serum separator tube. *Serum must be refrigerated.* | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| OB Glucose Screen<br>(Includes: Fasting glucose blood & urine AND 1 hour blood & urine glucose) | In house | **4 Different Specimens** Draw a min. of 3mls blood in green/black top tube or gold top tube **AND** 1 ml urine. Administer 50g Glucola. Collect a 1-hour Glucose draw 3 mls blood in red top or gold top and 1 ml urine. **Consult Procedure**. | |
| Obstetric Panel<br>(CBC, Hep. B Surf. Ag. Rubella, RPR, Type & Screen) | In house | **4 Different Specimens** 7 mls blood in lavender top tube (Blood Bank tube), 3 mls blood in EDTA lavender top tube, 1 full tube blood in gold top tube **AND** 1 full tube in red top tube. | |
| **OCCULT BLOODS** | | | |
| Occult Blood, **Gastric** | In house | 1 ml Gastric contents, in sterile container. Sample need to be sent to Lab immediately for testing. | |
| Occult Blood<br>(**Stool**)<br>**NOTE** If more than 1 Occ. Blood is to be ordered, use specimens # 2 & 3 respectively. | In house | Submit Hemoccult card: Cards should be stored at Room Temp. Protect from light, heat & chemicals. DO NOT use cards after expiration date. Apply thin smear of stool inside box A. Using other end of stick, apply thin smear from different area of stool to box B. Label card with patient's name date and time of collection. Keep all cards until all specimens are collected, they must also all be taken to the Laboratory within 14 days of first collection. | |
| Occult Blood Stool, Specimen # 2<br>(Stool) (Screening or diagnostic) | In house | Hemoccult card, same as above | |
| Occult Blood Stool Specimen # 3<br>(Stool) (screening r diagnostic) | In house | Hemoccult card, same as above | |
| Oligoclonal Bands, CSF and Serum | QU# 674X | **2 Different specimens** 3 ml blood in red top tube or gold top tube **AND** 1 ml CSF (0.5 min). **It is preferred that the collection date and time be the same for both specimens**. Serum can be drawn with in 48 hours of the CSF, but this is not recommended. Client may submit CSF only to be run with control serum with client's approval. | |
| Osmolality, **Serum** | In house | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Osmolality, **Urine** | In house | 10 ml random urine (no preservative) | |
| Ova and Parasites PVA Smear included | In house | Random stool specimen, placed into 2 preservative vials, (formalin & PVA) within one hour of collection. Add Stool to fill lines on vial; do not overfill. For specimens other than stool, contact lab for instructions. | |
| Oxalate Quantitative Urine, 24 hr.<br>(Oxalic Acid, Urine, 24hr.) | QU# 11318X | 10 ml aliquot of 24-hour urine collection with **25ml of 6N HCL preservative**. Keep refrigerated. Record volume on form. ****Patients should refrain from taking excessive amounts of ascorbic acid or oxalate-rich foods (i.e., spinach, coffee, tea, chocolate, rhubarb) for at least 48 hours prior to collection. **** See 24-Hour Urine Collections Procedure | |
| Pall Filter<br>(Filters for leukocyte removal at bedside) | In house | Call Blood Bank for Order (NOT orderable in Power Chart) | |
| PAP, Thin Prep | | See Thin Prep or Cytology | |
| Partial Thromboplastin Time (PTT) | | See PTT or Activated Partial Thromboplastin Time | |
| Parvovirus, B19 AB IgG/IgM | QU# 14050N | 1 full tube blood in red top or gold top tube. Allow blood to clot at room temperature. Centrifuge at 1500rpm for 10 minutes within 1 hour of collection. Avoid hemolysis. | |
| Pathology Blood Smear Review | In house | See Blood Smear Interpretation. | |
| PEP | | See Protein Electrophoresis | |
| PH, **body fluid** | In house | Fluid aspirated anaerobically into a syringe rinsed with heparin and sent to Lab **ASAP on ice**. State Source | |
| PH, **stool** | QU# 27557W | 5g fresh random unpreserved stool in sterile container. No barium or laxatives for 1week prior. | |
| PH, **urine** | In house | 1 ml random urine in urine container, (no preservative). | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| PH, **venous** | Cardiopulmonary | 1 tube blood in a green top tube (sodium or lithium heparin/**no gel**) (minimum volume is 2 mL). **Specical instructions**: Do not send specimen through the pneumatic tube system!! Call ext 4104 and leave the labeled specimen by the ED barcode printer. A respiratory tech wil come to pick up the specimen. *If the specimen is not picked-up or processed within 15 minutes of collection place tube in a cup of ice water.* | |
| Phenobarbital (Luminal) | In house | 1 full tube (min. 3mls) blood in red top tube or green top tube,(lithium heparin). No gell barrier tubes. State time of dose. | |
| Phenosure, HIV Comp | QU# 10421N | ****Special instructions****Call lab for specimen information. There will special patient information that needs to be submitted with specimen. | |
| Phenytoin (Dilantin) | In house | 1 full tube (min. 3mls) blood in red top tube or green top tube,(lithium heparin). No gel barrier tubes. State time of dosed. | |
| Phenytoin, Free (Dilantin, Free) (Does not include total, must order separately] | QU# 39693E | 1 full tube (min. 4mls) of blood in red top tube. **DO NOT USE GEL TUBE.** EDTA plasma (lavender top or royal blue top) tubes are also acceptable. The optimal time to collect sample is 4 hours post oral dose. | |
| Phlebotomy, Therapeutic | In house | **MUST SCHEDULE** through **Central Scheduling** or **CCC** (Cancer Care Center) | |
| Phosphorus, **blood** | In house | 1 full tube (min. 3mls) blood in green/black top tube or gold top tube. | |
| Phosphorus, **Urine (24 hour)** | In house | 10 ml aliquot from a 24hour urine collected with no preservative. Pick-up container from lab. Record total volume. Keep refrigerated. See 24-Hour Urine Collections Procedure. | |
| Photo, Gross Surgical | | Call Histology x4638 | |
| Pinworms | In house | Use pinworm collection kit. Apply sticky side of paddle to perianal area before child awakes in early am. Refer to Pinworm Collection Procedure | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| PKU | ODH | **Special Kit** OB department collects newborn specimen. | |
| Plasma, Fresh Frozen | | See FFP or Fresh Frozen Plasma | |
| Plasminogen | QU# 59709P | **Special Instructions** 1 full lt. blue top tube (fill to indicated line). Immediately spin at 3500 RPM for 15 minutes and separate and **freeze** plasma ASAP. | |
| Platelet Antibodies, (Associated Antibody) | | **Special Instructions****2 full tubes** blood in yellow top tube (ACD-B). Whole blood specimen, do not centrifuge. **Keep at room temperature.** | |
| Platelets, Apheresed (Leukoreduced) | Ordered from Community Blood Center | **Special Order Call Blood Bank** No specimen needed. Specimen will be associated with Type and Rh. Follow arm banding procedure. (May need to order Type & Rh) | |
| Platelets, Apheresed Irradiated (Leukoreduced) | Ordered from Community Blood Center | **Special Order Call Blood Bank** No specimen needed. Specimen will be associated with Type and Rh. Follow arm banding procedure. (May need to order Type & Rh) | |
| Platelet Antibody, Heparin-Induced (HIPA) | QU# 53793P | See Heparin-Induced Platelet Antibody | |
| Platelet Antibody (IgG), Direct | QU# 140129P | 1 full 7ml lavender top tube. (Or 2 full 4 ml lavender tops). **Keep tube at room temperature. Do not refrigerate or freeze. Room Temp.** | |
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| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Platelet Function Analysis | In house | **Special Instructions** All of the following conditions must be met:<br>1. The veinipuncture should be performed using a **21gauge** needle.<br>2. The specimen needs collected *via vacutainer collection*. **Do not** use a syringe or butterfly to collect; The specimen needs to Go directly into the anticoagulent tube.<br>**3. Draw 2 Light blue/black center (3.2% Na Citrate) *Plastic* tubes**<br>4. Discard sample if the vein collapses or blood flow stops.<br>5. Hemolysis is not acceptable.<br>6. Sample is **stable only 4 hours at room tempurature**.<br>7. Do not refrigerate or centrifuge. Do not allow the specimen to become chilled by courier transit. Specimens cannot be rewarmed or remixed.<br>8. **Do not send through the pneumtic tube system**.<br>Call the lab coag department with any questions about specimen collection.<br>**All specimen requirements *must* be met to provide accurate results.**<br>**Click here for a list of interfering medications.** | |
| Porphyrins (Fractionated), Quantitative, Urine, 24hour | QU# 68437N | 12mls urine from a 24hr collection. Do **not** use preservatives. **Protect from light.** Collect urine in a dark or wrapped container. Keep refrigerated. See 24-Hour Urine Collections Procedure | |
| Porphyrins (Fractionated), Quantitative, Random urine | QU# 36592X | 2ml random urine in 5g sodium carbonate or no preservative container. Protect from light during collection. Refrigerate. | |
| Potassium, **Blood** | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. Avoid hemolysis. | |
| Potassium, **Random Urine** | In house | 10 mls random urine in urine container (no preservative). Keep refrigerated. | |
| Potassium, **24-hour Urine** | In house | 10ml aliquot from a 24hour urine collected with no preservative. Pick-up container from lab. Keep refrigerated. Record total volume.<br>See 24-Hour Urine Collections Procedure | |
| Potassium & Sodium, **Random Urine** | In house | 10 mls random urine in urine container, (no preservative). Keep refrigerated. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Potassium & **Sodium**, **24-hour Urine** | In house | 10ml aliquot from a 24hour urine collected with no preservative. Pick-up container from lab. Keep refrigerated. Record total volume. See 24-Hour Urine Collections Procedure | |
| Prealbumin | In house | 1 full tube (min. 3mLs) blood in green/black or gold top tube. | |
| Pregnancy Test, **blood** (Quantitative) | In house | 1 full tube (min. 3mLs) blood in gold top tube or green/black -top tube. | |
| Pregnancy Test, **blood** (Qualitative) | In house | 1 full tube (min. 3mLs) blood in gold top tube, green/black-top tube, EDTA Lavender-top tube or green-top tube. | |
| Prenatal Type and Screen | In house | 7 mls blood in lavender top tube (Blood Bank tube). | |
| Primidone (Mysoline), Serum | QU# 40751 | 1 full tube blood in red top tube. **Do not use a serum separator tube.** Indicate time of last dose. | |
| Prist (IgE) | QU#24620E | See Immunoglobulin E, Total, Prist | |
| Procainamide (includes NAPA) | QU# 851A | 1 full tube (min. 3mLs) blood in red top tube. **Do NOT use serum separator tube.** Check with lab for *SUGGESTED DRAW TIME.* | |
| Progesterone | In house | 1 full tube (min. 3mLs) blood in red top tube or gold top tube. *Serum that has been stored on barrier gel for more than 24 hour is not acceptable*. | |
| Prolactin Level, **Serum** | In house | 1 full tube (min. 3mLs) blood in gold top tube. | |
| Pronestyl | | See Procainamide | |
| Propoxyphene, urine | In house | 10mLs random urine in urine container. Keep refrigerated | |
| Prostatic Acid Phosphatase (PAP) | QU# 208X | 1 full tube (min. 3 mls) blood in red top tube (Do not use preservative). | |
| Prostatic Specific Antigen (PSA), **Serum** | In house | 1 full tube (min. 3 mls) blood in gold top tube. Draw before rectal examination or biopsy procedure. Centrifuge, separate serum & Freeze if more that 24 hours before testing. Frozen | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Prostatic Specific Antigen, Complex PSA, Complex (SO) (Bayer) | Lab Corp | 1 full tube blood in red top or gold top tube. Freeze serum if testing will be delayed more than 24 hours. | |
| Prostatic Specific Antigen, **Free** (Includes Total PSA) | QU# 31348X | ****Special Instructions**** **1 full tube** blood in red top or gold top tube. Centrifuge, separate serum and Freeze. (ABN required for Medicare) | |
| Protein Body Fluid | | See Body Fluid, Protein | |
| Protein C Functional | QU# 1777X | ****Special Instructions Call Lab**** **1** full tubes blood in Lt. blue top tube (fill to indicated line, 3.2% citrated sodium). Immediately spin at 3500rpm for 10 min., then separate plasma and **freeze** ASAP in a plastic vial. | |
| Protein C Panel (includes both Antigenic and Functional) | QU#20319 | ****Special Instructions Call Lab**** **2** full tubes blood in Lt. blue top tube (fill to indicated line, 3.2% citrated sodium). Immediately spin at 3500rpm for 15 min., then separate plasma ASAP and aliquot 1 ml plasma into each of 2 transport tubes and label tubes as citrated plasma. Freeze immediately. No hemolysis. Frozen. | |
| Protein C Panel (includes both Antigenic and Functional) | QU#20319 | ****Special Instructions Call Lab**** **2** full tubes blood in Lt. blue top tube (fill to indicated line, 3.2% citrated sodium). Immediately spin at 3500rpm for 15 min., then separate plasma ASAP and aliquot 1 ml plasma into each of 2 transport tubes and label tubes as citrated plasma. Freeze immediately. No hemolysis. Frozen. | |
| Protein C Resistance | QU# 22X | ****Special Instructions Call Lab**** 1 full tubes blood in Lt. blue top tube (fill to indicated line, 3.2% citrated sodium). Immediately spin at 3500rpm for 15 minutes, then separate plasma ASAP and aliquot 1 ml plasma into each of 2 transport tubes and label tubes as citrated plasma. Freeze immediately. No hemolysis. | |
| Protein, **CSF** | In house | 1 ml CSF in sterile container. | |
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| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| **PROTEIN ELECTROPHORESIS** | | | |
| Electrophoresis (IFE & EPP) Profile, **Serum** | QU# 5077 | 2 full tubes blood is red top tube or gold top tube. Fasting specimens preferred. Hemolyzed, lipemic and plasma specimens may be rejected. Specimens that have been left uncapped are also unacceptable due to evaporation. | |
| Protein Electrophoresis, w/T.Protein, **Serum** | QU# 687T | **1 full tube** of blood in red top tube or gold top tube. **Fasting specimens** preferred. Hemolyzed, lipemic and plasma specimens may be rejected. Specimens that have been left un-capped are also unacceptable due to evaporation. | |
| Protein Total/ Electrophoresis, **Urine Random** | QU# 525X | 10mls random urine, (first morning specimen is preferred), in container, no preservative. **Refrigerate.** | |
| Protein Electrophoresis, **CSF** | QU# 749X | 1 ml CSF in sterile container. | |
| **Immunofixation**, **Urine** | QU# 134403E | 10mls of urine from a 24hour urine collection. No preservative. Discard first morning specimen before starting 24hour collection. Random urine sample is also acceptable.<br>See 24-Hour Urine Collections Procedure. | |
| Protein S Functional | QU# 1779X | ****Special Instructions** 1 full** tube in lt. blue top tube (fill to indicated line, 3.2% citrated sodium). Immediately spin at 3500 rpm for 15 minutes, then separate and freeze plasma ASAP. | |
| Protein S Panel (includes both Functional and Antigenic) | QU# 20318 | ****Special Instructions** 2 full** tubes in lt. blue top tube (fill to indicated line, 3.2% citrated sodium). Immediately spin at 3500 rpm for 15 minutes, then separate plasma ASAP and aliquot 1 ml plasma into each of 2 transport tubes. Freeze immediately. | |
| Protein, (Total) **Body Fluid** | In house | 1 ml fluid: State Source | |
| Protein, (Total) **Blood** | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Protein, (Total) **Urine Random** | In house | 1 ml random urine. | |
| Protein, (Total), **Urine 24 hour**<br>If Protein/reatinine Ratio is needed, see Protein/Creatinine Ratio | In house | Urine 24-hour, no preservative. Refrigerate throughout collection.<br>See 24-Hour Urine Collections Procedure. | |
| Protein/Creatinine **Ratio** 24 hour Urine<br>Includes 24hr Protein & 24hr Creatinine | In house | Call Lab - Urine 24-hour, no preservative. Keep refrigerated.<br>See 24-Hour Urine Collections Procedure. | |
| Prothrombin Time, (PT) or Protime | In house | **1 full tube** of blood in Lt. Blue-top tube, 3.2 % citrated sodium (must fill to top of label). | |
| Prothrombin Gene Mutation Analysis<br>(Factor II, DNA Analysis) | QU# 30326X | ** Need 2 Full Tubes** 2 lavender top tubes, (7mls whole blood). Specimens drawn in EDTA royal blue top, sodium heparin, lithium heparin, and ACD solution B (yellow top) tubes are also acceptable. **Do not centrifuge specimens. Keep at room temperature**. | |
| Protime (PT) **Mixing Studies Coagulation** | Quest | **2-3 full tubes** of blood in Lt. Blue-top tube, 3.2 % citrated sodium (must fill to top of label). Need a minimum of 3mls of citrated plasma. ***Freeze*** plasma. | |
| PSA | | See Prostatic Specific Antigen | |
| PSA Free | | See Prostatic Specific Antigen Free | |
| PTH, **Intact, Serum** (Parathyroid Hormone) | In house | 1 full tube in SST gold-top tube or red top tube serum. **Separate serum immediately and refrigerate.** | |
| PTT (APTT) | In house | **1 full tube** of blood in lt. blue top tube (must fill to top of label) 3.2% citrated sodium. | |
| PTT (APTT) **Mixing Studies Coagulation** | Quest | **2-3 full tubes** blood in lt. blue top tube. Tube must be filled to the indicated line. Need a minimum of 3mls of citrated plasma. ***Freeze*** plasma. | |
| Quad Screen | | See Maternal Serum Screen IV | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| QuantiFeron Gold (TB blood test) | | Order test as Miscellaneous testing. **1 full tube** blood in green top (Lithium or Sodium) heparin tube. **Only collectable on Tuesdays and Thursdays** due to specimen stability (12 hour stability). Maintain at room temperature | |
| Quantitative Immunoglobulins, Urine | | See Immunofixation, Urine | |
| Quinidine | QU# 66944R | 1 full tube (min. 3 mls) blood in red top tube. **Do not use serum separator tube**. | |
| RA Latex (Rheumatoid Factor), **Serum** (NOTE: If positive a titer is performed automatically) | In house | 1 full tube (min. 3 mls) blood in gold top tube. | |
| Rapid HIV-1 Screen | | See HIV-1, Rapid Screen | |
| Rapid Strep A Screen | | See Strep A, Rapid Screen | |
| Rapid Urease | In house | Call Lab for special media, (Clotest). After collection, bring to Lab immediately. | |
| Rapamune (Sirolimus) | QU# 36712P | 1 full tube whole blood in (preferred) EDTA lavender top or sodium heparin (green top) or Royal Blue EDTA tube. Optimal time to draw specimen is 30 to 60 minutes before the next oral dose. | |
| RBC, Autologous | Ordered from CBC | ****Special Order Call Blood Bank** Enter # of Units. No Specimen needed. Specimen will be associated with Type & Screen (May need to order Type & Screen). Patient must have armband.** | |
| RBC CMV-Neg | Ordered from CBC | **See Above** | |
| RBC Directed | Ordered from CBC | **See Above** | |
| RBC Directed/Irradiated | Ordered from CBC | **See Above** | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| RBC Irradiated | Ordered from CBC | **See Above** | |
| RBC Irradiated/CMV-Neg. | Ordered from CBC | **See Above** | |
| RBC Leukoreduced | In house test | **See Above – Call blood bank for Stat or ASAP ORDERS** | |
| RBC Leukoreduced/CMV-Neg. | Ordered from CBC | **See Above** | |
| RBC Leukoreduced/Irradiated | Ordered from CBC | **See Above** | |
| RBC Leukoreduced / Irradiated/CMV-Neg. | Ordered from CBC | **See Above** | |
| RBC Packed Cells | Ordered from CBC | **See Above** | |
| Reducing Substance, Fecal (Stool) | QU# 5022X | Collect 10-30 grams of stool in a plastic container. Seal container in a plastic bag before shipping. Store and ship **frozen**. Do not ship in metal cans. Specimens greater than 4 hrs old at room temperature or greater than 24 hrs old refrigerated will be rejected. | |
| Reducing Substance, Urine | | See Urine, Reducing Substance | |
| Renal Panel (Sodium, Potassium, Chloride, CO2, Gluc, BUN, Creat, Calcium, Albumin & Phosphorus) | In house | 1 full tube blood in green/black top tube or gold top tube. | |
| Renal Panel **minus** glucose | In house | 1 full tube blood in green/black top tube or gold top tube. | |
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| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Renin (Activity, Plasma) | QU# 10537N | 1 full 7ml or 3ml lavender tube. Centrifuge and separate blood at room temperature. **Do NOT refrigerate. Patient should refrain from taking medications 3 weeks prior to draw. Patient should be ambulatory for 30minutes prior to draw. Patient should be on a moderate sodium diet during collection.** (When submitting catheterization studies, retain a portion of each sample at the ordering lab) Frozen. | |
| Reticulocyte Count | In house | 1 tube Whole blood in 3ml Lavender-top tube. (Min. 1 ml blood drawn in the 3 ml tube or min. 3 ml blood drawn in the 7 ml tube.) Refrigerate up to 36 hours or Room Temp. for 6 hrs. | |
| Retinol | | See Vitamin A | |
| Rheumatoid Factor | | See RA Latex | |
| Rho Gam Workup | In house | 7 mls blood in lavender top tube (Blood Bank tube). | |
| Rotavirus Antigen | In house | 1g fresh stool in sterile container. Keep refrigerated. Submit within 24 hours. | |
| RPR, Serum | In house | 1 full tube (min. 3 mls) blood in serum separator tube (gold top tube). | |
| RPR, CSF (VDRL) | QU# 52902P | 1 ml CSF in sterile container. | |
| RSV Antigen | In house | Nasal Wash collection kit supplied by lab. | |
| Rubella Antibody (Qualitative), IgG | In house | 1 full tube (min. 3mls) blood in serum separator tube (gold top tube). | 53348W |
| Rubeola, IgG AB | QU# 52449W | 1 full tube (min. 3mls) blood in red top tube or gold top tube. | |
| Salicylate, Serum | In house | 1 full tube (min 3mls) blood in red top tube only. **Deliver to lab immediately** | |
| % Saturation | In house | Order both TIBC & IRON | |
| Scabies Scraping | In house | See Arthropod ID | |

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|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| (Anti-) Scleroderma | | See Antiscleroderma | |
| Sedimentation Rate (ESR) (Westergren) | In house | Min. 3mls whole blood in lavender top tube. **Stable for 4 hrs at room temp. or 12 hrs refrigerated.** | |
| Semen Analysis **Post-Vasectomy** | In house | **See Instructions** for semen analysis collection. **2-hour stability** for motility at room temperature, (24 hour stability for observance of presence only) State time of collection. | |
| Semen Analysis **Fertility Analysis** | In house | **See Instructions** for semen analysis collection. **2-hour stability for motility**. State time of collection. Ph & Viscosity included. **MUST have collection form filled out and sent to LAB.** | |
| Semen Complete | | See Semen Analysis, Fertility | |
| Serotonin, **Serum** | QU# 29405P | ****Special Instructions**** 1 full tube blood in red top or gold top tube. Centrifuge and remove cells within 1 hour. **Freeze serum immediately**. Patients should avoid food high in indoles: avocado, banana, tomato, plum, walnut, pineapple, and eggplant. Patient should also avoid tobacco, tea and coffee 3 days prior to specimen collection. | |
| Serotonin, **Whole Blood** | QU# 29397P | ****Must be Drawn at UVMC Outpatient LAB (due to special handling). **** **2** Full EDTA lavender top tubes. Transfer specimen to a plastic vial and add 35mg of ascorbic acid. Mix well and **freeze**. Patient should avoid food high in indoles: avocado, banana, tomato, plum, walnut, pineapple, and eggplant. Patient should also avoid tobacco, tea and coffee for three days prior to specimen collection. | |
| SPEP | | See Serum Protein Electrophoresis | |
| SGOT (AST) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| SGPT (ALT) | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Shillings Test: | | See Intrinsic Factor Antibody | |

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| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Sickle Cell Screen | QU#68643E | 1 full lavender (EDTA) top tube. Absolute minimum specimen is 50ul of sample. | |
| Sirolimus (Rapamune) (Rapamycin) | QU# 36712P | 1 full tube whole blood in EDTA Lavender top tube. Optimal time to draw is 30-60 minutes prior to next dose. | |
| Sjogren's Antibodies (Anti-SS-A/Anti-SS-B) | QU# 8458T | 1 full red top or gold top tube. Specimens that are grossly hemolyzed or lipemic will be rejected. | |
| Smear, Gram Stain | In house | See Gram Stain Smear | |
| Smooth Muscle Antibody (ASMA) | QU# 42085F | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. Specimens should avoid extreme heat and cold. Specimens that are grossly hemolyzed or lipemic will be rejected. | |
| Sodium, **blood** | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Sodium, **Urine 24 hr** | In house | Call Lab for 24-hr urine container.24 hour urine, no preservative. Refrigerate throughout collection.<br>See 24-Hour Urine Collections Procedure. | |
| Sodium, **blood** | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Sodium, **Urine 24 hr** | In house | Call Lab for 24-hr urine container.24 hour urine, no preservative. Refrigerate throughout collection.<br>See 24-Hour Urine Collections Procedure. | |
| Sodium, **Urine**, **Random** | In house | 10 mls Random Urine (no preservative) in a sterile urine container. | |
| Sodium & Potassium, **Urine 24-hour** | In house | Call Lab for 24-hr urine container.24 hour urine, no preservative. Refrigerate throughout collection.<br>See 24-Hour Urine Collections Procedure. | |
| Sodium & Potassium, **Random Urine** | In house | 10 mls Random Urine (no preservative) in a sterile urine container. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
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| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Somatomedin C<br>(IGF-I, insulin-like growth factor) | QU# 24844P | 1 full tube (min. 3 mls.) blood in red top tube or gold top tube. Centrifuge within 1 hour of collection and transfer to a plastic vial. **Freeze specimen**. Plasma is no longer an acceptable specimen. | |
| Somatostatin | QU# 34480X | **1 full tube (7 ml tube) blood in Pre-chilled lavender-top (EDTA)** tube. Separate and **freeze plasma immediately**. | |
| Special Stains (Histology) | | Call Histology **to order (x4638). Fill out Surgical Pathology Form.**<br>[AFB, Alcian Blue, Congo Red, Giemsa (Helicobacter), GMS (fungus), Iron, Mucicarmine, PAS, Pneumocystis, Trichrome] | |
| Specific Gravity | In house | 10 mls Random Urine (no preservative) in a sterile urine container. | |
| SPEP | | See Protein Electrophoresis | |
| Sperm, Post Vas | | See Semen Analysis Post-Vasectomy | |
| Stone Analysis | QU# 30261X | Submit entire specimen in clean dry container. Order in Power Chart as Care Set, Stone Analysis & Tissue Request. | |
| Stool, Fat Qualitative | | See Fecal Fat Qualitative | |
| Stool, Fat Quantitative | | See Fecal Fat Qualitative | |
| Stool, pH | QU# 27557W | 5gm of random unpreserved stool specimen. | |
| Stool, WBC | | See Fecal WBC, Smear | |
| Stool Reducing Substance | QU# 5022X | Collect 10-30 grams stool in a plastic container. Seal container in a plastic bag before shipping. **Store and ship frozen.** | |
| Stool, Rotavirus | | See Rotavirus Antigen | |
| Stool Staph/Yeast | | Order Gram Stain | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Strep A, Rapid Screen | In house | Collect 2 Aerobic (red capped) swabs using same technique as for throat culture. See instructions for Collection of Microbiology specimens. | |
| Striational Antibodies, Serum (Striated Muscle Antibody) | QU# 42119N | 1 full tube (min. 3mls) in red top tube or gold top tube. | |
| Sulfatide AB (IgG, IgM) | QU# 9266N | 1 full (10 ml) red/black top sst tube. Refrigerate serum. **DO NOT SHIP AT ROOM TEMPERATURE** | |
| Sural Nerve Biopsy | | Call Histology **(x4638) 48 hrs in advanced.** Fresh tissue & tissue request. | |
| Surface Marker Studies | | Call Histology **(x4638)**. | |
| Synovial Fluid Count | | Order Under Body Fluid Count | |
| TB Blood Test | | See QuantiFeron Plus | |
| T & B Cell Study | | Call Histology **(x4638)** | |
| TBG | | See Thyroxine Binding Globulin | |
| T-Uptake *(for FTI order anT-uptake & T4)*) Must have physician order for both. | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| T3 Free (Triiodothyronine, Serum) | In house | 1 full tube blood in red top tube. Keep covered and upright. Refrigerate serum for up to 2 days – freeze if longer. Patients on ***heparin*** should not be drawn for this test. Grossly lipemic specimens need ultracentrifuged. | |
| T3 Total (Triiodothyronine) | In house | 1 full tube blood in red top tube. Keep covered and upright. Refrigerate serum for up to 7days – freeze if longer. Grossly lipemic specimens need ultracentrifuge. | |
| T4 Free (Thyroxine Direct) | In house | 1 full tube (min. 3 mls) blood in a green/black, red or gold top tube. | |
| T4 (Thyroxine) Total (*For FTI order a T-uptake &T4*) Must have physician order for both. | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| T-Lymph Helper/Suppressor Ratio: | QU# 7195X | **See** Lymphocyte Subset Panel | |
| T. (Treponema) Pallidum Antibodies or (FTA-ABS) | QU# 53934R | **1 full tube** blood in red top tube or gold top tube. | . |
| Tacrolimus Level (FK06) | QU# 112532P | **1 full tube** whole blood in 3 ml EDTA Lavender-top tube**. Room Temp.** | |
| Tegretol Level (Carbamazepine) | In house | **1 full tube blood** in red top tube or green top tube.No gell barrier tubes. State time of last dose. | |
| Testosterone, (Total) | In house | 1 full tube (3mls min) in a red top or green top lithium heparin tube (**no gel**). Do not remove stopper (specimen will be spun at lab). Refigerate. Grossly lipemic specimens will need to be ultracentrifuged. | |
| Testosterone **Free, Serum** **(**Includes Total Testosterone) | QU# 36170X | 1 full tube (min. 3mls) blood in red top tube (**no SST tubes**). Specify age and sex on test form. Grossly Hemolyzed specimens are unacceptable. | |
| Tetra Screen | | See Maternal Serum Screen IV | |
| Theophylline (Aminophylline) | In house | 1 full tube (min. 3 mls) blood in red top tube or green top tube (lithium heparin).No gell barrier tubes. State time of last dose. | |
| Therapeutic Phlebotomy | | See Phlebotomy, Therapeutic | |
| Thiamine | | See Vitamin B1, Plasma | |
| Thin Prep (PAP) (When ordering MUST STATE diagnostic or screen) | In house | ****Special Media**** Cytology Preservative (solution for use with Thin Prep.) NON-GYN Request. | |
| Thin Prep **with HPV reflex** (When ordering MUST STATE diagnostic Or screen) | | ****Special Media**** Cytology Preservative (solution for use with Thin Prep.) NON-GYN Request. | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Thrombin Time | QU# 883X | **Special Instructions** **1 full** lt. blue top tube. Must fill to the indicated line. Immediately centrifuge for 10 minutes. Separate and **freeze** plasma immediately. | |
| Thrombin III, Antigenic | | See Antithrombin III | |
| Thyroid ABS, (ATA, TPO) (Graves Test) | QU# 7302A | 1 full red top or gold top tube. | |
| Thyroglobulin Antibody (Anti-Thyroglobulin AB) | QU# 80986R | 1 full tube blood in red top tube or gold top tube. | |
| Thyroglobulin, Quantitative | QU# 30130E | 1 full tube blood in red top or gold top tube. | |
| Thyroid Peroxidase Ab, (TPO) (Antimicrosomal Antibody) | QU# 80994R | 1 full gold top tube. | |
| Thyroid Stimulating Hormone (TSH) (3rd generation/High Sensitivity) | In house | **1 full tube** blood in green/black top tube or gold top tube. | |
| Thyroxine | | See T4 | |
| Thyroxine Binding Globulin (TBG) | QU# 870X | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. | |
| TIBC or Iron Binding Capacity Total (% Saturation=order TIBC & Iron) | In house | 1 full tube (min. 3 mls) green/black or gold top tube. | |
| Tick Identification | | See Arthropod ID | |
| Tissue Transglutaminase, IgA | QU# 90209T | 1 full tube (min. 3 mls) blood in red top or gold top tube. | |
| Tobramycin, **RANDOM** | In house | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. No gel barrier tubes. State time of last dose. | |
| Tobramycin, **Trough** | In house | 1 full tube (min. 3 mls) blood in red top tube or gold top tube. No gel barrier tubes. State time of last dose. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Topiramate | QU# 177139P | 1 full red-top tube. **Do not collect gel barrier tube.** Refrigerate. Specimens that are grossly hemolyzed are unaccepatable. | |
| Total Complement | | See CH50 Complement | |
| Total Protein | | See Protein, Total | |
| Toxoplasma (Antibodies) IgG & IgM | QU# 7690A | **1 full** tube blood in red top tube or gold top tube. Specimens that are grossly hemolyzed or lipemic are not acceptable. | . |
| Transferrin | QU# 30346R | 1 full tube (min. 3 mls) blood in red top tube. | |
| Transfusion Reaction Workup | In house | ****2 Different Specimens**** 7mls blood in lavender top tube (Blood Bank tube) **and** 10mls urine. **Must fill out:** "Report of Blood Transfusion Reaction" form. | |
| Treponema Pallidium Antibodies | | See FTA-ABS or T.Pallidium | |
| Trichomonas Wet Prep | In house | Vaginal swab in 1 cc sterile saline tube or Microbiology (red top) transport media. | |
| Triglyceride | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| Triple Screen | | See Maternal Serum Screen III | |
| Troponin-1 | In house | 1 full tube (min. 3 mls) blood in green/black top tube or gold top tube. | |
| TSH (Thyroid Stimulating Hormone) | In house | 1 full tube blood in green/black top tube or gold top tube. | |
| TSH, **3rd Generation** (Thyroid Stimulating Hormone) | In house | 1 full tube blood in green/black top tube or gold top tube. | |
| tTG, IgA | QU# 90209T | 1 full red top or gold top tube. See Tissue Transglutaminase. | |
| Tylenol, (Acetaminophen) | In house | 1 full red top tube | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Type & Screen or ABO & Screen | In house | 7 mls blood in lavender top tube (Blood Bank tube). Follow arm-banding procedures. (See I.D. for Blood Bank procedure under Blood Bank Section.) | |
| UCG, Urine Pregnancy | In house | 1 ml random urine in sterile container. | |
| UPEP | | See Urine Electrophoresis | |
| Uric Acid, blood | In house | 1 full tube (min. 3mls) blood in green/black top tube or gold top tube. | |
| Uric Acid, Body Fluid | In house | 1 ml body fluid in sterile container: Please State Source. | |
| Uric Acid, 24-Hour Urine | In house | Call Lab for 24-hr urine container. 24-hour urine, no preservative. Refrigerate throughout collection.<br>See 24-Hour Urine Collections Procedure. | |
| **Urine Tests - Random** | | SEE Individual Test Name Also | |
| Urine, Amylase | In house | 1 ml random urine in sterile container. | |
| Urine, Blood | In house | 1 ml random urine in sterile container. | |
| Urine, BUN | In house | 1 ml random urine in sterile container. | |
| Urine, Calcium | In house | 1 ml random urine in sterile container. | |
| Urine, Chloride | In house | 1 ml random urine in sterile container. | |
| Urine, Creatinine | In house | 1 ml random urine in sterile container. | |
| Urine, Culture | In house | 1 ml random urine in sterile container,(CC or cath specimen) which is stable 1 hour at room temp and 24 hours refrigerated; or 4-10 mls of urine in a grey top **urine device**, which is stable for 48 hrs at room temp. | |
| Urine, Glucose | In house | 1 ml random urine in sterile container. | |
| Urine, Random Microalbumin | In house | 1 ml urine random in sterile container. No preservative. Keep refrigerated. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Urine, Random Microalbumin / Creatinine **Ratio** | In house | 1 ml urine random in sterile container. No preservative. Keep refrigerated. | |
| Urine, Myoglobin | QU# 26419P | 4 mls random urine in sterile container, (No Preservatives). | |
| Urine, Osmolality | In house | 1 ml random urine in sterile container. | |
| Urine, pH | In house | 1 ml random urine in sterile container. | |
| Urine, Potassium | In house | 1 ml random urine in sterile container. | |
| Urine, Pregnancy | In house | 1 ml random urine in sterile container. | |
| Urine, Protein | In house | 1 ml random urine in sterile container. | |
| Urine, Reducing Substances | In house | 2 mls random urine in sterile container. | |
| Urine, Sodium | In house | 1 ml random urine in sterile container. | |
| Urine, Sodium & Potassium | In house | 1 ml random urine in sterile container. | |
| Urine, Specific Gravity | In house | 1 ml random urine in sterile container. | |
| Urinalysis, Complete UA | In house | 10 mls random urine in sterile container, (No preservative) | |
| Urinalysis, Microscopic Only | In house | **LAB ORDER ONLY**: 10 mls random urine in sterile container, (No preservative). | |
| Uricult ID & Sensitivity | | See ID & Sensitivity from culture device | |
| Valproic Acid (Depakene, Depakote) | In house | 1 full tube (min. 3 mls) blood in green top tube or red top tube. No gel barrier tubes. State time of last dose. | |
| Vancomycin: **PEAK** | In house | 1 full tube (min. 3 mls) blood in red top tube or green top tube. No gel barrier tubes. State time of last dose. | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Vancomycin: **Random** | In house | 1 full tube (min. 3 mls) blood in red top tube or green top tube.No gel barrier tubes. State time of last dose. | |
| Vancomycin: **Trough** | In house | 1 full tube (min. 3 mls) blood in red top tube or green top tube. No gel barrier tubes. State time of last dose. | |
| Vanillylamandelic Acid, 24 hour Urine (VMA w/o creatinine) | QU# 934X | 10ml aliquot of urine from a 24hr urine collection containing 6N HCL. A 24hr collection without preservative is acceptable if ph is below 6 and the sample is shipped frozen. Record the volume on the requisition and the specimen vial. **It is preferable for the patient to be off medications for three days prior to collection** (**Call lab for exceptions**). **Patient should avoid alcohol, coffee, tea tobacco and strenuous exercise prior to collection**. See 24-Hour Urine Collections Procedure. | |
| VAP Cholesterol Test | QU#10270X | 1 full tube blood in gold top, red/black top, or red top tube. Fasting is not required for this testing. | |
| Varicella-Zoster AB IGG | QU# 54031E | 1 full tube blood in gold top or red top tube. Grossly lipemic and hemolyzed specimens will be rejected. Refrigerate serum. | |
| Varicella-Zoster Virus Antibodies (IgG & IgM). (Herpes zoster virus) | QU# 1347N | **1 full tube** blood in red top tube or gold top tube. | |
| VDRL, CSF (also see RPR, CSF) | QU# 52902P | 1 ml CSF in sterile container. | |
| VDRL | | See RPR | |
| Vitamin **A** (Retinol) | QU# 921X | ****Special Instructions****. 1 full red top or gold top tube. Wrap tube in aluminum foil to protect from light. **Overnight fasting is preferred.** ***Centrifuge within 1 hour of collection.*** | |
| Venous PH | Cardiopulmonary | **See PH, venous** | |
| | | | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| Vitamin **B1**, Plasma | QU#29991P | ****Special Instructions ** 1 full** tube 7 ml EDTA lavender top tube. Centrifuge ASAP and pour off plasma and put into transfer tube labeled EDTA plasma & **wrap in foil to protect from light**. Specimens drawn in green top (sodium or lithium heparin) or white top (PPT-Potassium EDTA), or red and gold top tubes are also acceptable. Frozen. | |
| Vitamin **B12, Serum** | In house | ****Special Instructions**1 full tube** (min. 3 mls) blood in red top tube or gold top tube. Fasting preferred. **Wrap in foil** to protect from light. Draw before B12 therapy begins. | |
| Vitamin **B12 & Folate, Serum** | In house | ****Special Instructions**1 full tube** in red top tube or gold top tube. Fasting preferred. **Wrap in foil** to protect from light. Draw before B12 therapy begins. | |
| Vitamin **D, 25- Hydroxy (D2 and D3)** | Labcorp | 1 full tube blood in red top tube (preferred) or gold top tube. ***Separate serum from the cells immediately*. A fasting specimen is recommended, but not required.** | 1 mL serum sent to LabCorp |
| Vitamin **D 1, 25- Dihydroxy** | QU# 16493P | 1 full tube blood in red top tube or gold top tube. Lavender top (EDTA), green top (sodium heparin) and Lt blue (sodium citrate) plasma are also acceptable. *Separate and freeze serum within 3 hours of collection.* Ship frozen. | |
| VMA | | See Vanillylamandelic Acid | |
| Von Willebrand Profile | QU# 20231 | ****Special Instructions Call Lab** 3 full tubes** in lt blue top tube, (tubes must be filled to appropriate line). Spin specimen at 3500rpm for 15 minutes, then separate and freeze 2.0ml of plasma in 3 *separate vials for testing*. **Overnight fasting is preferred.** Hemolyzed specimens are not acceptable. Frozen | |
| WBC (White Blood Cell Count) | In house | 3mls whole blood in lavender top tube. (1 mls min. draw from a 3 ml tube or 3 ml min. draw from a 7 ml. draw) | |
| WBC with Differential (White Blood Cell Count) | In house | 3mls whole blood in lavender top tube. (1 mls min. draw from a 3 ml tube or 3 ml min. draw from a 7 ml. draw) | |

| Test Description | QUEST send out test: QU # if indicated: | Specimen / Instructions / Tube | Lab Use Only |
|---|---|---|---|
| A B C D E F G | H I J | K L M N O P Q R S T U V W | X Y Z |
| WBC, Fecal | | See Fecal WBC | |
| West Nile Virus Antibodies, (Serum) | QU# 36596X | 1 full tube blood in a red top or a gold top tube. | |
| West Nile Virus Antibodies, CSF | QU# 36597N | 2.0ml CSF in sterile container. | |
| Westergren Sed. Rate | | See Sedimentation Rate | |
| Wet Prep, Trichomonas | | See Trichomonas, Wet Prep | |
| White Blood Cell Count | | See WBC | |
| White Blood Cell Count with Differential | | See WBC with differential | |
| WNV | | See West Nile Virus | |
| Yeast Isolate, ID (Fungus) | QU# 43026F | Pure culture of organism to be identified on an agar plate. Transport in double walled container. | |
| Yersinia, Stool Culture | In house | Cary-Blair Media obtained from LAB, (bring preserved specimen to Lab ASAP, media expires after 96 hours). | |
| Zone 8, Allergen Panel | QU#20201 | 2 full red top tube or red/black top tubes. | |
| Zinc, Blood | QU# 945X | 1 full tube blood in Royal Blue EDTA (centrifuge 10 min @1000G), or Royal Blue No Additive tube(clot 30 min; centrifuge @1000g for 10mi)***Using powderless*** gloves pour plasma/serum into red-vial tube in trace element kit. Patient should refrain from taking vitamins or mineral supplements at least 3 days prior to specimen collection.* Transport at **Room Temperature.** | |
| Zinc & Lead Protoporphyrin | | See Lead & Zinc Protopophorin | |

| **Test Description**<br>24 Hour Urines<br>(Click here to access 24 hour urine Collection Procedure) | **QUEST send out test: QU # if indicated:** | **Specimen / Instructions / Tube** | |
|---|---|---|---|
| **24 HOUR URINES** | | Follow UVMC Instructions for Laboratory Specimen Collection in Lab Services Manual for 24hour collection procedure. | |
| 24 hr Urine, 5-HIAA | QU# 9936N | 10 ml aliquot of 24hr urine. Use **25ml of 6N HCL** as preservative or no preservative if PH of less than 6 is maintained and specimen is shipped frozen. See 5-HIAA for dietary restrictions. Record volume. | |
| 24 hr Urine, Amylase | In house | 10 ml aliquot from 24hour urine with **no preservative**. Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr Urine, Calcium | In house | 10 ml aliquot from 24hour urine with **no preservative**. Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr Urine, Catecholamines, Urine Free | QU# 4168N | 10mls of urine 24hour collection using **25ml of 6NHCL** or 15gm of boric acid as preservative. Record total volume, date & time. Keep refrigerated | |
| 24 hr Urine, Catecholamines, Urine Free | QU# 4168N | 10mls of urine 24hour collection using **25ml of 6NHCL** or 15gm of boric acid as preservative. Record total volume, date & time. Keep refrigerated | |
| 24 hr Urine, Chloride | In house | 10 ml aliquot from 24hour urine with **no preservative.** Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr Urine, Cortisol, Free | QU# 11280X | 2ml urine aliquot from a 24hour urine collected with no preservative. Urines collected with **6N HCL**, glacial acetic acid or boric acid are acceptable. Record 24hour urine volume on requisition and urine vial. Random urine specimens are also acceptable, (there are no reference ranges for random urines). | |
| 24 hr Urine, Creatinine | In house | 10 ml aliquot from 24hour urine collected with **no preservatives**. Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr Urine, Hydroxycorticosteriods | QU# 15202X | 20ml aliquot from a 24hour urine collection. Place **10gm of boric acid** into container at the start of collection. Record total volume. Pick-up container from lab. Keep Refrigerated. | |

| **Test Description**<br>24 Hour Urines<br>(Click here to access 24 hour urine Collection Procedure) | **QUEST send out test: QU # if indicated:** | **Specimen / Instructions / Tube** | |
|---|---|---|---|
| 24 hr, Urine Magnesium | QU# 6213N | 10 ml aliquot from a 24hour collection. Collection container must contain **25ml 6N HCL**. Call lab for collection container. Record total volume. | |
| 24 hr, Urine Metanephrine | QU# 14962X | 25ml aliquot of 24hour urine collected with **25ml 6N HCL** or 25ml or Acetic Acid. Urine without preservative is acceptable if PH is below 6 and the Sample is shipped frozen. **It is preferable that patients to be off all medications for three days prior to and during collection, however there are some exceptions (call lab for details). Patient should avoid tobacco, tea and coffee for three days prior to testing.** | |
| 24 hr, Urine Microalbumin | In house | 10 ml of urine from a 24hour collection with no preservative. Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr, Urine Oxalate, Quant. | QU# 11318X | 10 ml aliquot from 24hour urine collection with 25ml 6N HCL as preservative. Record volume. Keep refrigerated. ****Patient should refrain from taking excessive amounts of ascorbic acid or oxalate-rich foods (i.e., spinach, coffee, tea, chocolate, rhubarb) for at least 48 hours before the collection period.** | |
| 24 hr, Urine Phosphorus | In house | 10 ml aliquot from 24hour urine collected with **no preservative**. Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr, Urine Porphyrins Quantitative (Fractionated) | QU# 68437N | 12mls urine from a 24hr collection. **Do not use preservatives**. **Protect from light**. Collect urine in a dark or wrapped container. Keep refrigerated. | |
| 24 hr, Urine Potassium | In house | 10 ml aliquot from 24hour urine collected with **no preservative**. Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr, Urine Protein | In house | 10 ml aliquot from 24hour urine collected with **no preservative**. Record total volume. Pick-up container from lab. Keep refrigerated. | |

| **Test Description**<br>24 Hour Urines<br>(Click here to access 24 hour urine Collection Procedure) | **QUEST send out test: QU # if indicated:** | **Specimen / Instructions / Tube** | |
|---|---|---|---|
| 24 hr, Urine Protein/Creatinine Ratio | In house | 10 ml aliquot from 24hour urine collected with **no preservative.** Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr, Urine Sodium | In house | 10 ml aliquot from 24hour urine collected with **no preservative.** Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr, Urine Sodium & Potassium | In house | 10 ml aliquot from 24hour urine collected with **no preservative.** Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr Urine, Urea Nitrogen (BUN) | In house | 10 ml aliquot from 24hour urine collected with **no preservative**. Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr Urine, Uric Acid | In house | 10 ml aliquot from 24hour urine collected with **no preservative**. Record total volume. Pick-up container from lab. Keep refrigerated. | |
| 24 hr Urine, VMA<br>(Vanillylamandelic Acid w/o creatinine) | QU# 934X | 10ml aliquot urine from 24hr urine containing 6N HCL. 24hr urine with out preservative is acceptable if the ph is below 6 and it is shipped frozen. Record volume on requisition and urine vial. Keep Refrigerated. It is preferable for the patient to be off medications for three days prior to collection (Call lab for exceptions). Patient should avoid alcohol, coffee, tea, tobacco and strenuous exercise prior to collection. | |

| **Test Description**<br>Coagulation Studies | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| **COAGULATION STUDIES** | | ***All Lt Blue top tubes must be filled to the indicated line to be accepted. *Lt Blue top tubes with Yellow-striped labels 3.2% Sodium Citrate.** | |
| (Coagulation) **Factor II, DNA Analysis** Prothrombin Gene (Mutation) Analysis | QU# 30326X | ****Need 2 Full Tubes**** 2 lavender top tubes, (7mls whole blood). Specimens drawn in EDTA royal blue top, sodium heparin, lithium heparin, and ACD solution B (yellow top) tubes are also acceptable. **Do not centrifuge specimens**. **Keep at room temperature**. | |
| (Coagulation) **Factor V Activity** | QU# 344X | ****Special Instructions Call Lab** 1 Full** 4.5ml Lt blue top tube, (3.2% or 3.8% Sodium Citrate are acceptable). *Immediately* centrifuge for 15 minutes at 3500 rpm, separate and **freeze** plasma. Submit separate, frozen vials for each special coagulation assay ordered. | |
| (Coagulation) **Factor V Leiden** Mutation Analysis | QU# 22722X | ******Need 5mls whole blood from EDTA lavender tube (Also acceptable: Royal blue top EDTA or Green top sodium heparin or lithium heparin or Yellow top ACD Solution B). Must be **Room Temperature. *Specimen stability is crucial.*** For prenatal/fetal specimens call lab. | |
| (Coagulation) **Factor VII Activity** (Stable Factor) | QU#346X | ****Special Instructions Call Lab**:** 1 Full tube in lt blue top tube, (3.2% or 3.8% Sodium citrate). Spin at 3500 rpm for 15 min., separate plasma and **freeze immediately**. Submit separate, frozen vials for each special coagulation assay ordered. | |
| (Coagulation) **Factor IX Activity** | QU# 352X | ****Special Instructions Call Lab** 1 Full** 4.5ml Lt. blue top tube, 3.2% or 3.8% Sodium Citrate). Centrifuge for 15 minutes at 3500 rpm, separate and freeze plasma immediately. Submit separate, frozen vials for each special coagulation assay ordered. | |
| Coagulation Mixing Studies **APTT& PROTIME** | Quest | See Prothrombin Mixing Study or PTT Mixing Study or Mixing Study | |
| | | | |

| **Test Description**<br>Coagulation Studies | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| Platelet Function Screen | In house | *Special Instructions* All of the following conditions must be met:<br>1. The veinipuncture should be performed using a **21gauge** needle.<br>2. The specimen needs collected *via vacutainer collection*. **Do not** use a syringe or butterfly to collect. The specimen needs to go directly into the anticoagulant tube.<br>3. **Draw 2 Light blue/black center (3.2% Na Citrate) *plastic* tubes.** Discard sample if the vein collapses or blood flow stops.<br>4. Hemolysis is not acceptable.<br>5. Sample is **stable only 4 hours at room temperature**.<br>6. Do not refrigerate or centrifuge. Do not allow the specimen to be come chilled by courier transit. Specimens cannot be rewarmed or remixed.<br>**7. Do not send through the pneumatic tube system**.<br><br>Call the lab coag department with any questions about specimen collection**. All specimen requirements *must* be met to provide accurate results. Click for list of interfering medications.** | |
| Von Willebrand Profile<br>(Includes: Factor VIII Activity, von Willebrand Factor Antigen, von Willebrand, Ristocetin Co-factor) | QU#20231 | **Special Instructions Call Lab** **4-5 full** 4.5ml Lt. Blue top tubes, (3.2% or 3.8% Sodium Citrate). Centrifuge for 15 minutes at 3500 rpm, separate and **freeze plasma immediately**. Submit separate frozen vials for each special coagulation assay ordered. | |

| **Test Description**<br>Cultures | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| **Culture Listing** | | **See Instructions for collection of Microbiology specimens.** | |
| Abscess Culture (gram stain incl.) | In house | Microbiology transport media (red or blue cap) | |
| Aerobic ID (gram stain incl.)<br>(For sites not listed in this catalog.) | QU# 6346R | Sources may include: Pleural fluid, pericardial fluid, ventricular fluid, sinus, mouth, urethra and tissues. Use **culture swab transport** system or **a sterile tube or cup.** | |
| Anaerobic Culture (gram stain incl.) | In house | Microbiology transport media blue top with gel. | |
| Blood Culture - Note: all pediatric draws (14 yrs of less) must go into aerobic FAN. | In house | After betadine or chlorhexidine skin preparation: 10mls blood collected aseptically in both aerobic and anaerobic broth. Note: If patient is receiving antibiotics, must collect in aerobic FAN instead of standard broth. Separate order required for each collection. See Collection of Blood Culture Procedure. | |
| Body Fluid Culture (gram stain incl.) | In house | Sterile container | |
| B (Bordetella) Pertussis Culture | QU# 5496R | Collect a nasopharyngeal specimen using a calcium alginate or Dacron swab. Place swab in Bordetella (Regan-Lowe) medium. | |
| C. Trachomatis Culture | QU# 63495R | Submit specimen on a Dacron/rayon swab in M4 transport (red or blue cap). Acceptable Specimens: endocervix, urethra, conjunctiva, rectal mucosa (without feces), fluid aspirate, tissue, nasopharynx or throat swabs. *Other Acceptable Specimens*: Cytobrush and post hysterectomy specimens. **Refrigerate** specimens. **Rejection Criteria**: Wooden shaft swabs, calcium alginate swabs or dry swabs. | |
| CSF Culture (gram stain incl.) | In house | Sterile container**: DO NOT Refrigerate. Send to Lab ASAP** | |
| Ear Culture (gram stain incl.) | In house | Microbiology transport media (red or blue cap) culturette. | |
| Eye Culture (smear incl.) | In house | Microbiology transport media (red or blue cap) culturette. | |
| Culture, Fungus, Hair, Skin, Nails | QU# 5751E | Collect skin, hair or nail specimen by scraping infected area with scalpel blade into a sterile plastic container. Indicate source of specimen in the comment field on the requisition and on the specimen container. Keep at **Room Temperature.** | |

| **Test Description**<br>Cultures | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| Culture, Fungus w//stat KOH | In house | PREFERRED SPECIMEN: Raw specimen, any source *other than* blood, hair, skin or nail. Raw stool specimens are unacceptable. Submit stool in stool culture transport medium. Collect oral, nose nasopharynx, ear, eye, wound or urethral specimens using culture **swab transport system**/liquid medium. Use **sterile plastic container** for respiratory secretions, body fluid, tissue, CSF, urine, contact lens (or contact lens fluid). For tissue samples add a small amount or saline to sample. **Transport raw specimens refrigerated; transport swab specimens at room temperature**. | |
| Culture, Fungus, Misc | QU# 5801E | PREFERRED SPECIMEN: Raw specimen, any source *other than* blood, hair, skin or nail. Raw stool specimens are unacceptable. Submit stool in stool culture transport medium. Collect oral, nose nasopharynx, ear, eye, wound or urethral specimens using culture **swab transport system**/liquid medium. Use **sterile plastic container** for respiratory secretions, body fluid, tissue, CSF, urine, contact lens (or contact lens fluid). For tissue samples add a small amount or saline to sample. **Transport raw specimens refrigerated; transport swab specimens at room temperature**. | |
| Fungus Culture, **Blood** | QU# 6015P | ****Special tube**** 10ml Sodium Heparin whole blood (plain green rubber-stopper) | |
| GC (Screen) Culture | In house | Microbiology transport media (red or blue cap)<br>**DO NOT** REFRIGERATE. Send to Lab ASAP. | |
| Genital Culture (gram stain incl.) | In house | Microbiology transport media (red or blue cap)<br>**DO NOT** REFRIGERATE. Send to Lab ASAP. | |
| GI Stool Culture | | See Stool Culture | |
| Group B Strep Screen | | See Strep Screen, Group B | |

| **Test Description**<br>Cultures | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| Herpes Culture (Rapid)<br>HSV, Rapid Method | QU# 2692E | Collect specimen from a suspected lesion using a swab of cotton, rayon or Dacron with a plastic or metal shafts. **Do not *use calcium alginate swabs with wooden shafts*.** Place swab in M4 transport medium. **Refrigerate** ** Do not Leave at room temperature** Indicate source on requisition. **Other acceptable specimens are urogenital, nasopharyngeal, eye and throat swabs, CSF or tissue in viral transport or M4 transport medium.** | |
| Herpes Culture (Rapid)<br>HSV/VZV Rapid Culture | QU# 17495X | Collect lesion, aspirate or swab from sources such as oral, skin or conjuntiva and place in M4 media. Sterile swabs with plastic shafts and rayon or Dacron tips may be used. Do **not** use swabs made with cotton or wood. **Other acceptable specimens are body fluids, CSF, and tissues as well as respiratory specimens such as sputum, bronchial washing/lavage, and tracheal aspirates (trasport in M4 media).** Note: For genital, rectal and peri-rectal specimens order HSV, Rapid Method (2692E). **Refrigerate** ** Do not leave at room temperature.<br>** Anti-viral therapeutics should be noted on test requistion** | |
| Legionella Culture | QU# 5934P | Fresh biopsy tissue, lower respiratory tract specimens, or pleural fluid in sterile screw-capped container. **KEEP REFRIGERATED** | |
| Neonatal Culture (gram stain incl.) | In house | State Source: Microbiology transport medium (red or blue cap). | |
| Nose Culture (gram stain incl.) | In house | Nose: Microbiology transport medium (red or blue cap). | |
| Mycobacteria Culture, Blood<br>(AFB/Acid Fast Culture) | QU# 41194F | ****Special Tube**** 7- 10mls blood collected in an Isolator Tube, green top (heparin) vacutainer tube or yellow top **(SPS)** vacutainer tube. Invert tube gently (at least 4 times after drawing). Refrigerate. | |
| Mycobacteria Culture, Misc Source W/Decontamination<br>(AFB/Acid Fast Culture) | QU# 3986 | **Sources:** Bronchial Washings and Bronchial Alveolar Lavage material, Gastric Aspirate material, Stool and Colon Aspirate material. Submit in sterile container Refrigerate.<br>**Swab specimens will be rejected.** | |

| **Test Description**<br>Cultures | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| Mycobacteria Culture & Stain, Sputum | QU# 3251A | 5 mls of sputum or tracheal aspiration material in a sterile, wax – free container. Collect an early-morning specimen from deep, productive cough (on three consecutive days). Minimum specimen is 5ml volume. Refrigerate. | |
| Mycobacteria Culture, Tissue | QU# 1313A | Sources: Tissue, Wound/abscess aspirate material, and bone marrow. Place aspirated materials into a sterile screw capped container. Refrigerate. Collect Bone Marrow in a heparinized tube. | |
| Mycobacteria Culture & Stain, Urine | QU# 10355F | 50 mls urine in sterile container. **Collect first morning urine** by midstream or catheterization after appropriate cleansing of area. Send entire specimen, no preservative needed. **Specimen is stable three days refrigerated.** *Do not collect urine from drainage bag when an indwelling catheter is in place.* Refrigerate. | |
| Single Organism, culture | In house | **Lab Order Only. Call Lab for ordering and collections.** Test to be used in event of suspected outbreak or following consultation with Infection Ctrl. Dept. | |
| Sputum Culture (Gram stain incl.)<br>(Lower respiratory) | In house | Sputum in sterile container. To LAB within **1** hour, or refrigerated for up to 24 hours | |
| Strep A (throat) Culture | In house | Microbiology transport medium double swab, red cap. | |
| Strep screen,<br>Group B Culture or<br>Group B Strep Screen or Culture,<br>Group B Strep. | In house | Microbiology transport medium swab (red or blue cap).<br>Acceptable specimens: Vaginal introitus and/or Anorectum. | |
| Stool Culture or GI Stool Culture<br>or Culture Stool | In house | ****Special Instructions** -** Stool in sterile container. Send to Lab ASAP, specimen must be processed within 1 hour or place sample into orange-topped Cary-Blair preservative, which has stability up to 96 hours. Prior use of purgatives may interfere with testing. <u>If patient has been medicated with bowl evacuation, test only with physician approval.</u> DO NOT Refrigerate. | Room Temp. |

| **Test Description**<br>Cultures | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| Stool Culture **with Yersinia** workup or Culture Stool with Yersinia Workup | In house | ****Special Instructions**** Stool in sterile container. Send to Lab ASAP, specimen must be processed within 1 hour. Or place sample into orange topped Cary-Blair preservative, which has stability up to 96 hours. DO NOT Refrigerate. | Room Temp. |
| Surgical Culture (smear incl.) | In house | Microbiology transport media (red or blue cap). | |
| Throat Culture (Upper Respiratory) | In house | Microbiology transport media double swab, red cap. | |
| Urine Culture | In house | Urine in sterile container,(CC or cath specimen) which is stable 1 hour at room temp and 24 hours refrigerated; or 4-10 mls of urine in a grey top **urine device**, which is stable for 48 hrs at room temp. | |
| Viral Culture | QU# 689X | Submit swabs, lavages, fluids, urines (3ml), biopsy, CSF (1ml), amniotic fluid or seminal fluid (3ml) in M4 transport media. For stool samples add 1 gm of stool to 3ml of M4 media**. Refigerate.** *If specimen is blood or bone marrow, order the individuarl viral PCR rest.* | Refrigerate |
| Wound Culture (gram stain incl.) | In house | Microbiology transport media (red or blue cap). | |

| **Test Description**<br>Cytology | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| **CYTOLOGY** | | **CALL Histology (x4638).**<br>(Click here to access Instructions for collection of Cytology specimens) | |
| Breast Aspirate | In house | Cytology, Non-Gyn Request | |
| Breast Cancer Profile, Paraffin Block | | Call Histology x4638 | |
| Bronchial Brushings | In house | Cytology, Non-Gyn Request | |
| Bronchial Washings | In house | Cytology, Non-Gyn Request | |
| Cervical Pap, diagnostic | In house | Cytology, GYN Request | |
| Cervical Pap, screening | In house | Cytology, GYN Request | |
| Chromosome Study, Bone Marrow | | Call Histology x4638 | |
| DNA Ploidy, Paraffin Block | In house | Call Histology x4638 | |
| ER/PR Receptors, Paraffin Block | | Call Histology x4638 | |
| Esophageal Brushings | In house | Cytology, Non-Gyn Request | |
| Esophageal Washings | In house | Cytology, Non-Gyn Request | |
| Estrogen Level | In house | Call Histology x4638 | |
| Fine Needle Aspiration | In house | Call Histology x4638 - Cytology, Non-Gyn Request. | |
| Fine Needle Aspiration, Collected outside hospital | | Call Histology x4638 - Cytology, Non-Gyn Request. | |
| Fluids | In house | Call Histology x4638 - Cytology, Non-Gyn Request. | |
| Gastric Brushings | In house | Cytology, Non-Gyn Request | |
| Gastric Washings | In house | Cytology, Non-Gyn Request | |
| Photo Gross Surgical | In house | Call Histology (x4638) | |
| Sputum | In house | Cytology, Non-Gyn Request | |
| Thin Prep (PAP) (When ordering MUST STATE diagnostic or screen) | In house | ****Special Media**** Preserve CYST. Solution for use with Thin Prep. GYN Request. | |

| **Test Description**<br>Cytology | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| Thin Prep **with HPV reflex** (When ordering MUST STATE diagnostic or screen) | In house | ***Special Media**** Preserve CYST. Solution for use with Thin Prep. GYN Request. | |
| Urine (diagnostic screen) | | Cytology, Non-Gyn Request | |

| **DIALYSIS ONLY**<br>**Test Description** | **Quest send out test: QU# if indicated:** | **Specimen / Instructions / Tube** | **Shipping** |
|---|---|---|---|
| Dialysis Pre BUN | In house | 1 full tube (min. 3mls) blood in green/black top tube (**Preferred**) or gold top tube. | |
| Dialysis Glucose | In house | 1 full tube (min. 3mls) blood in green/black top tube (**Preferred**) or gold top tube. | |
| Dialysis HgbA1C | In house | 1 full tube lavender top tube, EDTA. | |
| Dialysate Profile (Urea dialysate, creatinine dialysate, Protein dialysate & Glucose\dialysate) | In house | 1 ml dialysate | |
| Dialysis Profile I<br>(Potassium, Chloride, Bicarb., BUN, Creatinine, LD, SGOT, Alk. Phos., T. Protein, Alb., Globulin, Calcium, Phosphorous) PLUS: CBC MINUS DIFF. | In house | **1 full tube** blood in gold top tube or green/black top tube **AND** 2 ml blood in lavender top tube. | |
| Dialysis Profile I<br>(Potassium, Chloride, Bicarb, BUN, Creatinine, LD, SGOT, Alk. Phos, T. Protein, Alb., Globulin, Calcium, Phosphorous) PLUS: CBC MINUS DIFF. | In house | **1 full tube** blood in gold top tube or green/black top tube **AND** 2 ml blood in lavender top tube. | |

| **Test Description**<br>Drug Screens | QUEST send out test: QU # if indicated | **Specimen / Instruction / Tube** | |
|---|---|---|---|
| **DRUG SCREENS** | | **Medical screens DO NOT require a chain of custody form.<br>**Legal drug screens DO require a chain of custody form. | |
| Urine Drug Screen **(UVMC)**<br>(7 drugs of abuse panel: Amphet, Barb., Benzo., Cannab., Cocaine, Opiate & PCP) | In house | Min. 30mL urine in urine container. | |
| Urine Drug Screen 9 Panel Employee:<br>(Includes the 7 panel drug screen and Propoxy, & Methadone) | In house | Min. 30mL urine in urine container. | |
| Employee, Drug Screen 9 Panel | In house | Min. 30mL urine in urine container. | |
| Drug Screen, Meconium (9 Panel) | QU# 30427X | 5gm fresh meconium (1gm min). Refrigerate. | |
| Drug Screen-Amphetamines | in house test | Min. 30mL urine in urine container. | |
| Drug Screen-Barbiturate | in house test | Min. 30mL urine in urine container. | |
| Drug Screen-Benzodiazepine | in house test | Min. 30mL urine in urine container. | |
| Drug Screen-Cannabinoids | in house test | Min. 30mL urine in urine container. | |
| Drug Screen- Cocaine | in house test | Min. 30mL urine in urine container. | |
| Drug Screen- Methadone | in house test | Min. 30mL urine in urine container. | |
| Drug Screen-Opiates | in house test | Min. 30mL urine in urine container. | |
| Drug Screen- PCP (Phencyclidine) | in house test | Min. 30mL urine in urine container. | |
| Drug Screen-Propoxyphene (Darvocet) | in house test | Min. 30mL urine in urine container. | |
| MCM Drug of Abuse Screen | in house test | Min. 30mL urine in urine container. (To be ordered by Miami County Mental Health **ONLY**). | |

| **OCCUPATIONAL HEALTH**<br>**Test Description** | **Quest send out test: QU # if indicated:** | **Specimen / Instructions / Tube** | **Shipping** |
|---|---|---|---|
| Hepatitis B Virus **Surface Antibody** | | **1 full tube** blood in red top tube or gold top tube. | |
| OCH SCREEN III (Lipid profile, CBC-Minus Diff & UA) | | ****3 Different Specimens**** 1 full tube blood in gold top tube or green/black top tube **AND** 2 ml blood in lavender top tube AND 10 mls random urine. | |
| OCH BETA 2 Microglobulin | QU# 19521E | 1 full tube blood in red top or gold top tube. Hemolyized specimens are not acceptable. | |
| OCH Blood Alcohol Industrial | | **Special Collection Procedure**. 2 gray top tubes. | |
| OCH Drug Screen **DFWP 8-10 Panel** | | 50 mls random urine, minimum. | |
| OCH **Exposure Panel:** Includes (HIV, Hepatitis B Surface Ab. ALT/SGPT& Hepatitis C Ab.) | | ****Special Instructions**** **3 full** tubes blood in gold top tube. Be Sure to get consent form for HIV signed. | |
| OCH Drug **Screen 8-10 Panel** | | 50 mls random urine in sterile container, minimum. | |
| OCH Drug of **Abuse Panel 5** | | 50 mls random urine in sterile container, minimum. | |
| OCH Drug **Screen Collection** | | 50 mls random urine in sterile container, minimum. | |
| OCH Drug Screen, **9 Panel Employee** | | 50 mls random urine in sterile container, minimum. | |
| OCH Drug **Screen Split** | | See Special Instructions for DOT collection. | |
| OCH **DOT** Drug Screen | | See Special Instructions for DOT collection. | |
| OCH **DOT** Drug Screen **Bus Driver** | | See Special Instructions for DOT collection. | |
| OCH **DOT Panel Post Accident** | | See Special Instructions for DOT collection. | |
| OCH Fireman Panel | | Refer to OCH Collection Procedure | |
| ODH Occult Blood Stool #1 | In house | 1 ml stool on Hemoccult card | |
| ODH Occult Blood Stool #2 | In house | 1 ml stool on Hemoccult card | |
| OCH Occult Blood Stool #3 | In house | 1 ml stool on Hemoccult card | |

| **OCCUPATIONAL HEALTH**<br>**Test Description** | **Quest send out test: QU # if indicated:** | **Specimen / Instructions / Tube** | **Shipping** |
|---|---|---|---|
| OCH PSA Screening | In house | ****Special Instructions**** 1 full tube blood in red top tube or gold top tube. Separate serum and freeze ASAP. Freeze if more than 24 hours before testing. | |
| OCH Panel V (Includes BUN, Creatinine, CBC with diff, and Urinanalysis) | | **** Special Instructions**** 1 full tube blood in gold top or green/black top tube **AND** 2ml blood in lavender top tube **AND** 10mls random urine. | |
| OCH Toluene Exposure Profile | | ****Special Tube** CALL UVMC LAB** | |
| OCH U/A dip | | 1 ml random urine in sterile container. | |
| OCH U/A dip (Bus Driver) | | 1 ml random urine in sterile container. | |
| OCH Urine Cadmium | | Refer to OCH Collection Procedure | |
| OCH Urine Chromium | | Refer to OCH Collection Procedure | |
| OCH Urine Copper | | Refer to OCH Collection Procedure | |

Send Corrections / Additions to:

UVMC LAB X4625
ATTN: Pat or Melodie
Upper Valley Medical Center
Clinical Laboratory
3130 N. Dixie Highway,Troy, Ohio 45373

Updated 01/2009

Upper Valley Medical Center
Clinical Laboratory
3130 N. Dixie Highway
Troy, Ohio 45373

# Pour Off Specimens from Original Container

**Purpose:**
To ensure that each specimen container identifies the patient uniquely when pouring off specimen into other containers, aliquot specimens for each testing department or reference laboratory.

**Procedure:**
If/when specimens are received into the laboratory and need a aliquot due to only receiving a minimum amount of specimen for different testing departments, reference laboratory or to meet specimen requirements (specimen needs separated from cells, specimen needs sent frozen in plastic container, mix specimen with additive, extra specimen saved) each secondary specimen needs patient name and a unique identifier to ensure that the container is labeled correctly. (Refer to the policy "Specimen Labeling" for further information) The original container is refrigerated and stored for seven day.

The laboratory barcode sticker can be placed on the secondary container or can be hand written with a permanent marker. An aliquot sticker from the barcode is acceptable.

Each aliquot specimen is labeled with the specimen type. (i.e. plasma, serum, csf fluid, urine ect…) to ensure the original specimen type that was collected.

New procedure prepared by T.Cheney Date 1-28-03

Revised procedure prepared by T.Cheney Date 11-5-08 Supercedes procedure written 12-28-04

## Glucose Tolerance Testing: 2 Hour, 3 Hour, 4 Hour and 5 Hour Phlebotomy Procedure

**Procedure:**

1. **Properly identify the patient by using two identifiers and make certain that the patient is fasting. Make sure that there are no other conflicting procedures ordered.(i.e. X-rays, cat-scan, and etc.) If there are, notify the ward secretary or nurse to reschedule other test per physician' swishes.**
2. Inform nursing to have the patient collect a fasting urine sample and label properly. After the fasting urine has been collected, collect a fasting blood sample from the patient and label properly.
3. For a **non-pregnant adult** - Administer 75 grams of glucose beverage and record amount ingested on the barcode.

   For **pregnant adult** - Administer 100 grams of glucose beverage and record amount ingested on the barcode.

   **Pediatric patient** - consult the diagram given for amount of glucola to be administered and record the amount ingested on the barcode.
4. Instruct the patient to consume the entire amount within 5 minutes. Start timing process when patient has finished the entire glucose beverage.
5. Make two lists of the times that blood and urine samples are to be collected from the patient. Give one list to the patients nurse explaining the procedure. Nursing is responsible for obtaining the urine specimens from the patient. (Provide nursing with the urine containers labeled with the barcodes including 1 hr., 2 hr., 3 hr. etc. documented on the urine container). Place the other list with the scheduled collection times and barcodes in the lab processing area as a reminder of the times the specimens need to be collected.

   **Blood and urine samples are to be collected at the following times:**

   | | |
   |---|---|
   | 2-hour tolerance test: | Fasting glucose and urine -1 hr glucose and urine, 2 hr glucose and urine. |
   | 3-hour tolerance test: | Fasting glucose and urine - 1 hr glucose and urine, 2 hr glucose and urine, 3 hr. glucose and urine |
   | 4-hour tolerance test: | Fasting glucose and urine - 1 hour glucose and urine, 2 hr glucose and urine, 3 hr glucose and urine, 4 hr glucose and urine. |
   | 5-hour tolerance test: | Fasting glucose and urine -1 hr glucose and urine, 2 hr glucose and urine, 3 hr glucose and urine, 4 hr glucose and urine, 5 hr glucose and urine. |

   Ask the patient to remain in their bed for the duration of the test. Patients are not to walk or do any kind of therapy during a glucose tolerance test.

6. Make certain that the patient understands:
   - How often to obtain urine samples and how often he/she will have blood drawn.
   - That he/she is to remain in bed during the entire test.
   - That he/she is allowed water only during the test
   - Smoking is not permitted during the test.
   - That if he/she should feel nauseated, faintness, dizziness, a headache or vomits, that he/she is to notify the PCT/Nurse immediately.

7. When each hour has elapsed, draw a blood sample and collect another urine sample from the patient

8. If the patient vomits after ingesting the glucose beverage, place appropriate comments in the Cerner system and note the time that the patient vomited. The glucose tolerance test should be canceled and rescheduled at anther time. Contact the ward secretary/nurse and have them notify the ordering Physician to verify rescheduled test.

9. The patient should be encouraged to drink as much water as they want. Provide the patient with a pitcher of ice water and a cup.

10. After the test has been completed, the patient can eat or drink whatever diet the physician has ordered.

**CONTACT THE LAB STAT IF THE PATIENT STARTS TO FEEL VERY ILL OR HAS ANY COMPLICATIONS.**

Special Note: Make sure the patient does not have dextrose running through an I. V. before starting the tolerance. The I.V. will need to be shut off before starting the test. Advise the patients nurse if this applies.

Keep the lines of communication open between lab and nursing to ensure the test is being completed correctly.

Revised: 07/16/2003
Supersedes procedure written: 12/2000

## DOSAGE OF GLUCOSE FOR ORAL GLUCOSE TOLERANCE TEST ON PEDIATRIC PATIENTS

1.75gm./kg.
(Use the 50gm. Bottle)

| Body weight (lb.) | (kg) | Glucose (gm.) | Volume 50% Solution (ml.) |
|---|---|---|---|
| 10 | 4.5 | 7.9 | 16.0 |
| 11 | 5.0 | 8.8 | 18.0 |
| 12 | 5.5 | 9.6 | 19.0 |
| 13 | 5.9 | 10.3 | 21.0 |
| 14 | 6.4 | 11.2 | 22.0 |
| 15 | 6.8 | 11.9 | 24.0 |
| 16 | 7.3 | 12.8 | 26.0 |
| 17 | 7.7 | 13.5 | 27.0 |
| 18 | 8.3 | 14.6 | 29.0 |
| 19 | 8.7 | 15.3 | 31.0 |
| 20 | 9.1 | 16.0 | 32.0 |
| 21 | 9.6 | 16.9 | 34.0 |
| 22 | 10.0 | 17.5 | 35.0 |
| 23 | 10.5 | 18.4 | 37.0 |
| 24 | 10.9 | 19.1 | 38.0 |
| 25 | 11.4 | 20.0 | 40.0. |
| 26 | 11.8 | 20.6 | 41.0 |
| 27 | 12.3 | 21.5 | 43.0 |
| 28 | 12.7 | 22.2 | 44.0 |
| 29 | 13.2 | 23.1 | 46.0 |
| 30 | 13.7 | 24.0 | 48.0 |
| 31 | 14.1 | 24.7 | 50.0 |
| 32 | 14.5 | 25.4 | 51.0 |
| 33 | 15.0 | 26.3 | 53.0 |
| 34 | 15.5 | 27.2 | 54.0 |
| 35 | 15.9 | 27.9 | 56.0 |
| 36 | 16.4 | 28.7 | 57.0 |
| 37 | 16.8 | 29.4 | 59.0 |
| 38 | 17.3 | 30.3 | 61.0 |
| 39 | .17.7 | 31.0 | 62.0 |
| 40 | 18.2 | 31.8 | 34.0 |
| 41 | 18.7 | 32.7 | 65.0 |
| 42 | 19.1 | 33.4 | 67.0 |
| 43 | 19.5 | 34.2 | 68.0 |
| 44 | 20.0 | 35.0 | 70.0 |
| 45. | 20.4 | 35.7 | 71.0 |
| 46 | 20.9 | 36.6 | 73.0 |
| 47 | 21.4 | 37.5 | 75.0 |
| 48 | 21.8 | 38.2 | 76.0 |
| 49 | 22.2 | 38.9 | 78.0 |
| 50 | 22.8 | 40.0 | 80.0 |
| 51 | 23.2 | 40.6 | 81.0 |
| 52 | 23.6 | 41.4 | 83.0 |
| 53 | 24.1 | 42.2 | 84.0 |

| Body weight (lb.) | (kg) | Glucose (gm.) | Volume 50% Solution (ml.) |
|---|---|---|---|
| 54 | 24.5 | 42.8 | 86.0 |
| 55 | 25.0 | 43.7 | 87.0 |
| 56 | 25.4 | 44.5 | 89.0 |
| 57 | 25.9 | 45.3 | 91.0 |
| 58 | 26.3 | 46.1 | 92.0 |
| 59 | 26.8 | 46.9 | 94.0 |
| 60 | 27.1 | 47.8 | 96.0 |
| 61 | 27.7 | 48.5 | 97.0 |
| 62 | 28.2 | 49.4 | 99.0 |
| 63 | 28.6 | 50.0 | 100.0 |
| 64 | 29.1 | 50.9 | 102.0 |
| 65 | 29.5 | 51.6 | 103.0 |
| 66 | 30.0 | 52.5 | 105.0 |
| 67 | 30.4 | 53.2 | 107.0 |
| 68 | 30.8 | 54.1 | 108.0 |
| 69 | 31.3 | 54.9 | 110.0 |
| 70 | 31.8 | 55.6 | 111.0 |
| 71 | 32.2 | 56.5 | 113.0 |
| 72 | 32.7 | 57.2 | 115.0 |
| 73 | 33.2 | 58.1 | 116.0 |
| 74 | 33.6 | 58.8 | 118.0 |
| 75 | 34.1 | 59.6 | 119.0 |
| 76 | 34.5 | 60.4 | 121.0 |
| 77 | 35.0 | 61.2 | 122.0 |
| 78 | 35.4 | 62.0 | 124.0 |
| 79 | 35.9 | 62.8 | 126.0 |
| 80 | 36.4 | 63.6 | 127.0 |
| 81 | 37.2 | 64.5 | 129.0 |
| 82 | 37.2 | 65.2 | 130.0 |
| 83 | 37.7 | 66.0 | 132.0 |
| 84 | 38.2 | 66.8 | 134.0 |
| 85 | 38.6 | 66.8 | 135.0 |
| 86 | 39.1 | 67.6 | 137.0 |
| 87 | 39.5 | 68.4 | 138.0 |
| 88 | 40.0 | 69.2 | 140.0 |
| 89 | 40.4 | 70.0 | 142.0 |
| 90 | 40.9 | 70.8 | 143.0 |
| 91 | 41.3 | 71.6 | 145.0 |
| 92 | 41.8 | 72.4 | 146.0 |
| 93 | 42.3 | 73.2 | 148.0 |
| 94 | .42.7 | 74.8 | 150.0 |
| 95 | 43.1 | 75.5 | 151.0 |
| 96 | 43.6 | 76.4 | 153.0 |
| 97 | 44.0 | 77.1 | 154.0 |
| 98 | 44.5 | 78.0 | 156.0 |
| 99 | 45.0 | 78.7 | 158.0 |
| 100 | 45.4 | 79.5 | 159.0 |

For patients weighing more than 100 lb., give the adult dose of 200 ml. Of a 50% solution (The whole 50 gm. Bottle.)

Upper Valley Medical Center
Clinical Laboratory
3130 North Dixie Highway
Troy, Ohio 45373

**Insulin Resistance Challenge, 2 Hour**

**Principle:** This test is used in the assessment of anovulatory women who are hyperandrogenic through measurement of 2-hour glucose and insulin levels after a 75 g, glucose load.

**Procedure:**

1. Identify the patient using standard operating procedures.
2. Confirm that the patient is fasting prior to specimen collection. If the patient is not fasting the test will need to be re-scheduled.
3. Collect a fasting glucose and insulin specimens from the patient, making sure to label the insulin tube (SST) as the fasting specimen with the collection date and time. The glucose tube (GRNBLK Gel) is to be labeled with the barcode from the fasting glucose order, identify the collection date and time.
4. Administer 75 g of glucose beverage. Instruct the patient to consume the entire amount within 5 minutes. Record the time glucose beverage consumption is completed. The second collection will be two hours after ingestion.
5. Ask the patient to remain in the outpatient testing area for the duration of the test. Patient may consume only water during the 2 hours between collections. Food and smoking are not allowed during this time. Instruct the patient to notify the collection personnel if at any time they experience nausea, faintness, dizziness, headache or vomiting.
6. After the two hours have elapsed collect the 2-hour glucose and insulin specimens. Label the 2-hour glucose with the barcode label from the order. Use the second barcode on the insulin label to label the 2-hour collection making sure to label the tube as the 2-hour specimen with the collection date and time.

New procedure prepared: ala date: 3/12/07

H:\labsuper\lis computer manual\ insulin resistance challenge 2 hr

## CLEANING AND SUPPLYING THE BLOOD COLLECTION TRAY

The drawing tray used by Phlebotomist and Technicians should be kept clean at all times. Many people and patients see our trays and the laboratory should maintain a neat, clean, and professional appearance. Items kept on the trays should be arranged in a logical sequence and must be well stocked.

Each drawing tray should be cleaned with at least 10% bleach to 90% water solution every week, and all expiration dates of items on each tray will be checked at the same time. Each phlebotomist is responsible for maintaining this schedule.

Every tray should contain these items:

- Serum Separator Tubes
- Lavender Top Tubes
- Blue Top Tubes: 2.7rnl. and 4.5rnl.
- Red Top Tubes
- Green Top Tubes: (lithium and sodium)
- Lancets (for finger sticks and heel sticks)
- 21, 22, 23, and 25 ga. Safety Needles (for syringes)
- 21, and 22 ga. Safety Vacutainer Needles
- Butterfly Safety Needles (various sizes)
- Alcohol Prep Pads
- Gauze or Cotton Balls
- Two Tourniquets
- Vacutainer Holders
- Vacutainer Transfer Device
- Betadine
- Band-Aids
- Tape
- Sharps Container
- Pen

An adequate supply of all these items should be checked before going to collect specimens. Go over all orders thoroughly for the tests requested to ensure you know correct specimen requirements. Check the dates of supplies before going out to draw and never use outdated or expired material.

Revised: 01/30/02 tmc
Supersedes procedure written: 12/2001 tmc

UPPER VALLEY MEDICAL CENTER
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## PROCEDURE FOR COLLECTING BLOOD USING THE CORRECT SEQUENCE OF TUBES

**Principle:** To ensure the proper guidelines to follow when collecting blood for multiple assays. This procedure includes the proper collection technique to follow when collecting blood using the vacutainer method and when using the syringe method.

**Procedure:**

Follow these steps; the order goes from the first tube drawn to the last tube drawn.

1. Blood Cultures (Use the aseptic drawing procedure, see blood culture collection procedure for any questions)
2. Light Blue top
3. Red or Tiger top
4. Green and light green
5. Purple EDTA
6. Gray top
7. Dark Blue
8. Royal Blue

Revised procedure prepared by _TMC_____ date _1/16/07_____ supersedes procedure written_1/30/03_____

# Processing Blood Specimens for Serum Testing

**Principle:**

Proper collection and processing of blood samples is a critical first step in ensuring specimen integrity and quality laboratory results. This procedure will instruct personnel on the proper handling of specimens for serum testing after specimen collection.

**Procedure:**

1. Determine the proper collection tube (i.e. serum separator tube (SST) or no gel barrier) and the quantity of serum needed for testing. Collect sample using proper veinipuncture techniques. Refer to the *Laboratory Service Manual* for assistance.

2. Make every effort to fill the SST tube to the stated draw volume to ensure the proper blood-to-additive ratio.

3. Mix the serum tube by **5** complete inversions. Proper mixing of the clot activator is critical to achieving appropriate clotting times and clot formation.

4. Allow SST specimens to clot for a **minimum of 30** minutes and the no gel barrier tubes to clot for a **minimum of 60** minutes in a vertical (upright) position at room temperature.

Note: For the following scenarios at outreach collection sites instruct the courier to transport the specimen to the Laboratory at room temperature in a vertical (upright) position for proper clot formation.

- If the serum in the no gel barrier tube cannot be aspirated off and separated from the red blood cells for any reason, there is no need to centrifuge or wait for the specimen to clot, send the specimen to the Laboratory with the courier within 2 hours.
- If a courier is present in the outreach collection sites to transport the specimen to the Laboratory before clotting time is complete, package the uncentrifuged specimen in a yellow transport bag, which indicates “immediate attention required”, and send the specimen to the Laboratory with the courier.
- All Stats will be transported to the Laboratory immediately after collection. Package the specimen in a red transport bag, which indicates “stat” and send the specimen to the Laboratory with the courier.

5. Observe the specimen for the presence of a dense clot after the 30 or 60 minute clotting time. Samples from certain populations of patients, including coumadin and heparin drug therapy and impaired coagulation may require longer clotting times. If a dense clot is not observed **do not centrifuge specimen**, allow the specimen to clot for an additional 30 minutes. Serum must be separated from the red blood cells as soon as possible, with a **maximum time limit of 2 hours.**

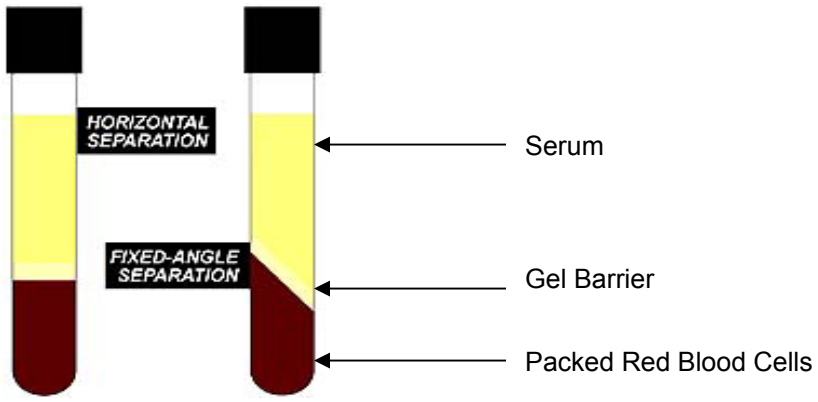
6. Once a dense clot is visualized the specimen can then be centrifuged for **15** minutes at **3500** RPM. Refer to *Centrifuge Operation and Maintenance Procedure* for additional centrifuge directions.

Notify Laboratory personnel immediately if specimens cannot be centrifuged, due to equipment failure or other reasons, these specimens must be delivered to the Laboratory within 2-hours of collection to be centrifuged by Laboratory personnel.

7. Visually check specimen to ensure proper centrifugation. It is extremely important that the serum is completely separated from the red blood cells. (See figure 1)
    a. The gel barrier in SST tubes adequately separates the serum from the cells once the specimen is properly centrifuged.
    b. The no gel barrier tubes must have the serum aspirated off the red blood cells into a clean test tube properly labeled with patient information and specimen type as “serum” for transport to the Laboratory.

Note: The specimen in the original tube is to be centrifuged **one** time. The tube should not be recentrifuged once the gel barrier is formed. A potential for inaccurate test results is possible.

Figure: 1




8. Once the specimen is properly centrifuged and the serum separated from the red blood cells notify the laboratory personnel immediately for specimen pickup. Please inform the laboratory personnel of any collection or specimen handling issues that may be of importance.

9. Upon receipt into the Laboratory, the Specimen Processor will log any specimen handling and collection issues on the *Chemistry Departments Specimen Integrity Log* for Technologist review. Examples of integrity issues include:
    - Specimens received uncentrifuged longer than 2 hrs since collection
    - Presence of fibrin
    - Presence of red blood cells in serum
    - Hemolysis
    - Difficult collection

Do not recentrifuge specimen with integrity issues that have already been centrifuged **once**. Forward these specimens to the Chemistry Department Technologist for further evaluation.

References:
BD Diagnostics. *Tech Talk*. Volume 4, No. 2, November 2005.
BD Diagnostics. BD Vacutainer ® Evacuated Blood Collection System Product Insert. Taken 9/7/06 from: http://www.bd.com/vacutainer/pdfs/blood_collection_tubes_product_insert_VDP40035.pdf

New procedure prepared by ___Jeff Kirk date ____10/17/06_____

# Quick Reference Guide for Tubes to Use

## Purple/Lavender Top

### 3 ML TUBE:

**CBC, CBC-DIFF**
**HEMOGLOBIN A1C, GLYCOHEMOGLOBIN**
**PLATLET COUNT**
**RETICULOCUTE COUNT, RETIC**
**AMMONIA (DELIVER ON ICE)**

### 7 ML TUBE:

**BLOOD BANK DRAWS**
**TYPE AND SCREEN**
**TYPE AND CROSSMATCH**
**PLATLET TRANSFUSIONS**
**BNP**

## Blue Top (Must be FULL)

**PROTIME**
**PTT/APTT**
**FIBRIN/FIBRINOGEN SPLIT**

## Green/Black Speckled Top Gel Barrier

| | | | | |
|---|---|---|---|---|
| ACETONE | ALBUMIN | ALKALINE PHOS. | AMYLASE | BUN |
| BICARB | BILIRUBIN | CALCIUM | CHLORIDE | CHOLESTEROL |
| GGTP | CKMB | CREATININE | D. BILI | FERRITIN |
| LIPASE | MAGNES. | PHOSPHOR. | POTASS. | HCG QUANT |
| PROTEIN | T4 | TROPONIN I | T-UPTAKE | TSH |
| AST/SGOT | ALT/SGPT | SODIUM | TRIGLYC. | TIBC/UIBC |
| URIC ACID | | | | |

## Green Top NO GEL

| | |
|---|---|
| CARBAMAZEPINE (Tegretol) | DIGOXIN |
| GENTAMICIN | PHENOBARBITAL |
| PHENYTOIN (Dilantin) | QUINIDINE |
| VALPROIC ACID | VANCOMYCIN |

## Gold Top Gel Barrier

**HCG-QUAL. PREG. TEST** **VITAMIN B12(Protect from light)** **FOLATE(Protect from light)** **HBSAG**
**HBSAB** **LH**
**LITHIUM** **PSA**
**PROLACTIN** **SALICYLATE**

## Gray Top Tube

**LACTIC ACID (No tourniquet to be used for draws)** **GLUCOSE** **ALCOHOL**

**Remember, if you do not know which tube to use please refer to the Lab Services Manual as a reference also.** **Prepared 11/24/2008, MET**

# TYPES OF BLOOD SPECIMENS

**Purpose**

To provide an explanation and guideline on how to differentiate between the different types of blood specimens. There are three acceptable types of blood specimens used for clinical testing: whole blood, serum and plasma.

**Whole Blood:**

A whole blood specimen is collected using a tube that contains an anticoagulant. A whole blood specimen is never centrifuged for testing. This means that the cells in the blood are not separated from the serum/plasma. Thus, the specimen remains in whole blood form. When drawn from a vein, a whole blood specimen usually appears dark red/purple in color.

**Serum:**

A serum specimen is collected into a tube that does not contain any anticoagulant. This means that eventually the blood will clot in the tube. Once the blood has clotted, the specimen is centrifuged. Centrifugation separates the cells from the serum. Thus, serum is the product that remains after the blood has clotted and been separated from the cells. Serum usually appears as light yellow in color and translucent in consistency (depending on the amount of hemolysis and lipemia).

**Plasma:**

A plasma specimen is collected into a tube that contains anticoagulant. This means that the blood will not clot in the tube. The specimen is immediately ready to be centrifuged. Centrifugation separates the cells from the plasma. Thus, plasma is the product that contains anticoagulant and has been separated from the cells. Like serum, plasma usually appears as light yellow in color and translucent in consistency (depending on the amount of hemolysis and lipemia).

**The ONLY difference between plasma and serum is the presence of anticoagulant in the blood collection tube.**

**Anticoagulant:**

Anticoagulant is any substance or additive that prevents blood clotting. Anticoagulants used to prevent clotting of blood specimens for laboratory analysis are heparin and several substances that make calcium ions unavailable to the clotting process, including EDTA (ethylenediaminetetraacetic acid), citrate, oxalate, and fluoride.

**Tubes Used for Whole Blood Specimens:**

| | |
|---|---|
| Lavender: | Contains K3 or K2 EDTA anticoagulant.<br>Does not contain a gel barrier. |
| Green: | Contains Sodium or Lithium Heparin anticoagulant.<br>Does not contain a gel barrier. |
| Yellow: | Contains ACD Solution A or B anticoagulant.<br>Does not contain a gel barrier. |

*** Any tube containing anticoagulant (without a gel barrier) can be used for a whole blood specimen. Use each tube according to the specimen requirements.

**Tubes Used for Serum Specimens:**

| | |
|---|---|
| Red: | Sterile tube. Contains no additive.<br>Does not contain a gel barrier. |
| Red/Black: | Contains Clot Activator.<br>Contains a gel barrier. |
| Gold: | Contains Clot Activator.<br>Contains a gel barrier. |

**Tubes Used for Plasma Specimens:**

| | |
|---|---|
| Lavender: | Contains K3 or K2 EDTA anticoagulant.<br>Does not contain a gel barrier. |
| Green: | Contains Sodium or Lithium Heparin anticoagulant.<br>Does not contain a gel barrier. |
| Green/Black: | Contains Lithium Heparin anticoagulant.<br>Contains a gel barrier. |
| Blue: | Contains Buffered Sodium Citrate anticoagulant.<br>Does not contain a gel barrier. |
| Gray: | Contains Potassium Oxalate anticoagulant.<br>Does not contain a gel barrier. |
| PPT (Plasma Preparation Tube) | Contains K2 EDTA anticoagulant.<br>Contains a gel barrier. |

Prepared: 10/30/03 pg

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# VENIPUNCTURE PROCEDURE

**PURPOSE:**
Proper collection of a blood specimen for laboratory analysis is essential for the correct diagnosis and care of the patient.

**PROCEDURE:**

1. Verify the patient by using the two patient identifiers, name and date of birth (Fig 1). If there are any discrepancies notify the patient's nurse right away. If an inpatient does not have an armband, do not draw their blood. Have a nurse identify the patient for you and have them place an armband on the patient. If the patient is incoherent, verify the patient by the armband. If you are drawing an outpatient, ask their name and date of birth. Verify these against the orders. NOTE: Blood Bank requires special armbands to be placed on the patient by you if you are drawing for any Blood Bank procedures. This includes inpatients and outpatients, see the Blood bank procedures if you are unsure of any issues. Please refer to the procedure, Specimen labeling, to ensure you have identified the patient correctly and follow UVMC's guidelines for specimen labeling. Verify the test requisition by checking the barcode label. The barcode label should have the following information on it:


**Figure 1**

Patient's Name
Location
Medical Record and Account numbers
Test requested
Date and time to be collected
Priority Code (STAT, ASAP, TIMED, CALL RESULTS, ROUTINE)
Accession number

2. Verify specimen requirements: optimal/minimal volumes and appropriate anticoagulant or preservatives. This is to be done before leaving the lab. Consult the Quest on line service manual or the Lab Service Manual to determine requirements. NEVER draw the blood without verifying the correct specimen requirement.

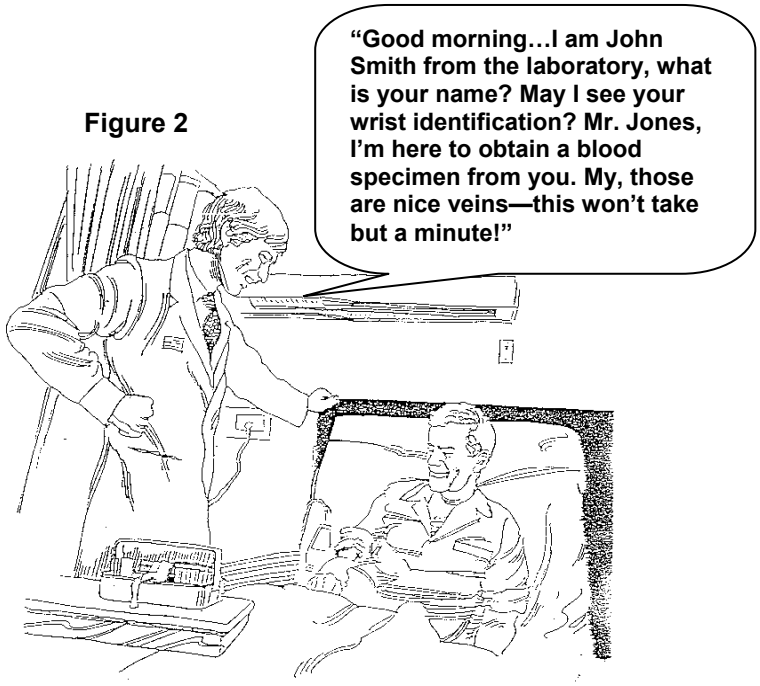
3. Take all appropriate supplies:

Needles (vacutainer or syringe)
Syringes and Vacutainer Adapter
Evacuated blood collection tubes with appropriate anticoagulant or blood culture bottles if needed

Vacutainer Transfer device
Tourniquet
70% alcohol prep pads or iodine preps
Cotton balls, or gauze squares
Tape, Band-Aids, or pressure wrap
Gloves

4. Introduce yourself to the patient by stating your name, and that you are from the lab. Gain the patient's confidence and explain what you are going to do. Reassure the patient and try to relieve any apprehension he or she may feel. Wash hands/don gloves. (Fig 2)

**Figure 2**




**If the patient refuses to have their blood drawn, attempt to courteously and professionally persuade the patient to have the test done. NEVER ARGUE WITH THE PATIENT! If the patient still refuses, notify the patient's nurse. The patient has a right to refuse any test. The patient's nurse will record this information on the patient's chart and will inform the ordering Physician or will try to persuade the patient to have the procedure done. If the patient still refuses, request the nurse to cancel the test. Notate the nurse's name on the barcode and check later to make sure the test has been canceled.

6. Proceed if the Patient agrees.
**If the test(s) ordered is required to be fasting or is a medication level, check to make sure patient is fasting and document appropriately on the requisition. Make certain to document date and time of the last dose when entering the test in the Cerner system.

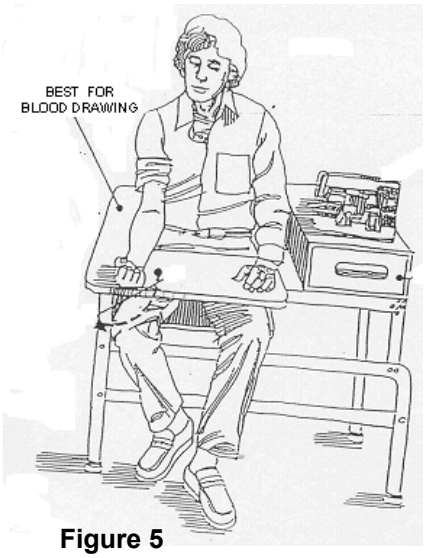



**Figure 5**

7. Properly position the patient:

Have bed patients lay on their back in a comfortable position. If necessary, add support under their arm with a pillow, or a rolled up towel, etc. (Fig.4)
Outpatients should be comfortably seated in the appropriate drawing chair. (Fig.5)
Do not draw blood from the patient if they are standing up.

8. Have supplies close at hand. Assemble necessary equipment needed for the venipuncture procedure.

**The collection tray and assembled venipuncture equipment should be placed on a stand next to the patient, within easy reach. NEVER PLACE COLLECTION TRAY ON PATIENT'S BED OR FLOOR.

9. Select the venipuncture site.

Inspect the area you plan to use.

Apply the tourniquet about midway between the elbow and shoulder on the desired arm of the patient. NEVER LEAVE THE TOURNIQUET ON FOR MORE THAN 1 MINUTE.

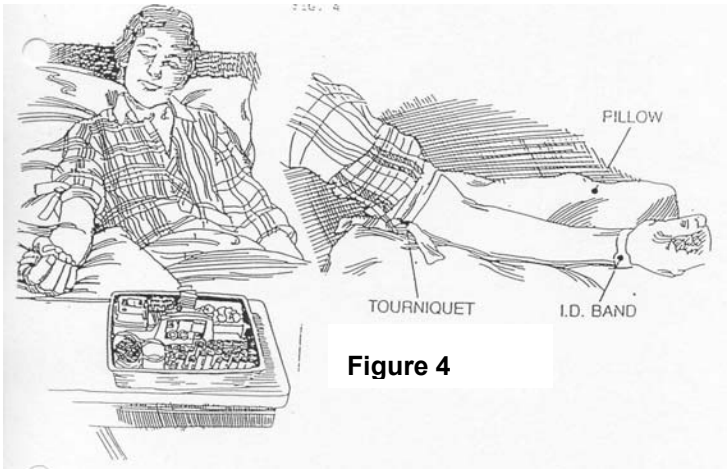
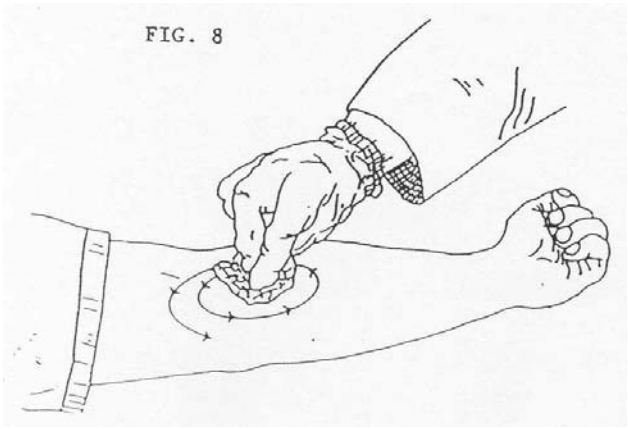


**Figure 4**

Request the patient to make a closed fist (if they are able to). This will make the veins more prominent.

Using the index finder, palpate for a vein. This will ensure visibility and the direction of the vein. Consult Fig. 7(at the end of the procedure) for the best sites for venipuncture; the Median Cubital veins are most commonly used.

If a vein is difficult to find, it may become easier to see after massaging the arm from the wrist to the elbow which forces blood into the vein. If you are still uncertain about finding a vein, examine the other arm. Sometimes veins in one arm are small while those in the other arm are larger. MAKE SURE THAT YOU DON'T DRAW ABOVE AN IV.

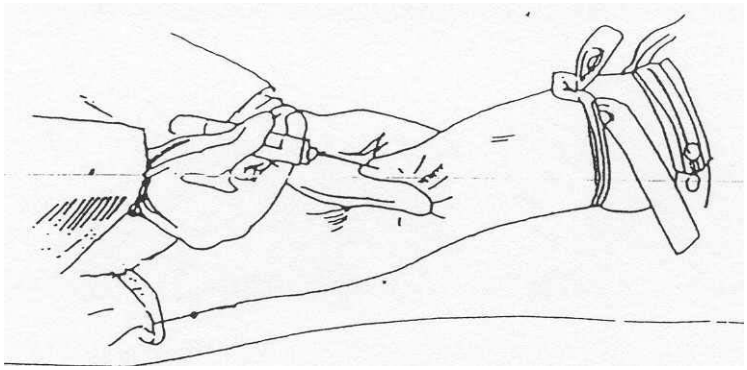



10. Clean the venipuncture site:

Remove the alcohol prep from the package and cleanse the venipuncture site in a circular motion from the center to periphery. (Fig. 8) Allow the area to air dry or by fanning with your hand. Do not blow on the site or touch the area after it has been cleaned. If the vein is difficult to locate and you need to palpate again, make sure to cleanse the site again.

11. Perform the venipuncture:

**Always wear gloves during the entire venipuncture procedure.
**Use appropriate needle size, and always inspect needle and tubes for any defects or flaws.

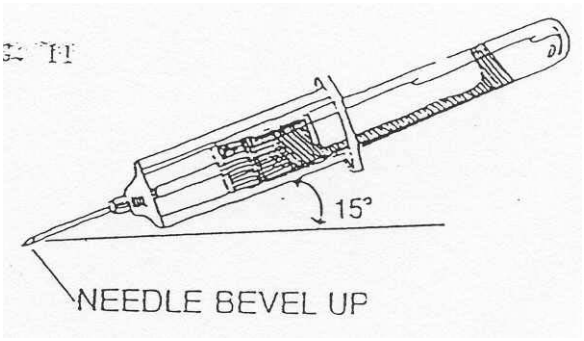


Hold the patient's arm approximately 1-2 inches below the venipuncture site.

Anchor the vein by pulling the skin tight or taut with your thumb. Press down on the arm and at the same time pull the skin toward the hand. The fingers of the hand should be around the underneath, grasping the arm as the thumb stretches and holds the vein taught. (See Fig. 9)

Make sure the bevel of the needle is upward and in line with the vein.

Puncture the vein in one smooth quick motion, at a 15 degree angle. (Fig. 11) Do not hesitate.

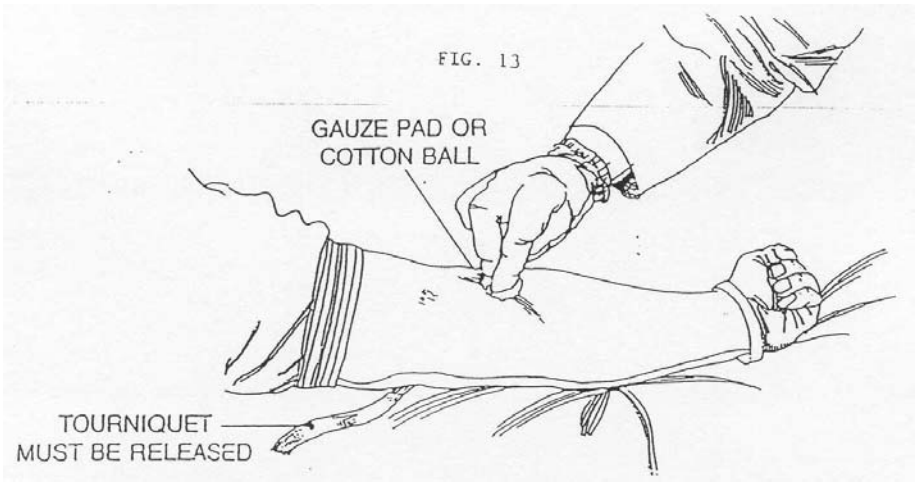



As the needle enters the vein, a little "give" will be noted.

Hold the syringe or vacutainer firmly with one hand at a 15 degree angle (Fig 11). With the opposite hand, either pull back on the plunger of the syringe slowly, or push the tube as far as it will go the bottom of the vacutainer holder. Fill the appropriate tubes. The order is as follows: Blood Culture, Light Blue second, Red or tiger top mottled red ( gel separator tube) Green and light green ( heparin tubes), Purple, Pink or white, Gray, Dark Blue, Royal Blue last.

Have the patient release their fist, and release the tourniquet.

Position the gauze or cotton ball over venipuncture site lightly.



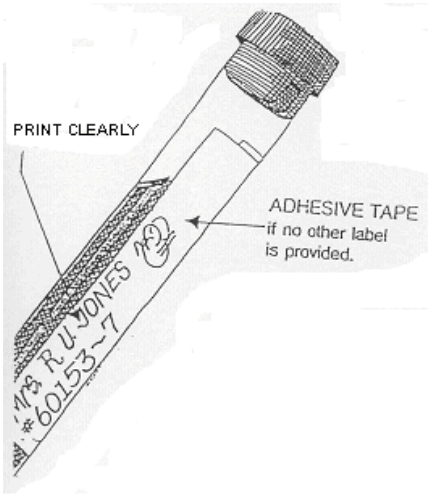

Quickly remove the needle, and then apply pressure to the site. (Fig. 13) Do not have the patient bend their elbow. Instruct the patient to keep the arm extended in a straight position and have them hold the gauze pad or cotton ball against the wound at least 2 minutes.

12. If venipuncture was a syringe draw, fill tubes by using the BD vacutainer transfer device. The vacuum in the tubes will pull the blood from the device. After filling each tube gently invert them 5 times each. Never hold the tubes in your hand and put the needle directly into the tubes. This is a major safety violation.

**********Gloves should still be on**********

13. Apply a Band-Aid or tape over the gauze or cotton ball on the site of the venipuncture. Make sure the patient is not allergic to adhesive tape prior to placing it on the venipuncture site.

14. Dispose of vacutainer device into a puncture proof container, or disposal unit




15. Label all tubes with the bottom half of the barcode label, the time collected, and your Cerner ID. If you do not have a barcode label make sure to hand label the tubes. *Refer to the Specimen Labeling Procedure. Print this information clearly (Fig. 15) Take special care not to contaminate the test request form with the blood. Keep the form separate from the specimen. Forms that accidentally do get contaminated must be discarded in proper waste containers and replaced. (Fig. 15)

16. Ice or warm specimen if appropriate (i.e. Ammonia, Cyclosporine, etc.)

**********You may now remove your gloves**********

17. Wash your hands.

18. Before leaving the room, make certain all used equipment has been properly disposed of and that the bed rails have been put back up if moved.

19. Leave the patient in a courteous manner.

**QUALITY ASSURANCE:**

1. Do not attempt to draw a patient more than twice. (Per phlebotomist). Either have another Phlebotomist or Technician try to obtain the specimen, or notify your supervisor of the difficult draw.

If more than three people have been unsuccessful in obtaining the specimen, notify the patient's nurse and explain the situation. Ask the nurse to notify the ordering Physician. The ordering Physician will have the option of collecting the specimen himself, having the Respiratory Therapy obtain an arterial specimen, or having an Anesthesiologist attempt the draw. If anyone outside of the laboratory collects the specimen make sure that they have the correct tubes and know the specimen requirements. Contact the Medical Director for guidance if all other options fail.

2. Mastectomy Side-The use of the arm on the mastectomy side for venipuncture should be avoided. If you are unable to locate another acceptable venipuncture site, have the patient's nurse notify the ordering Physician to see if it would be acceptable to use the mastectomy arm. For public relation reasons, draw from the other arm if the patient requests this.

3. Fistulas or Shunts- An arm with a fistula should not be used for blood collection. When possible, the specimen should be drawn from the opposite arm. Collection from the arm with the fistula should only be done under the direction of the Physician.

4. Prevention of hematoma:

Puncture only the uppermost wall of the vein.
Remove the tourniquet before removing the needle.
Use only the major veins (see Fig.7at the end of the procedure) not the superficial ones if possible.
Make sure the needle fully penetrates the uppermost wall of the vein.
Apply a small amount of pressure to the area with the gauze pad when bandaging the arm.

5. Prevention of hemolysis:

Mix anticoagulated blood thoroughly by inverting each tube gently at least 5 times.
Avoid drawing blood from an area of hematoma.
Avoid drawing the plunger back too forcefully when using a needle and syringe.
Avoid Using a needle that is too small (smallest gauge needle is a 25 g.)
Do not force blood from a syringe with a needle into a tube, instead take needle off, or use a larger needle to transfer blood from syringe into tube.
Make sure the needle is fitted securely on the syringe to avoid frothing of the blood.
Ascertain that the venipuncture site is dry without touching it.

6. If Venipuncture is unsuccessful:

Change the position of the needle. If the needle has penetrated too far into the vein, pull it back a little bit. If it has not penetrated far enough, advance it further into the vein.
The tube may not have vacuum, try another tube
Loosen the tourniquet and reapply it more loosely.
Probing for a vein is not recommended, as it is painful for the patient.
Never attempt a venipuncture more than twice. Have another competent person attempt to draw the patient.

7. Do not draw above an I.V. site. If you have no other choice, draw approximately three inches below the site. (Document specimen was drawn below the IV site on the barcode) If there are not other alternate sites for venipuncture and the patient has an I.V. refer to the Special Situation section below.

8. Label specimens directly after collection at the patient's bedside/ drawing chair. Never "pre-label" tubes.
9. Blood transfusions are not a reason to delay collection of blood. Donor cells from the transfused products immediately mix with the patient's own blood supply. During a transfusion, the arm opposite the transfusion should be used. If it is not possible to draw out of the opposite arm, consult a pathologist for guidance.

**SPECIAL SITUATIONS:**

1. Timed Intervals:

Specimens should be obtained at the precisely specified timed interval. For example: glucose tolerances, Cardiac Panels, or any therapeutic drug levels. These timed interval draws are usually scheduled ahead of time and it is very important to collect them at the specified time.

2. HIV Tests:

A consent form must be signed before an HIV test can be drawn. Refer to the HIV protocol in the Phlebotomy Procedure Manual.

3. Non-Venipuncture Specimen Collection:

Please refer to the procedure in the Phlebotomy Procedure Manual.
These Collections refer to:

Central Line Draws (Hickman Catheters, Leonard, and Broviac Catheters, Triple Lumen Lines)

Saline Lock Draws

Peripheral Line Draws (I.C. Line Draws)

Vascular Access Devices (VADs-which include Implanted Ports with Groshong Catheters)

Arterial Access Lines (ART Lines)

4. Drawing above an I.V. Site:

There are rare occasions when a patient has an I.V. in both arms, and there are no suitable veins to obtain a specimen. In these cases the following procedure may be used:

A. Look above the I.V. site to see if you can find a possible site for a successful venipuncture. Once a vein is located, ask the PATIENT'S NURSE if it would be possible to turn off the I.V. for approximately two minutes.
B. If the patient's nurse is able to shut down the I.V., proceed with the venipuncture as follows:

First make sure that Heparin is not running in the I.V. line of the arm that you have chosen. If there is, choose the other arm. Then you may proceed by either using the Vacutainer unit to draw a discard tube first, and then draw the specimen that is to be used for testing afterwards, or you can use a butterfly unit and a syringe and draw approximately 3-5 ml. In a syringe and discard the syringe (with the discard blood in it), leaving the butterfly unit still in the vein. Obtain another syringe and hook it to the end of the butterfly tubing and draw back enough blood for the testing to be done on that specimen. When the venipuncture is completed, inform the patient's Nurse right away, so that they may restart the I.V. Make sure to note on the barcode that the specimen was drawn above an I.V. and how many minutes that the I.V. was shut off prior to drawing the patient.

**Communicate any special situation or information about the draw on the barcode so the technician can use the information accordingly.**

5. Doctor-patient Relationship

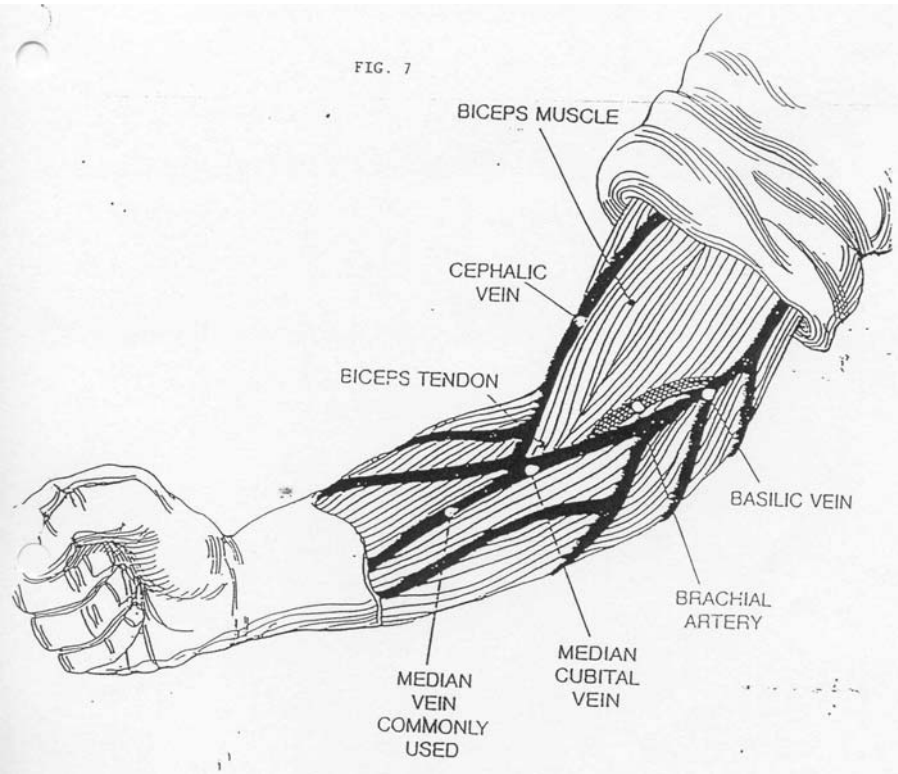
The Doctor has priority in seeing the patient. If the Doctor is seeing the patient, the Phlebotomist should ask politely if the Physician would like to have the sample drawn now, or at another time.

6. Tips for successful Geriatric Patient venipuncture:

A. The patient interview will determine how to proceed with the venipuncture. Many times older patients are confused or may be very much like dealing with a small child.
B. Explain to the patient exactly what you are going to do in order to gain the confidence of your patient.
C. If the patient appears confused or uncooperative in any way, get assistance.
D. In some diseases like arthritis or other degenerative conditions, assistance will be needed in order to maintain a stable arm position during venipuncture.
E. Many older patients have lost muscle tone and have rolling veins, modify equipment and use a syringe or a winged infusion set (butterfly).
F. Watch for and be prepared for unexpected movement and swinging of the patient's arms.
G. Be prepared to spend time talking to patients since many times these patients are lonely.
H. Good communication skills are essential.
I. Have patience because many times older patients do things in "slow mode."
J. Examine your own feelings about death and dying since many older patients are in the terminal stages of disease.
K. Show compassion and understanding.
L. Remember that gravity is your friend and hang the hand or arm over the edge of the bed or table.

7. Tips for successful pediatric venipunctures:

A. Always try to explain exactly what you will be doing to a child.
B. Be honest with the child if they ask questions about the procedure or if it will hurt them.
C. Let them participate by holding a sticker or Band-Aid.
D. Make sure all equipment is ready ahead of time.
E. Know the quantity of blood needed for the tests to be drawn and stick to the minimum recommended amount needed.
F. Talk to children in a reassuring manner.
G. Some children will try to stall the procedure and you may have to be firm in dealing with these children.
H. Understand that some children will not be reassured or calm at all and you may just have to go ahead with the procedure without explaining everything in detail as with these type of children this will just make it worse and they will just become more upset.




Revised procedure April 27, 2007. Supercedes revised procedure prepared by TMC date 9-11-06 supersedes procedure written 1-03 tmc

UPPER VALLEY MEDICAL CENTER
North Dixie Highway
Troy, Ohio 45373

# CAPILLARY / SKIN PUNCTURE PROCEDURE

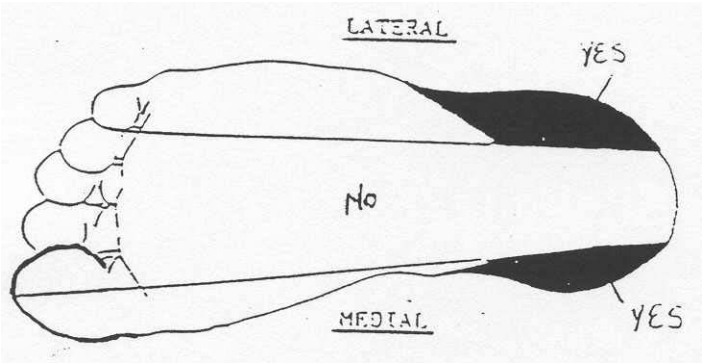
Purpose: To provide a standard method for collection of blood samples by capillary/skin puncture.

Equipment:

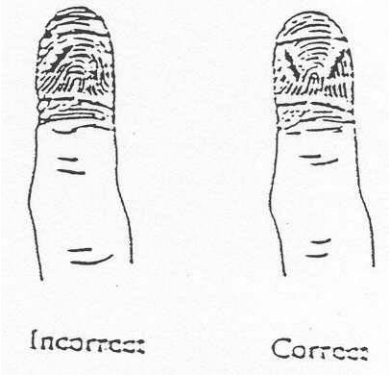
70% alcohol prep pads, dry gauze and a sterile lancet of appropriate size. Appropriate microtainer and personal protective equipment.

Procedure:
Wash hands and put on personal protective equipment (gloves, face shield).
Identify the patient using name and date of birth. Organize all equipment needed for procedure
.

1. Select appropriate puncture site. Heel in infants, finger in your collecting specimen on a child, adolescent, adult or geriatric patient. See the diagram below for the puncture sites for finger sticks and for heel sticks.



2. Increase the blood flow of the puncture site up to 7 times by using a warm washcloth (40 - 42 degrees Celsius for 3 minutes). Make sure that the washcloth is not too hot. Test it with the inside of your wrist to make sure.
3. Cleanse the puncture site appropriately making sure the area is well cleaned with the alcohol prep pad.
4. Hemolysis of the specimen may occur from residual alcohol at the skin puncture site, make sure it is dry.
5. Hold the site firmly so the patient does not move it. When doing a heel stick, hold the heel gently but firmly. This can be done in one of these two ways: (A) Place the forefinger over the arch of the foot and the thumb below the puncture site at the ankle or (B) Place the forefinger around the ankle and the thumb over the arch of the foot. When holding for a finger stick make sure to hold the finger to that the patient does not pull away at the last minute before the puncture is fully done. Make sure that your thumb is well away from the puncture site.
6. Using only laboratory approved safety lancets, perform the heel puncture in one smooth, continuous motion and perpendicular to the puncture site. Punctures should be made on the medial or most lateral portion of the plantar surface (the shaded areas in the illustration). It is also recommended that you do not perform heel sticks on the posterior curvature of the heel. The depth of the skin puncture in the heel is important in infants, particularly neonates. It must not exceed 2.4 mm. Penetration of the calcaneous bone, osteomyelitis and sepsis have all been reported as potential complications. For a finger stick the puncture should be made into the pulp of the finger (as shown in the shaded area of the illustration) in one continuous smooth motion. It should not be directed toward the bone.




7. Wipe away the first drop of blood, using the gauze. Wiping away the first drop of blood removed any tissue fluid that may contaminate the specimen. Do not use a cotton ball because fibers from the cotton ball may accidentally be put into the microtainer and can cause problems while testing the specimen.
8. Using moderate pressure let blood drip into the correct microtainer tube. Make sure to release pressure between blood drops. (This allows for re-circulation of new blood). If collection blood sample in an anticoagulant additive microtainer tube make sure to turn the tube as you collect the specimen to make sure the blood “catches” the additive on the way

down the tube, this will help avoid a clotted specimen. Do not squeeze the finger or heel excessively as this will cause dilution or hemolysis of the specimen.
9. After collection, seal the specimen container and hold gentle pressure on the puncture site until bleeding has stopped then apply a Band-Aid or a spot Band-Aid.
10. If an insufficient sample has been obtained because the blood stopped flowing, repeat the puncture at a different site using a fresh lancet.
11. Make sure to dispose of the lancet into the sharps container.
12. Label tubes appropriately with all pertinent information including your Cerner user ID.

**TIPS FOR SUCCESSFUL HEEL DRAWS**

1. Heel punctures should be performed on infants less than 12 months old unless the child is walking or the heel is too big to hold effectively.
2. Pre-warming the heel increases capillary circulation.
3. Know the amount of blood that you need for the required testing; taking too much blood may cause bruising. No more than 2 ml is recommended per collection.
4. Stay within safe boundaries of the heel in order to avoid unnecessary damage to underlying bone or blood vessels.
5. Do not puncture any deeper than 2.4 mm.
6. Avoid excessive squeezing or pressure to the heel.
7. Always wipe away the first drop of blood.
8. Avoid any scraping of the microtainer against the heel.
9. Avoid swollen or bruised areas of the heel.
10. Know when to restick.

**TIPS FOR SUCCESSFUL FINGER PUNCTURES**

1. Always try to explain exactly what you will be doing to a child.
2. Talk to children in a soft and reassuring manner.
3. Let children participate by holding a sticker or special Band-Aid.
4. Make sure that you have all your equipment ready ahead of time.
5. Try to have the child sit on the parent's lap so they can help hold the child.
6. Make sure to warn the child prior to puncturing the finger.
7. Recommended sites are the middle finger or ring finger.
8. Use a puncture device appropriate for the size of the child's finger.
9. Always wipe away the first drop; avoid milking.
10. Know the quantity of blood needed, no more than 2 ml is recommended per collection.

**PROCEDURAL NOTES:**

1. Drawing during the transfusion of blood products.
   Blood products that are being transfused immediately mix with the patient's own blood supply. Therefore, capillary draws are acceptable during the transfusion of blood products. If possible, the hand opposite the transfusion site should be used. If it is not possible to use the opposite side, consult the pathologist for guidance.

A venipuncture is recommended over a capillary stick for larger volumes of blood needed for testing. A venipucture is the optimal specimen collection and causes less trauma to the child and helps to provide better specimen integrity for testing.

Reference: The Phlebotomy Review Manual, Copyright ABP, Inc. 1996

Revised procedure by T.Cheney date 12-22-08

Supersedes Procedure Written by T.Cheney date April 2007

UPPER VALLEY MEDICAL CENTER
CLINICAL LABORATORY
North Dixie Highway
Troy, Ohio 45373

# COLLECTION OF BLOOD CULTURES

## DISCUSSION

BacT/Alert aerobic, anaerobic and FAN culture bottles are used with the BacT/Alert Microbial Detection system in qualitative procedures for the recovery and detection of micro-organisms form blood. The culture media provides suitable nutritional and environmental conditions for organisms commonly encountered in blood infections.

## MATERIALS REQUIRED

| | |
|---|---|
| When barcode order says "STND" | Aerobic bottle (color coded blue)<br>Anaerobic bottle (color coded purple) |
| When barcode order says "FAN" | Aerobic FAN bottle (color coded green)<br>Anaerobic bottle (color coded purple) |
| When patient is pediatric age (less than 14) | Aerobic FAN bottle (color coded green)<br>(Do not draw anaerobic bottle unless sufficient volume is available, or upon special request) |

Also needed: Sepps 10% povidone iodine ampules –OR- ChloroPrep ampules (chlorhexidine)
70% isopropyl alcohol prep
venipuncture aids, such as:

butterfly sets
adapter cap sets
adapter inserts

Please note: do not use chlorhexidine product on infants 2 months of age or younger. Use iodine.

## STORAGE AND HANDLING OF BOTTLES

BacT/Alert culture bottles are ready for use. Store protected from direct sunlight at room temperature (15-30 C.) An expiration date is printed on each bottle label. Do not use bottles beyond the last day of the month indicated. If the bottles are exposed to cold temperatures, precipitates may form that will disappear when the bottles are warmed to room temperature. Bottles must be at room temperature before use.

Prior to use, examine each bottle for evidence of damage or deterioration/ discoloration. The media in undisturbed bottles should be clear, but there may be slight opalescence or a trace of precipitant due to the anticoagulant SPS. Do not confuse opalescence with turbidity. Do not use a bottle with media exhibiting turbidity or excess gas pressure; these are signs of possible contamination.

PREPARATION OF THE PATIENT

Correct specimen collection is extremely important when obtaining blood culture specimens. Proper skin disinfection is an essential requirement to reduce the incidence of contamination. Great care must be taken to prevent contamination of the patient sample during venipuncture and inoculation into the culture bottles since contamination could lead to a specimen being determined positive when a clinically relevant isolate is not actually present.

Blood cultures must be collected from peripheral venipuncture sites. If the patient is currently receiving a transfusion, the blood cultures may be collected from the other arm.

Use of indwelling intravenous or intra-arterial catheters (line draws) should be avoided unless:

1. The patient's blood cannot be obtained with a venipuncture. Prior to using a line draw, have the nurse on charge notify physician and obtain permission to obtain the blood culture from the line. Documentation of this order is required in the patient's chart.

2. The patient's physician specifically orders the blood to be collected from the line source to rule out infection of the access device itself.

Note: If possible, obtain specimen prior to initiating antibiotic therapy. If this is not possible, blood cultures should be drawn immediately before administration of the next dose.

1. Locate vein to be used. Use a sterile 70% alcohol prep to cleanse skin over venipuncture site, rubbing briskly.

2. Remove iodine or ChloroPrep disinfectant ampule. With the tip in downward position, pinch center to crush ampule. Pump lightly until tip is saturated; flow of antiseptic can be regulated by finger pressure. Apply iodine/Chloroprep to

venipuncture site starting at center and moving in concentric circles to periphery of site.

3. Without removing iodine or ChloroPrep solutions, allow to stand for 60-90 seconds, or, ideally, till dry. Then proceed with venipuncture without further palpation of site.

**COLLECTION OF BLOOD**

When the venipuncture site has been prepared, the sample is collected using a butterfly set with adapter cap with optional insert. Prepare selected bottles:

1. Label the appropriate culture bottle (s) with patient information (full name, identification number, date and time drawn, and phlebotomist's initials) and accession number. If using a barcode label, do not place over bottle barcodes. The bottle must be at room temperature and upright.

2. Observing the level of fluid in the bottle, use a marking pen to indicate a line 10 cc above the media level, to act as a guide for achieving the proper 5-10 cc of blood sample

3. Remove plastic flip-top from each culture bottle and disinfect stoppers with iodine or CloroPrep.

To collect blood using a blood culture collection adapter:

1. Connect the Adapter Cap to the luer connector of the collection set.

2. Perform venipuncture aseptically. When the needle is in the vein, secure it with tape or hold it in place.

3. Place Adapter Cap on the aerobic culture bottle septum and press down to penetrate and obtain blood flow. Verify that blood flows into the bottle. Hold the Adapter Cap down on the bottle during collection. Line demarcations on the bottle label indications sufficient blood volume (5-10 ml). Do not overfill. Volumes greater than 10 cc do not maintain the optimal blood to medium ratio.

4. After obtaining the required volume of blood in the aerobic bottle, move the Adapter Cap from the aerobic bottle to the anaerobic bottle (if required) and collect 5-10 ml. of blood into the bottle (do not overfill). Do not remove the needle from the patient's vein during this process.

5. After blood collection is complete, remove the Adapter Cap form the blood culture bottle. If additional blood is required for other tests, place the Adapter Insert into the Adapter Cap and lock into place. This makes the cap compatible with vacuum collection tubes. When all blood has been collected, remove the needle from the patient's vein.

Always notify the care-giver after collecting the last set of blood cultures because they are most often waiting to start or change antibiotic therapy.

Transport all bottles promptly to the microbiology laboratory. If bottles cannot be loaded into the instrument at once, hold at 35 C or room temperature until loading occurs. *Do not refrigerate* inoculated bottles at any time. If inoculated culture bottles have been delayed in their receipt into the laboratory or have been incubated prior to entry into the BacT/Alert instrument, visually inspect them for indications of microbial growth. If microbial growth is evident, treat the bottles as positive and do not load onto the instrument.

POLICY FOR HANDLING LESS-THAN-OPTIMUM SPECIMEN VOLUME

The recommended 5 to 10 ml. volume of blood sample per 40-ml culture bottle gives the optimal blood-to-broth ration of 1:5 to 1:10 which will counteract the normal bactericidal activities of chemical and cellular mediator of immunity. As the volume of blood drawn is increased from 2 ml. to 20 ml. (for a 2 bottle draw), the yield of positive cultures may increase by 30-50 %. Therefore, 5-10 ml of blood per bottle should be drawn from adults to prevent false negatives. Although smaller amounts can be used, volumes of less than 10 cc lessen the probability of recovery when there is a small population of an organism.

However, when a difficult venipuncture is encountered on an adult patient and less than 10 ml total is drawn, place the entire sample into an aerobic bottle and note that an anaerobic bottle was not drawn due to sample size insufficiency.

Pediatric patients (less than 14 years of age) typically have more circulating bacterial per ml. during a septic episode than adults; therefore, smaller volumes of blood sample are adequate. As a general rule, the suggested volume of blood to be drawn from children is one ml.per each year of age; with infants younger than one year of age, less than 1 ml. may be available for culture. Place all samples from pediatric patients into FAN aerobic bottles unless specifically requested by the physician to collect an anaerobic sample. If a volume larger than 10 ml can be obtained from an older pediatric patient, the volume may be divided between a FAN and an anaerobic bottle.

References: BacT-Alert Culture bottles, product alert, August 2006
BacT-Alert Blood Culture adapter procedure, April, 2004
Principles and Procedures for Blood Cultures, Approved Guidelines, CLSI M47-A, May 2007

Revised procedure prepared by clb 08/02/2009 supersedes procedure written 04/2707, 05/07/2009

UPPER VALLEY MEDICAL CENTER
CLINICAL LABORATORY
North Dixie Highway
Troy, Ohio

**COLLECTION OF BLOOD CULTURES FOR MYCOBACTERIA (AFB) OR FUNGUS**

## DISCUSSION

**Patients infected with systemic mycobacteria or fungi, especially those who are immunocompromised, may have acid-fast bacteria or yeast/fungi in the bloodstream. Ordinary blood cultures use media and procedures designed for recovery of routine bacteria. Some of the more hardy yeasts may grow inadvertently in these bottles, but the more fastidious yeast and fungal organisms, or any mycobacteria, need special handling with different media and monitoring over a longer period of time. Blood cultures for mycobacteria (AFB) or Fungus will be sent to Quest Diagnostics Reference Laboratory for processing.**

## MATERIALS REQUIRED

7.5 ml green-top (heparin) collection tube
Materials for drawing blood culture (see separate procedure)

## COLLECTION OF SPECIMEN

NOTE: Often blood cultures are ordered in multiple sets of two or three per series. Each draw is a separate event and requires a separate accession number and venipuncture. The test should be ordered as a Mycobacterial Blood Culture or a Fungus Blood Culture instead of a regular blood culture.

Refer to separate procedure for collection of blood culture specimens for preparation of venipuncture site. (The blood will be collected into the green-top tube instead of the BacT-Alert bottles used for routine blood cultures.) Swab top of green-top tube with iodine and allow to dry at least 30 seconds to remove commensal skin flora. Aseptically draw blood into the tube with a Vacutainer device, or draw blood into a sterile syringe before transferring the specimen into the tube. Mix well by inverting several times.

When the collected specimen arrives at the lab, use the LIS Specimen Log In Function, Central Receiving site, to record the time received in the lab, and enter the time drawn and phlebotomist for each specimen. The specimen processing department will send the specimen(s) to Quest. Mycobacterial and Fungal blood cultures are sent at room temperature.

Reference: Quest Directory of Service Manual, no date provided.

Revised procedure prepared by __ddm__ date _8-18-06, supersedes procedure written_5-25-04

# WASTE DISPOSAL

**Procedure**

**Within the laboratory, there are four types of designated waste containers:**

1. **SHARPS:** Puncture-proof containers, designated for needles and "sharps" are located in all patient rooms, outpatient drawing rooms, and emergency room, as well as in all work areas of the laboratory. Portable sharps containers are available for use on phlebotomy trays. These are to remain closed during transport. To prevent ejection of contents and possible injury, **DO NOT over-fill.** Items in the container must NEVER protrude from the opening. Most sharps containers have a "full" indicator line; do not fill beyond this line, or approximately ¾ full. When full, sharps containers must be securely sealed before placing in redlined bio boxes.

   The definition of "sharps" includes: needles, broken glassware, slides, glass pipettes, plastic pipets and droppers of all types*, all syringes for phlebotomy or injection (used or unused) with or without needles, microhematocrit tubes, cover slips, lancets, surgical blades, wooden applicator sticks, any swabs (wooden or plastic) not enclosed in "culturette"-type sleeves, inoculating loops, and any object that may penetrate intact skin or a waste bag.

*The Ohio EPA defines anything meeting Webster's definition of "syringe" as a sharp; items which meet this definition of "sharps," but will not puncture a waste bag or intact skin (such as soft plastic transfer pipettes or bulb syringes without sharp fittings), may be discarded in red lined boxes bearing the words, "may contain sharps."

NEVER PLACE LOOSE NEEDLES OR SHARPS THAT MAY PUNCTURE A WASTE BAG OR INTACT SKIN IN RED OR CLEAR LINED RECEPTACLES.

2. **BIOHAZARD BOXES**: Redlined waste boxes are designated for biohazards, other potentially infectious material, and any items contaminated with biohazards or potentially infectious material. (Avoid discarding non-biohazardous items, or biohazardous liquid waste that can be flushed down a drain, in redlined containers, as this unnecessarily increases the cost of disposal.) Boxes are to be assembled so that the arrows on the sides point up while the box is being filled, using two-inch-wide pressure-sensitive poly tape or equivalent. The assembled boxes are then lined with appropriate sized red bags provided by the contractor. All biohazard waste boxes in the laboratory are double-bagged. Absorbent material, which may include such items as paper towels or gauze, is placed in each biohazard container in quantity sufficient to absorb all liquid waste discarded in that container (whether the liquid is in a tube, vial, specimen container, etc., or not), and at a level which will promote absorption of that waste, if needed.

   Discarded donor blood, plasma, or platelets should be flushed down the drain with large amounts of water, followed by rinsing the sink and cleaning the sink and surrounding area with 10% bleach solution. Liquid waste (blood or body fluids) contained in vacuum bottles or suction containers should be discarded in the same way. The containers or blood product bags are then discarded in redlined waste receptacles. *Exception:* Blood or plasma that has clotted, and containers with significant amounts of solid or semi-solid waste, should be packaged in securely closed plastic bags or large specimen containers (such as for large tissue samples) with an amount of absorbent material sufficient to absorb all of the liquid waste being discarded, before being placed in red-lined biohazard boxes. Alternatively, contents of vacuum bottles or suction

containers including solid or semi-solid waste may be solidified with a material such as *SafeSorb.*

Boxes bearing the words, “may contain sharps,” may contain only those sharps already properly packaged in puncture-proof containers, or “sharps” which will not puncture the red bag or human skin (such as soft plastic transfer pipettes and syringes without needles). **Do NOT over-fill. Allow room for secure closure of the bags.** (Filling to approximately two-thirds to three-fourths of the apparent capacity of the box will allow sufficient room for tying the bags.) Take care not to exceed the weight limit, which is printed on each box.

To prevent both puncture of bags and ejection of contents, biohazard waste must NEVER be compacted, either mechanically or manually, by compressing or agitating the contents. When a box becomes no more than two-thirds to three-fourths full, *each bag is to be individually securely closed* by twisting and tying in a single knot, so as to prevent leakage, before sealing the outer cardboard box with two-inch-wide pressure-sensitive poly tape or equivalent. (The bag must be capable of being held in an inverted position with the closed end at the bottom for a period of five minutes without leakage.) A bar-coded label bearing the date and point of generation (“lab” or “morgue”) is then applied near the top of the box, in the area marked “[CUSTOMER LABEL].” Biohazard waste to be incinerated (such as identifiable body parts, limbs, etc.) requires a special label, color-coded yellow, available from Histology. The packaged biohazardous waste is taken from the lab by Environmental Services to be removed for disposal by a qualified off-site waste contractor (currently Stericycle).

3. **REGULAR WASTE**: Clear-lined waste containers are designated for non-biohazardous waste, as defined in the UVMC Waste Management Policy. Biohazardous materials, including any items or materials dripping or caked with blood or body fluids, or items that may release blood or body fluids if compressed, are not to be placed in the clear-lined containers, as this could present an environmental hazard. Items or materials lightly stained with blood or body fluids that are not dripping or caked with blood or body fluids, and will not release blood or body fluids if compressed, or not visibly stained, may be discarded in clear-lined containers. Regular waste is removed by Environmental Services.

4. **CHEMICAL WASTE**: Flammable and non-flammable chemical waste drums are located in the lab storage room off the receiving dock. Waste reagents in the Histology-Cytology department and other chemical waste that cannot be recycled or discarded in the sanitary sewer system are held for disposal by outside contract, currently LAB PAK; additional information is available in the Histology manual. (B-5 and Bouins will be held in one-gallon containers and picked up when the containers are full.)

**Based on UVMC waste management policies, the following guidelines for laboratory waste disposal will be followed:**

**BIOLOGICAL SPECIMENS**

It must be stressed that extreme care must be taken when disposing of any item that has contained or does contain biological specimen(s). Tubes and disposable cups should be dropped gently into the biohazardous waste container, to prevent both ejection of items from the container and splashing of fluids which may contaminate walls, counter tops, floors, equipment, or nearby personnel (including yourself). Care must be taken to package waste before it reaches the top of the container. Biohazardous waste is not to be compacted by any means, mechanically or manually, by compressing or agitating the contents.

Biohazards are discarded in redlined waste receptacles. This includes blood, body fluids, feces, tissues, and other potentially infectious materials and articles contaminated with it. Any article dripping or caked with blood or body fluids, or that may release blood or body fluids if compressed, must be discarded in a biohazard waste container. Absorbent material, which may include such items as paper towels or gauze, is placed in each biohazard container in quantity sufficient to absorb all liquid waste discarded in that container (whether the liquid is in a tube, vial, specimen container, etc., or not), and at a level which will promote absorption of that waste, if needed.

Discarded donor blood, plasma, or platelets should be flushed down the drain with large amounts of water, followed by rinsing the sink and cleaning the sink and surrounding area with 10% bleach solution. Liquid waste (blood or body fluids) contained in vacuum bottles or suction containers should be discarded in the same way. The containers or blood product bags are then discarded in redlined waste receptacles. *Exception:* Blood or plasma that has clotted, and containers with significant amounts of solid or semi-solid waste, should be packaged in securely closed plastic bags or large specimen containers (such as for large tissue samples) with an amount of absorbent material sufficient to absorb all of the liquid waste being discarded, before being placed in red-lined biohazard boxes. Alternatively, contents of vacuum bottles or suction containers including solid or semi-solid waste may be solidified with a material such as *SafeSorb.*

*Never place loose needles, broken glass, or other sharps directly into red bags; they must first be properly packaged in plastic puncture-proof containers.*

Urine samples, including 24-hour samples containing preservatives, may be flushed down the drain with large amounts of water, followed by rinsing the sink and cleaning the sink and surrounding area with 10% bleach solution. Empty urine containers, with lids in place, may be discarded in the regular trash. *Exception:* If **any** amount of blood is visible in or on the urine container, it must be discarded in a redlined biohazard box after emptying.

Surgical specimens are disposed of by first pouring off the formalin into chemical waste containers (or sanitary sewer system if quantity is small, followed by large volumes of water), and then emptying the tissues into redlined containers for disposal by off-site waste contractor. Emptied specimen containers may then be disposed of in the regular trash, unless they appear to be contaminated with blood. Limbs that are not released to the mortician for burial will be placed in redlined biohazard boxes bearing a special label for incineration, for disposal by a qualified off-site waste contractor.

## SHARPS:

All sharp objects are to be placed in puncture resistant containers designated for sharps disposal.

The definition of "sharps" includes: needles, broken glassware, slides, glass pipettes, plastic pipets and droppers of all types*, all syringes for phlebotomy or injection (used or unused) with or without needles, microhematocrit tubes, cover slips, lancets, surgical blades, wooden applicator sticks, any swabs (wooden or plastic) not enclosed in "culturette"-type sleeves, inoculating loops, and any object that may penetrate intact skin or a waste bag.

*The Ohio EPA defines anything meeting Webster's definition of "syringe" as a sharp.

*LOOSE NEEDLES OR SHARPS THAT MAY PUNCTURE A WASTE BAG OR INTACT SKIN MUST NEVER BE PLACED IN RED OR CLEAR LINED RECEPTACLES.*

Contaminated needles must never be clipped, bent or broken prior to disposal. Do not recap contaminated needles (refer to ENGINEERING AND WORK PRACTICE CONTROLS).

Contaminated Vacutainer needles are to be discarded *without disengaging from the holder;* the needle-holder unit is discarded intact, after activation of the safety feature, in the sharps containers mounted on the walls of the patient rooms, outpatient drawing rooms, and emergency rooms, or in the nearest sharps container designated for that purpose.

*Needle and syringe units are to be discarded intact, after activation of the safety feature, in the sharps containers mounted on the walls of the patient rooms, outpatient drawing rooms, and emergency rooms, or in other sharps containers designated for that purpose.

*When necessary for transfer of specimens, safety needles are to be removed from syringes by use of a removal device (found on portable sharps disposal containers and on some bench top sharps disposal containers) after activation of the safety feature. A transfer device may then be attached to the syringe; after transfer of the specimen, the syringe-transfer device unit is discarded intact in the sharps containers mounted on the walls of the patient rooms, outpatient drawing rooms, and emergency rooms, or in the nearest sharps container designated for that purpose.

**HAZARDOUS CHEMICALS:**

Solvent Recycling: Used xylene, absolute alcohol, and 95% alcohol are recycled for reuse with the CBG BIOTECH Solvent Recycler. (Refer to ALCOHOL AND XYLENE RECYCLING MANUAL, located in the Histology department, for details.)

Disposal of hazardous reagents: Flammable or toxic reagent waste is not to be dumped down the drain. These waste reagents include alcohol*, formalin*, strong acids (pH less than 5.5), strong alkali (pH greater than 11.0), or any other toxic reagent, such as B-5 and Bouins used in the Histology department. These reagents must be poured into the appropriate chemical waste containers (designated for flammable or non-flammable chemical waste, or designated one-gallon containers for B-5 and Bouins) and held for disposal by a qualified outside waste contractor.

Reagents containing sodium azide as a preservative, in quantities typically used in this laboratory, may be discarded into the sanitary sewer system, followed by flushing with large volumes of water to prevent azide build-up. Accumulated build-up of azides can react with copper and lead used in some plumbing systems to form highly explosive metal azides, and must be avoided.

*Small amounts of alcohol and formalin may be discarded into the sanitary sewer system, followed by large volumes of water (one part chemical to 100 parts water).

**UNCONTAMINATED WASTE:**

Non-sharp uncontaminated materials are discarded into clear-lined containers. Unbroken clean blood collection tubes that are to be discarded because they have expired or are otherwise unacceptable must first be securely packaged in sturdy boxes to prevent breakage.

All sharps, such as broken glass, are to be packaged in puncture-resistant containers of appropriate size (sharps containers, specimen containers, etc.—not plain cardboard), which are then securely closed and placed in biohazard boxes bearing the words “may contain sharps.”

Non-biohazardous waste containing information of sensitive nature relative to patient confidentiality is to be shredded before disposal.
]

REFERENCES:


1) NCCLS GP5-A, Clinical Laboratory Waste Management; Approved GuidelineNCCLS GP17-A, Clinical Laboratory Safety; Approved Guideline
2) OSHA Standard 29CFR 1910.1030, Bloodborne Pathogens
3) OSHA Standard 29CFR 1910.1450, Occupational exposure to hazardous chemicals in laboratories
4) OSHA Standard 29CFR 1910.1048, Formaldehyde
5) DOT Standard 49CFR 178, Specifications for Packagings
6) DOT Standard 49CFR 173.196, Infectious Substances (etiologic agents)
7) DOT Standard 49CFR 173.197, Regulated Medical Waste
8) DOT Standard 49CFR 173.199, Diagnostic specimens and used health care products
9) Ohio Administrative Code 3745-27-30, Standards for generators of infectious waste
10) UVMC Chemical Waste Management Plan V3 (Environmental Services Hazmat Manual)
11) UVMC Hazardous Waste Management Plan V3 (Environmental Services Hazmat Manual)
12) UVMC Infectious Waste Management V3 (Environmental Services Hazmat Manual)
13) Murex Biotech Limited, Murex Streptex rapid latex test package insert
14) Office of Commissioners of Miami County, Sanitary Engineering Department


Updated Procedure 02-07-06
Supersedes Procedure 01-26-04

Upper Valley Medical Center
3130 N. Dixie Highway
Troy, Ohio 45365

**Procedure for HIV Specimen Collection and Consent Form**

Purpose: The State of Ohio and UVMC require that every person having HIV testing done, sign and HIV consent form before testing is performed.

The UVMC Outpatient testing staff and the Outreach Facility staff are responsible for obtaining the Outpatient HIV consent form. Nursing is responsible for all Inpatient and Emergency room patients. When Nursing placed an order for and HIV test to be drawn, they are assuming responsibility for making sure the consent form is signed by the patient.

Procedure: If the patient to be drawn is an outpatient, give the patient the consent form. Have the patient read the entire form and ask the patient if they any questions about the form or the test. If he/she has not questions, have the patient sign the form. If the patient has questions that you cannot answer, call a laboratory technician to help with any explanation that is needed. After the patient signs the form, print the patient's name and Medical Record number next to the signature. The HIV consent from needs to be placed with the patient's chart or scanned in the system.

*There is no age limit for HIV testing and anyone may sign for themselves.*

After the patient has signed the HIV consent form, (see attached), the specimen can be drawn and sent to the lab for testing.

New procedure prepared by 1/27/97 tmc
Superseded procedure written 1/22/99 tmc
Revised procedure prepared by T.Cheney 1/03/07

**Ohio Department of Health**
**246 N. High Street, P.O. Box 118**
**Columbus, Ohio 43266-0118**

# CONSENT FORM FOR HIV ANTIBODY TEST

What is HIV? The Human Immunodeficiency Virus (HIV) is the virus that causes AIDS (Acquired immune Deficiency Syndrome.)

**How Do People Get HIV? People may be infected by:**

(1) By having sex with someone whom is HIV infected and not using a condom. Vaginal, anal and oral sex can spread HIV.
(2) Sharing the same needle while using drugs with someone who is HIV infected.
(3) Having a blood transfusion before 1985.
(4) Being born to a mother who is infected with HIV.

**How is an HIV Test Done?** A sample of your blood or other body fluid is tested for antibodies. If the test is positive, more tests are done on the same sample to make sure the first test was right. If the other tests come back positive, you are considered to be infected.

**What Does A Positive Test Mean?** A positive test does NOT mean you have AIDS. It means that you have the virus that can lead to AIDS, which can take up to 10 years to develop. It also means you could pass the virus to someone else through sex or sharing needles. If your test is positive, you should:

- See a doctor to find out what medicines you can take to help keep you healthy.
- Talk with an expert about how to keep from passing the virus to others. The person who gives you the test can help you.
- Work with staff from the Ohio Department of Health to tell anyone you have had sex or shared needles with that they need to get an HIV test. Your name will NOT be used.

**What If The Test Is Negative?** It means no antibodies to the virus were found. However, you may need to take another test if you have had unsafe sex or shared needles in the last three months. It can sometimes take as long as six months for antibodies to show up on a test.

You Have A Choice: You can choose NOT to take this test at any point during your clinic visit by simply leaving the clinic site. If you are in a hospital or other health care facility, you need to let someone know within one hour after blood is drawn that you have changed your mind.

- If you choose to take this test, you can take a confidential test. This means you may have a written copy of your results. This means your name is on the results. Your test results can not be given to anyone unless you sign a paper giving consent. The law requires that positive HIV tests be reported to the Ohio Department of Health.
- If you do not want your name used, you can take an anonymous test. Your name is not used. Someone tells you the results, but no written results are given to you.

**Please Ask Questions!!** If you have any questions about this test, please ask a doctor, a counselor or call the Ohio AIDS/HIV/STD Hotline at 1-800-332-AIDS (2437). The hotline is a free call.

I have read the above, or have had it read to me, and I agree to be tested for HIV.

Name _____Date_____

***Prepared under the authority of Ohio Revised Code 3701.242 (A) (3)***

UPPER VALLEY MEDICAL CENTER
CLINICAL LABORATORY
3130 N. Dixie Highway
Troy, Ohio 45373

# POLICY ON LABORATORY PRIORITY LEVELS

**PURPOSE:**
In order to maintain a standard of quality care, certain terms are used to define the priority of tests and procedures within the UVMC laboratory. This procedure will define each priority level used by the laboratory and will define the time frames for which specimens are to be collected and results reported. If the turnaround time of any test(s) is going to be significantly delayed due to equipment malfunctions, quality control issues, etc., especially stat testing, notify the requester of the delay and give them an estimated time in which they can expect a result.

**STAT:**

Stat orders are considered critical tests due to the fact that they always require rapid communication of results, normal or abnormal. Stat orders are to take priority over all other testing, with the exception of High Priority stats (see below). The physician orders must be written stating that tests are to be ordered stat. Stat orders will be collected within 10 minutes of time ordered. Every effort will be made to complete and report results within 1 hour of time ordered.

At anytime the laboratory has equipment failure, staff shortage, or any other situation that may negatively affect a stat turnaround time, the use of a backup piece of equipment, method or facility should be identified as a temporary solution. The main priority must be to deliver results in an immediate fashion. Stat orders print as soon as the results are verified to both inpatient and outpatient fax or printer. Outpatient results must be called immediately upon release.

The majority of testing in the laboratory is offered as stat. The exceptions have been identified by the Medical Director and the medical staff and are as follows:

HDL
Vitamin B12
CEA
All serologies except Mono testing
O&P
Cultures will be plated immediately, but due to testing requirements will not be Available for 24-48 hours after plating
Rotavirus
HIV
C Difficile
Semen Analysis

All Reference Lab Testing

*Quant HCG will be offered stat but may take longer than 1 hour if dilution is Required

**HIGH PRIORITY(HP) STAT:**

The High Priority (HP) stat is to be used **only** for inpatients, including patients in the Emergency Department. The HP collection priority will be used to indicate a patient's life is in immediate jeopardy and will signify to the lab that this testing must take top priority. The physician orders must be written stating that the tests are to be ordered as High Priority. Collection and testing of high priority specimens is to take precedence over all other collections and testing. As with stat testing, specimens should be collected within 5-10 minutes of time ordered and tested immediately. It is our ultimate goal to release all high priority stat results with 30-45 minutes of time ordered, not to exceed 1 hour. High priority test results will print automatically to the nursing stations and the Emergency Department. The following tests have been identified by the Laboratory Medical Director as being appropriate to order high priority.

CBC
Protime
CKMB
Troponin
BNP
Basic Metabolic Panel
Electrolytes (Sodium, Potassium, Chloride, Bicarbonate)
Glucose
BUN
Creatinine
Calcium
Lactate

**ASAP:**
For inpatient testing, all tests ordered as ASAP will be drawn within 15 minutes and will be performed and called within 2 hours of time ordered. All ASAP orders will take priority over all other testing, with the exception of stats and high priority testing.

ASAP orders will automatically print to all inpatient locations and to the following outpatient locations: CCC, TAH, HPR, PAT, SDS, OPS, Dialysis, Nursing Homes, Home Health, Occupational Health, Dettmer and Cardiac Cath Lab.

For outpatient testing, the ASAP priority will be used to alert the laboratory that the results need called/faxed when complete. When a physician notates "call results" or "fax results" the ordering employee will create an expedite report to be generated upon verification of results to the number given on the order. The ordering employee will apply a sticker stating expedited and/or call results and will include the phone number to be called.

**TIMED:**
This priority should be used when tests are desired to be drawn at a specific time and date. The most common timed test order is used for therapeutic drug monitoring in order to appropriately assess the peak and trough levels. These tests will be drawn within 15 minutes of the stated date and time and will be performed within 2 hours from time drawn. These results will NOT print automatically nor will they be called.

**ROUTINE:**
Tests ordered as routine will be collected within 2 hours from time ordered except for routine Blood Bank orders. Blood Bank orders should be drawn as soon as possible. Routine orders will be resulted within an 8 hour time span. Exception: Some specialty tests are performed only several times a week, takes greater than 24 hours to report (cultures) or are referred to a reference lab and will fall outside the 8 hour time span. Routine results will not be called unless they have critical values.

Revised procedure prepared by pjr 12/4/07 supercedes procedure written 9/6/96, 1/13/99, 9/4/02, 1/27/05

UPPER VALLEY MEDICAL CENTER
CLINICAL LABORATORY
North Dixie Highway
Troy, Ohio 45373

# QUICK REFERENCE FOR SPECIMEN STABILITY

0**Acetaminophen**: 3 days at 2 – 8°C.

1**Acetone**: tightly capped; ASAP

**Albumin**: 72 hrs at 4-8 C. Freeze at -20° C for storage longer than 72 hours

**Alcohol**: room temperature for 3 hours, 7 days at 2 – 8°C, and frozen for14 days

0**Alkaline Phosphatase**: 5 days at 2-8° C

1**ALT**: 2 days at 2-8° C

**AMM**: needs placed on ice immediately; separated plasma: 3 hours at 4°C in a stoppered container

**Amylase**: 1 month at 4° degrees C or 7 days at 20-25° C

**AST**: 8 hrs at 20-24° C or 48 hrs at 2-8° C

**BNP**: keep tubes upright, unstable is glass, if testing delayed, separate plasma, freeze if >24 hrs

**BUN**: 14 days at 2–8°C or for two months frozen

**Bicarbonate**: 2–8°C for 7 day, specimen must be capped, stable 1 hr after uncapped

**Biliruben Total & Direct**: assay immediately, protect from light. Tightly covered and refrigerated samples at 2–8°C for one (1) week with no light exposure.

**B12**: 48 hrs at 2-8 °C or freeze

**Ca**: 1 week at 2–8°C

0**Carbamazapine**: 5 hours at room temperature, 5 days at 2 – 8°C and 14 days frozen.

1**CEA**: 48 hrs at 2-8 °C or freeze

2**Chloride**: 5 hours at room temperature, 5 days at 2 – 8°C and 14 days frozen

3**Cholesterol**: 7 days at 2-8 °C

4**CK**: 7 days at 2-8 °C; 1 month at 20-25°C

5**CK-MB**: 48 hrs at 2-8°C; or freeze

6**Creatinine**: 14 days at 2 – 8°C or frozen

7**CSF/Urine Protein**: 72 hours at 2 – 8°C

8**C-Reactive protein**: 8 hours at Room temperature, 2 days at 2–8°C and frozen 14 days.

9**Digoxin**: 8 hours at room temperature, 7 days at 2 – 8°C and 14 days frozen

10**Estradiol**: 48 hrs at 2-8°C or 6 months frozen

11**Ferritin**: 48 hrs at 2-8°C or freeze

12**Folate**: 48 hrs at 2-8°C or 30 days frozen

13**FSH**: 24 hrs at 2-8°C or freeze

14**Gentamicin**: 8 hrs at room temp, 48 hrs at 2-8°C or freeze

15**GGT**: room temperature or 2–8°C for 7 days and frozen for 14 days

16**Glucose**: 8 hrs at room temperature and for 3 days at 2-8°C

17**HBA1C**: 1 week at 20-25°C; 2 weeks 2-8°C

18**HBSAb**: aliquoted specimen 3 days 2-8°C, 365 days frozen

19**HDL**: 4 days at 2–8°C and frozen for 14 days

20**HIV**: 5 day at 2-8° C, 365 days frozen

21**Ionized Calcium**: 4 hours at 2–8°C

22**Iron**: 4 days at room temperature, 7 days at 2–8°C and 4 days frozen

23**Lactic acid**: 30 minutes room temp; 14 days at 2– 8°C or frozen

24**LDH**: 2 days at room temperature or 2 days at 2-8°C

25**LH**: 24 hrs at 2-8°C

26**LDL**: 4 days at 2 – 8°C and frozen for 14 days

27**Lithium**: 8 hours at room temperature, 24 hours at 2–8°C and 14 days frozen

28**Lipase**: 14 days at 2–8°C or frozen

29**Magnesium**: 7 days at 2–8°C and 14 days frozen

30**Microalbumin**: 3 days at 2–8°C.

31**Osmolality**: refrigerate or freeze if not run within 4 hrs.

32**Phenobarbital**: 48 hours at room temperature, 7 days at 2–8°C and 14 days frozen

33**Phenytoin**: 8 hours at room temperature, 7 days at 2–8°C and 14 days frozen

34**Phosphorus**: 7 days 2–8°C or 14 days frozen

35**Potassium**: 14 days at 2–8°C or frozen

36**Prealbumin**: 3 days at 2–8°C and 14 days frozen

37**Prolactin**: 48 hrs at 2-8 °C or freeze

38**Progesterone**: 48 hrs at 2-8°C or 6 months frozen

39**PSA**: 48 hrs at 2-8 °C or freeze

40**PTH**: 4 hrs. at room temp, 48 hrs at 2-8 °C or freeze

41**Salicilate**: 3 days at 2–8°C

42**Sodium**: 14 days at 2–8°C or frozen

43**TBHCG**: 48 hrs at 2-8 °C or freeze

44**Total Protein**: 3 days at 2-8 °C or 6 months frozen

45**T4**: 48 hrs at 2-8 °C or freeze

46**T4, Free**: 48 hrs at 2-8 °C or freeze

47**Tobramycin**: 48 hrs at 2-8 °C or freeze

48**Theophylline**: 7 days at room temperature, 7 days at 2–8°C and 14 days frozen

49**Troponin-I**: 24 hrs at 2-8 °C or freeze

50**Triglycerides**: 7 days at 2-8 °C

51**TSH**: 48 hrs at 2-8 °C or freeze

52**T-uptake**: 48 hrs at 2-8 °C or freeze

53**TIBC/UIBC**: 4 days at room temperature, 7 days at 2–8°C, and frozen for14 days

54**Uric Acid**: 3 days at room temperature, 5 days at 2–8°C and 14 days frozen

55**Valproic acid**: 48 hrs at 2-8 °C or freeze

56**Vancomycin**: 48 hrs at 2-8 °C or freeze

Laboratory Form:

Updated 12/24/08

Approved:_____

## GENERAL GUIDELINES FOR MAXIMUM SURGICAL BLOOD ORDER

Physicians must provide written orders for blood to be typed, screened, and crossmatched or typed and screened.

T&S = Type and Screen
Number = Units Crossmatched

| General Surgery | |
|---|---|
| Abdominal-perineal resection | 3 |
| Amputation A/K, B/K | T&S |
| Aneurysm resection | 6 |
| Breast Biopsy | T&S |
| Cholecystectomy and CD exploration | T&S |
| Colon Resection: | |
| Total large colon | 2 |
| Hemicolectomy | 2 |
| Sigmoidectomy | 2 |
| Anterior Resection | 2 |
| Small Bowel Resection | 1 |
| Colostomy, gastrostromy | T&S |
| Exploratory laparotomy | 4 |
| Femoropopliteal bypass | T&S |
| Hemorrhoidectomy | T&S |
| Hernia | T&S |
| Mastectomy: | |
| Simple | T&S |
| Radical | 1 |
| Radical with immediate reconstruction | 2 |
| Pancreatectomy | 4 |
| Paarathyroidectomy | T&S |
| Parotidectomy | T&S |
| Splenectomy | 2 |
| Thyroidectomy | T&S |
| Vein Stripping | T&S |

| Cardiopulmonary Surgery | |
|---|---|
| Bronchopleural fistula | 2 |
| Esophagectomy | 2 |
| Thoractomy | 2 |
| Tracheotomy | T&S |

| Gynecologic Surgery | |
|---|---|
| AP repairs (combined incontinence) | 1 |
| Conization | T&S |
| D & C | T&S |
| Ectopic Pregnancy | 2 |
| Hysterectomy | |
| Vaginal | T&S |
| Abdominal | T&S |
| Radical (Wertheim) | 2 |
| Hysterectomy with repair | 2 |
| Hysterectomy (C section) | T&S |
| Laparoscopy and bilateral tubal ligation | T&S |
| Oophorectomy | T&S |
| Pelvic lymphadenectomy | 4 |
| Tuboplasty | T&S |
| Uterine suspension with presacral neurectomy and fulgeration of endimetrial implants | T&S |
| Urethral diverticulum | T&S |

| Neurosurgery | |
|---|---|
| Carpel Tunnel procedures | T&S |
| Cranioplasty | 1 |
| Nerve Repair | T&S |
| Scalp and skull lesions (no intercranial communication) | T&S |

| Orthopedic Surgery | |
|---|---|
| Arthroscopy | T&S |
| Arthotomy | T&S |
| Dupuytren's contracture release | T&S |
| Hip Nailing | 2 |
| Leg Amputation | T&S |
| Medial Menisectomy | T&S |
| Open Reduction | 1 |
| Osteotomy, biopsy | T&S |
| Removal of hip pin | T&S |
| Replacement prothesis | 4 |
| Total hip (or resurfacing hip) | 5 |
| Total knee | T&S |
| Laminectomy | 3 |
| Spinal Fusion | 8 |

| Otolaryngologic Surgery | |
|---|---|
| Angiofibroma resection | 4 |
| Branchial cleft cyst | T&S |
| Caldwell-Luc | T&S |
| Caratoid body tumor resection | 4 |
| Ethmoidectomy | T&S |
| Jaw, neck, tongue dissection | 4 |
| Laryngectomy | 2 |
| with radical neck | 4 |
| Mandibulectomy | 2 |
| Mastoidectomy | 2 |

| Otolaryngologic Surgery | |
|---|---|
| Orbital exploration | 1 |
| Radical neck dissection | 2 |
| Septoplasty | T&S |
| Tumor of palate | T&S |

| Plastic Surgery | |
|---|---|
| Flap reconstruction | 4 |
| Otoplasty | T&S |
| Reduction Mammoplasty | T&S |
| Repair of cleft palate, lip | 1 |
| Repair of decubital ulcer | 2 |
| Skin flap | T&S |
| Skin graft | T&S |

| Urologic Surgery | |
|---|---|
| Adrenalectomy | 3 |
| Bilateral reimplantation ureters | T&S |
| Cystotomy | T&S |
| Fulgeration of bleeding bladder tumor | T&S |
| Hydrocolectomy | T&S |
| Ileal condiut | 1 |
| Meatotomy | T&S |
| Nephrectomy | 2 |
| Open prostate biopsy | T&S |
| Orchiectomy | T&S |
| Orchiopexy | T&S |
| Prostatectomy: | |
| Transurethral | T&S |
| Suprapubic | 2 |
| Perineal | 2 |
| Pyelolithotomy | |
| Radical cystectomy | 4 |
| Radical penectomy | 2 |
| Transurethral resection bladder | |
| Tumor (TUR) | T&S |
| Ureterolithotomy | T&S |

References:

1) Clinics in Laboratory Medicine, W.B. Saunders Company, March 1982, pg. 172-3.
2) Technical Manual, American Association of Blood Banks, Bethesda, 1996, 12th Ed. Pg. 58.

**Prepared by: js; revised 1/4/99**

**UPPER VALLEY MEDICAL CENTER**
CLINICAL LABORATORY
3130 N. Dixie Hwy.
Troy, OH 45373

# NURSING INSTRUCTIONS FOR REQUESTING BLOOD FOR TRANFUSION

I. Test and Component Ordering
   A. Blood Bank tests and components are ordered through Cerner Power Chart.
   B. In Cerner, enter the tests and component, including the number of components ordered.
   C. For components, complete a Blood Product Order Form. Fax a copy to the Blood Bank at 440-4393.
   D. Notify the Blood Bank of STAT requests. Call Blood Bank at phone number 440-4643.

II. Type and Rh Versus Type and Screen

A. Type and Rh

A type and Rh is performed on the patient. The patient's plasma is not screened for unexpected antibodies. A type and Rh is needed when platelets and plasma products (FFP and CRYO) are ordered.

B. Type and Screen

A type and Screen is needed when red blood cell products are ordered. A type and Rh is performed on the patient and the patient's plasma is screened for unexpected antibodies. With a type and Screen, blood is not crossmatched. If no unexpected antibodies are detected, two units of type specific blood will be available in Blood Bank for crossmatch on the patient, if ordered. With a negative antibody screen, when components are ordered, a crossmatch can be performed in about 10 to 15 minutes. In an emergency, blood can also be signed out by the physician to be transfused uncrossmatched. With a negative antibody screen, there is a 99% chance that random units of type-specific blood will be compatible.

If antibodies are present, the patient's physician will be notified immediately. Components could be crossmatched prior to surgery or need. It will take longer to find compatible components.

C. Components (Blood Products)

The number of components ordered are prepared and made available for transfusion. Units must be reordered and crossmatched on a fresh patient specimen every 72 hours on patients who have been pregnant or have received blood within the past three months.

The number of requested units must be indicated. UVMC has only leukoreduced RBCs at this time. If the components are ordered or needed STAT, the order should be called to Blood Bank so there can be verbal communication with Blood Bank and the order is received promptly.

Red blood cells of all Type and Rhs are stored at UVMC. Fresh frozen plasma (FFP) and Cryoprecipitate (CRYO) are stored frozen at UVMC and must be thawed to be prepared.

Due to short shelf life, platelets are stored at Community Blood Center in Dayton. Platelets are shipped upon order for transfusion. It is UVMC policy to use apheresed platelets. Apheresed platelet units are from one donor and are equal in size to 5 to 6 random donor units. They are better for the patient than transfusing multiple random units.

III. Alternatives Donors to Transfusion

A. Autologous Transfusion
   1. Useful for select patients and is most valuable when major blood loss can be anticipated.
   2. Four to six units of blood may be drawn safely within a 40-day period.
   3. Minimum permissible time between autologous donation is 72 hours.
   4. Age, pregnancy, being underweight and uncomplicated coronary artery disease are not necessarily contraindicated for this procedure.
   5. Disadvantage:
      a. Increased cost (over random supply).
      b. Donor must go to the Dayton Community Blood Center to have component collected.

B. Directed Donor Donation

1. Not statistically safer than blood from the random supply (volunteer donors).
2. Advantage: Positive psychological benefit for the patient.

3. Disadvantages:
   a. Increased cost (over random supply).
   b. Donor must go to Dayton CBC to have component collected.
   c. Potential legal problems, donors lose their anonymity, transfusion-transmitted diseases.

C. Intraoperative Blood Salvage

Performed during surgery under the direction of the Chief of the Medical Staff.

IV. Laboratory Responsibility

A. When Blood Bank work is completed; the results will be available in the hospital computer system. Nursing Stations will be notified when products ordered to be transfused are ready or if there will be a delay in supplying requested products.

B. The Blood Transfusion Record will be placed with the unit of blood.

V. Signing Blood Out of Blood Bank

A. Nursing personnel must bring a paper with the patient's information stamped on it. The patient's blood bank armband ID number must also be recorded and brought to Blood Bank.

B. Pertinent patient information on component (patient's name, medical record number, account number, and the unique blood bank armband ID number) and the unit number, must match the information on the Blood Transfusion Record. All checks should be made by both the lab technologist and the nursing personnel. Any discrepancies must be resolved prior to transfusion.

C. The Type and Rh should be reviewed. If the patient and the component type are not the same, two technologists should have reviewed the situation and initialed the Blood Transfusion Record. The Nursing personnel should question why the type and Rh are not the same. There are situations where this will occur.

D. The technologist is responsible for observing the condition/appearance of the blood. If the appearance of the blood is abnormal, the unit should not be issued.

E. The technologist must take segments from the unit (for red cell components) and store them in Blood Bank.

F. Both the nursing personnel and the tech sign out on the Blood Transfusion Record. Fill in the current date and time.

VI. Nursing Responsibilities Before/During Transfusion

A. Prior to transfusion, verify that the patient name and number on the armband agree with the name and number on the Blood Transfusion Record. This verification requires the signatures of two (2) nurses.

B. Completely fill out all information required of the transfusionist. Fill these out as appropriate – patient vitals before, 15 minutes after start, and immediately after transfusion.

C. Place the chart copy of the Blood Transfusion Record on the chart.

VII. Post Transfusion

A. Return the completed Blood Transfusion Record Blood Bank (Lab) copy to the Laboratory. This can be returned by nursing staff or the pneumatic tube system.

B. Discard the empty blood bag and tubing using proper hospital guidelines for biohazards.

VII. Blood Release and Return

A. Blood release for transfusion and not used must be returned to the Blood Bank within 20 minutes to assure that blood has not been warmed above $10^{o}$ C.

B. Blood may not be released to be stored in another area because constantly monitored refrigerators are not available outside of the Blood Bank.

**New Procedure**_____ **Supersedes** 2-22-06
**Prepared by:** jas 3-12-07

UVMC

**UPPER VALLEY MEDICAL CENTER**

**BLOOD PRODUCT ORDER FORM**

| PRODUCT (CIRCLE TO INDICATE PRODUCT) | INDICATIONS FOR TRANSFUSION (CHECK AT LEAST ONE) |
|---|---|
| **Leuko-reduced packed RBC's: One (1) Two (2) Three (3) Four (4) units**<br><br>Transfusion Instructions:<br>Rate: _____<br>Meds: _____<br>Other: _____ | **Acute Blood Loss**<br>☐ Estimated blood loss >1000 mL or 30% of volemia<br>☐ Hgb <8 g/dl or Hct <23%<br>☐ Hgb <10; operative trauma or head injury pt. with evidence of significant risk for ischemia by the following criteria:<br>☐ Systolic BP <90 mmHg<br>☐ Lactic acid >2 meq/L<br>☐ Base excess <0; at least 2 consecutive times<br>☐ O2 consumption index <170mL/min/sq.m<br>☐ MVO2 mixed venous O2 sat <65%<br><br>**Chronic Blood Loss**<br>☐ Transfusion dependent patient with Hgb < 8.6 g/dl<br>☐ Severe anemia, Hgb < 7 g/dl or Hct < 21%<br>☐ Symptomatic anemia<br>☐ Anemia of chronic kidney disease<br><br>**Other:**_____<br>☐ Coagulation factor deficiency (Protime >18 sec, APTT >55 sec, INR >1.5)<br>☐ Massive transfusion with active bleeding<br>☐ Reversal of Warfarin (Coumadin) in bleeding or surgical pt.<br>☐ Plasmapheresis (TTP/HUS etc.)<br>☐ Dilutional coagulopathy<br>☐ Protein C or S deficiency complication |
| **Fresh frozen plasma: Two ( 2) Three (3) Four (4) units**<br><br>Transfusion Instructions: _____<br>_____<br>_____ | |
| **Platelets: One (1) Two (2) units**<br><br>Single donor (apheresis), leuko-reduced<br>(1 apheresis unit = 6 random units)<br><br>Transfusion Instructions: _____<br>_____ | **Prophylaxis**<br>☐ Platelet ct. <10 000/mL or <20 000/mL in bleeding or surgical patient<br>☐ Pre-operative count <75 000/mL or 100 000/mL in neurosurgical or ophthalmic patients<br>**Hemorrhage**<br>☐ Quantitative (<50 000/mL) or qualitative platelet defect<br>☐ Intra or post-operative count of <75 000/mL or 100,000/mL in neurosurgical or ophthalmic patients<br>☐ Massive transfusion<br><br>**Thrombocytopathy**<br>☐ Congenital, drug related (ASA)<br>**Other:**_____ |
| **Other blood products:**<br>☐ **Cryoprecipitate**<br>☐ **Factor VII**<br>☐ **Factor VIII**<br>☐ **Factor IX**<br>Transfusion Instructions: _____ | ☐ Fibrinogen deficiency (<100 mg/dL) in bleeding or surgical patient<br>☐ Factor VIII deficiency with no Factor VIII concentrate available<br>☐ Von Willebrand's disease or uremic pt. unresponsive to DDAVP<br>☐ Massive transfusion<br>☐ Factor XIII deficiency<br><br>**Other:**_____ |

**Product Modifications: (circle all needed)**

Irradiated CMV Negative Donor HLA Matched Platelet Crossmatching

Physician sign_____ Prepared 2/27/2007

**Internal Fax # for Blood Bank: 4393**

**UPPER VALLEY MEDICAL CENTER**
CLINICAL LABORATORY
3130 N. Dixie Highway
Troy, OH 45373

# IDENTIFICATION FOR BLOOD BANK WITH ARMBAND

The Upper Valley Medical Center Transfusion service is using an armband system for identification of all patients who have specimens collected for Type and Screens, crossmatches or transfusion of blood components (platelets, FFP, etc...). This armband will serve as verification that the numbered specimen was drawn from this patient for Blood Bank purposes. Green is the official color for Blood Bank armbands in Ohio. At Upper Valley Medical Center, Blood Bank armbands are green.

For platelets, fresh frozen plasma and cryoprecipitate which are not crossmatched, the type and Rh only have to be performed once per admission. This armband must remain on the patient's arm for transfusions during the admission.

## I. WHEN COLLECTING A SPECIMEN:

NOTE: When identifying and collecting a specimen from a patient, another person (other than the collector) needs to be able to verify that the specimen was collected from the patient. This other person (the verifier) can be the patient, a family member or friend of patient, a nurse, or other lab person who was in the room at time of collection and witnessed the collection. See step C.2.

A. Patient Identification: *

NOTE: For Home Health Nurses, certain nurses have been trained to collect blood bank specimens with armband system. If they are in the hospital prior to collection and pick up Blood Bank labels, they will follow the routine operation. Otherwise, they will collect using the downtime procedure. All patients will come to the hospital for transfusion.

1. a. During routine operation, the armband ID will be the accession number assigned by computer for the patient's Type and Rh or Type and Screen. This number can be found on the accession label.

b. During downtime, the armband ID will be a unique number preprinted for Blood Bank. Obtain numbered sheet with numbered stickers and a Blood Bank armband from the Blood Bank. The number on the sticker sheet will be the patient's unique Blood Bank armband number.

2. Properly identify patient by comparing the request information with the patient's hospital identification armband. Ask patient to give his/her name and birthdate. If there is no hospital armband or the patient is unable to communicate, have a nurse from that floor identify the patient and verify patient's birthdate. If there is any doubt of the patient's identity, do not draw specimen until the problem is resolved.

B. Sample Collection: *

Obtain needed specimen, one 7 ml (EDTA) purple top tube, following proper specimen collection protocol.

C. Specimen Identification: *

1. Label specimen with:
   a. Routine - Label specimen (s) with barcode sticker from accession label for T&Rh or T&S (with same accession number as on the armband). On the specimen label write the patient's birthdate. Also, put the name of person collecting the specimen (first initial and last name) and the time of the draw on the specimen(s).
   b. Downtime - Label specimen with the following:
      1. Patient's name (last, first and initial)
      2. Patient's medical record number
      3. Patient's date of birth
      4. Date/ time of draw
      5. Name of person collecting the specimen (first initial and last name)
      6. Mandatory unique I.D. number
2. As a second identification check, have the patient look at the specimen tube and "initial" the tube showing that they have looked at the tube and checked the name on it for proper identification. During situations when the patient is not able to identify their specimen, ask another person familiar with the patient (family member or friend present in room when the specimen was collected) to look at the specimen. A nurse or other lab employee can be asked to watch the collection and initial the specimen, if needed. They can look at the specimen and information for correctness and "initial" the specimen. During Traumas or Massive Transfusion Protocols, follow procedures for those situations; there are other steps in place for the safety of the patient, such as transfusing type "O" blood.

* NOTE: Specimen labeling and patient armbanding must occur at the same time that the patient is identified and the specimen is collected to eliminate errors and to ensure a true chain of identification.

D. Blood Bank Armbanding *

1. a. Routine - Put the patients's birthdate, the time of the draw and the name of the person collecting the specimen (first initial and last name) on the barcode sticker of T&Rh or T&S accession label. Attach the barcode sticker to an armband insert card. Slide the card into the armband and securely fasten the Blood Bank armband around the patient's wrist. Put the armband on so that it is comfortable for the patient, but tight enough that it will not slide off over the wrist. # NOTE: If PAT, see 1c.

   b. Downtime - Write name of patient (last, first and initial), birthdate of patient, date/time of collection and name of the person collecting the specimen (first initial and last name) on the top numbered label of sticker sheet. Label armband insert card with the patient's name, patient's birthdate, date/time of collection and the

collector name. Place a numbered sticker from the sticker sheet onto the armband and securely fasten the Blood Bank armband around the patient's wrist. Put the armband on so that it is comfortable for the patient, but tight enough that it will not slide off over the wrist. # NOTE: If PAT, see 1c.

# NOTE: The Blood Bank Armband should be placed on the patient's wrist with other identification bands. In accordance with nursing policies, the armband should never be removed unless the patient's welfare necessitates such removal. In this event, another green Blood Bank band should be securely affixed **immediately** to the same or a different part of the patient's body. The Blood Bank band and a "Blood Bank Identification Transfer Record" form can be obtained from Blood Bank. The transfer record must be completed and sent the Blood Bank as documentation of the band switch. See below for details.

c. Preadmission Testing Patients (PATs) - If the patient is having a procedure the same day, securely fasten the Blood Bank armband around the patient's wrist. If the surgery date is a later date, the patient can wear the armband (which is preferred) or can carry it with them. On the date of admission, the armband must be brought back and secured to the patient's wrist after proper identification of comparing the patient's name and birthdate on the paperwork with those given verbally by the patient. If the actions listed above do not occur, it will necessitate a restick of the patient and a repeat of the type and crossmatches.

2. Have the patient read and sign the "Transfusion/Pregnancy Record" (T/P) circling "Yes", "No", or "Not Sure" to the question of them having been transfused or pregnant within the past 3 months. This will help determine if the specimen outdates in 72 hours or 10 days. If the patient can't sign, take a verbal response and note "Verbal" in patient signature area. Read the second statement on the T/P record for the person collecting the specimen and sign stating that you have properly identified the patient, labeled specimen properly, and correctly armbanded the patient**.** On the bottom of this T/P record note who initialed the specimen as the identification verifier. Mark as "patient", " friend" or "famly member of patient" or the Cerner sign-in of the UVMC employee.

Deliver specimen, slip with remaining stickers and paperwork to Blood Bank. Also, send a copy of the physician's orders to Blood Bank so the Blood Bank tech can confirm what is ordered.

## II. EMERGENCY REMOVAL OF ARMBAND AND REPLACEMENT:

1. Occasionally circumstances may require removal and replacement of the green Blood Bank Identification Armband. When this becomes necessary the laboratory should be notified **PRIOR** to the armband removal. A laboratory staff member **SHOULD** be present for the transfer (see note below). The lab staff will bring a new green armband and will remove the identification materials from the armband removed from the patient **IN THEIR PRESENCE.** Lab staff will insert the identification materials in the new green armband will attach it to the patient's arm. Lab personnel will fill out a **Blood Bank**

2. **Identification Transfer Record** which will be kept on file in the Blood Bank until that specimen has become outdated.

NOTE: In an emergency where an armband is cut off before Lab is notified, the lab must be called immediately. The lab staff will bring or send a new green armband. If the person who cut it off still has the armband and can positively identify the patient from whom the armband was cut, they can remove identification materials from the armband. They can insert the identification materials in the new green armband and attach it to the patient's arm. A **Blood Bank Identification Transfer Record** should be completed by the person who removed the armband signing the record. This will be kept on file in the Blood Bank until that specimen has outdated.

2. If the actions listed in No. 1 above do not occur, it will necessitate a restick of the patient and a repeat of the type and crossmatches. The patient can not be charged again. Redraws will be necessary in cases where armbands are found taped to beds or are missing.

**The most frequent cause of fatal transfusion reactions is clerical identification errors - a greater risk than AIDS.**

**NOTES:**

1. In downtime:
   a. Save unused stickers.
   b. If four or more units are ordered or in an emergency to speed up the process, the identification number can be written on the **"BLOOD TRANSFUSION RECORD"** and the large unit sticker of the **"BLOOD TRANSFUSION RECORD"**. The ID number should transfer through all copies of the slip.

UPPER VALLEY MEDICAL CENTER
2130 N. DIXIE HWY. TROY, OH 45373

# BLOOD RECIPIENT'S

**TRANSFUSION/PREGNANCY RECORD**

PLACE LABEL HERE

Use large label
(with date of birth and physician's name)
if possible

Date of surgery or transfusion:_____

I acknowledge that I have verified the recipient's identification, collected and properly labeled the specimen. I have applied the Blood Bank armband to the patient's arm (or given the armband to PAT patient, and explained to him/her that it must be brought back and securely applied to his/her arm on day of admission).

Collector's signature:_____ Date__

I have been transfused/pregnant within the past 3 months. (circle one)

YES / NO / NOT SURE

Patient's signature:_____

Verifier:_____

I

Labsuper/Jean's file/General/Armband bb nursing-rev12.08.rtf

**New Procedure**_____ **Supersedes** 11-21-07
**Prepared by:** js 12-26-08

**UPPER VALLEY MEDICAL CENTER**
CLINICAL LABORATORY
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# BRIEF OUTLINE ON SPECIMEN IDENTIFICATION FOR BLOOD BANK WITH DOWNTIME ID NUMBERS

The UVMC Transfusion Service is using an armband system for identification of all patients who have specimens collected for Type and Screens, crossmatches or transfusion of blood components (platelets, FFP, etc…). This armband will serve as verification that the numbered specimen was drawn from this patient for Blood Bank purposes. Green is the official color for Blood Bank armbands in Ohio. At Upper Valley Medical Center, Blood Bank armbands are green.

For platelets, fresh frozen plasma and cryoprecipitate which are not crossmatched, the type and Rh only have to be performed once per admission. This armband must remain on the patient's arm for transfusions during the admission.

## I. WHEN COLLECTING A SPECIMEN:

NOTE: When identifying and collecting a specimen from a patient, another person (other than the collector) needs to be able to verify that the specimen was collected from the patient. This other person (the verifier) can be the patient, a family member or friend of the patient, a nurse or other lab person who was in the room at the time of collection and witnessed the collection. See step D.3.

A. Patient Identification:

1. The armband ID will be a unique number preprinted for Blood Bank. **Obtain a packet with numbered stickers, Blood Bank armband, etc**. The number on the sticker sheet will be the patient's unique Blood Bank armband number.
2. Properly identify patient.
   a. Check armband to confirm the correct patient is being drawn. Ask patient to give his/her name and birthdate. If there is no armband or the patient is unable to communicate, have RN from that floor identify the patient and verify patient's birthdate.
   b. If there is any doubt on patient identity they problem must be resolved before the specimen is collected.

B. Sample Collection:

Obtain needed specimen - **one 7 ml EDTA purple top tube**, following proper specimen collection protocol.

C. Specimen Identification:

Label specimen with the following:

1. Patient's name (last, first and initial)
2. Patient's medical record number (if available)
3. Patient's birthdate

4. Date/ time of collection
5. Name of person collecting the specimen (first initial and last name)
6. Mandatory unique ID number

D. Blood Bank Armbanding

1. Label armband insert with the following:
   a. Patient's name (last, first and initial)
   b. Patient's birthdate
   c. Date/time of collection
   d. Name of the person collecting the specimen (first initial and last name)
   e. Mandatory unique ID number

2. Place insert into the green Blood Bank armband. Securely fasten the Blood Bank armband around the patient's wrist. Put the armband on so that it is comfortable for the patient, but tight enough that it will not slide off over the wrist.#

# NOTE: The Blood Bank armband should be placed on the patient's wrist with other identification bands. In accordance with nursing policies, the armband should never be removed unless the patient's welfare necessitates such removal. In this event, another green Blood Bank should be securely affixed **immediately** to the same or a different part of the patient's body. The Blood Bank band and a "Blood Bank Identification Transfer Record" form can be obtained from Blood Bank. The transfer record must be completed and sent to the Blood Bank as documentation of the band switch. See below for details.

3. As a second identification check, have the patient look at the specimen tube and "initial" the tube showing that they have looked at the tube and checked the name on it for proper identification. During situations when the patient is not able to identify their specimen, ask another person familiar with the patient (family member or friend) present in the room when the specimen was collected) to look over the specimen and information for correctness. If family or friends are unavailable, a nurse or other lab employee can be asked to watch the collection. They can look at the specimen and information for correctness and initial the specimen. During Traumas or Massive Transfusion Protocols, follow procedures for those situations; there are other steps in place for the safety of the patient, such as transfusing type "O" blood.

4. Have the patient read and sign the "Transfusion/Pregnancy Record" (T/R) circling "Yes", "No", or "Not Sure" to the question of them having been transfused or pregnant within the past 3 months. This will help determine if the specimen outdates in 72 hours or 10 days. If the patient can't sign, take a verbal response and note "Verbal" in patient signature area. Read the second statement on the T/P record for the person collecting the specimen and sign stating that you have properly identified the patient, labeled specimen properly, and correctly armbanded the patient**.** On the bottom of this T/P record note who initialed the specimen as the identification verifier. Mark as "patient", "friend" or "family member of patient" or the Cerner sign-in of the UVMC employee.

**All steps must be done at the same time.**

Send specimens, slip with remaining stickers and paperwork to Blood Bank. Also, send a copy of the physician's orders to Blood Bank so the Blood Bank tech can confirm what is ordered.

The Blood Bank tests must be ordered in the computer - T&S and requested components. This is done by the department requesting the tests.

If you have any questions, see the complete "**Identification for Blood Bank with Armband**" procedure in the Lab Services Manual.

## III. EMERGENCY REMOVAL OF ARMBAND AND REPLACEMENT:

NOTE: In an emergency where an armband is cut off, the lab must be called immediately. The lab staff will bring or send a new green armband. If the person who cut it off still has the armband and can positively identify the patient from whom the armband was cut, they can remove identification materials from the armband. They can insert the identification materials in the new green armband and will attach it to the patient's arm. A **Blood Bank Identification Transfer Record** should be signed by the person who removed the armband. This will be kept on file in the Blood Bank until that specimen has outdated.

If the actions listed above do not occur, it will necessitate a restick of the patient and a repeat of the type and crossmatches. The patient can not be charged again. Redraws will be necessary on cases where armbands are found taped to beds or are missing.

**The most frequent cause of fatal transfusion reactions is clerical identification errors - a greater risk than AIDS.**

armband bb nursing-outline 3.doc

**New Procedure**_____ **Supersedes** 11-21-07
**Prepared by:** js 12-26-08 jas

## BLOOD BANK IDENTIFICATION OF PATIENT SPECIMEN
## NO ARMBAND REQUIRED

This procedure is to be followed for Blood Bank specimens that are not intended for possible future crossmatches and, therefore, do not necessitate the need for the Blood Bank armband. Such procedures include RhoGam workup, Prenatal workup, Direct Coombs, Cord Blood workups,etc.

### I. WHEN COLLECTING A SPECIMEN:

A. Patient Identification: *

1. Check armband to confirm the correct patient is being drawn. Ask patient to give his/her name and birth date. If there is no armband or the patient is unable to communicate, have RN from that floor identify the patient and verify patient's birth date.

2. If there is any doubt on patient identity they problem must be resolved before the specimen is collected.

B. Specimen Identification: *

1. Obtain needed specimen - one 7ml. EDTA purple top tube, following proper specimen collection protocol. (For cord blood specimens, use the pink-topped EDTA tubes).

2. Label specimen with barcode sticker of accession label for test ordered. Also, write on tube the collection date and time and the collector's first initial and last name. Or, if no accession label is available (as in downtime), label the specimen with the following:

   a) Patient name (first and last)

   b) Patient medical record number

   c) Date and time drawn

   d) Collector name (first initial and last name)

   e) Test ordered.

3. Send the specimen and paperwork to Blood Bank.

* NOTE: Specimen labeling must occur at the same time that the patient is identified and the specimen is collected to eliminate errors in identification.

* Cord blood specimens can be labeled with mom's or baby's identification, plus "cord blood" so the Blood Bank personnel know what type specimen it is.

### II. IN BLOOD BANK:

When the specimen arrives in Blood Bank, compare the request form and the specimen label. If there is any discrepancy or doubt, resolve the problem before performing any tests with the specimen. Another specimen should be collected if there is any doubt of patient identity.

**New Procedure**_____ **Supersedes** 03-01-06
**Revised by js 10/8/07**

**UPPER VALLEY MEDICAL CENTER**
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## CRITERIA FOR UNACCEPTABLE BLOOD BANK SPECIMENS

LABELING:

All specimens received must have adequate labeling (see procedures on Blood Bank Identification with armband or without armband). If specimens received are not adequately labeled, consult with the specimen collector about labeling or recollection before performing the requested tests.

IDENTIFICATION DESCREPANCY:

Before a specimen is used in Blood Bank, the Blood Bank employee will confirm that all identifying information on the request form is in agreement with that on the specimen label. If there is a discrepancy or doubt, the problem must be solved before the test is performed. Another specimen will be collected to resolve the problem if there is any doubt.

EXTERNAL CONTAMINATION:

Obvious external contamination provides a health hazard to everyone handling the specimen, not just the laboratory personnel. The specimen should not be accepted into the laboratory with external contamination. Save the sample until a replacement is obtained. While waiting for the replacement, the specimen may be stored in a small biohazard bag. Attach a piece of tape to the outside of the bag explaining the situation. For blood tubes, wearing rubber gloves, the specimen can be transferred to a new tube. Properly label the new tube. Properly dispose of the contaminated tube.

AMOUNT OF SPECIMEN:

A specimen that has too small an amount for proper testing should be recollected. For a blood sample, have a phlebotomist redraw the sample. A 7-ml lavender (EDTA) top tube is requested.

REFERENCE: Laboratory Specimen Rejection Policy

**New Procedure**_____ **Supersedes** 1-04-99
**Prepared by:** jas 12-18-06
12/18/2006 mawc

**UPPER VALLEY MEDICAL CENTER**
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# PROCEDURE FOR HANDLING SPECIMENS FOR HISTOLOGY/CYTOLOGY

**PRINCIPLE**:

To ensure that all specimens are handled in a timely and efficient manner. The Histology/Cytology Department must work closely with nursing staff/surgery/physician offices to make sure that:

1. Specimens are processed as soon as possible.
2. Non-routine specimens are handled properly.
3. Autolysis does not occur.
4. Specimens are labeled properly.
5. Requisitions are filled out completely.
6. Specimens are accurately grossed and charged.

**DISCUSSION:**

All specimens that require only surgical pathology testing are to be considered as routine specimens and are to be submitted in 10% formalin. It is important that the volume of formalin be adequate. In general, the volume should be 10 times the size of the specimen.

Those specimens for **special studies,** for example specimens that have other testing such as cultures etc. are to be handled by specific guidelines found in procedure "The Collection of Non-Routine Pathology Specimens Procedure". These could include muscle biopsy, sural nerve biopsy, product of conception and lymph nodes to be received as fresh tissue. For further information on how to submit a specimen, please call the Histology Department at 4638, Monday – Friday 6AM to 4PM. After hours call the Lab at 4639.

Some specimens are excluded from submission to the pathology department see procedure "UVMC Policy for Surgical Specimens Excluded from Submission to the Pathology Department for Examination".

**Please note that for very large specimens, the specimen must be covered with formalin or autolysis will compromise the pathology of the specimen.**

Specimen for **Frozen Section** should be taken to the frozen section room immediately **without formalin.** The Histology department needs to be called at 4198 or 4638 as soon as the specimen has been collected. Once a frozen section is completed, the remainder of the tissue is brought to the histology department and additional tissue is submitted for permanent sections. These sections will be collected at the discretion of the pathologist. With tissue results being incorporated into the final report confirming the frozen section result report.

REMINDER: OSHA requires that all specimens of blood or other potentially infectious material shall be placed in a container which prevents leakage during transport. Bags that zip close and are labeled with the

biohazard code are acceptable for transporting specimens. If the specimen could possible puncture the primary container, it should be placed in a puncture resistant container and labeled as bio-hazardous.

**PROCEDURE:**

1. Submit specimen according to specimen type.
   (example: routine, special studies, frozen sections)

2. Specimen container must be labeled with patient name, medical record number, hospital account number, specimen/s type, date and time specimen collected. Containers must also be numbered if more that one specimen to a surgical case. Label must be legible.

3. Specimen requisition must contain all relevant information:
   a. Pre-op and Post-op diagnosis.
   b. Surgeon and all the physicians on the case.
   c. Specific description of specimen/s.
   d. Source of specimen.
   e. Date and time specimen/s collection.
   f. Requisition must be signed by ordering nurse.

4. Surgical specimen/s will be logged in Surgical Tissue Specimen Record Book. You will find Surgical Tissue Specimen Record Books and specimen buckets located outside the Endo rooms in Same Day Surgery and in the frozen room.

5. Specimen will be picked up from Surgery by a Histology tech. The Histology tech will check containers and requisitions for proper patient identification and information and also check visually for specimen when appropriate. The Histology tech will initial Surgical Tissue Specimen Record Book and transport the specimen/s to the Histology department, in a closed bio-hazard labeled transport container.
   ***When the specimen or the surgical order requisition is not completed correctly the histology tech will contact the surgery to correct the problem, before transporting the specimen/s to the Lab.***

6. When specimen/s is brought to the Histology department by outside personnel, the specimens must be logged on the irretrievable specimen log clipboard located in the Lab specimen processing area. The entry must be include date, time and signed by the person delivering the specimen, and counter signed by a lab employee. (The specimen/s must to be received in a bio-hazard bag.)

7. Specimen/s are processed Monday-Friday, surgical reports are usually available within 24 hours following surgery with the exceptions of weekends. Specimen/s may be held over for special stains, recuts, more fixation or decalcification at the Pathologist's discretion, which may cause some delay in reporting.

8. Once a surgical report is released by a pathologist it can be viewed in the Cerner anatomical pathology system and in Powerchart. Once released the system will automatically send copies of the report/s to Health Information Services and to all the doctors listed on the case. *****All significant or unexpected surgical pathology finding are called to the physicians and documented called by and given to, date and time.*****

Revised 10-30-08 cmw

Revised: 9/06/06 cmw

**UPPER VALLEY MEDICAL CENTER**
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# PROCEDURE FOR HANDLING FRESH TISSUE SPECIMEN/S

**PRINCIPLE:**

To facilitate the handling of fresh tissue specimens from surgery for special studies.

**PROPOSE:**

Most fresh tissue pathology specimens must be sent out for specialized processing. Due to the specific nature of each processing type, each type of specimen must be prepared according to the guidelines that have been established by each reference lab.

**PROCEDURE:**

**ALL** specimens sent for "non-routine" pathology **MUST** be labeled with proper patient identification and be accompanied with a completed surgical pathology requisition.

***LYMPH NODE:*** A section of lymph node, free of fat necrosis should be placed in a sterile container **without fixative**. Transport the specimen immediately to the Labs Histology department for processing. Calling the Histology department at 4638 as soon as the specimen has been collected informing them of the specimens pending arrival into the lab.

***MUSCLE BIOPSY:*** Quadriceps (are preferred because they are easily oriented), gastrocnemius, biceps, deltoid or any site are acceptable. A 1 x 0.5 x 0.5 cm (minimum) muscle biopsy needs to be place on sterile telfa pad, moisten with sterile saline and placed in a sterile specimen transport container (**do not add any other type of fixative).** ***Note: DO NOT clamp, suture or affix muscle to tongue blade. *** Transport the specimen immediately to the Labs Histology department for processing. Calling the Histology department at 4638 as soon as the specimen has been collected informing them of the specimens pending arrival into the lab.

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****Notify the Histology department at 4638 the day before collection, this will alert the histology personnel and pathologist of the collection. The histology department can then make any additional arrangements that are needed*****

***SURAL NERVE BIOSPY:*** A 3 cm. piece of nerve is required---one segment 2.6 cm. in length is to be placed on a sterile telfa pad, moisten with sterile saline and placed in a sterile container **(do not add any other type of fixative).** Transport the specimen immediately to the Labs Histology department for processing. Calling the Histology department at 4638 as soon as the specimen has been collected informing them of the specimens pending arrival into the lab.

*****Notify the Histology department at 4638 the day before collection, this will alert the histology personnel and pathologist of the collection. The histology department can then make any additional arrangements that are needed*****

***CHROMOSOME STUDIES:*** Tissue submitted for Chromosome Studies is to be placed in a sterile container. Transport the specimen immediately to the Labs Histology department for processing. Calling the Histology department at 4638 or 4198 as soon as the specimen has been collected informing them of the specimens pending arrival into the lab.

Revised 11-25-08 cmw

# COLLECTION OF NON-GYN CYTOLOGY SPECIMEN/S

**Principle:**

The collection of NON-GYN specimens is primary for the purpose of examination of the fluid to detect malignancy; the method is also used for the detection of inflammatory or infectious disorders.

These samples may include, but not limited to;

- Respiratory specimen/s
- Gastrointestinal specimen/s
- Serous Effusions
- Urine
- Cerebrospinal fluid/s
- Fine Needle Aspirates *

**Procedure:**

1. NON-GYN sample/s to be processed on the ThinPrep processor should be collected fresh in sterile container/s, or in CytoLyt fixative solution. (That can be obtained by calling the histology department at 4638.)
2. All specimen/s should be labeled with the patient's name, medical record number, account number, specimen type, date and time of collection.
3. A copy of physicians order must accompany each specimen.
4. The source, total volume, color and consistency must be logged on the order form.
5. Fine Needle Aspirates should be put directly into CytoLyt fixative solution. *** Please DO NOT Make Direct Smears. ***

All specimen/s should be delivered to the lab as soon as possible to ensure specimen quality and integrity. When problems do arise with any cytology specimen refer to the procedure; "Procedure for Specimen Rejection of Histology/Cytology Specimens".

Reviewed 1/17/06 cmw

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# THINPREP PAP TEST PROCEDURE
(PreservCyt Solution Sample Collection and Transport Medium)

PURPOSE: PreservCyt solution is designed for the use with the ThinPrep 2000 system. PreservCyt solution is a methanol based, preservation solution that serves as a transport, preservative, and antibacterial medium for gynecologic samples.

PRINCPLE: The ThinPrep process begins with the patient's gynecologic sample being collected by the clinician using a cervical sampling device which, rather than being smeared on a microscope slide, is immersed and rinsed in a vial filled with PreservCyt solution. The ThinPrep sample vial is then capped, labeled, and sent to a laboratory equipped with a ThinPrep 2000 Processor.

At the laboratory, the PreservCyt sample vial is placed into a ThinPrep 2000 Processor and a gentle dispersion step breaks up blood, mucus, non-diagnostic debris and thoroughly mixes the cell samples. The cells are then collected on a TransCyt Filter specifically designed to collect diagnostic cells. The ThinPrep 2000 Processor constantly monitors the rate of flow through the TransCyt Filter during the collection process in order to prevent the cellular presentation from being too scant or too dense. A thin layer of cells is then transferred to a glass slide in a 2mm-diaminter circle, and the slide is automatically deposited into a fixative solution.

REAGENTS:

PreservCyt solution sample collection and transport Medium
Cytobrush Plus GT
Pap-Perfect Plastic Spatulas
Cervical Cytology Papette (broom)

SPECIMEN COLLECTION PROCEDURE:

With patient in lithotomy position, expose cervix using a vaginal speculum moistened with warm water. Visually examine vaginal mucosa and cervix for lesions, ulceration or discharge. Document findings of the examination on patient's record, and communicate the relevant clinical findings to laboratory for optimum cytological interpretation.

1. To collect specimen from the ectocervix, select contoured end of plastic spatula and rotate it 360 degrees around the entire ectocervix while maintaining thigh contact with ectocervical surface. Remove spatula.
2. Rinse contoured end of plastic spatula in a vial of PreservCyt solution by swirling vigorously ten (10) times. Discard plastic spatula. Place cap on vial until step 4.
3. Insert Cytobrush Plus GT into the endocervix until only the bottom-most fibers are exposed. Slowly rotate one-quarter to one-half turn in one direction. Remove device. **Do not over rotate. Additional rotation may cause bleeding and contaminate specimen.**

4. Rinse the Cytobrush Plus GT in the PreservCyt solution by rotating the device in the solution ten (10) times while pushing it against the wall of the vial. Swirl the device vigorously to further release material. Discard collection device.
5. Tighten the PreservCyt vial cap so that the torque line on the cap passes the torque line on the vial.

Collection Technique using Brush/spatula collection device:

1. Sample ectocervix with a plastic spatula.
2. Rinse spatula in the PreservCyt vial by swirling vigorously 10 times. Place cap on vial until step 4. Discard collection device.
3. Sample endocervix with an endocervical brush.
4. Rinse the brush in the PreservCyt solution by rotating the device in the solution 10 times while pushing against the PreservCyt vial wall. Swirl the brush vigorously to further release material. Discard the collection device.
5. Tighten the PreservCyt vial cap so that the torque line on the cap passes the torque line on the vial.

Collection technique using broom like collection device

1. Obtain a sample from the cervix using a broom like device.
2. Rinse the collection device into a PreservCyt solution vial by pushing the brush into the bottom of the vial 10 times, forcing the bristles to bend apart to release the cervical material. As a final step, twirl the brush between the thumb and forefinger vigorously to further release cellular material. Discard the collection device.
3. Cap the PreservCyt vial tightly. Tighten the cap of the vial so that the black “torque” line on the cap passes the black “torque” line on the vial.

**Warning:** Do Not use Cytobrush Plus GT cell collector gently touch tip for endometrial sampling. **Use for cervical sampling only.** For endometrial sampling, use Medscand’s Endorette cannla. The Cytobrush device is not to be used on pregnant patients (due to insufficient clinical data).

Revised 1-4-07 cmw

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CLINICAL LABORATORY
3130 N. DIXIE HWY, TROY, OHIO 45373

# SCHEDULING AND REPORTING OF FROZEN SECTIONS, SCHEDULING AUTOPSIES AND REPORTING OF SURGICAL SPECIMENS

## SCHEDULING OF FROZEN SECTIONS:

Frozen sections are scheduled with the Histology department via their printer, from surgery scheduling. Scheduling is requested as soon as a surgery requiring a frozen section has been scheduled in O.R. The following information must be provided:

1. Date and time of surgery
2. Patient's full name
3. Patient's age and sex
4. Type of surgery
5. Surgeon
6. Type of anesthetic
7. If applicable, x-ray localization
8. If known, special instructions (ex. EM, cloning)

The histology tech will remove the scheduled frozen section printout from the printer; she will then log the frozen section onto the large desk calendar. The frozen section printout will then be given to the Pathology secretary; she will then look up any previous testing (Histology or Cytology). The Pathology secretary will return the frozen section print with any additional patient information to the Histology department and place the Frozen Section Patient information in the wall FS pocket. These will be filed in order of date of surgery.

## REPORTING OF FROZEN SECTIONS:

A Surgical Pathology requisition slip is to be completed with all appropriate data and submitted along with the specimen at the time of frozen section. A Frozen Section Report Form must also be completed at the time of frozen. The Pathologist doing the frozen will complete the Gross Pathology and Frozen Section Diagnosis section and sign the form. The histologist assisting may need to complete the top half of the form. The white copy will be given to surgery to be shown to the surgeon and then attached to the patient's chart. The yellow copy will be filed with the final Pathology Report in the Pathology Secretary's office. The histology tech will charge the appropriate charge/s. The Frozen Section QA sheet needs to be completed at the time of the frozen section listing all required information; this will be filled either by the Pathologist or the Histo tech assisting with the frozen section.

**SCHEDULING OF AUTOPSY:**

Autopsies are scheduled with the Pathologist. The Pathology Secretary will contact a diener to assist. During the hours that the Pathology secretary is not here, the tech in charge will notify the Pathologist of the autopsy and call for the diener.

REPORTING OF SURGICAL SPECIMENS:

Surgical reports are routinely rendered within 24 hours following surgery. The exceptions are those specimens that at collected late Friday and during the weekend, those specimens will be submitted on Monday. A specimen may be held over for proper fixation, decalcification or special stains, at the Pathologist's discretion.
Reporting will be performed through the Anatomic Pathology portion of the UVMC Cerner computer system. (See Pathology Transcription Procedure)

revised 09-24-06 cmw
supersedes procedure written: 9-4-98,02-29-00
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"GROSS ONLY" SPECIMENS TO BE DICTATED BY THE PATHOLOGIST

**PURPOSE:**

To establish a guideline that will be followed by both the UVMC Surgery units and the Histology department. Ensuring that specimens that require a "Gross Only status" will be processed as Gross Only specimens unless the processing pathologist determines that the specimen requires microscopic examination.

**CLINICAL SIGNIFICANCE:**

This process is to ensuring that all specimens are handled in the appropriate manner, aiding in the patient diagnosis, and possible patient treatment.

**PROCEDURE**:

The following list is a guideline for the Histology department to follow on which specimens will receive a "gross description only". Whenever there is a request by an attending physician, or at the discretion of the Pathologist when indicated by the clinical history or gross findings, microscopic examination will be done on any of the following:

Bone - without pathology
Calculus - Renal and bladder calculi are sent out for chemical analysis after Gross description. Histology department will send out.
Foreign body - example splinter, needle, glass, tick, fishhook
Hardware
Hernia sac
Hydrocele
Implants
Teeth
Toenail
Soft tissue following debridement
Tonsils - age 16 and under, unless enlarged or microscopic examination requested
Varicose veins

revised 10-13-08 cmw

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# UVMC POLICY FOR SURGICAL SPECIMENS EXCLUDED FROM SUBMISSION TO THE PATHOLOGY DEPARTMENT FOR EXAMINATION

PURPOSE: This policy is in place to insure the continuance of patient care.

PROCEDURE: See UVMC Organization/Functions of the Medical Staff, section E**)**
**EXAMINATION OF TISSUE BY PATHOLOGIST**

All pertinent, clinically relevant materials and tissues removed during operative and invasive procedures shall become the property of the hospital and shall be examined by the hospital pathologist whose report shall be a part of the patient's clinical record. The same applies to any pertinent tissue and/or cytological material and pertinent body fluid removed or obtained other than in surgery. Tissue and non-tissue specimens may be requested by the surgeon (medical staff practitioner) to be examined "gross only". This includes items to be identified and recorded for documentation purposes. These items may be examined microscopically as deemed appropriate, by the pathologist. All tissues received in the Histology department will be examined by a Pathologist after examination and opinion has been rendered the tissue may be sent out for consultation. Placentas shall be sent for pathological examination in accordance with The College of American Pathologists guidelines. Materials and tissues removed during an operative or invasive procedures that are not sent to pathology shall be described by the surgeon in the patient's, medical record.

Revised 12-29-08 cmw

Upper Valley Medical Center
Clinical Laboratory
3130 North Dixie Highway
Troy, Ohio 45373

**CENTRIFUGE OPERATION AND MAINTENANCE PROCEDURE**
For
**UVMC Laboratory**

PRINCIPLE:

The laboratory centrifuge is for the separation of the serum from the clot or the plasma from the cells of a specimen. The load on the centrifuge should be symmetrical before operating the unit. This is essential for safety in operating the unit and also prolongs the life of the centrifuge.

Please mix plasma and serum tubes appropriately when collected and follow the UVMC Laboratory's procedure titled *Processing Blood Specimens for Serum Testing* for proper clot formation before centrifugation of all serum specimens

1. Set the unit on a flat, sturdy surface. A centrifuge does need space for air circulation around it.

2. Plug into power supply.

3. Turn on the main power switch

4. Do a visual check. (rotor is in place and locking nut is tight---and that tube holders are in appropriate positions)

5. Load the centrifuge with tubes. Balance the tubes symmetrically and by fluid levels and by identical tube types. Properly balanced loads will improve sample separation and extend the life of the centrifuge.

6. Close the lid.

7. Each centrifuge will have a timer.
   Plasma and serum tubes that are less than or equal to 5 ml. are to be centrifuged for 10 mins.
   Plasma and serum tubes greater tham 5ml. are to be centrifuged for 15 mins.
   (some centrifuges may have different specification due to age of said centrifuges)
   (if a higher rpm is specified by the chemistry supervisor then a shorter spin time maybe used)
   (please see list for centrifuge exceptions)

8. Some centrifuges have a place to set speed (RPM's)---please refer to your specific centrifuge manual for this step. (3500 is the recommended speed)

9. Clean spillage as needed. (interior and exterior)

10. Listen for any unusual noise or vibrations. **(if anything out of the ordinary please stop centrifuge immediately)**

11. Clean spillage as needed. (interior and exterior) Weekly check off done in each dept.

**NOTE: DO NOT EVER OPEN THE LID WHEN CENTRIFUGE IS ROTATING.**

Please refer to the appropriate centrifuge manual for any troubleshooting and/or operating specifics.

**NOTE:** Centrifuge spills/broken tubes:

Shut off instrument and **leave centrifuge shut** for **30 minutes**. (allow for aerosols to settle)
**Always** wear gloves when cleaning up broken glass and spilled liquids.
**Always** use forceps or hemostat to remove the broken glass.
**Always** put the broken glass in an approved sharps disposal container.
**Never** operate the centrifuge in this condition.
The centrifuge **must** be disinfected before operation can resume.
Use **10% Bleach** when cleaning centrifuge interior and/or exterior.
After using the **10% Bleach on any part of the centrifuge**, **thoroughly rinse with water**.
Dry all parts as much as possible.

**ALWAYS STOP THE CENTRIFUGE IMMEDIATELY IF IT DOES NOT SOUND OR OPERATE RIGHT.**

**Please fill out an instrument problem log and forward to PI in the LAB ext 4734.**

Twice yearly, January and July, GE Service will do preventative maintenance checks.

REFERENCE:
Operating manual for Clinifuge or Medifuge or VanGuard or Horizon.

Revised procedure prepared by _____dss_____ date __04/24/08_____

Supersedes procedure written __07/31/06_____

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**CENTRIFUGE OPERATION AND MAINTENANCE PROCEDURE**
For
**Doctor's offices and Nursing Home Facilities**

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5. Load the centrifuge with tubes. Balance the tubes symmetrically and by fluid levels and by identical tube types. Properly balanced loads will improve sample separation and extend the life of the centrifuge.

6. Close the lid.

7. Each centrifuge will have a timer. All blood specimens are to be centrifuged for 15 mins. (unless it is noted otherwise per UVMC Laboratory) (please see list for centrifuge exceptions)
   (If you are using a VanGuard---please turn the timer clockwise all the way to 60 and then back to the time needed to centrifuge blood tubes.)

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**List of Commonly Used Medications Known to Induce Temporary Platelet Dysfunction**

## Medications Containing Nonsteroidal Anti-Inflammatory Agents:

Advil
Alka-Seltzer
Anacin
Anahist
Anaprox
APC
APC w/codeine
APC w/Demerol
A.S.A.
A.S.A. compound
A.S.A. compound w/codeine
Ascriptin A/D
Aspergum
Aspirin (USP)
Aspirin- childrens
Bayer Aspirin
Bayer Children's Aspirin
Bayer timed release
Bufferin
Calurin
Cama Inlay
Cope
Coricidin
Coricidin-D
Coricidin Demilets
Coricidin Medilets
Darvon w/A.S.A.
Darvon-N w/A.S.A.
Darvon compound
Dolene compound
Dristan
Easprin
Ecotrin
Empiral
Empirin
Empirin w/codeine
Emprazil
Emprazil-C
Equagesic
Excedrin
Excedrin PM
Fiorinal
Fiorinal w/codeine
Fizrin
4-way cold tablets
IBU (Ibuprofen Tablets)
Liquiprin
Lortab A.S.A.
Lodine Capsules
Measurin
Midol
Meclomen Capsules
Motrin
Nalfon
Naprosyn
Norgesic
Nuprin
PAC compound
PAC compound w/codeine
Pedia-Profen
Percodan
Ponstel
Relafen
Robaxisal-PH
Sine-OFF
St. Joseph's
St. Joseph's for Children
Super-Anahist
Synalogs
Synalogs-DC
Triaminicin
Toradol Vanquish

## Antibiotics:

Ampicillin
Chlortetracycline (Areomycin)
Carbenicillin
Nitrofurantoin (Furadantin)
Gentamicin
(Stelazine)
Cephalothin (Keflin)
Moxalactam
(Tofranil)
Nafcillin
Piperacillin
Quinacrine

## Anti-Inflammatory Drugs:

Sulfinpyrazone
Acetyl salicylic acid (Aspirin)
Colchicine
Ibuprofen (Motrin)
Indomethacin

Fenoprofen
Naproxen (Naprosyn)

Phenylbutazone
Mefenamic acid (Ponstel)

## Psychiatric Drugs:

Nortriptyline (Aventyl)
Amytriptyline (Elavil)
Desipramine (Norpramine)
Doxepin (Sinequan)
Tryfluoroperazine

Chlorpromazine (Thorazine)
Imipramine

**Cardiovascular/Respiratory**:
Aminophylline
Clofibrate
Phenoxybenzamine (Dibenzyline)
Dicumarol
Dihydroergotamine
Dipyridamone (Persantine)
Heparin
Hydralazine
Isoproterenol (Isuprel)
Nitroglycerin
Nitroprusside
Papaverine
Propranolol
Phentolamine (Regitine)
Reserpine
Theophylline
Verapamil

**Miscellaneous Drugs**:
Alcohol
Aminocaproic acid
Diphenhydramine (Benadryl)
Caffeine
Cyclosporine
Dextran
Glycerol guaiacolate
Hydroxyethl starch
Hydrocortisone
Methylprednisolone
Cyproheptadine
Promethazine (Phenergan)
Methysergide maleate
Tocopherol
Tranexamic acid
Vinblastine
Vincristine

**Anesthetics:**
Cocaine
Dibucaine (Nupercaine)
Procaine
Lidocaine (Xylocaine)

**Diuretics:**
Acetozolamide
Ethacrynic acid
Furosemide

**Antiplateltet Drugs**:
ReoPro
Integrelin
Aggrastat
Clopidogrel
Ticlid

## Medications Containing Aspirin

**Prescription:**
Aggrenox
Ascriptin w/Codeine Tablets
A.S.A. w/Codeine compound
Axotal Tablets
Bufferin w/ Codeine #3 Tablets
Darvon w/A.S.A Pulvules
Darvon compound-65
Disalcid Capsules
Easprin
Empirin w/codeine Tablets
Equagesic Tablets
Fiorinal Tablets
Fiorinal w/codeine
Magan Tablets
Micrainin tablets
Norgesic & Norgesic Forte Tablets
Pabalate-SF tablets
Percodan & Percodan-Demi Tablets
Robaxisal Tablets
Synalgos-DC Capsules
Trillsate Tablets & Liquid
Talwin compound
Zorprin Tablets

**Non-Prescription:**
Alka-Seltzer Effervescent tablets
Alka-Seltzer Plus Cold Medicine
Anacin Tabs & Caps. (Max strength)
Arthritis Str. Bufferin Tablet
A.S.A. Tablets
Ascriptin Tablets
Ascriptin A/D Tablets
Aspergum
Aspirin Tablet 5 grain
BC Tablets and Powder
Buffering Tablets
Cama Arthritis Pain Reliever
Congesprin Chewable Tablets
Cope Tablets
Coricidin D Decongestant Tablets
Coricidin Tablets
Doan's Pills
Ecotrin Tablets
Empirim Tablets
Excedrin Tablets & Capsules
4-Way Cold Tablets
Measurin Tablets
Midol Caplets

**Ibuprofen**:

The ibuprofen medications (such as **Advi**l, **Nuprin**, **Motrin**, etc.) also cause a tendency towards bleeding. For this reason avoid all ibuprofen medications beginning 2 days before testing.

Reference: PFA-100 System Getting Started/Training Guide – Dade Behring. 9020-6734 Revision B January 2004.

3/27/2007 pmc

# New Test Listing

The following pages contain information on new tests that have been added to the UVMC Laboratory compemdium. For each test listed, there is a discription of clinical application, methodology, result interpretation, limitations, specimen requirements, and reference values. For additional information contact the laboratory at 440-4335.

| Test | Date |
|---|---|