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**HERITAGE VALLEY
HEALTH SYSTEM**

**LABORATORY INFORMATION MANUAL
HVHS GUIDE TO LABORATORY TESTING**

PREPARED BY
DEPARTMENT OF PATHOLOGY
HERITAGE VALLEY BEAVER
HERITAGE VALLEY SEWICKLEY
HERITAGE VALLEY KENNEDY

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HERITAGE VALLEY HEALTH SYSTEM
LABORATORY PROCEDURE MANUAL

FOREWORD

The Laboratory Procedure Manual is arranged by Major Laboratory sections as indicated in the table of contents. Each test listing provides pertinent information concerning sample requirements, rejection, normal range, interpretation and availability.

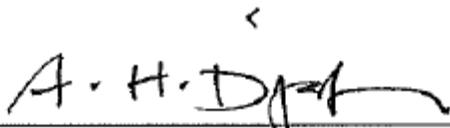
The list of tests in this manual does not represent the full scope of services available from the Laboratory. Information regarding procedures not listed in this manual may be obtained by calling the Laboratory.

The Laboratory pathologists and staff collectively compiled data for this manual. We will continually strive to update procedures, as new or improved test methods become available.



Carolyn C. Chen, MD

HVB, HVK Laboratory Medical Director



Azizeh H. Djafari, M.D.

HVS Laboratory Medical Director

QUALITY

The Heritage Valley Health System Laboratories are accredited by the College of American Pathologists, licensed by the Commonwealth of Pennsylvania, and meet the requirements of the Joint Commission, CLIA and other federal regulations. At least once each year an inspection is performed to confirm our continuing adherence to these rigorous professional standards.

Board-certified pathologists who are available 7 days per week, 365 days per year, direct the laboratories. Professional technical supervisors and analysts are employed; most of whom are registered by an outside credentialing organization, the American Society of Clinical Pathology (ASCP). Certification through the ASCP requires formal education, plus experience, plus passing a certification examination. In addition, current federal regulations require annual validation of each analyst's continuing competence.

Three times a year, every test performed in the Laboratory is checked by means of Proficiency testing samples obtained from the College of American Pathologists and other agencies. Unknown samples are analyzed for each of our tests. The results are submitted to the appropriate agency for evaluation and once completed, a formal report is issued. These evaluations are available for review.

Each day, quality control activities assure that the results for all tests are reproducible and accurate. Our technical supervisors and quality assurance supervisor monitor the results of these activities. Documentation showing the results of the various quality assessment and improvement processes is available for inspection at your request.

TURNAROUND TIME

The Laboratories provide service on routine tests 24 hours per day, 7 days per week. Requests for STAT service are handled as quickly as possible. If test performance requires more specialized staff, the specimen will be collected and preserved for later analysis, or sent to an outside reference laboratory. Tests referred to outside laboratories will ordinarily take a few days to be completed.

REQUESTING TESTS

According to CLIA-88 regulations, every order for laboratory testing must meet certain requirements:

- Testing can only be done at the written or electronic request of an authorized person.
- The request must contain the following: patient's name and unique identifier number, ordering physician, inpatient/outpatient location, tests to be performed, date of specimen collection, and any additional information relevant and necessary to a specific test in order to assure timely and accurate testing and reporting.
- For Pap smears, the patient's LMP, age and indication of previous abnormal reports, treatment, or biopsy is also required.

Standard request forms will be supplied which can be used to properly order tests. Also, proper use of computer terminals linked to the lab will result in a complete test request.

PATIENT PREPARATION

For many tests, appropriate preparation of the patient is necessary so that the results will be meaningful. For example, a fasting glucose or a HDL cholesterol both require that the patient fast for a period of time. Special instructions, if any are needed, will be found in the individual test listings in this manual.

SPECIMEN COLLECTION, PRESERVATION, AND TRANSPORTATION

Timing, collection technique, specimen container type, needed preservatives, and storage conditions must all be appropriate in order that the test results be valid. Instructions for adhering to these critical requirements are outlined in the individual test listing. If there is any question, please call the laboratory and inquire further.

PHLEBOTOMY PROCEDURE

SPECIMEN COLLECTION

1. Verify the identity of the patient as per HVHS Patient Care Manual, "Patient Identification and Banding." Explain to the patient the procedure that will be performed.
2. Follow all guidelines described in the Infection Control "Hand Hygiene" policy.
3. Gloves must be used when drawing blood. This is a regulatory and safety requirement.
4. Comply with any isolation procedures.
5. Assemble the necessary supplies for collecting the specimen.
6. Select the appropriate vein site.
7. Cleanse the patient's skin in the area from which blood is to be drawn. Move the alcohol pad in a circular motion from the center of the vein site outward. Allow the area to dry. If blood cultures have been ordered, follow defined skin cleansing procedure specific for blood cultures.
8. Perform the phlebotomy procedure making sure all tubes are filled until the vacuum is exhausted and blood flow stops. Gently invert tubes approximately eight to ten times. The order of draw is blood culture, blue, red or gold SST, green, purple, pink, then gray.

General reminders:

*Excessive probing is not recommended because it is painful to the patient and could cause tissue damage.

*The correct angle for inserting the needle is about 30 degrees or less.

*Blood should never be drawn from the same arm as a mastectomy. If the patient has a double mastectomy, ask the physician to write an order for where the blood should be drawn.

*If blood must be drawn from a patient with an IV, draw from the opposite arm or do a fingerstick if possible. If an IV is running in both arms and no other vein is available,

specimens may be drawn below the IV site and enter a comment into the computer that blood was drawn below an IV. If the blood must be collected from a site above the IV, request that an RN turn off the IV for at least two minutes preceding the draw. A waste tube should be collected and later discarded before drawing the tubes necessary for the tests. Any time specimens are collected from above an IV site, a comment must be entered in the computer noting that the specimen was collected above an IV site after the IV had been shut off for at least two minutes.

*A CBC or H&H should not be drawn until one hour after blood is done running. Other tests can be drawn from the opposite arm while blood is running.

*If a venipuncture cannot be successfully performed after two attempts, enlist the aid of a fellow phlebotomist. Remember to inform nursing that you were unable to obtain a specimen and that another phlebotomist will try. After two phlebotomists have tried the same patient unsuccessfully, contact the floor to let them know the situation so that the physician can be notified.

*Tubes should be immediately labeled in the presence of the patient. Follow department downtime procedures if computer labels are not available. The initials of the phlebotomist and the time/date of collection must be written on the labels. For Blood Bank samples, follow the Blood Bank downtime procedure.

*Properly dispose of contaminated materials and sharps in appropriate receptacles. Tie the tourniquet to the foot of the bed.

*STAT In-house specimens should be sent immediately to the Lab.

*Special Test Requirements:

Lactic Acids are to be drawn without a tourniquet and placed on ice.

Cleanse the patient's skin with iodine when drawing alcohols.

Use a butterfly when drawing Blood Cultures.

*Labels should be applied smoothly and vertically, using the barcode computer label. The name of the patient should appear closest to the top of a blood tube with the top of the label below the color bar. Do not write anything on or near the barcode.

CRITICAL RESULTS

All in-house STAT results are available immediately in the HIS as they are completed. All completed test results are immediately available electronically via the HER (CAP) as well.

Critical test values (results indicating a potentially life-threatening situation) are immediately called to the nursing unit and/or physician and results are read back by the person taking the result. These results are also flagged on reports, with a "C" to the right of the test result, and are annotated to indicate the time of notification and the initials of the laboratorian that called the result.

PATIENT REPORTS

The primary mode for reporting laboratory results is electronically to the Hospital HER (CAP and SCM).

Stat and Timed results are available electronically.

CUSTOMER SERVICE

If any questions should arise concerning laboratory service, please call the lab at (724) 728-4500. If the person answering this line is unable to provide the needed help, the following individuals are available:

Carol Sebastian - Laboratory Director

Leslie Hardy - Laboratory Manager

Carolyn C. Chen, MD - Chief Pathologist, Medical Director HVB and HVK

Azizeh Djafari, MD - Chief Pathologist, Medical Director HVS

Lynne Gallaher - Supervisor of Phlebotomy, Specimen Processing and Outreach

Tyler Raehn - Laboratory Quality Assurance/Automation Supervisor

Melissa Rafacz- - POCT Supervisor

Lisa Byerly – Supervisor of Hematology, Coagulation & Urinalysis

Paula Krechowski – Supervisor of Manual and Automated Chemistry

Tracy Dellorso – Supervisor of Blood Bank

Renee Palombi - Supervisor of Cytology & Histology

Dan Hewitt - Supervisor of Histology, HVS

Liz Forster - Supervisor of Microbiology & Immunology

Cheryl Bradley - Laboratory Information Specialist, HVB

Ruth Dinardo - Laboratory Information Specialist HVS, HVK

COMPUTER DOWNTIME

SCHEDULED DOWNTIME:

- Interfaces will be stopped between all systems.
- Arrangements are made with Hospital IS System for patient orders to be sent to the Lab system one day in advance to assure that no patient testing is missed.

Central Processing

- Tests to be drawn during the scheduled downtime that have not been previously ordered will be drawn and sent to the laboratory with a universal requisition. Patient Name, MR Number, Birth Date, collection time, collector's initials, and location must be recorded on this requisition. Patient name, birth date, collection time, and collector's initials must be on all specimens. Receipt time is recorded on the universal requisition when the specimen is received.

Technical areas:

- Samples are delivered to technical areas with a copy of the universal requisition.
- Samples run on the analyzers during downtime are manually programmed using first name, last name and MR number or date of birth.
- Patient result reports are printed by the analyzers. A copy of the universal requisition and results are retained in the performing department for manual result entry when system is functional.
- The CAP system is used to retrieve previously resulted tests.

Reporting:

- Following laboratory policy, all critical values and STATS will be called immediately and documented.
- Copies of the patient's results, universal requisition, and downtime form with the appropriate reference ranges are sent via pneumatic tube to inpatient floors and the ED. These forms are located in the laboratory in a central location. Specimens arriving in the lab with a previously ordered accession number will be attached to a departmental downtime requisition and given to the department for resulting.
- Any routine outpatient testing performed during downtime will be reported when the system is up and functional.

System Functional:

- ADT's and orders will pass to Laboratory System
- Laboratory staff will order all tests done during this time using the correct collection date and time from the downtime requisition.
- Each department will be responsible for verifying that all specimens have been accounted for and are resulted. Incomplete logs will be printed to verify that no outstanding orders have been missed.

UNSCHEDULED DOWNTIME:

- Unscheduled downtime is any time in which the system is unavailable without prior notification.

Central Processing:

- Inpatient units will send the universal requisition for any STAT or TIMED testing that needs to be performed during downtime. The universal requisition will be copied in the accession area and will be delivered to the department along with the patient samples. Patient Name, MR Number, Birth Date, collection time, collector's initials, and location must be recorded on this requisition. Patient name, birth date, collection time, and collector's initials must be on all specimens. Receipt time is recorded on the universal requisition when the specimen is received.
- Tests to be drawn during the scheduled downtime that have not been previously ordered will be drawn and sent to the laboratory with a Universal requisition. Patient Name, ID Number, Birth Date, ordering physician, and Location must be recorded on this requisition.

Technical areas:

- Samples are delivered to technical areas with a copy of the universal requisition.
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SECTION A - 1

ANATOMIC PATHOLOGY

HERITAGE VALLEY BEAVER, KENNEDY

BONE MARROW EXAMINATION

Department: Pathology

Sample Requirements: Buffered formalin (10%) in a plastic container with a tight fitting lid as well as coverslips and slides may be obtained in the Histology Lab. Aspirate and bone biopsy must be submitted to the Histology lab in formalin. Air-dried coverslips and/or slides may also be submitted to the Histology lab. Do Not Refrigerate.

Aspiration and core biopsy must be collected by clinician.

A "Receipt of bone Marrow" form must be filled out by the individual who transports the bone marrow specimen to the lab. The technician who receives the specimen is to sign the form. A purple pathology requisition must accompany the specimen.

Sample Rejection: Improper labeling, aspirate and/or bone biopsy submitted in anything other than 10% buffered formalin.

Normal Range: Result is interpretive.

Interpretation: The pathologist will provide a complete interpretation. This test is used to evaluate bone marrow morphology and iron stores, detect tumors, and diagnose hematological disorders.

Schedule: Mon-Fri 8 am to 4 pm, results available in 24 to 48 hours.

FROZEN SECTION – TISSUE

Department: Pathology

Sample Requirements: Submit tissue to Pathology immediately. May be submitted in saline, do not add fixative. Place tissue on saline-moistened gauze in a plastic bag or metal basin.

Deliver immediately to the Histology Laboratory and make technologist aware of the arrival of the specimen. A purple pathology requisition must accompany the specimen.

Normal Range: Result is interpretive.

Interpretation: Interpreted by the Pathologist. The frozen section can provide a quick, provisional diagnosis.

Schedule: Mon – Fri, 8 am to 4 pm or by special arrangement. Examination takes approximately 15 minutes per specimen.

STONE ANALYSIS

Department: Pathology

Sample Requirements: Submit in any clean, dry plastic container. Do not add any kind of fluid or fixative. If stones are very small, a plastic test tube can be used.

Sample Rejection: Unlabeled specimen.

Normal Range: Interpretive.

Interpretation:

Analysis will determine the stone's composition, allowing for the evaluation of the metabolic factors affecting stone formation.

Schedule: Submit anytime. Turn-around-time is 1-2 weeks.

TISSUE PATHOLOGY

Department: Pathology

Sample Requirements:

Small biopsies NOT MEANT FOR FROZEN SECTION may be submitted in formalin. All other tissues should be submitted unfixed. Containers of assorted sizes may be used. Unfixed specimens should be submitted on gauze moistened with saline.

Specimen should be brought to the Histology lab and placed in the refrigerator.

*Outpatient and GI lab biopsies should be submitted in formalin. 20ml containers of formalin can be obtained from the laboratory.

Sample Rejection: Improper label. Dried out sample.

Normal Range: Interpretive.

Interpretation: Histological diagnosis provided by the Pathologist.

Schedule: Mon – Fri 8 am to 4 pm. Results available in approximately 24 hours. Final typed report sent in 2 –3 working days

SECTION A - 2

**ANATOMIC PATHOLOGY
(HISTOLOGY)**

HERITAGE VALLEY SEWICKLEY

REQUIREMENTS FOR SPECIMENS

DEPARTMENT: Histology

Sample Requirements: If a specimen does not meet the following criteria it will result in rejection:

- Specimen bottle and requisition must be labeled with the proper patient identification (Label)
- The type of tissue being submitted must be on the specimen bottle and requisition.
- The specimen must be accompanied by a complete and correct requisition.
- The fixative or special handling instructions must be identified.
- Date specimen is collected.
- If the above mentioned requirements are not met, the specimen will be rejected. The reason for rejection is logged in the Specimen Rejection Log Book.

*The submitter of the specimen will be contacted and informed of the reasons for rejection.

*If corrective action is taken, the specimen will be accepted and processed as normal.

*If there is no corrective action taken, the specimen will be rejected and processing will not occur.

The accompanying requisition and specimen must be properly labeled!!!

Requisition is required to have the following information:

- Complete patient identification
- Location of patient
- Surgeon or submitting physician
- Clinical history (if possible)
- Pre and post-operative diagnoses
- Procedure
- Tissue being submitted
- Date of surgery

The specimen is required to have the following information:

- Complete patient identification
- Location of patient
- Surgeon or submitting physician
- Tissue contained in the specimen container
- Type of fixative contained in the bottle and any biohazard information regarding the fixative

BONE MARROW EXAMINATION

DEPARTMENT: Histology

Sample Requirements: Buffered Formalin (10%) in a plastic container with a tight fitting lid as well as slides and slide holders may be obtained from Central Services. The aspirate and bone biopsy must be submitted to the Histology laboratory in 10% formalin. Air-dried slides should also be submitted to the Histology laboratory along with a surgical pathology requisition.

Sample Rejection: Improper labeling; aspirate and/or bone marrow biopsy submitted in anything other than 10% formalin, inadequate specimen or no requisition

Normal Range: Result is interpretive

Interpretation: The pathologist will provide a complete interpretation. This test is used to evaluate bone marrow morphology and iron stores, detect tumors and diagnose hematologic disorders.

Schedule: Mon-Fr. 5 a.m. – 4 p.m. or by special arrangement.

FROZEN SECTIONS

DEPARTMENT: Histology

Sample Requirements: Submit tissue to histology department immediately.

Specimen must be submitted fresh. Do not add fixative. Place tissue in a plastic container. Call Pathology (ext. 7364) to notify them of the frozen section. Deliver specimen immediately to the frozen section room.

Sample Rejection: Improper labeling; tissue submitted in fixative (bone or calcified tissue cannot be examined in this fashion).

Normal Range: Result is interpretive

Interpretation: The pathologist will provide a complete interpretation. The frozen section provides a rapid diagnosis.

Schedule: Mon- Fri. 5 a.m. to 5 p.m. or by special arrangement.

GENETIC STUDIES (CHROMOSOME ANALYSIS)

DEPARTMENT: Histology

Sample Requirements: Submit tissue to Histology immediately.

Specimen should be placed in a sterile plastic container filled with saline and refrigerated upon delivery to the laboratory. A surgical pathology requisition with legible instructions (TO BE SENT FOR CHROMOSOME ANALYSIS) must accompany the specimen to the laboratory.

Sample Rejection: Improper labeling; tissue submitted in anything other than saline, improper or absent requisition.

Normal Range: Result is interpretive

Interpretation: The test is used to evaluate possible chromosomal abnormalities, expanded study of blood mosaicism, confirm genetic disease, and study metabolic defects and rule out chromosome abnormalities as cause of miscarriage.

Schedule: Mon-Fri. 5 a.m. to 5 p.m. or by special arrangement.

GROSS SURGICAL (BIOPSY) SPECIMEN

DEPARTMENT: Histology

Sample Requirements: Place specimens to be submitted for examination in a container of 10% formalin as soon as possible. Containers with 10% formalin in them are available from the Histology laboratory. Deliver the specimen and accompanying surgical pathology requisition to the laboratory.

Sample Rejection: Improper labeling, specimen submitted in anything other than 10% formalin; inadequate specimen; improper or no requisition

Normal Range: Interpretive

Interpretation: The pathologist will provide a complete interpretation. This test is used to evaluate abnormalities in the tissue biopsy if they exist.

Schedule: Mon- Fri. 5 a.m. to 5 p.m. or by special arrangement.

STONE ANALYSIS

DEPARTMENT: Pathology - Send out

Sample Requirements: Submit in any clean, dry plastic container. Do not add any fixative.

Sample Rejection: Improper labeling, improper or no requisition, inadequate specimen

Normal Range: Interpretive

Interpretation: Analysis will determine the stone's composition, allowing for the evaluation of the metabolic factors affecting stone formation.

Schedule: Submit anytime. Turn-Around-Time: 1-3 weeks

SURGICAL PATHOLOGY REQUISITIONS

DEPARTMENT: Histology

Sample Requirements: All specimens must be accompanied by a surgical pathology or tissue exam requisition.

The requisition must be completed in the following areas:

- Proper patient identification (Label)
- Clinical history (if possible)
- Pre and Post-Operative diagnosis
- Procedure
- Surgeon and handling nurse or assistant
- Location of patient
- Date Collected

*These requirements must be met all the time. If they are not met the specimen will be rejected.

Sample Rejection: The specimen will only be accepted if the requisition is accompanying the specimen and all of the proper identification is present on the specimen and the requisition

SECTION B
BLOOD BANK

BLOOD BANK

TELEPHONE:

Heritage Valley Beaver- 724 773-7680

Heritage Valley Sewickley- 412 749-7012

Heritage Valley Kennedy- 412 777-6379

Check for Availability of T&S Sample or Ready to Issue Units

Check SCM Blood Bank Results section for current T&S Sample or “Ready to Issue” units before placing an additional order for a T&S or blood products.

Call Blood Bank before placing an Order for a T&S or Blood Products.

This eliminates duplicate orders, unnecessary sample collections and delays in transfusion.

When calling for information, give 2 patient identifiers-full name and birth date.

Blood Bank Sample Collection and Labeling Requirements

-Engage the patient in the identification process

-Check patient’s full name, birth date and for inpatients also check the medical record number.

-After collecting the blood specimen, immediately label it in the presence of the patient.

-All hospital locations and draw sites will label the specimen with the appropriate patient’s Lab Label.

-Record collector’s initials and date and time of collection onto lab label attached to the blood specimen.

Tube types

Collect one 6 ml Pink top for a T&S

Collect one 3 ml Purple top for a 2nd sample.

Collect one 3 ml Purple top for a Direct Coombs

Collect one 3 ml Purple top for a Cord blood (Blood Type and DAT) or a purple top microtainer for a baby’s heel stick

Collect one 6 ml pink top for an Immediate Transfusion Investigation. A urine sample is not required unless requested by blood bank.

Procedure for Release of Blood or Blood Products

Blood or blood products may only be released to a person licensed to administer blood.

Complete the green “Obtaining Blood Product Form”

Place a chart label with patient’s name, date of birth and MR# on the form

Clearly print the first initial and last name of the Requesting RN

Clearly print the name of the Ordering physician

Check the Requested blood product

Check special needs or none

Record the RN phone extension and Transport station # if the blood is to be sent through the tube transport system.

Either take this form and a copy of the signed blood consent to the blood bank or for tube transport send this form and the copy of the signed blood consent form to the blood bank transport station #123 at Beaver or laboratory transport station # 3 at Sewickley.

Note: The blood bank calls when blood products are ready. Or, check for the blood product availability-status Ready to Issue in SCM before sending the green Obtaining blood product form to the blood bank.

For a Patient in the Operating Room, complete the Intra Operative Blood Product Order and Issue form and take this form and the original signed blood consent to the blood bank to obtain blood products.

Turn Around Time (TAT) for Blood Product Receipt

Type & Screen (T&S)	STAT	60 minutes
	ROUTINE	Processed in the course of routine work schedule

*Times are based on the receipt of a properly labeled, non-hemolyzed specimen
 Pink top tubes must be completely filled with blood. Short draw samples may not have adequate volume for testing.

	CROSSMATCHED RBCs		
No Current T&S at time of RBC Order	Antibody Screen Negative	60 minutes	
	Antibody Screen Positive	Minimum 2 hours	Depending on complexity of antibody identification, 2-8 hours. If Reference Lab testing is required, 1-3 days. RN will be notified if there is a delay in blood product availability.
T&S Complete at time of RBC Order	Antibody Screen Negative	15 minutes	IM SP X-Match
	Antibody Screen Positive	60 minutes	AHG X-Match A minimum of 2 antigen negative RBCs are automatically crossmatched whenever a positive antibody screen is detected. If multiple antibodies are present, it may be several hours or days before antigen negative RBCs are available. Rn will be notified if there is a delay in blood product availability.

T&S Complete at Time of RBC Order and Type Confirmed Twice	Antibody Screen Negative	5 minutes	Electronic X-Match
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SPECIAL NEED PRODUCTS	<p>100% OF ALL Red Blood Cells and Platelet Pheresis products received from the ARC are Leukocytes Reduced. (Leukocytes reduced products are CMV Safe.)</p> <p>Requests for special products such as Irradiated or Irradiated and CMV negative may require an 8-24 hour advance notice.</p> <p>Emergency delivery of special products will take 4 hours.</p>
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<p>CALL BLOOD BANK FOR</p> <p>Emergency Release of</p> <p>UNCROSSMATCHED RBCs</p>	<p>Immediately Available</p> <p>Requires patient's Medical Record Number</p> <p>O Neg units released for children and women in child bearing age</p> <p>O Pos released for adult males and women out of child bearing age</p> <p>Requesting physician must document reason and sign emergency release statement on the transfusion record attached to each product.</p>
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Blood Product	Availability
Fresh Frozen Plasma (FFP)	20 minutes to thaw 2 units
Blood Type must be confirmed once each admission. Antibody screen not required.	30 minutes to thaw 4 units
Single Donor Platelet Pheresis (SDP)	5 minutes →available inventory
Type required if unknown If confirmed historical blood type is available, no additional type is required.	1-2 hours→transfer from other campus

<p>Antibody screen not required</p>	<p>3-4 hours→order from blood supplier</p> <p>NOTE: Platelet pheresis products required for elective surgery or outpatient transfusion should be ordered the day before the day of the scheduled procedure.</p>
<p>Cryoprecipitate- Pool of 5</p> <p>Type required if unknown If confirmed historical blood type is available, no additional type is required. Antibody screen not required</p>	<p>20 minutes to thaw</p>

ANTIBODY SCREEN/ INDIRECT COOMBS

Department: Blood Bank

Sample requirements: Draw one 6 ml pink top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Mislabeled specimen (NO INITIALS, DATE OR TIME OF COLLECTION ON SPECIMEN); hemolyzed specimen.

Normal Range: Negative

Interpretation: Detect the presence of antibodies in patient's serum. If positive, antibody identification will be performed.

Schedule: Available 24 hours per day.

ANTIBODY TITER

Department: Blood Bank

Sample Requirements: 6 ml pink top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Mislabeled specimen (NO INITIALS, DATE OR TIME OF COLLECTION ON SPECIMEN), hemolyzed specimen.

Normal Range: Highest dilution (1, 2, 4, 8, 16, 32, 64, 128, 256, 512)

Interpretation: Results of the titer show the highest dilution at which a clinically significant red cell antibody can be detected.

Schedule: Available weekdays.

CORD BLOOD Neonatal type and DAT

Department: Blood Bank

Sample Requirements: Cord Blood sample collected in a purple EDTA tube labeled with both baby and mother's identification.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Mislabeled specimen (No initials, date or time of collection on specimen)

Normal Range: Negative for Direct Coombs test.

Interpretation: Determine Baby's ABO & Rh type and Direct Coombs result.

Schedule: Available 24 hours a day.

CRYOPRECIPITATE-Pool of 5

Department: Blood Bank

Sample Requirements: Call Blood Bank. Type required if unknown. If confirmed historical blood type is available, no additional type is required.

Sample Rejection: Mislabeled specimens (No initials, date or time of collection on specimen).

Normal Range: Dosing should be based on patient weight (One concentrate per 7-10 kg of body weight).

Interpretation: Used for replacement of fibrinogen. Cryo is indicated when the fibrinogen level decreases below 100 mg/dl.

Schedule: Frozen pooled product available. Product preparation approximately 25 min.

DIRECT COOMBS

Department: Blood Bank

Sample Requirements: Draw one 3 ml purple-top EDTA tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Mislabeled specimen (No initials, date or time of collection on specimen).

Normal Range: Negative

Interpretation: Used to detect IgG and complement antibodies bound to patient's red cells.

Schedule: Available 24 hours per day.

FETAL SCREEN

Department: Blood Bank

Sample Requirements: Draw one 3 ml purple-top EDTA tube from an Rh negative mother who has delivered an Rh positive baby. Collect as soon as possible after delivery but not within the first hour after delivery.

Transport/special handling: Deliver to lab immediately.

Sample Rejection: Mislabeled specimen (No initials, date or time of collection on specimen).

Normal Range: Negative

Interpretation: Used to detect Rh positive red blood cells in an Rh negative mother. If test result is negative then one 300ug dose of RhoGAM will be sufficient to prevent Rh immunization.

If test is positive, a Kleihauer-Betke test will be ordered and tested at the ITxM reference lab to determine the quantity of the fetal bleed. Additional doses of RhoGAM may be required.

Schedule: Available 24 hours per day.

FRESH FROZEN PLASMA

Department: Blood Bank

Sample Requirements: Call Blood Bank. Type must be confirmed one time each admission.

Normal Range: Dosing should be based on patient's weight. An initial dose of FFP is 10-20 ml/kg

Interpretation: FFP is appropriate for replacement of clotting factors. To correct warfarin effect in cases of active bleeding (subdural hemorrhage) or emergent surgery (INR > 1.5)

Schedule: Frozen product available. Prep for product approximately 30 min.

APHERESIS PLATELETS Leukocytes Reduced (CMV Safe)

Department: Blood Bank

Sample Requirements: Call Blood Bank. Type required if unknown. If confirmed historical blood type is available, no additional type is required.

Normal Range: One single donor platelet pheresis is equivalent to a therapeutic adult dose.

Interpretation: Platelet transfusions are administered to control or prevent bleeding associated with deficiencies in platelet number or function.

Schedule: Available on request. May take 3 to 4 hours to receive product from supplier.

RED BLOOD CELLS LEUKOCYTE REDUCTED (CMV-SAFE)

Department: Blood Bank

Sample Requirements: Call Blood Bank or check in SCM for blood product availability- Ready to Issue Current Type and screen collected within the last three days is required.

Normal Range: Minimum number of units needed to improve symptoms. Single unit transfusions are an acceptable practice.

Interpretation: Red cells should be used when there is a need for improved oxygen carrying capacity.

Schedule: Available 24 hours per day.

RhIG EVALUATION for Rho (D) IMMUNE GLOBULIN (RhoGAM)

Department: Blood Bank

Sample Requirements: 6 ml pink top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Mislabeled specimen (no collector's initials or date and time of collection)

Normal Range: N/A

Interpretation: Rho (D) immune globulin is given to Rh-negative women after the delivery of an Rh-positive baby; termination of pregnancy by spontaneous or induced abortion; following amniocentesis or abdominal trauma and ante-natal at 28 weeks.

Schedule: Available 24 hours a day.

TYPE ABO/RH (INFANT ONLY) NEONATAL TYPE

Department: Blood Bank

Sample Requirements: Heel stick collected in an EDTA microtainer.

Transport/special handling: Mix thoroughly immediately after collection. Microtainer tubes are highly susceptible to clotting during collection. Deliver to lab immediately.

Sample Rejection: Mislabeled specimen (No initials, date or time of collection on specimen). Hemolyzed specimen.

Normal Range: Type A, B, O, or AB. Rh positive or negative.

Interpretation: Determine infants ABO and Rh blood type.

Schedule: Available 24 hours a day.

TYPE ABO/RH

Department: Blood Bank

Sample Requirements: Draw one 6 ml pink top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Mislabeled specimen (No initials, date or time of collection on specimen)
Hemolyzed specimen.

Normal Range: Type A, B, O, or AB. Rh positive or negative.

Interpretation: Determine patient's ABO and Rh Blood Type.

Schedule: Available 24 Hours per day.

TYPE & SCREEN

Department: Blood Bank

Sample Requirements: Draw one 6 ml pink top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Mislabeled specimen (No initials, date or time of collection on specimen)
Hemolyzed specimen.

Normal Range: Negative (no antibodies detected)

Interpretation: Determine ABO, Rh and screen for unexpected antibodies.

Schedule: Available 24 hours per day.

TRANSFUSION REACTION INVESTIGATION

Department: Blood Bank

Sample Requirements: Draw one 6 ml pink top tube. Urine sample is not required unless requested by blood bank.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Mislabeled specimen (No initials, date or time of collection on specimen), hemolyzed specimen.

Normal Range: No evidence of hemolysis. Immediate investigation result will be called to RN. Pathologist summary will follow in 1 to 3 days.

Interpretation: Immediately notify both the attending Physician and Blood Bank. Complete transfusion reaction Document in SCM.

Schedule: Available 24 hours a day.

UNCROSSMATCHED BLOOD

To Request Uncrossmatched Blood:

- Call the Blood Bank.
- Provide Blood Bank Tech with the Medical Record number of the patient requiring uncrossmatched blood.
- Type O Pos blood will be released to all male patients and any female patient age 56 or older. Type O Neg will be released to all female patients age 55 or younger.
- The Emergency Transfusion Release form is part of the Transfusion Record that will be attached to each uncrossmatched unit of blood.
- After the emergency is over, the ordering physician is required to sign and document the clinical reason for the uncrossmatched blood in the Emergency Transfusion Release section on the Transfusion Record.
- A copy of each signed record is sent to the Blood Bank.
- The original signed records are placed on the chart.
- As soon as possible, order a Type and Screen on the patient who received uncrossmatched blood. Collect and send a blood specimen to the Blood Bank.
- If additional RBC's are required, place an order for more RBC's.
- The Blood Bank will complete compatibility testing on the unit that was released uncrossmatched.
- Any problems with compatibility testing will be immediately reported to the ordering physician.

SECTION C - 1

CYTOLOGY

HERITAGE VALLEY BEAVER, KENNEDY

CYTOLOGY - BRUSH BIOPSY

Sample Requirements: Applies to bronchial, esophageal, gastric, colonic, tracheal, urethral, and common bile duct brushings.

Submit disposable brushes in a 4 oz. plastic container half-full of saline. (Containers, coplan jars, and slides are available in the Cytology Laboratory.)

Deliver brushes in saline immediately to the Cytology Laboratory and place in the refrigerator. Smear submitted in alcohol are delivered to the Cytology Lab, but need not be refrigerated.

Sample Rejection: Improper labeling; air-dried smears; brushes sent in anything other than saline.

Normal Range: Negative for malignant cells. A complete descriptive report by the pathologist will be issued on each brush biopsy.

Interpretation: The test is used to establish the presence of primary or metastatic neoplasm, and to aid in the diagnosis of respiratory infections.

Turn-Around-Time: 24-Hours / Mon. -- Fri, 8AM to 4 PM.

CYTOLOGY – BODY FLUIDS

Sample Requirements: Applies to Pleural, Thoracentesis, ascetic, paracentesis, pericardial, pericardiocentesis, cyst (renal, ovary) joint fluids and biliary drainage fluid.

Submit fresh fluid containing no fixative.

Use any clean, dry container appropriate to the technique used for collection of the specimen. If culture of the fluid is also anticipated, the container needs to be sterile.

Deliver immediately to the Cytology Laboratory and place in the refrigerator.

Indicate the type of fluid on the label.

Sample Rejection: Unlabeled specimen. Addition of fixative of any type. Left at room temperature overnight.

Normal Range: These fluids should be negative for malignant cells. A complete descriptive report will be issued on each body fluid submitted for cytological evaluation.

Interpretation: Used to establish the presence of primary or metastatic neoplasm.

Turn-Around-Time: 24-Hours / Monday – Friday 8 AM to 4 PM.

CYTOLOGY – BREAST DISCHARGE

Sample Requirements: Applies only to nipple discharge of the breast. Smears are obtained from the breast nipple discharge and immediately fixed. DO NOT AIR-DRY.

Place fixed smears in a cardboard slide container. (All supplies available from the Laboratory). Refrigeration is not necessary for fixed specimens.

Sample Rejection: Improper labeling. Air-dried smears. Unlabeled smears.

Normal Range: Negative for malignant cells. A complete descriptive report will be issued by the Pathologist.

Turn-Around-Time: 24-Hours / Monday – Friday, 8 AM to 4 PM.

CYTOLOGY – SILVER STAIN

Sample Requirements: Clean dry container for cytology specimens. Tissue specimens should be submitted in formalin. Bring specimen to Cytology and refrigerate.

Applies to bronchial, gastric, tissues and all body fluid specimens.

Sample Rejection: Improper labeling. Failure to store in refrigerator.

Normal Range: Absence of fungus/pneumocystic organisms.

Interpretation: This technique is used to examine tissue/fluids for fungal organisms or pneumocystis carinii organisms.

Turnaround time is 24 - 48 hours. Mon - Fri, 8:00 a.m. to 4:00 p.m. Stat requests available after hours and weekends by discussing with pathologist on call.

CYTOLOGY – SPUTUM

Sample Requirements: A fresh, unfixed sputum specimen is necessary. A deep cough specimen is required. Inhalation therapy technique has proven very helpful in obtaining a satisfactory sputum. Three random samples are recommended.

A 4 oz. wide mouth plastic container with a tight fitting lid is available in the Laboratory for use in sputum collection. If culture is also required, a sterile container must be used.

Sputums are to be brought to the Cytology Lab immediately after collection and placed in the refrigerator.

Sample Rejection: Improper labeling. Fixation of any kind. Inadequate specimen (usually not a deep-cough specimen, but only saliva). Left at room temperature for several hours.

Normal Range: A complete descriptive report will be issued on each sputum submitted.

Interpretation: The test is used to establish the presence of primary or metastatic neoplasm, and to aid in the diagnosis of respiratory infections.

Turn-Around-Time: 24-Hours / Monday – Friday, 8 AM to 4 PM.

CYTOLOGY - URINE

Sample Requirements: A random sample of either voided or catheterized urine is obtained from a well-hydrated patient.

Submit the urine in a clean container with a tight fitting lid. If culture is also needed on the same sample, a sterile container is needed.

Sample Rejection: Improper labeling. Fixation of any kind. Overnight storage at room temperature. No 24-Hour urines or first morning specimens are accepted.

Normal Range: A complete descriptive report will be issued on each urine sample submitted.

Interpretation: The test is used to establish the presence of primary or metastatic neoplasm, and to aid in the diagnosis of urinary infection.

Turn-Around-Time: 24-Hours / Monday – Friday, 8 AM to 4 PM.

CYTOLOGY - WASHINGS

Sample Requirements: Applies to bronchial, gastric, renal pelvis and bladder washings.

An appropriate clean, dry container is used for collection of the specimen.

Unfixed bronchial washings and renal pelvic washings and bladder washings should be brought immediately to the Cytology Lab and placed in the refrigerator.

Sample Rejection: Improper labeling. Fixation of any kind. Failure to store refrigerated.

Normal Range: A complete descriptive report will be issued for each sample submitted.

Interpretation: Used to establish the presence of primary or metastatic neoplasm.

Turn-Around-Time (T.A.T.): 24-Hours / Monday – Friday, 8 AM to 4 PM.

FINE NEEDLE ASPIRATIONS

DEPARTMENT: Cytology

Sample Requirements: A small cell sample is obtained, by the radiologist, the clinician in his office, or at the patient's bedside. Express the sample into 30cc of Cytolyte fluid and deliver to the Cytology Lab. No refrigeration necessary. Cytolyte fixative may be obtained in the Cytology Lab.

Sample Rejection: Improper fixation. Unlabeled specimen.

Normal Range: A complete descriptive report will be issued on each fine-needle biopsy submitted.

Interpretation: This technique is used to examine the cytological characteristics of various tissue samples.

Turn-Around-Time: 24-Hours / Monday – Friday, 8 AM to 4 PM.

FINE NEEDLE ASPIRATION (ASSISTED)

Sample Requirements: A small cell sample is obtained by the Radiologist. A cytologist will come to radiology to properly prepare the specimen.

Sample Rejection: Inadequate specimen

Normal Range: A complete descriptive report will be issued on each fine-needle aspiration submitted.

Interpretation: This technique is used to examine the cytological characteristics of various tissue samples.

Turn-Around-Time: Rapid H&E stain 15 minutes, Cytology stain, 45 minutes.

PAP SMEAR

DEPARTMENT: Cytology

Sample Requirements: A cervical smear taken from the cervical os is recommended in all cases. For hormonal evaluation (Maturation Index), submit a scraping from the upper 1/3 of

the lateral vaginal wall. For detection of vaginal adenosis, submit vaginal scrapings uncontaminated by contact with the cervix. For lesions of the vagina or vulva, prepare smears directly from lesion. Supplies are available from the Cytology lab.

Immediate fixation after preparing the smear is imperative. After fixation, the smears need no refrigeration.

Sample Rejection: Unlabeled specimens, improper fixation. Air-dried smears.

Normal Range: A complete descriptive report will be issued on each case.

Interpretation: Applies to vaginal, cervical, or vulvar smears; and vaginal/cervical smears submitted for maturation index, evaluation for herpes, and evaluation for trichomonas, evaluation for monilia and for determination of vaginal adenosis. Used to establish the presence of primary or metastatic neoplasms, to evaluate hormonal function, and to aid in the diagnosis of genital infection.

Turn-Around-Time: 24-Hours to 72-Hours.

THINPREP PAP TEST

Department: Cytology

Intended Use: The ThinPrep 2000 system is intended as a replacement for the conventional method of Pap smear preparation for use in screening for the presence of atypical cells, cervical cancer, or its precursor lesions (Low Grade Squamous Intraepithelial Lesions, High Grade Squamous Intraepithelial Lesions), as well as all other cytologic categories as defined by The Bethesda System for Reporting Cervical/Vaginal Cytologic Diagnoses.

Summary and Explanation of the System: The ThinPrep process begins with the patient's gynecologic sample being collected by the clinician using a broom-type or endocervical brush/plastic spatula combination which, rather than being smeared on a microscope slide, are immersed and rinsed in a vial filled with PreservCyt Solution. The ThinPrep sample vial is then capped, labeled, and sent to the laboratory.

Limitations: Gynecologic samples collected for preparation using the ThinPrep 2000 System should be collected using a broom type or endocervical brush/plastic spatula combination.

Supplies used in the ThinPrep 2000 System are those designated and supplied by Cytec Corporation specifically for the ThinPrep 2000 System. These include PreservCyt Solution Vials, TransCyt Filters, and ThinPrep Microscope Slides. These supplies are required for proper performance of the system and cannot be substituted. Product performance will be compromised if other supplies are used. After use, supplies should be disposed of in accordance with local, state and federal regulations.

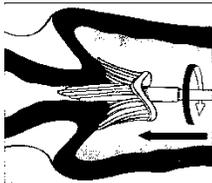
Warnings: PreservCyt Solution contains Methanol which is poisonous and may be fatal or cause blindness if swallowed. Methanol vapor may be harmful. PreservCyt Solution is flammable; keep away from fire, heat, sparks, and flame. Other solutions must not be substituted for PreservCyt Solution. PreservCyt Solution should be stored and disposed of in accordance with local, state, and federal regulations.

Precautions: The storage limit for cells in PreservCyt is 3 weeks at 4 to 37 degrees Celsius.

As with all laboratory procedures, universal precautions should be followed.

ThinPrep® Pap Test™ Quick Reference Guide

Broom-Like Device Protocol



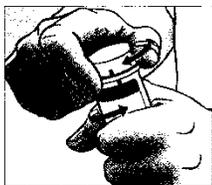
Obtain...

...an adequate sampling from the cervix using a broom-like device. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction five times.



Rinse...

...the broom as quickly as possible into the PreservCyt® Solution vial by pushing the broom into the bottom of the vial 10 times, forcing the bristles apart. As a final step, swirl the broom vigorously to further release material. Discard the collection device.



Tighten...

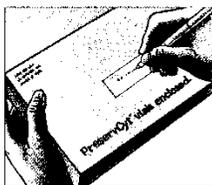
...the cap so that the torque line on the cap passes the torque line on the vial.



Record...

...the patient's name and ID number on the vial.

...the patient information and medical history on the cytology requisition form.



Place...

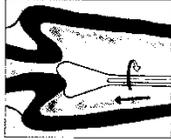
...the vial and requisition in a specimen bag for transport to the laboratory.

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Endocervical Brush/Spatula Protocol



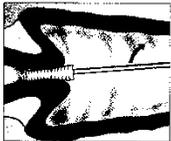
Obtain...

...an adequate sampling from the ectocervix using a *plastic* spatula.



Rinse...

...the spatula as quickly as possible into the PreservCyt® Solution vial by swirling the spatula vigorously in the vial 10 times. Discard the spatula.



Obtain...

...an adequate sampling from the endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottom-most fibers are exposed. Slowly rotate $\frac{1}{4}$ or $\frac{1}{2}$ turn in one direction. DO NOT OVER-ROTATE.



Rinse...

...the brush as quickly as possible 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 brush.



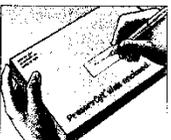
Tighten...

...the cap so that the torque line on the cap passes the torque line on the vial.



Record...

...the patient's name and ID number on the vial.
...the patient information and medical history on the cytology requisition form.



Place...

...the vial and requisition in a specimen bag for transport to the laboratory.

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SECTION C - 2

CYTOLOGY

HERITAGE VALLEY SEWICKLEY

CYTOLOGY - BODY FLUIDS

DEPARTMENT: Cytology

Sample Requirements: Applies to pleural, thoracentesis, ascetic, paracentesis, pericardial, CSF, pericardiocentesis, cyst (renal, ovary), or joint fluids.

Submit 50 ml or more fresh fluid containing no anticoagulant or fixative. Minimum volume is 5 ml.

Use any clean, dry container appropriate to the technique used for collection of the specimen. If culture of the fluid is also anticipated, the container needs to be sterile. Label container with patient name, another patient identifier and source of specimen.

*CSF – Submit fluid unfixed in plain red top tube or spinal fluid tube. Label tube with patient's name, another patient identifier and source of specimen.

Deliver immediately to the Cytology Laboratory and place in the refrigerator.

Indicate the type of fluid on the label.

Submit specimen with a completed cytology/surgical pathology requisition indicating specific site and clinical history.

Sample Rejection: Unlabeled specimen. Addition of fixative of any type. Left at room temperature overnight.

Normal Range: A complete descriptive report will be issued on each body fluid submitted for cytological evaluation.

Interpretation: Used to establish the presence of primary or metastatic neoplasm.

Turn-Around-Time: 24 hrs. /Mon-Fri, 8 a.m. to 4 p.m.

If cell block preparation and/or special stain is required, there will be an additional charge and the turnaround time will be extended.

CYTOLOGY - BREAST DISCHARGE

DEPARTMENT: Cytology

Sample Requirements: Applies only to nipple discharge of the breast. Smears are obtained from the breast nipple discharge and immediately spray fixed. Do not air-dry.

Label smears with patient name and birthdate. Place fixed smears in a cardboard slide container (All supplies available from the laboratory).

Refrigeration is not necessary for fixed specimens.

Submit specimen with a completed cytology requisition indicating specific site and clinical history.

Sample Rejection: Improper or unlabeled slides. Air dried smears.

Normal Range: A complete descriptive report will be issued by the pathologist.

Interpretation: This test is used to establish the presence of primary or metastatic neoplasm. Diagnosis is dependent on adequate cellular material.

Turn-Around-Time: 24 hrs. /Mon-Fri, 8 a.m. to 4 p.m.

CYTOLOGY - BRUSH BIOPSY

DEPARTMENT: Cytology

Sample Requirements: Applies to bronchial, esophageal, gastric, colonic and tracheal brushings.

Submit disposable brushes in a container prefilled with cytology fixative. Label container with patient name, another identifier and source of specimen.

Submit specimen with a completed cytology/surgical pathology requisition indicating specific site and clinical history.

Sample Rejection: Improper labeling. Improper fixative.

Normal Range: A complete descriptive report will be issued on each specimen submitted.

Interpretation: This test is used to establish the presence of primary or metastatic neoplasm, and to aid in the diagnosis of infections.

Turn-Around-Time: 24 hrs. /Mon-Fri, 8 a.m. to 4 p.m.

If cell block preparation and/or specimen stain is required, there will be an additional charge and the turnaround time will be extended.

CYTOLOGY - BUCCAL SMEAR

DEPARTMENT: Cytology

Sample Requirements: Call the cytology laboratory. Smears will be obtained by the cytotechnologist. The technologist will deliver the fixed smears in a cardboard container to the laboratory. Refrigeration is unnecessary for fixed smears.

Sample Rejection: Improper fixation. Air-dried smears. Too few cells.

Normal Range: Male: 0 to 10% of cell displaying Barr Bodies
Female: 20% or more cells displaying Barr Bodies

Interpretation: Used to determine the presence of sex chromatin.

Turn-Around-Time: 24 hrs. /Mon-Fri, 8 a.m. to 4 p.m.

FINE NEEDLE ASPIRATE

DEPARTMENT: Cytology

Sample Requirements: Applies to aspirations of palpable masses, lymph nodes, cysts, thyroid and salivary gland.

Express the specimen directly into a jar which contains Saccomanno fluid. A minimum of two separate passes should be done. When finished, rinse the needle in the Saccomanno fluid and send directly to the laboratory. Print patient name, another identifier and source of specimen on container.

Fixed smears are still acceptable, but are not the procedure of choice. Label the slide with the patient name and source of specimen. Touch the end of the needle to the glass slide and express one to two drops of material. Place a second slide on top of the first, allow the drop to spread and gently pull slides apart. Spray fixed slides immediately. When finished, rinse the needle in the Saccomanno fluid and send directly to the laboratory. Print patient name and source of specimen on container.

Submit with a completed cytology requisition specifying the source of the specimen along with clinical history and clinical impression. Indicate if this specimen is from a solid mass or a cyst. If the patient has a known history of malignancy, please include that on the requisition along with the reason for doing the aspiration.

Sample Rejection: Improper labeling, improper fixation

Normal Range: A complete descriptive report will be issued by a pathologist.

Interpretation: This test is used to establish the presence of primary or metastatic neoplasm. Diagnosis is dependent on adequate cellular material.

Turn-Around-Time: 24 hrs. /Mon-Fri, 8 a.m. to 4 p.m.

If cell block preparation and/or special stain is required, there will be an additional charge and the turnaround time will be extended.

PAP SMEAR

DEPARTMENT: Cytology

Sample Requirements:

CONVENTIONAL PAP SMEAR: A cervical smear taken from the cervical os is recommended in all cases. For hormonal evaluation (Maturation Index), submit a scraping from the upper 1/3 of the lateral vaginal wall. For detection of vaginal adenosis, submit vaginal scrapings uncontaminated by contact with the cervix. For lesions of the vagina or vulva, prepare smears directly from lesion. Supplies are available from the Cytology lab.

Immediate fixation with Spray-Cyte after preparing the smear is imperative. After fixation, the smears need no refrigeration. Submit the smear, labeled with the patient name in a cardboard folder/mailler.

THIN PREP PAP TEST: Submit specimen in PreservCyt Solution vial which contains 20 ml of PreservCyt Solution. Print patient name, another patient identifier and specimen source on vial.

Submit specimen with a completed cytology/surgical pathology requisition indicating specific site and clinical history, including LMP, previous abnormal cytology and/or pathology and hormone RX.

Sample Rejection: Unlabeled specimens. Improper fixation. Air dried smears. PAP specimens submitted in other than PreservCyt Solution will be forwarded to an outside reference laboratory.

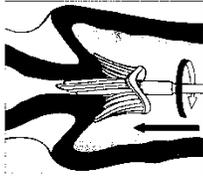
Normal Range: A complete descriptive report using the Bethesda System will be issued on each case.

Interpretation: Applies to vaginal, cervical or vulvar smears; and vaginal/cervical smears submitted for maturation index (hormonal evaluation requires a lateral vaginal wall smear and cannot be performed on ThinPrep specimens), evaluation for herpes, evaluation for trichomonas, evaluation for monilia and for determination of vaginal adenosis. Used to establish the presence of primary or metastatic neoplasms, to evaluate hormonal function and to aid in the diagnosis of genital infection.

Turn-Around-Time: 48 to 72 hours

ThinPrep® Pap Test™ Quick Reference Guide

Broom-Like Device Protocol



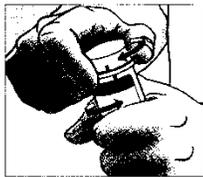
Obtain...

...an adequate sampling from the cervix using a broom-like device. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction five times.



Rinse...

...the broom as quickly as possible into the PreservCyt® Solution vial by pushing the broom into the bottom of the vial 10 times, forcing the bristles apart. As a final step, swirl the broom vigorously to further release material. Discard the collection device.



Tighten...

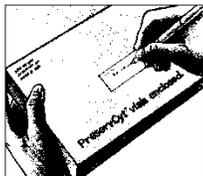
...the cap so that the torque line on the cap passes the torque line on the vial.



Record...

...the patient's name and ID number on the vial.

...the patient information and medical history on the cytology requisition form.



Place...

...the vial and requisition in a specimen bag for transport to the laboratory.

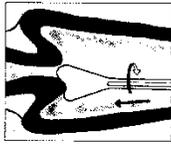
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Endocervical Brush/Spatula Protocol



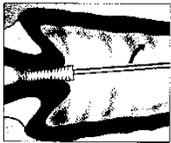
Obtain...

...an adequate sampling from the ectocervix using a *plastic* spatula.



Rinse...

...the spatula as quickly as possible into the PreservCyt® Solution vial by swirling the spatula vigorously in the vial 10 times. Discard the spatula.



Obtain...

...an adequate sampling from the endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottom-most fibers are exposed. Slowly rotate $\frac{1}{4}$ or $\frac{1}{2}$ turn in one direction. DO NOT OVER-ROTATE.



Rinse...

...the brush as quickly as possible 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 brush.



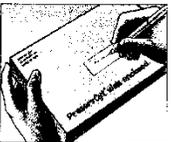
Tighten...

...the cap so that the torque line on the cap passes the torque line on the vial.



Record...

...the patient's name and ID number on the vial.
...the patient information and medical history on the cytology requisition form.



Place...

...the vial and requisition in a specimen bag for transport to the laboratory.

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CYTOLOGY - SPUTUM

DEPARTMENT: Cytology

Sample Requirements: A fresh sputum specimen is necessary. A deep cough specimen is required. Inhalation therapy technique has proven very helpful in obtaining a satisfactory sputum. Three random samples are recommended.

A 4 oz. wide-mouth plastic container pre-filled with cytology fixative with a tight fitting lid is available in the laboratory for use in sputum collection. If culture is also required, a separate sterile container must be used. Print patient name, another patient identifier and specimen source on container. If specimens are obtained on more than one day and submitted together, mark the date obtained on each container.

Sputums are to be brought to the Cytology department immediately after collection and placed in the refrigerator.

Sample Rejection: Improper labeling. Inadequate specimen (If pulmonary macrophages are not identified, specimen will be reported as unsatisfactory for adequate evaluation)

Normal Range: A complete descriptive report will be issued on each sputum submitted.

Interpretation: This test is used to establish the presence of primary or metastatic neoplasm and to aid in the diagnosis of respiratory infections.

Turn-Around-Time: 24 hrs. /Mon-Fri, 8 a.m. to 4 p.m.

If cell block preparation and/or special stain is required, there will be an additional charge and the turnaround time will be extended.

CYTOLOGY - URINE

DEPARTMENT: Cytology

Sample Requirements: A random sample of either voided or catheterized urine is obtained from a well-hydrated patient.

Submit the urine in a clean container with a tight fitting lid. If culture is also needed on the same sample, a sterile container is needed. Print patient name and another patient identifier on container.

Indicate on requisition if voided or catheterized specimen.

Sample Rejection: Improper labeling. Overnight storage at room temperature. No 24-hour urines accepted.

Normal Range: A complete descriptive report will be issued on each urine sample submitted.

Interpretation: This test is used to establish the presence of primary or metastatic neoplasm and to aid in the diagnosis of urinary infection.

Turn-Around-Time: 24 hrs. /Mon-Fri, 8 a.m. to 4 p.m.

CYTOLOGY - WASHINGS

DEPARTMENT: Cytology

Sample Requirements: Applies to bronchial, gastric, bladder and renal pelvis washings.

A clean, dry container is used which is appropriate to the technique used for collection of the specimen. Label specimen with patient name and another patient identifier.

Unfixed gastric washings should be placed on ice immediately after collection and brought to the Cytology lab and placed in the refrigerator. Unfixed bronchial, bladder and renal pelvic washings should be brought immediately to the Cytology lab and placed in the refrigerator.

Submit specimen with a completed cytology/surgical pathology requisition indicating specific site and clinical history.

Sample Rejection: Improper labeling. Fixation of any kind. Failure to store refrigerated.

Normal Range: A complete descriptive report will be issued for each sample submitted.

Interpretation: Used to establish the presence of primary or metastatic neoplasm.

Turn-Around-Time: 24 hrs. /Mon-Fri, 8 a.m. to 4 p.m.

If cell block preparation and/or special stain is required, there will be an additional charge and the turnaround time will be extended.

SECTION D

GENERAL LABORATORY

REFERENCE LAB TESTING/DO NOT DRAW for SATELLITE SITES

CHEMISTRY

MANUAL CHEMISTRY

HEMATOLOGY

IMMUNOLOGY

REFERENCE LAB TESTING

Many tests not listed in the following sections are available through reference lab testing. The main reference lab utilized by Heritage Valley laboratory services is Quest Diagnostics. For questions about tests not listed in the following manual sections, please consult the laboratory directly to determine if testing is available through Quest and specimen collection/transport requirements.

The following is a list of reference lab tests that require special handling and should **NOT** be drawn at off-sites. These tests must be collected directly at a hospital draw-site.

18-Hydroxycorticosterone, HPLC MS/MS
ADAMTS13 Activity
Adrenocorticotrophic Hormone (ACTH)
Amino Acids Quant by LC-MS/MS, Plasma
Antithrombin, Enzymatic (Activity)
APC Resistance
Arginine Vasopressin Hormone
BCR/ABL P210
Blood cultures—not a reference lab test, but requires special collection technique. Should be drawn by trained lab staff only regardless of draw-site location.
BRACA 1 and BRACA 2 (Myriad Genetic Labs)
Bupropion (Wellbutrin)
C. trachomatic Culture
C-1-Esterase Inhibitor, Functional
Carnitine Free and Total
Catecholamine Fractionation, Plasma
CD4/CD8 flow cytometry
CH 50 Compliment Activity Enzyme
Cryofibrinogen
Cryoglobulin
Factor IX, Activity
Factor VII, Activity
Factor VIII:C, Activity
Factor X, Activity
Factor XI, Activity
Factor XII, Activity
Factor XIII, Activity
Flow Cytometry
Flow for PNH
Glucagon Level
Glucose 6PD (Glucose 6-phosphate dehydrogenase)
Heparin Anti-Xa, Unfractionated
Heparin-Induced Thrombocytopenia Abs PF4
Hexagonal Phospholipid Neutral
Histamine, Plasma
Interleukin 6
Lupus Anticoagulant Reflexive Panel

M. tuberculosis by Quantiferon—Can be drawn at offsite but must be drawn **only** Mon-Thurs before 1PM. Also, tube must be **FULL** or reference lab will not accept.

Metanephrines, Plasma (Free)
Niacin (Vit B3)
NMP22, Urine
PNH
Porphyrins, Total, Plas/Serum
Pregnenolone
Protein C, Functional
Protein S, Functional
Pyruvic Acid
Raji Cell Immune Complex Assay
Renin Activity
Substance P
T and B cell quant (CD4/CD8) by flow
Thrombin time with reflex to 1:1 mix
Thrombotic Risk Screen
Urine Myoglobin
Vasoactive Intestinal Polypeptide
Very Long/Branched-Chain Fatty Acids
Vitamin B1 (thiamine), whole blood
Vitamin B2 (riboflavin)
Vitamin B6 (Pyridoxal 5-Phosphate)
Vitamin C (Ascorbic Acid), Plasma
Vitamin K
Von Willebrand Factor Antigen
Von Willebrand Panel
Xylose Absorption (25g) Adult

ACETAMINOPHEN

Department: Chemistry

Sample Requirements: 5 ml BLOOD: Draw one red top. DO NOT draw in Serum or Plasma Separator (gel) tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen, gross hemolysis, SST tube

Normal Range: Refer to lab report.

Interpretation: Hepatic damage may occur if serum concentration is greater than 120 mcg/ml at 4 hours after ingestion, or greater than 50 mcg/ml at 12 hours after ingestion Half-life can sometimes be used to judge toxicity: the usual half-life is 2-3 hours. If it increases to 4 hours or more, therapy with N-acetylcysteine is indicated.

Schedule: Available 24 hours a day.

ACETONE-HVK ONLY

Department: Manual

Sample Requirements: 3 ml BLOOD: Draw one red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimens

Normal Range: Negative

Interpretation: Used in the diagnosis of ketonemia and ketoacidosis resulting from Diabetes Mellitus, starvation and other metabolic disorders.

Schedule: Available 24 hours a day.

ALBUMIN - SERUM

Department: Chemistry

Sample Requirements: Draw one light green-top SST tube or one gold SST tube.

NOTE: If IgG Synthesis Ratio is ordered, the serum Albumin and IgG are included in that order.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimens.

Normal Range: Refer to lab report.

Interpretation: Useful as an aid in the diagnosis of chronic diseases. Decreased in thermal burns, trauma and crush injuries, nephrotic syndrome, neoplasms, Crohn's disease, collagen disease and other chronic states.

Schedule: Available 24 hours a day.

ALCOHOL BLOOD

Department: Chemistry

Sample Requirements: Site of venipuncture must be swabbed with a nonalcoholic anti-septic such as zepharin or betadine

LEGAL: 7 ml BLOOD: Draw 2 gray-top tubes with legal tape on top.

Must have chain of custody form with specimen.

MEDICAL: Draw one gray-top, red top or light green top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: Normal is negative. Levels higher than 300 can be toxic.

Interpretation: Isopropanol has a 0.2% cross-reactivity. Lower limit of detection for ethanol is 10 mg/dl for blood.

Schedule: Available 24 hours a day.

ALKALINE PHOSPHATASE

Department: Chemistry

Sample Requirements: Draw one light green SST tube. Gold SST tube also acceptable.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Increased in hepatic, bone and pulmonary disorders

Schedule: Available 24 hours a day.

ALPHA –1 ANTITRYPSIN

Department: Chemistry

Specimen Requirements: Draw one light green top or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Decreased or nearly absent levels can be a factor in chronic obstructive lung disease and liver disease.

Schedule: Available 24 hours a day.

ALPHA FETOPROTEIN (TUMOR MARKER)

Department: Chemistry

Specimen Requirements: Draw one light green (preferred) or one gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Values elevated 90% in patients with Hepatocellular Carcinoma. Also elevated in Endodermal sinus tumor, embryonal carcinoma, teratocarcinoma and choriocarcinoma. A low incidence of elevations occur in a variety of tumors especially carcinoma of the stomach, pancreas and biliary tract. AFP is not a screening test.

Schedule: Available 24 hours a day. NOTE: DO NOT order for Maternal Screen.

AMMONIA- PLASMA

Department: Chemistry

Sample Requirements: 5 ml BLOOD: Draw one purple top tube.

Transport/special handling: Test should generally **NOT** be drawn at off-sites. Place tube on ice immediately after collection. Test within 20 minutes, or freeze separated plasma.

Sample Rejection: Unlabeled or incorrect tube and sample at room temperature.

Normal Range: Refer to lab report.

Interpretation: Elevated in fulminant hepatic failure, Reye syndrome, cirrhosis, gastrointestinal bleeding or portal-systemic shunting of blood.

Schedule: Available 24 hours a day.

AMYLASE, SERUM

Department: Chemistry

Sample Requirements: Draw one light green (preferred) or one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Elevated in parotitis, pancreatitis, intestinal obstruction, biliary tract disease, pancreatic cysts, peritonitis, and renal failure and in certain lung and ovarian tumors.

Schedule: Available 24 hours a day.

AMYLASE - (2- 4 HR) or RANDOM URINE

Department: Chemistry

Sample Requirements: Collect a two (2) to four (4) hour urine collection. Submit the entire collection. Collect in clean container with no preservatives.

Transport/special handling: Refrigerate till transport to lab.

Label container with patient's name, location, and starting and completion time and date.

Sample Rejection: Improper label on specimen

Normal Range: Refer to lab report.

Interpretation: Elevated in acute pancreatitis

Schedule: Available 24 hours a day.

ANA (Anti-nuclear antibody) *includes anti-centromere antibodies

Department: Immunology

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: A positive ANA result includes an ANA titer. Immunofluorescent screening tests for a wide variety of antinuclear antibodies associated with autoimmune diseases.

Schedule: Turn-around-time 2 to 3 days.

ANTI-PHOSPHOLIPID ANTIBODIES (IgG, IgA, AND IgM)

Department: Manual Chemistry

Sample Requirements: Draw one gold SST, green, or blue top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen.

Normal Range: See Report.

Interpretation: Used as an aid in the diagnosis of Antiphospholipid Syndrome or SLE-like disorders

Schedule: Available Monday through Friday, daylight shift.

ANTI-CCP (Cyclic Citrullinated Peptide)

Department: Chemistry

Patient Preparation: None

Sample Requirements: Draw one Green top or one Gold top.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: > 3 days old at 2-8 °C

Normal Range: ≤ 17.0 U/mL

Interpretation: Immunoassay for the in vitro semi-quantitative determination of human IgG autoantibodies to cyclic citrullinated peptides in human serum and plasma. The results of the assay are intended to be used as an aid in the diagnosis of rheumatoid arthritis in combination with other clinical and laboratory findings.

Schedule: Testing performed twice weekly on Mondays and Thursdays.

ANTI-DNA (NATIVE, DOUBLE-STRANDED)

Department: Immunology

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: See Report

Interpretation: Native double-stranded DNA (DS-DNA) is found in 5-60% of patients with SLE. Drug-induced SLE is negative for DS-DNA. In 3-9% of rheumatoid arthritis patient's positive DS-DNA results are seen.

Schedule: Turn-around-time 3 to 5 days.

ANTI-MITOCHONDRIAL ANTIBODY

Department: Immunology

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Found in about 85% of patients with primary biliary cirrhosis but almost never in diffuse extra-hepatic biliary obstruction. May also be found in active chronic hepatitis and cryptogenic cirrhosis.

Schedule: Turn-around-time 2 to 3 days

ANTI-SMOOTH MUSCLE ANTIBODY

Department: Immunology

Sample Requirements: Draw one gold SST or red-top tube.
Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Found in about 80% of patients with chronic active hepatitis (Lupoid hepatitis) and in patients with biliary cirrhosis.

Schedule: Turn-around-time 2 to 3 days.

ANTI THYROID ANTIBODIES

Department: Chemistry

Sample Requirements: Draw plain red or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled tube.

Normal Range: Refer to lab report.

Interpretation: To identify thyroid autoimmune disease such as Hashimoto's Thyroiditis and Graves Disease.

Schedule: Testing performed Tuesday and Friday, daylight shift.

APTT-Activated Partial Thromboplastin Time

Department: Hematology

Sample Requirements:
Submit one full blue-top tube. Gently invert tube 7 times to mix after draw.

Transport/special handling: Stable for 4 hrs @ room temp for patients on heparin, 24 hours for those who are not.

Sample Rejection: Unlabeled specimen; clotted sample; specimen tube not full

Normal Range: Refer to lab report.

Interpretation: The APTT test should be used to monitor the use of unfractionated heparin. The therapeutic APTT target should be 1.5-2.0 times the base APTT value. The APTT test is

generally insensitive to the effects of low molecular weight heparin and should not be used to monitor this anticoagulant.

Schedule: Available 24 hours a day.

ARTERIAL BLOOD GAS

Department: Manual Chemistry

Sample Requirements: Draw one **dark** green tube, whole blood.

Transport/special handling: Testing must be completed within 30 minutes of collection, so do **not** draw at off-sites. Hospital draw-site collection only. Keep specimen at room temp.

Sample rejection: Unlabeled specimen, received >30 minutes past collection.

Normal Range: Refer to lab report.

Schedule: 24 hours

ASO (Anti-Streptolysin O)

Department: Chemistry

Sample Requirements: Draw one light green SST tube. One gold SST tube also acceptable.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Document exposure to streptococcal streptolysin O.

Schedule: Available 24 hours a day.

AST (SGOT)

Department: Chemistry

Sample Requirements: Draw one light green-top (preferred) or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Markedly elevated in viral hepatitis. Lesser elevations are seen in liver cell necrosis or injury of any kind, and in necrosis or trauma to heart or skeletal muscle.

Schedule: Available 24 hours a day.

ALT (SGPT)

Department: Chemistry

Sample Requirements: Draw one light green SST tube (preferred) or one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: ALT (SGPT) is present in very high amounts in liver and kidney. Liver cell necrosis of any cause will result in ALT elevations in the blood.

Schedule: Available 24 hours a day.

BOH (B-HYDROXBUTYRATE)-HVB and HVS

Department: Chemistry

Sample Requirements: Submit one gold, one purple, or one green top tube

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Important as an aid in cases of ketoacidosis

Schedule: Available 24 hours a day

BASIC METABOLIC PANEL

Department: Chemistry

Sample Requirements: For best results, an overnight fasting sample is preferred. Draw one light green SST (preferred) or gold (SST) tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: See Individual Tests.

Schedule: Available 24 hours a day

BENCE-JONES PROTEIN (Urine)

Department: Manual Chemistry

Sample Requirements: For random urine, collect first morning specimen. For 24 hour urine, collect all urine voided in a 24 hour period in a specimen jug with no preservative.

Transport/special handling: Refrigerate during collection.

Sample Rejection: Unlabeled specimen or improper collection.

Normal Range: Refer to Lab report.

Interpretation: Used to characterize the species of protein or proteins in the case of proteinurias and to identify the presence of free monoclonal light chains (Bence - Jones protein).

Schedule: Monday – Friday daylight shift only.

BILIRUBIN PROFILE - (TOTAL +CONJUGATED)

Department: Chemistry

Sample Requirements: Draw one light green gel separator tube (preferred) or one gold SST tube.

Transport/special handling: Protect from direct light.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Schedule: Available 24 hours a day.

BILIRUBIN- DIRECT

Department: Chemistry

Sample Requirements: Draw one light green gel separator tube (preferred) or one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Elevated in intrahepatic and extrahepatic biliary tree obstruction, hepatocellular damage, and cholestasis.

Schedule: Available 24 hours a day

BILIRUBIN- NEONATAL (< 15 DAYS OLD)

Department: Chemistry

Sample Requirements: From heel stick, use plain microtainer. For venous specimens, use light green or red top tube.

Transport/special handling: Deliver to lab immediately.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to evaluate hemolytic disease of the newborn

Schedule: Available 24 hours a day.

BILIRUBIN- TOTAL

Department: Chemistry

Sample Requirements: Draw one light green gel separator or one gold SST tube.

Transport/special handling: Protect from direct light.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Elevated in hepatocellular damage (inflammatory, toxic, neoplastic), intra- and extra-hepatic biliary tree obstruction, hemolytic diseases, neonatal physiological jaundice.

Schedule: Available 24 hours a day.

BILIRUBIN- UNCONJUGATED

Department: Chemistry

Sample Requirements: Draw one light green (preferred) or one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Increased plasma unconjugated bilirubin is commonly seen in hemolytic disorders.

Schedule: Available 24 hours a day.

PRO BNP – B TYPE NATRIURETIC PEPTIDE

Department: Chemistry

Sample Requirements: Draw one light green or one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: To identify patients suffering from Congestive Heart Failure and to monitor treatment.

Schedule: Available 24 hours a day

BUN- (BLOOD UREA NITROGEN)

Department: Chemistry

Sample Requirements: Draw one light green-top tube (preferred) or one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Elevated in impaired kidney function.

Schedule: Available 24 hours a day.

CALCIUM BLOOD

Department: Chemistry

Sample Requirements: Draw one light green-top tube (preferred) or one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Serum calcium is elevated in cases of hyperparathyroidism and in many neoplastic processes. Decreased serum calcium is seen in Vitamin D deficiency and inadequate nutrition. Since about half of serum calcium is protein bound, serum albumin and calcium values tend to parallel one another.

Schedule: Available 24 hours a day.

CALCIUM- 24 HR URINE

Department: Chemistry

Sample Requirements: Submit a 24 Hour urine collection. Label container with patient's name, location, and starting and completion time and date. If more than one container is needed, please indicate on each container, "1 of 3", "2 of 3", etc.

Transport/special handling: Refrigerate 24-hour urine container during collection.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: The test has little practical value in differential diagnosis.

Schedule: Available 24 hours a day

CALCIUM- IONIZED- BLOOD

Department: Manual Chemistry

Sample Requirements: Draw in a dark green top tube. Do not spin. Send immediately.

Transport/special handling: Test should only be ordered/drawn at hospital draw sites, as testing must be completed within 30 minutes of collection.

Sample Rejection: Unlabeled specimen. Uncapped tube.

Normal Range: Refer to lab report.

Interpretation: Ionized calcium reflects calcium metabolism better than total calcium measurements. It is useful in determining the physiologically active Ca level in patients with altered proteins and in disturbances of acid base metabolism.

Schedule: Available 24 hours a day

CA 125

Department: Chemistry

Specimen Requirements: Draw one light green (preferred) or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: NOT FOR SCREENING PURPOSES. CA 125 is a glycoprotein expressed by >80% of nonmucinous ovarian epithelial neoplasms and is useful in periodically following patients after treatment. Caution must be exercised in interpreting results, as CA 125 may be elevated in non-cancerous conditions.

Schedule: Available 24 hours a day.

CA 19-9

Department: Chemistry

Sample Requirements: Draw one light green (preferred) or one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Gross hemolysis or unlabeled specimen.

Normal Range: Refer to Lab report.

Interpretation: Ca 19-9 has been reported as elevated in 70 to 80% of pancreatic carcinomas, 50 to 60% of gastric cancers and 60% of hepatobiliary cancers. It should not be used as a screen, as it may also be elevated in non-cancerous conditions.

Schedule: Available 24 hours a day.

CA 15.3

Department: Chemistry

Specimen Requirements: Draw one red top or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Measurement of CA 15.3 in women with treated carcinoma of the breast may be useful for predicting early recurrence of disease. Measurement of CA 15.3 is not useful to screen women for carcinoma of the breast.

Schedule: 24 hours per day/7 days per week

CARBAMAZEPINE (TEGRETOL)

Department: Chemistry

Sample Requirements: Sample time: draw specimen prior to next dose. 5 mL BLOOD: Draw one red-top tube. DO NOT draw in Serum or Plasma Separator (gel tube).

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen. Serum Separator tube.

Normal Range: Refer to lab report.

Interpretation: Anti-convulsant medication

Schedule: Available 24 hours a day.

C – PEPTIDE

Department: Chemistry

Patient preparation: Patient should fast 12 – 14 hours

Specimen Requirements: Draw one light green or gold SST tube. Send specimen to lab immediately.

Transport/special handling: Send specimen to lab immediately. Sample stability is 4 hours at room temp, 24 hours refrigerated or 30 days at –20 degrees.

Specimen Rejection: Unlabeled specimen. Received beyond stability window.

Normal Range: Refer to lab report.

Interpretation: To identify diminished levels caused by insulin dependent diabetes or as a response to exogenous insulin, as well as elevated levels due to increased Beta cell activity of insulinomas.

Schedule: Available 24 hours a day.

CARBOXYHEMOGLOBIN

Department: Chemistry

Sample Requirements: Draw one dark green top tube or whole blood in syringe.

Transport/special handling: Test should only be ordered/drawn at hospital draw sites, as testing must be completed within 30 minutes of collection.

Sample Rejection: Unlabeled specimen, incorrect tube, received >30 minutes from collection.

Normal Range: Refer to lab report.

Interpretation:

Non-smoker: less than 2.0%

Smoker: 4 to 12%

Critical: greater than 20%

Schedule: Available 24 hours a day.

CARDIAC HIGH SENSITIVE CRP

Department: Chemistry

Sample Requirements: Draw one gold SST or light green tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Lipemia, Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to assess the risk of cardiovascular and peripheral vascular disease.

Schedule: Available 24 hours a day.

CBC (COMPLETE BLOOD COUNT)

Department: Hematology

Sample Requirements: Draw one purple-top tube. For finger-stick, utilize the microtainer blood collector with EDTA anticoagulant. Gently invert the tube 7 times to mix.

Transport/special handling: Stable 24 hrs @ room temp, 48 hrs refrigerated.

Sample Rejection: Unlabeled or clotted specimen.

Normal Range: Refer to lab report for age specific normal ranges.

Interpretation: Used to examine various features of anemias, infections, leukemias and other hematologic disorders.

Schedule: Available 24 hours a day.

CEA (Carcinoembryonic Assay)

Department: Chemistry

Specimen Requirements: Draw one gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: CEA assay is used to help monitor patients with various types of malignancies, evaluate response to therapy and as a possible indicator of recurrence or prognosis. CEA levels are elevated in smokers, patients with inflammation, inflammatory bowel disease, pancreatitis, some patients with hypothyroidism, cirrhosis and in some patients with noncolorectal neoplasms.

Schedule: Available 24 hours a day.

CELIAC DISEASE PANEL

Department: Manual Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Test panel includes IgA, Transglutaminase IgG/IgA, and Gliadin IgG/IgA.

Schedule: Available Monday through Friday, daylight.

CELL COUNT FLUID

Department: Hematology

Sample Requirements: Identify clearly on the label the SOURCE OF THE FLUID, as well as the patient identification information. Send to the lab immediately.

Transport/special handling: Transferring a partial amount of the fluid to a purple-top tube prior to transport can help prevent clotting which could affect analysis. Joint fluids are particularly prone to such clots. Ideally performed within 1 hour of collection. Can be stored up to 24 hrs refrigerated.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: The presence of cells in any fluid other than CFS is considered to be abnormal. Predominance of lymphs suggests a chronic inflammatory condition, while segs or histiocytes indicate acute inflammatory process.

Schedule: Available 24 hours a day.

CELL COUNT- SPINAL FLUID

Department: Hematology

Sample Requirements: Send immediately to Laboratory

Transport/special handling: Ideally performed immediately upon collection. Can be stored 24 hrs refrigerated if necessary.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Test results will aid in cases of viral meningitis, bacterial meningitis, subacute arachnoid hemorrhage, etc.

Schedule: Available 24 hours a day.

CERULOPLASMIN

Department: Chemistry

Specimen Requirements: Draw one light green or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Decreased in most instances of Wilson's disease. Used to evaluate Chronic Active Hepatitis, cirrhosis and other liver disease.

Schedule: Available 24 hours a day.

CHOLESTEROL

Department: Chemistry

Sample Requirements: Overnight fasting recommended. Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Used to evaluate risk of cardiovascular heart disease.

Schedule: Available 24 hours a day.

CIRCULATING ANTICOAGULANT (MIXING STUDY)

Department: Hematology

Sample Requirements: Submit one blue-top tube.

Transport/special handling: Must be received by lab within 2 hours of collection.

Sample Rejection: Unlabeled or clotted specimen; tube not full

Normal Range: Refer to lab report.

Interpretation: If the abnormal Protime and/or APTT corrects with normal plasma to the normal range, the problem is a factor deficiency. If correction does not occur, a circulating anticoagulant is present.

Schedule: Available 24 hours a day.

CHLORIDE

Department: Chemistry

Sample Preparation: None

Sample Requirements: One light Green top or Gold top SST tube

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: >3 days old

Normal Range: 96-108 mmol/L

Interpretation: Useful in evaluation of fluid and electrolyte balance. Increased in renal failure, acidosis, and dehydration. Decreased in metabolic alkalosis, renal tubular acidosis, diuresis and gastrointestinal disorders.

Schedule: 24 hours a day

CHLORIDE URINE (RANDOM OR 24 HOUR)

Department: Chemistry

Sample Preparation: None

Sample Requirements: Random Urine or 24 Hour urine – no preservative – refrigerated

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: >3 days old

Normal Range:

Infant: 2-10 mmol/day

Child: 15-40 mmol/day

Thereafter: 110-250 mmol/day (diet dependent)

Interpretation: Useful in evaluation of fluid and electrolyte balance.

Schedule: 24 hours a day

C3 COMPLEMENT

Department: Chemistry

Specimen Requirements: Draw one light green or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to detect inborn C3 complement factor deficiency or an immunologic disease in which complement is consumed at an increased rate. (E.g. SLE, Chronic Active Hepatitis, etc.)

Schedule: Available 24 hours a day.

C4 COMPLEMENT

Department: Chemistry

Specimen Requirements: Draw one light green or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to detect individuals with inborn C4 complement factor deficiency or with an immunologic disease in which complement is consumed at an increased rate.

Schedule: Available 24 hours a day.

CARBON MONOXIDE (COHB)

Department: Manual chemistry

Specimen Requirements: Draw one **dark** green tube.

Transport/special handling: Do **NOT** spin down. Test must be completed within 30 minutes of collection and thus should **NOT** be drawn at off-sites. Should be collected directly at a hospital draw-site. Keep specimen at room temperature.

Specimen Rejection: Received >30 minutes past collection.

Normal Range: Refer to lab report.

Schedule: Available 24 hours a day.

CO2 BICARBONATE

Department: Chemistry

Sample Preparation: none

Sample Requirements: Green Top or Gold Top tube refrigerated

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: >2 days old

Normal Range: 22-29 mmol/L

Interpretation: In vitro test for the quantitative determination of bicarbonate (HCO_3^-) in human serum and plasma on Roche automated clinical chemistry analyzers.

Schedule: 24 hours a day

COMPREHENSIVE PANEL

Department: Chemistry

Sample Requirements: For best results, an overnight fasting sample is preferred. Draw one light green or gold (SST) tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: See Individual Tests.

Schedule: Available 24 hours a day.

CORTISOL

Department: Chemistry

Specimen Requirements: Draw one light green or gold top SST tube.

Note: Cortisol levels fluctuate by time of day. It is important to specify if patient is to have level drawn in AM or PM. AM specimen should be drawn between 7 – 10 AM. PM specimen should be drawn between 4 – 8 PM.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to establish the diagnosis of adrenocortical insufficiency, Addison disease, and adrenocortical hypersecretion and Cushing syndrome. Malfunction of the organs in the hypothalamic-pituitary-adrenal cortex axis will result in alteration of the cortisol levels.

Schedule: Available 24 hours a day.

CPK (TOTAL ONLY)

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Used in diagnosis of myocardial infarction, and in dystrophic muscular disorders. Muscular exercise prior to obtaining the blood can cause marked elevation of CPK.

Schedule: Available 24 hours a day.

CREATININE BLOOD

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Creatinine is not a sensitive indicator of early renal disease, and is not affected by dietary intake. For each 50% reduction in glomerular filtration rate (GFR), serum creatinine levels double. In chronic renal disease, levels may be more sensitive to GFR than creatinine clearance.

Schedule: Available 24 hours a day.

CREATININE CLEARANCE- 24 HR URINE

Department: Chemistry

Sample Requirements: Please submit the patient's height and weight so that the result can be corrected for body surface area as is required. Serum creatinine must also be drawn within 24 hrs. of collection begin or end time.

Transport/special handling: Refrigerate during collection; no chemical preservative is necessary but Boric Acid or 6N Hydrochloric Acid may be added to container. If acid is added as preservative, "CAUTION ACID" warning label must be affixed to container and acid identified.

Label container with patient's name, location, Height and Weight, collection starting and completion date and time. If more than one container is necessary, please indicate on each container; 1 of 3; 2 of 3, 3 of 3 etc.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Used as a test of renal Glomerular Filtration Rate (GFR). In chronic and severe renal disease, a serum creatinine is a more sensitive test of GFR than is the clearance test which tends to be falsely higher than expected in such cases.

Schedule: Available 24 hours a day.

CREATININE- 24HR URINE

Department: Chemistry

Sample Requirements: Submit a 24 hour urine collection.

Transport/special handling: No preservative is necessary but Boric Acid or 6N Hydrochloric Acid obtained from the Main Laboratory may be added to the urine container. If acid is added as preservative, "CAUTION ACID" warning label must be affixed to container and acid identified. Refrigerate during collection. Label container with patient's name, location, starting and completion date and time of collection. If more than one container is needed, please indicate on each container; 1 of 3, 2 of 3 OF 3, etc.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: This test is of little or no help in evaluation of renal function unless done as part of a creatinine clearance. Since the excretion of creatinine in one given person is relatively constant, 24 hour urine creatinine levels are used as an approximate check on the completeness of serial 24-hour urine collections.

Schedule: Available 24 hours a day.

CRP (C Reactive Protein)

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: CRP is an acute phase reactant which can be used as a test for infections, inflammatory or neoplastic diseases. Progressive increases correlate with increases of inflammation / injury.

Schedule: Available 24 hours a day.

CRYSTAL ANALYSIS-BODY FLUIDS

Department: Hematology

Sample Requirements: Body fluid transferred into purple-top tube is the specimen of choice.

Transport/special handling: All specimens should be examined within a few hours of collection for most reliable results.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Schedule: Available 24 hours a day.

CYTOMEGALOVIRUS (CMV), IgG

Department: Manual Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Hemolysis; Lipemia; Unlabeled specimen.

Normal Range: Refer to Reference Lab report.

Interpretation: Aid in diagnosis of CMV infection.

Schedule: Tuesday and Friday, daylight shift.

CYTOMEGALOVIRUS (CMV), IgM

Department: Manual Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Hemolysis; Lipemia; Unlabeled specimen.

Normal Range: Refer to Reference Lab report.

Interpretation: Aid in the diagnosis of acute primary CMV infection.

Schedule: Tuesday and Friday, daylight shift.

D – DIMER

Department: Chemistry

Sample Requirements: Draw one blue-top tube. Gently invert tube 7 times to thoroughly mix blood.

Transport/special handling: Return sample to Main Laboratory immediately for testing. Test must be performed within 4 hours of draw time.

Sample Rejection: Unlabeled or clotted specimen; tube not full, received outside of stability window.

Normal Range: Negative

Interpretation: D-dimer Test should be ordered in conjunction with FDP test. If positive, indicates clot destruction (fibrin degradation after fibrin formation) whereas the FDP indicates fibrinogen degradation before fibrin formation.

If the D dimer value is below the 500 ng/ml cut off, deep vein thrombosis and pulmonary embolism can be excluded.

Schedule: Available 24 hours per day.

DHEA SULFATE

Department: Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to Lab report.

Interpretation: Useful in the diagnosis of congenital adrenal hyperplasia and adrenal carcinoma. Used in determining the cause of hirsutism, virilization and polycystic ovary disease.

Schedule: Available 24 hours a day.

DIFFERENTIAL, WBC

Department: Hematology

Sample Requirements: Submit one purple-top tube. Invert gently at least 7 times to thoroughly mix with the anticoagulant.

Transport/special handling: Stable 24 hrs @ room temp, 48 hrs refrigerated.

Sample Rejection: Unlabeled or clotted specimen.

Normal Range: Refer to lab report.

Interpretation: Identification of the cellular elements of blood: red cells, white cells, and platelets. Primary means of identifying discrete cell populations associated with disease.

Schedule: Available 24 hours a day.

DIGOXIN

Department: Chemistry

Sample Requirements: Draw one red top tube. DO NOT draw in a light green or gold SST tube. Specimen should be collected at least 6 to 8 hours after the dose or prior to the next dose.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Toxic levels: greater than about 2.0 ng/mL. A number of drugs can influence the absorption and clearance of digoxin. Patients on Digibind will give falsely elevated results.

Schedule: Available 24 hours a day.

DRUG SCREEN – URINE- (MEDICAL ONLY)

Department: Chemistry

Sample Requirements: Submit minimum of 5 mL of Urine. No preservative- If confirmation is requested 25mL of sample is required. (Confirmation is sent out)

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen. Volume less than 5 mL. Volumes less than 30 ml are insufficient for send out confirmation.

Normal Range: Negative

Interpretation: Urine is screened for the following classes of drugs:

Amphetamines

Opiates

Cannabinoids (marijuana metabolites)

Barbiturates

Phencyclidine

Benzodiazepines

Cocaine metabolite

Tricyclics

Oxycodone

Schedule: Available daily 24 hours a day.

NOTE: This test is a screening test and provides a preliminary test result. A more specific alternate chemical method must be used in order to obtain a confirmed analytical result. Clinical consideration and professional judgment should be applied to any drug of abuse test result. Specimens are held for 7 days. Confirmation may be ordered during this time frame. Call the lab to ensure there is sufficient quantity of urine to send out for confirmation.

ELECTROLYTES - PLASMA/SERUM

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen. Hemolyzed plasma or serum

Normal Range: Refer to lab report.

Interpretation: Used to monitor electrolyte status. See also individual tests.

Schedule: Available 24 hours a day.

EPSTEIN BARR (EBV) ACUTE PANEL

Department: Manual Chemistry

Specimen Requirements: Draw one gold SST tube.

Transport/special handling: FREEZE serum.

Normal Range: Refer to Lab report.

Interpretation: Useful in diagnosis of infectious mononucleosis. Test includes EVB VCA IgG & IgM and EBNA.

Schedule: Testing performed Tuesday and Friday, daylight shift.

EOSINOPHILE COUNT BLOOD

Department: Hematology

Sample Requirements: Submit one purple-top tube
Gently invert 7 times to thoroughly mix the anticoagulant with the blood.

Transport/special handling: Stable 24 hrs @ room temp, 48 hrs refrigerated.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: An increase in eosinophils may be indicative of an allergic reaction or a parasitic infection.

Schedule: Available 24 hours a day.

EOSINOPHILE – URINE

Department: Hematology

Sample Requirements: Preferred sample is at least 10 ml of the first morning specimen.

Transport/special handling: Send to lab immediately.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: These cells are not normally seen in urine, and the finding of more than 1% eosinophils among the leukocyte population present is considered significant.

Schedule: Available 24 hours a day.

ESTRADIOL (E2)

Department: Chemistry

Sample Requirements: Draw one light green or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: The determination of estradiol is utilized clinically in the elucidation of fertility disorders in the hypothalamus-pituitary-gonad axis, hynecomastia, estrogen-producing ovarian and testicular tumors and in hyperplasia of the adrenal cortex. Further clinical indications are the monitoring of fertility therapy and determining the time of ovulation within the framework of in vitro fertilization.

Schedule: Available 24 hours a day.

FACTOR V LEIDEN PCR

Department: Hematology

Sample Requirements: Draw one EDTA purple top tube.

Transport/special handling: Maintain specimen at room temperature. Send whole blood.

Sample Rejection: Unlabeled specimen. Tube not full.

Normal Range: Refer to lab report.

Interpretation: The high prevalence of the mutation in the normal population and its association with APC resistance and thrombosis suggests that it is worthwhile to screen thrombophilic patients for the mutated allele. It is recommended that the factor V mutation test be performed on APC resistant patients and it may offer valuable information in the following situations: venous thrombotic events, recurrent TIA's or strokes, patients being considered for anticoagulant therapy, investigation of familial thrombosis, screening prior to starting oral contraceptives.

Schedule: Testing performed on Mon, Wed and Fri.

FENA- (Random / 24 HR. URINE)

Department: Chemistry

Sample Requirements: Random spot urine or 24 hour urine collected on ice without preservative. The specimen must be refrigerated after collection is complete.

A sample of blood is obtained on the day of the test or at the completion of the 24-hour urine collection. A light green top (heparinized) tube or a gold SST tube may be used for blood collection. Submit a 24-hour urine collection with no preservative.

Label container with patient's name, location.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen or preservative added.

Normal Range: Refer to lab report.

Schedule: Available 24 hours a day.

FERRITIN

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to diagnose hypochromic microcytic anemias. Decreased in Iron deficiency anemia and increased in iron overload. Ferritin levels correlate with and are useful in evaluation of total body storage iron. In hemochromatosis, both ferritin and iron saturation are increased. Ferritin levels in hemochromatosis may be extremely elevated.

Schedule: Available 24 hours a day.

FIBRIN DEGRADATION PRODUCTS (FDP)

Department: Hematology

Sample Requirements: Draw one full blue top tube.

Transport/special handling: Send to lab immediately.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: A positive test suggests the possibility of Disseminated Intravascular Coagulopathy (DIC) and/or primary fibrinolysis.

Schedule: Available 24 hours a day.

FIBRONECTIN

Department: Manual Chemistry

Sample Requirements: Specimen is obtained by the physician using the Adeza Biomedical Specimen Collection Kit.

Specimens that are not tested within 8 hours of collection must be stored refrigerated at 2o to 8oC and assayed within three days of collection to avoid degradation of fFN. Store appropriately and avoid extreme temperatures. Label container with patient's name, location.

Sample Rejection: Specimens collected in or by any sample device other than the Adeza Biomedical Specimen Collection Kit. Specimens with insufficient volume for testing. Specimens received unlabeled. Specimens received > 3 days after the sampling date. Specimens received at temperatures >25C. Unlabeled specimen or preservative added to specimen.

Normal Range: Negative

Interpretation: Rapid fFN is a qualitative test used to help assess the risk of preterm delivery

Schedule: Available 24 hours a day. Contact the laboratory for Adeza Biomedical Specimen Collection Kit

FIBRINOGEN

Department: Hematology

Sample Requirements: Draw one full blue top tube. Gently invert the tube 7 times to thoroughly mix the blood with the anticoagulant.

Transport/special handling: Ideally tested immediately upon draw, but can be refrigerated for 48 hrs.

Sample Rejection: Unlabeled or clotted specimen.

Normal Range: Refer to lab report.

Interpretation: Decreased levels may indicate disseminated intravascular coagulopathy (DIC) or hypofibrinogenemia. Increased levels may be associated with bleeding, inflammation, and hyper-coagulable states.

Schedule: Available 24 hours a day.

FOLATE

Department: Chemistry

Specimen Requirements: Draw one gold top SST tube.

Transport/special handling: Refrigerate till transport to lab. Protect from light.

Specimen Rejection: Unlabeled specimen; Hemolyzed specimen.

Normal Range: Refer to lab report.

Interpretation: Use to detect folate deficiency, monitor therapy with folate, evaluate megaloblastic and macrocytic anemia, and evaluate alcoholic patients and those with prior bypass for morbid obesity or those with intestinal blind-loop syndrome.

Schedule: Available 24 hours a day.

*Note: RBC Folate is a separate order.

FREE PSA (Includes total PSA)

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Bloody specimen

Normal Range: Refer to lab report.

Interpretation: In this panel, percent free PSA is calculated regardless of concentration of total PSA. The interpretive guidelines provided for percent free PSA are based on a population of men with normal DRE and total PSA between 4.0 and 10.0 ng/ml.

Schedule: Available 24 hours a day.

FREE TESTOSTERONE

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to Lab report.

Interpretation: Evaluate hirsutism and masculinization in women. Evaluate testicular function in clinical states where testosterone binding proteins may be altered.

Schedule: Available 24 hours a day.

FREE T3 (Free Triiodothyronine)

Department: Chemistry

Sample Requirements: Draw one light green or gold top SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to evaluate thyroid function and assess abnormal binding protein disorders. Measurement of free T3 is of value in confirming the diagnosis of hyperthyroidism, when an elevated free or total T4 level is found.

Schedule: Available 24 hours a day.

FREE T4 (Free Thyroxine)

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Elevations in FT4 indicate hyperthyroidism, while decreased indicate hypothyroidism.

Schedule: Available 24 hours a day.

FSH (Follicle Stimulating Hormone)

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Increased FSH levels are associated with menopause and primary ovarian hypofunction in females and primary hypogonadism in males.

Schedule: Available 24 hours a day.

GENTAMICIN

Department: Chemistry

Sample Requirements:

Draw one red-top tube. DO NOT draw in a light green or gold SST tube. Label tube with patient's name, location, medical record number, time specimen obtained and indicate "peak" or "trough".

PEAK SAMPLE: Draw 30 minutes after completion of the IV infusion, or 1 hour after IM dose.

TROUGH SAMPLE: Draw within 30 minutes of the next dose

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen. Serum Separator tubes. Improper timing of sample collection.

Normal Range: Refer to lab report.

Interpretation: Aminoglycoside antibiotic.

Schedule: Available 24 hours a day.

GGT-GAMMA GLUTAMINE TRANSAMINASE

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Serum GGT is a sensitive indicator of hepatobiliary disease and is useful in the diagnosis of obstructive jaundice, chronic alcoholic, liver disease and the detection of hepatotoxicity. GGT is also increased in hepatoma, carcinoma of the pancreas and carcinoma metastatic to the liver.

Schedule: Available 24 hours a day.

GLUCOSE- 24HR URINE

Department: Chemistry

Sample Requirements: Submit a 24-hour urine collection. Refrigerate during collection. Label container with patient's name, location and date with starting and completion time. If more than one container is needed, please indicate on each container, "1 of 3", "2 of 3", etc.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Any cause of increased blood glucose can be the basis of glucose in the urine, especially rapid intestinal absorption and endocrine disorders.

Schedule: Available 24 hours a day.

GLUCOSE- FASTING

Department: Chemistry

Sample Requirements: 6-8 hour fast required. Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Used in the diagnosis of Diabetes mellitus. Many other disorders can cause both high and low values of blood glucose.

Schedule: Available 24 hours per day.

GLUCOSE- RANDOM

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Variable

Interpretation: Used to monitor glucose levels.

Schedule: Available 24 hours a day.

GLUCOSE- SPINAL FLUID ONLY

Department: Chemistry

Sample Requirements: Submit spinal fluid collection tube or stoppered tube. Clearly indicate that the sample is spinal fluid.

Transport/special handling: Must be processed immediately to avoid falsely low results.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Elevated CSF glucose is seen in diabetic hyperglycemia, epidemic encephalitis, CNS syphilis, increased serum glucose. A slight decrease in CSF glucose may be seen in subarachnoid hemorrhage, or in nonbacterial meningoencephalitis. Marked decrease can occur in acute pyogenic meningitis, TB meningitis, cryptococcal meningitis, primary amebic meningoencephalitis, mumps encephalitis, tumor of meninges, or sarcoidosis. In pyogenic meningitis, CSF glucose may return to normal rapidly after antibiotic therapy.

Schedule: Available 24 hours a day

GLYCOHEMOGLOBIN (HbA1C)

Department: Chemistry

Sample Requirements: Draw one purple top (EDTA) tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled or clotted specimen.

Normal Range: Refer to lab report.

Interpretation: Used most frequently to assess glucose control in insulin dependent diabetics in whom single blood glucose measurements may not accurately reflect the level of control present over the preceding few weeks.

Schedule: Available 24 hours a day.

HAPTOGLOBIN

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen; Excessive hemolysis.

Normal Range: Refer to lab report.

Interpretation: Useful in hemolytic work-ups, as haptoglobin will be decreased in conditions where red cells are lysed. Also can be decreased in Infectious Mononucleosis and liver disease.

Schedule: Available 24 hours a day.

HCG- TOTAL (QUANTITATIVE)

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen

Normal Range: Refer to lab report.

Interpretation: Negative in non-pregnant females

Schedule: Available 24 hours a day.

HCG – QUALITATIVE

Department: Hematology

Sample Requirements: Draw one red top tube

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen

Normal Range: Refer to lab report.

Interpretation: Qualitative test used to detect the presence of HCG in serum

Schedule: Available 24 hours a day.

HCG (Tumor Marker)

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Human chorionic gonadotropins are produced normally during pregnancy and by certain tumors such as choriocarcinomas. Useful in the diagnosis of testicular and trophoblastic tumors. Serial results can be used to follow tumor responses to ablative surgical therapy or chemotherapy.

Schedule: Available 24 hours a day.

HDL CHOLESTEROL

Department: Chemistry

Sample Preparation: Fasting patient preferred

Transport/special handling: Refrigerate till transport to lab.

Sample Requirements: Green top or gold top tube - refrigerated

Sample Rejection: > 7 days old

Normal Range: > 40 mg/dL

Interpretation: Enzymatic in vitro assay for the direct quantitative determination of HDL-cholesterol in human serum and plasma on Roche automated clinical chemistry analyzers.

Schedule: 24 hours a day

HEMOGLOBIN & HEMATOCRIT

Department: Hematology

Sample Requirements: Draw one purple-top tube. Invert tube 7 times to thoroughly mix the blood with the anticoagulant.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled or clotted sample.

Normal Range: Refer to lab report for age specific normal ranges.

Interpretation: Useful in defining the degree of anemia or polycythemia.

Schedule: Available 24 hours a day.

HEPATIC FUNCTION PANEL

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Liver function evaluation

Schedule: Available 24 hours a day

HEPATITIS A ANTIBODY IgM

Department: Chemistry

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: The presence of Hepatitis A Igm antibody indicates a recent hepatitis A infection.

Schedule: Monday through Saturday, daylight shift.

HEPATITIS B CORE IgM

Department: Chemistry

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: The presence of Hepatitis B core IgM indicates a recent Hepatitis B infection.

Schedule: Monday through Saturday, daylight shift.

HEPATITIS B SURFACE ANTIBODY

Department: Chemistry

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen.

Normal Range: Negative if no previous exposure to Hepatitis B or the vaccine.

Interpretation: Positive if the patient has been exposed to Hepatitis B or its vaccine.

Schedule: Monday through Saturday, daylight shift.

HEPATITIS B SURFACE ANTIGEN

Department: Chemistry

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen.

Normal Range: Negative

Interpretation: Indicates a current Hepatitis B infection.

Schedule: Monday through Saturday, daylight shift.

HEPATITIS C ANTIBODY

Department: Chemistry

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen.

Normal Range: Negative

Interpretation: Indicates a recent or past infection with Hepatitis C.

Schedule: Monday through Saturday, daylight shift.

HEPATITIS PROFILE ACUTE

Department: Chemistry

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen.

Normal Range: Negative

Interpretation: Panel includes: A antibody IgM, B surface antigen, B core antibody IgM, C antibody

Schedule: Monday through Saturday, daylight shift.

HIV I/II ANTIBODY

Department: Immunology

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen.

Normal Range: Negative

Interpretation: Reflex to HIV I western blot and HIV II EIA if screen is positive.
Positive in patients infected with HIV.

Schedule: Turn-around-time 3 to 5 days

HIV ANTIGEN/ANTIBODY

Department: Manual Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to Lab report.

Interpretation: The assay's design allows results of antibody and antigen detection to be reported separately and to differentiate between HIV-1 and HIV-2 reactivity.

Schedule: Monday through Friday daylight shift.

HOMOCYSTEINE

Department: Chemistry

Sample Requirements: Draw one purple (EDTA) tube on ice.

Transport/special handling: Deliver on ice. Separate plasma from cells if time from collection to receipt in lab will be over 1 hour.

Sample Rejection: Sample over 1 hour old that has not been separated from the cells.

Normal Range: Refer to lab report.

Interpretation:

Elevated homocysteine blood levels are caused by four major factors, including 1. Genetic deficiencies in enzymes involved in Homocysteine metabolism. 2. Nutritional deficiencies in B vitamins such as B6, B12, and folate. 3. Renal failure for effective amino acid clearance. 4. Drug interactions such as with nitric oxide, methotrexate and phenytoin that interfere with

homocysteine metabolism. Elevated levels are also linked with Alzheimer's disease and Osteoporosis.

Schedule: Available 24 hours a day.

IgA

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST top tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Increased Monoclonal IgA may be produced in Lympho-proliferative disorders, especially Multiple Myeloma. IgA may be elevated in a wide variety of conditions affecting mucosal surfaces.

Schedule: Available 24 hours a day.

IgE (Immunoglobulin E)

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Excessive hemolysis; unlabeled specimen.

Normal Range: Refer to Reference Lab report.

Interpretation: Evaluate possible atopic allergy. Frequently increased in parasitic infections.

Schedule: Available 24 hours a day.

IgG (Immunoglobulin G)

Department: Chemistry

Sample Requirements: Draw one light green or gold SST top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to monitor therapy in IgG myeloma. Evaluate patients, especially children and those with Lymphoma, with propensity to infections.

Schedule: Available 24 hours a day.

IgM

Department: Chemistry

Specimen Requirement: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Useful in establishing the diagnosis and monitoring therapy in macroglobulinemia of Waldenstrom or Plasma Cell Myeloma. Also used to evaluate likelihood of in utero infections or acuteness of infection.

Schedule: Available 24 hours a day.

IMMATURE PLATELET FRACTION

Department: Hematology

Specimen Requirement: Purple top tube (EDTA) whole blood.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Clotted specimen or short sample volume.

Normal Range: Refer to lab report.

Interpretation: Used to assess cause of Thrombocytopenia: bone marrow failure versus increased platelet destruction.

Schedule: Available 24 hours a day.

IMMUNOELECTROPHORESIS (FIXATION), SERUM

Department: Manual Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Gross hemolysis; Lipemia; Unlabeled specimen.

Normal Range: Refer to Reference Lab report.

Interpretation: Used for the identification of a monoclonal gammopathy.

Schedule: Monday through Friday daylight shift.

IMMUNOELECTROPHORESIS (FIXATION), URINE

Department: Manual Chemistry

Sample Requirements: Urine (24 hour or random) no preservative.

24 hour: Collect all urine samples voided in a 24 hour period in a specimen jug with no preservative. Refrigerate during collection.

Random: Collect first morning urine. Refrigerate.

Transport/special handling: Refrigerate during collection.

Sample Rejection: Specimen not refrigerated; Unlabeled specimen.

Normal Range: Refer to Reference Lab report.

Interpretation: Used for detection and identification of a monoclonal light chain in patients with or suspected to have multiple myeloma, macroglobulinemia, amyloidosis or related disorders.

Schedule: Monday through Friday daylight shift.

IMMUNOGLOBULINS

Department: Chemistry

Specimen Requirements: Draw light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Refer to lab report.

Schedule: Available 24 hours a day.

Note: test includes IgA, IgM, and IgG

INSULIN

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen, Hemolysis.

Normal Range: Refer Lab report.

Interpretation: The determination of insulin is utilized in the diagnosis and therapy of various disorders of carbohydrate metabolism including diabetes mellitus and hypoglycemia.

Schedule: Available 24 hours a day.

IRON

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen, hemolyzed sample

Normal Range: Refer to lab report.

Interpretation: Elevated in pernicious, aplastic and hemolytic anemias. Decreased in iron-deficiency anemia.

Schedule: Available 24 hours a day.

KLEIHAUER BETKE STAIN

Department: Blood Bank (Send Out)

Sample Requirements: Draw blood after infant's delivery. Submit one purple-top tube of Mother's blood. Gently invert tubes 7 times to mix.

Transport/special handling: Deliver to lab immediately.

Sample Rejection: Unlabeled or clotted specimen.

Normal Range: Negative

Interpretation: A positive Kleihauer-Betke stain is indicative of an abnormally large fetal/maternal hemorrhage. If RhoGAM has been ordered, the lab will calculate the volume of fetal cells and determine the number of RhoGAM vials needed. This test can also be done to determine if anemic newborns are bleeding internally or are anemic due to fetal/maternal hemorrhage. Grossly bloody stools and vomitus can also be tested: fetal vs. adult blood.

Schedule: Available 24 hours a day.

LACTIC ACID

Department: Chemistry

Sample Requirements: 5 mL BLOOD: Draw one gray-top tube and place on ice immediately. Avoid the use of a tourniquet. Centrifuge and separate within 15 minutes.

Transport/special handling: Transport on ice.

Sample Rejection: Unlabeled specimen, no fluoride preservative, and specimen not on ice.

Normal Range: Refer to lab report.

Interpretation:

Type I: Lactic Acidosis, Muscular exercise, and hyperventilation

Type IIA: Hypoxia related

Type IIB: Idiopathic, mild uremia, infections

Schedule: Available 24 hours a day.

LDH

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Elevations are seen as a result of various organs cell damage. See also LDH isoenzymes.

Schedule: Available 24 hours a day.

LDL, DIRECT

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Adult Treatment Panel III (ATP III) adopted the following classification of serum LDL Cholesterol.

Optimal	<100 mg/dL
Near Optimal/Above Optimal	100-129 mg/dL
Borderline High	130-159 mg/dL
High	160-189 mg/dL
Very High	>190 mg/dL

Interpretation: Useful in assessing the risk of coronary heart disease. Useful for the direct determination of LDL Cholesterol in patients whose fasting triglycerides are >400 mg/dl where LDL calculation may not be possible.

Schedule: Available 24 hours a day.

LEUKOCYTES – STOOL

Department: Hematology

Sample Requirements: Submit a fresh stool specimen in a sterile container or a fecal smear prepared on a glass slide.

Transport/special handling: Send to lab immediately.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: A positive fecal smear for white blood cells may be indicative of ulcerative colitis.

Schedule: Available 24 hours a day.

LIPASE

Department: Chemistry

Sample Requirements: Draw one light green or gold SST top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Values are elevated in acute pancreatitis, pancreatic abscess, pseudocyst, pancreatic trauma, or pancreatic cancer.

Schedule: Available 24 hours a day.

LIPID PANEL

Department: Chemistry

Sample Requirements: Minimum 12 hour fast is required. Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: See lab report.

Interpretation: Used to evaluate the lipid risk factors for cardiovascular heart disease.

Schedule: Available 24 hours a day

LITHIUM

Department: Chemistry

Sample Requirements: Draw sample at least 12 hours after last dose. 5 mL BLOOD: Draw one red-top tube.

CAUTION: Most green-top tubes contain Lithium Heparin as anti-coagulant, and thus cannot be used for Lithium analysis!

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen. Green-top tube.

Normal Range: See lab report.

Interpretation: Lithium is used for treatment of the manic phase of affective disorders. The half-life of lithium is 15-30 hours.

Schedule: Available 24 hours a day.

LUPUS ANTICOAGULANT SCREEN

Department: Reference Laboratory

Sample Requirements: Draw two blue top tubes.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled or clotted specimen; tube not full

Normal Range: Negative

Interpretation: Lupus Anticoagulant, a type of phospho-lipid interfering antibody, is the most likely cause of an unexpectedly prolonged APTT screening test. Lupus Anticoagulants are now considered to be a significant risk factor in patients with otherwise unexplained thrombosis and are often present in women who have recurrent miscarriages.

Schedule: Referred to reference laboratory

LUTEINIZING HORMONE

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: In both males and females, primary hypogonadism results in an elevation of basal FSH and LH levels. LH is elevated in primary gonadal failure, complete testicular feminization syndrome or precocious puberty. Decreased in failure of the pituitary or hypothalamus.

Schedule: Available 24 hours a day.

LYME DISEASE IgG, IgA AND IgM

Department: Immunology

Specimen Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen. Hemolysis.

Normal Range: See lab report.

Interpretation: Used to diagnosis Lyme disease.

Schedule: Testing performed on Mondays and Thursdays, daylight shift.

MALARIAL SMEAR

Department: Hematology

Sample Requirements: Submit one purple top tube. Fingertick blood smears are also acceptable. Send to the Laboratory immediately. Must make smears within one hour of collection.

Transport/special handling: Send to lab immediately. Smears must be made within 1 hour of collection.

Sample Rejection: Unlabeled to clotted specimen.

Normal Range: Negative

Interpretation: Positive findings indicate malaria. The pathologist will confirm positive findings and make a species determination.

Schedule: Available 24 hours a day.

MAGNESIUM

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Used evaluation of neuromuscular disorders, tremors, tetany, convulsions, renal failure cardiac arrhythmias and digoxin toxicity.

Schedule: Available 24 hours a day.

METHEMOGLOBIN

Department: Manual Chemistry

Sample Requirements: Draw one dark green tube or syringe whole blood.

Transport/special handling: Do NOT spin blood.

Sample Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Elevated levels are caused by exposure to aniline dyes, aromatic nitro compounds, and other organic chemicals. Certain hereditary disorders will also result in high levels.

Schedule: Available 24 hours a day.

METHADONE METABOLITE

Department: Chemistry

Sample Requirements: Random urine.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to Lab report.

Interpretation: Detection of methadone metabolite in urine.

Schedule: Available 24 hours/7 days per week.

MICROALBUMIN – 24 hour urine

Department: Chemistry

Specimen Requirements: 24 hour urine specimen with no preservative

Transport/special handling: Refrigerate during collection.

Specimen Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Used in detecting diabetics and others at risk for renal failure. Monitoring effectiveness of treatment, to prevent progression to overt proteinuria.

Schedule: Available 24 hours a day.

MICROALBUMIN – Random Urine

Department: Chemistry

Specimen Requirements: Random urine sample.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Used to assess the potential for early onset of nephropathy in diabetic patients.

Schedule: Available 24 hours a day.

MONO

Department: Immunology

Sample Requirements: Draw one gold SST or red top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen.

Normal Range: Negative

Interpretation: Infectious mononucleosis has been reported to be associated with the Epstein - Barr virus. This test tests for Heterophile antibodies. Positive heterophile tests have also been reported with hepatitis, rubella, leukemia, Rheumatoid arthritis, and Burkett's lymphoma. Slide agglutinations for heterophile have been shown to demonstrate 1 to 2 % false negative results. False positive results have been reported as high as 6 to 10 %.

Schedule: Available 24 hours a day.

MUMPS ANTIBODIES, IgG

Department: Manual Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Dependent on immunization status.

Interpretation: Determine immunity to mumps virus.

Schedule: Monday through Friday, daylight shift.

OSMOLALITY- SERUM

Department: Manual Chemistry

Sample Requirements: Draw one red-top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Values increase with dehydration, hyperglycemia; decrease in over-hydration, hyponatremia, adrenal insufficiency.

Schedule: Available 24 hours a day.

OSMOLALITY- URINE

Department: Manual Chemistry

Sample Requirements: Submit random urine sample.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: See lab report.

Interpretation: Used as an index of the tendency to produce concentrated or diluted urine.

Schedule: Available 24 hours a day.

PFA CLOSURE TIME

Department: Hematology

Sample Requirements:

Draw two blue top tubes using a 21G or larger needle.

Maintain specimen at room temperature. Do not centrifuge.

Sample stable for up to 4 hours.

HVB LAB DRAW ONLY – CANNOT BE COLLECTED AT OFF SITES.

HVS LAB DRAW ONLY – MUST BE SCHEDULED.

Transport/special handling: Must be collected at hospital draw site. Keep specimen at room temp—must be tested within 4 hours of collection.

Sample Rejection: Hemolyzed or centrifuged specimen. Specimen not received within the 4 hours. Specimen not received at room temperature.

Normal Range: Refer to Lab report.

Interpretation: The closure time provides an indication of platelet function. Platelet dysfunction detected by this test may be acquired, inherited, or induced by platelet inhibiting agents. The most common causes of platelet dysfunction are related to uremia, von Willebrand's disease, and exposure to agents such as Aspirin.

Schedule: HVB - available 24 hours a day. HVS – must be scheduled.

PHENOBARBITAL

Department: Chemistry

Sample Requirements: Draw one red top tube. DO NOT draw in gold SST tube.

NOTE: Specimen to be drawn prior to dose. Time to steady state is 2- 4 weeks.

Transport/special handling: Refrigerate till transport to lab. Must be red top non-gel tube.

Sample Rejection: Unlabeled specimen. Incorrect tube

Normal Range: See lab report.

Interpretation: Anticonvulsant medication

Schedule: Available 24 hours a day.

PHENYTOIN – (DILANTIN)

Department: Chemistry

Sample Requirements: 5 ml BLOOD: Draw one red-top tube. Trough levels should be drawn within 30 minutes of the morning dose. DO NOT draw in gold SST tube.

Transport/special handling: Refrigerate till transport to lab. Must be red top non-gel tube.

Sample Rejection: Unlabeled Specimen. Incorrect tube.

Normal Range: See lab report.

Interpretation: Anticonvulsant medication

Schedule: Available 24 hours a day.

PHOSPHOROUS- 24HR URINE

Department: Chemistry

Sample Requirements: Submit a 24-hour urine collection with no preservative. Refrigerate during collection. Label container with patient's name, location, and starting and completion time and date. If more than one container is needed, please indicate on each container, "1 of 3", "2 of 3", etc.

Transport/special handling: Refrigerate during collection.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Elevations occur in hyperparathyroidism. There is a significant diurnal variation in phosphorus excretion, and the output varies widely, as a function of diet.

Schedule: 24 hours a day.

PHOSPHOROUS- BLOOD

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab.

Interpretation: Phosphorus levels in the blood fluctuate throughout the day, and are subject to rapid change caused by factors such as diet, hormone levels, and renal function.

Schedule: Available 24 hours a day.

PLATELET AGGREGATION

Department:
Reference Laboratory

Sample Requirements:

Draw Monday through Friday before noon only.

Draw 4 blue top tubes (sodium citrate). Invert tubes to mix specimen.

Maintain specimen at Room Temp and transport to lab immediately.

Specimen must be sent to ITXM lab within 4 hours of draw.

Transport/special handling: M-F before noon draw only. Room temp.

Sample Rejection: Clotted samples; Specimens received after noon.

Normal Range: See Reference Lab report.

Interpretation: Used to evaluate platelet function. Aid in the diagnosis of Von Willebrand's Disease, Glanzmann's Disease, platelet storage pool disease, Bernard – Soulier Syndrome, "Gray Platelet Syndrome" and Raynaud's phenomenon.

Schedule: Referred to Reference Lab.

PLATELET COUNT

Department: Hematology

Sample Requirements: Draw one purple top tube. Invert tube 7 times gently to mix.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled or clotted sample.

Normal Range: See lab report.

Interpretation: Abnormalities are seen in many acquired and hereditary disorders.

Schedule: Available 24 hours a day.

POTASSIUM (K)

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen. Gross hemolysis.

Normal Range: Refer to lab report.

Interpretation: Useful in evaluation of fluid and electrolyte balance. Increased in renal failure, acidosis, and dehydration. Decreased in metabolic alkalosis, renal tubular acidosis, diuresis and gastrointestinal disorders.

Schedule: Available 24 hours a day

POTASSIUM- 24 HR. URINE

Department: Chemistry

Sample Requirements: Submit a 24 hour urine collection; no preservative. Label container with patient's name, location, starting and completion date and time of collection. If more than one container is needed, please indicate on each container; "1 of 3", "2 of 3", etc.

Transport/special handling: Do not add preservative.

Sample Rejection: Unlabeled specimen. Preservative added.

Normal Range: See lab report.

Interpretation: Used to evaluate electrolytes and fluid balance.

Schedule: Available 24 hours a day.

PREALBUMIN

Department: Chemistry

Sample Requirements: Draw one red top or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Prealbumin is useful in assessing nutritional status, especially in monitoring the response to nutritional support in the acutely ill patient.

Schedule: Available 24 hours a day.

PROGESTERONE

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Placental insufficiency has been associated with low levels of progesterone. Elevated levels may be seen in adrenal and testicular tumors.

Schedule: Available 24 hours a day.

PREGNANCY TEST – URINE

Department: Hematology

Sample Requirements: The first morning specimen is optimal, but random is acceptable. Collect in a clean, dry container and refrigerate.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen. Less than 1 ml of urine.

Normal Range: Negative

Interpretation: Used for the detection of HCG produced by the placenta in increasing amounts during pregnancy. Very dilute urine samples may give a false negative result. Positive results unrelated to pregnancy are possible in patients with hydatid form mole, choriocarcinoma, or other malignancies.

Schedule: Available 24 hours a day.

PROCALCITONIN

Department: Chemistry

Sample Requirements: Submit one gold, one purple, or one green top (Lithium heparin)

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Aids in the assessing of sepsis or septic shock

Schedule: Available 24 hours a day.

PROLACTIN

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST top tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Useful in the evaluation of pituitary tumors, amenorrhea, agalactorrhea, infertility and hypogonadism. Also utilized in monitoring therapy of prolactin-secreting tumors.

Schedule: Available 24 hours a day.

PROSTATIC SPECIFIC ANTIGEN (PSA)

Department: Chemistry

Specimen Requirements: Draw one red top or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen; Excessive hemolysis

Normal Range: See lab report.

Interpretation: Used as a screening tool to detect prostatic malignancy, as well as to monitor treatment of patients with diagnosed prostate carcinoma. Elevated results are not absolute evidence of the presence of malignancy. Results should be used in conjunction with other diagnostic tools.

Schedule: Available 24 hours a day.

PROTEIN ELECTROPHORESIS- SERUM

Department: Manual Chemistry

Specimen Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Identification of various disorders such as Dysproteinemias, Hypogammaglobinemia, and some inflammatory states. Also used to screen for monoclonal proteins present in Multiple Myeloma.

Schedule: Mon and Thursday- daylight shift.

PROTEIN ELECTROPHORESIS – RANDOM OR 24 HOUR URINE

Department: Manual Chemistry

Specimen Requirements:

40 ml urine in sterile cup for random specimen.

24 hour specimen in urine jug with no preservative.

Refrigerate specimen.

Transport/special handling: Refrigerate during collection. Do not add preservative.

Specimen Rejection: Unlabeled specimen. Urine with preservative.

Normal Range: Refer to lab report.

Interpretation: Used to monitor patients with monoclonal gammopathies.

Schedule: Mon and Thursday-daylight shift

PROTEIN FLUID

Department: Chemistry

Sample Requirements: Submit 5 ml of fluid in a clean, stoppered tube. Specify on the label the type of fluid submitted. Use the following codes to indicate the respective types of fluid:

PR: Abdominal, ascetic, paracentesis or
Peritoneal fluids.

TF: Pleural or thoracentesis fluid.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Schedule: Available 24 hours a day

PROTEIN- 24 HR. URINE

Department: Chemistry

Sample Requirements: Submit a 24-hour urine collection with no preservative. Refrigerate during collection. Label container with patient's name, location, and starting and completion date and time of collection. Please indicate the number of containers, "1 of 3", "2 of 3", etc.

Transport/special handling: Refrigerate during collection. Do not add preservative.

Sample Rejection: Unlabeled specimen. Preservative added.

Normal Range: See lab report.

Interpretation: Used to evaluate nephrotic syndrome and other proteinurias.

Schedule: Available 24 hours a day

PROTEIN BLOOD

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: See lab report.

Interpretation: Useful as a screen for various hyper- and hypo-proteinemias, nutritional state and degree of hydration.

Schedule: Available 24 hours a day.

PROTEIN- SPINAL FLUID

Department: Chemistry

Sample Requirements: Submit in a clean spinal fluid tube.

Transport/special handling: Deliver to lab immediately.

Sample Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Grossly bloody samples will affect protein due to serum protein. CSF protein increases in diseases leading to the breakdown of the blood-CNS barrier, such as meningitis and encephalomyelitis.

Schedule: Available 24 hours a day.

PROTIME (PT)

Department: Hematology

Sample Requirements: Draw one full blue-top tube. Gently invert tube 7 times to mix.

Transport/special handling: Stable at room temp for 24 hrs.

Sample Rejection: Unlabeled or clotted specimen; tube not full

Normal Range: See lab report.

Interpretation: NOTE-Interpret patient status with the INR result. INR is to be used in monitoring patients on stable doses of Warfarin. Seconds and/or ratios should not be used to determine treatment:

- No anticoagulant – Normal – INR 0.8-1.2
- Oral anticoagulant – Standard Dose – INR 2.0-3.0
- Oral anticoagulant – High Dose – INR 2.5-3.5

Schedule: Available 24 hours a day.

PTH, INTACT N – TERMINAL

Department: Chemistry

Sample Requirements: Draw in a gold SST or EDTA (purple) top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Useful in the differential diagnosis and management of hypercalcemia. PTH assay can be of help in the diagnosis of tumors and hyperplasia of the Parathyroid gland.

Schedule: Available 24 hours a day.

RENAL PANEL

Department: Chemistry

Sample Requirements: For best results, an overnight fasting sample is preferred. Draw one light green or gold (SST) tube.

Transport/special handling: Red top or green-top tubes must be received within first 3 hours after collection. Separate serum into clean transport vial if specimen delayed greater than 3 hours. SST tubes must be centrifuged.

Sample Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: See Individual Tests.

Schedule: Available 24 hours a day.

RETICULOCYTE COUNT

Department: Hematology

Sample Requirements: Draw one purple-top tube. Fingerstick samples are acceptable: Use EDTA microtainers. Gently invert tube 7 times to mix.

Transport/special handling: Stable 24 hrs @ room temp, 48 hrs refrigerated.

Sample Rejection: Unlabeled or clotted specimen.

Normal Range: See lab report.

Interpretation: A normal result indicates that a normal rate of erythropoiesis is being maintained. Increases are seen in chronic bleeding and hemolytic anemia. Decreases are seen in aplastic anemia and irradiation.

Schedule: Available 24 hours a day.

RHEUMATOID FACTOR

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Useful in the diagnosis and prognosis of Rheumatoid Arthritis.

Schedule: Available 24 hours a day.

RUBELLA IgG

Department: Chemistry

Sample Requirements: Draw one gold SST or light green top tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen.

Normal Range: See lab report.

Interpretation: See normal range.

Schedule: Available 24 hours a day.

RUBEOLA, IgG ANTIBODIES

Department: Manual Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Dependent on immunization status.

Interpretation: Determine status or aid in the diagnosis of recent infection. Useful in establishing effective immunity.

Schedule: Testing performed Monday through Friday, daylight shift. .

SALICYLATE

Department: Chemistry

Sample Requirements: Draw one red top tube. DO NOT draw in gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen. Incorrect tube.

Normal Range: Refer to lab report.

Interpretation: Analgesic, antipyretic, anti-inflammatory medication

Schedule: Available 24 hours a day.

SALINE SUPPRESSION TEST

Department: Chemistry

Sample Requirements: Baseline: light green (lithium heparin), lavender (EDTA), and gold (SST) or red top. Supine: specimen should be obtained between 8am and 10am (after at least two hours in supine position) OR Upright: specimen should be obtained before noon (after at least two hours in the upright position (seated or standing)

Four hours post infusion: lavender (EDTA) and gold (SST) or red top

Assays Performed:

Baseline: potassium, cortisol, aldosterone, and renin.

Four hours post infusion: aldosterone and renin

Note: aldosterone and renin testing will be performed our reference lab.

Sample Rejection: Unlabeled specimen. Potassium specimen must not be hemolyzed

Normal Range: Refer to lab report

Interpretation: Serum aldosterone >140pmol/L at the end of the study confirms a diagnosis of Primary hyperaldosteronism.

Schedule: Must be scheduled with the Medical Treatment Unit and IV Therapy

SED RATE

Department: Hematology

Sample Requirements: Draw one purple-top tube. Do NOT draw a blue-top tube. Gently invert tube 7 times to mix.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled or clotted specimen. Incorrect tube type.

Normal Range: Refer to lab report.

Interpretation: The sedimentation rate can be used to monitor inflammatory conditions.

Schedule: Available 24 hours a day.

SEX HORMONE BINDING GLOBULIN

Department: Chemistry

Sample Requirements: Draw one gold SST or one light green (lithium heparin) tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report

Interpretation: Evaluate tissue responsiveness to thyroid hormones.

Schedule: Available 24 hours a day

SICKLE CELL

Department: Blood Bank

Specimen Requirements: Draw one purple top tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled or clotted specimen.

Normal Range: Negative

Interpretation: Qualitative determination of the presence of Hemoglobin S. Distinction between heterozygous (trait) and homozygous (disease) state can only be made by more specific methods such as Hemoglobin Electrophoresis.

Schedule: Mon. – Fri. Daylight shift

SODIUM - BLOOD

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Values are increased in excessive loss of water, diuresis, vomiting and diarrhea. Decreases are seen in congestive heart failure, nephrosis, cirrhosis and ascites.

Schedule: Available 24 hours a day

SODIUM- 24 HR. URINE

Department: Chemistry

Sample Requirements: Submit a 24-hour urine specimen. No preservative

Label container with patient's name, location starting and completion date and time of collection. If more than one container is needed, please indicate on each container; 1 of 3, 2 of 3 etc.

Transport/special handling: Refrigerate during collection. Do not add preservative.

Sample Rejection: Unlabeled specimen or preservative added.

Normal Range: Refer to lab report.

Interpretation: Excretion of sodium is highly dependent on dietary intake and state of hydration.

Schedule: Available 24 hours a day

SODIUM/POTASSIUM- 24 HR.URINE

Department: Chemistry

Sample Requirements: Submit a 24-hour urine collection with no preservative. Label container with patient's name, location, starting and completion date and time of collection. If more than one container is needed, please indicate on each container; "1 of 3", "2 of 3", etc.

Transport/special handling: Refrigerate during collection. Do not add preservative.

Sample Rejection: Unlabeled specimen or preservative added to specimen.

Normal Range: Refer to lab report.

Interpretation: Values can reflect endocrine function, hydration and dietary effects.

Schedule: Available 24 hours a day

SPERM COUNT – POST VASECTOMY

Department: Hematology

Patient Preparation: At least 2 days sexual abstinence before sample collection.

Sample Requirements: Fresh semen sample, no preservative.

Transport/special handling: Must be received at HVB Mon. – Fri 8AM-4PM.

Sample Rejection: Unlabeled specimen. Sample submitted in a condom.

Normal Range: Post Vasectomy: No sperm seen.

Interpretation: Used to determine the success of the Vasectomy Procedure.

Schedule: Available Mon. – Fri. 8 AM to 4PM at HVB only

SYPHYLIS TOTAL WITH REFLEX TO RPR

Department: Manual Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to Lab report.

Interpretation: The assay is intended for the qualitative detection of total (IgG/IgM) antibodies to *Treponema pallidum* and the qualitative detection of non-treponemal reagin antibodies in human serum or plasma.

Schedule: Monday through Friday daylight hours

T3 (total) Triiodothyronine

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Particularly useful in the diagnosis of T3 Thyrotoxicosis, in which the T3 is elevated and the T4 is within normal limits. Also helpful in the confirmation of conventional Hyperthyroidism, in which T4, Free T4 and T3 are elevated. Necessary when clinical evidence indicated Hyperthyroidism, but thyroid profile is normal or border line.

Schedule: Available 24 hours a day.

T3 UPTAKE

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Thyroid function test for the diagnosis of hyper or hypo thyroidism. Used with T4 to provide the T7 or Free Thyroxine Index (FTI) calculation. An indirect measure of thyroxine binding globulin. Test is affected by many medications and disease states.

Schedule: Available 24 hours a day.

T4 (TOTAL) THYROXINE

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Decreased in Hypothyroidism and in the third stage of subacute thyroiditis. Increased in hyperthyroidism with subacute thyroiditis in its first stage and with thyrotoxicosis due to Hashimotos Syndrome.

Schedule: Available 24 hours a day.

TESTOSTERONE

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Evaluate hirsutism and masculinization in women. Evaluate testicular function in clinical states where the testosterone binding proteins may be altered (obesity, cirrhosis, thyroid disorders)

Schedule: Available 24 hours a day.

THEOPHYLLINE

Department: Chemistry

Sample Requirements: BLOOD: Draw one red top or green-top tube. Time to steady state averages 36 hours. After steady state is achieved, specimens should be drawn 1-2 hours after oral solution or immediate release tablet is given. Specimens should be drawn 4-8 hours after extended-release tablets are administered.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Used to evaluate theophylline blood levels in patients with asthma.

Schedule: Available 24 hours a day.

TIBC

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube. IMPORTANT: Avoid hemolysis. For Iron Saturation calculation, must order Serum Iron level.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen. Incorrect tube.

Normal Range: Refer to lab report.

Interpretation: TIBC correlates approximately with serum transferrin. Elevated in hypochromic anemias, acute hepatitis, and late pregnancy. Decreased in non-iron deficient anemia, chronic infections, hemochromatosis, cirrhosis, neoplastic disease, renal disease and thalassemia.

Schedule: Available 24 hours a day.

TISSUE TRANSGLUTIMINASE IgA/ IgG

Department: Manual Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen, hemolysis.

Normal Range: See Lab report.

Interpretation: Used for screening of celiac disease and dermatitis herpetiformis. Also used to evaluate children with failure to thrive.

Schedule: Available Monday through Friday, daylight shift

TRANSFERRIN

Department: Chemistry

Specimen Requirements: Draw one light green or gold top tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Increased in iron deficiency anemia. Decreased in chronic inflammatory states, neoplasia and renal disease. Used as an index of nutritional status.

Schedule: Available 24 hours a day.

TREPONEMA (SYPHILIS IgG)

Department: Manual Chemistry

Sample Requirements: Draw one gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used for the qualitative determination of total antibodies directed against *Treponema pallidum*. The presence of these antibodies in conjunction with non-treponema laboratory tests and clinical findings may aid in the diagnosis of syphilis infection.

Schedule: Testing performed Monday through Friday, daylight shift.

TRIGLYCERIDE

Department: Chemistry

Patient Preparation: The patient should fast for 12 hours or more hours.

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Triglyceride levels are of some value in evaluating lipidemias.

Schedule: Available 24 hours a day.

TROPONIN T

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: See lab report.

Interpretation: Troponin T is a cardio specific, highly sensitive marker for myocardial damage. In cases of acute myocardial infarction, Troponin T levels in serum rise 3 to 4 hours after the occurrence of myocardial symptoms and remain elevated for up to 14 days.

Schedule: Available 24 hours a day.

TSH (3RD generation)

Department: Chemistry

Specimen Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to monitor patients on thyroid replacement therapy, confirmation of TSH suppression in thyroid cancer, prediction of TRH stimulated response and aid in the diagnosis of primary hyperthyroidism. In order to detect the decrease in TSH and sufficient diagnostic accuracy in the above cases, a high sensitivity TSH assay is required. The test is also used in the differential diagnosis of hypothyroidism.

Schedule: Available 24 hours a day.

UREA CLEARANCE- 24 HR URINE

Department: Chemistry

Sample Requirements: Please submit the patient's height and weight so that the result can be corrected for body surface area as is required. Serum BUN must also be drawn.

Submit a 24 hour urine collection with no preservative. Refrigerate during collection.

Label container with patient's name, location, Height and Weight, collection starting and completion date and time. If more than one container is necessary, please indicate on each container; 1 of 3; 2 of 3, 3 of 3 etc.

Transport/special handling: Refrigerate during collection. Do not add preservative.

Sample Rejection: Unlabeled specimen; preservative added.

Normal Range: Refer to lab report.

Interpretation: Used as a test of renal Glomerular Filtration Rate (GFR).

Schedule: Available 24 hours a day.

URIC ACID - BLOOD

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen

Normal Range: Refer to lab report.

Interpretation: Elevated in gout, renal failure, leukemia, multiple myeloma, toxemia of pregnancy.

Schedule: Available 24 hours a day

URIC ACID- 24 HR. URINE

Department: Chemistry

Sample Requirements: Submit a 24-hour urine collection. No preservative, Refrigerate during collection.

Label container with patient's name, location; starting and completion date and time of collection. If more than one container is needed, please indicate on each container; "1 of 3", "2 of 3", etc.

Transport/special handling: Refrigerate during collection. Do not add preservative.

Sample Rejection: Unlabeled specimen. Preservative added.

Normal Range: Refer to lab report.

Interpretation: Increased in gout.

Schedule: Available 24 hours a day.

URINALYSIS

Department: Hematology

Sample Requirements: First morning specimen is preferred, but random specimen is acceptable. Refrigerate immediately after collection.

Urine is collect in a clean, dry container and labeled appropriately. Best container is the 12ml plastic urine tube with tight-fitting lid. Pediatric patient urobags should be placed in a sterile container and label appropriately. Transport urine specimen to the lab within 2 hours of collection.

Transport/special handling: If collected in a BD tiger top tube with preservative, specimen can remain at room temp for up to 72 hrs before analysis. If collected in container without preservative, specimen should be refrigerated until analyzed by laboratory. Stability refrigerated without preservative is 24 hrs.

Sample Rejection: Unlabeled specimen. Insufficient volume.

Normal Range: See lab report.

Interpretation: This test screens for abnormalities in the urine and yields much information about many of the body's major metabolic functions.

Schedule: Available 24 hours a day.

VALPROIC ACID (DEPAKOTE)

Department: Chemistry

Sample Requirements: Draw one red top tube just prior to dosing, preferably in the fasting state. DO NOT draw in light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen or incorrect tube, Serum Separator tubes. Serum that exhibits gross hemolysis.

Normal Range: Refer to lab report.

Interpretation: Anticonvulsant medication.

Schedule: Available 24 hours a day.

VANCOMYCIN

Department: Chemistry

Sample Requirements: 5 ml BLOOD: Draw one red top tube for each timed sample. DO NOT draw in light green or gold SST tube.

Label tubes with patient's name, location, medical record number; time specimen drawn and indicate "peak" or "trough".

PEAK SAMPLE: Draw 30 minutes after completion of a 30 min IV infusion, 1 hour after IM dose or 60 minutes after completion of a 60 min IV infusion.

TROUGH SAMPLE: Draw within 30 minutes of the next dose

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled Specimen. Serum Separator tubes. . Improper timing of sample collection.

Normal Range: Refer to lab report.

Interpretation: Antibiotic therapy. Vancomycin administered ORALLY for the treatment of Pseudomembraneous colitis and Enterocolitis is poorly absorbed and does not yield detectable serum levels.

Schedule: Available 24 hours a day.

VARICELLA ZOSTER IGG

Department: Manual Chemistry

Sample Requirements: SST Tube.

Transport/special handling: Refrigerate till transport to lab. Serum is frozen for storage in lab.

Sample Rejection: Hemolysis; Gross bacterial contamination.

Normal Range: Refer to Laboratory report.

Interpretation: Test for Varicella Zoster, IgG

Schedule: Testing performed Wednesday, daylight shift.

VITAMIN B12

Department: Chemistry

Specimen Requirements: Draw one red top or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Specimen Rejection: Unlabeled specimen.

Normal Range: Refer to lab report.

Interpretation: Used to detect B12 deficiency as in pernicious anemia, evaluate hypersegmentation of granulocyte nuclei, diagnose macrocytic anemia and megaloblastic anemia and evaluate alcoholism or malabsorption.

Schedule: Available 24 hours a day.

VITAMIN D 25- HYDROXY

Department: Chemistry

Sample Requirements: Draw one light green or gold SST tube.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Refer to Lab report.

Interpretation: Rule out vitamin D deficiency in cases of bone disease. Differential diagnosis of hypocalcemia, hypercalcemia and hypophosphatemia.

Schedule: 24 hours

VENOUS BLOOD GAS

Department: Manual Chemistry

Sample Requirements: Draw one **dark** green tube, whole blood.

Transport/special handling: Testing must be completed within 30 minutes of collection, so do **not** draw at off-sites. Hospital draw-site collection only. Keep specimen at room temp.

Sample rejection: Unlabeled specimen, received >30 minutes past collection.

Normal Range: Refer to lab report.

Schedule: 24 hours

WBC (WHITE BLOOD CELL COUNT)

Department: Hematology

Sample Requirements: Draw one purple-top tube. Invert tube gently 7 times to thoroughly mix.

Transport/special handling: Stable 24 hrs @ room temp, 48 hrs refrigerated.

Sample Rejection: Unlabeled or clotted specimen.

Normal Range: See lab report.

Interpretation: WBC count is useful in determining bacterial, viral or fungal conditions.

Schedule: Available 24 hours a day.

SECTION E

MICROBIOLOGY

AFB CULTURE (TB)

DEPARTMENT: Microbiology

Sample Requirements: The following specimens may be cultured for AFB: NOTE: Must also order AFB smear.

Sputum: 5-10 ml of undiluted first morning sputum.

MISC. Body Fluid: At least 5 ml of pleural, peritoneal, synovial, pericardial, ascites, or thoracentesis fluid.

Bone Marrow: At least 2 ml of bone marrow.

Bronchial Washings: At least 5 ml of bronchial aspirate, tracheal aspirate, or transbronchial aspirate.

Gastric: At least 5-10 ml fasting first-morning gastric specimen.

Spinal fluid: At least 2 ml of cerebrospinal fluid.

Blood: 10-ml whole blood with heparin (green top) collects aseptically.

Urine: At least 40 ml of the first morning collection; use of a clean catch technique.

Wound: Submit swab from various sources.

Place specimen in a sterile container. Refrigerate specimens after collection. Twenty-four (24-hour) urines are unacceptable.

Sample Rejection:

Unlabeled specimen. Inadequate sputum. Insufficient volume.

Normal Range: Negative

Interpretation: This test is used to detect the presence of Mycobacteria species.

Schedule: Any positive findings will be reported as soon as available. Negative cultures are given final reports in 7 weeks

AFB SMEAR (TB)

Department: Microbiology

Sample Requirements: Sample requirements are the same as for the culture: Refrigerate after collection. Send directly to the Main Laboratory.

Sample Rejection: Unlabeled specimen; insufficient volume.

Normal Range: No Acid Fast Bacilli seen.

Interpretation: Species cannot be assumed on the basis of the presence of acid fast organisms.

Schedule: Report in 1 day.

ANAEROBIC CULTURE

Department: Microbiology

Sample Requirements:

A gram stain must be ordered on all wound cultures.

Collect one swab using an anaerobic collection system or 0.5 – 2.0 ml aseptically aspirated pus or exudate from wound or abscess. Avoid contamination with normal flora from skin, rectum, vaginal tract or other body surfaces.

Notify lab if specific anaerobes are suspected (i.e. Actinomyces) that require extended incubation times.

Do not refrigerate or incubate.

Sample Rejection: Unlabeled specimen. Dry swab. Specimen not collected in anaerobic collection system.

Normal Range: No pathogenic organisms found.

Interpretation: All anaerobic pathogens will be isolated and identified.

Schedule: Preliminary report in 2 days. Final report in 2 to 5 days; may be longer

BLOOD CULTURE

Department: Microbiology

Sample Requirements: See the complete blood culture collection procedure included in this manual.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimens. Inadequate volume of blood drawn.

Normal Range: No growth.

Interpretation: This test is used to detect the presence of bacteria in the blood stream.

Schedule: Preliminary reports will be issued at 48 hours. No growth cultures will continue to be incubated for a total of 5 days.

B. PERTUSSIS by PCR

Department: Microbiology

Sample Requirements: Nasopharyngeal swab collection with Stuarts or Amie's transport media.

Sample Rejection: Unlabeled specimen. Incorrect transport media.

Normal Range: Negative

Interpretation: Establish evidence of Bordetella Pertussis infection.

Schedule: Test performed once per day; Turnaround time of approximately 24 hours.

COVID-19

Department: Microbiology

Sample Requirements:

- COVID-19 Molecular (Abbott) TAT 15 Minutes: Dry swab
- COVID-19 PCR Express (Cepheid) TAT 1 Hour and COVID-19 and Influenza A/B PCR Express (Cepheid): Anterior nares or Nasopharyngeal swab in universal or viral transport media
- SARS-CoV-2 by PCR (Panther System): Anterior nares swab in a direct load tube

Sample Rejection: Unlabeled specimen. Incorrect transport media.

Normal Range: Negative

Interpretation: Establish evidence of COVID-19 infection.

Schedule:

- COVID-19 Molecular (Abbott), COVID-19 PCR Express (Cepheid), COVID-19 and Influenza A/B PCR Express (Cepheid) – available 24 hours a day, 7 days a week.

- SARS-CoV-2 by PCR (Panther) - Test performed once per day; Turnaround time of approximately 24-48 hours.

MENINGITIS/ENCEPHALITIS PANEL

Department: Microbiology

Sample Requirement: 1 ml CSF

Transport/special handling: Deliver to lab immediately. Do not refrigerate specimen.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: To detect an array of bacteria, viruses, and *Cryptococcus neoformans/gatti* in spinal fluid.

Schedule: Performed upon receipt.

BRONCH CULTURE

Department: Microbiology

Sample Requirements: Specimens should be submitted in sterile, leak proof container.

Transport/special handling: Deliver to lab immediately.

Sample Rejection: Unlabeled specimen.

Normal Range: No pathogenic organisms found.

Interpretation: Depends on culture site and organisms isolated.

Schedule: Preliminary report in 24 hours. Final report in 48 – 72 hours. Susceptibility studies will be performed when indicated.

C. DIFFICILE BY PCR

DEPARTMENT: Microbiology.

Sample Requirements: Collect liquid or unformed feces in a plastic container. Samples should be tested as soon as possible.

Transport/special handling: Stable 24 hours at 20-30 C or 5 days at 2-8 C.

Sample Rejection: Unlabeled or leaking specimen. Formed stool specimen.

Normal Range: Negative

Interpretation: This test detects the presence of toxigenic *C. difficile* in patient's stool.

Turn-Around-Time: One day.

CERVICAL CULTURE

Department: Microbiology

Sample Requirements: Swab area to be cultured with a sterile Amies swab with charcoal.

Transport/special handling: Deliver to lab ASAP. Maintain at room temperature.

Sample Rejection: Unlabeled specimen.

Interpretation: Depends on organisms isolated.

Schedule: Preliminary report in 24 hours. Final report in 48-72 hours. Susceptibility studies will be performed when indicated.

CHLAMYDIA /GC PCR

Department: Microbiology

Sample Requirements: Aptima Collection Kit:

Endocervical swabs: Collect with Aptima Unisex Collection system:

1. Remove excess mucous with white swab-discard swab.
2. Collect specimen with the blue shaft swab. Gently rotate swab 10-30 seconds in the endocervical cana.
3. Remove the swab without contact with the vaginal mucosa.
4. Place blue swab in the transport tube and break the swab at the score mark.
5. Recap specimen.
6. After collection, transport and store Aptima unisex swab specimen transport tube at 2°C to 30°C until tested.

Male urethral swabs:

1. Patient should not urinate for 1 hour prior to collection.
2. Insert the blue shaft swab 2-4 cm. into the urethra.
3. Gently rotate swab for 2-3 seconds and withdraw the swab.
4. Stable for 24 hours only at room temperature or refrigerated.
5. Place blue swab in the transport tube and break the swab at the score mark. Recap specimen.

6. After collection, transport and store Aptima unisex swab specimen transport tube at 2°C to 30°C until tested.

Male urine only is tested at HVHS. Female urine (send outs)

Unpreserved urine in a sterile container. Stable for 24 hours at room temperature or refrigerated.

Sample Rejection: Unlabeled Specimen. Use of wrong collection container. Aptima Specimens containing 2 swabs or just a white shaft swab only or no swab must be rejected.

Normal Range: Negative.

Interpretation: Used in the diagnosis of Chlamydia and/or Neisseria gonorrhoea infections.

Turn-Around-Time: Two – three days.

CRYPTOCOCCUS ANTIGEN

DEPARTMENT: Microbiology

Sample Requirements: 1 ml of CSF or one red- top tube.

Transport/special handling: Refrigerate after collection.

Sample Rejection: Unlabeled specimen.

Normal range: None detected.

Interpretation: The test detects the presence of cryptococcal antigen in CSF or blood.

Turn-Around-Time (TAT): One (1) day.

EAR CULTURE

Department: Microbiology

Sample Requirements: Swab area to be cultured with a sterile culturette.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen.

Normal Range: No pathogenic organisms found.

Interpretation: Depends on culture site and organisms isolated.

Schedule: Preliminary report in 24 hours. Final report in 48-72 hours. Susceptibility studies will be performed when indicated.

EYE CULTURE

Department: Microbiology

Sample Requirements: Swab area to be cultured with a sterile culturette.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen.

Normal Range: No pathogenic organisms found.

Interpretation: Depends on culture site and organisms isolated.

Schedule: Preliminary report in 24 hours. Final report in 48-72 hours. Susceptibility studies will be performed when indicated.

FECAL IMMUNOCHEMICAL TEST FOR OCCULT BLOOD

Department: Microbiology

Sample Requirements: FIT test specimen card collected by the patient at home. Specimen collection directions are included in the test kit provided to the patient.

Sample Rejection: Unlabeled specimen, expired test card, incorrect collection by patient

Normal Range: Negative.

Interpretation: FIT test is used to detect bleeding in the lower intestine.

Schedule: Test is performed daily. Results available within 24 hours of specimen receipt from the patient.

FUNGUS CULTURE

Department: Microbiology

Sample Requirements:

Order as Fungus Culture Blood:

Blood:

See blood culture collection procedure.

Order as Fungus Culture Other:

Body Fluid:

One 50 ml of fluid. Do not send swabs.

Bone Marrow:

2 ml of bone marrow. Use BD yellow top SPS vacutainer tube.

Conjunctiva:

Swabs of conjunctiva, scrapings of corneal ulcer, washings of lacrimal duct. Avoid contamination with skin flora.

CSF:

2 ml or more of cerebrospinal fluid sent in a sterile tube.

Sputum:

Instruct the patient to cough deeply, expectorating 2 to 50 ml of the first morning sputum into a sterile collection cup. DO NOT collect specimen consisting entirely of saliva.

Stool:

5 ml of fresh stool in a sterile container.

Throat: To isolate yeast, send swab of area with exudate or plaque if possible. To isolate fungi, send scrapings, tissue or aspirate.

Tissue: Surgical specimen, biopsy, and tissue in a sterile tube.

Urine: 5-10 ml of first morning clean catch, or catheterized urine in a sterile container.

Vaginal: To isolate yeast, send swab of vagina, vulva, or labia. To isolate fungi, send tissue or drainage from vagina, cervix, endocervix or urogenital site in a sterile container.

Wound: Send sample of pus, purulent fluid or aspirate.

Order as Fungus Culture Skin:

Skin: Skin Scrapings, exudates, nail clippings, whole nail, debris under nail, hair in a sterile container.

Transport/special handling: DO NOT refrigerate or incubate. Store at room temperature.

Sample Rejection: Unlabeled specimen. Improperly sealed container.

Normal Range: No Growth. A single negative culture does not necessarily rule out the presence of a fungal infection.

Interpretation: Used in the diagnosis of fungal infections.

Schedule: Positive cultures will be reported out as soon as possible. Negative cultures will be finalized at 4 weeks.

GC CULTURE

Department: Microbiology

Sample Requirements: Specimen should be submitted on a swab in Amie's media with charcoal.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen. Not on an appropriate culture swab. Specimen that has been refrigerated or that is greater than 24 hours old.

Normal Range: No Neisseria gonorrhoea isolated.

Interpretation: Sample is tested only for Neisseria gonorrhoea. No other organisms will be identified. Growth of Proteus or yeast can make it impossible to rule out the presence of Neisseria gonorrhoea.

Turn-Around-Time: Two– three days.

GRAM STAIN

Department: Microbiology

Sample Requirements: Ideal sample will be accompanied by a culture order. Separate swabs should be sent for the culture and for the gram stain. A double swab system is acceptable as long as both swabs are used for specimen collection.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen. Insufficient specimen.

Normal Range: Normal results will vary from no organisms to normal flora depending upon the culture site.

Interpretation: This test is used to detect a bacterial infection.

Schedule:

Stat turnaround time: 60 minutes.

Routine turnaround time: 24 hours

HPV BY PCR (HIGH RISK) WITH REFLEX TO GENOTYPING FOR 16 AND 18/45

Department: Microbiology

Sample Requirements: Refer to the Cytology section of this manual. Follow collection procedure for Thin Prep PAP test collection.

Sample Rejection: Unlabeled Specimen. Use of wrong collection container.

Normal Range: Negative.

Interpretation: Used in the diagnosis of high risk strains of Human Pappiloma Virus.

Turn-Around-Time: Two – three days.

H. PYLORI BIOPSY

Department: Microbiology

Sample Requirements: Gastric biopsy in urea broth.

Transport/special handling: Deliver to lab immediately. Maintain at room temperature until sent to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: Positive indicates the presence of H. Pylori bacteria in gastric tissue.

Turnaround time: Five hours.

INFLUENZA A/B BY RAPID PCR

Department: Microbiology

Sample Requirements: Nasopharyngeal swab in viral transport media from Cepheid

Sample Rejection: Unlabeled specimen. Improper collection device.

Normal Range: Negative

Interpretation: Useful for rapid detection of influenza viruses in upper respiratory tract specimens.

Schedule: Available daily. May be ordered STAT or ROUTINE.

LEGIONELLA URINARY ANTIGEN

Department: Microbiology

Sample Requirements: Submit urine sample in a clean, dry container and label appropriately. Urine culture specimens with boric acid preservative are also acceptable.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: Legionella urinary antigen is used to detect infection with Legionella pneumophila sero group 1.

Schedule: Turn-around-time is 1 day.

LEGIONELLA CULTURE

Department: Microbiology

Sample Requirements: Collect sputum in sterile sputum collection container. (Rarely, Legionellae will be isolated from other specimens such as pericardial, pleural or peritoneal fluids.) Avoid the use of saline. Use minimum quantities of local anesthetics such as lidocaine. Both of the above can inhibit the growth and isolation of Legionellae.

Transport/special handling: Deliver to lab immediately. Refrigerate if transport will be delayed.

Sample Rejection: Unlabeled specimen. Leaking or dried specimen.

Normal Range: No growth.

Interpretation: Culture is the definitive method for the diagnosis of Legionnaires disease. Although the sensitivity of the culture varies from 50 to 80%, the specificity is 100%.

Schedule: On rare occasions, colonies may appear as early as 24 hours after inoculation of the culture medium, but only from specimens with an unusually large number of organisms presents. It is more likely that 3-5 days will be required to demonstrate growth. Cultures will be held for 7 days.

METHICILLIN RESISTANT STAPH SCREEN

DEPARTMENT: Microbiology

Sample Requirements: Culturette from right and left nasal.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation:

Results reported as negative or Methicillin Resistant Staph Aureus. No susceptibility testing performed.

Schedule: Two – Three days.

NASOPHARYNGEAL CULTURE

Department: Microbiology

Sample Requirements: See complete nasopharyngeal procedure included in this manual.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen.

Normal Range: No pathogenic organisms found.

Interpretation: Depends on culture site and organisms isolated.

Schedule: Preliminary report in 24 hours. Final report in 48-72 hours. Susceptibility studies will be performed when indicated.

OCCULT BLOOD

Department: Microbiology

Sample Requirements: For best results, it is recommended that testing be done each day for three consecutive days. Submit specimen as a smear on the testing card according to the instructions on the card. If no card is available, submit a small amount of feces in a leak proof plastic container.

Transport/special handling: Store card at room temperature. If a cup must be used, refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: Used to determine the presence of otherwise unsuspected blood in feces.
Schedule: One day.

PINWORM PREP

Department: Microbiology

Sample Requirements: Collect specimen by pressing sticky side of paddle against anus after patient has been sleeping, but prior to washing anal area or defecating. Specimens collected on three consecutive days will have a higher probability of discovering the parasite. Use the pinworm paddle collection device available from the main laboratory.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation: Because pinworms live so low in the intestinal tract, the eggs are not well mixed into the fecal stream and often are not detected in routine stool examinations. Thus, the pinworm paddle approach is best. Examinations on multiple days may be required to diagnose infection.

Schedule: One – two days.

RESPIRATORY SYNCYTIAL VIRUS PCR (RSV)

Department: Microbiology

Sample Requirements: Nasopharyngeal swab in viral transport media from Cepheid

Sample Rejection: Unlabeled specimen. Improper collection device.

Normal Range: Negative

Interpretation: Useful for rapid detection of respiratory syncytial virus/ influenza viruses in upper respiratory tract specimens

Schedule: Available daily. May be ordered STAT or ROUTINE.

SPINAL FLUID CULTURE

Department: Microbiology

Sample Requirements: Lumbar puncture should be performed under condition of strict asepsis, since contamination of the specimen can occur readily and confuse the identification of the etiological agent.

Submit CSF collected in a sterile container.

Transport/special handling: Transport to the Laboratory immediately.
Indicate on each CSF tube submitted the tests that are to be analyzed from that specimen tube.
Gram stain must be ordered with each CSF culture.

Sample Rejection: Unlabeled specimen.

Normal Range: No growth.

Interpretation: Used to diagnose meningitis. Leukocyte response in CSF in acute bacterial meningitis is usually polymorphonuclear, while that in viral, tuberculous, and fungal meningitis is usually lymphocytic and less intense, especially after 8-hours past onset.

Schedule: Handled STAT. Preliminary report in 24-hours. Final report two (2) – three (3) days.

STOOL CULTURE

Department: Microbiology

Sample Requirements: Submit 5 ml of fresh random stool placed in a sterile stool container or in Carey Blair Preservative. If using Carey Blair preservative, fill container until liquid reaches the fill line. Specimen is stable at room temp in this media. IF FRESH: Specimen must be less than two (2) hours old. Refrigerate specimen if storage is necessary.

Specimen Rejection: Unlabeled specimen. Diapers or bathroom tissue are not acceptable samples. Only one specimen per day is acceptable. Specimens will not be accepted on inpatients if the patient has been hospitalized longer than 3 days.

Normal Range: Normal fecal flora.

Interpretation: Stool is screened for Salmonella, Shigella, E.coli 0157-H7, Yersinia, and Campylobacter jejuni. Other organisms reported when present: Aeromonas, Plesiomonas sp.

Schedule: Preliminary report in 24 hours. Final report in 48 - 72 hours.

STREP A SCREEN (CULTURE)

Department: Microbiology

Sample Requirements: Submit a culturette swab.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen.

Normal Range: No group A Streptococcus isolated.

Interpretation: Group A Streptococcus isolated

Schedule: Final report in one to two days.

STREP A SCREEN by PCR

Department: Microbiology

Sample Requirements: Submit an E-swab.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative for Group A streptococcus by PCR.

Interpretation: The Group A Streptococcus PCR assay is a qualitative amplified molecular assay for the detection of Streptococcus pyogenes (Group A β -hemolytic Streptococcus) in throat swab specimens.

Schedule: Final report: 30 minutes-1 day

STREP B SCREEN BY PCR

Department: Microbiology

Sample Requirements: Submit culturette. Vag/Rectal specimen only.

Transport/special handling: Store at room temperature.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative for Group B streptococcus by PCR

Interpretation: Group B Strep is most notable for its role in neonatal sepsis and meningitis. The early-onset variety is thought to be acquired from the maternal genital tract at the time of delivery and has a higher mortality. All positive Group B PCR tests will reflex to a culture and susceptibility for Group B streptococcus.

Schedule: Final Report: Two– three days.

STREP PNEUMO URINARY ANTIGEN

Department: Microbiology

Sample Requirements: Submit urine sample in a clean, dry container and label appropriately. Urine culture specimens with boric acid preservative are also acceptable.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative

Interpretation:

Strep pneumo urinary antigen is used to detect infection with Strep pneumo.

Schedule: Turn-around-time is 1 day.

THROAT CULTURE

Department: Microbiology

Sample Requirements: Swab area to be cultured with a sterile culturette.

Transport/special handling: Store at room temp.

Sample Rejection: Unlabeled specimen.

Normal Range: No pathogenic organisms isolated.

Interpretation: Depends on culture site and organisms isolated.

Schedule: Preliminary report in 24 hours. Final report in 48-72 hours. Susceptibility studies will be performed when indicated.

URETHRAL CULTURE

Department: Microbiology

VAGINAL CULTURE

Department: Microbiology

Sample Requirements: Swab area to be cultured with a sterile lq stuart media culture swab.

Transport/special handling: Deliver to lab immediately. Store at room temp.

Sample Rejection: Unlabeled specimen.

Normal Range: No pathogenic organisms found.

Interpretation: Depends on culture site and organisms isolated.

Schedule: Preliminary report in 24 hours. Final report in 48-72 hours. Susceptibility studies will be performed when indicated.

VRE CULTURE

Department: Microbiology

Sample Requirements: Swab area to be cultured with a sterile culturette.

Transport/special handling: Store at room temp.

Sample Rejection: Unlabeled specimen.

Normal Range: Negative.

Interpretation: Depends on culture site and organisms isolated.

Schedule: Preliminary report in 24 hours. Final report in 48-72 hours. Susceptibility studies will be performed when indicated.

VARICELLA ZOSTER BY PCR

Department: Send Out

Specimen Requirements: Swab of lesion, vesicular fluid, or vesicle scrapings placed into viral transport M5 medium. Can also be done on CSF.

Specimen Rejection: Sample not placed in proper transport media. Use of wooden swab.

Normal Range: See Reference lab report.

Interpretation: Aid in the diagnosis of disease caused by varicella zoster virus (Chicken Pox and Shingles)

Schedule: Referred to Reference Lab.

VIRAL CULTURE

Department: Send out

Sample Requirements: Submit swabs, fluids, or aspirates in viral culture transport media available from the Main Laboratory.

Transport/special handling: Refrigerate till transport to lab.

Sample Rejection: Unlabeled specimen.

Normal Range: No virus isolated.

Interpretation: See ref lab report.

Schedule: Referred to Reference Lab: Variable, depends on findings.

WET PREP

Department: Microbiology

Sample Requirements: Submit a swab in sterile saline.

Transport/special handling: Deliver to lab immediately. Store at room temp.

Sample Rejection: Unlabeled specimen, dry swab.

Normal Range: No trichomonas, no wbc's, no clue cells, no yeast seen.

Interpretation: Used to determine the presence of Trichomonas vaginalis trophozoites, WBC's, clue cells, or yeast cells.

Schedule: Handled STAT.

WOUND CULTURE

Department: Microbiology

Sample Requirements: A gram stain must be ordered on all wound cultures.

Collect one (1) or two (2) swabs or 0.5 – 2.0 mL aseptically aspirated pus or exudate from wound or abscess. Avoid contamination with normal flora from skin, rectum, vaginal tract, or other body surfaces. Sterile preparation of the aspiration site is required.

If anaerobes are suspected a separate Anaerobic culture should be ordered!
Anaerobic cultures require special anaerobic collection swabs.

Transport/special handling: Do not refrigerate or incubate.

Sample Rejection: Unlabeled specimen. Dry swab.

Normal Range: No growth. Interpretation: All aerobic pathogens will be isolated and identified, and susceptibility testing performed as appropriate. Skin flora will be noted when isolated.

Schedule:

Preliminary report: One day.

Final report: Two - three day

TRANSFUSION REACTION REPORT

The time that elapses between suspicion of a transfusion reaction and initiation of appropriate therapy should be as short as possible. Any adverse symptoms or physical signs during the transfusion of blood or its components should be considered part of a potentially life-threatening reaction. The following immediate actions should be taken:

The transfusion should be stopped to limit the amount of blood infused.

The intravenous line should be kept open with a slow infusion of normal saline.

The patient's physician should be notified.

The Blood Bank must be informed immediately.

The top part of the transfusion reaction report should be filled out completely by the physician or responsible nurse under the direction of the physician.

Return the completed form together with the discontinued bag of blood and the administration set to the Blood Bank STAT.

The patient must be re-identified and a blood sample drawn for a direct coombs and possible repeat ABO, Rh and crossmatch. This sample should be sent to Blood Bank STAT with the completed form.

Do not rebracelet the patient. Leave the existing bracelet on the patient.

DISPOSITION OF FETUS

POLICY

It is the policy of Heritage Valley Beaver to encourage families to assume the responsibility for legal disposition of a fetus within 36 hours after expulsion or extraction in accordance with their preference or beliefs.

The mother or father will be advised of this time limit by the Nurse Manager and the name of the person notified will be recorded on the medical record.

Until legally disposed of, the Laboratory will house the remains.

Laboratory disposal is limited to any fetus under 16 weeks gestation, which shows no evidence of life after expulsion or extraction.

SPECIAL INSTRUCTIONS: A fetus under 16 weeks gestation which shows no evidence of life after expulsion or extraction does not require the filing of a death certificate nor is burial required.

Disposition may be made by Heritage Valley Beaver if the parents request and authorize the disposition. Form 12-7024-3, Permission for Disposition of Products of Conception, reproduced as Attachment I, is required to authorize this disposition.

If the parents desire burial, Authorization for Selection of Funeral Director, reproduced as Attachment II, must be signed.

2. A fetus over 16 weeks gestation or a fetus under 16 weeks gestation which shows evidence of life after expulsion or extraction requires the filing of a death certificate and burial or cremation. Authorization for Selection of a Funeral Director, Attachment II, must be signed.

24 HOUR URINE COLLECTIONS GUIDELINES

A complete, accurate collection is necessary for the proper evaluation of tests performed on 24 hour urine samples. Often preservatives are necessary to stabilize the substance being analyzed. Occasionally a preservative needed for one test is incompatible with another 24 hour urine test ordered at the same time. This circumstance requires separate collections. All 24 hour urine collections should be refrigerated. This aids in the preservation of the sample and diminishes the growth of bacteria and decomposition of urine constituents.

Patients should consume their usual liquid intake during the collection period, unless the physician specifies otherwise. Alcoholic beverages should not be consumed during the collection period. Refer to the specific test for additional instructions.

COLLECTION INSTRUCTIONS:

At the beginning of the collection period, the patient should void his/her bladder completely and discard the urine.

This starting time and date should be indicated on the empty 24-hour urine container at this time. The patient's name, ID number, location and test to be performed should also be noted on each container's label.

From this time on, for the next 24 hours, all urine passed should be added to the specimen container. If more than one container is needed, it should be labeled as "#1 of 2" or "#2 of 2".

The preservative should be in the container(s) when the first specimen is added. The preservative is obtained from the Lab. The Laboratory techs will mark the type of preservative added and place any warning labels required. Refrigerate during collection. Refer to additional instructions in the entry for the specific test in this manual.

At the end of the 24-hour period, at the exact same time that the collection was begun, the patient should completely void his/her bladder and add this urine to the container. Note the completed time on the container.

Send the entire collection, properly labeled, to the Laboratory.

COLLECTION OF BLOOD CULTURE SPECIMENS

MATERIALS REQUIRED:

21G 3/4" x 12" Blood Collection Set (Butterfly)

BD Vacutainer adapter

Labels

Gloves

Alcohol wipes

Blood Culture ChloraPrep Applicators - One step applicator containing:

Chlorhexidine gluconate 2% w/v

Isopropyl alcohol 70% v/v

Bactec Bottles

Blue with gray plastic cap = Aerobic, 10 ml max blood

Purple with purple plastic cap = Anaerobic, 10 ml max blood

Gray with pink plastic cap = Pediatric 3 ml blood max - For use on pediatric patients only.

Check Expiration Date – Do not use culture vials past their expiration date.

Do not use culture vials that exhibit cracks or defects.



Butterfly and Adapter



Anaerobic, Aerobic, Pediatric Bottle

PROCEDURE:

Procedural Notes:

Skin Disinfection - Proper skin disinfection is crucial for preventing contaminated blood cultures. Contaminated blood cultures lead to patients receiving unnecessary antibiotic therapy.

Blood Volume - Adequate volumes of blood must be collected to insure that blood cultures will be clinically accurate. Blood cultures are drawn in sets of two bottles (aerobic and anaerobic).

The correct blood draw per blood culture order is up to 10 ml for aerobic and up to 10 ml for anaerobic. Pediatric bottles are to be used on pediatric patients only and require up to 3 ml. of blood per bottle

Order of Draw – The aerobic sample is always drawn first.

Tracking – The initials of the collector must be present on the blood culture labels so that contamination rates can be monitored.

Collection date and time and the blood culture source/site (i.e. peripheral, CVC, arterial line, etc.) must be identified on the specimen label of each set.

Do not write over either bar code label since they are used when identifying the bottle to the blood culture instrument.

DO NOT ATTEMPT TO DRAW BLOOD CULTURES BY PLACING A NEEDLE ADAPTER AND NEEDLE ONTO THE BLOOD CULTURE BOTTLE. THE BLOOD CULTURE BROTH CONTAINS A TOXIC ANTICOAGULANT WHICH COULD BE INTRODUCED INTO THE PATIENT'S CIRCULATION. A BUTTERFLY ASSEMBLY OR SYRINGE MUST BE USED IN CONJUNCTION WITH THE APPROPRIATE VACUTAINER ADAPTER.

All blood cultures should be drawn from a peripheral site. If any culture is drawn from a line, a culture must also be drawn from a peripheral site if possible.

Positive Patient Identification

Follow policy # 1.10.3.001 in the Laboratory Phlebotomy Manual regarding positive patient identification. Proper patient identification procedure can also be found in the Patient Care Manual under "Patient Identification and Banding."

Bottle Preparation:

1. Check expiration date
2. Do not use vials that exhibit any cracks or defects
3. Remove plastic caps from aerobic and anaerobic blood culture bottles.
4. Wipe tops with alcohol pad, allow to dry. (Do not use Chloraprep on bottle tops).
5. MARK aerobic bottle at 10ml fill level and anaerobic bottle at 10 ml fill level on left side of label. Mark 3 ml. fill for pediatric bottles.
- 6.
7. Site Preparation:
8. Meticulous site preparation is critical. Cleanse the skin before venipuncture in the following manner:
9. NOTE: Chloraprep should not be used on children under 2 months of age. Alcohol may be used for site preparation in these patients.
10. Apply tourniquet.
11. Open the Chloraprep One-Step Blood Culture Prep. Pinch the wings on the applicator to break the ampule and release the antiseptic. Do not touch the sponge. Wet the sponge by repeatedly pressing and releasing the sponge against the venipuncture site until liquid is visible on the skin.
12. Clean the venipuncture site using repeated back and forth strokes of the applicator for approximately 30 seconds. Completely wet the site with antiseptic and allow to air dry for approximately 30 seconds. Do not blot or wipe away antiseptic.
13. DO NOT TOUCH or palpate area after cleansing. If re-palpation is necessary, either palpate with gloved finger cleaned in the manner above or be very careful not to palpate on or near the venipuncture site.

Collect Blood Sample (Butterfly):

1. Attach end of butterfly to the Vacutainer adapter.
2. To avoid needlestick injury always handle adapter and insert by the wings.
3. Perform venipuncture by holding wings of the butterfly with the bevel up.
4. Secure wings with paper tape if necessary.
5. Place adapter on prepared Aerobic bottle (Blue bottle) - press down to penetrate the bottle septum. Reminder- Be sure you have properly prepared the bottle as described in 'Bottle Preparation' section on page 3 of this procedure.
6. Hold cap in place on top of bottle
7. Keep bottle AS UPRIGHT AS POSSIBLE.
8. Draw up to 10 ml. Do not draw more than 10 ml.
9. Remove adapter and repeat on prepared Anaerobic (Purple bottle) - press down to penetrate the bottle septum. Reminder- Be sure you have properly prepared the bottle as described in 'Bottle Preparation' section on page 2 of this procedure.
10. Draw up to 10 ml. Do not draw more than 10 ml.
11. If other blood tests are to be drawn, place insert into the adapter and snap into place using the wings. **THERE IS A NEEDLE INSIDE THE ADAPTER. DO NOT PUT YOUR FINGER INSIDE THE ADAPTER OR INSERT.**
12. Draw other vacutainer tubes according to the correct order of draw.
13. Remove tourniquet.
14. Retract the needle by depressing the button. The needle will slide out of the venipuncture site and lock into place. Do not impede device retraction. Cover the puncture site with a sterile gauze pad and apply pressure.
15. Deposit the butterfly and the adapter in the nearest sharps container as a unit.
16. Complete the blood culture with the following steps before transporting to the lab.

Alternate Method to Collect Blood Sample (Syringe and Butterfly):



Butterfly



Vacutainer Adapter



Syringe



Vacutainer Blood Transfer Device

1. Remove needle hub from the butterfly, and discard in sharps container.
2. Attach end of butterfly to the Syringe.
3. Perform venipuncture by holding wings of the butterfly with the bevel up.
4. Secure wings with paper tape if necessary.
5. Draw sample through the butterfly into the syringe.
6. Remove the syringe from the butterfly.
7. Attach the end of the syringe to the vacutainer blood transfer device.
8. To avoid needlestick injury always handle adapter and insert by the wings.

9. Place blood transfer device on a prepared Aerobic bottle (Blue bottle) - press down to penetrate the bottle septum. Reminder- Be sure you have properly prepared the bottle as described in 'Bottle Preparation' section on page 3 of this procedure.
10. Hold cap in place on top of bottle
11. Keep bottle AS UPRIGHT AS POSSIBLE
12. Allow up to 10 ml. to enter the bottle. Do not add more than 10 ml.
13. Remove transver device and repeat on prepared Anaerobic (Purple bottle) - press down to penetrate the bottle septum. Reminder- Be sure you have properly prepared the bottle as described in 'Bottle Preparation' section on page 2 of this procedure.
14. Allow up to 10 ml. to enter the bottle. Do not add more than 10 ml.
15. If other blood tests are to be drawn, place insert into the adapter and snap into place using the wings. THERE IS A NEEDLE INSIDE THE ADAPTER. DO NOT PUT YOUR FINGER INSIDE THE ADAPTER OR INSERT.
16. Draw other vacutainer tubes according to the correct order of draw.
17. Remove tourniquet.
18. Retract the needle by depressing the button. The needle will slide out of the venipuncture site and lock into place. Do not impede device retraction. Cover the puncture site with a sterile gauze pad and apply pressure.
19. Deposit the butterfly and the adapter in the nearest sharps container as a unit.
20. Complete the blood culture with the following steps before transporting to the lab.

Completing the Blood Culture

1. Remove any blood from the top of the blood culture bottles with an alcohol pad.
2. Remove gloves and wash hands.
3. Place a label on each blood culture bottle. Do not cover the bar code on the bottles with the label. Do not write over either bar code label.
4. Place your initials, date, time and source on the blood culture labels. The lab will not accept Blood cultures if the identity of the collector is not designated.
5. Place the bottles and extra labels into a specimen bag and deliver the bottles to the lab.

REFERENCES:

Chloraprep Package Directions, Medi-Flex Hospital Products.
 BioMérieux, Inc. 2002. BacT/ALERT SA, SN, and PF Culture Bottles, Package Inserts.

COLLECTION OF SEMEN SPECIMEN

1. Patient should abstain from intercourse for three days prior to collection of specimen.
2. Specimens collected at home should be submitted in a small, clean, dry container. If coitus interruptus is followed, no vaginal jellies or any lubricants that inhibit activity are to be used. A condom is not recommended for collection due to immobilizing agents usually present in condoms. An alternate procedure for collection is masturbation.
3. Transportation of the specimen to the laboratory within 60 minutes after ejaculation is imperative. This is done simply by carrying the specimen underneath the armpit in order to maintain body temperature. Report directly to the laboratory to register and submit the specimen for analysis.

4. Specimens should be brought to the laboratory Monday thru Friday only. No weekends or holidays. They should be received prior to 10:00 AM.

COLLECTION OF STOOL SPECIMEN

All bowel movements over the period indicated for the test must be passed and collected directly into the container provided by the laboratory.

During collection period, the specimen container should be kept in a cool place.

Please return the container to the laboratory as soon as possible after collection.

COLLECTION FOR PINWORM PREP

1. Before collection, the patient must be sleeping for several hours.
2. Spread buttocks and place the sticky side of the paddle against the rectum. Do not insert.
3. Replace paddle in the tube and return to the laboratory.
4. Usually this is repeated for two more nights for a total of three specimens.
5. All of the paddles may be returned to the laboratory at the end of three days.

BLOOD COLLECTION TUBES ANTICOAGULANT LIST

Blood specimens are collected in Vacuette blood collection tubes. Vacuette tubes have color-coded rubber stoppers indicating the type of additives they contain.

VACUTAINER BLOOD COLLECTION TUBES

STOPPER COLOR	ADDITIVE	INSTRUCTIONS
Blue *	Sodium Citrate	Invert gently to mix
Gold	Serum Separator Gel	Do not invert
Light Green	Lithium Heparin	Invert gently to mix
Dark Green	Sodium Heparin	Invert gently to mix
Gray	Sodium Fluoride	Invert gently to mix
Lavender	EDTA	Invert gently to mix
Red 10 ml glass	None	Do not invert

Red-Plain	None	Do not invert
Yellow	ACD	Invert gently to mix
Navy (purple label)	EDTA	Invert gently to mix
Navy (red label)	None	Do not invert

Inaccurate test results can occur if tubes containing some additives are not filled completely. Blood samples must be collected in the appropriate tube for the test requested.

* A full sample for a blue top tube must be drawn in order to perform testing.