Laboratory Specimen Collection and Test Reference Manual

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TABLE OF CONTENTS

(Click on a test to hyperlink to that information)

GENERAL INFORMATION:

1. It is preferable to collect specimens at a standardized time of day. Some body constituents undergo diurnal variations in concentration. Change in posture causes shift in body fluids and therefore changes in blood protein concentration, which are higher in the erect than in the recumbent position by 10% or more. Exercise also causes altered concentrations.

2. Whenever possible, blood for most tests is collected from patients before breakfast; at least 10 hours after they have last eaten, and preferably, 6 hours after they have had water to drink. The Laboratory recognizes that there is variation among patient condition that may result in a time variation that differs from the above schedule (i.e.; continuous tube feed).

3. For biochemical examination, serum or plasma is best separated from the red blood cells within 1 hour, and no more than 2 hours. Speed is more important for electrolytes, enzymes, steroids, and other hormones.

4. If blood is to be collected by vacutainer system, allow vacuum tube to draw correct amount of blood. If collected by syringe, carefully insert needle into stopper and gently add blood to tube. (DO NOT FORCE BLOOD INTO TUBE), this causes hemolysis and may affect results.

5. The Laboratory cannot accept specimens without proper identification. Label each specimen , at minimum, with the following:

    a. Outpatients: patient's name and date of birth on each specimen. Other information which must be included either on the specimen or on the requisition: date and time of collection, collector's initials.
    b. Inpatients: patient name and patient number, date and time of collection, and collector's initials on the container, not on the lid.

6. Hemolyzed specimens must be recollected.

ORDERING LABORATORY TESTING

The Laboratory performs testing based on written or electronically submitted test orders. The submitted order should be included in the CPSI scanned image file (CPSI Hospital base Menu – enter patient account # - Clinical Data – Scanned Image – Outpatient Lab Orders)

The following are required for acceptable requisitions:

1. The requisition must be legible.
2. The following information is required:
    a. Complete first and last name
    b. Sex of patient
    c. Patient's date of birth (preferred) or age

   d. Complete contact information for person requesting testing
   e. Name and special handling of testing
   f. Specimen source when pertinent (ex: Microbiology and Tissue Specimens)
3. Additional information may be necessary for testing and results reporting such as race, ethnicity or family history.

The Laboratory will attempt to obtain missing or unclear information. A new requisition may be required.

A verbal order will be accepted only in necessary situations. Written orders are preferred. All verbal orders will require a "read-back" confirmation and written authorization within 30 days. (Laboratory forms "Verbal Orders")

BLOOD COLLECTION TUBES AND SUPPLIES:

- A standard supply of the various blood collection tubes and supplies should be on the patient unit in a phlebotomy tray.
- Tubes are color coded by the various color stoppers. The tubes are vacuum tubes and will draw the proper quantity of blood into the tube. DO NOT FORCE BLOOD into the tubes.
- Some of the tubes are marked with an expiration date. There may be a vacuum loss if the tubes are used past the date of expiration.
- All tubes with an anticoagulant MUST have the proper quantity of blood added.

Identifying Color Stoppers and Request to Accompany Tube:

Purple = Hematology: 4.5 ml size tube. Add blood and mix by gentle inversion 10 times.

Blue = Coagulation: 4.5 ml of blood. Mix by gentle inversion l0 times.

Red / Yellow / Tiger Top / Green= Chemistry: 4.5 or l0 ml of clotted blood.

Blood Culture Bottle Set: .1-5 ml of blood in Aerobic (blue cap) bottle; .1-5 ml of blood in Anaerobic (red cap) bottle.

See specific collection information for each test listed later in this document.

ORDER OF DRAW

1. Blood culture bottle
2. Coagulation – blue top
3. Non-Additive - red top
4. Serum Separator (SST) – yellow top
5. Heparinized – green top
6. EDTA – Lavender / purple top
7. Lithium / Sodium Fluoride – gray top

SPECIMEN LABELING:

All specimens should be labeled with the following information:
1. Patient's name
2. Patient MR number (for inpatients or ER) or date of birth for non-inpatients
3. Time of collection
4. Date of collection
5. Initials of person collecting specimen
6. Source of collection required for pertinent testing (esp. Microbiology and tissue samples)

CRITERIA FOR SPECIMEN REJECTION:

Each specimen received in the Laboratory is initially evaluated for acceptability. At the discretion of the intake technician / technologist, specimens may be rejected in keeping with the following criteria. If a specimen is rejected, the ordering unit or facility must be notified, and a QA Report filed and forwarded to the Technical Supervisor.

Final disposition of unique specimens such as CSF and other body fluids will be determined by the Laboratory Director.

If analysis is necessary due to the uniqueness of the specimen or due to extenuating circumstances relating to the patient's condition, the final report of analysis on these specimens must include the following comments:

Specimen Questionable. (list specific problem with specimen)
Review Results Critically. Specimen assayed per instruction of M.D.

1. Specimens received in syringes with needle attached will not be processed. The ordering physician or other caregiver on the unit is notified and requested to report to the Lab and remove the needle.

2. Containers where the specimen has leaked will be treated as follows:

    a. Urine and stool samples will be discarded and a new sample requested.

    b. Specimens for culture and sensitivity will be carefully examined and if necessary a new sample requested.

    c. For other body fluids, both sterile and non-sterile sites, the ordering physician will be notified.

    d. Final disposition of unique specimens such as CSF and other body fluids will be determined by the Laboratory Director.

3. Unlabeled or Mislabeled Specimens:

A mislabeled specimen usually occurs when the required criteria on the specimen label and the requisition are not identical. Any mislabeled and unlabeled specimens received are unacceptable and are to be rejected for analysis.

4. Code Specimens:

   For specimens labeled "Trauma" or "Unknown", the specimen is to be processed immediately and the results taken directly off the instruments, photocopied, and hand delivered to the physician. At a later time the order will entered into the HIS and the lab results entered with the comment: "Code Blue sample – UNLABELED!!—Review results with caution!"

5. Urine specimens:

   - Urines left at room temperature for more than two hours or poor quality specimen; too mucoid, collected on a swab for culture and sensitivity.
   - Urines that have been refrigerated for more than 18 hours after collection.
   - Urines contaminated with fecal material.

6. Culture specimens:

   - Culture specimens that have not been placed in a proper sterile container are rejected. Be sure that collection of another specimen is possible before discarding the specimen.
   - Inoculated blood or fungal culture bottles placed in the refrigerator (room temperature only).
   - Anaerobic culture not collected in a syringe or appropriate anaerobic transport container.

7. Clotted CBC (EDTA purple top) or coagulation-PT & APTT (Blue Top) tubes.

8. All blood specimens that have been collected with an incorrect anticoagulant.

9. All blood specimens where the serum or plasma is not separated soon enough (within two hours).

10. QNS (Quantity Not Sufficient) for analysis.

11. Patient given breakfast or insulin before fasting requests.

12. Patient given medication before scheduled time.

11. Hemolyzed Specimens: If the specimen is markedly hemolyzed, call the ordering physician and recommend that the sample be recollected prior to analysis. Moderately or mildly hemolyzed specimens will be processed and reported as soon as possible to the physician who will be asked if the patient should be redrawn and tests

repeated. Any results reported from hemolyzed specimens will have a comment appended describing the level of hemolysis as mild, moderate, or marked.

12. Incomplete Information: If specimen identification is not in question, but information is incomplete, the Lab will attempt to complete the requisition by telephone calls. If the information is not obtained the sample will be resulted with the following comment: SPECIMEN WAS INADEQUATELY LABELED BY COLLECTION PERSONNEL, REPORT MAY NOT ACCURATELY REFLECT COLLECTION TIME, OR COLLECTOR

TEST ADDITIONS AFTER SUBMISSION OF SPECIMEN:

Pomerene lab can arrange for additional testing if sufficient specimen volume and stability remain after initial tests have been completed. To request a test addition, please call the laboratory. In addition, we require a written order to be faxed from your facility.

MICROBIOLOGY SPECIMEN COLLECTION GUIDELINES

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
Abscess	Remove surface exudate by wiping with sterile saline or 70% EtOH					Tissue or fluid is always superior to a swab specimen. If swabs must be used, collect 2, one for culture and one for Gram staining. Use Starswab II (pink cap).
Open	Aspirate if possible, or pass a swab deep into the lesion and firmly sample the lesion's advancing edge.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day/source	A sample from the base of the lesion and a sample from the abscess wall are most productive.
Closed	Aspirate abscess wall material with needle and syringe. Aseptically transfer all material into anaerobic transport device.	Starswab II (pink cap) or Anaerobic transport system, <=1 ml	<=2 hr, RT	<=24 hr, RT	1/day/source	Sampling of the surface area can introduce colonizing bacteria not involved in the infectious process.
Bite Wound	Refer to Abscess					Do not culture animal bite wounds <=12 hr old (agents are usually not recovered) unless they are on the face or hand or unless signs of infection are present.
Blood Cultures	Disinfection of culture bottle: Apply 70% isopropyl alcohol to rubber stoppers and wait 1 min.	Versa Trek Bottles (Red & Blue) or Vacutainer with SPS (yellow top)	<=2 hr, RT	<=24 hr, RT or per instructions	3 sets in 24 hr.	See recommendations under Culture, Blood test criteria found above in this document.
	Refer to Culture, Blood for collection information.					

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
Bone	Collect surgically obtained bone.	Submit in sterile screw-cap container. Keep moistened with sterile saline.	<=15 min, RT	<=24 hr, RT	None	Always submit as much bone as possible; if possible, save an amount of the sample in the freezer.
Bone marrow	Prepare puncture site as for surgical incision.	Submit in sterile container.	<=24 hr, RT if collected in blood culture bottle.	<=24 hr, RT	1/day	Small volumes of bone marrow may either be inoculated into blood culture bottles, or directly onto culture media.
Burn	Clean and debride the wound prior to specimen collection.	Tissue placed in a sterile container, or swab exudate.	<=2 hr, RT	<=24 hr, RT	1/day/source	Use Starswab II (pink cap). Surface cultures of burns may be misleading.
Catheter						
i.v.	1. Cleanse the skin around the catheter site with alcohol.	Sterile screw cap container.	<=15 min, RT	<=24 hr, 4ºC	None	Acceptable i.v. catheters for semiquantitative culture: central, CVP, Hickman, Broviac, peripheral, arterial, umbilical, hyperalimentation, Swan-Ganz.
	2. Aseptically remove catheter and clip a 5 cm distal tip of the catheter directly into a sterile container.					
	3. Transport directly to microbiology to prevent drying.					
Foley	Do not culture since growth represents distal urethral flora.					Not acceptable for culture.
Cellulitis	1. Cleanse site by wiping with sterile saline or 70% alcohol.	Sterile screw cap container. Syringes are not acceptable transport.	<=15 min, RT	<=24 hr, 4ºC		Yield of potential pathogens is only 25-35%.
	2. Aspirate the area of maximum inflammation (commonly the center rather than the leading edge) with a fine needle and syringe.					
	3. Draw small amount of sterile saline into syringe and aspirate into sterile screw cap container.					

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
CSF	1. Disinfect site with betadine.	Sterile screw cap tube.	Bacteria: never refrigerate; <=15 min, RT	<=24 hr, RT	None	Obtain blood cultures also. If only 1 tube of CSF is collected, it should be submitted to microbiology first. Microbiology should be given tube #3 or 4.
	2. Insert a needle with stylet at L3-L4, L4-L5, or L5-S1 interspace.	Minimum amount required: bacteria, <=1 ml; fungi, <=2 ml; AFB, <=2 ml; virus, <=1 ml	Virus: transport on ice; <=15 min, 4ºC	<=72 hr, 4ºC		Aspirate of brain abscess or a biopsy may be necessary to detect anaerobic bacteria or parasites.
	3. On reaching the subarachnoid space, remove the stylet and collect 1-2 ml of fluid in each of four leak proof tubes.					Fungal and Viral cultures are referred to Quest Diagnostics.
Decubitis ulcer	See Comment section: A swab is not the specimen of choice.	Starswab II (pink cap) or Anaerobic transport system for tissue.	<=2 hr, RT	<=24 hr, RT	1/day/source	A decubitis swab provides little clinical information. A tissue biopsy sample or a needle aspirate is the specimen of choice.
	1. Cleanse surface with sterile saline.					
	2. If a sample biopsy is not available, vigorously swab the base of the lesion.					
Dental culture:	See Comment section.	Anaerobic Transport System	<=2 hr, RT	<=24 hr, RT	1/day	Periodontal lesions require special processing; the laboratory should be consulted prior to specimen collection to ensure techniques are available for the detection of specific agents.
Gingival, periodontal, periapical, Vincent's stomatitis	1. Carefully cleanse gingival margin and supragingival tooth surface to remove saliva, debris, and plaque.					
	2. Using a periodontal scaler, carefully remove subgingival lesion material and transfer to anaerobic transport system.					
Ear						
Inner	Tympanocentesis should be reserved for complicated, recurrent, or chronic persistent otitis media.	Sterile tube, Starswab II (pink cap) or Anaerobic Transport system.	<=2 hr, RT	<=24 hr, RT	1/day/source	Throat or nasopharyngeal cultures are not predictive of agents responsible for otitis media and should not be submitted for that purpose.
	1. For an intact ear drum, clean the ear canal with soap solution and collect fluid via the syringe aspiration technique.					
	2. For a ruptured ear drum, collect fluid on a flexible shaft-swab via an auditory speculum.					

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
Outer	1. Use a moistened swab to remove any debris or crust from the ear canal.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, 4ºC	1/day/source	For otitis externa, vigorous swabbing is required since surface swabbing may miss streptococcal cellulitis.
	2. Obtain a sample by firmly rotating the swab in the outer canal.					
Eye						
Conjunctiva	1. Sample both eyes using separate swabs by rolling over each conjunctiva.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, 4ºC	None	If possible, sample both conjunctivae, even if only one is infected, to determine the indigenous microflora. The uninfected eye can serve as a control with which to compare the agents isolated from the infected eye.
Corneal scrapings	1. Obtain conjunctival swab specimens as described above.	Sterile cup, add sterile saline to just cover the scrapings.	<=15 min, RT	<=24 hr, RT	None	It is recommended that swabs for culture be taken prior to anesthetic application, whereas corneal scrapings can be obtained afterward.
	2. Instill 2 drops of local anesthetic.					
	3. Using a sterile spatula, scrape ulcers or lesions and place in sterile cup.					
Fluid or aspirates	Prepare eye for needle aspiration of fluid.	Sterile screw cap container.	<=15 min, RT	<=24 hr, RT	1/day	Fungal culture should be considered; fungal culture is submitted to Quest Diagnostics. Anesthetics may be inhibitory to some etiologic agents.
Feces						
Routine Culture	Pass directly into a clean, dry container. Transport the specimen to the micro lab within 1 hour of collection or transfer a portion to transport system (white capped container).	Sterile screw cap container	Unpreserved: <=1 hr, RT; Preserved: <=24 hr, RT	<=24 hr, 4ºC; <=48 hr, RT or 4ºC	1/day	Do not perform stool cultures on patients whose length of stay was >3 days and the admitting diagnosis was not gastroenteritis. Swabs for routine pathogens are not recommended except in patients with active diarrhea.
Leukocytes	Pass stool specimen directly into a clean screw capped container.	Orange-top screw top container.	<=1 hr, RT	<=24 hr, 4ºC	1/day	This procedure often does not provide results of clinical value and can be misleading.
Occult Blood	1. Collect small amount of feces and apply to Hemoccult test card.	Hemoccult card				Obtain Hemoccult test cards from the Laboratory. Bleeding may be intermittent, so three consecutive specimens are recommended.
	2. Submit to laboratory for test development.					

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Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
Rectal swab	1. Carefully insert a swab ~1 in. beyond the anal sphincter.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	Reserved for detecting Neisseria gonorrhea, Group B strep., some enteric pathogens, HSV, or for patients unable to pass a specimen.
	2. Gently rotate the swab to sample the anal crypts.					
	3. Feces should be visible on the swab for detection of diarrheal pathogens.					
Fistulas	See Abscess					
abdominal, ascites, bile, joint, paracentesis, pericardial, peritoneal, pleural, synovial, thoracentesis	1. Disinfect overlying skin with betadine.	Sterile screw capped container, or Anaerobic Transport system.	<=15 min, RT	<=24 hr, RT; Pericardial fluid and fluids for fungal cultures, <=24 hrs, 4ºC	None	Culdocentesis fluids should be transported in Anaerobic Transport system. 10mL is preferred for most fluids, 100mL for peritoneal dialysate, minimum 0.5 mL
Fluids:						
	2. Obtain specimen via percutaneous needle aspiration or surgery.	Bacteria, <=1 ml; fungi, <=10 ml; mycobacteria, <=10 ml				Fungal and Viral cultures are referred to Quest Diagnostics.
	3. Transport specimen to laboratory immediately.					
	4. Always submit as much as possible; never submit a swab dipped in fluid.					
Gangrenous tissue	See Abscess/Tissue Culture Protocol(s)					
Gastric Fluid (for Gastoccult blood test)	1. Apply 1 drop of stomach aspirate or vomitus to Gastroccult test card.	Gastroccult card				Obtain Gastroccult cards from the Laboratory. *Do not* use Hemoccult cards or developer for gastric specimens.
	2. pH *must* be read within 30 seconds of sample application on test card. Record pH result on lab requisition.					May submit specimen in screw cap sterile container.
	3. Submit to laboratory for test development.					
Genital (female)						
Bartholin	1. Disinfect skin with an iodine preparation.	Anaerobic Transport system, <=1 ml	<=2 hrs, RT	<=24 hr, RT	1/day	
	2. Aspirate fluid from ducts.					

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
Cervical	1. Visualize the cervix using a speculum without lubricant.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	Viral and chlamydia collection requires special collection and transport; contact the laboratory prior to collection. Use M4 Media.
	2. Remove mucus and secretions from the cervix with a swab and discard the swab.					Do not use wooden shaft or calcium alginate swabs for viral cultures. Viral, fungal and Chlamydia cultures are referred to Quest Diagnostics.
	3. Firmly, yet gently, sample the endocervical canal with a newly obtained sterile swab.					
Cul-de-sac	Submit aspirate or fluid.	Anaerobic Transport system, <=1 ml	<=2 hrs, RT	<=24 hr, RT	1/day	
Urethral	Collect 1 hr. after patient has urinated.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	If no discharge can be obtained, wash the external urethra with betadine soap and rinse with water. Insert an urethrogenital swab 2-4 cm into the urethra; rotate swab for 2 secs.
	1. Remove exudate from the urethral orifice.					
	2. Collect discharge material on a swab by massaging the urethra against the pubic symphysis through the vagina.					
Vaginal	1. Wipe away an excessive amount of secretion or discharge.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	For intrauterine devices, place entire device in a sterile container and submit at room temperature
	2. Obtain secretions from the mucosal membrane of the vaginal vault with a sterile swab.					Gram staining is recommended for confirmation of bacterial vaginosis. Results from cultures are often misleading.
Genital (female or male)						
Lesion	1. Clean the lesion with sterile saline and remove the surface of the lesion with a sterile scalpel blade.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	Viral work-up requires special collection and transport; contact the laboratory prior to collection. Use M4 Media.
	2. Allow transudate to accumulate.					Specimens for syphilis should not be submitted for culture.
	3. Pressing the base of the lesion, firmly sample exudate with a sterile swab.					Do not use wooden shaft or calcium alginate swabs for viral cultures. Viral cultures are referred to Quest Diagnostics.
Genital (male)						
Prostate	1. Cleanse the glans with soap and water.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	More relevant results may be obtained by adding a urine specimen immediately before and after massage to indicate urethral and bladder organisms.

	Collection		Time and Temp			
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	2. Massage the prostate through the rectum.					Ejaculate can also be cultured.
	3. Collect fluid on a sterile swab.					
Urethra	Insert an urethrogenital swab 2-4 cm into the urethral lumen, rotate the swab, and leave it in place for at least 2 secs to facilitate absorption.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	Viral and chlamydia collection requires special collection and transport; contact the laboratory prior to collection. Use m4 Media.
Hair and Nails						
Hair	1. With forceps, collect at least 10-12 affected hairs with the base of the shaft intact.	Clean container, 10 hairs	≤ 24 hr, RT	≤ 24 hr, RT	1/day/site	Collect scalp scales, if present, along with scrapings of active borders of lesions. Note if any antifungal therapy taken recently.
	2. Place in a clean container.					
Nails	1. Wipe the nail with 70% alcohol using gauze, not cotton.	Clean container, with enough scrapings to cover the head of a thumb tack.	≤ 24 hr, RT	≤ 24 hr, RT	1/day	
	2. Clip away a generous portion of the affected area and collect material of debris from under the nail.					
	3. Place material in a clean container.					
Pilonidal cyst	See Abscess					
Respiratory, Lower						
Bronchoalveolar lavage, bronchial brush or wash, tracheal aspirate	1. Place aspirate or washing in a sputum trap.	Sterile screw capped container, >1 ml.	<=2 hr, RT	<=24 hr, 4ºC	1/day	Mycoplasma culture requires swab in M4 transport media. Referred to Quest Diagnostics.
	2. Place brush in a sterile container with saline.					
Sputum, expectorate	1. Collect the specimen under direct supervision of a nurse, physician or respiratory therapist.	Sterile screw capped container, >1 ml.	<=2 hr, RT	<=24 hr, 4ºC	1/day	Specimens will be screened for acceptability; specimens should contain <=10 squamous epithelial cells/LPF.
	2. Have the patient rinse or gargle with water to remove superficial flora.	Minimum amounts: bacteria, >1 ml; fungi, 3-5 ml; mycobacteria, 5-10 ml.				Mycobacteria and fungal cultures are referred to Quest Diagnostics. Mycoplasma culture requires swab in M4 transport media.

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
	3. Instruct the patient to cough deeply to produce a lower respiratory specimen. Collect in a sterile container.					
Sputum, induced	1. Have the patient rinse the mouth with water after brushing the gums and tongue.	Sterile screw capped container, >1 ml.	<=2 hr, RT	<=24 hr, 4ºC	1/day	Specimens will be screened for acceptability; specimens should contain <=10 squamous epithelial cells/LPF.
	2. With the aid of a nebulizer, have the patient inhale ~25 ml of 3-10% sterile saline.					If fungal cultures are requested, contact the laboratory; some etiologic agents survive for only short periods of time.
	3. Collect the induced sputum in a sterile container.					Mycobacteria and fungal cultures are referred to Quest Diagnostics.
Respiratory, Upper						
Oral	1. Remove oral secretions and debris from the surface of lesions with a swab and discard the swab.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	Sampling of superficial tissue is not recommended; tissue biopsy or needle aspirates are specimens of choice.
	2. Using a second swab, vigorously sample the lesion or affected area, avoiding normal tissue.					
Nasal	1. Insert a swab, premoistened with sterile saline, ~2 cm into the nares.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	Anterior nose cultures should be reserved for detecting staphylococcal and streptococcal carriers, or for nasal lesions.
	2. Rotate the swab against the nasal mucosa.					
Nasopharynx	1. Gently insert a clean calcium alginate swab into the nasopharynx via the nose.	Transport Swab	<=2 hr, RT	<=24 hr, RT	1/day	Culture plates should be placed in CO2 environment quickly.
	2. Rotate the swab slowly for 5 secs to absorb secretions.					Mycoplasma culture requires swab in M4 transport media. Referred to Quest Diagnostics.
Sinus	1. Cleanse the mucosal surface with and antiseptic. Sterile normal saline may be used for irrigation.	Starswab II (pink cap) or sterile plastic container.	<=2 hr, RT	<=24 hr, RT	1/day	.
	2. Aspirate sample with a needle or sterile plastic catheter.					
Throat	1. Depress the tongue with a tongue depressor.	Starswab II (pink cap)	<=2 hr, RT	<=24 hr, RT	1/day	Swabs for N. gonorrhea should be placed in a charcoal-containing transport medium and plated <=12 hr after collection.
	2. Sample the posterior pharynx, tonsils, and inflamed areas with a sterile swab.					If Rapid Strep is needed, also use Starswab II with Stuart's media (yellow cap).

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
Skin	1. Cleanse the affected area with 70% alcohol.	Clean container, with enough scrapings to cover the head of a thumb tack.	≤ 24 hr, RT	≤ 24 hr, RT	1/day/site	
	2. Gently scrape the surface of the skin at the active margin of the lesion. *Do not draw blood.*					
	3. Place the sample in a clean container. *Do not* submit sample on glass slides.					
Tissue	1. Submit in a sterile container.	Anaerobic transport system or a sterile screw-capped container. Saline may be added.	<=15 min, RT	<=24 hr, RT	None	Always submit as much tissue as possible; if possible, save an amount of the sample in the freezer.
	2. For small samples, add several drops of sterile saline to keep moist. Do not allow tissue to dry out.					Never submit a swab that has been rubbed over the surface.
	3. Place in an Anaerobic Transport system, or a sterile, moist jar.					For appropriate sites, some legionellae may be inhibited by saline.
Urine						
Female, midstream	1. Thoroughly cleanse the urethral area with soap and water.	Sterile wide-mouth container or urine transport kit.	Unpreserved: <=2 hrs, RT; Preserved: <=24 hrs, RT	<=24 hr, 4ºC	1/day	Do not use a preservative if urine is being submitted for fungal culture.
	2. Rinse the area with wet gauze pads.					Onsite devices may also be submitted.
	3. While holding the labia apart, begin voiding.					
	4. After several milliliters have passed, collect a midstream portion without stopping the flow of urine.					
Male, midstream	1. Cleanse the glans with soap and water.	Sterile wide-mouth container or urine transport kit.	Unpreserved: <=2 hrs, RT; Preserved: <=24 hrs, RT	<=24 hr, 4ºC	1/day	Onsite devices may also be submitted.
	2. Rinse the area with wet gauze pads.					
	3. Holding the foreskin retracted, begin voiding.					

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
	4. After several milliliters have passed, collect a midstream portion without stopping the flow of urine.					
Straight catheter	1. Thoroughly cleanse the urethral area with soap and water.	Sterile wide-mouth container or urine transport kit.	Unpreserved: <=2 hrs, RT; Preserved: <=24 hrs, RT	<=24 hr, 4ºC	1/day	Onsite devices may also be submitted.
	2. Rinse the area with wet gauze pads.					
	3. Aseptically insert a catheter into the bladder.					
	4. After allowing ~15 ml to pass, collect urine to be submitted in a sterile container.					
Indwelling catheter	1. Disinfect the catheter collection port with 70% alcohol.	Sterile wide-mouth container or urine transport kit.	Unpreserved: <=2 hrs, RT; Preserved: <=24 hrs, RT	<=24 hr, 4ºC	1/day	Onsite devices may also be submitted.
	2. Use a needle and syringe to aseptically collect 5-10 ml of urine.					
	3. Transfer to a sterile tube or container.					
Wound	See Abscess					
Clotest	Gastric biopsy	Clotest device				If desired, an additional biopsy specimen may be inserted. Do not contaminate with blood
Directigen	CSF: collect by lumbar puncture	1ml		<24 hrs. at 2-8 degrees C.		Detects antigens: Group B Strep, H. Influenzae B., S. Pneumoniae, N. Meningitidis, and E. Coli.
Influenzae Virus Rapid A/B	Throat: Vigorously rub both tonsillar surfaces and the posterior pharynx	Rayon swab / Dacron swab		<24 hrs. at 2-8 degrees C.		
	Nasopharyngeal: Insert beneath inferior turbinate and roll.	Rayon swab / Dacron swab		<24 hrs. at 2-8 degrees C.		
	Aspirate: Insert into either nare and suction.	Bulb syringe		<24 hrs. at 2-8 degrees C.		Expel specimen into a sterile specimen cup.
	Sputum: Deep cough or induced.	Sterile cup		<24 hrs. at 2-8 degrees C.		
H. Pylori IGG Screen	Collect specimen by venipuncture.	Gold top SST tube		<48 hrs. at 2-8 degrees C.		Test does not distinguish between current and past infections. Repeat in 2-7 weeks if initial result is negative.

	Collection		Time and Temp			
Specimen Type	**Guidelines**	**Device and/or minimum volume**	**Local Transport**	**Courier or Local Storage**	**Replica Limits**	**Comments**
Rapid Strep	Rub tonsillar surface or posterior pharynx.	Starswab with Stuart's Transport Media (Yellow Cap)		<24 hrs. at Room Temp. or 2-8 degrees C.		Negative result will generate reflex order for Strep culture.
RSV	Nasopharyngeal: Insert beneathinterior turbinate and roll.	Rayon swab / Dacron swab	< 2 hrs. RT	<48 hrs. at 2-8 degrees C.		
	Nasal wash: Instill up to 1 ml sterile saline into the nare, then suction	Bulb syringe	< 2 hrs. RT	<7 days at 2-8 degrees C,		Place specimen into a disposable container with a cap. (Plastic test tube)

MICROBIOLOGY PROCEDURE LIST BY CPT

- Microbiology Procedure CPT coding involves use of Composite Codes and Reflex Testing.
- Composite codes occur when two or more codes are performed simultaneously in accordance with 'standard of care'.
- Reflex testing "Occurs when initial test results are positive or outside normal parameters and indicate a second related test is medically appropriate".
- Test orders which are ambiguous will require clarification by the requesting physician. Use of correct specimen type is critical for correct test orders and work up of specimen.

- If reflex testing is <u>not</u> desired on a specific case, the laboratory must be notified at the time of specimen collection otherwise routine protocol will be followed.

- Coding modifiers will be used where appropriate to avoid appearance of duplicate tests.

Microbiology Procedures-Pomerene Hospital

Procedure Name	CPT Code	Comments
CULTURE, BLOOD	87040	Performed with Bactec Instrumentation; Isolation and presumptive ID of isolates
	87205	Gram-stain performed and billed as appropriate
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87106	Definitive ID of yeast; billed as appropriate
	87185	Beta Lactamase Enzyme Test
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
CULTURE, BODY FLUID	87070	Isolation and presumptive ID of isolates

Procedure Name	CPT Code	Comments
	87205	Gram-stain, always performed
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87106	Definitive ID of yeast; billed as appropriate
	87185	Beta Lactamase Enzyme Test
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
C DIFFICILE TOXIN A	87803	Toxin A by OIA (Optical Immunoassay)
CULTURE, EAR	87070	Isolation and presumptive ID of isolates
	87205	Gram-stain, always performed
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
CULTURE, EAR (CON'T)	87185	Beta Lactamase Enzyme Test
	87106	Definitive ID of yeast; billed as appropriate
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
CULTURE, EYE	87070	Isolation and presumptive ID of isolates
	87205	Gram-stain, always performed
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87185	Beta Lactamase Enzyme Test
	87106	Definitive ID of yeast; billed as appropriate
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
CULTURE, DEVICE	87070	Isolation and presumptive ID of isolates
	87205	Gram-stain performed and billed as appropriate
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87106	Definitive ID of yeast; billed as appropriate
	87185	Beta Lactamase Enzyme Test
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
CULTURE, GC	87081	Culture of pathogenic organisms, screening only.
	87205	Gram-stain performed and billed as appropriate
	87077	Definitive ID, each isolate; billed as appropriate
	87185	Beta Lactamase Enzyme Test
CULTURE, GENITAL	87070	Isolation and presumptive ID of isolates
	87205	Gram-stain, always performed on male specimens; performed and billed on female specimens when ordered as a separate procedure
	87077	Definitive ID, each isolate; billed as appropriate

Procedure Name	CPT Code	Comments
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87106	Definitive ID of yeast; billed as appropriate
	87185	Beta Lactamase Enzyme Test
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
GRAM STAIN W/O CULT	87205	Gram stain
KOH PREP: CERVICAL	87220	KOH exams for presence of filamentous fungi or molds
CULTURE, RESPIRATORY	87070	Isolation and presumptive ID of isolates
	87205	Gram-stain, always performed
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87185	Beta Lactamase Enzyme Test
CULTURE, RESPIRATORY (CON'T)	87106	Definitive ID of yeast; billed as appropriate
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
CULTURE, TISSUE	87070	Isolation and presumptive ID of isolates
	87205	Gram-stain, always performed
	87176	Homogenization for culture; tissue specimens; billed as appropriate
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87106	Definitive ID of yeast; billed as appropriate
	87185	Beta Lactamase Enzyme Test
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
CULTURE, URINE	87086	Quantitative colony count
	87088	Isolation and presumptive ID of isolates
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87106	Definitive ID of yeast; billed as appropriate
	87185	Beta Lactamase Enzyme Test
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
CULTURE, WOUND	87070	Isolation and presumptive ID of isolates
	87205	Gram-stain, always performed
	87077	Definitive ID, each isolate; billed as appropriate
	87147	Culture typing/immunological method/per antiserum; eg,Streptococcal typing; billed as appropriate
	87181	Agar Sensitivity Test
	87106	Definitive ID of yeast; billed as appropriate
	87185	Beta Lactamase Enzyme Test

Procedure Name	CPT Code	Comments
	87184	Disk method, susceptibility testing; billed as appropriate
	87186	MIC susceptibility testing; billed as appropriate
	87075	Anaerobic culture, isolation and presumptive ID; ordered and charged for appropriate sources
STOOL FOR WBC	87205	Microscopic examination for fecal leukocytes.
WET PREP	87210	Microscopic examination for bacteria, fungal elements, parasites, or cells
***Presumptive ID is defined as identification by:** colony morphology; growth on selective media; Gram stains; up to 3 tests (eg, catalase, oxidase, indole, PYR)		
****Definitive ID is defined as:** an identification of genus or species level requiring additional tests (eg,biochemical panels)		
Use modifier -59 for multiple specimens and/or sites		
Use modifier -91 for repeat tests performed on the same day		

MICROBIOLOGY GENERAL INFORMATION

SPECIMEN COLLECTION:

- Sputum, urine, stool, etc. are best collected in early morning and then sent to the laboratory the same day.
- It may be necessary in specific situations to process specimens which fail to meet criteria established for appropriate collection, storage, and/or transport.
- Specimens processed when they fit rejection criteria will be documented at time of processing and result comments will be appended to indicate questionable results.

IDENTIFICATION OF ORGANISMS:

- Standard practice in microbiology is to identify ‘significant’ organisms from cultures.
- Significance is determined in part by the quantitation of an organism relative to other organisms present, the potential of the organism to cause pathogenesis, and the site from which the specimen was obtained.
- When the organisms present are known to be part of the expected normal flora from a particular body site, the result is often reported as ‘normal (skin, urogenital, etc) flora or ‘mixed flora, no pathogens present.
- The following is a list of flora common to specific body sites:

Skin Flora

- Alpha hemolytic streptococci
- Coagulase-negative staphylococci
- *Bacillus* species
- *Corynebacterium* species

Respiratory Flora

- Alpha hemolytic streptococci not *Enterococcus*
- Nonhemolytic streptococci
- *Corynebacteria* species

- *Neisseria* species

The following organisms are potential pathogens, but may be part of routine flora if not present in significant numbers:

- Coagulase-negative staphylococci
- *Haemophilus influenzae, Haemophilus parainfluenzae*
- *Moraxella catarrhalis*
- *Neisseria meningitidis*
- *Streptococcus pneumoniae*

Genitourinary Tract Flora

- Alpha hemolytic streptococci not *Enterococcus*
- Non-hemolytic streptococci
- Coagulase-negative staphylococci (if not predominant)
- *Corynebacterium* species
- Lactobacilli

SUSCEPTIBILITY TESTING:

The standard method for susceptibility will be Microscan Walkaway system; interpretations will be reported on patient reports, the MIC value will be available from the Microbiology Laboratory if needed.

Drug reporting is based on NCCLS guidelines and facility formulary.

STORAGE OF ISOLATES/EXTRA TEST REQUESTS:

Culture plates are held for 5 days in case further testing is requested.

Isolates from blood and other sterile body sites will be stored refrigerated for 7 days.

Should additional testing be required once results are received, contact the Microbiology Lab to determine availability of further testing.

TEST NAME:		Test #:	**281040**
ARTERIAL BLOOD GAS			
ALSO KNOWN AS:	ABG	CPT:	82803
Most Common Specimen:	HEPARINIZED WHOLE BLOOD		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	1 ml Whole Blood		
Collection:	Heparinized Syringe		
Method:	iSTAT		
Other:	Transport on slushy ice unless analysis is performed within 15 minutes		
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME: Test #: **281686**

ACETAMINOPHEN

ALSO KNOWN AS: Tylenol CPT: 82003
Most Common Specimen: Plasma
Other Acceptable Specimens: Serum

Notes and Instructions

Specimen: 1 ml plasma or serum
Collection: Lithium heparin (green top)
Method: Beckman Coulter (gold top SST or red top)
Other: Refrigerate until transported to the laboratory AU system tube
Availability: Anytime

STAT Eligible: **YES**

TEST NAME: Test #: **281507**

ALBUMIN

ALSO KNOWN AS: ALB CPT: 82040
Most Common Specimen: Plasma
Other Acceptable Specimens: Serum

Notes and Instructions

Specimen: 1 ml plasma or serum
Collection: Lithium heparin (Green top), Gold top SST or red top tube
Method: Beckman Coulter AU system
Other: Refrigerate until transported to the laboratory
Availability: Anytime

STAT Eligible: **YES**

Test #: **281706**

TEST NAME: **ALCOHOL, MEDICAL BLOOD**

ALSO KNOWN AS: ALCOHOL, BLOOD, MEDICAL CPT: 82055
Most Common Specimen: PLASMA
Other Acceptable Specimens: SERUM

Notes and Instructions

Specimen: 1 ml plasma or serum
Collection: Lithium Heparin (Green Top), Gold Top SST or red top tube
Method: Beckman Coulter AU system
Other: Avoid Hemolysis, Do not use an alcohol prep to cleanse draw site. Cleanse with betadine.
Availability: Anytime

STAT Eligible: **YES**

TEST NAME: Test #: **281018**

ALKALINE PHOSPHATASE

ALSO KNOWN AS: ALKP, ALK PHOS CPT: 84075
Most Common Specimen: PLASMA
Other Acceptable Specimens: SERUM

Notes and Instructions

Specimen: 1 ml plasma or serum
Collection: Lithium heparin (Green top), Gold Top SST or red top tube
Method: Beckman Coulter AU system
Other:
Availability: Anytime

STAT Eligible: **YES**

TEST NAME: Test #: **281704**

AMMONIA

ALSO KNOWN AS: AMM CPT: 84075
Most Common Specimen: PLASMA
Other Acceptable Specimens: SERUM

Notes and Instructions

Specimen: 1 ml plasma keptonice
Collection: 3 ml Lithium heparin (green top) on ice
Method: Beckman Coulter AU system
Other:
Availability: Anytime

STAT Eligible: **YES**

TEST NAME: Test #: **281264**

AMPHETAMINES

ALSO KNOWN AS: AMP CPT: 84075
Most Common Specimen: PLASMA
Other Acceptable Specimens: SERUM
Part of urine drug screen, (Urine) toxicology screen, drugs of abuse panel

Notes and Instructions

Specimen: Random urine
Collection: Sterile appropriately labeled and sealed cup
Method: Beckman Coulter AU system
Other:
Availability: Anytime

STAT Eligible: **YES**

TEST NAME:	**AMYLASE**	Test #:	**281001**
ALSO KNOWN AS:	AMY	CPT:	82150
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1 ml plasma or serum		
Collection:	Lithium heparin (Green top), Gold Top SST or red top tube		
Method:	Beckman Coulter AU system		
Other:	Refrigerate until transported to the laboratory		
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:	**BLOOD BANK ORDERS**	Test #:	**NA**
ALSO KNOWN AS:	TYPE & RH, TYPE & SCREEN, CROSSMATCHES, CORD BLOOD, GAMULIN, PLATELETS, SINGLE DONOR FROZEN PLASMA	CPT:	NA
Most Common Specimen:	EDTA PLASMA AND CELLS		
Other Acceptable Specimens:	CLOTTED RED TOP TUBE (SERUM & CELLS)		
Notes and Instructions			
Specimen:	Whole blood		
Collection:	6 ml EDTA, 4 ml red top or 2 purple 3 ml EDTA tubes		
Method:	Antibody and antigen agglutination		
Other:	Patients must be ARM-BANDED for specific tests. Do not draw SST tube.		
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:	**BASIC METABOLIC PROFILE**	Test #:	**281719**
ALSO KNOWN AS:	Chem 7, BMP	CPT:	80048
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin (green top), Gold top SST or red top tube		
Method:	Beckman Coulter Au System		
Includes:	Ca*82310), CO2(82374), CL(82374), CREA(82565), GLU(82947), K(84132), NA(84295), BUN(84520)		
Other:	Refrigerate until transported to the laboratory. AVOID HEMOLYSIS		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**BARBITUATES**	Test #:	**281264**
ALSO KNOWN AS:	Barb (part of urine drug screen, (urine) toxicology screen or drugs of abuse panel	CPT:	28007
Most Common Specimen:	URINE		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	Random urine		
Collection:	Sterile cup – appropriately labeled and sealed		
Method:	Beckman Coulter Au system		
Includes:			
Other:			
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**BENZODIAZEPINES**	Test #:	**281264**
ALSO KNOWN AS:	Benzo, part of urine drug screen, (urine) toxicology screen or drugs of abuse panel	CPT:	28008
Most Common Specimen:	Urine		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	Random urine		
Collection:	Sterile cup – appropriately labeled and sealed		
Method:	Beckman Coulter Au System		
Includes:			
Other:			
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**BILIRUBIN, DIRECT**	Test #:	**281042**
ALSO KNOWN AS:	DBILI	CPT:	82248
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin (Green top), gold top SST or red top tube		
Method:	Beckman Coulter AU system		
Other:	Refrigerate until transported to the laboratory, **PROTECT FROM LIGHT**		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**BILIRUBIN, TOTAL**	Test #:	**281002**
ALSO KNOWN AS:	T Bili	CPT:	82247
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (Green top), gold top SST, red top tube
Method:	Beckman Coulter AU System
Other:	Refrigerate until transported to the laboratory, **PROTECT FROM LIGHT**
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**BNP**	Test #:	**287526**
ALSO KNOWN AS:	B-type Natriuretic Peptide	CPT:	83880
Most Common Specimen:	Plasma		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1 ml EDTA Plasma
Collection:	3 ml EDTA purple top – tube must be 90% full
Method:	Beckman Coulter DXi or Access System
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime
STAT Eligible:	**NO**

TEST NAME:	**BLOOD UREA NITROGEN**	Test #:	**281007**
ALSO KNOWN AS:	Urea Nitrogen, BUN	CPT:	84520
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (Green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:		Test #:	**281144**
C-REACTIVE PROTEIN			
ALSO KNOWN AS:	CRP	CPT:	86140
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1 ml plasma or serum		
Collection:	Lithium heparin (green top), gold top SST or red top		
Method:	Beckman Coulter Au system		
Other:	Refrigerate until transported to the laboratory.		
Availability:	Anytime		
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**281016**
CALCIUM			
ALSO KNOWN AS:		CPT:	82310
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin (Green top), gold top SST or red top tube		
Method:	Beckman Coulter Au system		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**CANNABINOIDS**	Test #:	**281264**
ALSO KNOWN AS:	THC, part of urine drug screen, (urine) toxicology screen or drugs of abuse panel	CPT:	280018
Most Common Specimen:	URINE		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	Random urine		
Collection:	Sterile cup – appropriately labeled and sealed		
Method:	Beckman Coulter Au System		
Includes:			
Other:			
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**CARBAMAZEPINE**	Test #:	**281438**
ALSO KNOWN AS:	Tegretol	CPT:	80156
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**CARBON DIOXIDE**	Test #:	**281039**
ALSO KNOWN AS:		CPT:	82374
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (Green top), gold top SST or red top tube
Method:	Beckman Coulter Au system
Other:	Refrigerate until transported to the laboratory. Minimize air exposure.
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**CARBOXYHEMOGLOBIN**	Test #:	**287207**
ALSO KNOWN AS:	CARBON MONOXIDE	CPT:	82375
Most Common Specimen:	HEPARINIZED WHOLE BLOOD		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1 ml whole blood
Collection:	4 ml green top (unspun)
Method:	Avoximeter
Other:	**DO NOT** centrifuge specimen
Availability:	Anytime
STAT Eligible:	**YES**

TEST NAME:	**CCOCAINE**	Test #:	**281264**
ALSO KNOWN AS:	COC, part of urine drug screen,(urine) toxicology screen or drugs of abuse panel	CPT:	28010
Most Common Specimen:	Urine		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	Random urine
Collection:	Sterile cup – appropriately labeled and sealed
Method:	Beckman Coulter Au system
Other:	**DO NOT** centrifuge specimen
Availability:	Anytime
STAT Eligible:	**YES**

TEST NAME:	**COMPLETE BLOOD COUNT**	Test #:	**281164**
ALSO KNOWN AS:	CBC, Hemogram, and Platelet	CPT:	85025
Most Common Specimen:	Whole Blood		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	3ml whole blood
Collection:	3ml purple top tube. Mix gently after filling
Method:	Beckman Coulter DxH or AcT
Other:	Refrigerate until transported to the laboratory. A manual differential will be automatically performed if indicated
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**CSF CELL COUNT**	Test #:	**281105**
ALSO KNOWN AS:		CPT:	89051
Most Common Specimen:	CSF		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1 ml CSF
Collection:	Sterile container
Method:	Hemacytometer
Other:	
Availability:	Anytime
STAT Eligible:	**YES**

TEST NAME:	**CELL COUNT, OTHER FLUID**	Test #:	**281106**
ALSO KNOWN AS:		CPT:	89051
Most Common Specimen:	BODY FLUIDS OTHER THAN BLOOD OR CSF		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	1 ml fluid put into a EDTA purple top tube		
Collection:	EDTA purple top tube		
Method:	Hemacytometer		
Other:			
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:	**CHLORIDE**	Test #:	**281006**
ALSO KNOWN AS:		CPT:	82435
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin (green top), gold top SST or red top tube		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**CHLORIDE, URINE RANDOM**	Test #:	**287268**
ALSO KNOWN AS:		CPT:	82382
Most Common Specimen:	URINE		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	1ml urine		
Collection:	Urine collection container		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**CHLORIDE, URINE 24 HOUR**	Test #:	**289296**
ALSO KNOWN AS:		CPT:	82436
Most Common Specimen:	URINE		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	24 hour urine
Collection:	24 hour urine collection
Method:	Beckman Coulter Au System
Other:	The specimen should be collected in a disposable, clean, plastic bottle that has a cap. The container should hold three liters. Obtain collection container from lab. Refrigerate until transported to the laboratory. Requires no preservative. Label container with the time the collection was begun and stopped.
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**CHOLESTEROL, HDL**	Test #:	**281299**
ALSO KNOWN AS:	HDL CHOLESTEROL	CPT:	83718
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory. Patient should be fasting 10 to 12 hours prior to phlebotomy.
Availability:	Anytime
STAT Eligible:	**YES**

TEST NAME:	**CHOLESTEROL, TOTAL**	Test #:	**281048**
ALSO KNOWN AS:		CPT:	82465
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory. Patient should be fasting 10 to 12 hours prior to phlebotomy.
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**CLOSTRIDIUM DIFFICILE TOXIN**	Test #:	**281398**
ALSO KNOWN AS:	C DIFF TOXIN A	CPT:	86403
Most Common Specimen:	FECES		
Other Acceptable Specimens:			

Notes and Instructions	
Specimen:	1ml feces, preferably liquid
Collection:	Sterile collection cup
Method:	Optical immunoassay
Other:	Refrigerate until transported to the laboratory
Availability:	Test should be performed on fresh stool within 72 hours of collection.
Remarks:	Patients should not be re-tested for C. difficile colitis until 6 days after treatment is completed.
STAT Eligible:	**NO**

TEST NAME:	**CREATININE**	Test #:	**281020**
ALSO KNOWN AS:	CREAT, CRE	CPT:	82565
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions	
Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top
Method:	Beckman Coulter Au system
Other:	Refrigerate until transported to the laboratory
Availability:	Any time during normal lab hours
STAT Eligible:	**YES**

TEST NAME:	**CREATININE URINE RANDOM**	Test #:	**281023**
ALSO KNOWN AS:	URINE CREAT	CPT:	82570
Most Common Specimen:	RANDOM URINE		
Other Acceptable Specimens:			

Notes and Instructions	
Specimen:	1ml urine
Collection:	Urine collection container
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**NO**

TEST NAME:	**CREATININE CLEARANCE**	Test #:	**281252**
ALSO KNOWN AS:	URINE CREAT	CPT:	82575
Most Common Specimen:	24 HOUR URINE AND PLASMA OR SERUM		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	24 HOUR URINE COLLECTION – NO PRESERVATIVE 1 ml plasma or serum
Collection:	Collect on ice in a 24 hour urine container obtained from lab Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	The specimen should be collected in a disposable, clean, plastic bottle that has a cap. The container should hold three liters. Obtain collection container from lab. Refrigerate until transported to the laboratory. Requires no preservative. Label container with the time and date the collection was begun and stopped.
Availability:	Any time
STAT Eligible:	**NO**

TEST NAME:	**CREATININE URINE 24 HOUR**	Test #:	**281022**
ALSO KNOWN AS:	URINE CREAT	CPT:	82570
Most Common Specimen:	24 HOUR URINE		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	24 HOUR URINE COLLECTION – NO PRESERVATIVE
Collection:	Collect on ice in a 24 hour urine container obtained from lab
Method:	Beckman Coulter Au system
Other:	The specimen should be collected in a disposable, clean, plastic bottle that has a cap. The container should hold three liters. Obtain collection container from lab. Refrigerate until transported to the laboratory. Requires no preservative. Label container with the time and date the collection was begun and stopped.
Availability:	Any time
STAT Eligible:	**NO**

TEST NAME:	**CREATINE KINASE**	Test #:	**281009**
ALSO KNOWN AS:	TOTAL CK, CPK	CPT:	82550
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold topo SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory. AVIOD HEMOLYSIS
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME: **CRYSTALS, FLUID** Test #: **287407**

ALSO KNOWN AS: CPT: 89060

Most Common Specimen: SYNOVIAL FLUID

Other Acceptable Specimens:

Notes and Instructions

Specimen:	1 ml fluid
Collection:	Sterile container
Method:	Polarized microscopy
Other:	
Availability:	Anytime

STAT Eligible: **NO**

TEST NAME: **COMPREHENSIVE METABOLIC PANEL** Test #: **281721**

CPT: 80054

Most Common Specimen: PLASMA

Other Acceptable Specimens: SERUM

Notes and Instructions

Specimen:	2ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter Au system
Includes:	ALB(82040), TBIL(82247), ALKP(84075), Ca(82310), CO2(82374), CL(82374), CREA(82565), GLU(82947), K(84132), NA(84295), BUN(84520), TP(84155), ALT(84460), AST(84450)
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **YES**

TEST NAME: **CSF GLUCOSE** Test #: **289278**

ALSO KNOWN AS: CPT: 82945

Most Common Specimen: CSF

Other Acceptable Specimens:

Notes and Instructions

Specimen:	1 ml CSF
Collection:	Sterile Container
Method:	Beckman Coulter Au System
Other:	
Availability:	Anytime

STAT Eligible: **YES**

TEST NAME: Test #: **281100**

CSF PROTEIN

ALSO KNOWN AS: CPT: 84155
Most Common Specimen: CSF
Other Acceptable Specimens:

Notes and Instructions

Specimen:	1 ml CSF
Collection:	Sterile Container
Method:	Beckman Coulter Au System
Other:	
Availability:	Anytime
STAT Eligible:	**YES**

TEST NAME: Test #: **287154**

CULTURE, AFB with STAIN

ALSO KNOWN AS: TB CULTURE, MYCOBACTERIA CULTURE CPT: 87116
Most Common Specimen: Sputum
Other Acceptable Specimens: Body Fluids, Wound/Abscess Aspirates, Bronchial Washings, Urine and Blood
Unacceptable:

Notes and Instructions

Specimen:	See Microbiology Collection Guidelines
Collection:	Sterile container or Vacutainer with SPS (yellow top-blood)
Method:	Automated culture with DNA Probe and/or biochemicals
Other:	No swabs or fixatives.
Availability:	Any time
Remarks:	Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.
Turnaround Time:	<=6 weeks
STAT Eligible:	**NO**

TEST NAME: Test #: **281122**

CULTURE, BLOOD

ALSO KNOWN AS: N/A CPT: 87040
Most Common Specimen: Whole Blood
Other Acceptable Specimens: N/A
Unacceptable Specimens: N/A

Notes and Instructions

Specimen: VersaTrek media, Aerobic and Anaerobic bottles; BD Vacutainer tubes in 3 & 10 ml sizes (yellow top).

Collection:
1. 0.1- 5 ml in VersaTrek bottles. The minimum is 0.1 ml. Although bacterial recovery will not be as great as with a larger amount.
2. Draw and submit to microbiology lab in either the 3 or 10 ml BD Vacutainer tubes. (yellow top)

Method: ESP Blood Culture System, continuous automatic monitoring instrument.

Other: Immediate transport to the laboratory; leave specimens at R.T.

Availability: Any time

Remarks: See below for Blood Culture Collection Recommendations

Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.

Blood Culture Collection Technique- Cepti-Seal:

1. Isopropyl Alcohol Frepp.
    a. Locate vein to be used.
    b. Remove Frepp from kit. Hold in a horizontal position and pinch handle to break ampule. Do not continue to squeeze handle.
    c. Place sponge on selected site and depress once or twice to saturate sponge.
    d. Scrub vigorously for at least 30 seconds.
    e. Allow to dry.
2. Iodine
    a. Remove sepp from kit. Hold in downward position and pinch center of Sepp to crush ampule. Apply iodine tincture to venipuncture site Starting at center and moving outwart in concentric circles to Periphery.
    b. Allow to dry.
    c. Procede with blood collection.
    d. Discard components of Septi-Seal Kit.

The following guideline will be utilized for work-up of positive blood culture isolates:

Probable pathogen

- Growth of same organism in repeated cultures obtained either at different times or from different anatomic sites
- For positive cultures with same organism from multiple bottles within a 24-hour period—identification and susceptibility testing will be referred to previous report.
- Growth of certain organisms such as members of *Enterobacteriaceae*, *Enterococcus* spp., *Streptococcus pneumoniae*, *Streptococcus pyogenes*, and Gram-negative anaerobes in only one bottle out of multiple bottles for a set will have identification and susceptibility testing performed.
- Isolation of commensal microbial flora from blood cultures obtained from patients suspected to be bacteremic (eg, immunosuppressed patients or those having prosthetic devices); identification and susceptibility testing will be done with physician consult.

Probable contaminant

- Identification and susceptibility testing will not be performed for:

	• Growth of Bacillus spp. Corynebacterium spp., Propionibacterium acnes, or coagulase-negative staphylococci in only one of multiple cultures. • Growth of multiple organisms from only one of several cultures (polymicrobial bacteremia is uncommon).
Turnaround Time:	Preliminary report at 24 hours, 48 hours and 72 hours for No Growth; Final report at 5 days for No Growth; Any positive result will be phoned to the physician or nurse in charge of the patient as a Critical Result.
STAT Eligible:	**YES (collection)**

Blood Culture Special Ordering Considerations: (to be sent to Aultman Microbiolotg)		
Diagnosis	Order	Collect / Innoculate
Rule-out fungal infection	Culture, fungus only	Innoculate TREK blood culture bottles (aerobe and anaerobe)
Rule-out Mycobacterial infection	Culture, AFB	Innoculate TREK blood culture bottles (aerobe and anaerobe) AND send two 4 mL green top (heparin) butes
Rule-out Brucella	Culture blood and enter in comment field "ohysicain suspects Brucella" *Notify Aultman Microbiology	Innoculate TREK Blood culture bottles (aerobe and anaerobe)
CMV	Order viral culture, CMV	Collect 2 EDTA (lavender / purple) tubes

Blood Culture Collection Guidelines	
Condition	Recommendations
Suspected acute primary bacteremia or fungemia, meningitis, osteomyelitis, arthritis, or pneumoniae	2 sets of cultures-1 from each of 2 prepared sites, the 2nd drawn after a brief time interval, immediately following the clinical events that precipitated the blood culture; then begin therapy. Assures sufficient sampling in cases of intermittent or low level bacteremia.
Fever of unknown origin (eg, occult abscess, etc)	2 sets of cultures-1 from each of 2 prepared sites, the 2nd drawn after a brief time interval (30 minutes). If cultures are negative after 24-48 hours obtain 2 more sets, preferably prior to an anticipated temperature rise (usually afternoon). The yield after 4 sets of cultures is minimal.
Infective endocarditis:	
Acute	Obtain 3 blood culture sets within 2 hours, and then begin therapy. 95% to 99% of acute endocarditis patients (untreated) will yield a positive in one of the first three cultures.
Subacute	Obtain 3 blood culture sets on day 1, repeat if negative after 24 hours. If still negative or if the patient had prior antibiotic therapy, repeat again. Adequate sample volume despite low level bacteremia or previous therapy should result in a positive yield.
Immunocompromised host aids:	
Septicemia, fungemia, mycobacteremia	Obtain 2 sets of cultures from each of 2 prepared sites. Low levels of fungemia and mycobacteremia frequently encountered.
Suspected bacteremia or fungemia with persistently negative blood cultures	Consider alternative blood culture methods designed to recover rare or fastidious microorganisms. Contact Infectious Disease Physician and/or the Microbiology Lab

TEST NAME: Test #: **281614**

CULTURE, BODY FLUID

ALSO KNOWN AS: N/A CPT: 87070

Most Common Specimen: Sterile Body Fluid-- Abdominal, Ascites, Bile, Joint, Paracentesis, Pericardial, Peritoneal, Pleural, Synovial, Thoracentesis

Other Acceptable Specimens: N/A

Unacceptable Specimens: N/A

Notes and Instructions

Specimen: See Microbiology Specimen Collection Guidelines

Collection: Sterile screw capped container; 10ml is preferred for most fluids, 100ml for peritoneal dialysate, minimum 0.5 ml; swabs are not preferred for Body Fluid Culture specimens.

Method: Culture

Other: <=24 hr, RT; Pericardial fluid and fluids for fungal cultures, <=24 hrs, 4ºC

Availability: Any time

Remarks: Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.

Turnaround Time: Preliminary report at 24 hours; Final report in 2-3 days.

STAT Eligible: **NO**

TEST NAME: Test #: **281522**

CULTURE, CATHETER TIP

ALSO KNOWN AS: CATHETER TIP CULTURE CPT: 87070

Most Common Specimen: Intravascular catheter tip.

Other Acceptable Specimens: Central line, Hickman, Broviac, peripheral, arterial, umbilical, hyperalimentation, Swan-Ganz.

Notes and Instructions

Specimen: See Microbiology Specimen Collection Guidelines

Collection: Submit in sterile screw cap container; Transport directly to microbiology to prevent drying.

Method: Culture

Other: <=24 hr, 4ºC

Availability: Any time

Remarks: Foley catheter tips are not accepted for culture.

Diagnosis of an IV catheter-related bacteremia (or fungemia) is difficult, even the finding of a positive blood culture does not identify the catheter as the source.
If bacteremia is suspected, blood cultures may be obtained through the line and peripherally. Removal of the central line and culture of the tip may be necessary.
Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.

Turnaround Time: Preliminary report at 24 hours; Final report in 2-3 days.

STAT Eligible: **NO**

TEST NAME:		Test #:	**287169**
CULTURE, CHLAMYDIA			
ALSO KNOWN AS:	CHLAMYDIA TRACHOMATIS CULTURE	CPT:	87110
Most Common Specimen:	Swab in M4 Media		
Other Acceptable Specimens:	Aspirates or Tissue Specimens in M4 Media.		
Unacceptable:	Specimens obtained with wooden shaft swabs.		
Notes and Instructions			
Specimen:	See Microbiology Collection Guidelines.		
Collection:	Dacron or Rayon swabs, aspirates or tissue in M4 media.		
Method:	Amplified tissue culture, detection of cytoplasmic inclusions by IFA after 48 hours.		
Other:	Refrigerate immediately, store and transport at 2-8 degrees C.		
Availability:	Any time		
Remarks:	No wooden shaft swabs		
Turnaround Time:	3-4 days.		
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**281510**
CULTURE, CSF			
ALSO KNOWN AS:	CULTURE, CERBRAL SPINAL FLUID	CPT:	87070
Most Common Specimen:	CSF		
Other Acceptable Specimens:	N/A		
Unacceptable Specimens:	N/A		
Notes and Instructions			
Specimen:	2 ml CSF		
Collection:	Obtained by physician during lumbar puncture and submitted to microbiology lab in collection tubes provided in lubar puncture kit. Tube #3 or 4 is preferred with approximately 2 ml of CSF for culture.		
Method:	Culture		
Other:	CSF specimens should be transported to microbiology lab as soon as possible.		
Availability:	Anytime		
Remarks:	Where appropriate, gram stain, pathogen identification, susceptibility or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.		
Turnaround Time:	Preliminary reports at 24 hours, 48 hrs. with final report at 3 days. Although the Thioglycollate tube and the CSF tube will be held 1 week.		
STAT Eligible:	**NO**		

TEST NAME: Test #: **281521**

CULTURE, EAR

ALSO KNOWN AS: N/A CPT: 87070
Most Common Specimen: Ear Inner/Outer
Other Acceptable Specimens: N/A
Unacceptable Specimens: N/A

Notes and Instructions

Specimen: See Microbiology Specimen Collection Guidelines
Collection: Inner Ear use Sterile tube – Starswab II (pink cap)
Method:
Other: Inner Ear: <=24 hr, RT; Outer Ear: <=24 hr, 4ºC
Availability: Any time
Remarks: Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.
Turnaround Time: Preliminary report at 24 hours; Final report in 2-3 days.
STAT Eligible: **NO**

TEST NAME: Test #: **281520**

CULTURE, EYE

ALSO KNOWN AS: N/A CPT: 87070
Most Common Specimen: Eye swab from conjunctive
Other Acceptable Specimens: Corneal scrapings, aspirates
Unacceptable: N/A

Notes and Instructions

Specimen: See Microbiology Specimen Collection Guidelines
Collection: Starswab II (pink cap)
Method: Culture
Other: Conjunctiva: <=24 hr, 4 degrees C; Corneal Scrapings, Fluid or Aspirates; <=24 hours Room Temp.
Availability: Anytime
Remarks: Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.
Turnaround Time: Preliminary report at 24 hours; Final report in 2-3 days.
STAT Eligible: **NO**

TEST NAME:		Test #:	**281511**
CULTURE, GC ONLY			
ALSO KNOWN AS:	GC CULTURE, GONORRHEA CULTURE	CPT:	87081
Most Common Specimen:	Male or Female Genitalia		
Other Acceptable Specimens:	Anal, Bartholin Fluid, Cervix, Intra uterine Device, Perianal, Perirectal, Rectum, Blood, Synovial Fluid, Throat, CSF, Abscesses, and Eye		
Unacceptable Specimens:	N/A		

Notes and Instructions	
Specimen:	See Microbiology Collection Guidelines
Collection:	Starswab II (pink cap)
Method:	Culture
Other:	<= 24 hours at Room Temp
Availability:	Anytime
Remarks:	Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.
Turnaround Time:	Preliminary report at 24 hours; Final report in 2-3 days.
STAT Eligible:	**NO**

TEST NAME:		Test #:	**281512**
CULTURE, GENITAL			
ALSO KNOWN AS:	N/A	CPT:	87070
Most Common Specimen:	Urethral or Vaginal Swab		
Other Acceptable Specimens:	Bartholin Fluid, Cervix, Endocervical, Endometrial, Intra uterine Device		
Unacceptable Specimens:	N/A		

Notes and Instructions	
Specimen:	See Microbiology Specimen Collection Guidelines
Collection:	Starswab II (pink cap)
Method:	Culture
Other:	<=24 hr, RT
Availability:	Any time
Remarks:	Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT. DNA probe technology will not be available and requests for this testing will be submitted to reference lab; contact Laboratory for specific collection information and transport media used for testing
Turnaround Time:	Preliminary report at 24 hours; Final report in 2-3 days.
STAT Eligible:	**NO**

TEST NAME:		Test #:	**287271**
CULTURE, HERPES			
ALSO KNOWN AS:	N/A	CPT:	87252
Most Common Specimen:	Swab in M4 Viral Transport Media		
Other Acceptable Specimens:	Lesion material in M4 Viral Transport Media		
Unacceptable:			
Notes and Instructions			
Specimen:	See Microbiology Collection Guidelines		
Collection:	Cotton, Rayon or Dacron plastic shafted swab.		
Method:	Spin Amplification Culture with Elvis detection.		
Other:	Refrigerate immediately at 2-8 degrees C. transport 2-8 degrees C.		
Availability:	Any time		
Remarks:			
Turnaround Time:			
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**287124**
CULTURE FUNGUS with SMEAR			
ALSO KNOWN AS:	N/A	CPT:	87102
Most Common Specimen:	Hair, Skin, Nails, Oral Specimens, Nose, Nasopharynx, Ear, Eye, Wound, Urethral, Sputum, Body Fluids, Tissue, Bone Marrow, CSF, Urine, Contact Lens Fluid, and/or Contact Lens.		
Other Acceptable Specimens:			
Unacceptable Specimens:	N/A		
Notes and Instructions			
Specimen:	See Microbiology Collection Guidelines		
Collection:	Culture swab, Sterile container		
Method:	Fungal culture		
Other:	Indicate specimen source		
Availability:	Anytime		
Remarks:	Identification for each pathogen will be performed.		
Turnaround Time:	4-8 weeks for negatives		
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**287156**
	CULTURE, MYCOPLASMA NEONATES		
ALSO KNOWN AS:	N/A	CPT:	87109
Most Common Specimen:	Sputum		
Other Acceptable Specimens:	Throat, Pleural Fluid, Bronchial Washings, Pneumocentesis Fluid and Biopsy Tissue		
Unacceptable Specimens:	N/A		
Notes and Instructions			
Specimen:	See Microbiology Collection Guidelines		
Collection:	Submit swab in M4 Transport Media.		
Method:	Culture		
Other:			
Availability:	Anytime		
Remarks:	Please provide site.		
Turnaround Time:	N/A. Mycoplasma culture may take a considerable amount of time.		
STAT Eligible:	**NO**		

TEST NAME:		Test #:
	CULTURE, NASAL/NASOPHARYNGEAL	
ALSO KNOWN AS:	INTERNAL NARES, SINUS CULTURE	CPT:
Most Common Specimen:	Nasal Swab	
Other Acceptable Specimens:		
Unacceptable Specimens:	N/A	
Notes and Instructions		
Specimen:	See Microbiology Collection Guidelines.	
Collection:	Starswab (pink cap)	
Method:	Culture	
Other:	Nasal/Nasopharyngeal <= 24 hrs. at Room Temp.	
Availability:	Anytime	
Remarks:	Where Appropriate, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology List by CPT.	
Turnaround Time:	Preliminary report at 24 hrs; Final report in 2-3 days	
STAT Eligible:	**NO**	

TEST NAME:		Test #:	**281524**
CULTURE, OTHER			
ALSO KNOWN AS:	MISCELLANEOUS CULTURE	CPT:	87070
Most Common Specimen:	Peg Tube, G-Tube, Etc.		
Other Acceptable Specimens:			
Unacceptable Specimens:	N/A		
Notes and Instructions			
Specimen:	See Microbiology Collection Guidelines under specific source.		
Collection:	Starswab II (pink cap), Sterile Cup		
Method:	Culture		
Other:	<=24 hrs. Room Temp.		
Availability:	Anytime		
Remarks:	Please specify source. Where appropriate, gram stain, identification of pathogens, susceptibility or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.		
Turnaround Time:	Preliminary report at 24 hrs. Final report 2-3 days.		
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**281516**
CULTURE, SPUTUM			
ALSO KNOWN AS:	SPUTUM CULTURE	CPT:	87070
Most Common Specimen:	Sputum, Tracheal Aspirate		
Other Acceptable Specimens:	Bronchial (brush, washings, or lavage), Larynx, Lung Aspirate, Lung Biopsy, Periodontal, Tracheostomy Site		
Unacceptable Specimens:	N/A		
Notes and Instructions			
Specimen:	See Microbiology Specimen Collection Guidelines		
Collection:	Sputum Trap, Sterile Cup		
Method:	Culture		
Other:	Sputum or Bronchial: <=24 hr, 4ºC;		
Availability:	Any time		
Remarks:	See below for Screening/Rejection Criteria for Sputum/Endotracheal Specimens Rejected specimens will be held for 24 hours, physician will be notified of rejected status and a new specimen will be requested. Specimens graded as unacceptable for culture will have the culture order cancelled, and there will be charge for Gram stain only. Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT. .		
Turnaround Time:	Preliminary report at 24 hours; Final report in 2-3 days.		
STAT Eligible:	**NO**		

The following criteria are used to determine acceptance or rejection, using a Gram-stained smear of the specimen:

Sputum			
PMN/LPF	Squamous Epithelial Cells/LPF	Action	Comments
<10	<10	Accept	Gram stain does not suggest inflammatory process, but the number of PMN may not be relevant, if patient is neutropenic.
≥ 25	<10	Accept	Minimal oral contamination, inflammation present, good specimen.
< 25	<10	Accept	Minimal oral contamination, fair specimen.
> 25	10-25	Accept**	Specimen is contaminated with saliva, but inflammation is present. If organisms are seen when slide is examined on oil immersion, the specimen is acceptable and is of marginal quality. **If no organisms are seen on oil immersion, the specimen is unacceptable due to low culture yield.
<10	10-25	Reject	Specimen contaminated with saliva, request new specimen.

Endotracheal Aspirate		
Adult Patients (>16 y)	>10 Squamous Epithelial Cells/LPF OR No Organisms Seen on Oil Immersion	Reject

TEST NAME:		Test #:	**281128**
CULTURE, STOOL S&S			
ALSO KNOWN AS:	SSYC Culture, Enteric Pathogen Culture and Stool Culture	CPT:	87046
Most Common Specimen:	Feces		
Other Acceptable Specimens:	Rectal swab		
Unacceptable Specimens:	N/A		
Notes and Instructions			
Specimen:	See Microbiology Collection Guidelines.		
Collection:	Enteric plus vial (preferred), Rectal swab, Plain cup – should be processed within 3-4 hours.		
Method:	Culture		
Other:	<= 24 hrs. at Room Temp.		
Availability:	Anytime		
Remarks:	Salmonella, Campylobacter, Shigella and Yersinia species have been considered “classic” enteric pathogens in years passed. Although, the 0157:H7 strain of E. Coli is now becoming much more prevalent. Thus, sorbitol negative E. Coli strains will be sent to the Ohio Dept. of Health for confirmation and cytotoxin verification. A predominance of an organism type such as Staphylococcus Aureus or yeast may also be considered significant. Where appropriate, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology List by CPT.		
Turnaround Time:	Preliminary reports at 24 and 48 hours, Final report 3-4 days.		
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**289001**
CULTURE, STREP SCREEN ONLY			
ALSO KNOWN AS:	N/A	CPT:	
Most Common Specimen:	THROAT SWAB		
Other Acceptable Specimens:	N/A		
Unacceptable Specimens:	N/A		
Notes and Instructions			
Specimen:	See Microbiology Specimen Collection Guidelines		
Collection:	Swarswab II with Charcoal or Starplex Swab with Amies Media.		
Method:	Culture		
Other:	<= 24 hours at Room Temp.		
Availability:	Anytime		
Remarks:	Where appropriate, identification of pathogens, susceptibility or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.		
Turnaround Time:	1-2 days.		
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**281515**
CULTURE, THROAT			
ALSO KNOWN AS:	THROAT CULTURE	CPT:	87070
Most Common Specimen:	Throat Swab		
Other Acceptable Specimens:			
Unacceptable Specimens:	N/A		
Notes and Instructions			
Specimen:	See Microbiology Specimen Collection Guidelines.		
Collection:	Starswab (pink cap)		
Method:	Culture		
Other:	<= 24 hrs at Room Temp		
Availability:	Anytime		
Remarks:	Where appropriate, identification of pathogens, susceptibility, or other testing will beperformed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.		
Turnaround Time:	Preliminary report at 24 hours. Final report in 2-3 days.		
STAT Eligible:	**NO**		

TEST NAME: Test #: **281513**

CULTURE, URINE

ALSO KNOWN AS: N/A CPT: 87088

Most Common Specimen: Urine

Other Acceptable Specimens: Urine, Foley Catheter; Urine, Cystostomy; Urine, Ileo-conduit; Urine, Ureter; Urine, Straight Cath; Urine, Suprapubic Aspirate; Nephrostomy - OnSite

Unacceptable Specimens: Urine, Condom Catheter is not a desirable specimen.

Notes and Instructions

Specimen: See Microbiology Specimen Collection Guidelines

Collection: Urine specimen submitted in sterile container, mid-stream collection or OnSite.
Collection guide for using OnSite.

1. Cleanse genital area and collect a midstream urine specimen or a cath urine specimen in a clean container.
2. Remove OnSite UCD from its outer packaging, being careful not to touch the sampler tips.
3. Dip the sampler tips into the thoroughly mixed urine sample, making sure that both tips are immersed up to the point where they meet.
4. Remove sampler from the urine container.
5. Holding the OnSite UCD vertically with one hand, use the other hand to draw the sampler up through the casing in a straight manner. Discard the sampler.
6. Label the inoculated slide casing with patient ID on the MacConkey (light pink) agar side with a permanent marker. Using tape for identification purposes is not recommended as it may come off due to the effects of moisture.
7. Return the OnSite casing to the outer packaging, close firmly.
8. Follow your procedure for handling biologically hazardous materials.
9. Transport to microbiology lab for processing.

Method: Culture

Other: <=24 hr, 4ºC

Availability: Any time

Remarks: See below for criteria used to process Urine Cultures.

UTIs may be asymptomatic, produce mild symptoms, or cause serious infection. The criteria useful in determining the assessment of culture is the type of urine (midstream, straight cath, etc.) and the patient clinical history; U/A results may also direct workup. Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.

STAT Eligible: **NO**

Table 1 Urine Culture Protocol

Specimen Type: Female midstream or straight cath Male straight cath		
Initial Processing	**Growth Quantitation**	**Work up and Report**
Use 1 µl (0.001 ml) loop 1 colony = 1,000 cfu/ml >100 colonies = >100,000 cfu/ml	No growth with 24 hours incubation	Re-incubate, read next day
	No growth at 48 hours incubation	Finalize as 'No Growth'
	1 or 2[1] isolates >10,000 cfu/ml (10 colonies)	Report quantitation and work up potential pathogens[1,5] Describe and save non-uropathogens
		Review UA for CNS isolates[2]
	1 or 2 isolates <10,000 cfu/ml	Report quantitation and describe[3]; Save plates of potential pathogens
	≥ 3 isolates on first read (even <18 hours old)	Report >3 colony types, including yeast[5]; save plates in case needed for further work-up
Specimen Type: Male midstream (Use same criteria for Condom Cath-this is not a recommended specimen type.)		
Initial Processing	**Growth Quantitation**	**Work up and Report**
Use 1 µl (0.001 ml) loop 1 colony = 1,000 cfu/ml >100 colonies = >100,000 cfu/ml	No growth with 24 hours incubation	Re-incubate, read next day
	No growth after 48 hours incubation	Finalize as 'No Growth'
	1 or 2 isolates[5], >50,000 cfu/ml (50 colonies) potential pathogens	Report quantitation and work up potential pathogens[1]; Describe and save non-uropathogens
	1 or 2 isolates[5], <50,000 cfu/ml (50 colonies) potential pathogens and non-uropathogens	Report quantitation and describe[3]; Save plates of potential pathogens
	≥ 3 isolates on first read (even <18 hours old)	Report '> 3 colony types' -including yeast[5]; save plates in case needed for further work-up
Specimen Type: Indwelling Cath/Foley Cath/Retention Cath		
Initial Processing	**Growth Quantitation**	**Work up and Report**
Use 1 µl (0.001 ml) loop 1 colony = 1,000 cfu/ml >100 colonies = >100,000 cfu/ml	No growth with 24 hours incubation	Re-incubate, read next day
	No growth after 48 hours incubation	Finalize as 'No Growth'
	1-3 isolates of **any** count	Report quantitation and work up potential pathogens[1]; Describe and save non-uropathogens

	4 or more isolates	Describe and report '> 3 colony types'; save plates in case needed for further work-up
Specimen Type: Suprapubic Aspirate/ Kidney Transplant/ Nephrostomy		
Initial Processing	**Growth Quantitation**	**Work up and Report**
Use 1 µl (0.01 ml) loop 1 colony = 100 cfu/ml >100 colonies = >10,000 cfu/ml	No growth with 24 hours incubation	Re-incubate, read next day
	Any isolates, any colony count	Report quantitation and describe[3]; work up all potential uropathogens
		ID yeast to species regardless of quantitation
Notes		
1 Ignore urethral/skin flora if <10 colonies, when counting organisms		
2 For low counts (≥ 10 colonies), if UA is normal-describe and save; if UA not done or was positive-work up CNS		
3 Describe: Gram positive cocci, Gram negative bacilli, Gram positive bacilli		
4 If ≥ 80% of growth consists of 1or 2 potential pathogens, do ID and sensitivity		
5 GT on yeast if >50,000 (50 colonies); if < 50,000, quantitate/report yeast; if yeast is > 50,000 in pure culture, do full ID		

TEST NAME: **CULTURE, VAGINAL GROUP B STREP** Test #: **281519**

ALSO KNOWN AS: CULTURE, GROUP B STREP CPT: 87070
Most Common Specimen: Vaginal
Other Acceptable Specimens: Anal, Throat
Unacceptable Specimens: N/A

Notes and Instructions

Specimen: See Microbiology Specimen Collection Guidelines
Collection: Starswab II (pink cap)
Method: Culture
Other: <= 24 hours at Room Temp.
Availability: Anytime
Remarks: Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.

Turnaround Time: Preliminary report at 24 hrs; Final report in 2-3 days
STAT Eligible: **NO**

TEST NAME: Test #: **281514**

CULTURE, WOUND

ALSO KNOWN AS: CPT: 87070

Most Common Specimen: Wound Drainage, Incision Site, Lacerations

Other Acceptable Specimens: Abdomen, Anal Swab, Ankle, Anticubital, Arm, Axilla, Bile, Brain, Breast, Chest, Ear-Outer, Elbow, Finger, Foot, Forearm, Groin, Hand, Hip, Jackson Pratt, Knee, Neck, Nose, Pelvis, Perianal, Perirectal, Prostate, Rectal, Sacrum, Scalp, Shoulder, Thigh, Toe, Tracheostomy Site, Umbilicus

Unacceptable Specimens: For Body Fluids, use CULTURE, BODY FLUID; For Abscess, use CULTURE, ABSCESS

Notes and Instructions

Specimen: See Microbiology Specimen Collection Guidelines.

Collection: Starswab II (pink cap), or Sterile screw capped container.

Method: Culture

Other: <=24 hr, RT

Availability: Any time

Remarks: Where appropriate, Gram stain, identification of pathogens, susceptibility, or other testing will be performed and additional CPT codes will be billed in addition to the primary code. See Microbiology Procedure List by CPT.

The main pathogens or groups of microorganisms that will be reported are:

- *Staphylococcus aureus*
- Coagulase-negative staphylococci (reviewed for specific cases)
- Beta-hemolytic streptococci
- *Enterococci* and Other streptococci (viridans and nutritionally variant)
- *Enterobacteriaceae* (*E. coli*, *Proteus*, *Morganella*, *Providencia*, etc.)
- *Pseudomonas aeruginosa* (*Pseudomonas* spp.)
- Anaerobic bacteria (presumptive vs. definitive identification with physician review, referred to Quest Diagnostics for ID and susceptibility.
- *Candida* spp. (and other yeast)

Wounds that are likely to benefit from a microbiological work-up are those that are failing to heal, or with clinical signs of infection.

Turnaround Time: Preliminary reports in 24 hrs; Final report in 2-3 days

STAT Eligible: **NO**

TEST NAME: Test #: **287347**

D-DIMER, QUANTITATIVE

ALSO KNOWN AS: D-DIMER, QUANT CPT: 85379

Most Common Specimen: CITRATED PLASMA – BLUE TOP

Other Acceptable Specimens: None

Notes and Instructions

Specimen: 2.7ml TUBE MUST BE FULL.

Collection: Nicitrate tube (blue top). TUBE MUST BE FULL.

Method: ACL Elite

Other: Mix 10 times gently

Availability: Anytime

STAT Eligible: **YES**

TEST NAME:	**DIGOXIN**	Test #:	**281027**
ALSO KNOWN AS:		CPT:	80162
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin (green top), gold top SST or red top		
Method:	Beckman Coulter Au system		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**DRUG SCREEN URINE MEDICAL**	Test #:	**281264**
ALSO KNOWN AS:		CPT:	80100
Most Common Specimen:	URINE		
Other Acceptable Specimens:			
Unacceptable:			
Notes and Instructions			
Specimen:	3ml urine		
Collection:	Random urine collection with no preservative or additive		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory.		
Availability:	Any time		
Remarks:			
Turnaround Time:	1 hour		
STAT Eligible:	**YES**		

TEST NAME:	**ELECTROLYTE PROFILE**	Test #:	**281172**
ALSO KNOWN AS:	LYTES	CPT:	80051
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	lithium heparin tube (green top), gold top SST or red top tube		
Method:	various CO2(82374), CL(82374), K(84132), NA(84295)		
Other:	Refrigerate until transported to the laboratory. AVIOD HEMOLYSIS		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**ERYTHROCYTE SEDIMENTATION RATE**	Test #:	**281069**
ALSO KNOWN AS:	SED RATE, ESR	CPT:	85651
Most Common Specimen:	WHOLE BLOOD ANTICOAGULATED		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	3ml whole blood		
Collection:	3ml purple top tube, mix gently		
Method:	Excite 10		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**FERRITIN**	Test #:	**287171**
ALSO KNOWN AS:		CPT:	82728
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin (green top), gold top SST or red top tube		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Anytime		
STAT Eligible:	**NO**		

TEST NAME:	**FETAL FIBRONECTIN**	Test #:	**287121**
ALSO KNOWN AS:	FFN	CPT:	82731
Most Common Specimen:	Cervicovaginal swab		
Other Acceptable Specimens:	N/A		
Unacceptable Specimens:			
Notes and Instructions			
Specimen:	Cervicovaginal secretions		
Collection:	Adeza Biomedical Specimen Collection Kit.		
Method:	Solid phase immunochromatography		
Other:	Specimen is stable <=8 hours at Room Temperature. Or <=3 days at 2-8 degrees C.		
Availability:	Anytime		
Remarks:			
Turnaround Time:	Daily		
STAT Eligible:	**YES**		

TEST NAME:	**FIBRINOGEN**	Test #:	**287321**
ALSO KNOWN AS:		CPT:	85348
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	CITRATED PLASMA		
Collection:	Blue sodium citrate tube, mix gently, TUBE MUST BE FULL		
Method:	Calculated – ACL Elite		
Other:	Refrigerate until transported to the laboratory.		
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:	**FOLATE**	Test #:	**287387**
ALSO KNOWN AS:	FOLIC ACID	CPT:	82746
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1 ml plasma or serum		
Collection:	Lithium heparin (green top), gold top SST or red top		
Method:	Beckman Coulter DXI		
Other:	Refrigerate until transported to the laboratory. Also, minimize exposure to light.		
Availability:	Anytime		
STAT Eligible:	**NO**		

TEST NAME:	**FECES GUAIAC**	Test #:	**281081**
ALSO KNOWN AS:	HEMOCCULT FECES; OCCULT BLOOD FECES	CPT:	82270
Most Common Specimen:	FECES		
Other Acceptable Specimens:	Stool sample in sterile container		
Notes and Instructions			
Specimen:	Stool		
Collection:	Sterile container		
Method:	Hemoccult SENSA slide		
Other:	Keep at room temperature until delivered to the laboratory		
Availability:	Any time		
Remarks:	Bleeding may be intermittent, so three consecutive specimens are recommended.		
STAT Eligible:	**YES**		

TEST NAME:	**GASTRIC GUAIAC**	Test #:	**281082**
ALSO KNOWN AS:	GASTROCCULT; OCCULT BLOOD GASTRIC	CPT:	82273
Most Common Specimen:	Gastric sample in sterile container; emesis/vomitus		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	Collect small amount of gastric contents		
Collection:	Urine container		
Method:	Gastroccult slide		
Other:	Keep at room temperature until delivered to the laboratory **immediately**		
Availability:	Any time		
Remarks:	*Do not* use Hemoccult cards or developer for gastric specimens.		
STAT Eligible:	**YES**		

TEST NAME:	**GENTAMICIN**	Test #:	**281687**
ALSO KNOWN AS:	GENT PEAK OR TROUGH	CPT:	81070
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin(green top) or plain red top. Trough specimens: should be collected 30 to 60 min before the dose. Peak specimens: should be collected 60 minutes after the dose begins infusing or five minutes after the dose finishes (if infusion takes longer than 60 min)		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**GAMMA-GLUTAMYL TRANSFERASE**	Test #:	**281552**
ALSO KNOWN AS:	GGT	CPT:	82977
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml serum or plasma		
Collection:	lithium heparin tube (green top), gold top SST or red top tube		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**GLUCOSE 1 HR POST PRANDIAL AFTER 50 GRAMS**	Test #:	**281054**
ALSO KNOWN AS:	SUGAR	CPT:	82947
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum or plasma drawn 1 hour after 50 G glucose ingestion		
Collection:	lithium heparin tube (green top), gold top SST		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time during normal lab hours		
STAT Eligible:	**NO**		

TEST NAME:	**GLUCOSE 2 HR POST PRANDIAL AFTER 50 GRAMS**	Test #:	**281052**
ALSO KNOWN AS:	SUGAR	CPT:	82950
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum drawn 2 hours after 50 G glucose ingestion		
Collection:	lithium heparin tube (green top), gold top SST		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time during normal lab hours		
STAT Eligible:	**NO**		

TEST NAME:	**GLUCOSE 75 GRAM, 2 HOUR, EVERY 30 MINUTES**	Test #:	**281181**
ALSO KNOWN AS:	SUGAR	CPT:	82951
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum every 30 minutes for 2 hours after 75 gm glucose ingestion.		
Collection:	lithium heparin tube (green top), gold top SST		
Method:	Beckman Coulter Au system		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time during normal lab hours		
STAT Eligible:	**NO**		

TEST NAME:	**GLUCOSE BEDSIDE**	Test #:	**289294**
ALSO KNOWN AS:	SUGAR, FINGER-STICK GLUCOSE	CPT:	82948
Most Common Specimen:	WHOLE BLOOD		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	2 drop whole blood from finger-stick		
Collection:	No collection device		
Method:	electrochemical		
Other:			
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**GLUCOSE TOLERANCE 1 HOUR**	Test #:	**280176**
ALSO KNOWN AS:	GTT-1hour	CPT:	82951
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	Urine specimen must be collected at time of blood draw. 1 ml plasma or serum at start, 30 min., and 1 hour draws.		
Collection:	lithium heparin tube (green top), gold top SST		
Method:	Beckman Coulter Au System		
Other:	Patient must fast 6-10 hours. Do not eat during 1 hour test. Glucose Dose: 50 GRAMS GLUCOLA		
Availability:	Any time		
STAT Eligible:	**NO**		

TEST NAME:	**GLUCOSE TOLERANCE 2 HOUR**	Test #:	**280276**
ALSO KNOWN AS:	GTT-2hour	CPT:	82951
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	Urine specimen must be collected at time of blood draw. 1 ml plasma or serum at start, 30 min., 1 hour, and 2 hour draws.		
Collection:	lithium heparin tube (green top), gold top SST		
Method:	Beckman Coulter Au System		
Other:	Patient must fast 6-10 hours. Do not eat during 2 hour test. Glucose Dose: 100 GRAMS GLUCOLA		
Availability:	Any time		
STAT Eligible:	**NO**		

TEST NAME:	**GLUCOSE TOLERANCE 3 HOUR**	Test #:	**280076**
ALSO KNOWN AS:	GTT-3 hour	CPT:	82951
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	Urine specimen must be collected at time of blood draw. 1 ml plasma or serum at start, 30 min., 1 hour, and 2 hour, and 3 hour draws.		
Collection:	lithium heparin tube (green top), gold top SST		
Method:	Beckman Coulter Au System		
Other:	Patient must fast 6-10 hours. Do not eat during 3 hour test. Glucose Dose: 100 GRAMS GLUCOLA		
Availability:	Any time		
STAT Eligible:	**NO**		

TEST NAME:	**GLUCOSE TOLERANCE 4 HOUR**	Test #:	**280476**
ALSO KNOWN AS:	GTT-4 hour	CPT:	82951
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	Urine specimen must be collected at time of blood draw. 1 ml plasma or serum at start, 30 min., 1 hour, and 2 hour, 3 hour, and 4 hours.		
Collection:	lithium heparin tube (green top), gold top SST		
Method:	Beckman Coulter Au System		
Other:	Patient must fast 6-10 hours. Do not eat during 4 hour test. Glucose Dose: 100 GRAMS GLUCOLA		
Availability:	Any time		
STAT Eligible:	**NO**		

TEST NAME:	**GLUCOSE TOLERANCE 5 HOUR**	Test #:	**280576**
ALSO KNOWN AS:	GTT-5 hour	CPT:	82951
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	Urine specimen must be collected at time of blood draw. 1 ml plasma or serum at start, 30 min., 1 hour, 2 hour, 3 hour, and 4 hour, and 5 hours.		
Collection:	lithium heparin tube (green top), gold top SST		
Method:	Beckman Coulter Au System		
Other:	Patient must fast 6-10 hours. Do not eat during 5 hour test. Glucose Dose: 100 GRAMS GLUCOLA		
Availability:	Any time		
STAT Eligible:	**NO**		

TEST NAME:	**GLUCOSE, SERUM**	Test #:	**281012**
ALSO KNOWN AS:	SUGAR	CPT:	82947
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions	
Specimen:	1ml plasma or serum
Collection:	lithium heparin tube, gold top SST
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**GRAM STAIN W/O CULTURE**	Test #:	**281126**
ALSO KNOWN AS:	GRAM STAIN	CPT:	87205
Most Common Specimen:	ALL BODY SITES		
Other Acceptable Specimens:	ALL		
Unacceptable Specimens:	N/A		

Notes and Instructions	
Specimen:	See Microbiology Specimen Collection Guidelines
Collection:	Culture Swab Plus, Sterile screw capped container, Urine Collection tube
Method:	Microscopic exam
Other:	See Microbiology Specimen Collection Guidelines; collection, storage, and transport of sample depends on specimen type.
Availability:	Any time
Remarks:	Gram stains <u>are</u> routinely performed when cultures are ordered on sputum, genital, wounds, body fluids, tissue, and eye swabs. Gram stains <u>are not</u> routinely done on stool, urine, nasopharyngeal, throat, or outer ear swabs, and must be ordered separately. Gram stains may be ordered alone if a culture is not desired.
Turnaround Time:	Daily
STAT Eligible:	**YES**

TEST NAME:	**H. PYLORI SCREEN (CLOTEST)**	Test #:	**281282**
ALSO KNOWN AS:	H. PYLORI UREASE TEST	CPT:	87081
Most Common Specimen:	Gastric Biopsy		
Other Acceptable Specimens:	N/A		
Unacceptable:			

Notes and Instructions	
Specimen:	Gastric Biopsy
Collection:	With standard biopsy forceps, excise tissue at least 2 cm. away from the pylorus along lesser or greater curve of the antrum.
Method:	Urease indicator gel
Other:	
Availability:	Any time
Remarks:	
STAT Eligible:	**NO**

TEST NAME:	**HEMATOCRIT**	Test #:	**281180**
ALSO KNOWN AS:	CRIT, HCT	CPT:	85014
Most Common Specimen:	WHOLE BLOOD ANTICOAGULATED		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	3ml whole blood		
Collection:	3ml purple top tube. Gently mix		
Method:	Beckman Coulter DXH or ACT		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**HEMOGLOBIN**	Test #:	**281179**
ALSO KNOWN AS:	HGB	CPT:	85018
Most Common Specimen:	WHOLE BLOOD ANTICOAGULATED		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	3ml whole blood		
Collection:	3ml purple top tube. Gently mix		
Method:	Beckman Coulter DXH or ACT		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**HEPATIC FUNCTION PANEL**	Test #:	**281269**
ALSO KNOWN AS:	LIVER PROFILE, LFTs	CPT:	85058
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin tube, gold top SST or red top tube		
Method:	Beckman Coulter Au System		
Includes:	ALB(82040), TBIL(82247), DBIL(82248), ALKP(84075), ALT(84460), AST(84450)		
Other:	Refrigerate until transported to the laboratory. AVOID HEMOLYSIS		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**HEMOGLOBIN A1C**	Test #:	**287199**
ALSO KNOWN AS:	GLYCATED HEMOGLOBIN, A1C	CPT:	83036
Most Common Specimen:	WHOLE BLOOD ANTICOAGULATED		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	3mL whole blood anticoagulated
Collection:	3ml purple top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory.
Availability:	Any time

STAT Eligible: **NO**

TEST NAME:		Test #:	**289706**
	INFLUENZA VIRUS RAPID A/B		
ALSO KNOWN AS:	FLU A/B	CPT:	87400
Most Common Specimen:	NASOPHARYNGEAL SWAB		
Other Acceptable Specimens:	THROAT SWAB (SPECIAL COLLECTION KIT)		

Notes and Instructions

Specimen:	THROAT SWAB (SPECIAL COLLECTION KIT)
Collection:	
Method:	Rapid AB detection
Other:	
Availability:	1 hour

STAT Eligible: **YES**

TEST NAME:		Test #:	**281028**
	IRON		
ALSO KNOWN AS:	FE	CPT:	83540
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory. AVOID HEMOLYSIS
Availability:	Any time

STAT Eligible: **YES**

TEST NAME:		Test #:	**281234**
KETONE, SERUM			
ALSO KNOWN AS:	ACETONE, SERUM	CPT:	82009
Most Common Specimen:	SERUM		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	1 ml SERUM		
Collection:	Gold top or SST, plain red top tube		
Method:	Acetest tablet		
Other:			
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:		Test #:	**281235**
KETONE, URINE			
ALSO KNOWN AS:	ACETONE, URINE	CPT:	81002
Most Common Specimen:	URINE		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	1 ml URINE		
Collection:	Sterile container with no preservative		
Method:	Acetest tablet		
Other:			
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:		Test #:	**281287**
KOH PREP			
ALSO KNOWN AS:	MICROSCOPIC EXAM-FUNGUS	CPT:	87210
Most Common Specimen:	Cervical swab		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	See Microbiology Specimen Collection Guidelines.		
Collection:	KOH tube obtained from microbiology lab.		
Method:	Microscopic Exam		
Other:	<24 hours, Room Temperature.		
Availability:	Daily		
Remarks:	Testing is limited to microscopic analysis; if fungal culture is desired, tests will be submitted to the reference laboratory.		
STAT Eligible:	**YES**		

TEST NAME:	**LACTATE**	Test #:	**287560**
ALSO KNOWN AS:	LAC	CPT:	
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	1ml plasma on ice		
Collection:	3ml sodium oxalate (gray top tube) on ice. Do not use tourniquet.		
Method:	Oxidized		
Other:			
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**LACTATE DEHYDROGENASE**	Test #:	**281246**
ALSO KNOWN AS:	LDH	CPT:	83615
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1ml plasma or serum		
Collection:	Lithium heparin tube (green top), gold top SST or red top tube		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Any time		
STAT Eligible:	**YES**		

TEST NAME:	**LACTOFERRIN, FECAL**	Test #:	**281539**
ALSO KNOWN AS:		CPT:	
Most Common Specimen:	SPECIMEN STOOL		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	Stool		
Collection:	Plain sterile container		
Method:	Immunochromatography		
Other:			
Availability:	Any time		
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**287071**
	LIPASE		
ALSO KNOWN AS:		CPT:	83690
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	1 ml plasma or serum		
Collection:	Lithium heparin (green top), gold top SST or red top tube		
Method:	Beckman Coulter Au System		
Other:	Centrifuge as soon as possible after collection. Refrigerate until transported to the laboratory		
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:	**LIPID PROFILE**	Test #:	**281317**
ALSO KNOWN AS:		CPT:	80061
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		
Notes and Instructions			
Specimen:	2ml plasma or serum		
Collection:	Lithium heparin (green top), gold top SST or red top tube. Patient should be fasting 10 to 12 hours prior to phlebotomy.		
Method:	Beckman Coulter Au System		
Includes:	CHOL(82465), HDL(83718), TRIG(84478), LDL, CHOL/HDL RATIO		
Other:	Refrigerate until transported to the laboratory		
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:		Test #:	**281689**
	LITHIUM		
ALSO KNOWN AS:		CPT:	80178
Most Common Specimen:	SERUM		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	1 ml serum		
Collection:	Gold top SST or red top tube		
Method:	Beckman Coulter Au System		
Other:	Refrigerate until transported to the laboratory		
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:	**MAGNESIUM**	Test #:	**281685**
ALSO KNOWN AS:		CPT:	83735
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or plasma
Collection:	Lithium heparin tube (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory. AVOID HEMOLYSIS
Availability:	Any time during normal lab hours

STAT Eligible: **YES**

TEST NAME:		Test #:	**287080**
	MALARIA SMEAR		
ALSO KNOWN AS:		CPT:	87207
Most Common Specimen:	EDTA WHOLE BLOOD		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1 ml EDTA whole blood
Collection:	1 3ml EDTA purple top
Method:	Stained smear
Other:	
Availability:	Anytime

STAT Eligible: **NO**

TEST NAME:		Test #:	**281264**
	METHAMPHETAMINES		
ALSO KNOWN AS:	METH	CPT:	28009
Most Common Specimen:	Part of urine drug screen, (urine) toxicology screen or drugs of abuse panel		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	Random urine
Collection:	Sterile cup: appropriately labeled and sealed
Method:	Beckman Coulter Au System
Other:	
Availability:	Anytime

STAT Eligible: **NO**

TEST NAME:		Test #:	**281264**
METHEMOGLOBIN			
ALSO KNOWN AS:	MetHgb	CPT:	83050
Most Common Specimen:	Stat = Aultman: Heparinized (green) whole blood Routine = Quest: EDTA (lavender)		
Other Acceptable Specimens:	Quest: Heparinized (green) or citrated (blue) whole blood with Hemoglobin results on patient		
Notes and Instructions			
Specimen:	Do not open tube		
Collection:			
Method:	Determined by site		
Other:	Stat specimen must be delivered to Aultman Lab within 2 hours		
Availability:			
Turn Around Time:	3 hours		
STAT Eligible:	**NO**		

TEST NAME:		Test #:	**281148**
MONO TEST			
ALSO KNOWN AS:	Monospot	CPT:	86308
Most Common Specimen:	Serum		
Other Acceptable Specimens:	EDTA plasma		
Notes and Instructions			
Specimen:	1 ml serum or plasma		
Collection:	3 ml Red top or SST or 3 ml EDTA		
Method:	Direct- solid phase immunoassay		
Other:	Refrigerate until transported to the laboratory		
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME:		Test #:	**281264**
OPIATES			
ALSO KNOWN AS:	OPI Part of urine drug screen, (urine) toxicology screen, or drugs of abuse panel	CPT:	281771
Most Common Specimen:	RANDOM URINE		
Other Acceptable Specimens:			
Notes and Instructions			
Specimen:	Random urine		
Collection:	Sterile cup – appropriately labeled and sealed		
Method:	Beckman Coulter Au System		
Other:			
Availability:	Anytime		
STAT Eligible:	**YES**		

TEST NAME: Test #: **281825**

OSMOLALITY, SERUM

ALSO KNOWN AS: CPT: 83930
Most Common Specimen: SERUM
Other Acceptable Specimens:

Notes and Instructions

Specimen:	1 ml or serum
Collection:	Gold top SST or red top tube
Method:	Freezing point
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime

STAT Eligible: **YES**

TEST NAME: Test #: **281826**

OSMOLALITY, URINE

ALSO KNOWN AS: CPT: 83935
Most Common Specimen: URINE
Other Acceptable Specimens:

Notes and Instructions

Specimen:	1 ml URINE
Collection:	Urine collection container
Method:	Freezing point
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime

STAT Eligible: **YES**

TEST NAME: Test #: **281264**

PHENCYCLIDIN

ALSO KNOWN AS: PCP CPT: 280017
Most Common Specimen: (Part of urine drug screen, (urine) toxicology screen or drugs of abuse panel)
Other Acceptable Specimens:
Unacceptable:

Notes and Instructions

Specimen:	Random urine
Collection:	Sterile cup – appropriately labeled and sealed
Method:	Beckman Coulter Au System
Other:	
Availability:	Any time
Remarks:	

STAT Eligible: **NO**

TEST NAME:	**PHENOBARBITAL**	Test #:	**281301**
ALSO KNOWN AS:	PHENOBARB	CPT:	80184
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**PHENYTOIN (TOTAL)**	Test #:	**281051**
ALSO KNOWN AS:	DILANTIN, TOTAL DILANTIN	CPT:	80185
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold top SST, or red top tube
Method:	Beckman Coulter Au Ssytem
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**PHOSPHORUS**	Test #:	**281684**
ALSO KNOWN AS:	PO4	CPT:	84100
Most Common Specimen:	SERUM		
Other Acceptable Specimens:	PLASMA		

Notes and Instructions

Specimen:	1ml serum or plasma
Collection:	Tiger top Gold top, or lithium heparin tube
Method:	Phosphomolybdate / UV
Other:	Refrigerate until transported to the laboratory. AVOID HEMOLYSIS
Availability:	Any time during normal lab hours
STAT Eligible:	**YES**

TEST NAME:	**PINWORM EXAM**	Test #:	**281245**
ALSO KNOWN AS:	SCOTCH TAPE PREP	CPT:	87208
Most Common Specimen:	PERIANAL SPECIMEN		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	PERIANAL SPECIMEN
Collection:	Obtain collection information form from laboratory along with collection supplies
Method:	Direct exam
Other:	
Availability:	Daily

STAT Eligible: **NO**

TEST NAME:	**PLATELET COUNT**	Test #:	**281162**
ALSO KNOWN AS:		CPT:	85049
Most Common Specimen:	WHOLE BLOOD ANTICOAGULATED		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	3ml whole blood
Collection:	3ml purple top tube
Method:	Beckman Coulter DXH or ACT
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **YES**

TEST NAME:	**POTASSIUM**	Test #:	**281005**
ALSO KNOWN AS:		CPT:	84132
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold top SST
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory. AVOID HEMOLYSIS
Availability:	Any time

STAT Eligible: **YES**

TEST NAME:	**POTASSIUM, URINE 24HR**	Test #:	**289298**
ALSO KNOWN AS:		CPT:	84133
Most Common Specimen:	URINE 24 HOUR		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1 ML URINE
Collection:	24 HOUR URINE – NO PRESERVATIVE
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **NO**

TEST NAME:	**POTASSIUM, URINE RANDOM**	Test #:	**289285**
ALSO KNOWN AS:		CPT:	84133
Most Common Specimen:	RANDOM URINE		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1 ML URINE
Collection:	RANDOM URINE – NO PRESERVATIVE
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **NO**

TEST NAME:		Test #:	**281229**
	PREGNANCY, QUANTITATIVE		
ALSO KNOWN AS:	QUANT. HCG, BETA HCG	CPT:	84702
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1 ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter DXI or Access
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime

STAT Eligible: **YES**

TEST NAME: **PREGNANCY, URINE QUALATATIVE** Test #: **281228**

ALSO KNOWN AS: URINE PREGNANCY CPT: 84703
Most Common Specimen: URINE
Other Acceptable Specimens:

Notes and Instructions

Specimen: 1 ml URINE
Collection: Sterile container
Method: Immunochromatographic assay
Other: Refrigerate until transported to the laboratory
Availability: Anytime

STAT Eligible: **YES**

TEST NAME: **PROSTATIC SPECIFIC ANTIGEN** Test #: **287195**

ALSO KNOWN AS: PSA CPT: 84153
Most Common Specimen: SERUM
Other Acceptable Specimens:

Notes and Instructions

Specimen: 1 ml serum
Collection: Gold top SST or red top tube
Method: Beckman Coulter DXI
Other: Refrigerate until transported to the laboratory.
Availability: Anytime

STAT Eligible: **NO**

TEST NAME: **PROTEIN TOTAL, SERUM** Test #: **281072**

ALSO KNOWN AS: PROTEIN, TP CPT: 84155
Most Common Specimen: PLASMA
Other Acceptable Specimens: SERUM

Notes and Instructions

Specimen: 1ml plasma or serum
Collection: Lithium heparin tube (green top), gold top SST or red top tube
Method: Beckman Coulter Au System
Other: Refrigerate until transported to the laboratory
Availability: Any time

STAT Eligible: **YES**

TEST NAME:	**PROTEIN FLUID**	Test #:	**289281**
ALSO KNOWN AS:	PROTEIN	CPT:	84155
Most Common Specimen:	FLUID		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1ml fluid
Collection:	Sterile container
Method:	Beckman Coulter Au System
Other:	
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**PROTEIN, URINE 24 HOUR**	Test #:	**281241**
ALSO KNOWN AS:		CPT:	84155
Most Common Specimen:	24 HOUR URINE		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	50 ML urine aliquot
Collection:	Obtain collection container from the laboratory. No preservative required.
Method:	Beckman Coulter Au System
Other:	The specimen should be collected in a disposable, clean, plastic bottle that has a cap. The container should hold three liters. Obtain collection container from lab. Keep on ice until transported to the laboratory. Requires no preservative. Label container with the time the collection was begun and stopped.
Availability:	Any time
STAT Eligible:	**NO**

TEST NAME:	**PROTEIN, URINE (RANDOM)**	Test #:	**281337**
ALSO KNOWN AS:		CPT:	84155
Most Common Specimen:	RANDOM URINE		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1ml random urine
Collection:	Urine collection container
Method:	Dye binding
Other:	Refrigerate until transported to the laboratory
Availability:	Any time during normal lab hours
STAT Eligible:	**YES**

TEST NAME:	**PROTHROMBIN TIME**	Test #:	**281290**
ALSO KNOWN AS:	PT, PROTIME	CPT:	85610
Most Common Specimen:	CITRATED PLASMA		
Other Acceptable Specimens:			

Notes and Instructions	
Specimen:	2.7ml whole blood
Collection:	2.7ml whole blood in a light blue tube, mix gently. TUBE MUST BE FULL. Clotted and short samples will be rejected
Method:	ACL Elite
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**ACTIVATED PARTIAL THROMBOPLASTIN TIME**	Test #:	**281296**
ALSO KNOWN AS:	aPTT, PTT	CPT:	85730
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:			

Notes and Instructions	
Specimen:	2.7ml whole blood. Mix gently. Tube must be full.
Collection:	2.7ml whole blood in a light blue tube, mix gently. TUBE MUST BE FULL. Clotted and short samples will be rejected, line collections should be avoided
Method:	ACL Elite
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**RAPID STREP**	Test #:	**281285**
ALSO KNOWN AS:	N/A	CPT:	87430
Most Common Specimen:	Throat		
Other Acceptable Specimens:	N/A		
Unacceptable Specimens:	Specimens collected in charcoal swabs (black top)		

Notes and Instructions	
Specimen:	See Microbiology Collection Guidelines.
Collection:	Starswab II with Stuart's Transport Media (yellow cap)
Method:	Immunochromatography
Other:	<= 24 hrs. at Room Temperature
Availability:	Anytime
Remarks:	A negative test result will generate a reflex order for culture.
Turnaround Time:	Daily
STAT Eligible:	**YES**

TEST NAME: Test #: **281161**

RETICULOCYTE COUNT

ALSO KNOWN AS: RETIC CPT: 85045
Most Common Specimen: EDTA WHOLE BLOOD
Other Acceptable Specimens:

Notes and Instructions

Specimen:	1 ml EDTA whole blood
Collection:	3 ml EDTA purple top
Method:	Beckman Coulter DXH
Other:	
Availability:	Anytime
STAT Eligible:	**NO**

TEST NAME: Test #: **281703**

RESPIRATORY SYNCYTIAL VIRUS

ALSO KNOWN AS: RSV CPT: 86756
Most Common Specimen: Nasopharyngeal Swab
Other Acceptable Specimens: Nasal washings
Unacceptable Specimens: Specimens received in viral transport media.

Notes and Instructions

Specimen:	See Microbiology Collection Guidelines.
Collection:	Rayon or Dacron Nasopharyngeal swabs, saline nasal washing
Method:	Optical Immunoassay
Other:	Nasopharyngeal swab and nasal wash < 2 hrs. at Room Temperature. Nasopharyngeal swab < 48 hrs. at 2-8 degrees C. Nasal wash specimens may be refrigerated for up to 7 days at 2-8 degrees C.
Availability:	Anytime
Remarks:	
Turnaround Time:	Daily
STAT Eligible:	**YES**

TEST NAME: Test #: **281690**

SALICYLATE

ALSO KNOWN AS: Aspirin CPT: 80196
Most Common Specimen: PLASMA
Other Acceptable Specimens: SERUM

Notes and Instructions

Specimen:	1 ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime
STAT Eligible:	**YES**

TEST NAME:	**SGOT**	Test #:	**281011**
ALSO KNOWN AS:	AST, ASPARTATE AMINOTRANSFERASE	CPT:	84450
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory. AVOID HEMOLYSIS
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**SGPT**	Test #:	**281034**
ALSO KNOWN AS:	ALT, ALANINE AMINOTRANSFERASE	CPT:	84460
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory. AVOID HEMOLYSIS
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**SODIUM**	Test #:	**281004**
ALSO KNOWN AS:	NA	CPT:	84295
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top) or gold top
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**SODIUM, URINE 24 HOUR**	Test #:	**289287**
ALSO KNOWN AS:		CPT:	84300
Most Common Specimen:	24 HOUR URINE		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	50 ML urine aliquot
Collection:	Obtain collection container from the laboratory. No preservative required.
Method:	Beckman Coulter Au System
Other:	The specimen should be collected in a disposable, clean, plastic bottle that has a cap. The container should hold three liters. Obtain collection container from lab. Keep on ice until transported to the laboratory. Requires no preservative. Label container with the time the collection was begun and stopped.
Availability:	Any time

STAT Eligible: **NO**

TEST NAME:	**SODIUM, URINE (RANDOM)**	Test #:	**289288**
ALSO KNOWN AS:		CPT:	84300
Most Common Specimen:	RANDOM URINE		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	1ml random urine
Collection:	Urine collection container
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **YES**

TEST NAME:	**T4, TOTAL**	Test #:	**281025**
ALSO KNOWN AS:		CPT:	84436
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1 ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red to ptube
Method:	Beckman Coulter DXI
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime

STAT Eligible: **NO**

TEST NAME:	**T4, FREE**	Test #:	**287316**
ALSO KNOWN AS:		CPT:	84439
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1 ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter DXI
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime
STAT Eligible:	**NO**

TEST NAME:	**T3-UPTAKE**	Test #:	**281024**
ALSO KNOWN AS:	T3U, T-up	CPT:	84479
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter DXI
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**NO**

TEST NAME:	**THEOPHYLINE**	Test #:	**281551**
ALSO KNOWN AS:	AMINOPHYLLINE, SLOBID	CPT:	80198
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold top SST or red top tube
Method:	Beckman Coulter Au Ssytem
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:	**THYROID STIMULATING HORMONE**	Test #:	**281266**
ALSO KNOWN AS:		CPT:	84443
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter DXI
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **NO**

TEST NAME:	**TOBRAMYCEN**	Test #:	**287190**
ALSO KNOWN AS:	TOBRA	CPT:	
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **YES**

TEST NAME:	**TOTAL IRON BINDING CAPACITY (INCLUDES IRON)**	Test #:	**281363**
ALSO KNOWN AS:	Iron Binding Capacity	CPT:	83550
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **NO**

TEST NAME:	**TRICYCLIC ANTIDEPRESSANTS**	Test #:	**281264**
ALSO KNOWN AS:	TCA	CPT:	280019
Most Common Specimen:	Part of urine drug screen, (urine) toxicology screen or drugs of abuse panel		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	Random Urine
Collection:	Sterile cup – appropriately labeled and sealed
Method:	Beckman Coulter Au System
Other:	
Availability:	Any time
STAT Eligible:	

TEST NAME:	**TRIGLYCERIDES**	Test #:	**281047**
ALSO KNOWN AS:		CPT:	84478
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	2ml serum or plasma
Collection:	Lithium heparin tube (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**NO**

TEST NAME:	**TROPONIN I**	Test #:	**289280**
ALSO KNOWN AS:		CPT:	84484
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold top SST or red top tube
Method:	Beckman Coulter DXI
Other:	Refrigerate until transported to the laboratory.
Availability:	Anytime
STAT Eligible:	**YES**

TEST NAME:	**URIC ACID**	Test #:	**281008**
ALSO KNOWN AS:		CPT:	84550
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold topo SST, or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **YES**

TEST NAME:	**URINALYSIS**	Test #:	**281393**
ALSO KNOWN AS:	URINE SCREEN, UA, URINE DIPSTICK	CPT:	81003
Most Common Specimen:	URINE		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	10ml urine
Collection:	Sterile urine container. If a culture is requested a separate should be collected. STAT specimens should be delivered to the laboratory.
Method:	Dipstick – Urisys1800
Other:	Refrigerate until transported to the laboratory
Availability:	Any time during normal lab hours

STAT Eligible: **YES**

TEST NAME:	**VALPROIC ACID**	ABBR:	**VALP**
ALSO KNOWN AS:	DEPAKOTE	CPT:	80164
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Lithium heparin tube (green top), gold top SST or red top tube
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **YES**

TEST NAME:	**VANCOMYCIN**	ABBR:	**VANCO**
ALSO KNOWN AS:	VANCO PEAK AND TROUGH	CPT:	80202
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1ml plasma or serum
Collection:	Red top preferred, gold top, or lithium heparin tube. Trough specimens: should be collected 30 to 60 min before the dose. Peak specimens: should be collected 2 hours after the dose begins or 5 min after the dose finishes infusing (if infusion takes longer than 2 hours)
Method:	Beckman Coulter Au System
Other:	Refrigerate until transported to the laboratory
Availability:	Any time

STAT Eligible: **YES**

TEST NAME:		Test #:	**287148**
	VITAMIN B12		
ALSO KNOWN AS:	B12	CPT:	82607
Most Common Specimen:	PLASMA		
Other Acceptable Specimens:	SERUM		

Notes and Instructions

Specimen:	1 ml plasma or serum
Collection:	Lithium heparin (green top), gold SST or red top tube
Method:	Beckman Coulter DXI or Access
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime

STAT Eligible: **NO**

TEST NAME:		Test #:
	VITAMIN D	
ALSO KNOWN AS:	VIT D	CPT:
Most Common Specimen:	PLASMA	
Other Acceptable Specimens:	SERUM	

Notes and Instructions

Specimen:	1 ml plasma or serum
Collection:	Lithium heparin (green top), gold SST
Method:	Beckman Coulter DXI
Other:	Refrigerate until transported to the laboratory
Availability:	Anytime

STAT Eligible: **NO**

TEST NAME:	**WBC WITH DIFFERENTIAL**	Test #:	**281167**
ALSO KNOWN AS:	WHITE COUNT WITH DIFF	CPT:	85048
Most Common Specimen:	WHOLE BLOOD ANTICOAGULATED		
Other Acceptable Specimens:			

Notes and Instructions

Specimen:	Whole blood
Collection:	3ml purple top tube
Method:	Beckman Coulter DXH
Other:	Refrigerate until transported to the laboratory
Availability:	Any time
STAT Eligible:	**YES**

TEST NAME:		Test #:	**281244**
	WET PREP		
ALSO KNOWN AS:	TRICHAMONAS VAGINALIS	CPT:	87210
Most Common Specimen:	Genital Specimens.		
Other Acceptable Specimens:			
Unacceptable Specimens:			

Notes and Instructions

Specimen:	See Microbiology Specimen Collection Guidelines
Collection:	Clean Screw capped container or saline tube obtained from microbiology lab.
Method:	Microscopic exam
Other:	Specimen MUST be processed within 1 hour; keep at Room Temperature.
Availability:	Anytime
Remarks:	Microscopic exam by wet mount may be performed to detect the presence of trichomas.
Turnaround Time:	Daily
STAT Eligible:	**YES or NO**

BODY FLUID SPECIMEN REQUIREMENTS – SYNOVIAL

Specimen Collection:

Test	**Specimen Collection**
Cell Count & Differential	*EDTA (purple top) or Sodium Heparin
Crystal Analysis	Red top (plain) or Sodium Heparin (green top) tube
Chemistry Tests, Etc.	Red top (plain) tube

*EDTA tube (purple top) must have the liquid EDTA **not** the EDTA in powder form.

Use of any other tube and specified anticoagulant will produce artifacts making microscopic examination for crystals and cell identification less reliable as well as the cell count.

Order in LIS as Fluid Synovial.

Normal values:

Color:	**Straw-yellow**
Clarity:	**Clear-slightly cloudy**
WBC's:	**0-200/mm (0-0.2x10 /L)** [39]
Neutrophils:	**<25% on differential**
Monocytes & histiocytes:	**65% or > on differential**
Lymphocytes:	**Variable number on differential**
RBC's:	**None**
Crystals:	**None**
Protein:	**1-3 g/dl**
Glucose:	**(blood-synovial fluid difference) 0--10mg/dL**

BODY FLUID SPECIMEN REQUIREMENTS – PERITONEAL, PERICARDIAL, PLEURAL

Specimen Collection:

Test	**Specimen Collection**
Cell Count & Differential	*EDTA (purple top)
Culture	
Chemistry Tests, Etc.	Red top (plain) tube

Need to run serum with all chemistry for a ratio. ALL chemistries will be sent to Autlman Hospitals for processing.

To order in Lis:

Cell count = 281106
Protein = 189289
LDH = 289283
pH = 281773
Culture = 281614

BODY FLUID SPECIMEN REQUIREMENTS – CEREBROSPINAL

Specimen collection and handling:

CSF should be submitted in sterile, clear, plastic tubes provided in the lumbar puncture tray. Bring the specimen to the lab immediately for STAT analysis.

Requisition:	Spinal Fluid
Normal Values:	
Glucose	40-70 mg/dl
Total Protein	15-45 mg/dl
WBC Count:	Adults 0-5 mononuclear Cells/mm^3 Neonates 0-30 mononuclear Cells/mm^3

WBC Differential:	Adults	Neonates
Lymphs	60% +20%	20% + 15%
Monocytes	30% + 15%	70% + 20%
Neutrophils	2% + 4%	4% + 4%

All tests done at JPMH

TISSUE AND FLUID SPECIMENS: PREPARATION AND TRANSMITTAL TO THE LABORATORY

I. PROCEDURE

A. All tissue specimens, as indicated by the hospital bylaws, must be sent to the Laboratory for examination.
B. All specimens must be accompanied with a tissue examination or miscellaneous request slip with the following information:

1. Patient's first and last name
2. Age
3. Room number (inpatient), or designated as outpatient
4. Doctor's name
5. Pre-operative and post-operative diagnosis
6. Type of specimen
7. Date specimen was obtained
8. Special instructions-frozen section, estrogen/progesterone receptor analysis, etc.

C. All specimen containers must be properly labeled with the patient's name, type of specimen, doctor, and date. The label should be on the side of the container, **not** on the lid; also a formalin warning label must be on every specimen container.

D. Frozen section analysis:

1. The surgeon is responsible for contacting the pathologist and setting up a time and day for the surgery to be done.
2. All material for frozen section analysis must be handed directly to a pathologist, who is informed that the specimen is for frozen section analysis.

E. Specimens for estrogen or progesterone receptor analysis.

1. The test is performed on processed tissue block.

F. Lymph Nodes

1. **Notify Laboratory in advance of surgery if possible to schedule a stat courier to Aultman Pathology. Lymph node removed for suspected lymphoma should be wrapped in a saline soaked sponge without fixative and placed in a transport container. The container will be delivered to Aultman Pathology within 2 hours. If a pathologist or transport is not available within 2 hours, place the specimen in 1-% formalin**.

G. Bone marrow specimens must be brought immediately to the laboratory. The specimens must be properly labeled and handed to the pathologist or hematology technologist.

H. Kidney stones (surgically removed or passed in urine) should be submitted **without** fixative.

I. **Fixative:** Unless otherwise specified, all tissue specimens should be placed in 10% formalin. *Ideally*, the ratio of tissue to formalin should be 1 to 9 - that is, a great excess of formalin. Formalin acts by cross-linking proteins and is used up in the process of fixation. Minimally, the specimen should be totaled covered with formalin. This is acceptable if the pathologist is to examine the tissue and cut smaller sections for analysis on the same day.

J. Amputated limbs: These specimens, well wrapped and properly marked, are taken to the lab as soon as they are removed. The surgeon should communicate with pathology as to the patient’s desired disposition of the limb.

K. Fetus' have the usual two week holding period. If at the end of this time the family wishes the hospital to dispose of the fetus, it is disposed of as a surgical tissue.

L. Smears of the cervix, breast, mouth, skin lesions, rectum, or colon prepared at bedside, in examining room or operating room, are smeared onto glass slides by the physician. Name of the patient and date of birth is to be written in pencil on the frosted end of the slide. The specimen is not acceptable unless the smear has been fixed. Using the cytology request form, fill out completely and send it to the laboratory with the specimen. Unless completely filled out, they are unacceptable.

M. Sputum: The patient is instructed to expectorate directly into a cup. Morning specimens resulting from an overnight accumulation of secretions yield the best diagnostic material. Three separate specimens on three successive days should be collected to ensure maximum of diagnostic accuracy. **DO NOT** collect multiple specimens in less than six-hour intervals. The patient must be instructed how to spit into the alcohol without a deep cough; saliva (oral secretion) is of no diagnostic value with regard to lung disease. Acceptable sputum specimens are the product of a deep cough, not merely secretions from the nose and mouth.

The Respiratory Care Department is routinely responsible for obtaining early morning sputa on inpatients. The floor personnel are responsible for filling out the cytology request form and sending it to Respiratory Care. Obtain specimen cups from either Respiratory Care or the laboratory. Be sure the cytology request form is completely filled out. The container itself must be labeled with the patient's name, date, and time to be acceptable.

N. Fluids: All specimens of fluid or semi-fluid consistency (thoracic, pleural, abdominal, ascetic, paracentesis) should be sent immediately to the laboratory ***without*** fixative. Give the specimen directly to laboratory personnel to make sure the laboratory is aware of its arrival. The size of the sample need not exceed 100ml of fluid.

Fill out the cytology request form properly and completely. The form should accompany the specimen. The container should bear the name of the patient and type of specimen to be acceptable. If laboratory tests other than cytology are required, a separate portion of the fluid must be submitted in a ***fresh*** state.

O. Urine: Voided and catheterized urines are ordinarily used. After voiding and discarding urine secreted during the night, a midstream specimen collected one to two hours later is ideal for routine urinary cytology. Random specimens may also give satisfactory results in symptomatic patients, and also should be collected midstream. The specimen should be sent **immediately** to the laboratory.

P. Brushings: A disposable brush should be clipped two inches above the bristles, placed in a red-top test tube and covered with 50% alcohol. A non-disposable brush should be agitated in a red-top test tube containing 3-5 mls of alcohol. Agitate well to remove all cellular material adhering to the bristles. Specimens should be sent to the laboratory. The cytology request form and brushing should be properly labeled.

Q. Washings:

1. **Pelvic and Bronchial** - The specimen should be sent to the laboratory.
2. **Colon and Sigmoid** - The specimen should be brought to the laboratory **immediately**. The specimen is unacceptable if the patient was not adequately washed out and the specimen contains a lot of fecal material.
3. **Gastric Drawing Technique** - The specimen should be brought to the laboratory **immediately**. The gastric juices present will quickly digest cancer cells, making them impossible to identify. The laboratory personnel will contact the Pathologist

R. Unacceptable surgical tissue specimens: The following are standards set for unacceptable surgical tissue specimens:

1. The specimen is unlabeled or pertinent information is omitted from the request slip or label.
2. Label information is incorrect, does not correlate with the request slip, or is illegible.
3. The specimen is received without fixative (when fixative is indicated).
4. The specimen is not stamped with the time received.
5. A specimen is missing - in the case of more than one specimen container per patient. If any specimen is found to be unacceptable, the matter will be brought to the attention of the department from which it came. Personnel involved/physician must correct the errors or omission before the specimen can receive a pathology accession number and be processed.

S. ***All specimens*** should be brought to the laboratory in a timely manner, that is, as soon after the removal as is reasonably practical. This will ensure prompt attention by laboratory personnel and may often reduce the time required of the final report to be issued.

T. Any questions regarding proper handling of specimens not covered in this document should be referred to the Pathologist.

CYTOLOGY SPECIMENS

GENERAL CRITERIA FOR ACCEPTIBILITY

A. To be acceptable and to be processed, specimens must:

1. **Be properly labeled**. All specimens must bear the patient's name and Date of Birth. For gynecologic and buccal smear specimens this includes the patient's full name and Date of Birth in pencil on the frosted end of the slides.
2. **Cytology request must be complete and legible**. Name, Date of Birth, doctor, and type of specimen are essential. Other information is very helpful. Request forms for buccal smear exam, however, must include information concerning

history, physical findings, and type of disorder suspected. Patient address is needed if patient is to be billed direct.

3. **The specimen must be in a condition suitable for diagnosis**. Colon and sigmoid washings must not contain significant fecal material. Gastric suctions and washings must not be allowed to stand before delivery to Lab. All brushings and washings must be delivered to the Lab immediately if the technologist does not assist in the collection.

B. Gyn specimens may be rejected for the following reasons:

1. Slides are broken or shattered when received. Clinician is to be notified and asked to repeat the smear if nothing can be salvaged, or if it is judged to be inadequate for valid evaluation.
2. A discrepancy exists between name on slide and that on the request form. The doctor's office should be called. It often is a case of patient having married or changed her name.
3. The doctor's office calls to change the patient's name and the slide provides to be abnormal. We insist that the exam be repeated with the correct patient's name and Date of Birth on the slide subsequently submitted.
4. The prepared specimen has been processed, screened, and judged unsatisfactory. The report will state "Unsatisfactory".
   i. inflammatory exudate obscures cellular detail
   ii. too few cells to evaluate
   iii. smear too thick
   iv. blood obscures cellular detail
   v. smear dry due to delayed fixation, etc.

5. The patient is charged for the first smear, but not the repeat smear if it is submitted within 60 days of the first smear.

C. Buccal Smears

1. Obtain scrapings of buccal mucosa by drawing the edge of a wooden tongue blade firmly over an area. Discard the first material and gently scrape the same area a second time to obtain deeper and better preserved cells. Smear the material on one or two glass slides and flood the smear with cytofix within two seconds after the smear is made. Do both buccal cavities and label separately (right/left). Occasionally, chimeras (genetic mosaics) may be detected in this way.

2. Fill out the cytology request form, including the pertinent physician findings, and give the type of disorder suspected. Write the patient's name and date of birth on the frosted end of the slides used to collect the specimen. The specimen in unacceptable if this information is not complete.

D. Drawing technique - Gas Wash

1. Ask patient what was eaten for dinner the previous evening. If patient had anything but liquids, or anything at all for breakfast, **do not** proceed with the test.

2. Draw first sample into two containers. (Some usually goes to the laboratory Check for dentures and remove if present. Place nasogastric tube into stomach. gastric/urine department.)

3. Pour in 100cc 7% alcohol into nasogastric tube.

4. After 30 minutes, draw as much as possible back through the tube. Collect in properly labeled container.

5. Remove tube and dismiss patient.

GYNECOLOGICAL SPECIMENS FOR CYTOLOGIC ANALYSIS

A. Gynecological Specimen

1) The cervical smear must be obtained under direct vision after introduction of the speculum. Under no circumstances should the speculum be lubricated with medical jellies, since the origin material may contaminate the smear and make it unreadable. If there are difficulties in introducing the speculum it may be moistened with a few drops of warm water. Several methods of obtaining materials from the uterine cervix are available.

   i) The cotton swab smear.
      The entire portion of the cervix is swabbed with a cotton-tipped applicator, which is introduced into the external os as far as possible. The cervical mucus and the cellular material is spread rapidly by rolling the applicator on a slide. Immediate fixation is mandatory.

   ii) The cervical scraper (Ayre)
      One end of the scraper is somewhat longer than the other so that it fits the external os. The scraper is rotated, the longer end being used as a pivot within the external os. The material is spread on a slide and fixed immediately.

   iii) Endocervical aspiration
      By means of a small cannula attached to a syringe or preferably to a large rubber bulb, the contents of the endocervical canal are aspirated, subsequently expelled on a slide, smeared and fixed immediately.

   iv) Endometrial aspiration smear
      The ectocervix is gently cleansed with an accepted antiseptic solution. A sterile endometrial aspiratory cannula with syringe attached is introduced through the external os and the internal os, into the endometrial cavity

where it is halted by the cervical stop provided. The endometrial cavity is then thoroughly aspirated and the cannula is withdrawn. The material is expelled upon a glass slide. A second glass slide is placed on the first slide and the two slides are then pulled apart. Following this, both sides should be fixed immediately.

B. Gynecological (Gyn) Specimen Preparation

1. Quickly and evenly spread a sufficient quantity of material, eliminating thick clumps and blank areas. Pipettes and scrapers spread unevenly, thus producing inferior specimens and consuming valuable time. Commercially available specialized spreaders produce a uniform film with all but inspissated material. However made, the uniform smear must be fixed ***immediately***. Cyto Fixer, spray fixative or any other suitable pap smear fixative may be used. The smear is fixed by flooding the slide with Cyto Fixer or 95% alcohol within two seconds after the smear is made. Spray fixing is accomplished by holding the spray can 6-9" from the slide and covering the slide with fixative. After fixing, allow smear to dry, then write the patient's complete name and date of birth on the frosted end of the slide in pencil. Include first and last name. Send to the laboratory along with the completed request form.

GUIDELINES FOR SUBMITTING SMEARS FOR HORMONAL CYTOLOGY

A. Indications for Hormonal Evaluation

1. Infertility Studies
   a. If patient's infertility is due to a hormonal imbalance, this can be detected by the use of serial smear to record the present or absence of various stages of menstrual cycle.
   b. Also by this method, the approximate time of ovulation can be determined.

2. Determination of whether or not patient has aborted

   a. If the viability of the fetus is not certain, the clinician can give patient estrogen. If the fetus is deceased, a high estrogenic pattern will be seen. If the fetus is still alive, the pregnancy pattern will persist.
   b. If bleeding occurs late in pregnancy, hormonal evaluation can determine whether or not the placenta is still functioning.

3. Investigation of Amenorrhea
   a. Hormonal evaluation if patients with amenorrhea can help determine the presence of:

      i. Estrogen-producing tumors
      ii. Functioning follicular cysts
      iii. Testicular feminization syndrome
      iv. Ovarian failure

4. Hormonal Evaluation in those Estrogen Deficient

    a. Hormonal cytology can be used to check the effects of replacement hormonal treatment.

5. Ovarian Function or Adrenal Function in Patients with Carcinoma of Breast

    a. Sometimes it is helpful in the above patients to determine whether or not estrogen is being produced so the physician can be guided as to the further therapy.

B. Specimen Requirements

1. The smears for hormonal evaluation must come from the lateral vaginal wall.
2. Cervical smears are unacceptable for hormone evaluation.
3. The physician should submit separate slide marked with a V for this determination.
4. The date of the last menstrual period ***must*** be included on the requisition.
5. To give an accurate evaluation, the patient's age, last menstrual period (LMP), or other pertinent information, i.e., hysterectomy, pregnancy, therapeutic, treatments, etc., must be available. It is also necessary to know the length of the previous cycle.

C. Reporting of Estrogen Evaluation

1. For women who are having menstrual cycles, there are four basic hormone patterns during one menstrual cycle. In reporting the estrogen level, we will check:

    a. Normal, if the level is within the normal limits for that particular phase of the menstrual cycle, or

    b. Low or High, if indicated for stated stage of the cycle.

2. Post-Menopausal Female

    a. In reporting the estrogen evaluation, check normal and then state, "compatible with post-menopausal pattern", or "compatible with atrophic pattern." If there is true estrogen activity, this will be indicated by a comment stating the amount of hormone effect.

3. In the presence of heavy inflammatory exudate, Trichomonas infestation, Herpes Simplex, etc., it is impossible to do an accurate evaluation. The patient should be treated and then another smear taken. The report will state that the sample was unsatisfactory for evaluation/interpretation, and will list the reasons.

NOTE: The presence of improved testing procedures for blood hormone levels has made this test less useful. If improved methods are available, they should be used.

REFERENCES:

Beckman Coulter package inserts and IFU's (instructions for use) associated with individual tests.

AABB Standards, current edition.

Microbiology Specimen Collection Associated with each procedure.