

 UNIVERSITY of MARYLAND ST. JOSEPH MEDICAL CENTER	<b>LIS-30 Cytology Service Manual</b>	<b>Policy Executive:          Laboratory Medical Director</b>
<b>Laboratory</b>	<b>LIS</b>	<b>Policy Owner: LIS Coordinator</b>
<b>ATTACHMENTS: N/A</b>		

**CYTOLOGY SPECIMENS:**

**SPECIMEN LABELING:**

**Specimen label MUST contain:**

- 1. Two patient identifiers (Name, DOB and/or MRN#)**
- 2. Specimen laterality (if applicable)**
- 3. Specimen Source**
- 4. Specimen Description (if applicable).**

**REQUISITION/ORDER:**

Must contain two patient identifiers (Name, DOB and/or MRN#) Specimen information on label must match what is entered on the requisition/order.

**Provide any pertinent clinical information on requisition/order to aid in specimen final diagnosis.**

**Cytology, Fine Needle Aspiration**

**Methodology** -Microscopy

**Test Performed At**

St. Joseph Medical Center

**Specimen Required**

- A. Acceptable specimens applies to: Includes virtually any body site that can be aspirated with a fine needle, generally 22 gauge.
- B. Direct smears – Fixed – 95% Ethyl alcohol or sprayed with a spray fixative. Allow 1 to 2 slides to air dry for thyroid, lymph node and bone aspirations.
- C. Aspirate – Fluid and tissue pieces in 50% Ethyl alcohol, or, if unavailable, sterile saline.

**(Note: If Lymphoma considered in the clinical differential diagnosis and flow cytometry to be performed, the specimen must be submitted fresh/unfixed.)**

D. Procedure

1. Using a permanent marker, label frosted end of slide/slides with patient’s first initial and last name, date of birth and specimen site.
2. Perform FNA on the suspected lesion.

3. Remove the needle and syringe from the lesion and place/express a drop or two of the aspirated material onto glass slide.
4. Spread material by applying flat, gentle pressure with a second slide, then gently pull the two slides apart (within a few seconds).
5. Immediately place 1 slide into 95% Ethyl alcohol or spray with cytology fixative. Hold the spray about 12 inches away from the slide(s). If applicable, let second slide air dry and label A.D. Otherwise, fix both slides.
6. The excess material should be expressed into a labeled screw capped container of 50% Ethyl alcohol or saline and the syringe and needle rinsed in the same solution.
7. Procedure can be repeated multiple times using a sterile syringe and needle each time until the lesion has been thoroughly sampled.
8. Labeled spray fixed and/or air-dried slides should be placed in a plastic or cardboard slide holder.
9. Label specimen container with aspirated fluid with the patient's name and date of birth, date of collection, specimen source, and clinician's name. Slides and aspirated material will be delivered to the Cytology Laboratory using one Cytology requisition form. Test should be either ordered in the Hospital computer system for Cytology or a Cytology Request Form must be completed including patient's full name, social security number, date of birth, patient's address, date of collection, specimen source (left or right when applicable), and insurance information including ICD-10 code, requesting clinician's name, and pertinent clinical history.
10. Place specimen in a plastic specimen bag with Cytology Requisition Form inserted into the pocket separate from the specimen.

Note: The clinician's office or nursing unit will be notified when any of the following occurs:

- Spilled or unlabeled specimens.
- No requisition received.
- Patient/source information on requisition is incomplete or does not match information on specimen.
- No clinician name provided.
- Laterality not provided (if applicable)
- Slides broken beyond our ability to repair.
- Outpatients: lack of necessary information to register

the patient i.e. insurance ICD codes etc...

### **Reference Values**

Interpretive diagnostic report will be issued.

### **Day(s) Test Set Up**

Monday through Friday 8:30 am – 4:30 pm. All other days, times and holidays – deliver specimens to Central Processing Laboratory for appropriate handling. **Test**

### **Classification/CPT Code Information**

88173 - Interpretation and report

## **Cytology, Body Cavity Fluids, Pleural Fluid:**

**Chest, Thoracentesis Pericardial Fluid: Pericardiocentesis fluid**

**Peritoneal Fluid: Paracentesis fluid, Abdominal fluid,**

**Pelvic Fluid, Cul-de-sac Fluid: Culdocentesis Synovial Joint, Peritoneal Washings, Pelvic Washings**

**Methodology** – Microscopy

### **Test Performed At**

St. Joseph Medical Center

### **Specimen Required**

Specimens include Body Fluids (Pleural, Pericardial, Peritoneal, Abdominal, Pelvic, Cul-de-sac, Synovial (Joint), Washings (Peritoneal, Pelvic), etc.

1. Perform thoracentesis, paracentesis, washing, etc. and place fluid in a clean, sterile collection container of appropriate size for anticipated volume of fluid.
2. Collect any amount of fluid up to a maximum of 500 ml for cytology (a minimum of 10 ml is desirable for optimal cytologic evaluation).
3. To reduce clotting, heparin may be added.
4. Add 3 units of heparin per ml volume of collection container. Gently agitate the container in order to mix the heparin with the fluid.
5. In-Patient: Submit fresh, unfixed heparin treated fluid.
6. Out-Patient: Add an equal volume of 50% Ethyl alcohol or other suitable cytology fixative/preservative, e.g. - CytoRich etc. (Note: If volume is large, a smaller aliquot may be fixed)

**Note: If studies other than cytology are required, (e.g. -, microbiology, hematology, flow cytometry etc.), the collected fluid must be submitted fresh – do not add cytology fixative. (If the volume is suitable, the specimen may be divided, with aliquots prepared for these studies following the appropriate specimen collection procedures for the specific test ordered.)**

7. Label specimen container with patient's name, date of birth, date of collection, specimen type (left or right side when applicable) and physician's name.
8. A Cytology requisition must accompany each specimen

Inpatient: Each specimen must be electronically ordered in hospital computer system for Cytology to generate labels and Cytology requisition(s).

Outpatient: A Cytology request form must be completed to include patient's full name, social security number, date of birth, patient's address, date of collection, specimen source (left or right when applicable), and insurance information including ICD-10 code, requesting clinician's name, and pertinent clinical history.

9. Any additional special test studies ordered for Cytology must be noted on the Cytology Requisition when ordering in hospital computer system. (e.g. - Hemosiderin laden macrophages, CD4/CD8 Lymphocyte subtypes, Flow Cytometry, etc.)

- a. Place specimen in a plastic specimen bag with the Cytology Requisition inserted into separate pocket. Once completed, all specimens should be returned to a UMSJMC Outpatient Lab Center (i.e. O'Dea Building Suite 210).

Refrigerate specimen if there is an unavoidable delay in delivery.

Note: The clinician's office or nursing unit will be notified when any of the following occurs:

- Spilled or unlabeled specimens.
- No requisition received.
- Patient/source information on requisition is incomplete or does not match information on specimen.
- No clinician name provided.
- Laterality not provided (if applicable)
- Slides broken beyond our ability to repair.
- Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...

### **Reference Values**

Interpretive diagnostic report will be issued.

### **Day(s) and Time(s) Test Performed**

Monday through Friday 8:00 am – 4:30 pm. All other days, times and holidays, deliver specimens to the Central Processing Laboratory for appropriate handling.

### **CPT Code Information**

88104

88305 (when applicable)

## **Cytology, Breast Nipple Secretions, Discharge**

**Methodology** - Microscopy

### **Test Performed At**

St. Joseph Medical Center

### **Specimen Required**

1. Direct smear of nipple discharge
2. Prepare 1 to 2 slides

### **Collection Procedure**

1. Using a permanent marker, label frosted end of glass slide(s) with patient's name and date of birth, source of specimen including right or left side.
2. Fluid expressed from the breast can be collected directly onto glass slides.
3. To collect sample, gently express a "pea-sized" drop of fluid from the nipple and smear the material lengthwise on a clean labeled glass slide and fix immediately by placing slide in a coplin jar or other suitable container filled with 95% ethanol **or** evenly spray fix. Repeat technique to prepare at least two slides, more if possible.
4. Alternatively, if secretion is thick, use another clean - labeled glass slide to spread material. Collect a small amount of nipple secretion directly onto a labeled glass slide. Oppose a second labeled glass slide onto the first, allowing the collected material to provide surface tension between the two slides, and then gently and quickly pull the two slides apart in a horizontal motion to spread the material in a thin film over both slides. Fix slides immediately in 95% Ethyl alcohol **or** evenly spray fix.
5. If secretion is scanty, lightly touch the clean slide against the nipple a few times, making several touch preps on one slide. Fix immediately.
6. Spray fixed slides should be allowed to dry before placing labeled slide(s) in an appropriately labeled plastic or cardboard slide holder.

7. When labeled slides are fixed in 95% Ethyl alcohol, label the outside of the container with patient's name, date of birth, source of specimen including laterality. Note: The clinician's office or nursing unit will be called when:
  - Spilled or unlabeled specimens.
  - No requisition received.
  - Patient/source information on requisition is incomplete or does not match information on specimen.
  - No clinician name provided.
  - Laterality not provided (if applicable)
  - Slides broken beyond our ability to repair.
  - Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...
  
8. A Cytology requisition must accompany each specimen.
  - a. Inpatient: Electronically order specimen(s) for Cytology in Hospital computer system to generate a printed Cytology Requisition and labels.
  - b. Outpatient: A Cytology Request Form must be completed to include patient's full name, social security number, date of birth, patient's address, collection date of specimen, specimen source (right or left when applicable), insurance information including ICD code, requesting clinician's name, and any pertinent clinical history.
  
9. Place specimen in a plastic specimen bag with the Cytology requisition inserted into the separate pocket. Once completed, the specimen should be returned to a UMSJMC Outpatient Lab Center (i.e. O'Dea Building Suite 210).

#### Reference Values

Interpretive diagnostic report will be issued.

#### Day(s) and Time(s) Test Performed

Monday through Friday 8:00 am to 4:30 pm. All other days, times and holidays, deliver specimens to the Central Processing Laboratory for appropriate handling.

#### CPT Code Information

88104

### ***Cytology, Cerebrospinal Fluid (CSF, Spinal Fluid)***

**Methodology** - Microscopy

#### **Test Performed At**

St. Joseph Medical Center **Specimen**

#### **Required**

1. Collect and submit at least 0.5 ml or more of FRESH (no fixative) spinal fluid in a sterile tube from a lumbar puncture tray or other sterile disposable screw-capped container.
2. Pre-fixation with alcohol is not recommended for spinal fluid, because alcohol may precipitate protein present in the fluid.

#### **Supplies/Materials**

1. Standard cerebrospinal fluid lumbar puncture

collection equipment

2. Sterile screw-capped container.

### **Collection Procedure**

1. Using standard CSF (lumbar puncture) collection procedures collect a minimum of 0.5 ml or more fluid for Cytology.
2. Specimen should be delivered to Cytology Laboratory immediately. Refrigerate specimen if there is an unavoidable delay in delivery.  
Note: In general, morphology of cells within the CSF fluid can be maintained with prompt refrigeration for 24 hours.
3. Any special tests to be performed from the specimen submitted for Cytology must be noted on the Cytology Form/Requisition.
4. Label container(s) with patient's full last name, first name or first name initial, date of birth, date of collection, specimen source, and clinician's name.  
Note: The clinician's office or nursing unit will be notified when any of the following occurs:
  - Spilled or unlabeled specimens.
  - No requisition received.
  - Patient/source information on requisition is incomplete or does not match information on specimen.
  - No clinician name provided.
  - Laterality not provided (if applicable)
  - Slides broken beyond our ability to repair.
  - Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...
5. Test should be either ordered in hospital computer system for Cytology to generate a Requisition or a Cytology Request form must be completed, including patient's full name, date of birth, date of collection, clinician's name, pertinent clinical history, patient's social security number and insurance information including ICD code are needed.
6. Place specimen in a plastic bag with the completed Cytology request form or the Order Entry Request form inserted into pocket separate from specimen and have the specimen transported to Cytology Laboratory or the Central Processing Laboratory for appropriate handling. Refrigerate specimen if there is an unavoidable delay in delivery.

### **Reference Values**

An interpretive diagnostic report will be issued.

### **Day(s) and Time(s) Test Performed**

Monday through Friday, 8:00 am to 4:30 pm. All other days, times and holidays, deliver specimens to the Central Processing Laboratory for appropriate handling.

### **CPT Code(s)**

88104

## **Cytology, Gastrointestinal Tract Brushings (Esophageal, GE Junction, Gastric, Duodenal, Colon, Bile Duct and Others)**

**Methodology** - Microscopy

### **Test Performed At**

St. Joseph Medical Center

### **Specimen Required**

Endoscopically directed brushing sample of the identified area of concern prepared on glass slide(s).

### **Supplies/Materials**

1. Standard endoscopy equipment
2. Plastic container with slots for slides (i.e. coplin jar, etc.) filled with 95% ethyl alcohol or a commercial cytology spray fixative, plastic or cardboard slide mailers.
3. Frosted end glass slides (2-4)

### **Method/Collection Procedure**

1. Using standard endoscopy technique, identify the area of concern and obtain a brushing sample of the lesion. Give particular attention to brush the edges of an ulcer as well as the floor in order to obtain diagnostic material.
2. Upon withdrawing the brush, quickly roll the brush over clean, dry glass slide (label side up) depositing as much specimen as possible onto the glass slide(s).
3. Immediate evenly spray-fix the slide with cytology fixative or place slide immediately into a slotted plastic container (coplin jar, etc.) filled with enough fixative/preservative solution (95% ethyl alcohol) to cover the slide(s). Repeat this process until at least 2-4 slides have been prepared. If slides are spray fixed they should be allowed to dry before placing in slide mailers (plastic or cardboard) for transport.
4. Brush(s) used in collecting the sample can be detached and collected in a screw capped container with sterile saline (inpatient) or a cytology fixative/preservative (outpatient).
5. Using a permanent marker, the frosted end of the slides must be labeled with patient's full last name, first name or first initial, date of birth and source of the specimen or specific body site including laterality when applicable.
6. Submit prepared slide(s) and solution containing the detached brush along with one Cytology Requisition.

Note: The clinician's office or nursing unit will be notified when:

- Spilled or unlabeled specimens.
- No requisition received.
- Patient/source information on requisition is incomplete or does not match information on specimen.
- No clinician name provided.
- Laterality not provided (if applicable) • Slides broken beyond our ability to repair.
- Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...

7. Test(s) should be either ordered in hospital computer system for Cytology to generate a requisition or a Cytology Request Form must be completed including patient's full name, date of birth, date of collection, clinician's name, social security number and insurance information including ICD code(s) (outpatient) source of specimen/specific body site including laterality when applicable and any available pertinent clinical history.
8. Place specimen(s) in a plastic bag with Cytology Request Form or Order Entry Requisition Form inserted into pocket separate from specimen and deliver specimen to Cytology Laboratory or the Central Processing Area of the Clinical Lab. Refrigerate specimen(s) if there is an unavoidable delay in delivery.

### **Reference Values**

An interpretive diagnostic report will be issued.

### **Day(s) and Time(s) Test Performed**

Monday through Friday, 8:00 am to 4:30 pm. All other days/times deliver specimen to the Central Processing Laboratory for appropriate handling.

### **CPT Code(s)**

88104

88305 (when applicable)

## ***Cytology, Gastrointestinal Tract Washings (Esophageal, GE Junction, Gastric, Duodenal, Colon and Others)***

**Methodology** - Microscopy

### **Test Performed At**

St. Joseph Medical Center

### **Specimen Required**

Endoscopically obtained washing at least 10 ml or more of the area of the area of concern.

### **Supplies/Materials**

1. Standard endoscopy equipment
2. Clean plastic container
3. Cytology fixative/preservative (50% Ethyl alcohol, CytoRich or other appropriate cytology fluid fixative.

### **Method/Collection Procedure**

1. Using a standard endoscopy technique, lavage the area of concern using a physiologic solution.
2. Aspirate the solution and place in a clean plastic specimen container. Label the container (wall of container not lid) with patient's full last name, first name or first initial, date of birth, specimen collection date, clinician's name and source of specimen/specific body site including laterality when applicable.
3. For Inpatient specimens, do not add fixative. Submit the specimen along with the order entry generated requisition or the Cytology requisition to the Cytopathology Lab or Central Processing Lab. If there is an unavoidable delay in delivery of the specimen, refrigerate until transport to the Lab.
4. For Outpatient specimens, mix the specimen collected with an equal volume of cytology fixative (50% Ethyl alcohol, Cyto Rich, or the like)

Note: The clinician's office or nursing unit will be notified when:

- Spilled or unlabeled specimens.
  - No requisition received.
  - Patient/source information on requisition is incomplete or does not match information on specimen.
  - No clinician name provided.
  - Laterality not provided (if applicable)
  - Slides broken beyond our ability to repair.
  - Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...
5. Test(s) should be either ordered in hospital computer system for Cytology to generate a requisition or a Cytology Request Form must be completed including patient's full name, date of birth, date of collection, social security number and ICD code(s) (Outpatients), source of specimen/specific body site including laterality when applicable, clinician's name and any available pertinent clinical history.
  6. Place specimen(s) in a plastic bag with the Cytology Request Form inserted into pocket separate from specimen and deliver specimen to Cytology Laboratory or the Central Processing Laboratory. Refrigerate specimens if there is an unavoidable delay in delivery.

**Reference Values**

An interpretive diagnostic report will be issued.

**Day(s) and Time(s) Test Performed**

Monday through Friday, 8:00 am to 4:30 pm. All other days/times deliver specimen to the Central Processing Laboratory for appropriate handling.

**CPT Code(s)**

88104

88305 (when applicable)

***Cytology, Respiratory Tract-Bronchial Brushings***

**Methodology** -Microscopy

**Test Performed At**

St. Joseph Medical Center

**Specimen Required**

**Bronchial Brush**

Obtain bronchial brush specimen during a bronchoscopy procedure. Submit prepared slides and detached brush in saline solution.

1. Brush the suspected lesion with a bronchial brush.
2. Submit 2 or more slides prepared from material collected on brush Roll brush(s) over clean, dry slide(s) and fix immediately with spray fixative or place slide(s) in a container (coplin jar) containing 95% Ethyl alcohol. Place slides in a slide holder (cardboard or plastic).
3. Rinse the bronchial brush(s) used to prepare bronchial washing slides in saline to dislodge additional material. Using a permanent marker, label slides with patient's last name, first initial, date of birth, and specimen source including laterality if applicable.

4. Detach the bronchial brush and immediately place in a container with saline to prevent air drying of the cellular material.
5. Submit prepared slides, and detached brush in the solution together with one completed Cytology Form. Deliver the specimen to the Cytology Laboratory. Refrigerate specimen if there is an unavoidable delay in delivery.

**Note:**

The clinician's office or nursing unit will be notified should any of the following conditions exist:

- Spilled or unlabeled specimens.
  - No requisition received.
  - Patient/source information on requisition is incomplete or does not match information on specimen.
  - No clinician name provided.
  - Laterality not provided (if applicable)
  - Slides broken beyond our ability to repair.
  - Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...
1. Label the container with patient's name, date of collection, and clinician's name. Indicate specimen source (i.e. bronchoscopy brushing (right or left)).
  2. Order test in hospital computer system including specimen source (site of procurement – left, right, etc.), and pertinent clinical history. Requisition must be sent along with the specimen.
  3. Place specimen(s) in a plastic specimen bag with "Cytology Request Form" inserted into pocket, separate from specimen.

**Reference Values**

An interpretive diagnostic report will be issued.

**Day(s) and Time(s) Test Performed**

Monday through Friday – 8:00 am – 4:30 pm. All other days and times – deliver specimen to the Central Processing Laboratory for appropriate handling.

**Test Classification/CPT Code Information**

88104

88305 (when applicable)

***Cytology, Respiratory Tract-Bronchial Washings,***

***Broncho-alveolar Lavage***

**Methodology** – Microscopy

**Test Performed At**

St. Joseph Medical Center

**Specimen Required**

Bronchial washings, bronchial lavages – collect bronchial washings and lavages of the bronchoalveolar spaces during a bronchoscopy procedure.

1. Collect up to 50 ml of bronchial washings in a container.
2. Submit Inpatient specimens' fresh.
3. Label the container(s) with patient's name, date of collection, and clinician's name. Indicate specimen source (bronchial washing, BAL, specific site – left, right, etc.)

4. Order test in hospital computer system to generate a requisition (Inpatient) or complete a Cytology Request Form (Outpatient) for each specimen source/site sampled. Include the following: patient's name, date of birth, social security number, date of collection, source of specimen and specific site (left, right, etc.), physician's name and address, and pertinent clinical history. The requisition must be sent along with the specimen.
5. Place specimen(s) in a plastic bag with the Cytology Request Form inserted into the pocket separate from the specimen.

Note: The clinician's office or nursing unit will be notified when any of the following occurs:

- Spilled or unlabeled specimens.
- No requisition received.
- Patient/source information on requisition is incomplete or does not match information on specimen.
- No clinician name provided.
- Laterality not provided (if applicable) • Slides broken beyond our ability to repair.
- Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...

### **Reference Values**

An interpretive diagnostic report will be issued.

### **Day(s) and Time(s) Test Performed**

Monday through Friday – 8:00 am – 4:30 pm. At all other days and times deliver specimen(s) to the Central Processing Laboratory for appropriate handling.

### **Test Classification/CPT Code Information**

88104

88305 (when applicable)

## **Cytology, Respiratory Tract-Sputum**

**Methodology** - Microscopy

### **Test Performed At**

St. Joseph Medical Center

### **Specimen Required**

**Cytology sputum specimen must be collected in its own sterile specimen container, separate from microbiology cultures.** Expecterated (A series of early morning deep-cough specimen collected every day for 3 consecutive days is recommended)

Induced sputum specimen – Early morning deep cough specimen preferred unless clinically contraindicated.

1. Instruct patient to, upon first awakening, brush his/her teeth and/or rinse mouth well with water to minimize contaminating specimen with food particles, mouthwash or oral drugs, mucous and saliva. Remove dentures, if applicable.
2. Instruct patient to take a deep breath, hold it momentarily, and forcibly exhale the air out.
3. Repeat step #2
4. Take a third deep breath, then cough deeply and vigorously, from the diaphragm or abdomen, into a screw-capped sterile container. Clear the throat and expectorate all material obtained by this process into the container.

5. Steps 1 to 4 should be repeated three times (four altogether) at 15 minute intervals for about 1 hour, each time expectorating into the cup.

Note: Saliva is of no value in this test. Only sputum, obtained from deep in the lung will render a satisfactory specimen. When material is coughed from deep in the lungs, a choking or gagging sensation is frequently experienced. That material is the most important to examine, and it is crucial that it NOT be swallowed. If you should awake in the early morning hours with spasms of coughing which produce sputum from deep in the lung, this specimen should be expelled into the sputum container and saved until the morning. Twenty-four hour sputum collections are unacceptable.

6. Inpatient

- a. A member of the nursing staff will be responsible for instructing the patient on how to obtain a specimen the night before the specimen is collected.
- b. The patient will be furnished with the labeled specimen cup to be used the next morning.
- c. If a series of sputum collections is requested by the clinician, the patient will be furnished a new labeled sputum cup by the nursing staff every night for the specified number of examinations.
- d. Deliver specimen to the Cytology lab. Refrigerate specimen if there is an unavoidable delay in delivery.

7. Outpatient

- b. The clinician's office staff or other staff member will be responsible for instructing the patient on how to obtain the specimen.
- c. The patient will be furnished with the necessary labeled specimen containers to use. A separate container should be used each day. The patient will write his/her name and date of birth on the label along with the date the specimen is collected.
- d. The patient will refrigerate specimens until all required samples have been collected. Once completed, all specimens should be returned to a UMSJMC Outpatient Lab Center (i.e. O'Dea Building Suite 210).

8. Post Bronch: (Post-bronchoscopy sputum is a MOST VALUABLE specimen)

- a. Give the patient a clean sputum cup BEFORE the procedure.
- b. Following the procedure, have the patient cough deeply and expectorate ALL sputum into the cup for 1-2 hours.
- c. Collect the cup after 1-2 hours and take it IMMEDIATELY to the Laboratory.

9. Label specimen containers with patient's name, date of birth, date of collection, specimen source and clinician's name.

10. For each specimen collected, the test should be either ordered in the Hospital computer system for Cytology or a Cytology Request Form must be completed, including the patient's name, date of collection, clinician's name, date of birth, social security number, insurance information including ICD-10 code, specimen source and pertinent clinical information.

Note: The clinician's office or nursing unit will be notified when any of the following conditions exist:

- Spilled or unlabeled specimens.
  - No requisition received.
  - Patient/source information on requisition is incomplete or does not match information on specimen.
  - No clinician name provided.
  - Laterality not provided (if applicable)
  - Slides broken beyond our ability to repair.
  - Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...
11. Place specimens in plastic bag(s) with Cytology Requisition form inserted into the pocket separate from the specimen.

### **Reference Values**

Interpretive diagnostic report will be issued.

### **Day(s) and Time(s) Test Performed**

Monday through Friday – 8:00 am – 4:30 pm. At all other times deliver specimens to the Central Processing laboratory for appropriate handling.

### **Test Classification/CPT Code Information**

88104

88305

## **Cytology, Special Studies**

PCP – Pneumocystic Jiroveci, HLM – Hemosiderin-laden Macrophages, CD4/CD8 – Lymphocyte subtypes, Candida (Fungus), HSV – Herpes simplex virus, viral inclusions, CMV

**Methodology** - Microscopy

### **Test Performed At**

St. Joseph Medical Center

### **Specimen Required**

1. Follow specimen guidelines for specific body site and type of specimen to be collected for the specific adjunct study desired.
  - a. Pneumocystis Jiroveci (PCP) – pneumocystic Jiroveci pneumonia specimens for Pneumocystis Jiroveci examination routine Bronchoscopy obtained specimen, i.e. Washing, Brushing and Bronchoalveolar lavage (BAL) specimen(s). Bronchoalveolar lavage specimen is preferred for the evaluation for PCP. Alternately Bronchial Washing and Brushing specimens can be evaluated. Sputum specimens, though not recommended, can also be evaluated for PCP.
  - b. Hemosiderin-laden macrophages (HLM), Lymphocyte subtypes (CD4/CD8) bronchoscopy obtained specimens (Washings, Brushings, BAL) and body cavity fluid specimens (Pleural, Pericardial).
  - c. Candida fungal infection (Candida Albicans), Herpes Simplex Virus (HSV) Specimens from various body sites, especially esophageal.
  - d. Flow Cytometry Studies  
Body Fluid specimens, especially pleural fluid, fine needle aspirations of various body sites when a lymphoid process is suspected.

2. Complete a Cytology Request Form which will accompany the specimen(s).
  - a. Inpatients: Electronically order/enter specimen(s) for Cytology in hospital computer system to generate printed labels and a Cytology requisition(s).
  - b. Outpatients: A Cytology Request Form(s) must be complete to include: patient's full name, social security number, date of birth, patient's address, collection date of specimen, specimen source including laterality, insurance information including ICD code(s), requesting clinician, submitting clinician when different than requesting one, and any pertinent clinical history.
  - c. Special test or studies must be indicated on the Cytology Requisition.

Note: The clinician's office or nursing unit will be called when any of the following exist:

- Spilled or unlabeled specimens.
  - No requisition received.
  - Patient/source information on requisition is incomplete or does not match information on specimen. • No clinician name provided.
  - Laterality not provided (if applicable)
  - Slides broken beyond our ability to repair.
  - Outpatients: lack of necessary information to register the patient i.e. insurance ICD codes etc...
3. Place specimen in a plastic bag with the Cytology requisition inserted into the separate pocket. Deliver specimen to the Cytology Laboratory or to the Central Processing Laboratory for appropriate handling.
  4. Refrigerate specimen if there will be unavoidable delay in delivery.

#### **Reference Values**

Interpretive diagnostic report will be issued.

#### **Day(s) and Time(s) Test Performed**

Monday through Friday 8:00 am – 4:30 pm. All other days, times and holidays, deliver specimens to the Central processing Laboratory for appropriate handling.

#### **CPT Code Information** (Various – dependent upon special stain performed)

88104

88305 (when applicable)

88312

88313

### ***Cytology, Sure Path™ Pap, Liquid Based Cervical Vaginal Specimen for Cytology (Send out test)***

#### **Methodology** - Microscopy

(Note: HPV (Human Papilloma Virus) screening/detection can also be performed off the liquid based pap smear vial using the Hologic Aptima HPV Assay, as well as other tests including evaluation for Chlamydia, Gonorrhea, Herpes Simplex 1 and 2, and Trichomonas Vaginalis).

#### **Test Performed At**

UMMC, LabCorp and Quest

Reference Lab – HPV Testing using the Hologic Aptima HPV Assay, Chlamydia Trachomatis and Neisseria Gonorrhoeae, Herpes Simplex Virus 1 and 2, and Trichomonas Vaginalis

**Specimen Required**

1. Patient Preparation:
  - a. Ideal testing date is 2 weeks after first day of last menstrual period.
  - b. Preferably the specimen should not be obtained after recent douching or use of vaginal medications, vaginal contraceptives, etc.
2. Materials:
  - a. Gloves
  - b. Appropriate vaginal speculum, without lubricant
  - c. Rovers Cervix-Brush, Pap Perfect plastic spatula, Gentle Touch cytobrush, obtained from laboratory
  - d. SurePath®™ Preservative Fluid collection vial
  - e. Cytopathology Request Form/electronic requisition.
  - f. Plastic Biohazard specimen bag
3. Specimen Collection

Specimen collection includes specimens from both the cervix and endocervix with special emphasis on sampling the transformation zone.

  - a. Cervix brush (Broom-like device)
    - i. Label vial with patient's name (last name, first letter of first name or full first name), date of birth.
    - ii. Introduce speculum, without lubrication other than water and without prior vaginal manipulation.
    - iii. Insert the Rovers Cervix-brush into the endocervical canal. Apply gentle pressure until the bristles form against the cervix. Maintaining gentle pressure, hold the stem between the thumb and forefinger. Rotate brush 5 times clockwise. iv. Placing your thumb against the back of the brush pad, simply disconnect the entire brush from the stem into the Surepath preservative vial.
    - v. Place the cap on the vial and tighten.
  - b. Spatula and Brush
    - i. Select contoured end of plastic spatula and rotate 360° around the entire cervix while maintaining tight contact with exocervical surface. Remove spatula.
    - ii. Visually locate the notched score line on the side of the spatula handle, about 4 cm from the contoured collection end. With gloved hand(s) and one single, quick, and firm SNAP, separate the contoured end from the rest of the spatula handle. Do not touch collection end. Drop this contoured collection end into a vial of SurePath preservative (supplied by TriPath Imaging, Inc.). Discard remaining device handle end of the spatula after each use. Place cap on vial until step 4; do not tighten cap.
    - iii. Insert Cytobrush Plus GT device into the endocervix until only the bottom-most bristles are exposed at the os. Slowly rotate ¼ to ½ turn in one direction. To reduce unnecessary bleeding, do

- not over-rotate brush. Over-rotation may result in poor sample collection. Remove cytobrush device.
- iv. Visually locate the notched score line on the side of the cytobrush handle, about 4 cm from the brush tip. With gloved hand(s) and one single, quick, and firm SNAP, separate the brush head-short handle from the rest of brush handle. Do not touch collection end. Drop brush head-short handle into the same vial of SurePath preservative. Discard remaining device handle end of cytobrush.
  - v. Tighten the SurePath vial cap so the torque line on the cap passes the torque line on the vial. Send the appropriately labeled SurePath vial containing the collection device tip(s) and the requisition to the Lab for PrepStain processing.
- c. Comment
- i. Be certain gloves are free of powder for the powder interferes with the interpretation of the slide and can produce an adverse tissue reaction on the patient.
  - ii. Cyto-Brush Contraindications:
    - \* DO NOT USE for endometrial sampling
    - iii. \*\* DO NOT USE on pregnant patients
- d. Note Specimens will be subject to rejection and the clinician's office will be contacted when:
- i. Either no requisition or no vial is received
  - j. ii. Patient information on the requisition and vial do not match
  - k. iii. Specimen vial was received unlabeled
4. Please complete a Cytology Request Form or enter an electronic requisition.
- a. The Cytology Request must contain the following REQUIRED information
    - i. Patient's name
    - ii. Social security number
    - iii. Date of birth
    - iv. Patient's address
    - v. Date of collection
    - vi. Name of requesting clinician
    - vii. Insurance information including ICD code (absence of this will default specimen to self-pay)
    - viii. Specimen source
    - ix. Test request (default will be Pap smear)
    - x. Routine screen/diagnostic or high risk status (default will be Routine)
  - b. In addition, the following elements should be noted:
    - i. LMP (last menstrual period)
    - ii. Additional tests to be performed from the vial
    - iii. Pertinent clinical history (including surgery)
    - iv. Hormonal therapy
    - v. Previous Pap test and biopsy results.

5. Place labeled Sure Path vial in a plastic specimen bag with the completed Cytology Request Form and any other insurance, ID paperwork, etc., inserted into pocket, separate from the specimen.
6. Deliver inpatient specimens to the Clinical Laboratory. Deliver outpatient specimens to the specimen receiving area in the Pathology Department.

**Reference Values**

LB Pap test final diagnosis report will be issued utilizing the Bethesda System for Reporting Results of Cervical Cytology.

**Day(s) and Time(s) Test Performed**

Monday through Friday, 8:00 am – 4:30 pm

**CPT Code Information**

88142

88142

**Cytology, Urinary Tract – Catheterized**

**Methodology** - Microscopy

**Test Performed At**

St. Joseph Medical Center

**Specimen Required**

Catheterized urine (bladder, ureter, renal pelvis), washings (bladder, renal pelvic, ureteral,):

1. Hydrate patient (unless clinically contra-indicated): The patient should drink a glass of water at 15 minute intervals for two hours, prior to collection.
2. After two hours of hydration, catheterize and discard the urine.
3. Between 30 – 60 minutes later, catheterize and collect the urine (all up to 100 – 120 ml) in a clean, screw-capped container:

Note: Multiple specimens on consecutive days are recommended. If the patient cannot be hydrated:

- a. Discard the first morning urine, then catheterize and collect the next specimen after the bladder has filled.
  - b. If the patient has an indwelling catheter, collect up to 100 ml of specimen.
4. Inpatients: Collect fresh unfixed urine and submit to the Cytology laboratory immediately.

Outpatients: Refrigerate specimen. Specimens should be delivered to UMSJMC Outpatient Lab Center (i.e. O’Dea Building Suite 210).

Note: The clinician’s office or nursing unit will be notified when any of the following conditions exist:

- Spilled or unlabeled specimens
- No requisition received
- Patient/source information on requisition is incomplete or does not match information on specimen
- No clinician name provided
- Laterality not provided (if applicable)
- Slides broken beyond our ability to repair
- Outpatients: lack of necessary information to register the patient i.e. insurance, ICD codes etc.

5. Label containers with patient's name, date of birth, date of collection, clinician's name, specimen source and specific site (including laterality, if applicable).
6. Test should be ordered in hospital computer system for Cytology or a Cytology Request Form must be completed, including the patient's name, date of birth, date of collection, clinician's name, insurance information including ICD-10 codes, specimen source and specific site (including laterality, if applicable). Note: It is important that both specimen container(s) and requisition form be labeled "catheterized".
7. Place specimen in a plastic bag with Cytology Requisition form inserted into the pocket separate from the specimen.

### **Reference Values**

Interpretive diagnostic report will be issued

### **Day(s) and Time(s) Test Performed**

Monday through Friday – 8:00 am – 4:30 pm. At all other times deliver specimens to the Central Processing Laboratory for appropriate handling.

### **Test Classification/CPT Code Information**

88104

## **Cytology, Urinary Tract – Voided Urine**

**Methodology** - Microscopy

### **Test Performed At**

St. Joseph Medical Center

### **Specimen Required**

Voided Urine – Multiple specimens on consecutive days are recommended.

Inpatient/Outpatient

1. Hydrate the patient, unless contra-indicated. The patient should drink a glass of water at 15 minute intervals for two hours.
  2. The first urine specimen following the two hour hydration should be discarded.
  3. Inpatient: One hour later, the patient should void and collect 60 to 100 ml of the second specimen to be submitted fresh and unfixed to the Cytology laboratory as soon as possible. Refrigerate specimen if there is an unavoidable delay in delivery.
  4. Outpatient: One hour later, the patient should void and collect 60 to 100 ml of the second specimen to be submitted fresh. Deliver the specimen to a UMSJMC Outpatient Lab Center (O'Dea Building Suite 210). Refrigerate the specimen if there is an unavoidable delay in delivery.
- Note: The clinician's office or nursing unit will be notified when any of the following occurs:
- Spilled or unlabeled specimens
  - No requisition received
  - Patient/source information on requisition is incomplete or does not match information on specimen
  - No clinician name provided
  - Laterality not provided (if applicable)
  - Slides broken beyond our ability to repair
  - Outpatients: lack of necessary information to register the patient i.e.

insurance, ICD codes etc.

5. Label the container(s) with the patient's name, date of collection, clinician's name, specimen source and the hospital ID number, if applicable.
6. The test should be either ordered in Hospital computer system for Cytology or a Cytology Request Form must be completed including the patient's name, date of birth, date of collection, the clinician's name, and the specimen source. Voided samples collected during instrumentation must be noted as pre/post instrumentation.
7. Place the specimen(s) in a plastic bag with the Cytology Requisition form inserted into the pocket separate from the specimen.

#### **Reference Values**

Interpretive diagnostic report will be issued.

#### **Day(s) and Time(s) Test Performed**

Monday through Friday – 8:00 am to 4:30 pm. At all other times deliver the specimens to the Central Processing Laboratory for appropriate handling.

#### **CPT Code(s)**

88104

## ***Cytology, Tzanck Prep (Preparation) Smear Collection***

### **Procedure**

#### **Methodology** - Microscopy

The Tzanck Prep smear is performed to diagnose infections caused by Herpes Virus. Cells are examined under a microscope for signs of infection, including identification of viral inclusions associated with Herpes Virus.

#### **Test Performed at**

St. Joseph Medical Center

#### **Materials Needed**

Tzanck Prep/Smear Collection Kit includes, plus slide(s), slide holder/mailer, spray fixative, indelible marker, tongue depressors, cytology paper requisition, and plastic bag. The collection kits can be obtained from the Cytology lab Monday through Friday from 8:30 am to 4:30 pm, extension 1735. All other times and days, including holidays, kits are available in the Central Processing Lab in the Clinical Lab, Ground Floor, extension 4495.

#### **Specimen Required Collection Technique**

1. Write the patient's name, date of birth and specimen source on the white frosted end of the slide(s). **Please note:** the area of slide below the name is for spreading the collection specimen on the slide.
2. Select the lesion site.
3. Using gloves, pre-moisten the site with gauze or swab soaked in saline.
4. A direct scrape procedure is preferred. With a tongue depressor, carefully open a fresh blister or vesicle or remove the crust from a ruptured lesion.
5. The physician or nurse collecting the sample should use the edge of a tongue depressor to scrape along the margin/base of the lesion gathering as much cellular material as possible. Try to prepare at least two slides.
6. Carefully spread the tongue depressor with the collected material onto the glass slide(s) transferring the specimen in a thin layer.

7. Hold the spray fixative container 6 – 9 inches from the slide and **immediately** spray fix the area of the slides containing the collected specimen.
8. Allow the sprayed slides to dry before placing the slide in the slide holder. Snap close the plastic mailer, tape and/or rubber band cardboard mailer. Place in specimen bag with requisition inserted in the outside pocket separate from the specimen.
9. Prepared slide(s) along with the requisition should be taken to the Main Clinical Lab, signed in, and verified by receiving tech.

**Requisition:**

Test should be ordered in hospital computer system as a Cytology Non-GYN test or complete a downtime Cytology Request Form included in the kit.

1. Cytology Request Form: Please complete the form to include patient's name, date of birth, social security number or MRN#, date of collection, clinician's name, and specimen source (body site sample collected from). Note: The clinician's office, or nursing unit will be called when any of the following conditions exist:
  - a. No requisition form
  - b. Patient information on requisition does not match information on specimen,
  - c. Broken slide(s) that cannot be reconstructed or specimen is not labeled properly
  - d. Clinician's name is not provided or signature is not present.
  
2. When a Tzanck Prep Test is ordered as a STAT/RUSH outside of the Cytology Lab's normal business hours (8am-4:30pm M-F, Closed weekends and holidays), the Pathologist on-call must be notified **BY THE ORDERING CLINICIAN OR THE NURSING STAFF**. Call Central Processing Lab at extension 4495 to reach the Pathologist on-call.

**Reference Values**

Interpretative diagnostic report will be issued.

**CPT Code(s)**

88104