

 <b>UNIVERSITY of MARYLAND ST. JOSEPH MEDICAL CENTER</b>	<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, 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 or smaller.
- B. Direct smears – Fixed – 95% Ethanol alcohol or sprayed with a spray fixative. Allow 1 to 2 slides to air dry for thyroid aspirations.
- C. Aspirate – Fluid and tissue pieces in 50% Ethanol 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.
  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% Ethanol 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% Ethanol 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 physician's name.
  10. Slides and aspirated material will be delivered to the Cytology Laboratory or the Clinical 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 name, date of collection, date of birth, Social Security Number, specimen source and specific, exact site; i.e. left, right, etc, physician's name and address, and pertinent clinical information. Note: Doctor's office or nursing unit will be notified when any of the following conditions exist:

- a. No name on requisition form.
- b. Name on requisition does not match name on specimen.
- c. Unlabeled specimen.
- d. No doctor's name
- e. Slide(s) broken in transit beyond our ability to repair
- f. Spilled specimen

Place specimen in a plastic specimen bag with Cytology Requisition Form inserted into the pocket separate from the specimen.

### **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 the Clinical 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 fluid.
6. Out-Patient: Add an equal volume of 50% Ethanol 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
  - a. Inpatient: Each specimen must be electronically ordered in hospital computer system for Cytology to generate labels and Cytology requisition(s).
  - b. 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 physician's name, address and pertinent clinical history.
9. Routine or Rush status must be indicated.

Note: Any additional special test studies ordered for Cytology must be noted on the Cytology Requisition if indicated electronically when ordering in hospital computer system. (e.g. - Hemosiderin laden macrophages, CD4/CD8 Lymphocyte subtypes, Flow Cytometry, etc.)
10. Place specimen in a plastic specimen bag with the Cytology Requisition inserted into separate pocket and deliver specimen directly to the Clinical Laboratory for appropriate handling. Refrigerate specimen if there is an unavoidable delay in delivery. Note: The doctor's office or nursing unit will be called when any of the following conditions exist:
  - a. No name on requisition
  - b. Name on requisition does not match name on specimen.
  - c. Unlabeled specimen
  - d. Spilled specimen
  - e. No doctor's name provided
  - f. Laterality is not identified

#### **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 Clinical 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% Ethanol 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 a plastic or cardboard slide holder.
7. When labeled slides are fixed in 95% Ethanol alcohol, label the outside of the container with patient's name, date of birth, source of specimen and side (right or left).

Note: The doctor's office or nursing unit will be called when:

- a. No requisition form received with specimen
  - b. Mislabeled or unlabeled specimen and/or request form.
  - c. Broken slide(s) received beyond repair.
  - d. No doctor's name provided.
  - e. For Outpatients: Lack of necessary information to register patient, i.e. insurance information, ICD-10 code(s), 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-10 code, requesting physician's name, address and any pertinent clinical history.
  9. Routine or Rush status must be indicated on Cytology Requisition.
  10. Place specimen in a plastic specimen bag with the Cytology requisition inserted into the separate pocket and deliver specimen directly to the Cytology Laboratory or to the Clinical Laboratory for appropriate handling.

### **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 Clinical 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/specific body site and left or right side, when applicable, physician's name.

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

- a. Spilled specimens

- b. No requisition form
  - c. Name on requisition does not match name on specimen
  - d. Unlabeled specimen
  - e. No doctor's name
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, physician's name, pertinent clinical history and additionally out-patients physician's address, patient's social security number and insurance information including ICD-10 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 deliver to the Clinical 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 Clinical 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 and left or right side when applicable. Likewise all specimen containers must have the same identifying information as well along with the physician's name.
    6. Submit prepared slide(s) and solution containing the detached brush along with one Cytology Requisition.
- Note:

- a. The doctor's office or nursing unit will be notified when:
    - i. Spilled specimens are received
    - ii. No requisition form
    - iii. Name of requisition does not match name on specimen
    - iv. Unlabeled/mislabeled specimen
    - v. No doctor's name given
  - b. Label container(s) with patient's name, date of birth, date of collection, physician's name, source of specimen/specific body site and left or right side when applicable.
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, physician's name/address, social security number and insurance information including ICD-10 code(s) (outpatient) source of specimen/specific body site and left or right side 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 if possible deliver specimen to Cytology Laboratory or 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 Clinical Lab 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, physician's name and source of specimen/specific body site and left or right side when applicable.



3. For Inpatient specimens, do not add fixative. Submit the specimen along with the order entry generated or the Cytology requisition immediately to the Cytopathology Lab or Stat 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 doctor's office or nursing unit will be notified when:
  - a. Spilled specimens are received
  - b. No requisition form received
  - c. Name on requisition does not match name on specimen
  - d. Unlabeled/mislabeled specimen
  - e. No doctor's name given
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-10 code(s) (Outpatients), source of specimen/specific body site and left or right side when applicable, physician's name/address 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 if possible deliver specimen to Cytology Laboratory or the Clinical 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 Clinical 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% Ethanol alcohol. Spray fixed slides once and placed 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, and date of birth.



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

**Note:**

1. The doctor's office or nursing unit will be notified should any of the following conditions exist:
  - a. Spilled specimens
  - b. No requisition form
  - c. Name on requisition does not match name on specimen
  - d. Unlabeled specimen
  - e. No doctor's name given
  - f. Laterality not indicated
2. Label the container with patient's name, DOB, date of collection, and physician's name. Indicate specimen source (i.e. bronchoscopy brushing (right or left)).
3. 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..
4. 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 Clinical 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. Deliver specimen(s) to the Cytology laboratory. Refrigerate specimen(s) if there is an unavoidable delay in delivery.

Note:

1. The doctor's office or nursing unit will be notified when any of the following conditions exist:
  - a. Spilled specimen

- b. No requisition form
  - c. Name on requisition does not match name on specimen
  - d. Unlabeled specimen
  - e. No doctor's name given
  - f. Laterality not indicated
2. Label the container(s) with patient's name, DOB, date of collection, and physician's name. Indicate specimen source (bronchial washing, BAL, specific site – left, right, etc.)
3. Please perform a hospital computer system Request (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.
4. Place specimen(s) in a plastic bag with the Cytology Request Form inserted into the pocket separate from the specimen.
5. Deliver specimens to the Clinical Laboratory.

### **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 Clinical 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**

Expectorated (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 physician, 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, or Clinical Laboratory.  
Refrigerate specimen if there is an unavoidable delay in delivery.

7. Outpatient

- a. The doctor's office staff or other staff member will be responsible for instructing the patient on how to obtain the specimen.
- b. 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.
- c. The patient will refrigerate specimens until all required samples have been collected. Once completed, all specimens will be returned to the Clinical Lab.

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

- a. Give the patient a clean sputum cup BEFORE the procedure.
- b. 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 Clinical Laboratory.

9. Label specimen containers with patient's name, date of birth, date of collection, specimen source and physician'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, physician's name and address, date of birth, social security number, specimen source and pertinent clinical information.

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

- a. No requisition form;
- b. Name on requisition does not match name on specimen;

- c. Unlabeled specimen;
  - d. No doctor's name given.
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 Clinical laboratory for appropriate handling.

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

88104

88305

### **Cytology, Special Studies**

(PCP – Pneumocystis Carinii, 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 carinii (PC) – Specimens suitable for Pneumocystis carinii examination are Bronchoscopy Washing, Brushing and Bronchoalveolar lavage (BAL). Bronchoalveolar lavage specimens are 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) specimens suitable are 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  
Suitable specimens are 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 (right or left side when applicable), insurance information including ICD-10 code(s), requesting physician, submitting physician when different than requesting one, physician's address and any pertinent clinical history.

- c. Priority status (ROUTINE or RUSH) must be indicated (default will be Routine)
  - d. Special test/study or ordered/required must be indicated on the Cytology Requisition.
- 3. Note: The doctor's office or nursing unit will be called when any of the following exist:
  - a. No name on the requisition
  - b. Name on requisition does not match name on specimen
  - c. Unlabeled or incompletely labeled specimen (name, specimen source, left/right when applicable)
  - d. No doctor's name
  - e. Spilled/leaky specimen
  - f. Broken slide(s) beyond repair
  - g. No requisition received
  - h. Outpatients – lack of necessary information to register patient; i.e. insurance information, etc.
- 4. Place specimen in a plastic bag with the Cytology requisition inserted into the separate pocket. Deliver specimen to the Cytology Laboratory or to the Clinical Laboratory for appropriate handling.
- 5. 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 Clinical 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**

#### **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 Cystic Fibrosis, HPV Genotyping, and Trichomonas Vaginalis).

#### **Test Performed At**

St. Joseph Medical Center

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

#### **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, plastic spatula, Cyto Brush Plus GT cytobrush, obtained from laboratory
- d. SurePath®™ Preservative Fluid collection vial
- e. Cytopathology Request Form
- 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. 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 returned to the doctor's office when:
  - i. Either no requisition or no vial is received
  - ii. Name on the requisition and vial do not match
  - iii. Specimen vial received unlabeled
- 4. Please complete a Cytology Request Form
  - 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-10 code (absence of this will default specimen to self-pay)
    - viii. Specimen source (default will be cervical vaginal unless history of hysterectomy is noted)
    - ix. Test request (default will be Pap smear)
    - x. Routine screen/diagnostic or high risk status
  - b. In addition, the following elements should be noted:
    - i. LMP (last menstrual period)
    - ii. Additional tests to be performed from the vial (Liquid based Paps only)
    - 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 for transport to the Lab or Prep Stain processing.
- 6. Deliver inpatient specimens to the Clinical Laboratory. Deliver outpatient specimens to the specimen receiving area in the Pathology Department.



**Reference Values**

Smear 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, urethral):

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 or Clinical laboratory immediately. Outpatients: Refrigerate specimen. Deliver specimen to Clinical laboratory.  
Note: The doctor's office or patient's nurse or nursing unit will be notified when any of the following conditions exist:
  - a. Spilled specimen
  - b. No requisition form
  - c. Name on requisition does not match name on specimen.
  - d. Unlabeled specimen
  - e. No doctor's name.
5. Label containers with patient's name, date of birth, date of collection, physician's name and hospital ID number (if applicable), specimen source and specific site (left/right, if applicable).
6. 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, physician's name and address, specimen source and specific site (left/right, if applicable). Note: It is important that both specimen container(s) and requisition form be labeled catheterized or that the specimen was obtained pre or post instrumentation.
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 Stat 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 Clinical laboratory as soon as possible. Refrigerate specimen if there is an unavoidable delay in delivery.
4. Outpatient: Deliver the specimen to the Clinical laboratory. Refrigerate the specimen.  
Note: The doctor's office or the patient's nurse or unit will be notified when any of the following conditions exist:
  - a. Spilled specimen
  - b. No requisition form
  - c. Name on requisition does not match name on specimen
  - d. Unlabeled specimen
  - e. No doctor's name
5. Label the container(s) with the patient's name, date of collection, physician'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 physician's name and address, 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 Clinical 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, plus slide(s), slide holder/mailler, spray fix, lead pencil, tongue depressors, 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 Stat Lab in the Clinical Lab, Ground Floor, extension 1308

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

1. Write the patient's name (last name, first letter of first name or full first name and date of birth) on the white (frosted end side) area of the slide(s). 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 scrap 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 slides with 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 STAT labeled bag with requisition inserted in the pocket separate from the specimen.
9. Prepared slide(s) along with the requisition should be taken to the Cytology lab, room 271 in the Ambulatory Services Building, during the normal hours of operation, 8:00 am – 4:30 pm weekdays, or the Clinical Lab, Ground Floor, extension 1308, after 4:30 pm weekends and holidays.

**Requisition:**

Test should be ordered in hospital computer system for the Cytology department or complete a Cytology Request Form.

1. Cytology Request Form: Please complete the form to include patient's name, date of birth, social security number, date of collection, physician's name and address, and specimen source (body site sample collected from). Note: The doctor's office or patient's nurse or nursing unit will be called when any of the following conditions exist:
  - a. No requisition form
  - b. Name on requisition does not match name on specimen,
  - c. Broken slide(s) that cannot be reconstructed, unlabeled specimen
  - d. No doctor's name given.
2. When a Tzanck Prep Test is ordered and the Cytology Lab is closed (after 4:30 pm weekdays, weekends and holidays, the Pathologist on-call must be notified BY THE CLINICIAN OR THE NURSING STAFF. Call Stat Lab at extension 1308 to reach the Pathologist on-call.

**Reference Values**

Interpretative diagnostic report will be issued.

**CPT Code(s)**

88104

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