**TITLE: SPUTUM ASSESSMENT (EVALUATION)**

**PRINCIPLE / PURPOSE:** Sputum assessments are performed to determine the adequacy of these samples for cultures. Screening does not apply for AFB, fungus, or Legionella cultures, suctioned, trach aspirates, or other specimens collected by the respiratory department are not evaluated. The expectorated sputum is often contaminated with oropharyngeal flora and can lead to culture results that are difficult to interpret. The significance of an organism in a specimen depends on evidence of its origin from the lower respiratory tract. The assessment system used will aid in evaluating the sputum for evidence of contamination.

**COMPLEXITY LEVEL:** High

**SAFETY:**

- Gloves

- Approved lab coats, worn closed

- Biological Safety Cabinet

**SPECIMEN:**

Expectorated Sputum.

* Sputum should be obtained from a deep cough, and collected in a sterile screw-cap container.

The following do NOT require an assessment:

* Tracheal specimens
* Endotracheal specimens
* Induced specimens
* Suction specimens

**EQUIPMENT AND MATERIALS:**

1. Crystal Violet

2. Gram’s Iodine

3. Decolorizer

4. Safranin

5. Control slide

6. Microscope slides

7. Microscope

8. Immersion Oil

**Smear Preparation:**

**1.** Label slide appropriately.

2. Select bloody, purulent (pus filled area) or black areas of the clinical specimen with the sterile swab.

3. Spread the sample on slide to form a thin film (approximately a nickel-sized area).

**Staining Procedure:**

1. Allow slides to dry.

3. Gram stain using the automatic gram stain instrument.

4. If unable to utilize the automatic gram stain instrument, a manual gram

stain may be performed.

**Examination and Interpretation of the Smear**

1. Smears should be examined under low power.

2. Scan the entire slide.

3. Estimate the average number of Squamous Epithelial cells per low

power field.

4. Sputum specimens that average <10 Squamous Epithelial Cells per low

power field are acceptable for culture.

5. Sputum specimens that average >10 Squamous Epithelial Cells per low

power field are not acceptable for culture and should not be processed. 6. If the specimen is UNACCEPTABLE, call the floor and request that another sample be sent.

**Note:** Hold all rejected sputum for at least 24 hours in the designated refrigerator in case there is a request to process it.

**INTERPRETING AND REPORTING RESULTS:**

**Resulting:**

**Specimen is acceptable:**

**1**. Go to Micro result entry.

2. Enter accession number.

3. Result using the code SPUA that translates to “This specimen is

acceptable, culture report to follow.”

4. Finalize the sputum evaluation.

5. Refer to appropriate LIS procedure for ordering a respiratory culture. A

new accession number must be generated for the respiratory culture with

same collect and receive date as SPUEVA.

**Specimen is unacceptable:**

1. Go to Micro result entry.

2. Enter accession number.

3. Result using the code UNSPUA. This translates to: “Sputum specimen

not acceptable for testing. Please recollect.”

4. Call the caregiver to request sample re-collection. Document person

notified, date, and time. Make documentation on Sputum Evaluation Log.

5. Finalize the sputum evaluation.

**REFERENCES:**

Martin, R.S., Sumarah, R.K., Robart, E.M., “Assessment of Expectorated Sputum for Bacteriological Analysis Based on Polymorphs and Squamous Epithelial Cells: Six- Month Study.” Journal of Clinical Microbiology. 8(6): 635-7, Dec. 1978.

Wong, L.K., Barry, A.L., Horgan, S.M., “Comparison of Six Different Criteria for Judging the Acceptability of Sputum Specimens”. Journal of Clinical Microbiology. 16: 627-631, Oct. 1982.

Murray, P.R., Washington, J.A., “Microscopic and Bacteriologic Analysis of

Expectorated Sputum”. Mayo Clinic Proc, Vol. 50, June 1975.

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|  | Signature Date | |
| Medical Director Approval –  ARMC Cancer Center  ARMC Main Lab |  |  |
| Medical Director Approval –  MedCenter Mebane |  |  |

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