

Sputum Collection and Induction Procedures

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Results from sputum testing can

- provide initial diagnosis
- provide drug susceptibility testing
- allow for monitoring of the patient for response to treatment.

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Initial Monitoring for smear conversion

- Frequency
 - ◆ Every 2 weeks after week 2 of therapy
- Number of specimens
 - ◆ 1 sample – Collection observed by health care worker

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Monitoring for imminent smear conversion

- **Frequency**
 - ❖ Every few days to weekly
- **Number of specimens**
 - ❖ Total of 3 samples on three different days.
 - ❖ Once first negative smear is determined during periodic monitoring for conversion, collect 2 additional samples – At least one should be observed by health care worker

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Monitoring for culture conversion

- **Frequency**
 - ❖ Monthly
- **Number of specimens**
 - ❖ **3 samples** on three different days – At least one should be observed by health care worker

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Monitoring after culture conversion

- **Frequency**
 - ❖ Only if clinically indicated
- **Number of specimens**
 - ❖ **3 samples** on three different days – At least one should be observed by health care worker

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Recommendations for Sputum Collection

- Initial Monitoring for smear conversion
 - ❖ Every 2 weeks after week 2 of therapy
 - 1 sample
 - Collection observed by health care worker
- Monitoring for imminent smear conversion
 - ❖ Every few days to weekly
 - 3 samples on three *different* days
 - One collection observed by health care worker

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Recommendations for Sputum Collection

- Monitoring for culture conversion
 - ❖ Continue to collect monthly until sputum culture negative
 - 3 samples on three *different* days
 - One collection observed by health care worker

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Supplies and Equipment

- Approved respiratory protection mask
 - ❖ Follow infection control procedures!
- Completed laboratory form – write legibly
- Sputum collection container with mailing carton and patient ID label
 - ❖ Name
 - ❖ DOB
 - ❖ Date of collection

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Supplies and Equipment - continued

- Gloves
- Bag for biohazard waste
- Tissues and bag for disposal
- Small glass of water

Additional Supplies for Induced Specimens

- Nebulizer
- Disposable tubing with upmist chamber and mouthpiece
- Sterile water or hypertonic saline (10%) for nebulizer

Spontaneous Collection Procedures

- Explain purpose of procedure to patient/family
- Give instructions for how to collect and handle specimen
- Early morning specimen preferable
- Patient should rinse mouth and/or brush teeth – no mouthwash

Spontaneous Collection Procedures – cont.

- Instruct to breath deeply several times, then cough vigorously
- Discuss need for sputum – deep secretions – not saliva or spit
- About 5-10 ml needed – send what you get
- Hot shower, boiling water may help

Spontaneous Collection Procedures – cont.

- Sample placed directly in inner tube
- Tube cleansed with antiseptic wipe
- TIGHTEN, TIGHTEN, TIGHTEN!
- Packaging for shipment
- Arrange for pick-up for non-observed specimens
- Refrigeration preferred if delay in transport
 - ❖ Holds down growth of contaminants

Spontaneous Collection Procedures – Induced Specimens

- Be sure to label as “induced specimen”
- Assemble machine
- May need to discuss disposable supplies and cleaning of machine to reassure patient
- Assure that nebulizer is producing adequate mist

Spontaneous Collection Procedures

- Instruct patient to breathe mist in deeply
- As soon as begins coughing, collect sample
- If does not produce cough, instruct to cough vigorously
- May take 5 minutes of mist time!

Infection control

- Cover with tissue while coughing unless actually producing sample
- HCW should wear approved mask (N95)
- LOCATION, LOCATION, LOCATION
 - ❖ Healthcare setting
 - Negative pressure
 - 12 ACH
 - Outside exhaust

Infection control

- Home
 - ❖ Exclude other family members
 - ❖ Well ventilated area - room with window and door or **outside!**
 - ❖ Vacate room for several hours following procedure, if possible
 - ❖ Shut door!

After the collection

- Discard tubing and other contaminated supplies in approved biohazard containers, places
- Clean nebulizer with 1:10 bleach solution (change filters as needed)
- Patient should remain isolated until coughing subsides
 - ❖ Tissues/disposal

After the collection

- Specimens to lab through normal process
- Discuss timeframe for results with patient
- Schedule additional samples, if needed

Yield of smear and culture from repeated sputum induction for the diagnosis of pulmonary tuberculosis.

Sputum (% yield)

| specimen | one | two | three | four |
|-------------|-----|-----|-------|------|
| AFB smear | 64 | 81 | 91 | 98 |
| AFB culture | 70 | 91 | 99 | 100 |
