What You Need to Know About Collecting Sputum

I. What is sputum?
- Sputum is the phlegm that we collect from TB cases and suspects.
- Sputum is different than saliva (spit).
  - Sputum comes from deep inside your lungs and is usually thick.
  - Saliva (spit) comes from your mouth and is thin and watery.
- To get an accurate test result, be sure to collect sputum, not saliva.

II. Why do we collect sputum?
- We collect sputum to test it for tuberculosis (TB) germs.
- Running laboratory tests on sputum is the best way to find out if a patient has TB disease.
- Sputum results tell us if the TB medicine is working.

III. How to do we collect sputum?
The Public Health Investigator (PHI) will:
1. Instruct the patient on how to collect the sputum sample.

   SAMPLE INSTRUCTIONS
   Take several deep breathes with your mouth open, cough several times. Cough up phlegm from your lungs. Do not place fingers inside the cup. Spit into the cup. Replace the outer lid and give it back to me.

2. Hand an intact sputum container to the patient. This will prevent contamination.
3. Instruct the patient to go outside or in the bathroom to produce sputum away from others. If needed, give the patient a brown paper bag so they can discreetly give the specimen to you.
4. The patient will spit into the cup to obtain a minimum of 5 mL of sputum (about a tablespoon). Instruct patient to wash their hands when they are done.

   SPUTUM COLLECTION TIPS
   - Early morning specimens are preferred for testing.
     - Advise the patient to brush their teeth and rinse their mouth with water as soon as they wake up prior to collecting a specimen.
     - Do not use mouthwash. Collect the specimen before you eat or drink anything.
   - Advise the patient to sit down while collecting sputum so they don’t fall if they get dizzy.
   - If the patient is unable to cough up sputum:
     - Have them breathe in steam from a hot shower or use a nebulizer.
     - Call your supervisor.
   - Take whatever sputum a patient can give you. It’s better to leave with something than nothing.
   - Clean your cooler weekly with disinfectant cleaner.

5. Put gloves on to break down the sputum container. Label the inner tube of the sputum container.

   The label will have the patient’s name, DOB, SSN#/TB ID#, and the clinic providing TB care.
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6. Ensure that both tops of the sputum container are tightened firmly to avoid leakage.
7. Complete a Lab Request form and a Sputum Collection form. See SAMPLES of each form below.
8. Place the labeled container with the completed lab request form in a bio-hazard bag.
9. Place the specimen in a cooler. The sputum must be kept cool at all times.
10. Transport the specimen to the City of Houston (COH) Health Department lab as soon as possible. Clean your hands with hand sanitizer before and after handling the specimen.
11. Once you deliver the specimen to the COH lab, the lab technician will sign the completed Sputum Collection form.
12. Submit the completed Sputum Collection Form to your supervisor.

IV. How does the laboratory process this specimen?
See the What You Need to Know About Testing Sputum Samples series to learn more.

V. Results are in—how does this affect Case Registry, Nurse Case Managers, and the Field?

A. Case Registry will:
   a. Receive sputum results from the laboratory.
   b. Post sputum results to the patient’s file in TB Master in a timely manner.
   c. Report TB cases and suspects to the state based on specimen smear and culture results.

<table>
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<tr>
<th>Date Collected</th>
<th>Specimen #</th>
<th>Specimen Type</th>
<th>Smear</th>
<th>Culture</th>
<th>Culture ID</th>
<th>Report Date</th>
<th>Isolazid</th>
<th>Rifampin</th>
<th>Ethambutol</th>
<th>Streptomycin</th>
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<tbody>
<tr>
<td>02/22/2012</td>
<td>M234</td>
<td>Sputum</td>
<td>PS / 4+</td>
<td>PC</td>
<td>MTB-C</td>
<td>Not Done</td>
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<td>S</td>
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</tbody>
</table>

* = Drug not listed does not have sensitivity done
S = Susceptible
R = Resistant

B. Nurse case managers will:
   a. Sign isolation release orders once a patient has met non-infectious criteria. See SAMPLE below.
      ✓ Three consecutive negative smears
      ✓ Two weeks of TB medication
      ✓ Clinical improvement.
   b. Monitor/order sputum results to ensure culture conversion within 60 days of initiating TB treatment.
   c. Consult with Heartland National TB Center if a patient is resistant to one or more first-line TB medications to adjust the patient’s drug regimen.

C. The Field will:
   a. Use N-95 respirators with smear positive patients until they have three consecutive negative smears.
   b. When initiating the first visit, collect 3 sputa from every TB case/suspect, regardless of pulmonary or extra-pulmonary TB suspicion/diagnosis.
      ▪ Collect a specimen on the spot. Return to collect an early morning specimen for the following two days.
      ▪ Specimens must be collected 8 hours apart.
   c. If the patient remains smear positive, collect sputum at least twice weekly till AFB negative; then collect two additional sputa.
   d. Once patient has three consecutive negative smears, collect sputum monthly for the duration of treatment.
   e. If patient remains culture positive, ensure that sputum is collected prior to sixty (60) days from start of treatment.
   f. If the patient becomes smear positive again, repeat of the process of initial sputum collection.
   g. Contact investigations should proceed without delay for AFB+, cavitary chest x-ray TB suspects. AFB- CI activity can be delayed as appropriate (depending on clinical presentation, case load, etc).
Lab Request Form Sample

The lab request form must have the specimen collection date/time.

Remember to label the form!
Sputum Collection Form Sample

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Lab technician receiving the specimen will fill this out.

Must be filled out

Fill out if patient is unavailable ONLY

Fill out if patient is available

Visual Screening

(Based on 1st visit each month if patient on Ethambutol)

Enter Date: Month/Day/Year

<table>
<thead>
<tr>
<th>No Glasses</th>
<th>Right Eye</th>
<th>Left Eye</th>
<th>Both Eyes</th>
<th>Red/Green</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20/20</td>
<td>20/20</td>
<td>20/20</td>
<td></td>
</tr>
<tr>
<td>With Glasses</td>
<td>20/20</td>
<td>20/20</td>
<td>20/20</td>
<td></td>
</tr>
</tbody>
</table>

Complete if patient not available for collection of sputum specimen by TB field staff

Hospitalized: Hospital Name/Date(s) hospitalized
In Harris County Jail: Dates/Spin #
In TDC: Dates/Spin #
In Other Jail: Name/Location/Dates/Spin #
Died: Date/Source of Information

Bacteriology

Observe sputum collection for cases/suspects at 1st DOT visit EACH Month. Follow guidelines for non-pulmonary Cases.

Sputum Specimen Collected

Extrapulmonary (No Specimen recommended)
Refused
Unable to Produce (No nebulizer)
Unable to Produce (Nebulizer used)
UTL (Unable to locate Patient)

City Lab/Clinic Use Only

Verification of Specimen Delivered for Processing
Specimen delivered to LAB/CLINIC
Date
Received by

Case Registry Use Only

Date Received in Case Registry
Received by
HOUSTON DEPARTMENT OF HEALTH AND HUMAN SERVICES
Release from Home Isolation Form

Patient Name ________________________  DOB __________________

- Symptoms have improved
- Treatment compliance adequate treatment for at least 2 to 3 weeks
- Patient has three consecutive negative sputum smears collected on different days.

Medical Providers Name

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Date and Time Home Isolation if lifted ________________________________

Nurse Case Manager ________________________________

TBC:HomeIsolationLiftedForm8/12