

Quality and Timeliness of Specimens for Mycobacterial Culture

Division of Consolidated Laboratory Services
and

Virginia Department of Health TB Program

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Do you inspect the collected sputa prior to dispatching the specimen to the lab?

Yes

No

Do you know how often the courier comes to your Health Dept. to pick up specimens?

Yes

No

Are most patients able to return sputum specimens the same day as collection?

Yes

No

Do you coach the client on how to collect sputa prior to their first collection?

Yes

No

Sometimes

Do you observe a client's first sputum collection?

Yes

No

Sometimes

Do you enter specimen order into WebVISION or does someone else in your health department do that?

Yes, I do

No, someone else does

It's a team effort

DCLS PRESENTATION

TB PROGRAM PRESENTATION

Specimen Orders - WebVISION



MUST be entered and dispatched

- Orders transmitted to DCLS at night
- If not dispatched, DCLS will not receive the order & can't process the specimen

Basic steps:

1. Create encounter
2. Enter information about each specimen (sputum, urine etc.)
3. Dispatch specimens

To request a step by step guide: email tuberculosis@vdh.virginia.gov

Tips for success

For WebVISION, ensure multiple staff can:

- Create encounters
- Enter specimens
- Dispatch specimens

If label doesn't print from WebVISION - don't worry!
Hand write label w/the necessary information (bar code NOT needed)



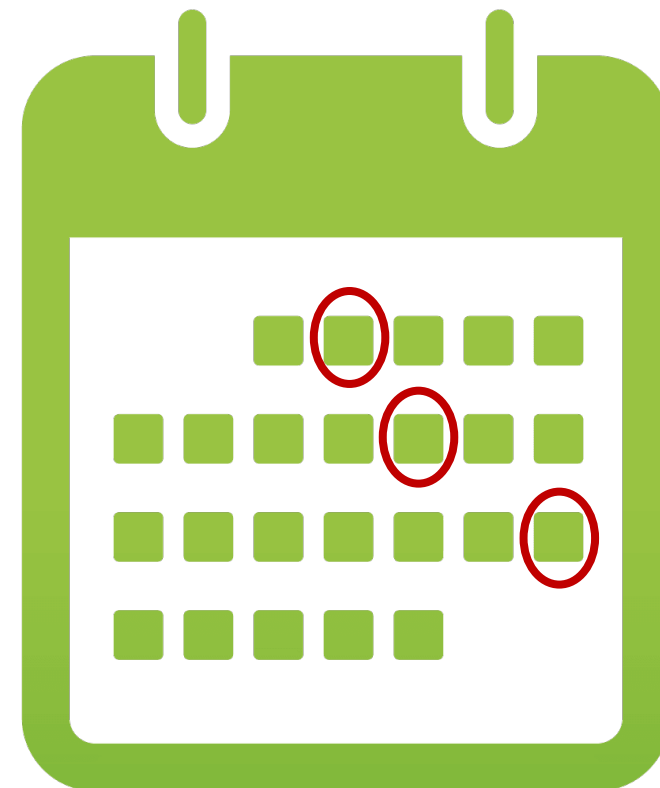
Ensure adequate supply of coolers and icepacks

Know if your site is a hub or sub pickup site for the courier

Resource Documents

Recommended Sputum Sample Collection Schedule

- Found on the [TB Program website](#) on the [TB Disease page](#) under VDH Guidelines and Recommendations



Guidelines for Submission of Sputum Specimens for TB Testing

- Guidance from Association of Public Health Laboratories (APHL)
- Also linked in Recommended Sputum Sample Collection Schedule

Feedback From Districts - Training


- Training
 - Sputum collection
 - Include hands on components and observation of collection
 - Specimen packaging
 - WebVISION
- Orientation
 - Online courses on TB topics - including lab components
 - New Nurse Training attendance
- Creation of document with videos and resources for TB staff



Feedback from Districts - Collection Process

- Keep educational resources with collection kits to increase use
- Observe 1st collection
- Teach clients in-person
 - Educate on process
 - Provide instructional materials - ensure multiple languages available
 - Use videos
- Document quantity of sputum in progress notes
- No collection on Saturdays
 - Specimens collected on Friday will not be tested until Monday, making Friday and Saturday the least desirable days for collection.

Feedback from Districts - Storage/Shipping

- Instruct client to store specimen in refrigerator
 - Use any available staff to pick up specimens
 - Send specimens with ice packs
 - Store specimens at health department in refrigerator
- 
- Courier specimens same day of collection
 - Specimens collected Sunday/Monday shipped on Monday
 - Goal of specimen arrival at lab within 1 day of collection
 - Give greater attention to timing of specimen collection
 - Stop batching specimens

Feedback from Districts - Administrative

- Create TB binder with following materials:
 - DCLS sample requirements
 - Guidelines for sample collection
 - Location of supplies
 - Location of refrigerator for storing samples
 - Instructions for arranging courier service
 - Instructions for obtaining results
 - Checklist to ensure all policies/procedures are followed



Feedback from Districts

DCLS

- Notify Districts of “poor quality” samples.
- Provide performance measure data to Districts.
- Create training video to be used in new nurse orientation.

TB Program

- Incorporate how to assess poor quality specimens in annual TB training.
- Explain that quality of specimens is a performance indicator for the lab.

Resources for Districts

- VDH Sputum Collection One-Pager for Clients
- VDH Sputum Collection Tips and Tricks
- Videos for Client Education
- [DCLS TB Clinical Specimen Collection Guidance](#)

Sputum Collection Guide

1

Drink water
before bed



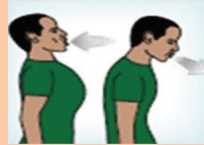
2

In morning,
rinse mouth
with filtered
water



3

Take slow,
deep
breaths



x 3

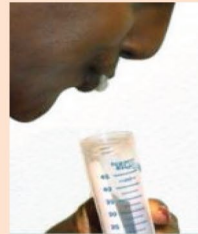
4

Inhale then
cough hard
to produce
sputum



5

Spit sputum
into tube



6

Provide at
least 5mL
and tightly
close
container



7

Label and
refrigerate



Sputum Collection Tips for Healthcare Workers



Before collection:

- Healthcare workers should wear appropriate respiratory protection if present for collection
- Ensure use of a safe place for sputum collection, such as negative pressure room, outside, or in a well-ventilated room in the client's home
- Educate the client on collection steps
- Plan to observe the first specimen collection. The second and third specimens should be collected at least 8 hours apart
- Plan to collect a morning sputum. Secretions pool overnight, so a morning sputum is a better specimen
- Instruct the client to rinse their mouth with filtered or bottled water to limit the presence of nontuberculous mycobacteria (NTM) and food
 - A lot of tap water contains NTM - handout on [VDH TB website](#)
 - If you do not have filtered or bottled water, boiled tap water can be used



During collection:

- Observe at least the first sputum collection:
 - Ensure the sample is thick, not watery with spit or nasal secretions
 - Obtain at least 5mL
 - Instruct the client not to put their mouth on the tube, if possible
- Encourage the client to sit and lean forward. This is the best position for producing a strong cough
- Try these strategies if the client cannot produce sputum:
 - Have the client breathe in steam from a hot shower or a boiling pot of water
 - Apply percussion to the client's back to help loosen secretions
 - Help the client use a nebulizer with hypertonic saline to induce sputum. Inhaling the saline for about 10 minutes should help produce a cough
- Tightly seal the collection tube



After collection:

- Label the tube with:
 - Client's full name
 - Unique identifier (i.e., client ID, DOB)
 - Date and time of collection
- Place only one conical tube per biohazard bag
- Store specimens refrigerated at 4°C (do not freeze)
- Enter specimen order into WebVISION and dispatch order
- Ship on a cold pack within 24 hours of collection
- Do not batch (hold onto) specimens to submit to DCLS together - the fresher the better!



Division of Consolidated Laboratory Services



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TUBERCULOSIS CLINICAL SPECIMEN

Laboratory: Microbial Reference

Blood and Bone Marrow Specimens



Bronchial washings, tissue, cerebrospinal fluid, gastric wash and other body fluids



Sputum



Test Description: Process clinical specimens for the recovery and identification of *Mycobacteria spp.* Perform Antimicrobial susceptibilities performed on initial *Mycobacterium tuberculosis*

Laboratory: Microbial Reference

Order Approval Required? (Note: For non-Virginia Department of Health Submitters there is an associated fee for this service. Please contact Microbial Reference Group Manager 804-648-4480 ext 210 for more information.) Fee for Service Agreement for non-Virginia Department of Health submitters

Collection Container: Sterile Container

Optimal Volume: Maximum 10 ml

Collection Guidelines: First morning sputum. Specimen should be transported to the laboratory as soon as possible, preferentially within 24 hours of collection

Storage Container: Not Applicable

Storage Instructions: Store at 2-8°C

Transportation Instructions: Transport with Cold Packs

Test Methodology: N-Acetyl-L-Cysteine (NALC) specimen processing; Direct Nucleic Acid Amplification Test (NAAT) for *Mycobacterium tuberculosis* complex; Fluorochrome smears; Conventional and Molecular Methods for identification

Additional Information: Kits for collection of clinical specimens are provided to State Health Departments by the Division of Consolidated Laboratory Services (DCLS) by calling (804) 648-4480 x 104.

Causes For Rejection:

- Specimen with no name or identifier, leaked out during transit, visibly contaminated with foreign substance or too old, greater than 7 days from collection.
- The specimen containers must be labelled with two unique patient identifiers that exactly match two unique identifiers on the test request form.

Possible Results: Identification of *Mycobacteria spp.* Drug susceptibility testing (DST) results on first time *Mycobacterium tuberculosis* isolates. No Acid Fast Bacilli Isolated in Culture.

Next Steps



Implement
corrective
actions



Assess in 6
months



Continue to
maintain
performance or
identify
additional
corrective
actions



Sputum specimens should be stored (if needed, i.e. overnight) at what temperature before transport?

- A. Room temperature
- B. Refrigerated
- C. On ice packs

How should sputum specimens be transported to the lab?

- A. At room temperature
- B. In a cooler, with ice pack

What is the optimal volume of sputa for mycobacterial culture?

- A. 1mL
- B. 2mL
- C. 5mL

Specimens must be dispatched for DCLS to process the specimen.

True

False

A handwritten label is OK if the WebVISION label does not print.

True

False

I know if my site is a hub or sub pickup for the courier.

Yes

No

thank you!