TB Laboratory Self-Assessment Tool

- Public Health Lab
- Clinical Lab
- Commercial Lab

https://www.aphl.org/programs/infectious_disease/tuberculosis/Pages/Self-Assessment-Tool.aspx
TB Laboratory Self-Assessment Tool

- General Specimen Collection and Handling
- Safety
- General Laboratory Practice
- Smears from Clinical Specimens
- Public Health and Epidemiology
- Specimen Processing and Decontamination
- Inoculation and Growth Detection
- Susceptibility Testing
- Direct Detection
Does your laboratory have written specimen collection and rejection criteria for AFB smear/culture specimens for:

- Volume of specimen
- Age of specimen
- Storage temperature of specimen
- Minimum time between collection of sputum specimens
Collection/Rejection Criteria

- **Volume**: 16 labs with Yes, 4 labs with No
- **Age**: 16 labs with Yes, 4 labs with No
- **Storage temperature**: 18 labs with Yes, 2 labs with No
- **Time between collection**: 16 labs with Yes, 4 labs with No

The graph shows the number of labs (y-axis) for each criterion with bars indicating Yes in red and No in orange.
On average, how many specimens does your laboratory process per week?
On average, how many specimens does your laboratory process per week?
QA program for AFB smear results

• Participation in multiple proficiency programs
• Internal proficiency testing or competency programs
• Blind review of 20% or more of AFB-stained smears by a supervisor or other employee
• Monitoring for a change in smear positivity rates
• Monitoring for smear/culture correlation
What broth culture system is your lab using?
What broth culture system is your lab using?

- BD MGIT Automated: 6 labs
- BD MGIT Manual: 8 labs
- Versatrek ESP: 3 labs
- Biomerieux Bact/Alert: 4 labs
Do you use fluorescent, non-fluorescent or a combination of staining methods for primary specimen smears?
Do you use fluorescent, non-fluorescent or a combination of staining methods for primary specimen smears?

• All 21 labs are using fluorescent staining methods for primary smears!
  • 5 labs confirm with non-fluorescent stain
Does your laboratory include a negative control with each batch of specimens processed for culture?
Does your laboratory include a negative control with each batch of specimens processed for culture?
Does your laboratory use respiratory protection when performing AFB work?
Does your laboratory use respiratory protection when performing AFB work?

- Yes
- No

Number of Labs

- Yes: 18
- No: 2
Considerations for use of respirators

• Laboratory risk level
  • Low
  • Moderate
  • High

• Factors that increase the risk of infection
  • Opening and manipulating positive culture vials
  • Preparing smears from positive cultures
  • Potential for spill or broken culture containers
  • High positivity rate for MTBC

[Links]
High-risk TB laboratories (TB-containment laboratories) - Tuberculosis Laboratory Biosafety Manual - NCBI Bookshelf (nih.gov)
Centrifuge questions:

- Does your laboratory use a refrigerated centrifuge?
- Does your laboratory have aerosol resistant buckets (covered centrifuge buckets)?
- What speed do you use to centrifuge your AFB samples?
Centrifuges:

- Refrigerated: Yes
- Covered centrifuge buckets: Yes
Centrifuge speed:

Optimal recovery of AFB at:

3000-3300 x g

OR

>3800 RPM
Does your laboratory decontaminate all waste before it leaves the mycobacteriology area?
Does your laboratory decontaminate all waste before it leaves the mycobacteriology area?

No. of Labs

- Yes
- No
Does your laboratory monitor contamination rates of solid and broth media?
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- Solid: 2-5% Yes, 14 No
- Broth: 5-8% Yes, 14 No
Does your laboratory reprocess contaminated cultures?
Does your laboratory reprocess contaminated cultures?

- Yes
- No

No. of Labs

- Yes: 25
- No: 1
Does your laboratory monitor:

• Turn-around times for smear and culture reporting?
• Smear/culture correlation data?
• Culture positivity rates?
Does your laboratory monitor:

- Smear/Culture TAT?
  - Yes: 18
  - No: 4

- Smear/Culture correlation?
  - Yes: 16
  - No: 6

- Culture positivity rates?
  - Yes: 10
  - No: 10
Resources:

• WSLH!

• APHL: Tuberculosis Page
  • [https://www.aphl.org/programs/infectious_disease/tuberculosis/Pages/default.aspx](https://www.aphl.org/programs/infectious_disease/tuberculosis/Pages/default.aspx)
  • Self-assessment tool
  • Mycobacteriology Training Modules
  • Fact Sheets
  • Guidelines and Best Practices

• CDC: Tuberculosis Page
  • [https://www.cdc.gov/tb/default.htm](https://www.cdc.gov/tb/default.htm)
  • False Positive Investigation Toolkit
  • Guidelines
  • Data & Statistics
Contact Info:

Laura Louison, Microbiologist Supervisor
608-224-4328
Laura.louison@slh.wisc.edu

Nathan Simon, TB Laboratory Program Coordinator
608-224-4265
Nathan.simon@slh.wisc.edu
Questions?