Mycobacteriology Supplemental Information

Mycobacterium Tuberculosis, TB

The South Dakota Public Health Laboratory provides isolation and identification testing of all *Mycobacterium* species (including *M. Tuberculosis* and non-tuberculosis mycobacteria). Molecular testing for *M. Tuberculosis* is available on request, on pulmonary samples only. Public and private health care providers may submit sputum and other clinical specimens and reference specimens. Positive isolations or identifications of *M. Tuberculosis* are reported to the South Dakota Tuberculosis Control Section of the SD DOH.

Sputum and specimens from other sources are concentrated and stained with fluorochrome and are cultured for isolation and identification. Middlebrook 7H-11 plates, Lowenstein-Jensen slants, and Bactec MGIT tubes are used for isolation. Species identification is accomplished by nucleic acid probe tests and Maldi-TOF.

Specimen Collection

CLINICAL SPECIMENS

Sputum: Collect a series of 3- 5 single, early morning samples. A volume of 5 - 10 ml is adequate for each sample.

Induced (or nebulized) sputum: These specimens are usually very watery and should be labeled as "induced" so that they will not be mistaken for saliva. Saliva is an unsatisfactory specimen.

Bronchial washings: Collect up to 40 ml.

Gastric lavage specimens: Collect early in the morning or 8 hours after eating or drug therapy. Buffer immediately with 100 mg of sodium carbonate (Na_2CO_3) or other alkaline buffer. Deliver to the laboratory quickly. Kits supplied by the SDPHL contain buffer.

Tissue: Aseptically collect and transport to the laboratory at once.

Urine: A series of single, mid-stream specimens, voided in the early morning, should be submitted, rather than a 24-hour pooled specimen.

Feces: Only fecal specimens from confirmed or suspected AIDS or other immunocompromised patients will be accepted. Collect a minimum of 1 gram of feces.

Blood: Collect 10 ml of blood in a sterile tube containing heparin, citrate or SPS tubes.

Other specimens: Collect aseptically following the proper procedure for the type of specimen. Other specimens include pleural fluid, pus, joint fluid, laryngeal or wound swab, and spinal fluid. DO NOT use any transport medium.

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REFERENCE SPECIMENS

You can submit either the isolate on the original (primary) medium or a subculture on an appropriate medium after growth is visible. Laboratories electing to submit original cultures should make sure visible growth is evident before mailing and should hold a subculture in their laboratory. Contaminated cultures will be accepted only upon PRIOR approval.

Specimen Identification

1. Complete **all** the provider and patient information areas on the SDPH Laboratory requisition slip. Include pertinent clinical information with each specimen.

2. Using indelible ink, label each specimen with the date of collection and the patient's first and last name. Unlabeled specimens or specimens where the patient identifier on the specimen does not match the identifier on the form will not be tested.

Reporting and Interpretation of Results

Clinical specimens are tested for the presence or absence of *Mycobacterium* species by smear, liquid culture and standard solid culture methods. Negative cultures are incubated for 6 weeks before the specimen is reported as negative. Isolates from clinical specimens and reference cultures are identified to the genus and species level.

Smears: The provider is notified by fax or mail.

Cultures: If growth occurs at any time during the 6-week incubation period, identification procedures begin. Turnaround time is 1 - 2 weeks after growth for identification by probe and Maldi-TOF.

Drug susceptibility testing of *M. Tuberculosis*-complex cultures are sent to California Department of Public Health for first line sensitivities. For all other Mycobacteria species, isolates will be returned to the submitter at the submitters request.

Molecular testing is reported	
Negative*	MTB not detected
Positive for *M. Tuberculosis**	MTB detected- RIF resistance detected or, MTB detected- RIF resistance indeterminate or, MTB detected- RIF resistance not detected

*The following disclaimer will be included on all molecular results. "These results were obtained with research procedures. The results must not be used for diagnosis, treatment or the assessment of a patient's health. Clinical correlation is required. Culture results pending."

The results of all specimens are reported to the health care provider who submitted the specimen. In addition, positive results are reported to the TB program coordinator in the Office of Disease Prevention.

Criteria for Unacceptable Specimens

1. The specimen was not properly identified with the patient's name or identifier.
2. The patient identifier on the specimen does not match the identifier on the form.
3. The specimen was broken or leaked in transit.
4. The specimen was submitted in a non-regulation container.
5. The specimen was submitted in 5% formalin, Cary-Blair or other preservative.
6. There was no specimen in the bottle.
7. The patient information was not complete.
8. The specimen did not arrive in appropriate temperature range. (2-8°C)