

## **TUBERCULOSIS: LABORATORY TESTING AND REPORTING IN MANITOBA**

Health care provider (HCP) orders sample for acid-fast bacilli (AFB) smear and culture from patient suspected of having tuberculosis (TB). Specimen collection performed as per Diagnostic Services Manitoba (DSM) guidance:

- Samples accepted include: sputum, bronchial wash, stool, urine, blood, cerebrospinal fluid, other sterile fluids, tissues, and gastric aspirates.
- Decision to perform AFB smear and culture made by HCP based on patient signs and symptoms +/- contact investigation

Samples for AFB testing are sent to **one of three** DSM laboratories depending upon patient location. (Each laboratory has a unique ID number.)

### **1. Health Sciences Centre (HSC)**

All samples from HSC itself; all FNIH Nursing Station samples; all Westman Laboratory (WL) samples; and samples from all other sites not covered by St. Boniface General Hospital are sent to HSC; HSC is the reference laboratory for AFB testing in Manitoba.

- Smear and culture
- Real-time polymerase chain reaction (PCR) is performed (sputum specimens only) if a smear is positive for AFB on an index case<sup>1</sup>
- Once culture becomes positive, nucleic acid probes are performed to detect *M. tuberculosis* (MTB) complex, *M. avium-intracellulare* (MAI), and *M. gordonae*
- If an isolate is positive for MTB by probe, it is sent to the National Microbiology Laboratory (NML) for identification confirmation, genotypic and phenotypic susceptibility testing, and for mycobacterial interspersed repetitive units (MIRU) - variable number tandem repeat (VNTR) typing.
- Any positive result is reported to: HCP; Manitoba Health, Healthy Living and Seniors (MHLS) ; and to the HSC Infection Prevention Control Program (IPCP) or other IPCP as appropriate.

### **2. St. Boniface Hospital (SBH)**

All samples from SBH itself; samples from Misericordia Health Centre, Concordia Hospital, Grace Hospital, Riverview Health Centre, Victoria Hospital, and Selkirk & District General Hospital.

- Smear and culture
- Real-time PCR is performed (sputum specimens only) if a smear is positive for AFB on an index case<sup>1</sup>.
- Positive smear and/or culture reported to HCP and SBH IPCP or other IPCP as appropriate.
  - ✓ Smear positives are reported to MHLS; positive cultures are not as they are forwarded to HSC.
- Specimen forwarded to HSC once the culture becomes positive to perform nucleic acid probes to identify MTB, MAI or *M. gordonae*.

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<sup>1</sup> Patient with no prior diagnosis of tuberculosis.

### 3. Westman Laboratory (WL)

- PCR, using \*GeneXpert, on sputum specimens
  - ✓ All sputum specimens that have Mycobacterial culture ordered will have the GeneXpert PCR performed.
    - If positive, it is reported to HCP, MHHLS and WL IPCP
- All specimens (regardless of PCR result) are forwarded to the HSC for smear and culture to be performed.

\* GeneXpert is an automated test that can identify MTB DNA and resistance to rifampin (RIF; RIF resistance is not reported).

#### **DSM**

- Sends a fax report of all its positive findings to MHHLS.
- If a specimen is smear positive and PCR negative, MHHLS will be notified.
- Direct smear positive: HSC faxes results to MHHLS automatically through the Laboratory Information System (LIS).
- Culture positive (index case) *M. tuberculosis* only: MHHLS is automatically notified through the LIS if the culture is positive.
- TB PCR: index case: MHHLS is notified automatically by fax through the LIS for HSC and SBH. WL performs a manual fax.

#### **NML**

- Faxes all positive reports to HSC.
- Mails all positive reports to MHHLS on a monthly basis. MHHLS gets all results from NML regardless of if they were reported clinically or not.
- NML sends encrypted monthly MIRU-VNTR results to the WRHA.
- Has agreed to send encrypted monthly MIRU-VNTR results to MHHLS in future.

**Note:** If treating MD is not the ordering MD, s/he can obtain test results by:

1. Looking up in eChart
2. Calling DSM and asking to be added to the list of HCP who are informed re a specific patient.
3. Contacting the ordering MD.

Manitoba TB Lab Tests Reporting Process – MIRU data (v2, Sept 2014)

