

# TB Nurse Network Meeting

Wednesday, January 17, 2018

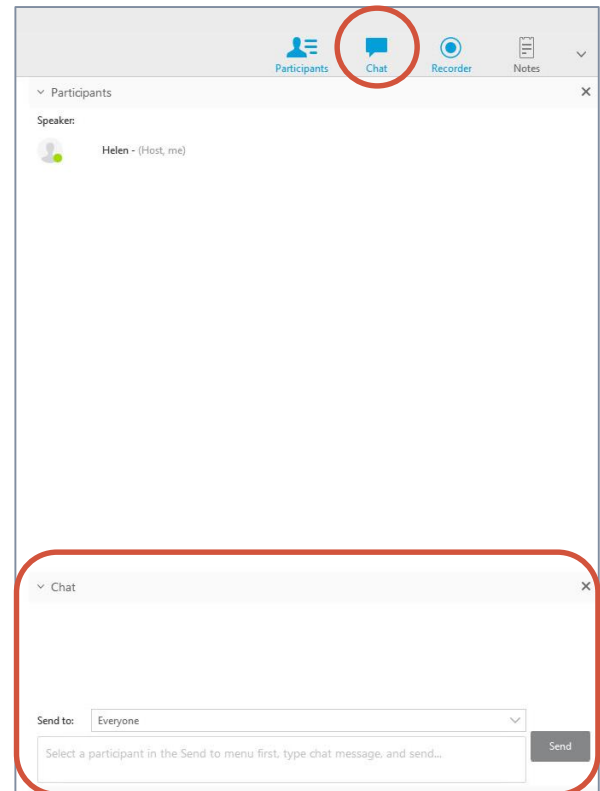
10:00-11:30 AM ET

Conference call in number: 1-888-557-8511

Access Code: 254-487-3 #

Please Remember to Mute Your Phones  
Do Not Put Us on Hold

Enter your name and facility into the  
chat box for attendance →



## Announcements

- Next meeting Wednesday, April 18<sup>th</sup>, 2018
  - Topic: TBD. Suggestions? Contact [mcguirkh@michigan.gov](mailto:mcguirkh@michigan.gov)
- LHD billing for TB services
  - How do you bill for TB services?
  - Survey coming soon



# Michigan Learning Opportunities

## TB Contact Investigation Trainings

- Skills 3-day course
  - Late summer, July? Lansing?
  - 18-24 attendees
  - Must be LHD or TB clinic employee
  - First spots: someone who has never taken the course, new to TB (within 5 years), or works in a high TB-burden county
  - Interested? Email [mcguirkh@Michigan.gov](mailto:mcguirkh@Michigan.gov)
  
- Introduction to TB Contact Investigations Online Webinar (about 1.5 hours)
  - Open to anyone interested, more information soon

## Michigan Learning Opportunities

- **2018 World TB Day Conference**

- Monday, March 26<sup>th</sup> 2018
- Okemos Conference Center
- **Nominations for TB survivors, call Helen 517-284-4957**
- Panel on legal role of public health in TB control → send us your questions!

- **Sunstrum Seminar**

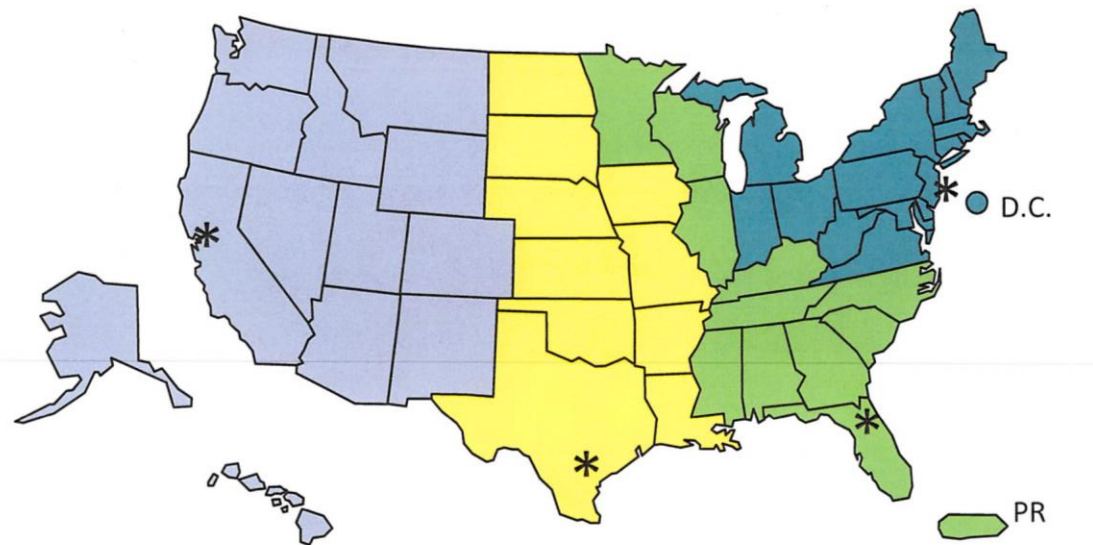
- Three-Year-Old Girl with a Positive IGRA
- Friday 1/19/18; 8:15 – 9:30 AM
- Wayne County TB Clinic, 2001 S. Merriman Rd, Suite 300, Westland, MI 48186
- In-person or online (same dial and website info as today for webinar)

## CDC COEs

CDC TB Centers of Excellence for Training, Education, and Medical Consultation (COEs)  
– formerly RTMCCs

[Rutgers Global TB Institute](#)

No upcoming trainings/recently archived webinars at this time



- Region 1, Curry International TB Center
- Region 2, Heartland National TB Center
- Region 3, Global TB Institute
- Region 4, Southeastern National TB Center

\*COE Location

# New Resources

TB Nurse Case Studies Training Tool  
[http://www.heartlandntbc.org/assets/products/case\\_studies\\_tb\\_ncm\\_training\\_tools.pdf](http://www.heartlandntbc.org/assets/products/case_studies_tb_ncm_training_tools.pdf)



## A Clinician's Guide to the TB Laboratory



EXCELLENCE · EXPERTISE · INNOVATION

A Clinician's Guide to the TB Laboratory  
[http://www.heartlandntbc.org/assets/products/clinicians\\_lab\\_guide.pdf](http://www.heartlandntbc.org/assets/products/clinicians_lab_guide.pdf)



## CASE STUDIES IN TUBERCULOSIS

Nurse Case Management Training  
Tools for Patient Success

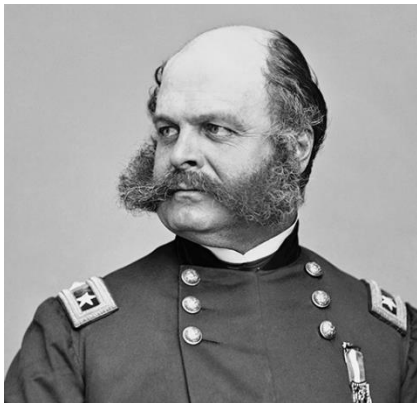
EXCELLENCE | EXPERTISE | INNOVATION

## TB in the News

- [Fast, Cheap Testing for Tuberculosis? Soon It May Be Possible](#) – Jan 1, 2018
  - LAM is a sugar component of the cell wall shed by *Mycobacterium tuberculosis*. Can be found in the urine of those with active pulmonary TB disease.
  - 101 HIV-negative Peruvian patients, 48 culture confirmed active pulmonary TB
  - LAM was elevated in patients with a higher mycobacterial burden, higher proportion of weight loss, or cough
  - 8/9 patients who were smear-negative and culture-positive for TB testing positive for LAM
  - *Science Translational Medicine* 13 Dec 2017: Vol. 9, Issue 420
- [Improved Diagnostics Fail to Halt the Rise of Tuberculosis](#) – *Nature magazine* 11/17/17, republished in *Scientific American*
  - Short editorial on high hopes of GeneXpert, and countries with a “weak health system” are not seeing the returns they had hoped for
  - “The tale is a familiar one in global health care: a solution that seems extraordinarily promising in the lab or clinical trials falters when deployed in the struggling health-care systems of developing and middle-income countries.”

## TB in the News

- [How TB Shaped Victorian Fashion](#) – *Smithsonian Magazine*
  - 1780-1850: thinness and pale skin were attractive attributes for women
  - Mid-1850's: "Consumptive chic"; corsets showed off narrow waists. Middle and upper-class women used makeup to lighten their skin, redden their lips and color their cheeks.
  - Second half of 19<sup>th</sup> century: Robert Koch and germ theory; public health began targeting factors to prevent the spread of TB. No more:
    - Long, trailing skirts (swept up germs from the streets)
    - Corsets – exacerbates TB by limiting the movement of lungs and circulation of blood. "Health Corsets" were introduced
    - Men's extravagant beards



"The Trailing Skirt: Death Loves a Shining Mark," *Puck*, August 8, 1900



## Interesting Publications



[Vitamin C potentiates the killing of \*Mycobacterium tuberculosis\* by the first-line tuberculosis drugs isoniazid and rifampicin in mice](#) – American Society for Microbiology, Jan 3, 2018

- High concentrations of vitamin C sterilize cultures of drug susceptible and drug resistant Mtb.
- Combination of vitamin C and isoniazid and rifampicin reduced bacterial burden in the lungs of Mtb infected mice faster than isoniazid and rifampicin alone.
- Suggest the addition of vitamin to first-line TB drugs could shorten TB treatment in humans.

[Reprogramming Innate Immune Cells to Fight TB](#) – Cell, 1/11/18

- Focusing on macrophages – innate response, which Mtb immediately disarms
- Showed when BCG is administered to mice in a way that enables access to bone marrow, it can reprogram stem cells (generate all immune cells).

## Interesting Publications

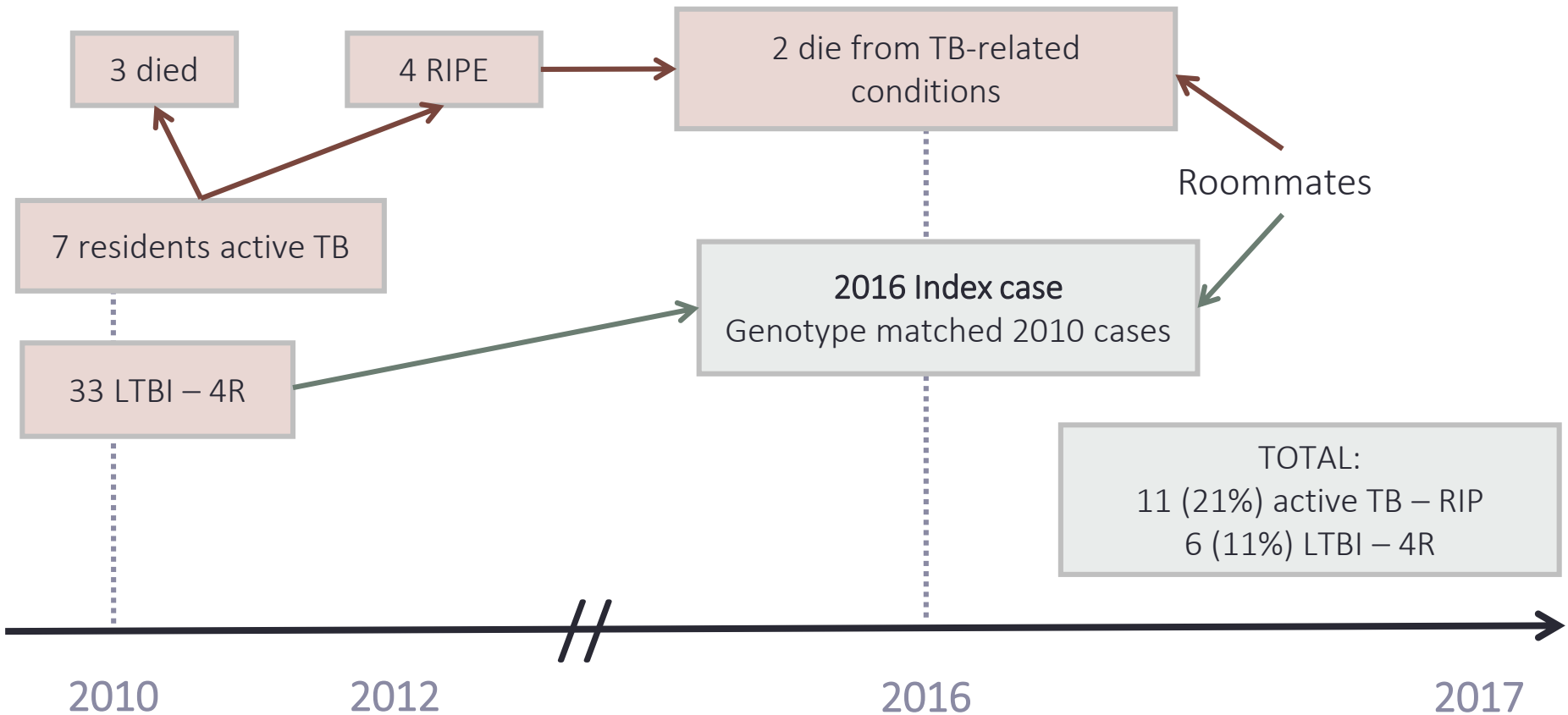
### [Tuberculosis State Is Associated with Expression of Toll-Like Receptor 2 in Sputum Macrophages](#) – American Society for Microbiology, 10/12/17

- Mtb parasitizes the host macrophage
- Looked at macrophages with “Toll-like Receptor 2” from sputum in three different groups of people:
  1. Infection-free
  2. LTBI
  3. Active pulmonary TB disease
- If we could distinguish LTBI from active TB, high-risk individuals could be targeted for treatment before disease begins manifestation.

↓  
Expression of Toll-like Receptor 2

# Interesting Publications

[Notes from the Field: Use of Asynchronous Video Directly Observed Therapy for Treatment of Tuberculosis and Latent Tuberculosis Infection in a Long-Term-Care Facility – Puerto Rico, 2016-2017](#). MMWR Morb Mortal Wkly Rep 2017;66:1386–1387



2016

- Puerto Rico Department of Health (PRDH) were not available to administer daily DOT and the facility did not have the personnel needed to provide daily patient transport to the PRDH clinic.
- Standard “live” vDOT protocol was attempted, but not sustainable due to unpredictable cell phone and internet connectivity
- Asynchronous vDOT protocol in Spanish was developed
- Commute would have taken 1.5 hours per day, DOT for each of the 17 people would have required an additional 1.5 hours per day of observation.
- Use of asynchronous vDOT saved PRDH approximately 240 hours in DOT-related activities, equivalent to 25% of the workload for a full-time epidemiology technician/case manager over 6 months of treatment.
- CDC has developed an eDOT toolkit (<https://www.cdc.gov/tb/publications/guidestoolkits/tbedottoolkit.htm>) to facilitate adoption of these practices.

	% Compliance*	Avg # doses taken	Avg # doses scheduled
TB Disease (11) 6 months rifampin, isoniazid, pyrazinamide	92	128 <sup>†</sup>	144
LTBI (6) 4 months Rifampin	87	96 <sup>§</sup>	110

\* percentage of recommended doses taken

<sup>†</sup> CDC recommends completion of 130-dose treatment during a 5 day/week regimen for active TB disease and compliance is **recommended to be at least 80%**. Doses taken were counted only during weeks in which  $\geq 4$  doses occurred (80% compliance).

<sup>§</sup> CDC recommends completion of 120-dose Rifampin treatment during a 7 day/week regimen. Duration of treatment was extended from 16 to 22 weeks to accommodate 5 day/week dosing and achieve 80% compliance.

<https://www.cdc.gov/tb/publications/ltbi/treatment.htm#treatmentRegimens>

# A Guide to Interpretation of PCR Results from the State Lab

Jolene Vanneste  
Senior Microbiologist  
Mycobacteriology Unit  
Michigan Department of Health and Human Services

Prevent Disease – Promote Wellness – Improve Quality of Life



# Objective:

Understanding the 3 different types of PCR reports:

1. From clinical specimens processed at MDHHS
2. From clinical specimens processed by facilities other than MDHHS
3. From cultures positive for acid-fast bacilli





# Clinical Specimen Slide Report – 1<sup>st</sup> Result Out

BUREAU OF LABORATORIES  
MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PO BOX 30035  
3350 N. MARTIN LUTHER KING, JR. BLVD  
LANSING, MI 48909  
Phone: (517)335-8059  
Fax: (517)335-9871

## PRELIMINARY REPORT

COPY TO: KENT COUNTY HEALTH DEPT-PERSONAL HEALTH SERVICES  
Starlins Agency # 853  
700 FULLER AVENUE N.E.  
GRAND RAPIDS, MI 49503

Specimen Number: CL17-304813  
CLIA#: 23D0650909  
Report Generated: 10/26/2017 at 12:20:57PM

SUBMITTER: KENT COUNTY HEALTH DEPT-PERSONAL HEALTH SERVICES  
Starlins Agency # 853  
700 FULLER AVENUE N.E.  
GRAND RAPIDS, MI 49503

Date Collected	10/25/2017	Patient Last Name
Time Collected	1505	Patient First Name
Date Received	10/26/2017	Patient DOB
Specimen Type	SPUTUM	Gender
Specimen Volume	17ML	

Respiratory specimens with volume less than 3 mL may compromise recovery of acid-fast organisms.

## TEST RESULTS

### Acid-Fast Bacilli Clinical Specimen

#### AFB Slide

Acid Fast Bacilli - Few Found

THIS RESULT IS A NEW POSITIVE RESULT

NUCLEIC ACID AMPLIFICATION REPORT WILL FOLLOW

## POSSIBLE SLIDE RESULTS:

Acid Fast Bacilli – Not Found

Auramine-O negative

Auramine-O positive?, ZN negative

Acid Fast Bacilli – Few Found

Auramine-O positive, ZN positive <10 AFB seen

Acid Fast Bacilli – Found

Auramine-O positive, ZN positive >10 AFB seen

# Clinical Specimen PCR Report

## (Specimens Processed at MDHHS)

BUREAU OF LABORATORIES  
MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PO BOX 30035  
3350 N. MARTIN LUTHER KING, JR. BLVD  
LANSING, MI 48909  
Phone: (517)335-8059  
Fax: (517)335-9871

### PRELIMINARY REPORT

COPY TO: KENT COUNTY HEALTH DEPT-PERSONAL HEALTH SERVICES  
Starlims Agency # 853  
700 FULLER AVENUE N.E.  
GRAND RAPIDS, MI 49503

Specimen Number: CL17-304813  
CLIA#: 23D0650909  
Report Generated: 10/25/2017 at 4:19:07PM

SUBMITTER: KENT COUNTY HEALTH DEPT-PERSONAL HEALTH SERVICES  
Starlims Agency # 853  
700 FULLER AVENUE N.E.  
GRAND RAPIDS, MI 49503

Date Collected	10/25/2017	Patient Last Name	
Time Collected	1505	Patient First Name	
Date Received	10/25/2017	Patient DOB	
Specimen Type	SPUTUM	Gender	
Specimen Volume	17ML		

Respiratory specimens with volume less than 3 mL may compromise recovery of acid-fast organisms.

### TEST RESULTS

#### Acid-Fast Bacilli Clinical Specimen

##### AFB Slide

Acid Fast Bacilli - Few Found

THIS RESULT IS A NEW POSITIVE RESULT

##### Real Time PCR

M. tuberculosis complex DNA - DETECTED

M. avium complex DNA - Not Detected

NAA testing was developed and its performance characteristics determined by the Michigan Department of Health and Human Services. It has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary if performance characteristics are verified at the testing laboratory.

All NAAAT results should be confirmed by culture. A negative result does not rule out the possibility of isolating M. tuberculosis complex and/or M. avium complex from this specimen.

MYCOBACTERIUM CULTURE IN PROGRESS

### POSSIBLE RESULTS:

M. tuberculosis complex DNA – DETECTED / Not Detected

M. avium complex DNA – DETECTED / Not Detected

-NAA testing was developed and its performance characteristics determined by the Michigan Department of Health and Human Services. It has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary if performance characteristics are verified at the testing laboratory.

-All NAAT results should be confirmed by culture. A negative result does not rule out the possibility of isolating M. tuberculosis complex and/or M. avium complex from this specimen.

-MYCOBACTERIUM CULTURE IN PROGRESS

# Referred Sediment PCR Only Report (Specimens Processed at Facility other than MDHHS)

BUREAU OF LABORATORIES  
MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PO BOX 30035  
3350 N. MARTIN LUTHER KING, JR. BLVD  
LANSING, MI 48909  
Phone: (517)335-8059  
Fax: (517)335-9871

## FINAL-COPY REPORT

COPY TO: WAYNE STATE UNIVERSITY PHYSICIANS GROUP -TB CONTROL  
Starlims Agency # 2677  
50 E CANFIELD ST  
DETROIT, MI 48201  
Specimen Number: CL17-320100  
CLIA#: D0850909  
Report Generated: 12/19/2017 at 2:25:19PM

SUBMITTER: ST. JOHN HOSPITAL & MEDICAL CENTER -MICROBIOLOGY DEPT  
Starlims Agency # 100272  
22101 MOROSS ROAD  
DETROIT, MI 48212

Date Collected	12/15/2017	Patient Last Name	
Time Collected	0248	Patient First Name	
Date Received	12/19/2017	Patient DOB	
Specimen Type	SPUTUM	Submitter Patient ID	
		Gender	
		Submitter Identifier	

## TEST RESULTS

### Nucleic Acid Amplification Test (NAAT)

#### Real Time PCR

M. tuberculosis complex DNA - DETECTED  
M. avium complex DNA - Not Detected

NAA testing was developed and its performance characteristics determined by the Michigan Department of Health and Human Services. It has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary if performance characteristics are verified at the testing laboratory.  
All NAAT results should be confirmed by culture. A negative result does not rule out the possibility of isolating M. tuberculosis complex and/or M. avium complex from this specimen.  
SPECIMEN RECEIVED AS PROCESSED SEDIMENT  
SLIDE AND CULTURE EXAMINATION NOT PERFORMED

## POSSIBLE RESULTS:

M. tuberculosis complex DNA – DETECTED / Not Detected

M. avium complex DNA – DETECTED / Not Detected

-NAA testing was developed and its performance characteristics determined by the Michigan Department of Health and Human Services. It has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary if performance characteristics are verified at the testing laboratory.

-All NAAT results should be confirmed by culture. A negative result does not rule out the possibility of isolating M. tuberculosis complex and/or M. avium complex from this specimen.

-SPECIMEN RECEIVED AS PROCESSED SEDIMENT

-SLIDE AND CULTURE EXAMINATION NOT PERFORMED

# AFB Identification

## Identification Techniques:

- MALDI-TOF: performed on growth from solid media or a subculture of original broth culture
- AccuProbe: performed on broth or solid media cultures
- PCR: performed on broth cultures for patients with NO history of Mycobacterium sp. or NTM history greater than 1 year ago
- HPLC – No longer available at MDHHS...

The AF Lab will perform which ever test is appropriate to get the quickest result out



# AFB ID - PCR on Broth Cultures: Two Types of Reports

Broth cultures positive at facilities other than MDHHS

Broth cultures positive at MDHHS

BUREAU OF LABORATORIES  
MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PO BOX 30035  
3350 N. MARTIN LUTHER KING, JR. BLVD  
LANSING, MI 48909  
Phone: (517)335-8059  
Fax: (517)335-9871

PRELIMINARY-COPY REPORT

COPY TO: MID-MICHIGAN DIST. HEALTH DEPARTMENT-MONTCALM  
Starlims Agency # 40  
615 NORTH STATE ROAD, SUITE 1  
STANTON, MI 48888-9702

Specimen Number: CL18-310010  
CLIA#: 23D0650909  
Report Generated: 01/03/2018 at 3:36:54PM

SUBMITTER: SPECTRUM HEALTH BUTTERWORTH /MICRO LAB  
Starlims Agency # 124  
35 MICHIGAN ST NE MC056  
GRAND RAPIDS, MI 49503

Date Collected	12/04/2017	Patient Last Name	
Time Collected	1106	Patient First Name	
Date Received	01/03/2018	Patient DOB	
Specimen Type	SPUTUM	Submitter Patient ID	
		Gender	
		Submitter Identifier	

TEST RESULTS

Acid-Fast Bacilli Cultural Isolate

AFB Identification

PRELIMINARY REAL TIME PCR REPORT - M. tuberculosis complex DNA - Not Detected  
PRELIMINARY REAL TIME PCR REPORT - M. avium complex DNA - DETECTED

This test was developed and its performance characteristics determined by the Michigan Department of Health and Human Services. It has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary if performance characteristics are verified at the testing laboratory.  
ADDITIONAL REPORT WILL FOLLOW

BUREAU OF LABORATORIES  
MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PO BOX 30035  
3350 N. MARTIN LUTHER KING, JR. BLVD  
LANSING, MI 48909  
Phone: (517)335-8059  
Fax: (517)335-9871

PRELIMINARY-COPY REPORT

COPY TO: MID-MICHIGAN DIST. HEALTH DEPARTMENT-MONTCALM  
Starlims Agency # 40  
615 NORTH STATE ROAD, SUITE 1  
STANTON, MI 48888-9702

Specimen Number: CL17-305167  
CLIA#: 23D0650909  
Report Generated: 01/03/2018 at 8:04:44AM

SUBMITTER: SPARROW HOSPITAL-MICROBIOLOGY LAB  
Starlims Agency # 126  
1215 E. MICHIGAN AVE.  
LANSING, MI 48909

Date Collected	11/23/2017	Patient Last Name	
Time Collected	1107	Patient First Name	
Date Received	11/24/2017	Patient DOB	
Specimen Type	SPUTUM	Submitter Patient ID	
		Gender	
		Physician	
		Submitter Identifier	

Source Volume 2ML

Respiratory specimens with volume less than 3 mL may compromise recovery of acid-fast organisms.

TEST RESULTS

Acid-Fast Bacilli Clinical Specimen

AFB Slide

Acid Fast Bacilli - Not Found

AFB Isolation

Acid Fast Bacilli Found - Identification to Follow

THIS RESULT IS A NEW POSITIVE RESULT

AFB Identification

PRELIMINARY REAL TIME PCR REPORT - M. tuberculosis complex DNA - Not Detected  
PRELIMINARY REAL TIME PCR REPORT - M. avium complex DNA - Not Detected

This test was developed and its performance characteristics determined by the Michigan Department of Health and Human Services. It has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary if performance characteristics are verified at the testing laboratory.  
ADDITIONAL REPORT WILL FOLLOW



# Good News – No More Just Verbal Reports:

PCR on Non-respiratory  
clinical specimens sources  
has been validated by MDHHS!

Prevent Disease – Promote Wellness – Improve Quality of Life



# Questions?

If questions comes to mind later,  
the TB Lab can be reached at 517-335-9636

Prevent Disease – Promote Wellness – Improve Quality of Life







# Latent TB Infection

## *MDSS Guidance*

Shona Smith, MPH

MDHHS Tuberculosis Epidemiologist

[smiths79@Michigan.gov](mailto:smiths79@Michigan.gov)



# Determining Case Status

[CSTE Case Definition](#)



# Determining Case Status

## Suspect

A positive TST (as defined by CDC)

**or**

A positive IGRA (as defined by CDC)

**AND**

*M. Tuberculosis* complex was not isolated from a clinical specimen (if a specimen was collected)

## Confirmed

A positive TST (as defined by CDC)

**or**

A positive IGRA (as defined by CDC)

**AND**

*M. Tuberculosis* complex was not isolated from a clinical specimen (if a specimen was collected)

**AND**

No clinical evidence compatible with TB Disease\*

\*No signs or symptoms consistent with TB Disease AND 1) Chest imaging without abnormalities consistent with TB (chest radiograph or CT scan) or 2) Abnormal chest imaging that could be consistent with TB Disease with microbiologic testing that is negative for MTB complex and where TB Disease has been clinically ruled out



# Completing the Detail Form

As Resources Allow

# Report of Case of Latent Tuberculosis Infection

Michigan Department of Health and Human Services

Communicable Disease Division

Investigation Information					
Investigation ID	Onset Date <i>mm/dd/yyyy</i>	Diagnosis Date <i>mm/dd/yyyy</i>	Referral Date <i>mm/dd/yyyy</i>	Case Entry Date <i>mm/dd/yyyy</i>	Case Completion Date <i>mm/dd/yyyy</i>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
LTBI State Case Number		LTBI City/County Case Number		Investigation Status	
<input type="text"/>		<input type="text"/>		Active <input type="text"/>	
Case Status					<input type="checkbox"/> State Prison Case
<input type="radio"/> Confirmed <input type="radio"/> Suspect <input type="radio"/> Confirmed - Non Resident <input type="radio"/> Not a Case <input type="radio"/> Unknown <input type="radio"/> Non-Michigan Case					
Patient Status	Patient Status Date <i>mm/dd/yyyy</i>	Part of an outbreak?	Outbreak Name	Case Updated Date <i>mm/dd/yyyy</i>	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	

## Patient Information

Patient ID <input type="text"/>	First <input type="text"/>	Last <input type="text"/>	Middle <input type="text"/>
Street Address <input type="text"/>			Within City Limits? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown
City <input type="text"/>	County <input type="text"/>	State <input type="text"/>	Zip <input type="text"/>
Home Phone ### ## ## <input type="text"/>	Ext. <input type="text"/>	Other Phone ### ## ## <input type="text"/>	Ext. <input type="text"/>
Residence Census GEOID: <input type="text"/> (CGI_B: ) <small>Report GEOID to the level of census tract [11 digits]. Geocoder available at: <a href="https://geocoding.geo.census.gov/geocoder/geographies/address;sessionid=u-0Ty1S-pltShQ4j2LsyGUafFMr6OKQInmGSEJHTDjryS47YnUmb!-1637032754?form">https://geocoding.geo.census.gov/geocoder/geographies/address;sessionid=u-0Ty1S-pltShQ4j2LsyGUafFMr6OKQInmGSEJHTDjryS47YnUmb!-1637032754?form</a></small>			
Parent/Guardian (required if under 18)			
First <input type="text"/>	Last <input type="text"/>	Middle <input type="text"/>	

## Demographics

Sex <input type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Unknown	Date of Birth mm/dd/yyyy <input type="text"/>	Age <input type="text"/>	Age Units <input type="radio"/> Days <input type="radio"/> Months <input type="radio"/> Years
<b>Race</b> (Check all that apply) <input type="checkbox"/> Caucasian <input type="checkbox"/> African American <input type="checkbox"/> American Indian/Alaska Native <input type="checkbox"/> Hawaiian/Pacific Islander (Specify) <input type="text"/> <input type="checkbox"/> Asian (Specify) <input type="text"/> <input type="checkbox"/> Other (Specify) <input type="text"/> <input type="checkbox"/> Unknown			
<b>Hispanic Ethnicity</b> <input type="radio"/> Hispanic/Latino <input type="radio"/> Non-Hispanic/Latino <input type="radio"/> Unknown		<b>Arab Ethnicity</b> <input type="radio"/> Arab <input type="radio"/> Non-Arab <input type="radio"/> Unknown	
Worksites/School <input type="text"/>	Occupations/Grade <input type="text"/>	MDOC ID <input type="text"/>	
U.S.-born (born in 1 of the 50 U.S. states, the District of Columbia, a U.S. territory, or born abroad to a parent who was a U.S. citizen) <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown			
Country of Birth <input type="text"/>		Month-Year Arrived in the U.S. mm/yyyy (if country of birth other than U.S.) <input type="text"/>	

**Initial Patient Evaluation***Initial Reason Evaluated for LTBI (select one)*

## Public Health Activity

- Contact Investigation  
 Immigration Medical Exam (includes Class B immigrant, refugee, and Civil Surgeon exams)  
 Other Public Health Department Activity

## Non-Public Health Screening Activity

- Screening for Congregate Setting not done by Public Health Department (includes shelters, correctional facilities, schools, and rehab facilities)  
 Employment Clearance (includes health care workers and volunteers)  
 Student Clearance  
 Other Medical Risk Screening (e.g. HIV, TNF-blockers)

## Other Reasons

- Positive TST/IGRA (outside of a contact investigation or organized screening program)  
 Abnormal Chest Radiograph (where TB symptoms were not the reason for the radiograph)  
 TB Symptoms  
 Other Reason Not Listed Above [specify]

*Source Case and Contact Investigation History*

Is the likely source case for the patient's TB Infection known?

- Yes, (TB State Case Number of the source case: )  No  Unknown

Was the patient identified during the contact investigation, but not evaluated for TB at that time?

- Yes  No  Unknown

Was the patient not identified during the contact investigation of the source case (i.e., missed contact)?

- Yes  No  Unknown

*Testing for TB Infection*

Was a tuberculin skin test (TST) placed?

Yes  No  Unknown

Interpretation of TST (select one)

Positive  Negative

TST Placement Date

*mm/dd/yyyy*



TST Read Date

*mm/dd/yyyy*



TST Result: Millimeters (mm) of induration (enter 99 for unknown):

Was an interferon gamma release assay (IGRA) done?

Yes  No  Unknown

If yes, type of IGRA used (select one)

QuantiFERON-TB Test  T-SPOT.TB Test  Other, specify

IGRA Result (select one)

Positive  Negative  Indeterminate/Borderline  Failed/Invalid  Unknown

Date of IGRA specimen collection:

*mm/dd/yyyy*



*Chest Imaging*

Was chest imaging done?

Yes  No  Unknown

Type of Chest Imaging (select all that apply)

Standard X-ray  Computed Tomography (CT)

Other, specify  Unknown

Date of Chest Imaging: *mm/dd/yyyy*



Chest Imaging Interpretation (select one):

Normal (not consistent with TB)  Abnormal (consistent with TB)  Unknown



Case ID

First Name

Last Name

Report of Case of Latent Tuberculosis Infection

Page 3

Microbiologic Testing

Was a sputum culture done?

Yes  No  Unknown

Sputum Culture Result

Positive  Negative  Unknown

Sputum Culture Collection Date  
mm/dd/yyyy

Sputum Culture Report Date  
mm/dd/yyyy

Was a culture done from another site (non-sputum)?

Yes  No  Unknown

Other Specimen Result (non-sputum):

Positive  Negative  Unknown

Enter anatomic code

Other Specimen Collection Date mm/dd/yyyy

Other Specimen Report Date mm/dd/yyyy

### Epidemiologic Information

<i>Patient Immune Status</i>	
HIV Status at Diagnostic Evaluation <input type="radio"/> Negative <input type="radio"/> Positive <input type="radio"/> Indeterminate <input type="radio"/> Not Offered <input type="radio"/> Refused <input type="radio"/> Unknown	
If Positive, State HIV/AIDS Patient Number <i>(If AIDS Reported 1993 or Later)</i> <input style="width: 90%;" type="text"/>	Date of most recent HIV Test mm/yyyy <i>(if country of birth other than U.S.)</i> <input style="width: 90%;" type="text"/>
CD4 Count <i>(cells/mm<sup>3</sup>)</i> <input style="width: 90%;" type="text"/>	Viral Load <i>(copies/mL)</i> <input style="width: 90%;" type="text"/>
Additional TB Risk Factors <i>(select all that apply)</i> <input type="checkbox"/> None <input type="checkbox"/> Cancer <input type="checkbox"/> Diabetes Mellitus <input type="checkbox"/> End-Stage Renal Disease <input type="checkbox"/> Hepatitis B or C <input type="checkbox"/> Pregnancy <input type="checkbox"/> Post-organ Transplantation <input type="checkbox"/> Smoking, specify <input style="width: 150px;" type="text"/> <input type="checkbox"/> TNF- $\alpha$ Antagonist Therapy <input type="checkbox"/> Other, specify <input style="width: 150px;" type="text"/>	
<i>Patient Social Risk Factors</i>	
Lived outside U.S. for > 2 months? <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown	
If Yes, enter country (1) <input style="width: 150px;" type="text"/> <span style="float: right;">▼</span>	
If Yes, enter country (2) <input style="width: 150px;" type="text"/> <span style="float: right;">▼</span>	
If Yes, enter country (3) <input style="width: 150px;" type="text"/> <span style="float: right;">▼</span>	
Experienced Homelessness within the Past Year <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown	If no, has the patient ever experienced homelessness? <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown
Resident of Correctional Facility at Time of Diagnostic Evaluation <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown	If yes, select type of correctional facility: <input type="radio"/> Federal Prison <input type="radio"/> State Prison <input type="radio"/> Local Jail <input type="radio"/> Juvenile Correction Facility <input type="radio"/> Other Correctional Facility <input type="radio"/> Unknown
Resident of Long-Term Care Facility at Time of Diagnostic Evaluation <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown	
If yes, select type of long-term care facility: <input type="radio"/> Nursing Home <input type="radio"/> Mental Health Residential Facility <input type="radio"/> Hospital-Based facility <input type="radio"/> Alcohol or Drug Treatment Facility <input type="radio"/> Residential Facility <input type="radio"/> Other Long-Term Care Facility, specify <input style="width: 150px;" type="text"/> <input type="radio"/> Unknown	
Patient Ever Used Illicit Drugs <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown      If yes, specify which drugs <input style="width: 150px;" type="text"/> <i>(For the purposes of national surveillance, "illicit" drug use will be defined based on federal law, e.g. use of marijuana is illicit under federal law, regardless of its status under applicable state law)</i>	
Patient Ever Met the Criteria for Alcohol Use Disorder <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown <i>(Alcohol use disorder is a clinical diagnosis made using criteria outlined in the Diagnostic and Statistical Manual [DSM]. The criteria are at: <a href="https://pubs.niaaa.nih.gov/publications/dsmfactsheet/dsmfact.pdf">https://pubs.niaaa.nih.gov/publications/dsmfactsheet/dsmfact.pdf</a>)</i>	

## Treatment and Outcome Information

Patient Started LTBI Treatment

Yes  No

If No, primary reason treatment was not started (select one)

Patient lost to follow-up 
  History of previous treatment for TB or LTBI 
  Treatment medically contraindicated  
 Treatment not offered based on local clinical guidelines 
  Patient refused 
  Other, specify


Initial LTBI Drug Regimen

Isoniazid (9 months; 9H) 
  Isoniazid (6 months; 6H) 
  Isoniazid/Rifapentine (3 months; 3HP)  
 Rifampin (4 months; 4R) 
  Other, specify

LTBI Administration (select all that apply)

DOT (Directly Observed Therapy) 
  EDOT (Electronic Directly Observed Therapy) 
  Self-Administered  
 Other, specify

Date Therapy Stopped mm/dd/yyyy



Reason Therapy Stopped (select one)

Completed Therapy 
  Lost to Care 
  Patient Choice 
  Pregnancy 
  Not LTBI  
 Other, specify   
 Developed TB, TB State Case Number   
 Adverse Event Related to LTBI Treatment (select all that apply): 
 Hospitalized:  Yes  No  Unknown  
 Died:  Yes  No  Unknown

*(Please immediately report all adverse events resulting in hospitalization or death to CDC at [LTBIdrugevents@cdc.gov](mailto:LTBIdrugevents@cdc.gov))*

Completed LTBI treatment but developed TB

TB State Case Number

**Referral Information**

*Person Providing Referral*

First <input type="text"/>	Last <input type="text"/>	Phone ###-###-#### <input type="text"/>	Ext. <input type="text"/>	Email <input type="text"/>
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Case ID    First Name    Last Name    Report of Case of Latent Tuberculosis Infection    Page 6

**Referral Information cont.**

*Primary Physician*

First <input type="text"/>	Last <input type="text"/>	Phone ###-###-#### <input type="text"/>	Ext. <input type="text"/>	Email <input type="text"/>
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Street Address

City <input type="text"/>	County <input type="text"/>	State <input type="text"/>	Zip <input type="text"/>
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**Case Notes**

Notes

Case ID    First Name    Last Name    Report of Case of Latent Tuberculosis Infection    Page 7

**Lab Results**

Report Date (mm/dd/yyyy)	Test Name	Reported Test Name/Test Result	Specimen	Collection Date (mm/dd/yyyy)
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No Labs



# Closing a Case of LTBI in MDSS

Treatment Start and Treatment Completion



## When to “Complete” LTBI Investigations for Cases

### After Treatment Initiation

- ✓ A diagnosis of LTBI is verified
- ✓ “Suspect” or “Confirmed” case status is selected
- ✓ Detail form is as complete as possible (except treatment completion information)
- ❑ Change Investigation Status to “Completed”
- ❑ Then Change Investigation Status to “Completed – Follow Up”

### After Treatment Completion

- ✓ Confirmation that treatment stopped (whether or not full course was completed)

OR

- ✓ Patient lost to Follow-Up
- ❑ Enter “Date Therapy Stopped,” “Reason Therapy Stopped,” and TB Info if applicable
- ❑ Change Investigation Status to “Completed”

# Open Forum

Thank you!

Meeting notes and presentations will be sent to everyone on the TB Nurse Network list and posted on [our website](#).

**Next TBNN meeting**

Wednesday, April 18<sup>th</sup>, 2018

10-11:30 AM ET

Please contact Helen McGuirk with questions, comments, or suggestions for presentations and content:

[mcguirkh@michigan.gov](mailto:mcguirkh@michigan.gov)

517-284-4957