



2018 TB Epidemiology and ODRS Basics

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Key Message



- It's time to test and treat Latent TB Infection (LTBI)
- It's time we strengthen TB education and awareness among health care providers
- It's time to end stigma
- It's time to speak up
- It's time to end TB

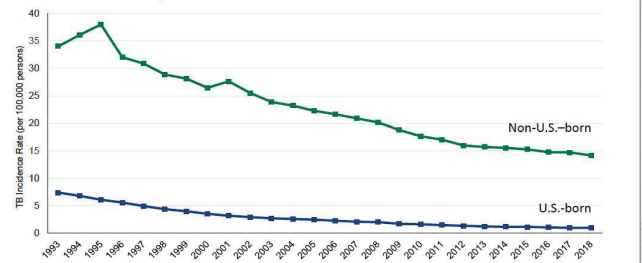


Introduction

- In 2018:
- A total of 9,028 (2.76 per 100,000) TB cases were reported in the United States
 - 178 TB cases were reported in Ohio
 - Incidence in the U.S. decreased by 1.33% compared to 2017
 - 128 MDR-TB cases in U.S.
 - 3 XDR-TB cases in U.S.
 - Ohio incidence rate is increased by 19.2% from 2017

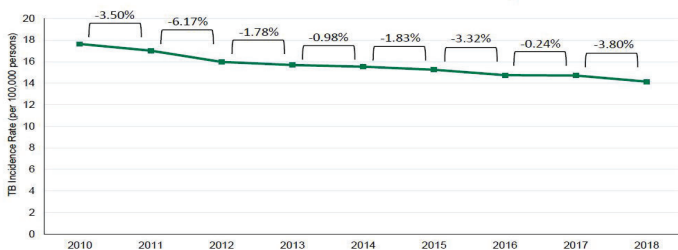


Tuberculosis Incidence Rates by Country of Birth* — United States, 1993–2018



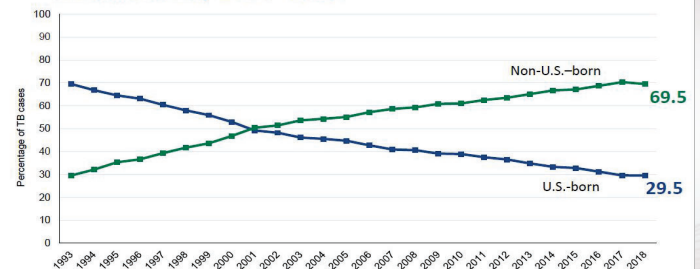
*Based on provisional NTSS data as of February 11, 2019
Source: Center for Disease Control and Prevention (CDC)

Annual Percent Change in Incidence Rate for Non-U.S.-Born Persons* — United States, 2010–2018



Source: CDC.gov
Based on data from NTSS as of Feb 11, 2019

Percentage of Tuberculosis Cases by Country of Birth* — United States, 1993–2018



*Based on provisional NTSS data as of February 11, 2019

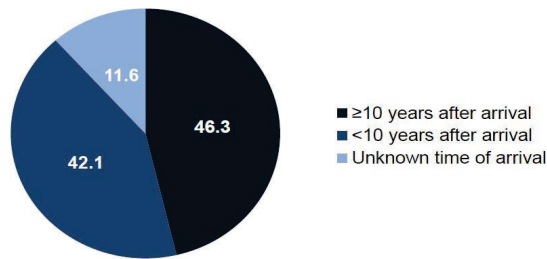
Source: CDC.gov

Percentage of Non-U.S.–Born Tuberculosis Cases by Time of Arrival in United States* — 2018

Time of Arrival	Percentage
≥10 years after arrival	46.3
<10 years after arrival	42.1
Unknown time of arrival	11.6

*Based on provisional NTSS data as of February 11, 2019

Source: CDC.gov



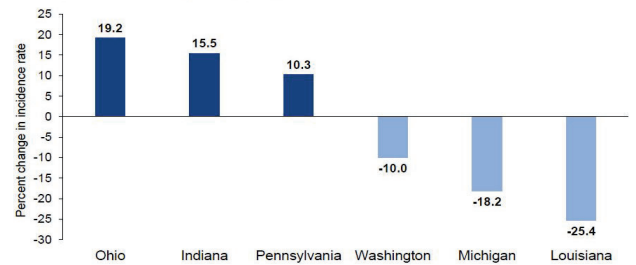
*Based on provisional NTSS data as of February 11, 2019

Source: CDC.gov

Percent Change in Incidence Rates for Selected States*,† — United States, 2017–2018

State	Percent change in incidence rate
Ohio	19.2
Indiana	15.5
Pennsylvania	10.3
Washington	-10.0
Michigan	-18.2
Louisiana	-25.4

*Based on provisional NTSS data as of February 11, 2019.
†Includes states with ≥100 TB cases and ≥10% absolute change in incidence rate from 2017–2018
Source: CDC.gov



*Based on provisional NTSS data as of February 11, 2019

* Includes states with ≥ 100 TB cases and $\geq 10\%$ absolute change in incidence rate from 2017–2018

Source: CDC.gov

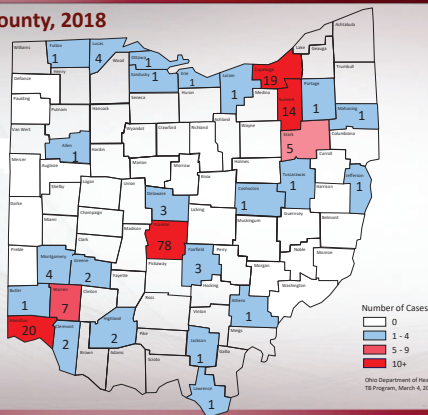
Ohio TB Cases by County, 2018

178 Total Cases

Number of Cases

- 0
- 1 - 4
- 5 - 9
- 10+

Ohio Department of Health
TB Program, March 6, 2019



Number of Cases

Ohio Department of Health
TB Program, March 4, 2016

TB Program, March 4, 2025

U.S. and Ohio TB Case Rates 1995-2018

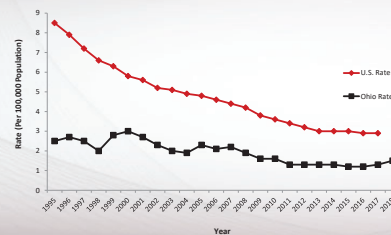
Rate (Per 100,000 Population)

Year

—♦— U.S. Rate

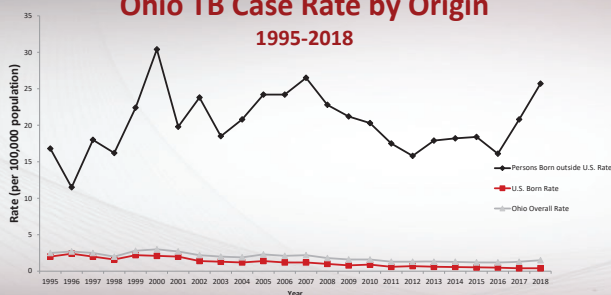
—■— Ohio Rate

Year	U.S. Rate (Per 100,000 Population)	Ohio Rate (Per 100,000 Population)
1995	8.5	2.2
1996	8.0	2.5
1997	7.5	2.5
1998	7.0	3.0
1999	6.5	2.5
2000	6.0	2.8
2001	5.8	2.8
2002	5.5	2.5
2003	5.2	2.2
2004	5.0	1.8
2005	4.8	1.8
2006	4.6	2.2
2007	4.5	2.2
2008	4.3	2.0
2009	4.0	1.8
2010	3.8	1.5
2011	3.5	1.3
2012	3.3	1.3
2013	3.1	1.3
2014	3.0	1.3
2015	3.0	1.2
2016	2.9	1.2
2017	2.9	1.3
2018	2.9	1.5

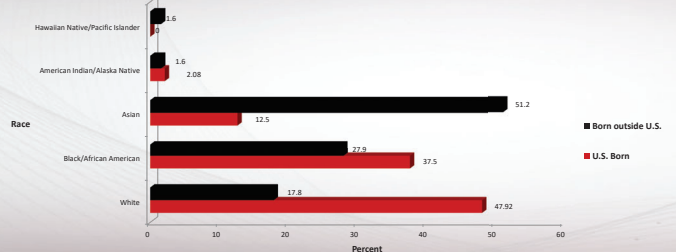


Ohio TB Case Rate by Origin 1995-2018

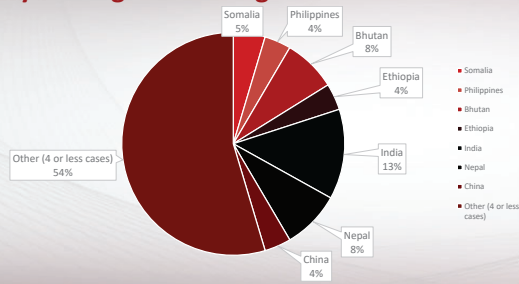
Year	Persons Born outside U.S.	U.S. Born Rate	Ohio Overall Rate
1995	17.5	2.5	3.5
1996	11.5	2.0	3.0
1997	18.5	2.0	3.0
1998	16.5	1.5	2.5
1999	23.0	2.0	3.5
2000	30.5	2.5	3.5
2001	20.0	2.0	3.0
2002	24.0	1.5	2.5
2003	18.5	1.5	2.5
2004	21.0	1.5	2.5
2005	24.5	1.5	2.5
2006	24.5	1.5	2.5
2007	27.0	1.5	2.5
2008	23.0	1.5	2.5
2009	21.5	1.5	2.5
2010	20.5	1.0	2.0
2011	18.0	1.0	2.0
2012	16.0	1.0	2.0
2013	18.0	1.0	2.0
2014	18.5	1.0	2.0
2015	19.0	1.0	2.0
2016	16.0	1.0	2.0
2017	21.5	1.0	2.0
2018	26.0	1.0	2.0



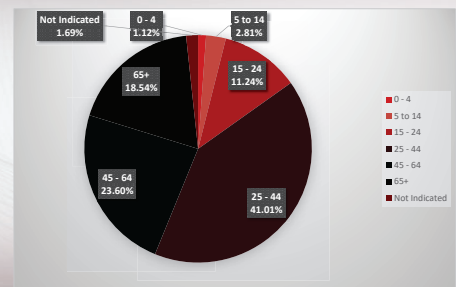
Race	Born outside U.S. (%)	U.S. Born (%)
Hawaiian Native/Pacific Islander	1.6	0.1
American Indian/Alaska Native	1.6	2.08
Asian	51.2	12.5
Black/African American	27.9	37.5
White	17.8	47.92



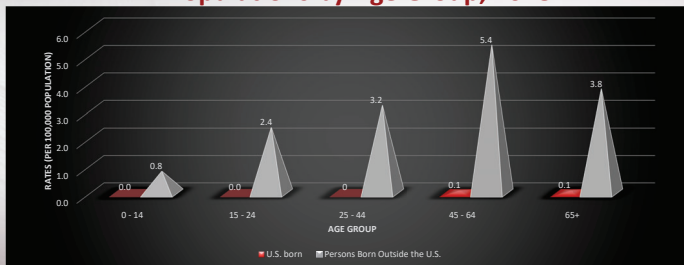
Country Of Origin for Foreign Born TB Cases in Ohio, 2018



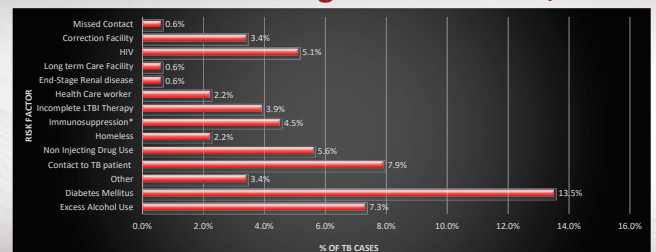
Proportion of Ohio TB Cases by Age Group, 2018



Rates Among U.S.-Born and Persons Born Outside the U.S. Populations by Age Group, 2018

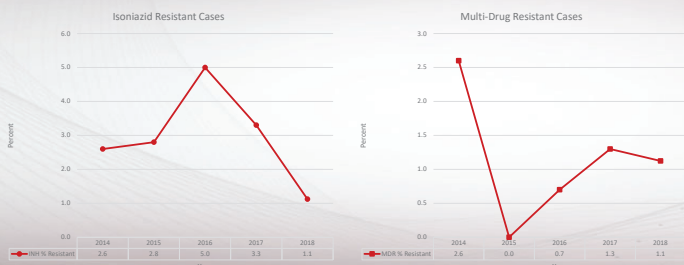


Risk Factors Among Ohio TB Cases, 2018

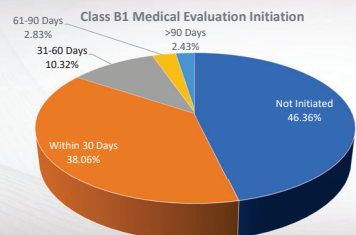


* Other than HIV

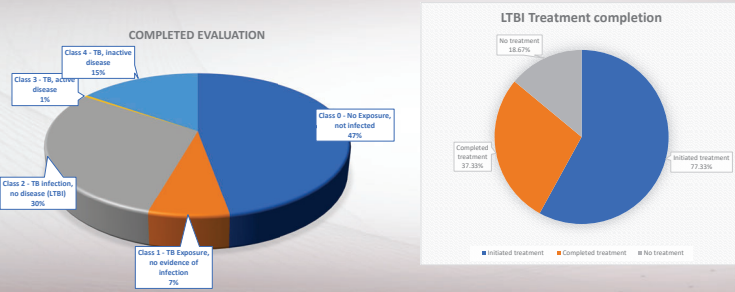
Proportion of Anti-TB Drug Resistant Cases



Evaluation of Class B1 TB Referrals



TB Diagnosis and Treatment of LTBI



Reported TB Cases in Ohio, 2010 - 2018

Year	Number (Cases)	Rate*
2010	190	1.6
2011	145	1.3
2012	149	1.3
2013	148	1.3
2014	156	1.3
2015	143	1.2
2016	140	1.2
2017	150	1.3
2018	178	1.5

* Cases Per 100,000 Population

ODRS TB Module – Common Mistakes/Reminders

IGRA in Laboratory Section

Specimen ID: Example

Specimen Type: Blood

Date Collected: 2/22/2019 00:00:00 (Military Time HH:MM:SS)

Invalidated: ☐

Ordering Provider: Add

Ordering Facility: Add

Done Cancel

Test Name	Result	Reference	Organism	Result Date

Add Test

IGRA in Laboratory Section (cont.)

Example Blood 02/22/2019 00:00:00 Yes Edit

Test Name	Result	Reference	Organism	Result Date
Specimen ID: Example				
Reason for Test: <input type="checkbox"/>				
Test Name: <input type="checkbox"/>				
Test Method: <input type="checkbox"/>				
Result: Positive				
Numeric Result: <input type="checkbox"/>				
Reference: <input type="checkbox"/>				
Result Date: 2/26/2019				
Organism: Mycobacterium tuberculosis				
PPGE Number: <input type="checkbox"/>				
Col (Col): <input type="checkbox"/>				
Stranding Pattern: <input type="checkbox"/>				

Done Cancel

Correct IGRA Entry – “Clinical Information” section of ODRS

Symptoms (check all that apply):

- ☐ Anorexia
- ☐ Bloody Cough
- ☐ Chest Pain
- ☐ Cough
- ☐ Fatigue
- ☐ Fever
- ☐ Night Sweats
- ☐ Weight Loss
- ☐ Other

Other, specify:

Date of symptoms earliest onset:

Are symptoms improving or worsening? ☐

As of date:

Status at TB diagnosis: ☐

Date of death:

If DEAD, was TB a cause of death? ☐

Previous diagnosis of TB disease: ☐

If YES, enter year of previous TB disease diagnosis:

Tuberculin (Mantoux) Skin Test at diagnosis: Not Done

Date Test Placed:

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

Interferon Gamma Release Assay for Mycobacterium tuberculosis at diagnosis: Positive

Date Collected:

Test Type: QuantiFERON Gold Elite

Other, specify:

Primary Reason Evaluated for TB Disease:

IRV Status at Time of Diagnosis: ☐

State HW/AIDS Patient Number:

City/County HW/AIDS Patient Number:

"Other" Specimen Type in Laboratory Section

Specimen ID: Example

Specimen Type: Other Bronch Alveolar L ←

Date Collected: 2/22/2019 00:00:00 (Military Time HH:MM:SS)

Invalidated: ☐

Ordering Provider: Add

Ordering Facility: Add

Done Cancel

Test Name	Result	Reference	Organism	Result Date
Add Test				

Correct "Other" Specimen Type in Laboratory Section

Specimen ID: Example

Specimen Type: Bronchial Fluid (or Bronchial Washing)

Date Collected: 2/22/2019 00:00:00 (Military Time HH:MM:SS)

Invalidated: ☐

Ordering Provider: Add

Ordering Facility: Add

Done Cancel

Test Name	Result	Reference	Organism	Result Date
Add Test				

TB Lab Tests & Time Required

Test	Time Required
Nucleic acid amplification test, detection (NAAT-TB)	1 day
Nucleic acid amplification test, resistance markers (NAAT-R)	1-2 days
Acid-fast bacilli microscopy	1 day
Growth detection	Up to 6-8 weeks (average 10-14 days)
Liquid	(average 3-4 weeks)
Solid	
Identification of Mycobacterium tuberculosis complex by DNA probe or high-performance liquid chromatography (HPLC)	1 day (after detection of growth)
First-line drug susceptibility testing (liquid medium)	1-2 weeks
Second-line and novel compound drug susceptibility testing	
Liquid (broth-based) medium	1-2 weeks
Solid (agar- or egg-based) medium	3-4 weeks

Drug Susceptibilities in Laboratory Section

Specimen ID:

Reason for Test:

Test Name: Other Mycobacterium tuberculosis complex rpoB gene rifam

Test Method:

Result: Other Not Detected

Numeric Result:

Reference: Susceptible

Result Date: 2/28/2019

Organism:

PFGE Number:

Gel Code:

Banding Pattern:

ELR Test Data:

Done Cancel

Correct Drug Susceptibilities – "Susceptibilities" section of ODRS

Susceptibilities Edit

Specimen ID	Date Collected	Results	Result Date
		Positive Mycobacterium tuberculosis complex	

Susceptibility Testing Done?: Yes

Type of testing: Initial

Numeric Result	Susceptibility Results
Isoniazid 0.1 ug/ml	Susceptible
Rifampin 1 ug/ml	Susceptible
Pyrazinamide 100 ug/ml	Susceptible
Ethambutol 5 ug/ml	Susceptible
Streptomycin 1 ug/ml	Susceptible

[Show complete drug list](#)

Genotyping Initiated?: Yes

"Other" Test Types in Laboratory Section

Specimen ID:

Reason for Test:

Test Name: Other DNA probe ←

Test Method:

Result: Positive ✓

Numeric Result:

Reference:

Result Date: 3/1/2019

Organism: Mycobacterium tuberculosis complex

PFGE Number:

Gel Code:

Banding Pattern:

Done Cancel

TB Lab Tests & Time Required

Test	Time Required
Nucleic acid amplification test, detection (NAAT-TB)	1 day
Nucleic acid amplification test, resistance markers (NAAT-R)	1-2 days
Acid-fast bacilli microscopy	1 day
Growth detection	Up to 6-8 weeks (average 10-14 days)
Liquid	(average 3-4 weeks)
Solid	
Identification of Mycobacterium tuberculosis complex by DNA probe or high-performance liquid chromatography (HPLC)	1 day (after detection of growth)
First-line drug susceptibility testing (liquid medium)	1-2 weeks
Second-line and novel compound drug susceptibility testing	
Liquid (broth-based) medium	1-2 weeks
Solid (agar- or egg-based) medium	3-4 weeks

Correct "Other" Test Types in Laboratory Section

Specimen ID:

Reason for Test:

Test Name:

Test Method:

Result:

Numeric Result:

Reference:

Result Date:

Organism:

PFGE Number:

Gel Code:

Banding Pattern:

Done Cancel

"Other" Lab Result in Laboratory Section

Specimen ID:

Reason for Test:

Test Name:

Test Method:

Result:

Numeric Result:

Reference:

Result Date:

Organism:

PFGE Number:

Gel Code:

Banding Pattern:

Done Cancel

Correct "Other" Lab Result in Laboratory Section

Specimen ID:

Reason for Test:

Test Name:

Test Method:

Result:

Numeric Result:

Reference:

Result Date:

Organism:

PFGE Number:

Gel Code:

Banding Pattern:

Done Cancel

Notes Section

Notes

Add Note

Date:

User Name:

Note Type:

Title:

Note:

Done Cancel

Show All / Hide All:

Date Created	User Name	Type	Title	Show/Hide

Thank you!

Contact information:

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