There were 35 new Report-Verified Cases of Tuberculosis in Wisconsin in 2020. 32 Wisconsin patients had culture-confirmed tuberculosis with susceptibility testing performed.

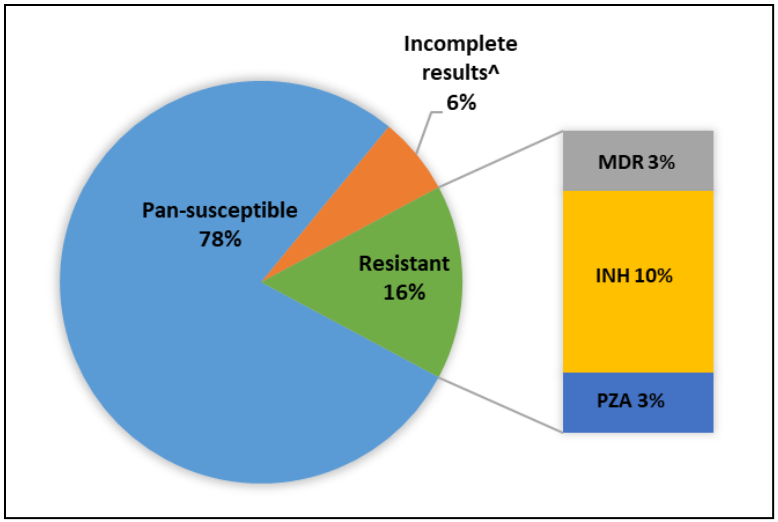
Number of Wisconsin Patients with New Isolations of *Mycobacterium tuberculosis* complex:

County of Residence	Brown	Dane	Dodge	Eau Claire	Kenosha	Marathon	Milwaukee	Oconto	Outagamie	Racine	Sauk	Sheboygan	Waukesha	TOTALS
Pulmonary	1	4	1	0	1	1	7	1	2	2	1	1	2	**24**
Extra-pulmonary*	1	0	0	1	0	0	2	0	0	2	2	0	0	**8**
Totals	**2**	**4**	**1**	**1**	**1**	**2**	**9**	**1**	**2**	**4**	**3**	**1**	**2**	**32**

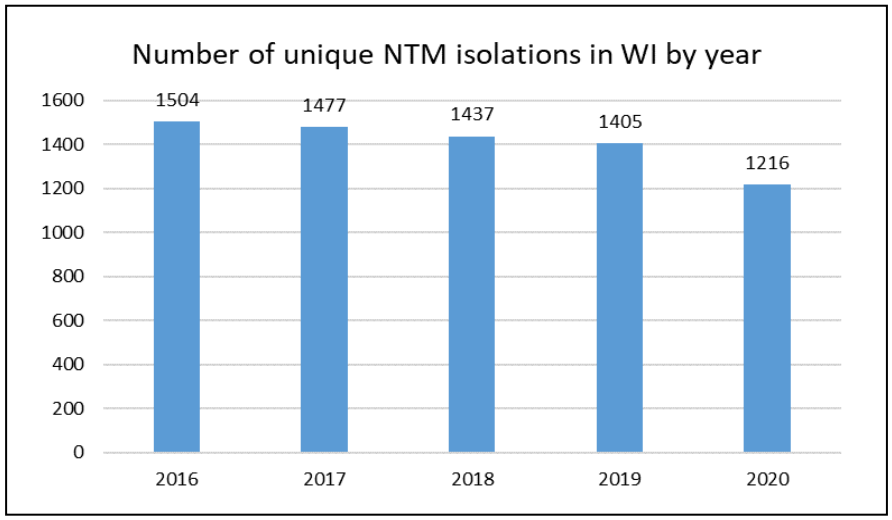
(*)Extra-Pulmonary sources of isolation: 2 lymph node, 1 pleural, 2 CSF, 1 urine, 1 chest, 1 hip

2020 Wisconsin TB Patient Drug Susceptibility Summary

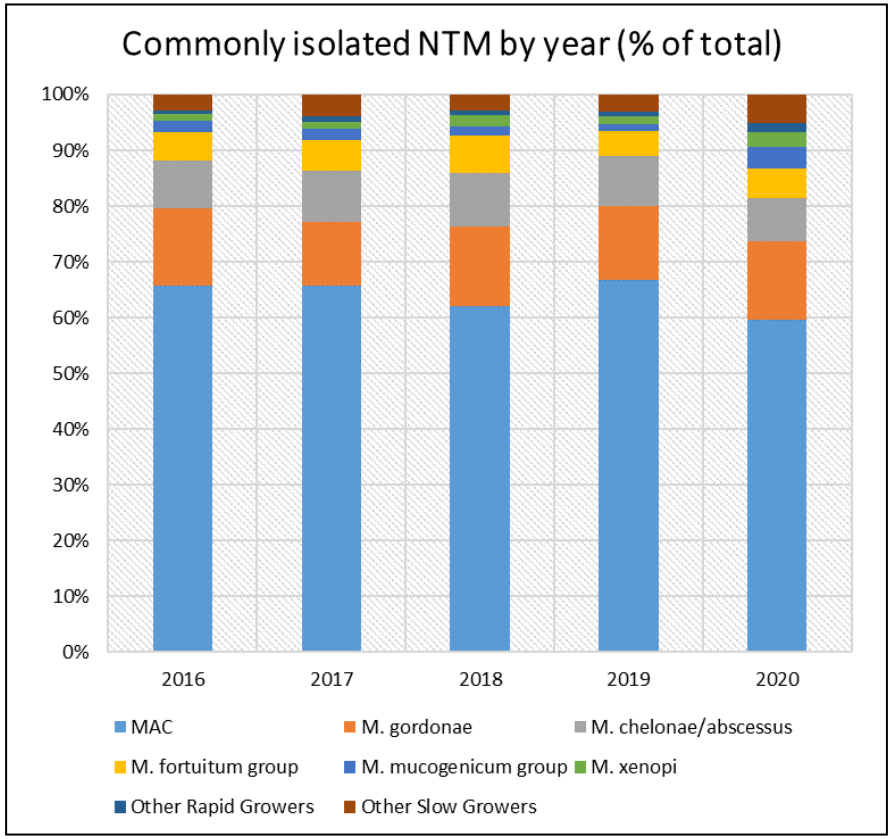
***M. tuberculosis* complex First-Line Drug Susceptibility Testing§**	
Susceptible to all first-line drugs	25
Resistant to INH (0.2 ug/ml) only	2
Resistant to both INH concentrations	1
Resistant to rifampin only	0
Resistant to ethambutol only	0
Resistant to PZA only	1
PZA indeterminate	1
poly-resistant	0
Multi-drug resistant (MDR) #	1
non-viable, unable to perform	1*
TOTAL	32

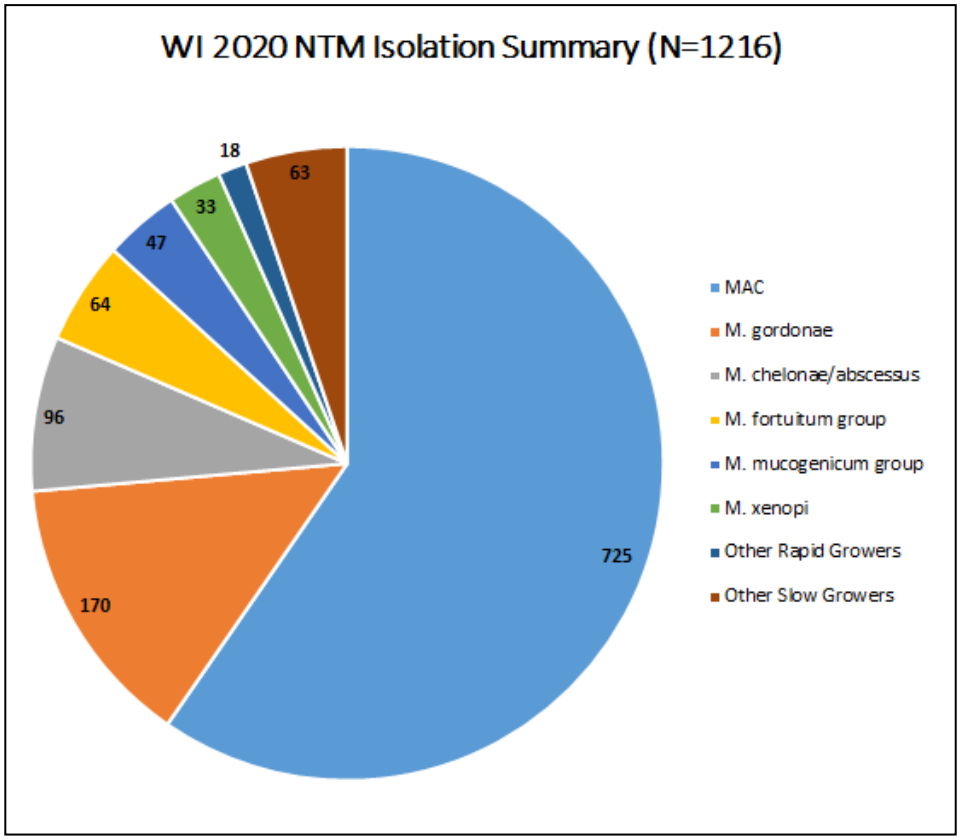


(§) TB First-Line Drugs tested: isoniazid (INH) 0.2 and 1.0 ug/ml, rifampin 1.0 ug/ml, ethambutol 5.0 ug/ml, pyrazinamide (PZA) 100 ug/ml
(#) MDR = resistant to at least INH and rifampin
(*) This isolate was tested at CDC—susceptible to I,R,E, unable to test PZA
(^) Unable to obtain definitive susceptibility results for PZA, all other drugs were susceptible



Non-tuberculous mycobacteria (NTM) isolations are self-reported to the Wisconsin State Laboratory of Hygiene (WSLH) by all mycobacteriology labs in the state of Wisconsin. This data represents one unique isolation per patient. Subsequent cultures and isolations are not included in this summary. The figures on this page depict NTM isolation trends over the past 5 years as well as a breakdown of the most common NTM identifications for 2020. A comprehensive table of all mycobacteria species isolated is included on the following pages.





Number of Patients with New Isolates of *Mycobacterium* species, (non-tuberculous):

	Brown	Chippewa	Dane	Eau Claire	Fond du Lac	Juneau	Kenosha	La Crosse	Manitowoc	Marathon	Milwaukee	Outagamie	Portage	Racine	Sheboygan	Waukesha	Winnebago	Wood	**Totals**
M. abscessus	2		6	2			2		1	1	6	3						2	**25**
M. arupense											5	7							**12**
M. avium complex	16		85	13	6	1	5	9		4	486	42	2	1	2	1	2	7	**682**
M. bovis BCG	1										1								**2**
M. chelonae			3	1			1			1	1	1				1		11	**20**
M. chelonae/abscessus				5				4			33	3						1	**46**
M. chimaera											39								**39**
M. elephantis											1								**1**
M. fortuitum	1		5							1	6	1							**14**
M. fortuitum group	1										30								**31**
M. franklinii								1			3							1	**5**
M. gilvum				1															**1**
M. goodii											1								**1**
M. gordonae/paragordonae		1	28	5	4			9		4	101	12	1		1	2	1	1	**170**
M. haemophilum											1								**1**
M. heckeshornense												1							**1**
M. interjectum			1																**1**
M. intracellulare											4								**4**
M. kansasii	1		3		1						4	1							**10**
M. kumamotonense	1			1														1	**3**

Continued	Brown	Chippewa	Dane	Eau Claire	Fond du Lac	Juneau	Kenosha	La Crosse	Manitowoc	Marathon	Milwaukee	Outagamie	Portage	Racine	Sheboygan	Waukesha	Winnebago	Wood	
M. lentiflavum			2								7								**9**
M. llatzerense											3								**3**
M. mageritense											1								**1**
M. malmoense											1								**1**
M. marinum	1										2	2						1	**6**
M. mucogenicum											27	1						3	**31**
M. mucogenicum group	1		3				1	1			3	3				1		3	**16**
M. neoaurum											6								**6**
M. nonchromogenicum											1								**1**
M. peregrinum			8	2							2							1	**13**
M. peregrinum/septicum																		1	**1**
M. porcinum			2									1		1					**4**
M. saskatchewanense			1																**1**
M. septicum											1								**1**
M. shimoidei					1														**1**
M. simiae			1	1							1								**3**
M. simiae complex																		1	**1**
M. szulgai								1											**1**
M. terrae											1								**1**
M. terrae complex											1								**1**
M. triplex											2								**2**
M. wolinskyi			1																**1**
M. xenopi	1		11								18					1		2	**33**
Other Mycobacteria	1		1								7								**9**
Totals	**27**	**1**	**161**	**31**	**12**	**1**	**9**	**25**	**1**	**11**	**806**	**78**	**3**	**2**	**3**	**6**	**3**	**36**	**1216**

This data is broken down by county where the submitter or originating laboratory is located.

Table 1. Mycobacteria Groups and Complexes

Name	**Species within group or complex** (This list may not be exhaustive.)
M. avium complex[1]	*avium* subsp. *avium*, *avium* subsp. *silvaticum*, *avium* subsp. *paratuberculosis, avium* subsp. *hominissuis, intracellulare, chimaera, colombiense, vulneris, marseillense, timonense, bouchedurhonense.*
M. chelonae-abscessus group[1]	*chelonae, immunogenum, abscessus* subsp. *abscessus, abscessus* subsp. *bolletii, massiliense, salmoniphilum, (franklinii,* proposed)
M. fortuitum group[1]	*fortuitum, peregrinum, senegalense, setense, septicum, porcinum, houstonense, boenickei, brisbanense, neworleansense, alvei, (conceptionense,* proposed)
M. mucogenicum group[5]	*mucogenicum, aubagnense, phocaicum*
M. simiae complex [3,4]	*simiae, genavense, triplex, lentiflavum, heidelbergense, europaeum*
M. terrae complex[6]	*terrae, arupense, engbaekii, hiberniae, kumamotonense, nonchromogenicum, senuense*
M. tuberculosis complex[1]	*tuberculosis, bovis, bovis BCG, africanum, caprae, microti, canetti, pinnipedii, mungi*

References:

1. Manual of Clinical Microbiology 10th Edition. Chapters 28-30. Washington, DC: ASM Press.

2. McNeil M. and Brown J. 1994. The medically important Aerobic Actinomycetes: epidemiology and microbiology. Clin Microbiol Rev. 7(3):357-417.

3. Tortoli et al. 2011. *Mycobacterium europaeum* sp. nov., a scotochromogenic species related to the *Mycobacterium simiae* complex. Int J Syst Evol Microbiol. 61: 1606-1611.

4. Tortoli, E. 2003. Impact of genotypic studies on mycobacterial taxonomy: the new mycobacteria of the 1990s. Clin. Microbiol. Rev.16**:**319-354.

5. Adekambi, T. 2009. *Mycobacterium mucogenicum* group infections: a review. Clin Microbiol Infect2009;15:911–918.

6. Tortoli et al. 2013. Survey of 150 strains belonging to the *Mycobacterium terrae* complex and description of *Mycobacterium engbaekii* sp. nov., *Mycobacterium heraklionsense* sp. nov., and *Mycobacterium longobardum* sp. nov. Int J Syst Evol Microbiol. 63: 401-411.