

Wisconsin Mycobacteriology Laboratory Network Data Report | 2015

There were 69 new Report-Verified Cases of Tuberculosis in Wisconsin in 2015. 60 Wisconsin patients had culture-confirmed tuberculosis with susceptibility testing performed.

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

<i>M. tuberculosis</i> complex		Appleton	Bayfield	Brown	Chippewa	Columbia	Cudahy	Dane	Eau Claire	Fond du Lac	Franklin	Greenfield	Kenosha	Kewaunee	La Crosse	Marathon	Menasha	Milwaukee	North Shore	Racine	Shawano	Sheboygan	St. Croix	Waukesha	West Allis	Winnebago	TOTALS	
	Pulm*	2	1	1	1			4	1	2	1	1	1		1	1	1	15	1	1	2	1		1	2	1	2	41
	Extra[#]			1		1	1	3	1					1		1		4	1	2		1	2				19	
TOTALS		2	1	2	1	1	1	7	2	2	1	1	1	1	1	2	1	19	2	3	2	1	1	2	1	2	60	

(β) This table shows the county in which the patient is receiving treatment for tuberculosis.

(*) "Pulm" = Pulmonary sources of isolation

(#) "Extra" = Extra-Pulmonary sources of isolation: 4 lymph node, 2 pleural, 2 urine, 2 lung tissue, 2 tissue, 1 neck tissue, 1 liver, 1 larynx, 1 pericardial, 1 breast, 1 thoracic, 1 peritoneum

<i>M. tuberculosis</i> complex First-Line Drug Susceptibility Testing[§]	
Susceptible to all first-line drugs	49
Resistant to INH (0.2 ug/ml) only	2
Resistant to both INH concentrations	2
Resistant to rifampin only	0
Resistant to ethambutol only	0
PZA resistant	1 (<i>M. bovis</i>)
poly-resistant	1 (EMB & PZA)
Multi-drug resistant (MDR) [#]	4
non-viable, unable to perform	1
TOTAL	60

(§) 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.

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

<i>Mycobacterium</i> species ^β	Bayfield	Brown	Columbia	Dane	Eau Claire	Fond du Lac	Green Lake	Kenosha	La Crosse	Manitowoc	Marathon	Milwaukee	Outagamie	Portage	Racine	Rock	Sauk	Shawano	Sheboygan	Washington	Waukesha	Winnebago	Wood	TOTALS
<i>M. abscessus</i>				15		1		1			1	14	2											34
<i>M. avium</i> complex*	1	14		96	21	11	1	18	13		10	553	48	3		2	1	1	2	18	14		15	842
<i>M. bovis</i> BCG												3												3
<i>M. chelonae</i>		1		7	4	1					1	9	1							1			1	26
<i>M. chelonae</i> abscessus group*					4				6			36	3								3		5	57
<i>M. fortuitum</i> group*			1	17	1	1		1	1		2	51	5		1						2	1	3	87
<i>M. goodii</i>	1	9		35	4	10		5	13		8	62	4	1	1		1		1	6	4		2	167
<i>M. kansasii</i>		1		2								2	1											6
<i>M. marinum</i>									2	1		1	1											5
<i>M. mucogenicum-phocaicum</i> group											1	25	2										1	29
<i>M. simiae</i> complex*				3								6					1							10
<i>M. terrae</i> complex*				1	2				3			1	1							1	1			10
<i>M. xenopi</i>				2							1	8												11

SEE TOTALS NEXT PAGE

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

<i>Mycobacterium</i> species Continued ^β	Bayfield	Brown	Columbia	Dane	Eau Claire	Fond du Lac	Green Lake	Kenosha	La Crosse	Manitowoc	Marathon	Milwaukee	Outagamie	Portage	Racine	Rock	Sauk	Shawano	Sheboygan	Washington	Waukesha	Winnebago	Wood	TOTALS
<i>M. celatum</i>												1												1
<i>M. elephantis</i>				1																				1
<i>M. mantenii</i>												1												1
<i>M. nebraskense</i>												1						1					5	7
<i>M. paraffinicum</i>			1																					1
<i>M. parascrofulaceum</i>													1											1
<i>M. scrofulaceum</i>												1												1
<i>M. szulgai</i>				1								1												2
Late-pigmented rapid grower				3								2												5
Early-pigmented rapid grower					1							3												4
TOTALS (page 2 and 3)	2	25	2	183	37	24	1	25	38	1	24	781	69	4	2	2	3	2	3	26	24	1	32	1311

(β) This table shows the county of the laboratory that isolated the organism.

(*) See Table 1 for a list of species within the Mycobacteria groups and complexes.

Aerobic Actinomycetes^ε and other partially acid fast organisms^β

Organism	Brown	Dane	Fond du Lac	Marathon	Milwaukee	Outagamie	St. Croix	Sauk	Sheboygan	Wood	TOTALS
Aerobic Actinomycetes*	1	19	1	1	3	2	1	1	1	1	31

(ε) Aerobic Actinomycetes include the following genera: *Nocardia*, *Actinomadura*, *Gordona*, *Rhodococcus*, *Streptomyces*, *Tsukamurella* ².

(β) This table shows the county in which the laboratory isolated the organism.

Table 1. Mycobacteria Groups and Complexes

Name	Species within group or complex (This list may not be exhaustive.)
<i>M. avium</i> complex ¹	<i>avium</i> subsp. <i>avium</i> , <i>avium</i> subsp. <i>silvaticum</i> , <i>avium</i> subsp. <i>paratuberculosis</i> , <i>avium</i> subsp. <i>hominissuis</i> , <i>intracellulare</i> , <i>chimaera</i> , <i>colombiense</i> , <i>vulneris</i> , <i>marseillense</i> , <i>timonense</i> , <i>bouchedurhonense</i> .
<i>M. chelonae-abscessus</i> group ¹	<i>chelonae</i> , <i>immunogenum</i> , <i>abscessus</i> subsp. <i>abscessus</i> , <i>abscessus</i> subsp. <i>bolletii</i> , <i>massiliense</i> , <i>salmoniphilum</i> , (<i>franklinii</i> , proposed)
<i>M. fortuitum</i> group ¹	<i>fortuitum</i> , <i>peregrinum</i> , <i>senegalense</i> , <i>setense</i> , <i>septicum</i> , <i>porcinum</i> , <i>houstonense</i> , <i>boenickei</i> , <i>brisbanense</i> , <i>neworleansense</i> , <i>alvei</i> , (<i>conceptionense</i> , proposed)
<i>M. mucogenicum-phocaicum</i> group	<i>mucogenicum</i> , <i>aubagnense</i> , <i>phocaicum</i>
<i>M. simiae</i> complex ⁴	<i>simiae</i> , <i>europaum</i> sp. nov., <i>florentinum</i> , <i>kubicae</i> , <i>parascrofulaceum</i> , <i>genavense</i> , <i>lentiflavum</i> , <i>parmense</i> , <i>heidelbergense</i> , <i>montefiorensense</i> , <i>interjectum</i> , <i>saskatchewanense</i> , <i>intermedium</i> , <i>palustre</i> , <i>triplex</i> , <i>stomatepiae</i> , <i>sherrisii</i>
<i>M. terrae</i> complex ³	<i>terrae</i> , <i>arupense</i> , <i>engbaekii</i> , <i>hiberniae</i> , <i>kumamotonense</i> , <i>nonchromogenicum</i> , <i>senuense</i>
<i>M. tuberculosis</i> complex ¹	<i>tuberculosis</i> , <i>bovis</i> , <i>bovis BCG</i> , <i>africanum</i> , <i>caprae</i> , <i>microti</i> , <i>canetti</i> , <i>pinnipedii</i> , <i>mungi</i>
Early-pigmented, rapidly-growing mycobacteria: ¹	<i>neoaurum</i> , <i>canariasense</i> , <i>cosmeticum</i> , <i>monacense</i>
Late pigmented, rapidly-growing mycobacteria: (<i>M. smegmatis</i> group and <i>M. wolinskyi</i> group) ¹	<i>smegmatis</i> , <i>goodii</i> , <i>mageritense</i> , <i>wolinskyi</i>

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. 2013. Survey of 150 strains belonging to the *Mycobacterium terrae* complex and description of *Mycobacterium engbaekii* sp. nov., *Mycobacterium herakliionsense* sp. nov., and *Mycobacterium longobardum* sp. nov. *Int J Syst Evol Microbiol.* 63: 401-411.
- 4) Tortoli et al. 2011. *Mycobacterium europaum* sp. nov., a scotochromogenic species related to the *Mycobacterium simiae* complex. *Int J Syst Evol Microbiol.* 61: 1606-1611.