



WEST VIRGINIA TUBERCULOSIS PROFILE

ANNUAL REPORT 2023

**WEST VIRGINIA DEPARTMENT OF HEALTH
BUREAU FOR PUBLIC HEALTH
WEST VIRGINIA TUBERCULOSIS ELIMINATION PROGRAM**

Telephone

(304) 558-3669

Toll-free in West Virginia

(800) 330-8126

Fax

(304) 558-1825

Website

oeeps.wv.gov/tuberculosis

Staff

Suzanne M. Wilson, MPH

Director of the Division of STD, HIV, Hepatitis and Tuberculosis

Suzanne.M.Wilson@wv.gov

Stephanie McLemore, RN

Director of the Tuberculosis Elimination Program

Stephanie.D.McLemore@wv.gov

Dr. Sandra Elliott, M.D.

Medical Director for the Tuberculosis Elimination Program

Kathy Pauley, RN

Surveillance Nurse for the Tuberculosis Elimination Program

Kathy.C.Pauley@wv.gov

Sarah Miller, R.T.

Radiologic Technologist for the Tuberculosis Elimination Program

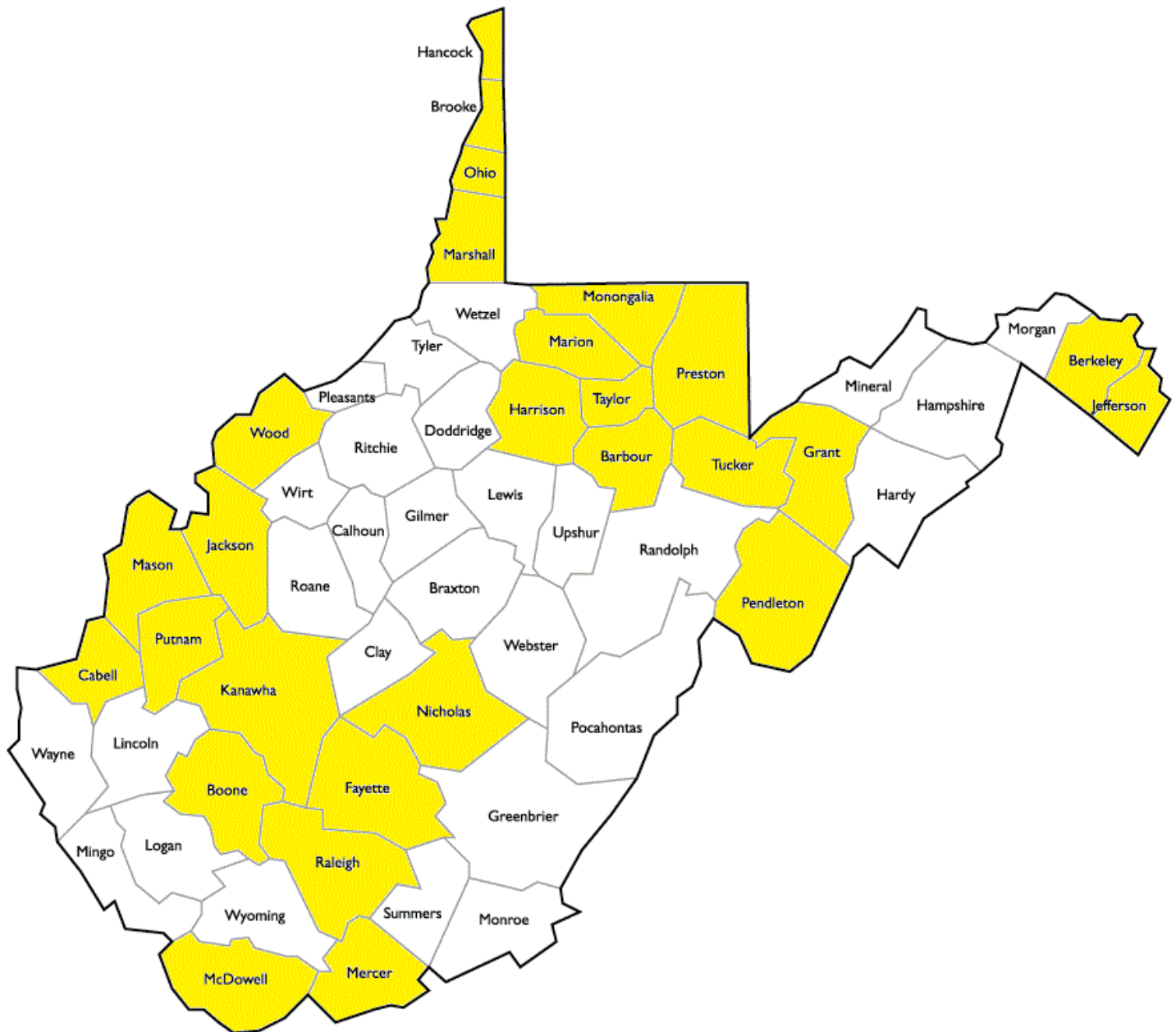
Sarah.E.Miller@wv.gov

Jon McCants

Data Specialist for the Tuberculosis Elimination Program

Jon.P.Mccants@wv.gov

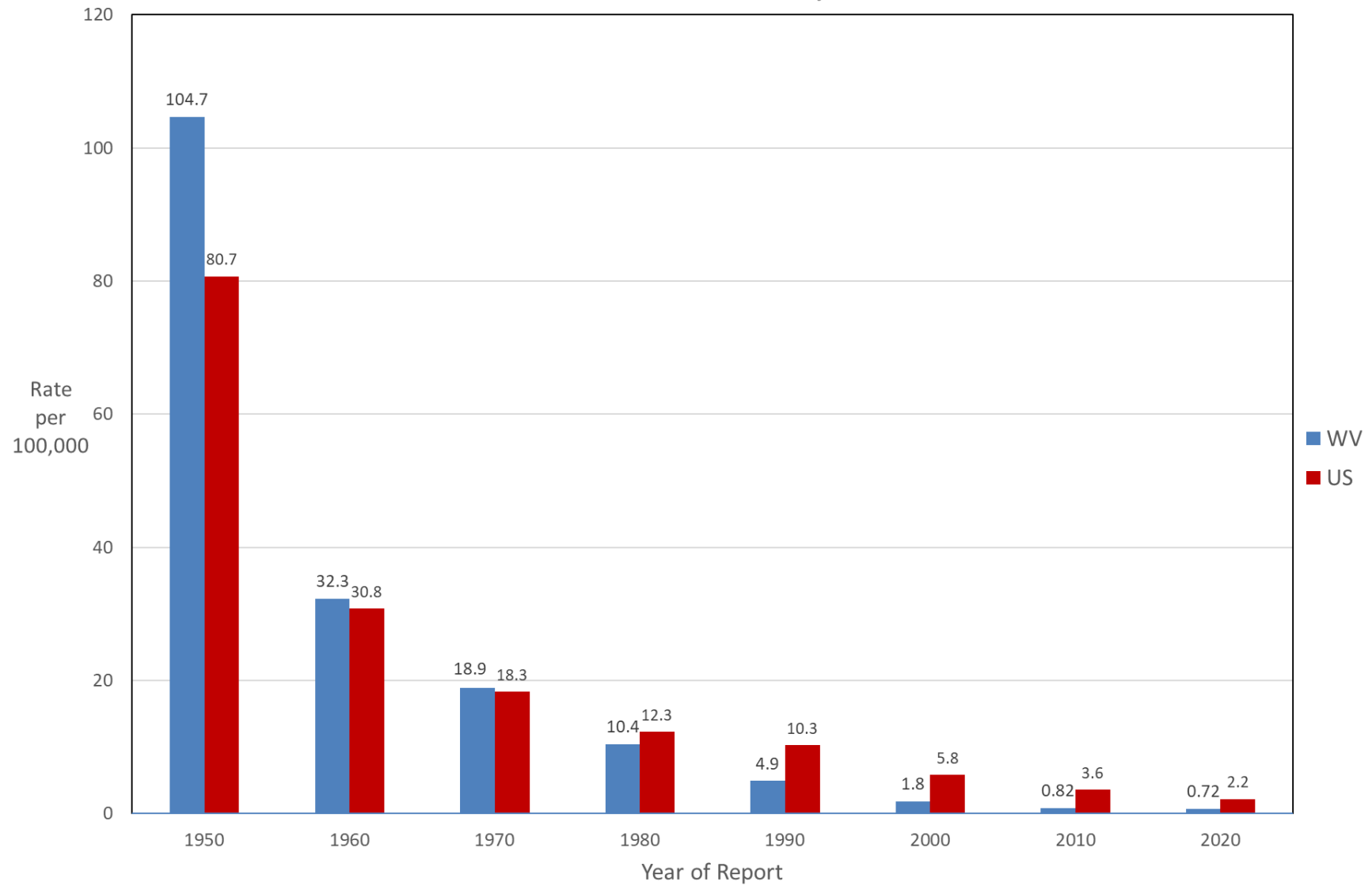
WV Active Tuberculosis Cases by County, 2018-2023



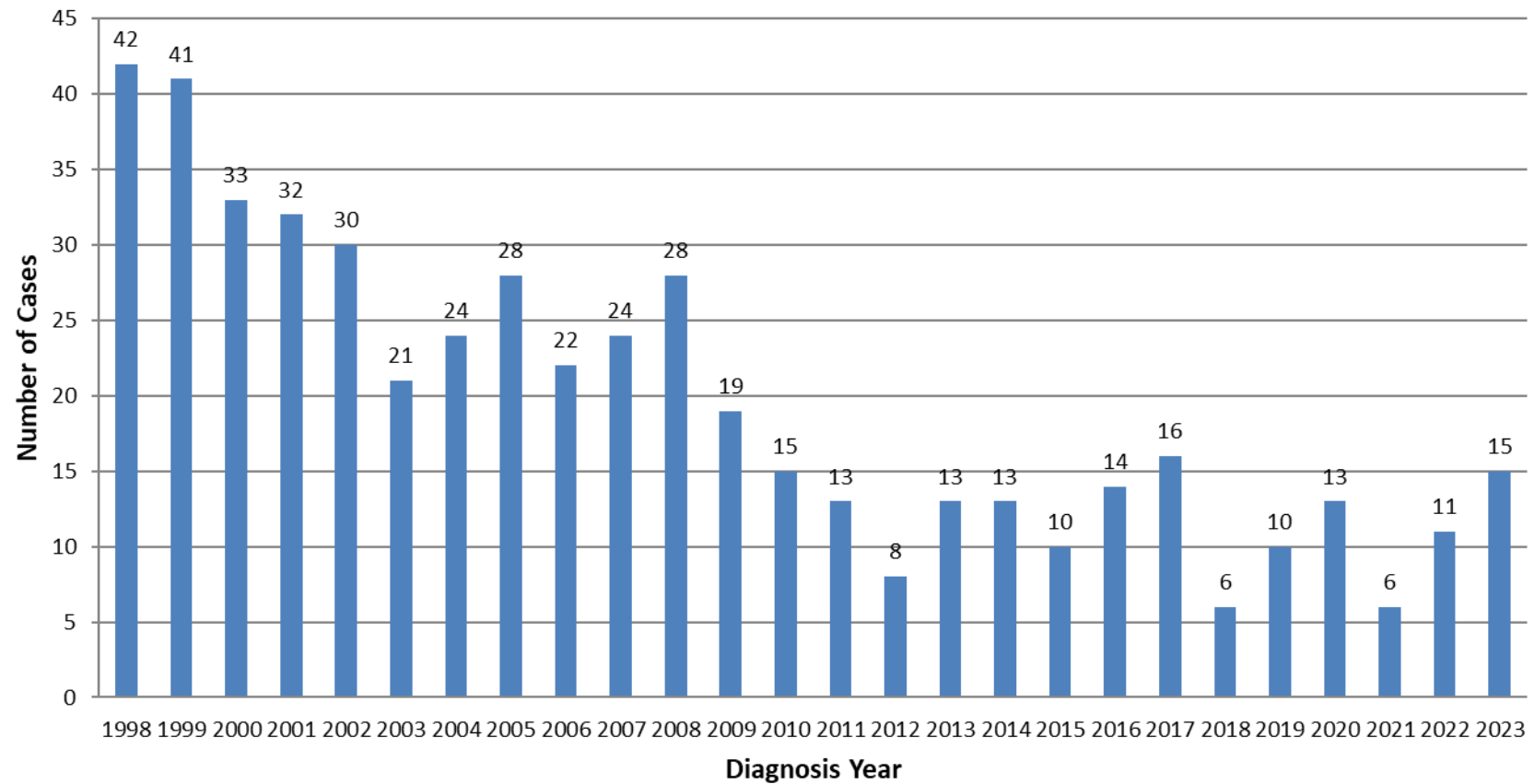
Each highlighted county may have one or multiple cases for the 2018-2023 period. This map is intended to show the geographic area of the cases only for the five-year period.

TB Incidence Rate by Year of Report

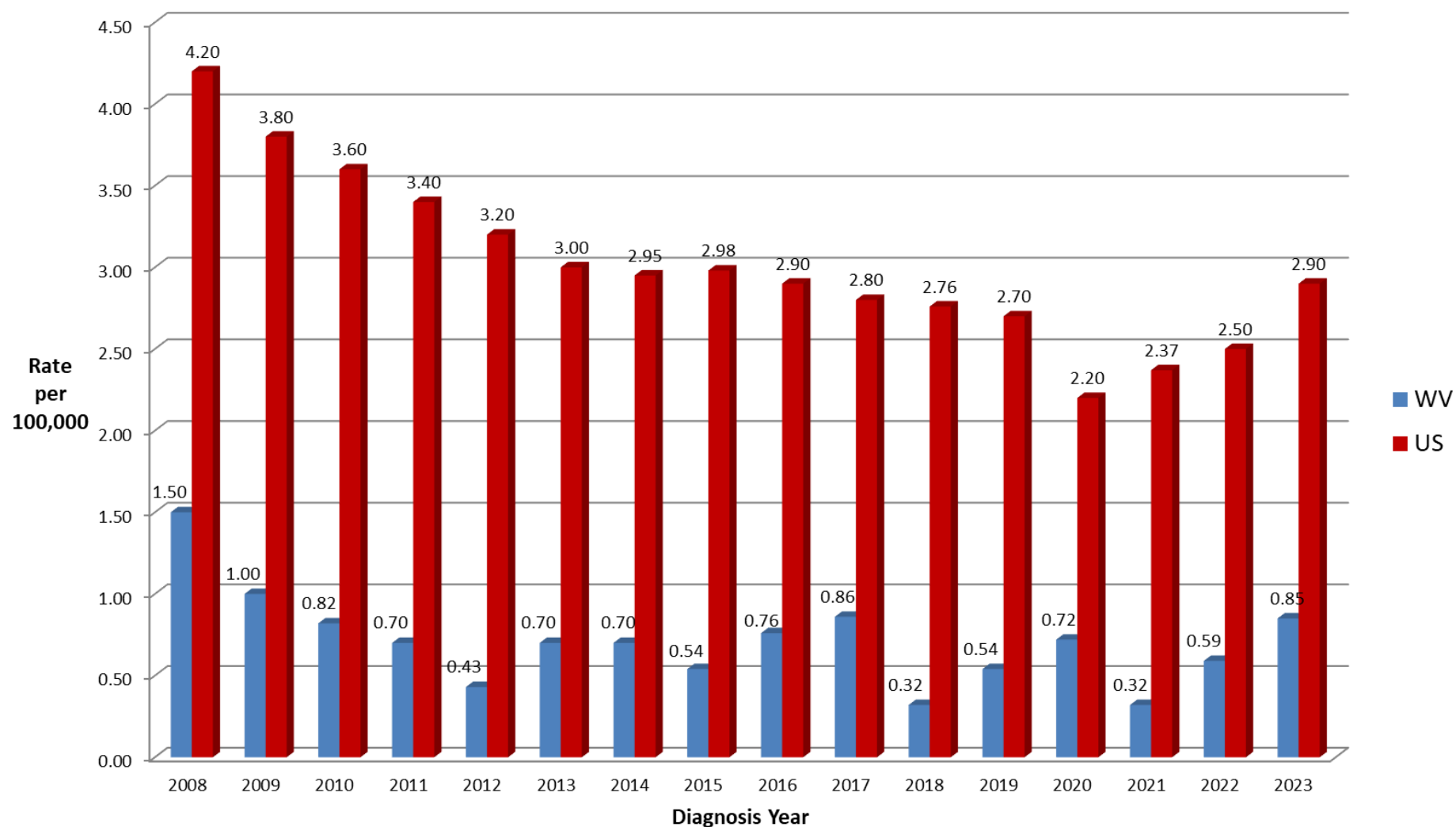
WV and US Decennial Rates, 1950-2020



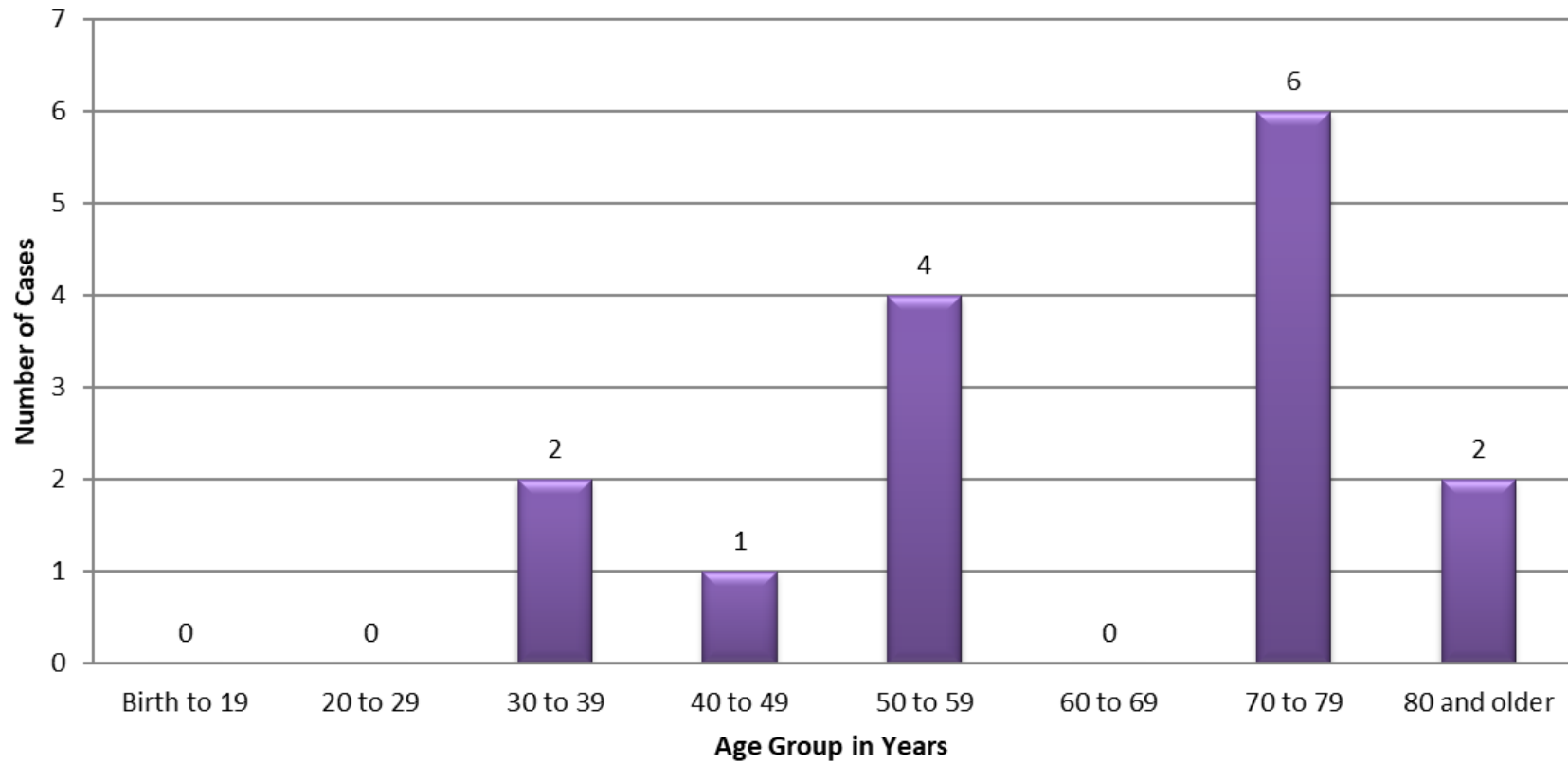
Newly Diagnosed Active TB Cases in WV by Year of Diagnosis 1998-2023



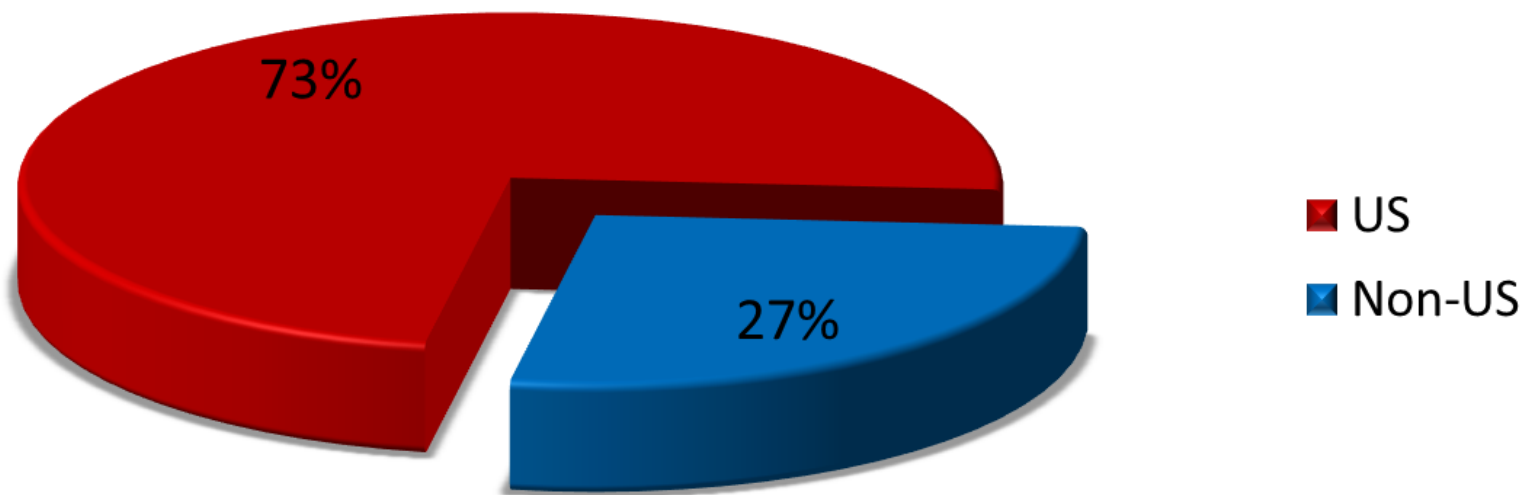
TB Incidence Rates by Diagnosis Year, WV and US 2008-2023



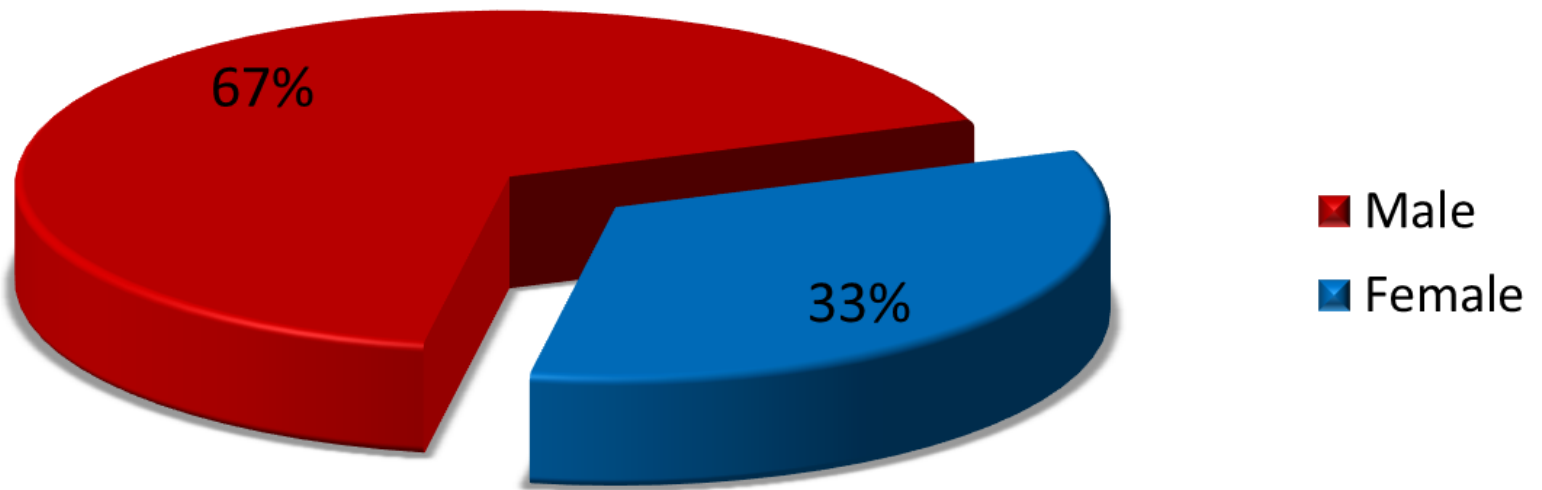
WV Cases of Active TB by Age Group at Diagnosis - 2023



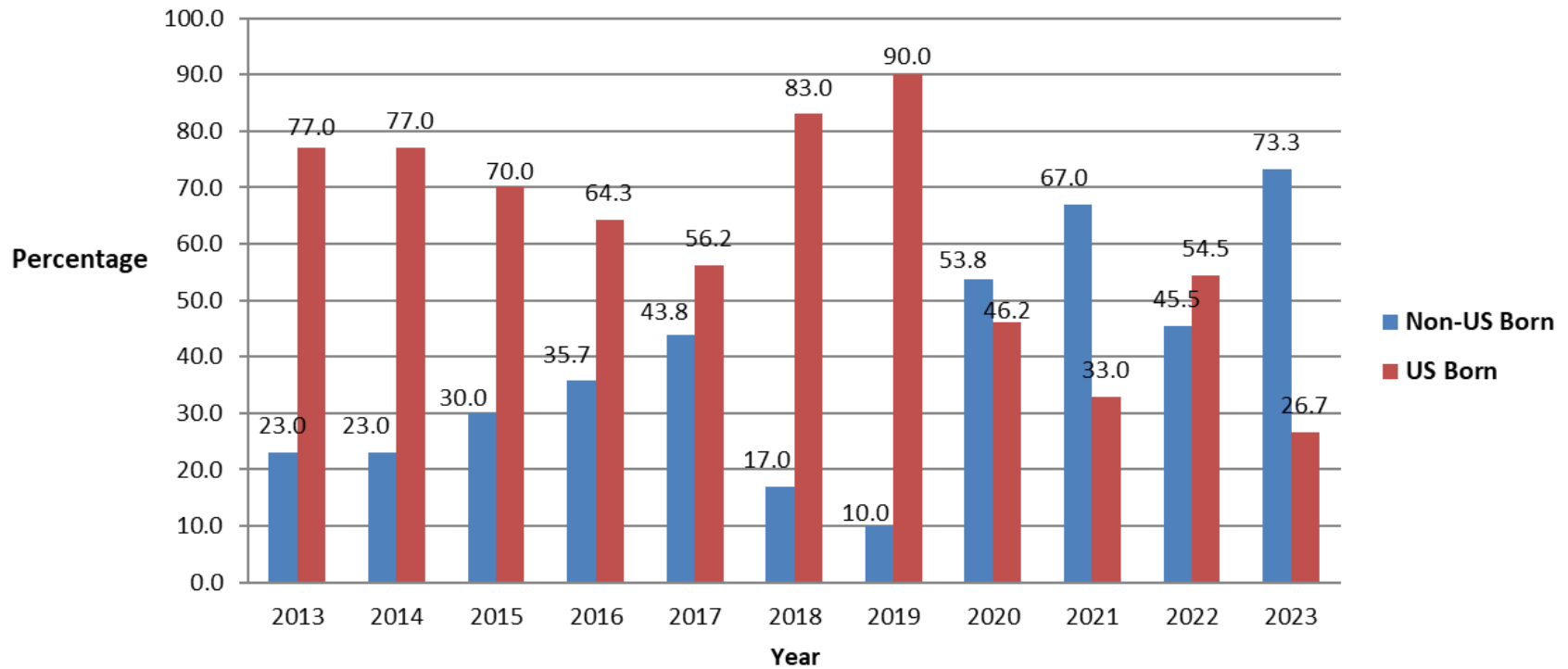
WV TB Active Cases by Country of Origin - 2023



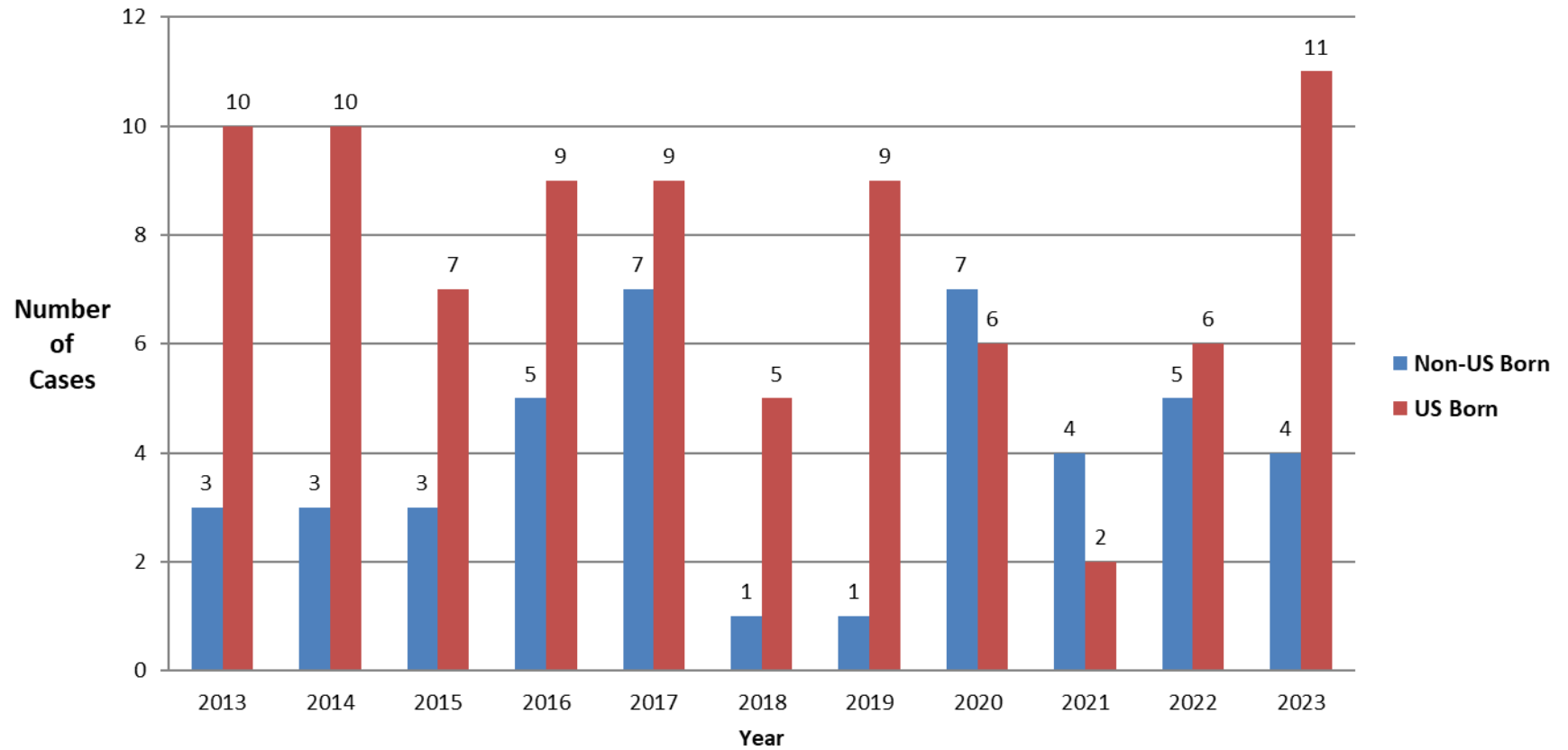
Gender of WV Active TB Cases - 2023



Percentage of WV Active TB Cases Non-US Born vs. US Born 2013-2023



Number of WV Active TB Cases Non-US Born vs. US Born 2013-2023



Race of WV Active TB Cases by Diagnosis Year 2013-2023



**Reported Risk Factors and Occupations
WV TB Cases, 2023**

<u>RISK FACTOR</u>	<u>Percentage of 2023 Cases</u>
Diabetic	33.30%
Lived outside of the United States for more than 2 months	33.30%
Viral Hepatitis	26.70%
Ever been a Resident of Correctional Facility	20.00%
Immunocompromised not related to HIV/AIDS	13.30%
Contact to an Active Tuberculosis Case	13.30%
Homeless in Past Year	6.70%
History of Homelessness	6.70%
Current Resident of Correctional Facility at Diagnosis	6.70%
Injected Drug Use	6.70%
Excessive Alcohol Use	6.70%
TNF Antagonist Therapy	6.70%
Post Organ Transplantation	6.70%
End Stage Renal Disease	0.00%
Resident of Long-Term Care Facility at Diagnosis	0.00%
Non-Injected Drug Use	0.00%
Immunocompromised related to HIV/AIDS	0.00%

OCCUPATION

<u>CLASSIFICATION</u>	<u>NUMBER</u>	<u>PERCENT</u>
None	10	66.67%
Healthcare Worker	4	26.67%
Unknown	1	6.67%
Migratory/Seasonal Worker	0	0.00%
Correctional Facility Employee	0	0.00%
TOTAL	15	100.00%

SURVEILLANCE CLINICAL DATA
For the Month - Year Counted
Beginning 1/2023 and Ending 12/2023

Reporting Area: West Virginia Department of Health,
Bureau for Public Health - All Counties

STATUS AT DIAGNOSIS OF TB

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Alive	15	100.00%
Dead	0	0.00%
Unknown/Missing	0	0.00%
TOTAL	15	100.00%

PREVIOUS DIAGNOSIS OF TB

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
No	10	66.67%
Yes	3	20.00%
Unknown/Missing	2	13.33%
TOTAL	15	100.00%

SITE OF DISEASE

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Pulmonary	10	66.67%
Extrapulmonary	4	26.67%
Both	1	6.67%
Site Not Stated/Missing	0	0.00%
TOTAL	15	100.00%

SPUTUM SMEAR

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Positive	2	13.33%
Negative	2	13.33%
Not Done	10	66.67%
Unknown/Missing	1	6.67%
TOTAL	15	100.00%

SURVEILLANCE CLINICAL DATA
For the Month - Year Counted
Beginning 1/2023 and Ending 12/2023
(continued)

SPUTUM CULTURE

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Positive	3	20.00%
Negative	0	0.00%
Not Done	10	66.67%
Unknown/Missing	2	13.33%
TOTAL	15	100.00%

MICROSCOPIC EXAM OF TISSUE AND OTHER BODY FLUIDS

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Positive	3	20.00%
Negative	3	20.00%
Not Done	8	53.33%
Unknown/Missing	1	6.67%
TOTAL	15	100.00%

CULTURE OF TISSUE AND OTHER BODY FLUIDS

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Positive	7	46.67%
Negative	0	0.00%
Not Done	6	40.00%
Unknown/Missing	2	13.33%
TOTAL	15	100.00%

CHEST X-RAY

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Normal	1	6.67%
Abnormal	9	60.00%
Not Done/Unknown/Missing	5	33.33%
TOTAL	15	100.00%

SURVEILLANCE CLINICAL DATA
For the Month - Year Counted
Beginning 1/2023 and Ending 12/2023
(continued)

TUBERCULIN (MANTOUX) SKIN TEST AT DIAGNOSIS

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Positive	0	0.00%
Negative	1	6.67%
Not Done	14	93.33%
Unknown	0	0.00%
Missing	0	0.00%
TOTAL	15	100.00%

HIV STATUS

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Negative	10	66.67%
Positive	0	0.00%
Indeterminate	0	0.00%
Refused	0	0.00%
Not Offered	0	0.00%
Test Done, Results Unknown	0	0.00%
Unknown	0	0.00%
Missing	5	33.33%
TOTAL	15	100.00%

INITIAL DRUG REGIMEN

CLASSIFICATION	NUMBER OF RECORDS	PERCENT
Standard RIPE treatment	14	93.33%
None Standard treatment	1	6.67%
No treatment started	0	0.00%
Unknown	0	0.00%
TOTAL	15	100.00%

NEWLY REPORTED VERIFIED ACTIVE CASES OF TUBERCULOSIS IN WEST VIRGINIA, 2016-2023

INCIDENCE RATES * (I-RATE) ARE SHOWN PER 100,000 RESIDENTS

COUNTY	POPULATION 2020 CENSUS	2016 I-RATE	2017 I-RATE	2018 I-RATE	2019 I-RATE	2020 I-RATE	2021 I-RATE	2022 I-RATE	2023 I-RATE
Barbour	15,465	0.00	0.00	0.00	0.00	0.00	0.00	6.47	0.00
Berkeley	122,076	2.46	0.82	0.00	0.00	1.64	0.82	1.64	1.6
Boone	21,809	0.00	4.59	0.00	0.00	4.59	0.00	0.00	0.00
Braxton	12,447	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Brooke	22,559	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00
Cabell	94,350	6.36	1.06	0.00	1.06	2.12	0.00	0.00	0.00
Calhoun	6,229	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Clay	8,051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Doddridge	7,808	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fayette	40,488	0.00	0.00	2.47	0.00	0.00	0.00	0.00	0.00
Gilmer	7,408	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grant	10,976	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.1
Greenbrier	32,977	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hampshire	23,093	0.00	4.33	0.00	0.00	0.00	0.00	0.00	0.00
Hancock	29,095	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.4
Hardy	14,299	0.00	6.99	0.00	0.00	0.00	0.00	0.00	0.00
Harrison	65,921	0.00	0.00	1.52	0.00	0.00	0.00	1.52	1.5
Jackson	27,791	0.00	0.00	3.60	0.00	0.00	3.60	0.00	3.6
Jefferson	57,701	1.73	0.00	0.00	0.00	1.73	0.00	0.00	0.00
Kanawha	180,745	0.00	0.55	0.00	0.55	1.11	0.55	0.00	1.1
Lewis	17,033	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln	20,463	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Logan	32,567	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marion	19,111	0.00	0.00	0.00	5.23	0.00	0.00	0.00	0.00
Marshall	56,205	0.00	0.00	0.00	0.00	0.00	1.78	0.00	0.00
Mason	30,591	0.00	0.00	3.27	0.00	0.00	0.00	3.27	0.00
McDowell	25,453	0.00	0.00	0.00	7.86	0.00	0.00	0.00	0.00
Mercer	59,664	0.00	0.00	1.68	0.00	0.00	0.00	0.00	1.7
Mineral	26,938	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mingo	23,568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monongalia	105,822	0.94	1.89	0.00	1.89	3.78	0.00	1.89	0.00
Monroe	12,376	0.00	8.08	0.00	0.00	0.00	0.00	0.00	0.00
Morgan	17,063	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nicholas	24,604	0.00	0.00	0.00	0.00	4.06	4.06	0.00	4.1
Ohio	42,425	0.00	2.36	0.00	2.36	0.00	0.00	2.36	0.00
Pendleton	6,143	0.00	0.00	0.00	16.28	0.00	0.00	0.00	0.00
Pleasants	7,653	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pocahontas	7,869	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Preston	34,216	0.00	2.92	0.00	0.00	0.00	0.00	0.00	2.9

* Incidence rates must be interpreted with caution due to the smaller population of some counties.

NEWLY REPORTED VERIFIED ACTIVE CASES OF TUBERCULOSIS IN WEST VIRGINIA, 2016-2023

INCIDENCE RATES * (I-RATE) ARE SHOWN PER 100,000 RESIDENTS

COUNTY	POPULATION 2020 CENSUS	2016 I-RATE	2017 I-RATE	2018 I-RATE	2019 I-RATE	2020 I-RATE	2021 I-RATE	2022 I-RATE	2023 I-RATE
Putnam	57,440	0.00	5.22	0.00	0.00	0.00	1.74	1.74	1.7
Raleigh	74,591	1.34	1.34	0.00	1.34	0.00	0.00	0.00	0.00
Randolph	27,932	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ritchie	8,444	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Roane	14,028	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00
Summers	11,959	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Taylor	16,705	5.99	0.00	0.00	0.00	0.00	0.00	0.00	6.0
Tucker	6,762	0.00	0.00	0.00	0.00	0.00	0.00	14.79	14.8
Tyler	8,313	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upshur	23,816	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wayne	38,982	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Webster	8,378	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wetzel	14,442	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wirt	5,194	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wood	84,296	0.00	0.00	0.00	0.00	0.00	0.00	1.19	1.2
Wyoming	21,382	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	1,793,716								
I-Rate for WV		0.76	0.86	0.32	0.54	0.70	0.32	0.59	0.85

* Incidence rates must be interpreted with caution due to the smaller population of some counties.

Latent Tuberculosis Infection (LTBI) Incidence/100,000 Population * by County, 2018-2023

COUNTY	POPULATION 2020 CENSUS	2018 Rate	2019 Rate	2020 Rate	2021 Rate	2022 Rate	2023 Rate
Barbour	15,465	19.40	32.33	0.00	0.00	6.47	19.39
Berkeley	122,076	18.84	21.30	1.64	2.46	36.86	34.4
Boone	21,809	13.76	13.76	0.00	4.59	123.80	36.68
Braxton	12,447	16.07	0.00	0.00	0.00	8.03	16.06
Brooke	22,559	13.30	31.03	0.00	4.43	17.73	13.29
Cabell	94,350	22.26	57.23	7.42	1.06	52.99	40.27
Calhoun	6,229	0.00	32.11	0.00	0.00	0.00	0.00
Clay	8,051	0.00	12.42	0.00	0.00	0.00	24.84
Doddridge	7,808	25.61	12.81	0.00	0.00	38.42	12.81
Fayette	40,488	0.00	17.29	0.00	9.88	34.58	39.52
Gilmer	7,408	0.00	13.50	0.00	0.00	13.50	0.00
Grant	10,976	9.11	9.11	0.00	0.00	18.22	45.55
Greenbrier	32,977	18.19	12.13	66.71	0.00	48.52	63.68
Hampshire	23,093	8.66	0.00	0.00	0.00	17.32	8.66
Hancock	29,095	6.87	10.31	0.00	6.87	6.87	20.62
Hardy	14,299	62.94	27.97	48.95	0.00	6.99	41.96
Harrison	65,921	13.65	12.14	1.52	13.65	18.20	7.58
Jackson	27,791	3.60	10.79	0.00	0.00	0.00	3.59
Jefferson	57,701	8.67	19.06	0.00	0.00	36.39	32.93
Kanawha	180,745	18.26	23.79	10.51	9.96	60.86	53.66
Lewis	17,033	23.48	29.35	0.00	5.87	17.61	23.48
Lincoln	20,463	0.00	4.89	0.00	9.77	24.43	9.77
Logan	32,567	21.49	15.35	3.07	15.35	12.28	24.56
Marion	19,111	31.40	26.16	5.23	0.00	52.33	20.93
Marshall	56,205	1.78	10.68	0.00	0.00	1.78	1.78
Mason	30,591	6.54	9.81	0.00	9.81	9.81	6.53
McDowell	25,453	3.93	27.50	3.93	3.93	39.29	23.57
Mercer	59,664	18.44	13.41	0.00	20.11	43.58	51.96
Mineral	26,938	11.14	7.42	0.00	11.14	11.14	14.84
Mingo	23,568	8.49	4.24	4.24	4.24	16.97	25.45
Monongalia	105,822	38.74	20.79	16.06	15.12	31.18	33.07
Monroe	12,376	8.08	0.00	0.00	8.08	40.40	16.16
Morgan	17,063	0.00	0.00	0.00	0.00	17.58	11.72
Nicholas	24,604	16.26	4.06	0.00	8.13	8.13	16.25
Ohio	42,425	4.71	11.79	0.00	0.00	9.43	7.07
Pendleton	6,143	16.28	0.00	0.00	0.00	65.11	16.27
Pleasants	7,653	0.00	13.07	0.00	0.00	0.00	13.07
Pocahontas	7,869	0.00	0.00	0.00	25.42	12.71	63.54
Preston	34,216	8.77	8.77	0.00	8.77	8.77	20.45
Putnam	57,440	8.70	5.22	0.00	8.70	33.08	31.33
Raleigh	74,591	21.45	33.52	8.04	2.68	95.19	68.37
Randolph	27,932	7.16	3.58	0.00	25.06	17.90	25.06
Ritchie	8,444	11.84	11.84	11.84	0.00	23.69	0.00
Roane	14,028	0.00	7.13	0.00	21.39	49.90	28.51
Summers	11,959	16.72	8.36	0.00	0.00	50.17	8.36
Taylor	16,705	23.94	17.96	0.00	0.00	29.93	5.98
Tucker	6,762	14.79	0.00	0.00	0.00	14.79	0.00
Upshur	23,816	4.20	4.20	4.20	0.00	16.80	16.79
Wayne	38,982	5.13	5.13	0.00	2.57	17.96	35.91
Webster	8,378	11.94	0.00	0.00	0.00	23.87	23.87
Wetzel-Tyler**	22,755	13.18	17.58	0.00	4.39	13.18	8.78
Wirt	5,194	0.00	0.00	0.00	0.00	38.51	0.00
Wood	84,296	9.49	9.49	0.00	9.49	13.05	46.77
Wyoming	21,382	4.68	4.68	0.00	23.38	18.71	28.06
TOTAL	1,793,716	14.55	17.28	4.85	6.86	32.73	29.27

* Incidence rates must be interpreted with caution due to the small population of most counties.

**Wetzel-Tyler is a combined Health Department and their county populations are combined for this table.

**ACTIVE CASES OF TUBERCULOSIS IN WEST VIRGINIA AND THE US
1982-2023**

<u>YEAR</u>	<u>WV CASE RATE</u>		<u>US CASE RATE</u>	
	<u># WV CASES</u>	<u>Per 100,000</u>	<u># US CASES</u>	<u>Per 100,000</u>
2023	15	0.85	9,633	2.9
2022	11	0.54	8,300	2.5
2021	6	0.32	7,860	2.37
2020	13	0.70	7,163	2.2
2019	10	0.54	8,920	2.7
2018	6	0.32	9,029	2.76
2017	16	0.86	9,093	2.8
2016	14	0.76	9,287	2.9
2015	10	0.54	9,563	2.98
2014	13	0.70	9,412	2.95
2013	13	0.70	9,588	3.0
2012	8	0.43	9,951	3.2
2011	13	0.70	10,521	3.4
2010	15	0.82	11,181	3.6
2009	19	1.0	11,540	3.8
2008	28	1.5	12,898	4.2
2007	24	1.3	13,293	4.4
2006	22	1.2	13,779	4.6
2005	28	1.6	14,093	4.8
2004	24	1.3	14,511	4.9
2003	21	1.2	14,874	5.1
2002	30	1.7	15,075	5.2

ACTIVE CASES OF TUBERCULOSIS IN WEST VIRGINIA AND THE US
1982-2023
(Continued)

<u>YEAR</u>	<u>WV CASE RATE</u>		<u>US CASE RATE</u>	
	<u># WV CASES</u>	<u>Per 100,000</u>	<u># US CASES</u>	<u>Per 100,000</u>
2001	32	1.8	15,989	5.6
2000	33	1.8	16,377	5.8
1999	41	2.3	17,531	6.4
1998	42	2.3	18,361	6.8
1997	54	3.0	19,851	7.4
1996	57	3.2	21,337	8.0
1995	71	3.9	22,860	8.7
1994	80	4.4	24,361	9.4
1993	75	4.1	25,287	9.8
1992	92	5.1	26,673	10.5
1991	64	3.6	26,283	10.4
1990	87	4.9	25,701	10.3
1989	77	4.1	23,495	9.5
1988	68	3.6	22,436	9.2
1987	99	5.2	22,517	9.3
1986	124	6.5	22,768	9.5
1985	108	5.6	22,201	9.3
1984	133	6.8	22,255	9.4
1983	133	6.8	23,846	10.2
1982	162	8.3	25,520	11.0

**TUBERCULOSIS DRUG RESISTANCE IN WV
2002 TO 2023
(MONODRUG-RESISTANT AND MULTIDRUG-RESISTANT)**

<u>YEAR</u>	<u>MONODRUG</u>	<u>MULTIDRUG</u>	<u>2 OR MORE</u>
2023	0	0	0
2022	0	0	0
2021	0	0	0
2020	0	0	0
2019	0	0	0
2018	0	0	0
2017	2	0	0
2016	1	0	0
2015	1	0	0
2014	2	0	0
2013	4	0	0
2012	2	0	0
2011	1	0	0
2010	1	0	1
2009	3	0	0
2008	0	0	0
2007	1	0	1
2006	2	0	0
2005	3	0	0
2004	3	0	0
2003	0	0	1
2002	2	0	1