

2015 Annual Tuberculosis Surveillance Report

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Office of Epidemiology

Division of Tuberculosis and Newcomer Health



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Acknowledgements

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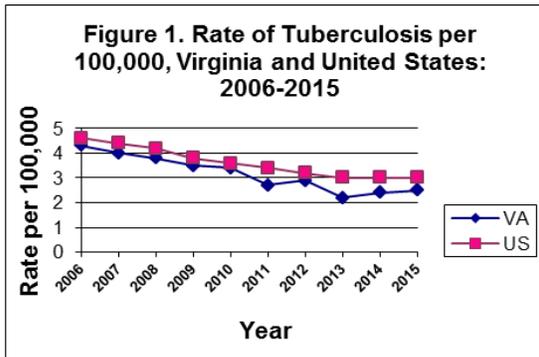
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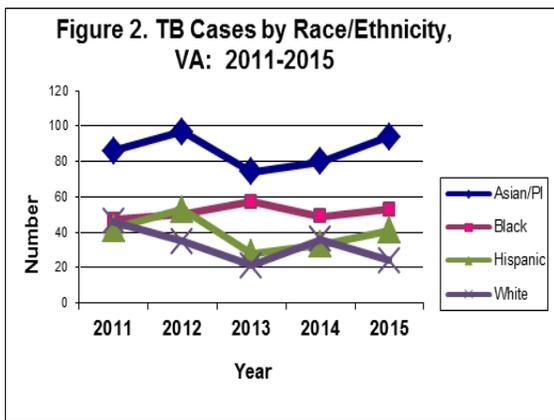
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In 2015, Virginia reported 212 tuberculosis (TB) cases, a 14% increase from the 198 cases reported in 2014. After two decades of decline in the United States, CDC reports a leveling of TB incidence for 2013-2015 to 3.0 per 100,000 persons. Virginia ranked 7th in the nation for the number of reported TB cases with a case rate of 2.5 per 100,000 persons. In this report, data on demographics and selected risk factors for TB are provided at the state level for 2011-2015.



Sex and Race

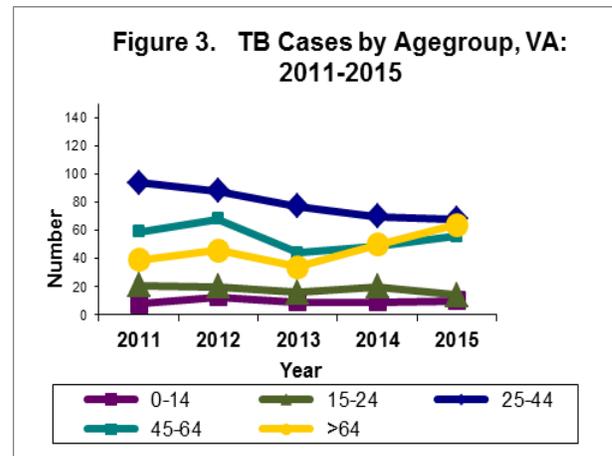
In 2015, 49% of TB cases were female and 51% were male. Among racial and ethnic groups, when compared to 2014, Asians, Blacks and Hispanics had increases in 2015 (Figure 2).



Age

Ten pediatric cases, aged 0 to 14 were reported in 2015. Among the 15-24 year old age group, 14 cases were reported

compared to 20 cases in 2014. For the fifth year in a row, those aged 25 to 44 had a decrease compared to the previous year, from 70 cases in 2014 to 68 cases in 2015. Among those aged 45-64, 56 cases were reported in 2015 compared to 49 in 2014. Those aged 65 and older increased from 50 in 2014 to 64 in 2015 (Figure 3).



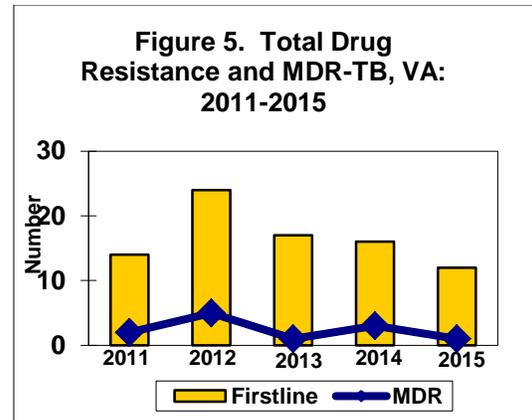
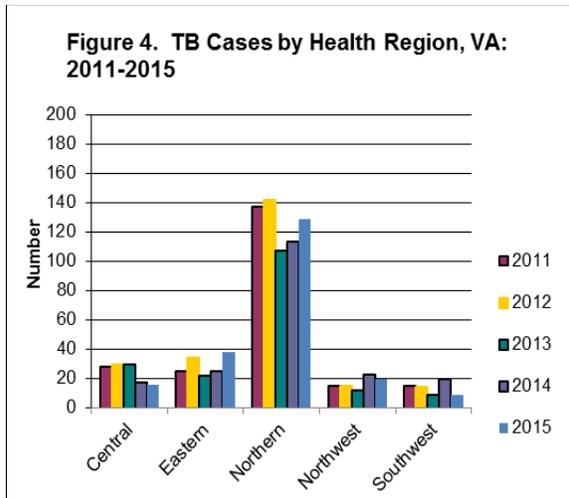
Place of Origin

In 2015, 167 or 79% of Virginia's TB cases were reported among foreign-born persons.

The diversity of cultures and countries of origin among Virginia's TB cases is remarkable. These cases represent 39 countries of origin other than the United States. The top five countries of origin in 2015 included the Philippines, India, Viet Nam, Ethiopia, and Korea.

Geographic Distribution

In 2015, the Central, Northwest, and Southwest health regions reported fewer cases than the previous year. Northern and Eastern health regions reported increases. The Northern region, with a caseload that is overwhelmingly comprised of foreign-born people, reported 61% (129) of the total. Eastern Health Region reported 38 cases for 18%, Central Region reported 16 cases for 8%, Northwest Region reported 20 cases for 9% and Southwest Region reported 9 cases for 4% of the total (Figure 4).



HIV Co-Infection and Selected Risk Factors

Several risk factors are associated with TB, including occupational risk, congregate living, co-infection with HIV, homelessness, substance use and diabetes. Diabetes is consistently the most frequently observed risk factor among TB cases in Virginia. In 2015, 45 cases (21%) were reported. In 2015, 7 health care workers were reported with TB and TB was reported among 2 residents of long-term care facilities. Overall, 7 (3.3%) of Virginia's cases were reported with HIV infection. In 2015, 17 cases (8%) reported excessive alcohol use, 2 reported injection drug use and 4 reported non-injection drug use.

Drug Resistance

Drug susceptibility tests were performed for 171 culture positive cases. Drug resistance was found in 12 cases to one or more first-line drugs, most frequently isoniazid. One case of multidrug-resistant TB (MDR-TB) was reported in 2015. (By definition MDR-TB is resistant to both isoniazid and rifampin). No cases meeting the definition of extensively drug-resistant (XDR) TB were reported in 2015 (Figure 5).

Mortality

In 2014, the most recent year with complete data, 10 (5.1%) TB cases died during treatment and 5 (2.5%) cases were diagnosed at the time of death or post-mortem.

Treatment Outcomes

For 2014, the year with the most complete data, 95.9% of the drug-susceptible cases completed therapy within 12 months.

Contact Investigations

In 2014, 2,814 contacts to acid-fast bacilli (AFB) sputum smear positive or sputum culture positive cases were identified. Of those, 66.7% were evaluated for infection and disease. Among the 278 people identified with latent TB infection (LTBI), 160 (57.6%) were started on treatment and 136 (88.1%) completed treatment for latent TB infection.

Summary

In 2015, morbidity increased slightly among the foreign-born and elderly. Diabetes continues to be the most frequent risk reported among Virginia's TB cases.

Table 1. Number and Rate of Tuberculosis Cases: Virginia and United States, 2006-2015

Year	Virginia		United States	
	No.	Rate	No.	Rate
2006	332	4.3	13,727	4.6
2007	309	4.0	13,288	4.4
2008	292	3.8	12,904	4.2
2009	273	3.5	11,540	3.8
2010	268	3.4	11,181	3.6
2011	221	2.7	10,521	3.4
2012	235	2.9	9,951	3.2
2013	180	2.2	9,588	3.0
2014	198	2.4	9,412	3.0
2015	212	2.5	9,563	3.0

Historical US data from CDC. Reported Tuberculosis in the United States, 2014. Atlanta, GA: US DHHS, CDC, October 2014. 2015 data from Centers for Disease Control and Prevention. Leveling of Tuberculosis Incidence—United States, 2013-2015, MMWR/65(11);273-278.

Table 2. Tuberculosis Cases and Rate per 100,000 by Health Region: Virginia, 2010-2015

Region	2011			2012			2013			2014			2015		
	No.	%	Rate												
Total	221	100	2.7	235	100	2.9	180	100	2.2	198	100	2.4	212	100	2.5
Central	28	12.7	2.0	30	12.8	2.0	29	16.1	2.1	17	8.6	1.2	16	7.5	1.1
Eastern	26	11.8	1.4	34	14.5	1.8	22	12.2	1.2	25	12.6	1.3	38	17.9	2.0
Northern	137	62.0	6.0	142	60.4	6.1	107	59.4	4.5	113	57.1	4.7	129	60.8	5.3
Northwest	15	6.8	1.2	15	6.4	1.2	12	6.7	0.9	23	11.6	1.8	20	9.4	1.5
Southwest	15	6.8	1.1	14	6.0	1.0	9	5.0	0.7	20	10.1	1.5	9	4.2	0.7

**Table 3. Tuberculosis Cases by Demographics and Location:
Virginia, 2011-2015**

	2011		2012		2013		2014		2015	
	221		235		180		198		212	
Total Cases	No	%								
Sex										
Female	95	43.0	106	45.1	72	40.0	94	47.5	104	49.1
Male	126	57.0	129	54.9	108	60.0	104	52.5	108	50.9
Race/Ethnicity										
Asian/Pacific Islander	86	38.9	97	41.3	74	41.1	80	40.4	94	44.3
Black, Not Hispanic	47	21.3	50	21.3	57	31.7	49	24.7	53	25.0
Hispanic	42	19.0	53	22.6	28	15.6	33	16.7	41	19.3
White, Not Hispanic	46	20.8	35	14.9	21	11.7	36	18.2	24	11.3
Age										
0-14	8	3.6	13	5.5	9	5.0	9	4.5	10	4.7
15-24	21	9.5	20	8.5	16	8.9	20	10.1	14	6.6
25-44	94	42.5	88	37.4	77	42.8	70	35.4	68	32.1
45-64	59	26.7	68	28.9	44	24.4	49	24.7	56	26.4
>64	39	17.6	46	19.6	34	18.9	50	25.3	64	30.2
Place of Birth										
Foreign-born	160	72.4	183	77.9	149	82.8	147	74.2	167	78.8
US-born	61	27.6	52	22.1	31	17.2	51	25.8	45	21.2
Health Region										
Central	28	12.7	30	12.8	30	16.7	17	8.6	16	7.5
Eastern	26	11.8	34	14.5	22	12.2	25	12.6	38	17.9
Northern	137	62.0	142	60.4	107	59.4	113	57.1	129	60.8
Northwest	15	6.8	15	6.4	12	6.7	23	11.6	20	9.4
Southwest	15	6.8	14	6.0	9	5.0	20	10.1	9	4.2

Table 6. Tuberculosis Cases by Demographics and Region: Northern, 2011-2015

	2011		2012		2013		2014		2015	
	137		142		107		113		129	
Total Cases	No.	%								
Sex										
Female	56	40.9	67	47.2	44	41.1	58	51.3	67	51.9
Male	81	59.1	75	52.8	63	58.9	55	48.7	62	48.1
Race/Ethnicity										
Asian/Pacific Islander	63	46.0	68	47.9	43	40.2	53	46.9	60	46.5
Black, Not Hispanic	24	17.5	27	19.0	36	33.6	27	23.9	29	22.5
Hispanic	36	26.3	35	24.6	21	19.6	23	20.4	29	22.5
White, Not Hispanic	14	10.2	12	8.5	7	6.5	10	8.8	11	8.5
Age										
0-14	3	2.2	6	4.2	5	4.7	3	2.7	6	4.7
15-24	14	10.2	7	4.9	12	11.2	12	10.6	6	4.7
25-44	65	47.4	62	43.7	50	46.7	42	37.2	47	36.4
45-64	39	28.5	39	27.5	29	27.1	31	27.4	33	25.6
>64	16	11.7	28	19.7	11	10.3	25	22.1	37	28.7
Place of Birth										
Foreign-born	123	96.9	128	90.1	104	97.2	103	91.2	120	93.0
US-born	4	3.1	14	9.9	3	2.8	10	8.8	9	7.0

Table 7. Tuberculosis Cases by Demographics and Region: Northwest, 2011-2015

	2011		2012		2013		2014		2015	
	15		15		12		23		20	
Total Cases	No.	%								
Sex										
Female	8	53.3	8	53.3	4	33.3	8	34.8	12	60.0
Male	7	46.7	7	46.7	8	66.7	15	65.2	8	40.0
Race/Ethnicity										
Asian/Pacific Islander	8	53.3	4	26.7	4	33.3	5	21.7	7	35.0
Black, Not Hispanic	0	0.0	2	13.3	3	25.0	2	8.7	4	20.0
Hispanic	1	6.7	6	40.0	0	0.0	7	30.4	4	20.0
White, Not Hispanic	6	40.0	3	20.0	5	41.7	9	39.1	5	25.0
Age										
0-14	0	0.0	1	6.7	0	0.0	2	8.7	0	0.0
15-24	1	6.7	1	6.7	0	0.0	3	13.0	1	5.0
25-44	9	60.0	7	46.7	6	50.0	8	34.8	6	30.0
45-64	2	13.3	4	26.7	2	16.7	5	21.7	5	25.0
>64	3	20.0	2	13.3	4	33.3	5	21.7	8	40.0
Place of Birth										
Foreign-born	11	73.3	4	26.7	7	58.3	15	65.2	11	55.0
US-born	4	26.7	11	73.3	5	41.7	8	34.8	9	45.0

Table 8. Tuberculosis Cases by Demographics and Region: Southwest, 2011-2015

	2011		2012		2013		2014		2015	
	15		14		9		20		9	
Total Cases	No.	%								
Sex										
Female	5	33.3	7	50.0	3	33.3	9	45.0	3	33.3
Male	10	66.7	7	50.0	6	66.7	11	55.0	6	66.7
Race/Ethnicity										
Asian/Pacific Islander	3	20.0	4	28.6	2	22.2	3	15.0	3	33.3
Black, Not Hispanic	3	20.0	0	0.0	0	0.0	3	15.0	4	44.4
Hispanic	0	0.0	1	7.1	3	33.3	1	5.0	0	0.0
White, Not Hispanic	9	60.0	9	64.3	4	44.4	13	65.0	2	22.2
Age										
0-14	0	0.0	1	7.1	1	11.1	1	5.0	0	0.0
15-24	1	6.7	1	7.1	1	11.1	0	0.0	1	11.1
25-44	3	20.0	4	28.6	4	44.4	9	45.0	2	22.2
45-64	5	33.3	5	35.7	2	22.2	2	10.0	0	0.0
>64	6	40.0	3	21.4	1	11.1	8	40.0	6	66.7
Place of Birth										
Foreign-born	5	33.3	6	42.9	5	55.6	6	30.0	4	44.4
US-born	10	66.7	8	57.1	4	44.4	14	70.0	5	55.6

Table 9. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Virginia, 2011-2015

Race/Ethnicity	2011		2012		2013		2014		2015	
	US-born	Foreign-born								
Total	61	160	52	183	31	149	51	147	45	167
Asian/Pacific Islander	3	83	3	94	0	74	4	76	3	91
Black, Not Hispanic	25	22	22	28	16	41	21	28	23	30
Hispanic	2	40	4	49	0	28	3	30	2	39
White, Not Hispanic	31	15	23	12	15	6	23	13	17	7

Table 10. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Central Region, 2011-2015

Race/Ethnicity	2011		2012		2013		2014		2015	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	14	15	14	16	14	16	9	8	7	9
Asian/Pacific Islander	0	9	1	7	0	13	2	5	1	6
Black, Not Hispanic	7	0	9	1	10	1	5	2	3	2
Hispanic	0	4	0	5	0	2	0	0	0	0
White, Not Hispanic	7	2	4	3	4	0	2	1	3	1

Table 11. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Eastern Region, 2011-2015

Race/Ethnicity	2011		2012		2013		2014		2015	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	20	6	12	22	5	17	10	15	15	23
Asian/Pacific Islander	1	2	0	13	0	12	0	12	1	16
Black, Not Hispanic	13	1	8	3	4	3	9	1	10	1
Hispanic	0	0	1	5	0	2	0	2	1	6
White, Not Hispanic	6	3	3	1	1	0	1	0	3	0

Table 12. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Northern Region, 2011-2015

Race/Ethnicity	2011		2012		2013		2014		2015	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	14	123	14	128	3	104	10	103	9	120
Asian/Pacific Islander	2	61	2	66	0	43	2	51	1	59
Black, Not Hispanic	3	21	4	23	2	34	4	23	3	26
Hispanic	2	34	2	33	0	21	2	21	1	28
White, Not Hispanic	7	7	6	6	1	6	2	8	4	7

Table 13. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Northwest Region, 2011-2015

Race/Ethnicity	2011		2012		2013		2014		2015	
	US-born	Foreign-born								
Total	4	11	4	11	5	7	8	15	9	11
Asian/Pacific Islander	0	8	0	4	0	4	0	5	0	7
Black, Not Hispanic	0	0	1	1	0	3	1	1	4	0
Hispanic	0	2	1	5	0	0	0	6	0	4
White, Not Hispanic	4	1	2	1	5	0	7	3	5	0

Table 14. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Southwest Region, 2011-2015

Race/Ethnicity	2011		2012		2013		2014		2015	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	10	5	8	6	4	5	14	6	5	4
Asian/Pacific Islander	0	3	0	4	0	2	0	3	0	3
Black, Not Hispanic	3	0	0	0	0	0	2	1	3	1
Hispanic	0	0	0	1	0	3	0	1	0	0
White, Not Hispanic	7	2	8	1	4	0	12	1	2	0

Table 15. Tuberculosis Cases by Selected Risk Factors: Virginia, 2011-2015

Total Cases	2011		2012		2013		2014		2015	
	221		235		180		198		212	
	No.	%								
Occupation										
Health Care	7	3.2	8	3.4	5	2.8	5	2.5	7	3.3
Migrant	0	0.0	1	0.4	0	0.0	1	0.5	0	0.0
Corrections	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	5	2.3	2	0.9	4	2.2	5	2.5	2	0.9
Prison/Jail	8	3.6	6	2.6	0	0.0	0	0.0	1	0.5
Homeless	1	0.5	10	4.3	8	4.4	1	0.5	2	0.9
Co-Morbidity										
Diabetes	31	14.0	27	11.5	26	14.4	33	16.7	45	21.2
HIV	9	4.1	12	5.1	10	5.6	10	5.1	7	3.3
Substance Use										
Alcohol	17	7.7	21	8.9	13	7.2	7	3.5	17	8.0
IDU	0	0.0	2	0.9	2	1.1	0	0.0	2	0.9
Non-IDU	13	5.9	15	6.4	7	3.9	1	0.5	4	1.9

Table 16. Tuberculosis Cases by Selected Risk Factors: Central Region, 2011-2015

Total Cases	2011		2012		2013		2014		2015	
	28		30		30		17		16	
	No.	%	%		%		%		%	
Occupation										
Health Care	0	0.0	3	10.0	0	0.0	0	0.0	0	0.0
Migrant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corrections	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	0	0.0	0	0.0	1	3.3	1	5.9	1	6.3
Prison/Jail	2	7.1	4	13.3	0	0.0	0	0.0	1	6.3
Homeless	0	0.0	1	3.3	3	10.0	0	0.0	0	0.0
Co-Morbidity										
Diabetes	2	7.1	4	13.3	7	23.3	3	17.6	7	43.8
HIV	3	10.7	1	3.3	0	0.0	2	11.8	0	0.0
Substance Use										
Alcohol	5	17.9	3	10.0	3	10.0	2	11.8	2	12.5
IDU	0	0.0	0	0.0	1	3.3	0	0.0	1	6.3
Non-IDU	3	10.7	4	13.3	4	13.3	0	0.0	1	6.3

Table 17. Tuberculosis Cases by Selected Risk Factors: Eastern Region, 2011-2015

Total Cases	2011		2012		2013		2014		2015	
	25		25		22		25		38	
	No.	%								
Occupation										
Health Care	0	0.0	1	4.0	0	0.0	1	4.0	1	2.6
Migrant	0	0.0	1	4.0	0	0.0	1	4.0	0	0.0
Corrections	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	0	0.0	0	0.0	0	0.0	1	4.0	1	2.6
Prison/Jail	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Homeless	0	0.0	1	4.0	0	0.0	0	0.0	1	2.6
Co-Morbidity										
Diabetes	3	12.0	5	20.0	3	13.6	5	20.0	5	13.2
HIV	1	4.0	0	0.0	0	0.0	1	4.0	4	10.5
Substance Use										
Alcohol	1	4.0	4	16.0	1	4.5	2	8.0	3	7.9
IDU	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Non-IDU	2	8.0	3	12.0	1	4.5	1	4.0	1	2.6

Table 18. Tuberculosis Cases by Selected Risk Factors: Northern Region, 2011-2015

Total Cases	2011		2012		2013		2014		2015	
	137		142		107		113		129	
	No.	%	No.	%	No.	%	No.	%	No.	%
Occupation										
Health Care	6	4.4	3	2.1	5	4.7	3	2.7	3	2.3
Migrant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corrections	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	3	2.2	1	0.7	1	0.9	3	2.7	0	0.0
Prison/Jail	3	2.2	1	0.7	0	0.0	0	0.0	0	0.0
Homeless	1	0.7	5	3.5	3	2.8	0	0.0	1	0.8
Co-Morbidity										
Diabetes	24	17.5	15	10.6	10	9.3	23	20.4	25	19.4
HIV	3	2.2	8	5.6	8	7.5	6	5.3	1	0.8
Substance Use										
Alcohol	9	6.6	7	4.9	5	4.7	2	1.8	7	5.4
IDU	0	0.0	1	0.7	0	0.0	0	0.0	1	0.8
Non-IDU	6	4.4	6	4.2	1	0.9	0	0.0	2	1.6

Table 19. Tuberculosis Cases by Selected Risk Factors: Northwest Region, 2011-2015

Total Cases	2011		2012		2013		2014		2015	
	15		15		12		23		20	
	No.	%	No.	%	No.	%	No.	%	No.	%
Occupation										
Health Care	0	0.0	1	6.7	0	0.0	1	4.3	2	10.0
Migrant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corrections	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	2	13.3	0	0.0	1	8.3	0	0.0	0	0.0
Prison/Jail	1	6.7	0	0.0	0	0.0	0	0.0	0	0.0
Homeless	0	0.0	1	6.7	1	8.3	0	0.0	0	0.0
Co-Morbidity										
Diabetes	0	0.0	2	0.0	5	0.0	2	0.0	8	40.0
HIV	0	0.0	1	6.7	1	8.3	0	0.0	0	0.0
Substance Use										
Alcohol	1	6.7	3	20.0	2	16.7	0	0.0	4	20.0
IDU	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Non-IDU	1	6.7	1	6.7	0	0.0	0	0.0	0	0.0

Table 20. Tuberculosis Cases by Selected Risk Factors: Southwest Region, 2011-2015

Total Cases	2011		2012		2013		2014		2015	
	15		14		9		20		9	
	No.	%								
Occupation										
Health Care	1	6.7	0	0.0	0	0.0	0	0.0	1	11.1
Migrant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corrections	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	0	0.0	0	0.0	1	11.1	0	0.0	0	0.0
Prison/Jail	2	13.3	1	7.1	0	0.0	0	0.0	0	0.0
Homeless	0	0.0	2	14.3	1	11.1	0	0.0	0	0.0
Co-Morbidity										
Diabetes	1	6.7	1	7.1	1	11.1	0	0.0	0	0.0
HIV	2	13.3	2	14.3	1	11.1	1	5.0	2	22.2
Substance Use										
Alcohol	1	6.7	4	28.6	2	22.2	2	10.0	1	11.1
IDU	0	0.0	1	6.7	1	11.1	0	0.0	0	0.0
Non-IDU	1	6.7	1	7.1	1	11.1	0	0.0	0	0.0

Table 21. Culture Positive Tuberculosis Cases with Drug Resistance: Virginia, 2011-2015

Initial Susceptibilities	2011		2012		2013		2014		2015	
	174		172		135		151		171	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Drug Resistance	14	8.0	24	14.0	17	12.6	19	12.6	13	7.6
Any firstline drug	12	6.9	19	11.0	16	11.9	16	10.6	12	7.0
Multidrug**	2	1.1	5	2.9	1	0.7	3	2.0	1	0.6

**Multidrug resistance or MDR is by definition resistance to isoniazid and rifampin.

Table 22. Tuberculosis Mortality: Virginia, 2010-2014*

Total Cases	2010		2011		2012		2013		2014	
	268		221		235		180		198	
	No.	%								
Total Deaths	18	6.7	17	7.7	21	8.9	15	8.3	10	5.1
Dead at Time Diagnosis	7	2.6	2	0.9	6	2.6	7	3.9	5	2.5
Died During Treatment	11	4.1	15	6.8	15	6.4	8	4.4	5	2.5

*If a person is diagnosed with TB post-mortem or diagnosed with TB at the time of death they are coded as dead at the time of diagnosis. If they died during TB treatment, they are coded as died during treatment. There may be people in either of these categories whose underlying cause of death is not TB.

Technical Notes

TB disease is a reportable condition as defined in the *Regulations for Disease Reporting and Control*. In addition, TB infection in children under age 4 is also a reportable condition. The Division of Disease Prevention, TB Control conducts surveillance for TB disease in the entire population and for TB infection among children. It collects, analyzes, and disseminates data as an integral part of TB control.

Rates per 100,000

In Tables 1 and 2, rates for 2006-2010 were calculated using 2000 Census data released by the United States Bureau of the Census, Population Estimates Program. Annual Estimates of the Population for Counties of Virginia: April 1, 2000 to July 1, 2010 (CO-EST2006-01-51). For 2011 to 2015 rates were calculated using estimates compiled by the Weldon Cooper Center for Public Service, accessed 2/29/2016 <http://www.coopercenter.org/demographics/virginia-population-estimates#popestimates>

Tuberculosis (TB) (*Mycobacterium tuberculosis*)

2009 Case Definition

CSTE Position Statement(s)

- 09-ID-65

Clinical Description

A chronic bacterial infection caused by *Mycobacterium tuberculosis* usually characterized pathologically by the formation of granulomas. The most common site of infection is the lung, but other organs may be involved.

Clinical Criteria

A case that meets all the following criteria:

- A positive tuberculin skin test or positive interferon gamma release assay for *M. tuberculosis*
- Other signs and symptoms compatible with tuberculosis (TB) (e.g., abnormal chest radiograph, abnormal chest computerized tomography scan or other chest imaging study, or clinical evidence of current disease)
- Treatment with two or more anti-TB medications
- A completed diagnostic evaluation

Laboratory Criteria for Diagnosis

- Isolation of *M. tuberculosis* from a clinical specimen,* OR
- Demonstration of *M. tuberculosis* complex from a clinical specimen by nucleic acid amplification test,** OR
- Demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained or is falsely negative or contaminated.

Case Classification

Confirmed

A case that meets the clinical case definition or is laboratory confirmed

Comment(s)

A case should not be counted twice within any consecutive 12-month period. However, a case occurring in a patient who had previously had verified TB disease should be reported and counted again if more than 12 months have elapsed since the patient completed therapy. A case should also be reported and counted again if the patient was lost to supervision for greater than 12 months and TB disease can be verified again. Mycobacterial diseases other than those caused by *M. tuberculosis* complex should not be counted in tuberculosis morbidity statistics unless there is concurrent tuberculosis.

*Use of rapid identification techniques for *M. tuberculosis* (e.g., DNA probes and mycolic acid high-pressure liquid chromatography performed on a culture from a clinical specimen) are acceptable under this criterion.

** Nucleic acid amplification (NAA) tests must be accompanied by culture for mycobacteria species for clinical purposes. A culture isolate of *M. tuberculosis* complex is required for complete drug susceptibility testing and also genotyping. However, for surveillance purposes, CDC will accept results obtained from NAA tests approved by the Food and Drug Administration (FDA) and used according to the approved product labeling on the package insert, or a test produced and validated in accordance with applicable FDA and Clinical Laboratory Improvement Amendments (CLIA) regulations.

<http://wwwn.cdc.gov/nndss/script/casedef.aspx?condyrid=876&datepub=1/1/2009%2012:00:00%20am>