

## Tuberculosis

<b>2010 Case Total</b>	<b>86</b>	<b>2010 Incidence Rate</b>	<b>2.3 per 100,000</b>
<b>2009 Case Total</b>	<b>102</b>	<b>2009 Incidence Rate</b>	<b>2.8 per 100,000</b>

Tuberculosis (TB) is often considered a disease of the past. However, nearly one-third of the world's total population, or approximately two billion people, are currently infected with the bacteria that causes TB. Each year, approximately 9 million people around the world develop TB, and almost 2 million deaths are related to TB. TB is the leading killer of people who are HIV infected. Through public health efforts including timely case diagnosis, contact investigation, administration of therapy, prevention, and education, Oklahoma and the US have seen a steady decline of TB (see graph).

In Oklahoma, persons of white race had the highest number of cases (n = 32, see Table 1). Conversely, the highest incidence rate occurred among persons of Native Hawaiian/Pacific Islander race (152 per 100,000, see Table 2). Some races may be under-represented as race is self-reported and more than one race can be declared. The number of cases in special populations decreased, with prisoners, nursing homes and university students having none for the year. Persons ages 65 and older represented the highest rate of illness at 3.6 per 100,000 population followed by two age groups: children 0 to 4 years of age and adults 45 to 64 years of age, both at 2.9 per 100,000 population.

Resistance to isoniazid (INH) decreased from the previous two years. However, one case with multiple-drug resistance (MDR) was identified. This case was in a foreign born individual that had previous TB treatment in their native country, and presented with a 15-month history of a productive cough. Cavitory lesions were present on the chest x-ray, and sputum specimens were smear and culture positive for *M. tuberculosis*, the causative agent of TB. The case also experienced fever, fatigue and weight loss of >10% body weight. The organism was resistant to INH and rifampin, and had partial resistance to ethambutol. The patient improved on multi-drug therapy including intravenous amikacin. Treatment will continue for up to 24 months. During treatment, the patient will be monitored for symptoms of toxicity. A contact investigation revealed one close contact who tested positive and was started on treatment for latent TB infection (LTBI).

People at high risk for TB infection include those who are close contacts to active TB cases, foreign born, low-income and/or homeless individuals, people who work with high risk groups in special settings such as correctional facilities or drug treatment centers, racial and ethnic minorities and people who inject illicit drugs.

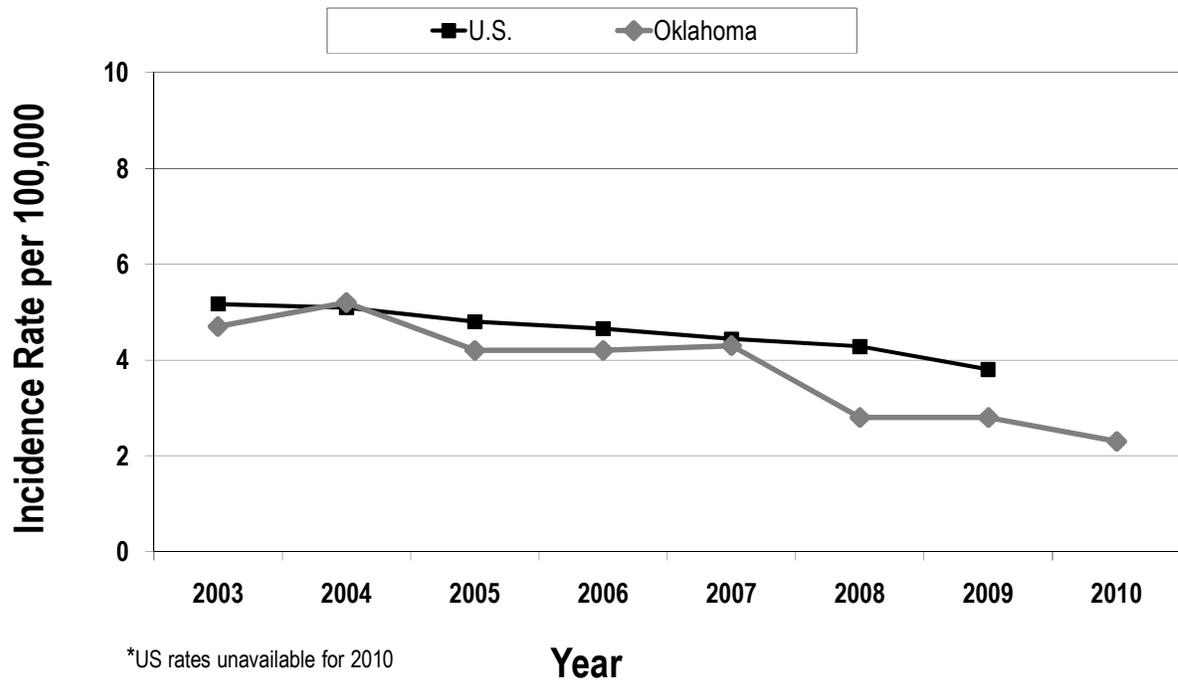
People at high risk for progressing from LTBI (non-contagious) to active TB disease (contagious) include those who are immunocompromised, malnourished, substance abusers, people with medical conditions (such as diabetes, severe kidney disease, or silicosis), people who were infected with TB within the previous two years, children under 4 years of age, and people who inject illicit drugs.

Prevention, early diagnosis and treatment are paramount to successful tuberculosis control. TB should be considered in the differential diagnosis of persons presenting with a productive cough, bloody sputum, fevers, and/or unexplained weight loss. Early suspicion and testing are of utmost importance. Delayed diagnosis of TB can result in serious disease as well as community spread of TB. Persons with active TB are treated using directly observed therapy (DOT) in Oklahoma, meaning that each dose of TB medication is supervised to confirm adherence.

Testing for TB includes the Mantoux tuberculin skin test (TST), sputum testing for acid fast bacilli (AFB), chest radiographs, and/or interferon-gamma release assay (IGRA) blood tests. OSDH collaborates with Oklahoma City-County and Tulsa City-County Health Departments to control TB in the state. Physicians who specialize in TB are available for consultation regarding testing, infection control and treatment by calling 405-271-4060 during or after regular business hours.

For information about TB disease and testing, contact the OSDH Acute Disease Service, TB Program at 405-271-4060, visit this Web site: [www.health.ok.gov](http://www.health.ok.gov), or contact your local county health department.

## Tuberculosis Incidence Rates by Year, Oklahoma and U.S., 2003 – 2010\*



**Table 1: Reported Tuberculosis Cases, Oklahoma 2003 - 2010**

Year	2003	2004	2005	2006	2007	2008	2009	2010
<b>Tuberculosis Cases</b>	163	178	144	144	149	100	102	86
<b>AGE (years)</b>								
0 - 4	11 (7%)	14 (8%)	12 (8%)	8 (6%)	12 (8%)	12 (12%)	10 (10%)	8 (9%)
5 - 14	1 (1%)	10 (6%)	7 (5%)	3 (2%)	9 (6%)	1 (1%)	7 (7%)	1 (1%)
15 - 24	16 (10%)	24 (13%)	7 (5%)	9 (6%)	11 (7%)	8 (8%)	7 (7%)	9 (11%)
25 - 44	51 (31%)	50 (28%)	40 (28%)	36 (25%)	36 (24%)	29 (29%)	23 (22%)	23 (27%)
45 - 64	52 (32%)	54 (30%)	53 (37%)	56 (39%)	60 (40%)	32 (32%)	38 (37%)	27 (31%)
> 65 Years	32 (20%)	27 (15%)	25 (17%)	32 (22%)	21 (14%)	18 (18%)	17 (17%)	18 (21%)
<b>RACE</b>								
American Indian/ Alaska Native	33 (20%)	36 (20%)	32 (22%)	22 (15%)	30 (20%)	19 (19%)	13 (13%)	14 (16%)
Asian	16 (10%)	20 (11%)	14 (10%)	20 (10%)	8 (5%)	7 (7%)	12 (12%)	14 (16%)
Black	27 (17%)	32 (18%)	21 (15%)	22 (15%)	22 (15%)	23 (23%)	13 (13%)	10 (12%)
Native Hawaiian/ Pacific Islander	0	0	0	0	5 (3%)	6 (6%)	5 (5%)	6 (7%)
White	87 (53%)	88 (50%)	70 (49%)	79 (55%)	84 (56%)	45 (45%)	51 (50%)	32 (37%)
Unknown	-	-	-	-	-	-	-	8 (9%)
Two or more races	0	2 (1%)	7 (4%)	1 (.7%)	-	-	7 (7%)	2 (3%)
Hispanic*	18 (11%)	29 (32%)	21 (15%)	25 (17%)	25 (17%)	13 (13%)	16 (16%)	18 (21%)
<b>SPECIAL POPULATIONS</b>								
Foreign Born	37 (23%)	37 (21%)	35 (24%)	39 (27%)	38 (26%)	30 (30%)	20 (20%)	23 (27%)
University Students	8 (5%)	5 (3%)	2 (1%)	5 (3%)	2 (1%)	1 (1%)	0	0
Homeless	7 (4%)	9 (5%)	13 (9%)	8 (6%)	7 (5%)	8 (8%)	6 (6%)	2 (2%)
Nursing Homes	5 (3%)	5 (3%)	5 (3%)	8 (6%)	4 (3%)	5 (5%)	4 (4%)	0
AIDS/TB	10 (6%)	4 (2%)	10 (7%)	6 (4%)	5 (3%)	3 (3%)	1 (1%)	3 (4%)
Prisoners	6 (4%)	11 (6%)	8 (6%)	7 (5%)	2 (1%)	2 (2%)	2 (2%)	0
<b>BACTERIOLOGY</b>								
Resistance To INH	9 (5.6%)	1 (1%)	5 (5%)	3 (2%)	0	3 (3%)	4 (4%)	2 (2%)
MDR-TB	1 (.8%)	0	1 (1%)	0	0	0	0	1 (1%)
Culture Positive for MTB	126 (77%)	109 (61%)	93 (65%)	73 (51%)	91 (61%)	80 (80%)	54 (53%)	40 (47%)

\*Persons of Hispanic ethnicity may also be represented in other races

**Table 2: Tuberculosis Incidence Rates per 100,000 by Age and Race,  
Oklahoma 2003 - 2010**

Year	2003	2004	2005	2006	2007	2008	2009	2010
<b>Oklahoma Case Rate*</b>	4.7	5.2	4.2	4.2	4.3	2.8	2.8	2.3
<b>U.S. Case Rate*</b>	5.1	4.9	4.8	4.6	4.2	3.8	3.8	NA
<b>AGE†</b>								
0 - 4	5	6	5	3	5	4.6	3.8	2.9
5 - 14	1	2	1	0.6	2	0.2	1.4	0.2
15 - 24	3	5	1	2	2	1.5	1.3	1.7
25 - 44	5	5	4	4	4	3.0	2.4	2.4
45 - 64	7	7	7	7	8	3.5	4.1	2.9
> 65	7	6	5	7	5	3.7	3.5	3.6
<b>RACE‡</b>								
American Indian/ Alaska Native	12	13	12	8	11	6.7	4.5	4.7
Asian	34	43	30	43	17	11.2	19.1	22.3
Black	9	12	8	8	8	8.0	4.5	3.4
Native Hawaiian/ Pacific Islander	0	0	0	0	210	164.3	129.4	152
White	3	3	3	3	3	1.6	1.8	1.1
Two or more races	0	1	4	0.6	--	--	4.7	1.3
Hispanic***	10	16	7	13	14	5	5.7	6.0

\*Rate is 100,000 per population

†Race and Age calculations using census data

‡Persons of Hispanic ethnicity may also be represented in other races.